County of Sonoma
Agenda Item
Summary Report

To: Board of Supervisors / Board of Directors

Board Agenda Date: January 23, 2018
Vote Requirement: Informational Only

Department or Agency Name(s): Agricultural & Open Space Districts and County Administrator’s Office

Staff Name and Phone Number: Karen Gaffney 707-565-7344

Supervisory District(s): All

Title: Living in A Fire Adapted Landscape

Recommended Actions:
Accept the “Living in a Fire Adapted Landscape” report to integrate relevant recommendations into the Recovery & Resiliency work plan.

Executive Summary:
The Watershed Collaborative – a coalition of groups including county agencies, special districts, resource conservation districts, non-profits, agricultural groups, watershed groups, state and federal agencies – was convened in October 2017 to address the impacts of the fires on natural and working lands and to outline a set of short and long term actions focused on watershed resiliency. A report – “Living in a Fire Adapted Landscape” was developed with the input of over 150 individuals representing 60 organizations, and includes a set of prioritized actions for consideration by the County Board of Supervisors. The report is a preliminary compilation of recommendations, does not represent a consensus view of all participating entities, and has not been peer reviewed, nor does the report identify the resources needed to implement the priorities or a lead entity. The report is a strategy document rather than an implementation plan, and may be considered by the Board of Supervisors as significant input into the watershed work plan for the Sonoma County Office of Recovery and Resiliency.

Discussion:
The fires of October 2017 devastated communities in Sonoma County, and the road to recovery will be long and arduous. In addition to the tragic loss of life and the destruction of homes, businesses and public infrastructure, the fires burned natural and working landscapes. Forests and shrub lands, urban open spaces, stream corridors, rangelands and cultivated agriculture were damaged. This report focuses on the impacts to working and natural lands, and identifies a set of priorities for long term resiliency of these watershed lands.
A fundamental part of Sonoma County’s identity, these watershed lands are critical to the health and recovery of our communities. They provide local food, filter drinking water, protect cities and towns from flooding and landslides, sustain biological diversity, provide opportunities for residents to enjoy the mental and physical health benefits of the outdoors, and contribute to the County’s iconic beauty. The soils, trees, and other vegetation in these watersheds sequester carbon, while the riparian corridors are critical for climate change adaptation, wildlife movement and groundwater recharge. Historically, these working and natural lands regularly experienced fire, with many native plant communities relying upon fire for their continued viability.

Immediately after the fires, the Sonoma County Agricultural Preservation & Open Space District (Sonoma Ag + Open Space) and the Sonoma County Water Agency convened over 100 watershed groups to discuss short and long term actions to address the aftermath of the fires. These groups – hereafter called the Watershed Collaborative - included representatives from local, state and federal agencies, resource conservation districts, non-profits, agricultural groups, academic entities, watershed and community groups. Working groups were formed, chaired and coordinated by Ag + Open Space and Sonoma Resource Conservation District staff.

This report outlines a set of strategic, actionable priorities to protect working and natural lands, public and private landowner investments in these watershed lands, and the continuing ability of these lands to provide multiple benefits to human and natural communities. Many of the priorities outlined in this report will apply not only to future fires, but to other disasters such as floods, droughts and earthquakes. Resiliency is the ability to recovery quickly from difficulties, and in the context of our watersheds this extends to natural systems, working lands, and the people who manage, live, and enjoy these places. Sharing knowledge, skills, and resources not only produces better results, it strengthens us as a community. A consistent theme from participants throughout this process was the importance of continuing that collaboration in service of a resilient Sonoma County.

The new Office of Recovery and Resiliency Watershed Recovery Coordinator will be able to build upon the thoughtful and strategic input provided by the experts who contributed their time to develop the “Living in a Fire Adapted Landscape” report, continue to coordinate input from the watershed collaborative, and develop a specific work plan for watershed recovery that integrates many of the identified priorities of the watershed collaborative.

In close collaboration with the Office of Watershed Recovery and Resiliency, the Sonoma County Agricultural Preservation & Open Space District and the Sonoma County Water Agency will move forward on key elements included in the report, including data, assessment and planning in support of post-fire evaluation and long term watershed resiliency, evaluations of burn severity and intensity as a function of land management and land use type, development of a “story map” regarding the fires, evaluation of the relationship between the fires and water supply infrastructure, and supporting the Office of Recovery and Resiliency in expanding upon and implementing relevant priorities identified in the report.

**Prior Board Actions:**

None
### Strategic Plan Alignment

**Goal 2: Economic and Environmental Stewardship**

#### Fiscal Summary

<table>
<thead>
<tr>
<th>Expenditures</th>
<th>FY 17-18 Adopted</th>
<th>FY 18-19 Projected</th>
<th>FY 19-20 Projected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Budgeted Expenses</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Additional Appropriation Requested</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total Expenditures</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Funding Sources

- General Fund/WA GF
- State/Federal
- Fees/Other
- **Total Sources**

#### Narrative Explanation of Fiscal Impacts:

Not Applicable

#### Staffing Impacts

<table>
<thead>
<tr>
<th>Position Title (Payroll Classification)</th>
<th>Monthly Salary Range (A – I Step)</th>
<th>Additions (Number)</th>
<th>Deletions (Number)</th>
</tr>
</thead>
</table>

#### Narrative Explanation of Staffing Impacts (If Required):

None

#### Attachments:

Draft report “Living in a Fire Adapted Landscape: Priorities for Resiliency – Sonoma County Working and Natural Lands

#### Related Items “On File” with the Clerk of the Board:

None
LIVING IN A FIRE-ADAPTED LANDSCAPE

PRIORITIES FOR RESILIENCY

SONOMA COUNTY NATURAL & WORKING LANDS
This report represents a compilation of prioritized recommendations from a wide variety of experts on working and natural lands. The report is focused on the long term resiliency of Sonoma County watersheds – including our working and natural lands. The report does not represent any one organization, nor does it reflect consensus.

Acknowledgments

The following individuals were influential in the development of Watershed Collaborative and the resulting priorities.

Audubon Canyon Ranch
Sasha Berleman

Cal Fire
Ben Nicholls
Jon Woessner
Derek Witmer
Todd Derum

California Department of Fish and Wildlife
Derek Acomb
Desiree Dela Vega
Ryan Watanabe

California Geologic Survey
Patrick Brand

California Native Plant Society
Dan Gluesenkamp
Julie Evens

Member of the Public
Maxene Spellman
Penny Sirotta
Ray Kraus
Scott Newman

City of Santa Rosa Water
Deb Lane
Sean McNeil

Clean River Alliance
Chris Brokate

Community Alliance with Family Farmers
Wendy Krupnick

Community Foundation Sonoma County
Elly Grogan

Community Soil
Paolo Tantarelli

Office of Congressman Mike Thompson
Stephen Gale

Conservation Corps North Bay
Marilee Eckert
Terri Thomas
Tyler Pitts

Cook Vineyard Management
David Cook
County of Sonoma
Department of Agriculture
Andy Casarez

County of Sonoma Information Systems Department
Kevin Lacefield
Michelle Mestrovich
Tim Pudoff

Daily Acts
Brianna Schaefer
Trathen Heckman

E. & J. Gallo Winery, Sonoma
County Agricultural Preservation & Open Space District – Advisory Committee
John Nagle

Engineers Without Borders
Rebecca Batzel
Jessica Pollitz

Farmers Guild; Community Alliance with Family Farmers
Evan Wiig

Federal Emergency Management Agency
John Woytak

Gold Ridge Resource Conservation District
Adriana Stagnaro
Brittany Jensen
John Green

Gold Ridge Resource Conservation District; Sonoma County Farm Bureau
Joe Pozzi

Greenbelt Alliance
Teri Shore
Greenbelt Alliance; FOREVER Initiative
Dee Swanhuyser

Jackson Family Farms
Carolyn Wasem
Kass Green & Associates
Kass Green

Laguna de Santa Rosa Foundation
Christine Fontaine
Kevin Munroe
Wendy Trowbridge
Anita Smith
Brent Reed

LandPaths
Craig Anderson
Erin Mullen
Lee Hackeling
Omar Gallardo

National Marine Fisheries Service
Bob Coey
Charleen Gavette
Dan Wilson
John McKeon

Natural Resources Conservation Service
Drew Loganbill
Emma Chow
Jennifer Walser

North Coast Regional Water Quality Control Board
Alydda Mangelsdorf
Chuck Striplen
Clayton Creager
David Kuszmar
Diana Henrioulle
Jonathan Warmerdam
Matt St. John
Rich Fadness
Stephen Bargsten

Occidental Arts & Ecology Center
Brock Dolman

Office of Assemblymember
Jim Wood
Paul Ramey
## Acknowledgments

<table>
<thead>
<tr>
<th>Office of Assemblymember Marc Levine</th>
<th>Point Blue Conservation Science Gina Graziano</th>
<th>San Francisco Bay Regional Water Quality Control Board Christina Toms</th>
<th>Misti Arias</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calum Weeks</td>
<td>Jay Roberts</td>
<td>San Francisco Estuary Institute Cristina Grosso</td>
<td>Monica Delmartini</td>
</tr>
<tr>
<td>Janelle Wetzstein</td>
<td>John Parodi</td>
<td>Robin Grossinger</td>
<td>Sheri Emerson</td>
</tr>
<tr>
<td></td>
<td>Melissa Pitkin</td>
<td>Scott Dusterhoff</td>
<td>Sonoma County Agricultural</td>
</tr>
<tr>
<td></td>
<td>Permit Sonoma</td>
<td>County of Sonoma Department of Agriculture</td>
<td>Preservation &amp; Open Space District</td>
</tr>
<tr>
<td></td>
<td>Russian River Confluence</td>
<td>Tony Linegar</td>
<td>- Advisory Committee</td>
</tr>
<tr>
<td></td>
<td>Russian River Protection Committee Brenda Adelman</td>
<td>Sonoma County Agricultural Conservation Action</td>
<td>Jan McFarland</td>
</tr>
<tr>
<td>Pepperwood Preserve</td>
<td>Russian River Confluence</td>
<td>Sonoma County Agricultural Protection &amp; Open Space District</td>
<td>Amie Windsor</td>
</tr>
<tr>
<td>Cassandra Liu</td>
<td>Adriane Garayalde</td>
<td>Sonoma County Board of Supervisors, District 5</td>
<td>Susan Upchurch</td>
</tr>
<tr>
<td>Celeste Dodge</td>
<td>Russian River Watershed Association</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Devyn Freidfel</td>
<td>Andy Rodgers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lisa Micheli</td>
<td>Colleen Hunt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Michael Gillogly</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sandi Funke</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Permit Sonoma</td>
<td>Russian River Watershed Association</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Robert Pennington</td>
<td>Russian River Watershed Protection Committee</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Brenda Adelman</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Background & Report Purpose

The fires of October 2017 devastated communities in Sonoma County, and the road to recovery will be long and arduous. In addition to the tragic loss of life and the destruction of homes, businesses and public infrastructure, the fires burned natural and working landscapes. Forests and shrublands, urban open spaces, stream corridors, rangelands and cultivated agriculture were damaged. This report focuses on the impacts to working and natural lands, and how we can keep them vibrant for future generations.

A fundamental part of Sonoma County’s identity, these watershed lands are critical to the health and recovery of our communities. They provide local food, filter drinking water, protect cities and towns from flooding and landslides, sustain biological diversity, provide opportunities for residents to enjoy the mental and physical health benefits of the outdoors, and contribute to the County’s iconic beauty. The soils, trees, and other vegetation in these watersheds sequester carbon, while the riparian corridors are critical for climate change adaptation, wildlife movement and groundwater recharge. Historically, these working and natural lands regularly experienced fire, with many native plant communities relying upon fire for their continued viability.

While natural and working lands will recover on their own over time, some areas will need active restoration, management, and investment of resources in order to avoid runoff of toxic materials and sediments into drinking water supplies and sensitive habitats, to minimize the threat of flooding, landslides, and other safety hazards, and to maximize ecosystem recovery. Through thoughtful and targeted assessments, planning, and permitting, the health and function of Sonoma County’s open space lands can be strengthened to be better prepared for future fires.

This report outlines a set of strategic, actionable priorities to protect working and natural lands, public and private landowner investments in these watershed lands, and the continuing ability of these lands to provide multiple benefits to human and natural communities. Many of the priorities outlined in this report will apply not only to future fires, but to other disasters such as floods, droughts and earthquakes. As development pressure in the wildland urban interface intensifies, and the impacts of climate change increase, so does the risk of catastrophic wildfire spreading into urban areas. Enhanced integrated planning and land management in our natural and working lands will promote the resiliency of the County’s human communities as well as its rich ecosystems.

The work of the Watershed Collaborative is based in a vision of our landscape and its people adapting to the changing climate without catastrophic loss. Resiliency is the ability to recovery quickly from difficulties, and in the context of our watersheds this extends to natural systems, working lands, and the people who manage, live, and enjoy these places. One heartfelt lesson we have all learned from the fires is that sharing knowledge, skills, and resources not only produces better results, it strengthens us as a community. A consistent theme from participants throughout this process was the importance of continuing that collaboration in service of a resilient Sonoma County.
Relationship To Other Fire Recovery Efforts

The County of Sonoma is leading the local recovery effort, working closely with other local, state, and federal agencies to address the impacts of the fire on the health, economic vitality and safety of Sonoma County citizens and communities. The County – in concert with special districts like the Sonoma County Water Agency and the Agricultural Preservation and Open Space District (Ag + Open Space) – leads watershed recovery efforts, via participation in CAL FIRE’s Watershed Emergency Response Team (WERT) and through other initiatives. This report was requested by the Sonoma County Board of Supervisors in the immediate aftermath of the fires to ensure that the expertise of agricultural and natural resources groups informed the recovery and long-term resiliency of Sonoma County’s watershed lands.

In addition to the County of Sonoma’s lead role in watershed recovery and resiliency, other complementary efforts and initiatives are also underway that will contribute information and strategies to watershed recovery. These include the Russian River Confluence, the Forest Conservation Working Group and the FOREVER Initiative, the Russian River Pilot Program, Sonoma County Regional Parks Integrated Parks Plan, Rebuild North Bay, SoCo Rises, Audubon Canyon Ranch’s prescribed fire imitative, Sonoma County Water Agency Strategic Plan and the Sonoma County Ag + Open Space Vital Lands Initiative, among others.
Watershed Collaborative Approach

This report reflects a collaboration of the Sonoma County community to identify actions for natural and working lands impacted by the fires, with an emphasis on the protection of working lands, native habitats, wildlife, streams and wetlands, as well as human health and safety. This joint effort became known as the Watershed Collaborative. Although coordination was provided by Ag + Open Space and the Sonoma Resource Conservation District at the request of the Sonoma County Board of Supervisors, the proposed actions listed in this report reflect the priorities of multiple groups, and the report does not necessarily reflect the consensus of all participants. Working groups were formed around particular focus areas to enhance efficiency and take advantage of the incredible local knowledge and expertise in our community. Each working group includes representatives from local, state and federal agencies, resource conservation districts, non-profits, agricultural groups, academic entities, watershed and community groups, and is chaired and coordinated by Ag + Open Space and Sonoma Resource Conservation District staff. The entities listed at the start of this report self-selected to participate in working groups based on their interest and expertise, and the entire process was open to anyone who wished to participate.

Each working group met three times, developing a list of tasks which they felt were critical to the health and resiliency of Sonoma County watersheds. The first meeting was an opportunity to discuss the fires and share ideas for short and long term actions. At the second meeting, attendees prioritized the complete list of actions. During the third meeting, attendees reviewed the lists of summarized actions, and made any necessary revisions. A final meeting re-convened all of the working groups to review the final report in advance of its presentation to the Board of Supervisors. The report reflects a rapid assessment process that engaged many busy people during a challenging time – there are no doubt elements that the participants may wish to further refine during future discussions.
Report Focus Areas

The Natural & Working Lands Report presents a set of overall priorities to ensure the resiliency of working and natural lands, as well as more detailed priorities for the five focus areas, outlined and described below. Some of the work outlined in the report is already planned or underway, and some has not yet begun.
Overall Priorities

1. Support landowners and land managers in assessing and mitigating watershed impacts of the 2017 fires
2. Build on increased community awareness to enhance strategies for living in a fire-prone landscape
3. Evaluate the response of natural and agricultural lands to the fire to inform recovery efforts and prepare the community and the land for the inevitable impacts and benefits of future wildfire
4. Implement, refine, or develop policy to ensure community and ecosystem resiliency in a fire-adapted landscape
5. Develop long-term funding strategies for wildfire resilience, preparation, and recovery for working and natural lands
6. Maintain the collaboration focused on fire resiliency on natural and working lands

Priority action numbers are for reference only and do not imply a ranking.
## Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Section 1</td>
<td>Data, Assessment, &amp; Planning</td>
<td>15</td>
</tr>
<tr>
<td>Section 2</td>
<td>Working Lands</td>
<td>21</td>
</tr>
<tr>
<td>Section 3</td>
<td>Land Management</td>
<td>25</td>
</tr>
<tr>
<td>Section 4</td>
<td>Education &amp; Outreach</td>
<td>29</td>
</tr>
<tr>
<td>Section 5</td>
<td>Legislation, Policy, &amp; Funding</td>
<td>35</td>
</tr>
</tbody>
</table>
SECTION 1
FOCUS AREA
Data, Assessment, & Planning
Background: Data, Assessment, & Planning

Sonoma County is fortunate to have made investments in data that enabled public agencies, non-profits, and the scientific community to rapidly and effectively respond to this disaster – allowing us to quickly identify building locations, perform hydrologic modeling, assess ecosystem function and evaluate the threats to our watersheds and priorities for recovery. In this respect, we are ahead of the curve compared to most other places in the nation dealing with disasters of this magnitude. The data developed by Sonoma County agencies and institutions allow us to rapidly identify problem areas and places on the landscape most likely to pose threats to agricultural lands, native habitats, ecosystems and wildlife, and human health and safety. For example, the Sonoma County community is using LiDAR data developed with NASA, hydrologic models to forecast the effects of atmospheric rivers, the recently completed fine-scale vegetation and habitat map to track and model sources of pollution likely to move into stream systems during storm events, and other remotely sensed data to evaluate the current and potential impacts of the fires.
**Priority Actions: Data, Assessment, & Planning**

1. Identify short-term toxin, sediment, and debris flow threats and other hazards to waterways and public safety.*
   
   Rationale: Determine where immediate and short-term recovery efforts are needed to protect working and natural lands.

   **Actions identified by working groups include:**
   
   a. Establish a short-term, collaborative monitoring program to measure ambient toxin and sediment concentrations through the upcoming rainy season*
   
   b. Establish, in collaboration with partners, an assessment framework to understand the fate and transport of contaminants [sediments and toxics] from burned regions to waterways for use in long-term monitoring of fire impacts
   
   c. Survey roads, culverts, and other potential failure areas using traditional mechanisms and citizen science
   
   d. Prioritize contamination control and remediation efforts in areas with significant potential to deliver contaminants to waterways, and monitor success of efforts
   
   e. Identify areas with a high probability of debris flow or other hazards using Geographic Information Systems (GIS) and remote sensing to inform emergency planning decisions

2. Evaluate the response of natural and agricultural lands to the fire.
   
   Rationale: Inform how landowners can best manage their land to reduce and/or mitigate the long-term negative impacts of wildfire.

   **Actions identified by working groups include:**
   
   a. Evaluate fire severity and response based on land management activities (e.g., forest management, grazing, agricultural land cover) *
   
   b. Conduct ground assessments to monitor natural vegetation response over long-term, especially among rare plants and rare plant communities (e.g., riparian, mesic chaparral, etc.) affected by the fire *
   
   c. Acquire aerial imagery and a digital surface model of rural areas post-burn and use to assess fine-scale burn severity, vegetation mortality, carbon loss, etc. *
   
   d. Analyze pre-fire vegetation data (e.g., vegetation type, understory and overstory fire/fuels) and burn intensity and severity to assess short-term change and long-term resiliency of ecosystems
   
   e. Assess impacts of fire suppression [bulldozer lines, fire retardant, etc.]
   
   f. Analyze wildlife response to wildfires, including analysis of wildlife corridors

*Indicates an action already underway • Priority action numbers are for reference only and do not imply a ranking.
3. Strengthen and coordinate data collection and analysis efforts for fire recovery.
Rationale: Provide information for agencies, NGOs, and landowners to better prepare for future wildfire and reduce their catastrophic impact.

Actions identified by working groups include:

a. Improve monitoring of tributary stream flows and water table levels in order to better prepare for potential flood events
b. Identify what data are needed for recovery and long-term resiliency
c. Complete the planned total maximum daily load (TMDL) studies for the Russian River watershed
d. Evaluate the value of the NASA-funded Sonoma Veg Map data in fire response
e. Complete an economic valuation of fire damage to ecosystem services*
f. Conduct post-fire carbon mapping and monitoring to assess climate impacts of the fires*
g. Improve fire projection models by basing methodology on fire ecology and projected climate change, as opposed to fire suppression
h. Develop platform for citizen-science based data-collection on fire behavior, land recovery, and potential hazard zones to be utilized for this disaster and future disasters

4. Develop framework for management and dissemination of data.
Rationale: Enable data sharing to inform coordinated decision-making before, during, and after wildfires and other natural disasters.

Actions identified by working groups include:

a. Evaluate and leverage existing data dissemination systems [e.g., ArcGIS Online, EcoAtlas, etc.] and establish a common data platform for partners and public
b. Perform literature and data review and distribute data resources among partners to best inform land-management decisions
c. Increase capacity for remote, digital data collection and utilization for local and state agencies [e.g. increased use of imagery, tablets, utilization of local interns]
d. Establish electronic templates to ensure standardized data collection
e. Create a county-wide GIS Strategic Plan and investigate potential for ESRI support

* Indicates actions identified only by the Scientific Committee.
5. Develop long-term landscape vision for wildfire resilience and ecosystem recovery and incorporate into county planning.

Rationale: Use what we have learned to create more sustainable and resilient working and natural lands.

**Actions Identified by Working Groups Include:**

a. Analyze wildfire and disaster planning programs from around the world that specifically address ecosystem recovery in natural and working lands, and apply locally.

b. Improve Hazard Mitigation Plans for County through a joint stakeholder planning effort that has enhanced information about watershed resiliency.

c. Evaluate historic fire patterns and incorporate into regional planning.

d. Evaluate the relationship between water system resiliency and watershed resiliency through the lens of fire.

e. Where appropriate, integrate information and priorities from this report into the Sonoma County General Plan, Ag + Open Space Vital Lands Initiative, Sonoma County Integrated Parks Plan and other relevant county plans.
Background: Working Lands

Sonoma County has a long history of productive agriculture in the form of crop cultivation, livestock, dairying, wine grape growing, and a myriad of food and fiber production. The areas burned included many working lands, as well as the infrastructure required for productive agriculture to thrive. Working lands provide many benefits to our watersheds, and the recovery and protection of these lands is an important part of watershed resiliency. Preliminary assessments indicate that working lands were an important buffer in reducing the impacts of the fire and may continue to provide these types of benefits for other types of natural disasters.
Priority Tasks: Working Lands

1. **Support the recovery and viability of working lands.**
   Rationale: Ensure that agricultural operations can recover and continue to thrive on working lands after the fires.

   ACTIONS IDENTIFIED BY WORKING GROUPS INCLUDE:
   a. Rebuild water, fence and road infrastructure and mitigate potential watershed impacts of non-functioning infrastructure *
   b. Incentivize grazing as land management strategy – using best management practices – through funding for fencing and water sources, regulatory influence on meat markets and reduction of regulatory barriers
   c. Use easements, Williamson Act contracts and other tools to ensure that working lands in fire-prone areas remain in operation
   d. Collectively manage fuel load treatment areas so that one neighbor does not negatively impact the surrounding area
   e. Reduce economic, regulatory and logistical barriers to timber harvest, so that the sustainable harvest of merchantable timber can be used as a tool for forest and fuel load management
   f. Explore biomass energy options as one solution for fuel load reduction
   g. Document and communicate how working lands helped with firefighting

2. **Assess the benefits of local working lands in disaster relief and recovery.**
   Rationale: Evaluate the value of working lands in the County with regards to fire relief.

   ACTIONS IDENTIFIED BY WORKING GROUPS INCLUDE:
   a. Analyze the protective effects of agricultural buffers [including vineyards and rangelands] around urban communities in relation to disaster resilience
   b. Evaluate role of working lands in watershed resiliency and function
   c. Assess use of vineyard workers as labor force for erosion control when materials and funds are available
   d. Evaluate the use of agricultural ponds in fire suppression and investigate incentives for agricultural pond creation with fire relief functions

   *Indicates an action already underway
   Priority action numbers are for reference only and do not imply a ranking.
3. Improve disaster planning for agriculture users and the associated emergency response.

Rationale: Be ready for fast, coordinated action for the next disaster to save livestock, infrastructure, natural lands and human lives.

**Actions Identified by Working Groups Include:**

a. Improve and create disaster plans with relevant agencies [e.g. Animal Services, Ag Commissioner’s Office, Sheriff’s Department, etc.] for the evacuation and care of poultry and livestock in emergency situations.

b. Create and disseminate a template disaster plan and provide technical recommendations to assist landowners of working lands in emergency planning.
SECTION 3
FOCUS AREA
Land Management
Background: Land Management

Following a wildfire of any size, the landscape changes, sometimes quite dramatically. In some cases, this change is beneficial for the ecosystems and natural processes at work, while at other times the change is catastrophic and requires remedial action to reduce the potential for negative impacts. Important streams and wetlands were significantly impacted by the October 2017 fires, potentially compromising the health and function of these waterbodies. Because many of these sensitive waterbodies were already compromised before the fires – due to 150 years of urbanization, road construction, and land use activities – additional care must be taken to reduce further degradation, loss of habitat, and increased pollution. The Land Management Focus Area identifies short-term actions to address current threats to working and natural lands, and long-term actions to increase Sonoma County’s fire preparedness and enhance watershed protection and recovery.
Priority Actions: Land Management

1. Take actions to protect natural and agricultural lands in the short and long term. Key concerns include water quality impacts, sensitive habitat damage, road and slope failures, and invasive plant proliferation.

   Rationale: Focus recovery efforts where they will have the greatest impact.

   ACTIONS IDENTIFIED BY WORKING GROUPS INCLUDE:
   a. Focus contamination control efforts of sediments and toxic materials on rural home sites near waterways and steep slopes, and remove hazardous debris from waterways *
   b. Evaluate and prepare for culvert and road repair for systems damaged by fire or by subsequent debris flows and higher stormflows. *
   c. Prepare for invasive species management on burnt lands
   d. Implement land management best practices within 100 feet of creeks, rivers, and other waterways

2. Restore sensitive natural landscapes disrupted by fire and pre-fire degradation.

   Rationale: Some areas may require active management, including erosion control, native plant revegetation or invasive species control.

   ACTIONS IDENTIFIED BY WORKING GROUPS INCLUDE:
   a. Collect fire-related hazard trees for use as large woody debris in riparian restoration projects
   b. Identify high-sensitivity natural areas that may need restoration (e.g., high-intensity burn areas, graded areas in high quality or rare vegetation types, riparian habitat) and implement restoration based on best available science *
   c. Repair damage to lands caused by fire suppression [bulldozer lines and other fire breaks, fire retardant, etc. ] *
   d. Improve wetland habitat throughout county, including the Laguna de Santa Rosa, to increase floodplain capacity to control flood waters
   e. While performing restoration activities, take into account pre-fire degraded areas and include these in targeted enhancements.

Actions identified by the working group as highest priority (bold) • *Indicates an action already underway • Priority action numbers are for reference only and do not imply a ranking.
3. Increase local capacity to manage fuels effectively countywide.

Rationale: Manage natural, agricultural, and urban-interface lands to prevent build-up of dangerous fuel loads, enhance environmental benefits and protect escape routes.

**ACTIONS IDENTIFIED BY WORKING GROUPS INCLUDE:**

a. Create and maintain firebreaks that provide multiple benefits beyond fuel load reduction, including agriculture, recreation, biodiversity, water supply and quality, and carbon sequestration.

b. Expand local capacity for utilizing controlled burns to manage fuels and maintain healthy ecosystems.

c. Increase landowner education on best management practices for fuels within the wildland-urban interface zone, using workshops, example projects, etc.

d. Support establishment of Forest Health Districts or a similar mechanism to provide structure, funding, and resources for rural landowners to collectively manage forest lands in an ecologically sound manner.

e. Explore biomass energy options for mechanically removed fuel loads.
Background: Education & Outreach

In times of crisis, often one of the greatest challenges is clear and consistent communication. Fortunately, prior to the October 2017 fires, myriad agencies, non-profit organizations, and schools had already been successfully collaborating to increase the environmental literacy of the community and instill practices that enhance watershed health and resiliency. Those groups, in addition to others, comprise the Education and Outreach Working Group. This working group identified and recommended communications channels, messaging documents, educational programs, and other resources to clearly communicate important information or desired actions in a timely and consistent way. The strategies acknowledge the importance of learning from the community, promoting citizen science, and engaging in two-way dialogue, and are intended to reach a diversity of audiences with appropriate and relevant messages.
Priority Actions: Education & Outreach

1. Provide Sonoma County residents with essential, coordinated information about working and natural lands during and immediately following the fires.*
   Rationale: Give the public reliable information and streamline outreach.

   ACTIONS IDENTIFIED BY WORKING GROUPS INCLUDE:
   
a. Identify the audiences that would benefit from outreach and education following the fires, using appropriate messages and communications channels *
   
b. Disseminate scientifically accurate information in clear, conscientious way to educate and inspire.*
   
c. Ensure information is disseminated in culturally relevant ways [e.g., translated into Spanish, shared on proper message boards, etc.] *
   
d. Provide press updates on recovery efforts of working and natural lands *
   
e. Develop resources to quickly/easily distribute to neighborhood groups, NextDoor, etc.; devise ways to get information about working and natural lands out to a wide audience
   
f. Collaborate among partners to ensure messaging is consistent across sources

2. Provide landowners with resources to best care for fire-affected areas.*
   Rationale: Concerned landowners may inadvertently increase pollutant discharges to streams, impact stream habitat, introduce invasive plants, impede natural recovery, and/or spend time and money on actions that do not help protect their property or the environment.

   ACTIONS IDENTIFIED BY WORKING GROUPS INCLUDE:
   
a. Provide landowners with appropriate land management recovery methods for both urban and rural areas, and recommend that they seek expert advice from resources such as the RCDs when it comes to caring for damaged lands [i.e., ‘first do no harm’] *
   
b. Spread message that most of the burned natural lands are fire-adapted and will recover without interference
   
c. Coordinate targeted outreach campaign to landowners whose burned areas may affect streams and wetlands and provide best management practices to protect water quality, habitat, and water supply, and reduce flood risk
3. Increase the general awareness in our community about the realities of living in fire-prone landscapes.

Rationale: Build a community foundation of knowledge about fire-adapted landscapes, fire likelihood, risks, and natural functions of wildfire in order to increase effectiveness of methods to protect and restore fire-prone lands.

**Actions Identified by Working Groups Include:**

- **a.** Launch long-term communication and engagement with greater Sonoma County community regarding fire issues, including education of public officials on fire ecology
- **b.** Educate community on how to live with fires in a fire-adapted landscape
- **c.** Integrate fire education into existing Environmental Education programs and continue to expand local environmental and agricultural literacy
- **d.** Increase education about Wildland Urban Interface, prescribed fire benefits and implementation, fire-adapted plants and landscapes
- **e.** Educate Sonoma County residents on the impact of the fire to ecosystem services and the benefits they provide
- **f.** Expand education on potential wildfire ignition sources to reduce future fire potential
- **g.** Develop programs and curricula to ensure interaction with schools and school-centered advocacy related to fire
- **h.** Educate the community regarding relevant sections of the County Hazard Mitigation Plan
- **i.** Set up citizen science protocols and engage the community that wants to ‘do something’ through citizen science efforts

4. Encourage and coordinate community participation in recovery and resilience efforts.*

Rationale: Provide effective ways for concerned residents to help care for their neighbors and their community.

**Actions Identified by Working Groups Include:**

- **a.** Engage community, including students, in recovery efforts and post-fire monitoring in an appropriate and safe way *
- **b.** Use restoration efforts as an opportunity to educate about fire adapted landscapes
- **c.** Facilitate community healing by offering opportunities to be outdoors and help restore protected lands
- **d.** Engage higher education academic professionals and their students in recovery efforts
- **e.** Establish citizen science platforms (like iNaturalist) to engage community in recovery efforts
- **f.** Engage leaders from under-served and ethnic communities; disseminate information in a culturally relevant way
5. Support private landowners in preparing for wildfire.
   Rationale: Manage natural, agricultural, and urban-interface lands to prevent build-up of dangerous fuel loads and protect escape routes.

   ACTIONS IDENTIFIED BY WORKING GROUPS INCLUDE:
   a. Improve best management practices (BMPs) education, including how to apply for prescribed burn permits and how to create ecologically-sensitive defensible space
   b. Establish a Wildlands-Urban Interface Workshop for landowners to learn how to best prepare for wildfire
   c. Utilize non-typical community groups [e.g., neighbor organizations, museums, Chamber of Commerce] and existing communication platforms [e.g., NextDoor, Facebook, email, mailers] to educate landowners on risks and best practices
   d. Educate landowners on key components of Sonoma County Hazard Mitigation Plan and Fire Safe Sonoma documents
   e. Explore working with private insurance companies regarding updating the criteria for insurance rates related to fire in our area based on the latest science and data
FOCUS AREA
Legislation, Policy, & Funding

SECTION 5
Background: Legislation, Policy, & Funding

Although many of the actions needed for fire recovery and long-term watershed resiliency are within the capabilities of local organizations, some will require significant amounts of outside and local funding, while others will require changes in policy or legislation. The Legislation, Policy, and Funding Focus Area focuses on strategies for obtaining additional funding to ensure a resilient future for the watersheds impacted by the wildfires, as well as addressing some of the challenges and opportunities related to local and state laws and policies.
Priority Actions: Legislation, Policy, & Funding

1. Leverage the recent attention on Sonoma County to seek local, state, federal and private funding and support for policy change to advance priorities for watershed resiliency.*

Rationale: Use this critical time to make lasting changes that better protect working lands, parks, natural environments, public safety, and property.

- Actions identified by working groups include:
  a. Seek funding and support for long-term land management policy changes, including incorporating wildfire policy into the General Plan, ensuring that land use planning and building standards are informed by most recent science, and increased consideration of hazard risk in local development decisions *
  b. Develop and adopt land use policy and legislation that considers recurrence of fires and other disasters to ensure that this level of damage does not devastate the county again
  c. Ensure that rebuilt structures and new development associated with recovery occurs within the existing community footprint, and high intensity uses continue to be contained within existing Urban Growth Boundaries and Urban Service Areas
  d. Analyze and include climate change and increased risk and vulnerability from future fires in hazard planning

2. Develop short and long-term funding strategies for wildfire recovery, resilience, and preparation.

Rationale: Help ensure that recovery resources are fairly and effectively distributed and make funds available to plan and implement wildfire safety and restoration measures.

- Actions identified by working groups include:
  a. Ensure public and non-profit organizations are included in response and recovery plans, and are provided sufficient funding to support recovery efforts, research, and resiliency planning through support for grant applications, philanthropic funding, state and federal funding, etc.
  b. Ensure base funding for RCDs, NGOs, watershed groups, etc. to manage for long term watershed resiliency
  c. Consider the creation of a self-financing “wildland management utility” that can operate on public and private lands to address fire, drought, climate, and flood resiliency
  d. Seek funding for assessment of impacts, long term monitoring, and other needed research to support data-driven land use decision-making, including public-private funding schemes
  e. Provide guidance to organizations about funding opportunities and

*Indicates an action already underway  •  Priority action numbers are for reference only and do not imply a ranking.
3. Improve the emergency response framework to better respond to the needs of natural and working lands in emergency situations.

Rationale: While well equipped for saving lives and property, the emergency framework could better address needs that are specific to natural and working lands.

**Actions Identified by Working Groups Include:**

a. Analyze the response for this emergency in natural and working lands settings, and investigate policy and legislative changes to improve future disaster response, including early warning systems and communication challenges

b. Develop neighborhood level emergency response plans focused on the unique needs of natural and working lands, and support landowners in implementation

c. Implement existing disaster preparedness plans, incorporate Watershed Collaborative priorities into existing and new plans, and create new plans where gaps exist (e.g., Flood & Fire Plan, Stormwater Resources Management Plan, Earthquake Plan, etc.), ensuring that all plans are publicly-accessible and landowners are able and willing to implement them

d. Improve coordination among emergency and non-emergency agencies to ensure that the unique needs of rural landowners are met [e.g. large animal evacuations, access to livestock, etc.]

e. Analyze how infrastructure in natural and working lands can provide benefits and challenges in times of disaster [e.g., water sources, increased potential for electric fires, distributed power sources, etc.]

4. Increase the use of innovative land management practices within the wildland urban interface to better prepare for future natural disasters.

Rationale: Use the heart, commitment, and innovative spirit of Sonoma County residents to test new, creative wildland urban interface management strategies to improve land management locally and in other regions.

**Actions Identified by Working Groups Include:**

a. Ensure that communities are striving for resiliency to fire, flood, and drought in regional planning endeavors and provide support for implementation

b. Develop voter support for programs which enhance the management of the wildland urban interface including fuel load reduction, natural resource management, and innovative land use planning

c. Encourage rebuilding and future building in areas outside of fire and flood risk zones and closer to public services such as transit systems, schools, and offices

d. Increase funding for large-scale fuel load reduction projects –
5. Enhance permitting processes, zoning, and building codes to support wildfire prevention, reduce risk and improve watershed health.

Rationale: Make it easier, especially for private landowners, RCDs, and NGOs, to implement practices that will improve public safety and disaster resiliency while still maintaining adequate environmental protection.

- Provide opportunities for interested landowners to work with conservation organizations as potential sources for recovery support and funding [e.g., fee purchase, conservation easement purchase, transfer of development rights, etc.]
- Establish and manage flood and fire resiliency buffers around urban communities including long-term protections for existing community separators and greenbelts
- Coordinate and fund a cooperative fire use, fuels and restoration crew
- Expand the Fire Safe Sonoma, integrate priorities for working and natural lands, and utilize existing framework to foster fire prevention, fire resiliency, and fire safety
- Increase land stewardship incentives for private landowners using best available science
- Consider working with insurance agencies to incentivize private landowner stewardship
- Develop a “lessons learned” document to share widely, in the hope that other places can learn from our experiences

**Actions Identified by Working Groups Include:**

- Evaluate challenges to implementation of fuel reduction projects (including prescribed fires, mechanical thinning, or other ecologically sensitive methods), and other best management practices (e.g. restoration, road crossing repairs, forest management, etc.), and develop a simpler/cost effective process for landowners to complete these projects
- Coordinate with Permit Sonoma and City of Santa Rosa planning officials and other permitting agencies to streamline permitting in an environmentally conscious manner, and consider a less onerous permitting process for restoration projects (as opposed to new development projects)
- Collaborate with planning officials within the county and cities to establish fire, building, and landscaping codes that enhance watershed resiliency, carefully consider well site placement, and decrease toxics in building materials
- Utilize community support and local expertise to develop a program for burned areas designed to incentivize rebuilding with low-impact development strategies, water conservation best practices (including using rainwater as a water source and water efficient landscapes), and energy conservation best practices
- Consider creating less restrictive forest management policy to allow for fire resilient forest management
- Expand the North Coast Water Board “5C Program” (road maintenance) to Sonoma County, in order to improve and expedite the permitting process
- Consider legislation to generate funding specifically for fire resiliency
In the wake of the recent catastrophic fires, our Sonoma County community came together to help one another and to embark on the path to recovery, including the resiliency of our working and natural lands. The Sonoma County Board of Supervisors formed the Watershed Collaborative to ensure that the broader community was engaged in a conversation and the resulting plan for action. Groups with a long history of high-quality planning and implementation for working and natural lands – including resource conservation districts, non-profits, agricultural and watershed groups, academic institutions, local, state and federal agencies – worked together for over two months to develop priorities for watershed resiliency in the aftermath of the fires. This report represents the collective best thinking and priorities of these high-capacity organizations, and outlines a vision that incorporates past experience and current work with new information gleaned from the fires.

The Watershed Collaborative presents this report to the Sonoma County Board of Supervisors for review and consideration. The Watershed Collaborative recommends that the Board:

a. Accept this report;

b. Consider requesting the Watershed Collaborative to develop a more detailed work plan based upon the priorities identified in this report, in order to outline resources, roles and timelines for implementation;

c. Articulate the role of the Watershed Collaborative moving forward in informing County watershed recovery actions;

d. Direct District, Water Agency, Regional Parks, and other County entities to move forward with certain priority actions in this report;

e. Provide this report to Permit Sonoma for consideration in the County General Plan update and the Hazard Mitigation Plan update; and

f. Integrate the identified priorities into the County’s new Office of Watershed Resiliency.