

Sonoma County Wildfire Resilience Planner Needs Assessment Report

Introduction and Purpose

Ag Innovations was contracted by Sonoma Water to conduct a User Needs Assessment for the Wildfire Resilience Planner, an online landscape-scale vegetation management prioritization tool. The Wildfire Resilience Planner is part of the Sonoma County Wildfire Decision Support Framework, an effort to provide critical information for decision makers and the public at multiple scales for strategic, ecologically-sensitive fuel management across Sonoma County (read more about the Sonoma Wildfire Decision Support Framework [here](#)). The goal of the User Needs Assessment was to better understand the interests, needs, challenges, and aspirations of a broad, community-wide range of potential users in and around Sonoma County of this decision-support resource to help inform its development.

Methods

Ag Innovations worked with core members of the project team, including Susan Haydon (Sonoma Water lead), Karen Gaffney (project manager), and Deanne DiPietro (Conservation Biology Institute project lead) to develop the User Needs Assessment process and outputs. Together, they developed an overall Needs Assessment Approach, including the scope, desired outcomes, guiding principles, interview protocol and questions, and the list of target interviewees. (See Appendix A for the interview questions; see Appendix B for the guiding principles, desired outcomes, and interview protocol; see Appendix C for a list of completed and requested interviews).

Ag Innovations sent out interview requests to 63 individuals via email. Interviews began on Oct. 8th and continued until mid-November, 2021. In total, Ag Innovations conducted 21 interviews with 39 individuals representing over 30 organizations. Thirteen of the interviews were conducted in groups and eight interviews were with individuals. During small group interviews, interviewees were grouped with 1-3 others with similar interests and/or job functions related to wildfire risk reduction. The group interviews helped accommodate more interviewees into the project budget/timeline and also inspired deeper conversations. Group interviews were typically 1-1.25 hours to accommodate the multiple perspectives, while individual interviews were typically up to one hour.

Target interviewees were primarily potential users of the decision support tool whose work includes and/or intersects with landscape-scale wildfire-related interests, including prevention and risk mitigation, preparedness, response, and recovery. We focused on those whose work cut across multiple parcels, jurisdictional boundaries, ecosystems, watersheds, and organizational silos. A secondary focus was those stakeholder groups that could impact or be impacted by wildfire, including water and energy utilities, roads and transportation, tourism and hospitality, risk managers and insurance agencies, and healthcare (in terms of smoke impacts). Target interviewees were identified and agreed upon in collaboration with the project team, as well as through the recommendations of interviewees themselves.

While scheduling interviews, Ag Innovations staff followed up with prospective interviewees a minimum of two times after the initial email, using a variety of methods (email, phone, website) to contact the target interviewees. Scheduling requests were accommodated whenever possible; in only three cases were we not able to accommodate interviewees due to scheduling constraints and/or limited interviewee

availability. Thirteen target interviewees were not interested (two of those had recently switched jobs and job focuses, and one suggested that we interview another member of the same organization). Eight target interviewees never responded to the request. We hypothesize that the reason some of these individuals did not respond to the request was due to lack of capacity, since the interview requests overlapped with fire season (ex: Sonoma Fire), and that some of the individuals did not respond due to lack of interest or perceived fit with their work, including that fire is not a central component of their job (ex: Sonoma County Hospitality Association, Verizon).

In mid-November, interview data was compiled and analysis work began. Developed in close coordination with CBI staff who reviewed all the interview data, a summary of the primary themes - in terms of landscape-scale wildfire-related needs and interests - was identified and is presented below in this report. The results of the analysis will help to inform the development of the tool by guiding functionality, data, themes, terminology, and “help” information. The information will help guide additional conversations with specific stakeholders by providing background about their priorities and needs. Additionally, the needs identified that are beyond the scope of this phase of development may inform functionality to be included at a later date, funding-dependent.

Results - Common Needs and Interests

Coordinating Across Small Private Parcels

A consistent “pain point” across interviews was the high degree of parcelization of land across Sonoma County. The majority of land is held by small private landowners in 5-10 acre parcels, which are perceived as being too big for an individual to manage independently, but too small to be cost-effectively managed by professionals. As one interviewee said, “[5-10 acres] is the worst possible scale to work, because it’s not big enough to actually bring in a lot of equipment to do cost-effective work.”¹

An expressed need and an emerging solution is to coordinate multiple adjacent landowners in vulnerable or high-value areas to spread the costs of planning and implementation and to encourage coordinated treatment methods across parcels. Coordination itself is a major challenge. As one interviewee said, “It’s hard to get projects going; it’s the nature of Sonoma County where we have so many forested small parcels. You might have to deal with 100 landowners, and everybody has to agree. It’s so difficult getting these projects actually done at the landscape scale. I think that’s the biggest challenge.”² Another echoed the same sentiment: “At the landscape scale, we are coordinating with hundreds of landowners with different goals and ideas.”³ There was some awareness that a spatial mapping process may help landowners have a common understanding of what’s needed and feasible in terms of landscape-scale treatments, minimizing the divergence of thinking among landowners that prevents coordination.

Public Education and Outreach to Accelerate Action

The amount of work that needs to be done to effectively address issues around wildfire is enormous, and requires a commensurate degree of public awareness, support, and in-depth coordination given that most land in Sonoma County is privately-held. This was a common theme that many interviewees spoke about. As one interviewee said, “There is a need to educate landowners and communities about ways to plan and think about land-use planning and management, and there is a need to educate the general public about the benefits of actively managing landscapes.”⁴

¹ Interview Group 14B, October 12, 2021

² Interview Group 1, October 11, 2021

³ Interview Group 2, October 1, 2021

⁴ Interview Group 14B, October 12, 2021

More than a few interviewees talked about the need for education as very place-based and specific for landowners and key stakeholders, especially information about the kind of landscape they are in, the level of wildfire risk and the range of ecological values, appropriate treatment types, and resources for learning and action. One interviewee described their aspiration in Sonoma County as “that people understand where they live, and the dominant landscape factors that influence them and their risks.”⁵ Stakeholders felt that targeted education and outreach - with spatial information at its center - could empower landowners to do small treatments on their own properties to reduce risk. “Education gives landowners the tools to make their families and property safer. It’s not that hard but they don’t know what they don’t know and don’t have the resources to learn.”⁶ There was a recurring interest in helping professionals and landowners learn about and understand effective practices in different landscapes/contexts and what the potential costs and benefits are.

Centralized and Updated Information

Another common need identified across interviews was for a centralized information hub that provides wildfire-specific data as well as ecological, climate, social and community assets, and other intersecting data. Currently, information about wildfires, wildfire planning, and wildfire mitigation is spread across a variety of agencies and external resources (e.g., websites, knowledge held by fire officials, etc.), all with different areas of expertise. Interviewees often mentioned that it can be difficult to know where to go for specific pieces of information, or that it takes time to access and that the information exists in different forms and on different maps, making it time-consuming to compile and compare. “A pain point is that there is no centralized location for these datasets; they aren’t located in one place.” People described a desire for a “one stop shop” that would link them to appropriate resources as well as house accurate datasets. This would facilitate a variety of processes, including CEQA compliance, permitting, etc. because people and organizations would be able to find the information they needed quickly and easily. Data layers within one mapping tool would allow multiple values and risks to be identified in the same map, increasing decision-makers’ ability to address multiple values simultaneously and make more informed decisions about trade-offs. Further, keeping county-specific data up-to-date and readily available in the mapping tool (for example LiDAR-derived data from prior years now seen as outdated) would mean greater clarity and certainty for decision-making.

Lastly, tracking of planned and completed treatments was also seen as important in illuminating where management actions are being focused, how they align with the areas of highest risk and vulnerability, and how much progress is being made to reduce risks and foster ecological health. Additionally, interviewees described wanting data about the effectiveness of different treatments, as well as how those treatments interact with and impact the larger system. “I would like to see more information about the effectiveness of different practices, both pre-, post, and during fire. Are these things working? Is removal of fuel working?”⁷

Vetted and Consistent Messaging

In addition to a centralized location for information, interviewees also described the need for more coordinated and higher-quality messaging across agencies and partner organizations. As the concern around wildfires has increased, so has the spread of misinformation, incomplete, or dated materials, as well as conflicting recommendations. Information that is clear and actionable is essential to drive accelerated change. Having a centralized location to find best practices and accurate, updated information would reduce confusion and improve project efficiency and outcomes.

⁵ Interview Group 2, October 1, 2021

⁶ Interview Group 14A, October 25, 2021

⁷ Interview Group 6, November 6, 2021

Integrating Ecological Values and Practices into Wildfire Risk Decisions

Interviewees ranged in their perspectives about how to build resilience to increasingly severe and unpredictable wildfires in Sonoma County. We found there to be two different approaches, one with primary emphasis on protecting human assets and another that focuses on promoting ecological health and community planning to live with fire. These are not mutually exclusive approaches, necessarily, but it is worth noting that there is an ongoing debate about where and how to focus limited resources for doing the work of building resilience to wildfire.

One approach is focused most on protecting human health, safety, and structures by working directly in the location of those assets. Interviewees referred to this as an “Inside-Out” focus, starting from the home outward to the defensible space around the home, and, to a degree, beyond to the larger landscape. They see that wildfire embers are the primary ignition source for homes. Their first priority is reducing risk on the property specifically and the surrounding landscape, and less on prioritizing ecological assets.

The other approach is more focused on ecological health as the context within which homes/structures exist and people live. This was referred to as the “Outside-In” focus, concerned with ecological and species health, ecological assets and services, and even socio-economic risks such as smoke exposure, tourism costs, utilities risk, and more. This approach seeks to reduce the severity of wildfires by addressing excessive fuel loads, invasive plants, and drier conditions from increased evapotranspiration from overgrowth. Some stakeholders that prioritize the “Inside-Out” approach are concerned that this focus can overlook the importance of the home and human safety as a priority and will waste limited funding that should be allocated to reducing risk to homes and properties.

Encouragingly, while most interviewees noted their primary focus aligned with organizational missions and priorities, they also acknowledged concern for other values as factors that shape their decisions. For example, fire and wildfire protection professionals expressed a care and concern for ecological health, and ecologists and open space professionals talked about protecting people and structures. Interviewees identified the importance of having data that covers this range of values and both the Inside-Out and Outside-In approaches in one online resource. Doing so could create a coordinated and integrated approach that not only stewards the broad-range values needed for wildfire resilience, but can reduce tension and unnecessary tradeoffs between people-centered and ecologically-centered decisions.

It also became apparent that there are knowledge gaps about both approaches for virtually all interviewees. There are concerns that although ecological awareness is relatively high in this community, many organizational and individual decisions that intend to protect property and personal safety - before, during, and after wildfire events - inadvertently damage ecosystems and their functioning. This is due to limited information about how to incorporate ecological considerations into wildfire work, the need for advanced planning of such work, limited resources for implementing it, and, possibly, a fear of appearing to constituents to be doing anything other than taking direct, effective action focused on human lives and safety. Many interviewees lamented the lack of ecological knowledge informing wildfire risk reduction decisions. One interviewee said that the response was focused on “public outcry for safety, and nothing else.”⁸ For example, in an effort to prevent ignitions, some efforts have removed all vegetation, which can be counterproductive as it can increase the opportunity of invasive species encroachment and even possibly provide a corridor for ember transport. Another common example was misplaced dozer lines during a wildfire event. Without ecologically-sound guidance and placement, dozer lines, fire roads, and other practices can cause considerable, often avoidable damage to plant and animal communities and water courses.

Planning and implementing ecologically-sound wildfire risk reduction practices is a nuanced topic, as fire science is an evolving and complex field. Other interviewees noted that in some cases, there is simply not

⁸ Interview Group 6, November 6, 2021

enough data or information to make these complicated land management decisions, or to effectively analyze the costs and benefits of a proposed action. One land manager described how a “lop and scatter” method of thinning (wherein cut debris is left on the forest floor) can be dangerous since that fuel does not biodegrade quickly, especially in a changing climate that is increasingly dry. However, some debris can provide important habitat for amphibians or other species.

Overall, this speaks to the tension between needing to implement human risk mitigation efforts as soon as possible, while needing to be aware of and factor in potential ecological, economic, and even cultural values. Some interviewees alluded to a flaw in the strictly human-focused approach, saying that planning for wildfires without considering the ecosystem is an extension of the same erroneous understanding that led to a century of fire suppression and resulted in some of the most catastrophic wildfires in California’s history. They say that fires are part of Sonoma County’s ecosystem, and thus should not be dealt with in isolation of other ecosystem processes. As one interviewee said, “Our natural lands support us with clean areas, clean water, and a variety of economic and health benefits. We want to be that voice to remind people that a healthy landscape is a safe landscape.”⁹ Another put it simply: “I always break it down that you can improve forest health and do fuels reduction at the same time. They aren’t separate.”¹⁰ Yet another said, “A lot of people have a misconception that there is a wildfire problem, and that you either address wildfire or the environment. In reality, a resilient environment makes us more fire safe and less prone to the detrimental impact of wildfire.”¹¹

Treatment Economics and Funding

A consistent difficulty identified in this work is the high cost per acre and the total costs of landscape-scale treatments. “The cost is insurmountable for some private landowners or agencies.”¹² Interviewees spoke to the challenges in competing for limited grant funding, and how counterproductive it is to be pitted against other local organizations for the same pots of money for one-time treatments. They lamented that the one-time grants don’t provide funding for the critical maintenance work. “The model of one-time funding that is not permanent won’t make this problem go away.”¹³ They also identified that in order to be eligible for funding, you must have already completed a CEQA analysis, which requires technical expertise, and is time-consuming and expensive. Some interviewees pointed to Marin County’s recent tax measure as a model for achieving consistent funding at an appropriate scale. Two staff members of the Marin Wildfire Prevention Authority, funded by this tax measure, were interviewed as part of this process.

As mentioned in the Education and Outreach theme, interviewees talked not only about the need for having more readily available the cost and benefit information about different treatment options, but to proactively explore ways to drive down costs through coordinated efforts (e.g., arranging group planning or purchase of mechanical thinning or goat grazing services) and supporting development of treatment services (e.g., portable mills for timber harvest) and the associated workforce development. “We need to secure funding to fund my position, to hire technicians and people who are trying to get into the sphere of land management. We need to make my position a program, and not just me.”¹⁴ As mobilization of landowner vegetation management actions begin in earnest, it would be wise - perhaps as part of county-wide economic development - to build the service sector to meet growing demands. “We need a better funding mechanism to help [landowners] implement practices, one that doesn’t come out of their pockets because they can’t fund it.”¹⁵ Using an online resource will help assess the scale of that demand in the coming years.

⁹ Interview Group 6, November 6, 2021

¹⁰ Interview Group 14A, October 25, 2021

¹¹ Interview Group 17B, November 16, 2021

¹² Interview Group 17B, November 16, 2021

¹³ Interview Group 17A, October 20, 2021

¹⁴ Interview Group 14B, November 16, 2021

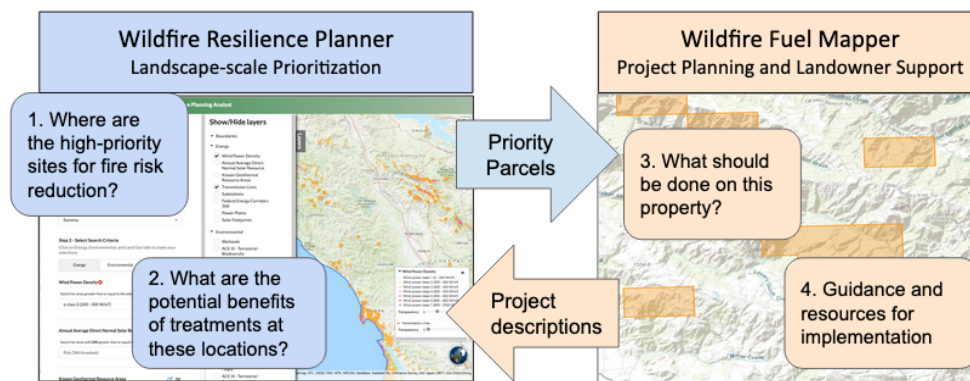
¹⁵ Interview Group 5, October 26, 2021

Land Use Planning

Allowance for further expansion into wildland areas without consideration of the increased risks and costs to the county was seen as a real concern, as was the need to begin to explore “managed retreat” from certain high-risk places. One interviewee, when describing aspirations for Sonoma County wildfire resilience, said, “I would like to see a predictable number of policies that over time reduce the number of people living in the wildland urban interface (WUI).”¹⁶ Another put it bluntly: “Fundamentally we have to stop parcelizing the WUI if we want safe places.”¹⁷ This is not unlike what happened with FEMA Flood Mapping, and another interview drew the comparison as this: “Fire doesn’t come out of nowhere; fire is a condition of the environment that we have to guide policy for in terms of development or zoning. With floods, we got there very quickly. We haven’t grasped that with wildfire. We haven’t changed the paradigm or the tool set we are using to address it.”¹⁸ While the creation of land-use planning regulations are outside of the scope of this tool, there are ways that the tool could help inform the creation of new policies or streamlining of existing ones.

Implications for Wildfire Resilience Planner Development

The Sonoma County Wildfire Decision Support Framework effort is building decision-support tools to support the planning of Sonoma County’s fuels management projects. These decision-support tools – the Wildfire Resilience Planner and Wildfire Fuel Mapper – complement one another and support the Community Wildfire Protection Plan and the development, prioritization of projects.



Above: The two tools of the Sonoma County Wildfire Decision Support Framework and the fuels reduction planning steps they support. This Needs Assessment focuses on the Wildfire Resilience Planner but also touches on the important role of the Wildfire Fuel Mapper.

Access to Centralized and Updated Information

The Wildfire Resilience Planner is a web-based software application (tool) that provides a straightforward, transparent, and reliable approach to plan fuels reduction projects. The Wildfire Resilience Planner tool uses the latest data available and has been vetted for use in these decisions by the experts in the county and across the state. This tool directly addresses the need for clarity about which maps and datasets to use and the appropriate way to use them. Use of this on-line resource will reduce or eliminate the time involved in searching for and acquiring relevant data and maps needed for planning purposes by making

¹⁶ Interview Group 6, November 1, 2021

¹⁷ Interview Group 3, November 10, 2021

¹⁸ Interview Group 1, October 11, 2021

these key maps and spatial datasets easy to browse within a single platform and apply them for planning fuels treatment projects.

Use of the Wildfire Resilience Planner will ensure that planning of projects by multiple organizations is based on consistent, agreed-upon fire hazard and risk data, while not excluding the consideration of other quality information sources in the final decisions about where to work. For example, the tool incorporates the Sonoma County Wildfire Hazard Index as the basis for prioritizing locations for fuels treatment projects in Sonoma County, rather than other wildfire hazard and risk maps. This decision was made in consultation with the developers of the Sonoma County CWPP and the ongoing work on fuels and vegetation mapping for Sonoma County using LiDAR-derived land cover data. Other authoritative wildfire risk maps that are important to reference when applying for funding or for further justifying decisions about where to do this work, such as those published by state and federal government programs, will be made available in the tool to overlay and compare with the Sonoma County maps. Information from these maps will be included in a report generated for a treatment plan.

Datasets will be updated and incorporated as soon as is feasible when new versions become available, and the tool will provide metadata explaining the sources of all included data layers in a format that will be useful to a variety of stakeholders.

Regarding guidance about the types of treatments to do: the Wildfire Resilience Planner tool does not help users with decisions about specific actions to reduce fuels. The user can find data and information in the Fuel Mapper tool that can be used in conjunction with consultations with experts to decide on the best treatment methods for the particular location in question. The purpose of the tools are to inform decision making and prioritization and specifically not meant to eliminate or replace professional expertise and advice nor the necessary knowledge and experience gained from on-the-ground, in-the-field experience. The Wildfire Resilience Planner and Fuel Mapper tools offers both guiding information that encourages the user to think about the larger system and longer term, rather than just choosing one treatment. That is one of the core objectives of the Decision Support Framework.

Coordinating Across Small Private Parcels

The Wildfire Resilience Planner will provide a single platform for planning treatment projects with a view of the entire landscape, watershed, or neighborhood, allowing for the identification of parcels and landowners that could be grouped together for outreach, funding, coordinating, and resource-sharing purposes.

The tool will support coordination with landowners by producing maps that show the landscape-scale context of fuels-reduction projects planned on multiple individual parcels, creating a compelling narrative of the benefits to be gained by working strategically on adjoining parcels to achieve a continuous risk-reduction buffer. Maps from the tool illustrating this approach could be used in proposals to potential funders, demonstrating optimized use of grant funding.

The users of the Wildfire Resilience Planner (the landscape-scale planning tool) will be encouraged to continue their project planning with the Wildfire Fuel Mapper (the parcel-scale planning tool) to get information about the types of treatments that would be recommended and most cost-effective for the property or groups of properties selected. The Wildfire Resilience Planner will provide the parcel IDs for use in the Wildfire Fuel Mapper to determine these more detailed project specifications.

Public Education and Outreach to Accelerate Action, Consistent Messaging

The Wildfire Resilience Planner, along with the Wildfire Fuels Mapper and CWPP websites, provides a trusted resource for the Sonoma County community for place-specific information about wildfire risk reduction. It is important that these platforms be coordinated and consistent in their messaging about the objectives being targeted, the methods for prioritizing projects, and how members of the community can

contribute to the overall wildfire resilience of their neighborhoods. Each of these websites can offer information for the public on the aspects of wildfire resilience on which they focus, and point to one another for more information. Education and training should be coordinated and consistent among lead developers and key stakeholders and users.

Project Tracking

The Wildfire Resilience Planner will include a data layer depicting the footprints of all known planned fuels reduction treatment projects. This will provide the user with the ability to check for existing efforts to avoid duplication, and also to build upon them to achieve additional protection for assets in those areas by connecting multiple projects to form risk-reduction buffers.

The project will address the need for ongoing project tracking more in Year 2 by evaluating existing sources of this kind of data and the possibility for aggregating them into the tool for an updated view of the projects being planned and implemented, including the NCRP and CA RCD efforts using Project Tracker. A project description entry form could be added to the tool to collect project information as well.

Integrating Ecological Values and Practices into Wildfire Risk Decisions

The Wildfire Resilience Planner is focused on promoting a unified approach to the fundraising, planning, and coordination needed to reduce wildfire severity and losses of valued community and natural assets. The Planner helps the Sonoma County community visualize its full range of community values, supporting a coordinated and integrated approach that can balance and document people-centered and ecologically-centered decisions.

By including natural assets in the prioritization model, the reports, and in the spatial data layers available for overlays, the user is encouraged to consider them in their planning of fuels treatments. The tool will alert the user about known priority species and habitats that occur in the treatment zone based on California Natural Diversity Database, Vital Lands Initiative, and Conservation Lands Network data.

The Wildfire Resilience Planner and the Wildfire Fuel Mapper tools can also potentially contribute to a shift toward a more information based, scientific, approach to reducing the risk of severe wildfire by encouraging advance planning, the use of new science and data in decisions about treatment locations and methods, and (in Year 2 and beyond) a way to track project activities and build an understanding of what's working and what is not. These tools would provide for proactive, coordinated planning between the natural lands managers and the fire response community leading to practices that safeguard the region's natural resources. The planner can be a "hub" for relevant information resources such as ecologically-sound practices being developed by Sonoma Ecology Center.

Treatment Economics and Funding

The Wildfire Resilience Planner can help bring funding to bear for treatment projects by supporting development of grant applications and other fundraising with strategic, large-scale, coordinated treatment plans that characterize project areas and wildfire risk, climate resiliency issues and can quantify benefits based on authoritative data and metrics. The Wildfire Fuel Mapper will help address problems associated with the costs of treatments by providing a system for estimating costs and facilitating coordination among landowners for sharing resources such as large equipment and grazing animals.

Land Use Planning

The fuel treatment planning tools being developed for the Sonoma County Wildfire Decision Support Framework are not currently geared specifically toward affecting land use policy changes. The data and information provided from the tools provide land use and project planning information from which to

inform decision making from a climate resilient and wildfire lens. There may be an indirect effect of the use of the tools by making it easy to see wildfire hazard and the community assets that are at risk, and that developing buffers around dense areas of the built environment is a sound strategy for reducing risk to those community assets.