Woodside Fire Protection District
Board of Directors Meeting
Administration Building
808 Portola Rd.
Portola Valley, CA 94028
January 31, 2023

To view a recording of the meeting, follow this link:
https://www.dropbox.com/s/t7fw4h54i81e5f1/20230131-WFPD-Board-of-Directors-Meeting.mp4?dl=0

The regular meeting of the Board of Directors was called to order at 7:01 P.M. by Director Miller.

Directors Present: Cain, Miller

Directors Absent: Holthaus (Arrived via Zoom late in Meeting)

Staff: Chief Lindner, Deputy Chief Cuschieri, Finance Manager Edwards, Fire Marshal Bullard, Battalion Chief Dagenais, Battalion Chief Smith, Battalion Chief K. Hird, Battalion Chief Zabala, Deputy Fire Marshal M. Hird, Interim Battalion Chief Nannini, Pub Ed Officer Brown

Other Attendees: Fire Inspector K. Giuliacci, Joseph Charles – San Mateo County Counsel, Mike Wassermann – Capital Program Management (CPM), Anthony Shafer, Oliver Curtis, and Shea Broussard from FlameMapper

Public Comment Non-Agendized Topics:
Bob Turcott – Bob thanked the District for its work on the WUI Fire Area Ordinance. The residents of the area WFPD serves desperately need the leadership and fire safety that this work represents. He gave a couple examples to the Board. He served on Portola Valley's housing element committee. He informed the Board that after the last public review of the draft housing element, but before it was submitted to the state for feedback, a fire hazard map was added, not the Moritz fire map, which has served as the official reference in the PV General Plan since 2010, was included in the last housing element revision in 2015, forms the basis for fire safety policies, and identifies 89% of Portola Valley's area as high or highest hazard. Rather, it was a 2008 Cal Fire map, which aside from 6% of Portola Valley, indicates that there is no significant fire hazard. In addition, the draft safety element has redefined fire safety policies in terms of the Cal Fire map rather than where it says, eliminating existing policies from up to 83% of Portola Valley's area. He asked why was the Cal Fire map selected? The answers have been contrived and evolving. He informed the Board that first, they were told that was merely a placeholder. Next, they were told it's required by state law. He stated that it isn't. He then shared with the Board that most recently, the planning commission was falsely told that Moritz's analysis is based exclusively on vegetation, that he ignored topography and weather, and as a result, it's an inadequate basis for planning. Bob stated that all those assertions are false. These examples are consistent with what he has witnessed in his engagement with the town over the last two years. He shared if he was told that Portola Valley officials have not been attempting to exert influence on the Fire District, he simply wouldn't believe it. That would be inconsistent with the approach he has witnessed. He finished by stating that residents desperately need the District to protect its professional integrity. They need the District to promote objective, science-based assessment, and best development practices. They need your ongoing leadership. He thanked the Board.

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Director Miller thanked Bob for his comments.

Consent Agenda:

Director Miller motioned to move items 1, 2, 3, 4 and 5 to the consent agenda, 2nd by Director Cain. Motion passed 2-0, Director Holthaus absent.

Item 6: Reorganization of the Board of Directors

- **a.** Election of Board President
- **b.** Election of Board Secretary

After a brief discussion Director Miller recommend tabling the elections until the next Board meeting.

Item 7: Amendment #1 Agreement Between Woodside Fire Protection District and Capital Program Management, Inc.

Mike Wasserman from Capital Program Management informed the Board that when the original agreement was entered, it was based on time materials with an estimated fee budget. He stated that they did that hoping that things would be smooth. Unfortunately, things didn't go as smooth and required a lot more hours than originally anticipated. First and foremost, because of doing the work at SLAC, they didn't realize how difficult and time consuming it would be to provide the necessary construction management services during the construction, and that went away over what they had thought it would be. He informed the Board that they also spent a lot more time than they thought would be necessary in dealing with constructor builder reviews and the follow up with all comments, and still working through all those items. He stated that this is the new updated estimated fee budget. He mentioned they feel pretty solid about this because it's based on actuals. They have a really good handle on how much more time it's going to take, which went by the various people, how much that translates in dollars, that they will need to finish the projects. He informed the Board that it is a $220,000 amendment, on top of the original $500,000 agreement.

Director Miller showed his appreciation for the update.

A motion was made by Director Miller to allow Chief Lindner to authorize payment for $220,000 extra service charge. Director Cain 2nd. Motion passed 2-0 , Director Holthaus absent.

Item 8: Station 7 and Station 8 Project Updates

Station 8 Update: Mike Wassermann from Capital Program Management informed the Board that they are fixing a lot of stuff that they didn’t originally anticipate. They are dealing with the sewer line and found out the continued sewer problems at Station 8 were actually due to not enough slope on the line to connect down to the street. They are exploring to see if they can do a new sewer tap down lower, so they can get the proper fall in there to avoid and discontinue this problem. He informed the Board that PG &E continues to be difficult to expedite.

Station 7 Update: Mr. Wassermann informed the Board that PG&E approved the meter variance, which means the electrical meter will be in the basement.

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Item 9: FlameMapper Hazard and Risk Assessment Update Presentation to the Board

The FlameMapper team introduced themselves to the Board. Anthony Shafer, Shea Broussard, and Oliver Curtis. They stated they are here today to present an update on what they have been working on from a hazard assessment and risk assessment standpoint, and they have prepared slides.

The following is transcribed as recorded:

"First of all, establishing a lot of common terminology, so that we're all on the same page, and then kind of showing some of the preliminary results we have, which we're pretty excited about, because we think that they represent some real developments in how we can assess hazard and risk within areas like the Woodside Fire Protection District. First, we like to start every presentation by just quickly describing, you know, the mission of the company. And our goal really is to provide the data tools and know how so that people can make mitigation, informed mitigation choices. That's kind of where we step in and why we do hazard and risk assessments, because for us, it's always about how do we get to mitigation and other types of prevention activities, so that people can be kind of better prepared and that the outcomes can be less catastrophic for our community and responders as well.
And so, again, our vision is to, you know, see a world where people feel equipped to mitigate the potential impacts of wildfire. And that's really what drives all of the work that we do, the different modeling exercises and the statistical exercises that we go through. So first, really quickly, just defining the study area for everyone. It's a fairly large area that we've been working in, about 240 square kilometers. It encompasses all of Woodside, all of Portola Valley, some additional buffered areas as well. It's important when you're doing these sorts of statistical exercises and geographic exercises, that you are capturing more than just the area itself, so that you can understand different trends and anomalies that might be occurring directly at the edge of your area. So, that's why this area is bigger than just the cities or the district itself. Again, the focus of this presentation is on, kind of some of the common language and some of the results. So, we'll start in with some of the key terms that we're going to be working with today. Starting with Hazzard, this comes directly from the NFPA. It's defined as a fuel complex with a kind arrangement, volume, condition, location, that determines the ease of ignition and resistance to fire control. That's a fairly technical definition. We'll get into what we mean by fuel complex from a flame mapper's perspective. Next thing, we're going to jump to risk, which is the measure of probability and severity of adverse effects that result from exposure to a hazard. And again, we'll provide a little bit more clarity on how we see that for you guys today. So, jumping back into what is a fuel complex. One of the things that made this project unique is that we are establishing fuel complex not just as a vegetation load, which is typically the conventional approach to hazard studies, but we're also trying to combine structural load there as well. So, we've done is we're combining both the vegetation load, which is, and you'll see this later, determined by simulation, and the structural load, which was taken from a series of different studies, and/or applying those two things in order to determine a hazard that is inclusive of some of these structure -- potential structural loading within any particular community. And we think this is a fairly unique approach. We were liking the initial results here, and we'll jump into that in more detail. Risk. What are those adverse effects of exposure to hazard? Well, from our perspective, that equates to structure loss. When you're talking about community assets. So, when we talk about risk, we are talking about, effectively, structure loss. And that's really the bread and butter of what we do as a company, is trying to statistically understand structure loss and the different variables that go into that. And we use very large data sets to do that.
So, wildfire hazard assessment is the consideration of all of these factors that are occurring within an area, that are going to create those conditions which create, you know, a wildfire, the rapid energy spread and heat release. And what it is, is it's a combination of, again, simulation in this case, we're using the high-resolution fuel layers that were produced for San Mateo County. They are fairly recent, actually quite recent. And then there's additional different types of spatial smoothing and kind of geographic analysis that need to be performed on those different areas, because everything has a

geographic component to it as well. And you'll see on the right here is an image which describes the different variables that go into a wildfire model simulation. So, for the purposes of this study, we've done many, many, many simulations in this area, using various combinations of wind and weather. Again, we're always looking for worst-case conditions, so that we can simulate these -- the hazards and the risk under those worst-case assessments. So, in this particular case, you're seeing this kind of amalgamation of all of these different layers of information which go into a wildfire simulation. when you're working with simulation to the spatial scale, the simulation has pretty large impacts on the type of resolution you're going to get in the end. And this is, again, because we're using that 5-meter data to begin with, we're able to produce things that are at a much higher fidelity, if you will, than kind of a larger scale studies, which, you know, might be at the state level or even county level, which just frankly, from a computational standpoint, can't do that at 5 meter, because it's just too much data. So, why do we do these types of assessments? Again, policy planning, response, all the things that you guys are very familiar with. So, the conventional approach to this hazard is a fairly simple equation. It is the likelihood which can be thought of as the burn probability times an intensity. An intensity could be a variety of different modeled outputs, anything from flame length to fire length intensity to a heat unit area calculation. So, any of those different outputs could effectively be put into that intensity side. And again, the likelihood is that burn, the probability that any particular area would burn, not in terms of susceptibility, it has to do with the probability that fire would spread to that particular area. What we've done here is we've taken this equation and we've added in that structure load into the intensity side of it. So, we're taking the same burn probability, we're taking the same vegetative heat load, which we've simulated, and then we're averaging in the vegetation heat load and the spatial average of what's happening with the structures. And we're coming up with a different type of hazard assessment that -- or hazard result, which looks at both those vegetated layers and the structure layers. Because what we know is that, if a structure were to burn, there is a significant amount of fuel within that structure. In order to do that structure load calculation, what we've taken is a value from several different studies which seem to have, more or less, similar results.

So, we're applying a heat unit area to all of the structures within the study area. So, basically, all of the structures within the study area get the same heat unit area calculation applied to them, and we use that as the foundation for creating this new information layer, which tries to summarize the heat area captured within those structures themselves. And the interesting thing about this is these energy release calculations came from a variety of different places. One of them is looking at, you know, heat release in a nuclear incident sort of situation. So, you know, these are interesting studies. We think they're coming up with reasonable numbers that we found to apply to something like this. And so, we think this is a fairly novel way of approaching this particular question, and we want to kind of show some of the results. So, where does that fire load come from? Where does that 799 Mega-Joule per meter squared come from? In this case, it's from, you know, the mass, the calories, and the total area associated with combustion in a particular location. So, that's like the foundational logic behind where that number comes from. And that, again, came out of these two papers that we're reading and other things that were read to come up with that equation. So, the preliminary findings of this. Again, we're always looking to analyze things from a statistical standpoint. And so, we're finding, you know, normal distributions for the most part. And so, what we plan on doing is assessing the classes, the moderate, high, and very high classes, which most people are familiar with, based on a standard distribution of the kind of per picks of result in a particular area. And so, what we have -- again, we're looking at this because we want to make sure that our results is consistent with, you know, previous work, to some degree. But we want to make sure that we're also providing a classification that's representative of a statistical distribution and not some other kind of distribution based on, you know, a categorical understanding of, you know, risk or hazard within an area. So, what does that look like within the fire protection district and the study area boundary? So far, this is kind of what we've come up with. We're still doing some validation on the burn probability side of the simulations that we've run. We're seeing some interesting things in one or two areas that we want to speak more offline with

folks about. But basically, this is where our, again, the hazard side of it is starting to show, from our standpoint. When you compare this against -- to the more recent things that have been done in this particular area. On the left is the Cal Fire map that most people are pretty familiar with. And the Moritz fire hazard map that was done, kind of more or less, in the same time period. It looks noticeably similar. Part of that has to do with maybe some of -- these two things. I'm not 100% certain on the methodology for the Cal Fire map, but on the Moritz side, I know that that's more of an on-the-ground assessment. But what we're doing here is more of a simulated assessment, as well as an understanding of burn probability based on, you know, the actual vegetated fuels within the area. So, that's kind of where we are on the hazard mapping side of it.

And just to make sure that as we move forward, hazard is not risk. So, hazard is effectively a component of risk, but we're going to talk a little bit more about risk in a second. But just in terms of the progress of the hazard side, we're in the process of verifying some of the simulation which I just mentioned. And then, the final things have to do with the way that we aggregate that data up so that we can visualize it slightly differently. And then the evaluation of those aggregation boundaries for the final recommendation that we will be prepared to make. So, that's kind of the first half here, in terms of where we are with hazard. I'm sure folks are probably going to want to go back to that map here in a bit, but I'm just going to kind of keep running through where we are on the risk side. So, the risk assessment. And the goal here is, again, to summarize the potential effects of exposure to hazard. And again, we're using quantitative ways of doing so, which is really, again, the expertise of this company in something that we've been doing now for nine years, in terms of understanding risk from an empirical standpoint. So, why do we do this again? This is for a communication standpoint, this is for outreach, this is for planning, this is for response. So, many of the same similar reasons. Although, what we're looking at from risk, in this case, is our empirical understanding of what might be happening based on previous history of wildfire or structure loss within the state of California. We know that the district's priorities are lives, number one, of course. Understanding how evacuation resources would be working within an area, the emergency responders' safety as well, and then structural protection. So, I think our understanding of risk also aligns with these priorities. And so, we've kind of separated this out into two different types of risk assessments. One of them has to do with evacuations and potential areas where kind of vulnerability would be high within an evacuation network. And then the second side of it is more on the structural protection side of it. So, again, the probability of loss is our way of assessing risk from that standpoint. So, when you're looking at evacuation risk, one of the things that we do at the very beginning, is we have to understand intensity. So, heat intensity within an area, within a community, within a neighborhood even, and how that heat would be exposing people to potential life threatening conditions along a roadway. So, it's a combination of a simulation with an understanding of what might be happening along a roadway, so that you can understand those two things and then make a determination based on -- In this case, we typically use 4-foot flame lengths within a certain distance of a road to say that there's a potential vulnerability there. I guess we would be open to other break points, if you will, data breakpoints, as to what would define vulnerability along a road. But that's generally the standard we use.
We did see quite high flame lengths within the study area, so we'd be happy to kind of break that down slightly differently. On the right, what you're seeing is a visualization, not necessarily from this area. This was done for a different study, but to understand how many people would be moving along any particular road, in a very simplified fashion. And we need that because we need to know where people could potentially be. We also need to know where could fire have that high level of exposure. And then those two things form risk, but they also allow us to understand mitigation prioritization, which is, again, the end goal with everything that we're doing. So, you have to understand where people might be, you have to understand exposure, and then you have to have a way of kind of ranking and prioritizing those things when you finally get to mitigation. So, I'm just going to quickly walk through what this kind of does. Visually speaking, on the left, you're just seeing an area in Woodside. And we have completed this, you know, for the area, of course. Of all of the locations where you

have buildings or structures, we assume this is one of the basic limitations of what we're doing. We're not traffic engineers, we're not trying to understand flow volume on a roadway. We're just trying to say that there's a certain number of people that would be leaving a structure, and therefore they would have to get on the road, and then we effectively count where they are at any particular location along that road as a sum. So, on the right, what you're seeing is kind of like the total count of the people that would be on any particular road segment. That, again, forms the basis for how we prioritize when we get into mitigation. So, as it allows us to understand where the roads have the highest, kind of, numeric count of people, so we can understand, you know, where every evacuation priority area would need to be. But then we also can kind of inverse rank them based on the number of people that would be impacted from any particular vulnerability along the network. So, when we're looking at that vulnerability along a network, what you're seeing here on the right is just, again, a different -- a canyon example in this case, of the modeled flame lengths, which is one of those indicators we use to understand exposure, and where those exist along a road network. And then we understand the volume along those particular areas, and we make that mitigation prioritization assessment from that. But all of the different modeled flame lengths in this case would represent vulnerabilities or evacuation risk in this particular area. And we have, obviously, the capability of doing that at different spatial scales, depending on how the district wants to interpret that data. So, for instance, it could be broken up by evacuation zone and delivered in that particular way, as opposed to, like, the whole data set at once, etc.. Which after we get into evacuation and, you know, we've effectively completed that at this point, we get into that structure risk side of it.

So, in terms of, how do we evaluate this? Our goal is to understand, at the end, the probability of loss of a structure at a particular location, should fire be effectively next to it. We use the DINS data or the damage inspection data, which at this point is approximately 64,000 structures, in order to test different variables, which in our estimation have influence over whether or not a structure would be lost. So, there's 64,000 examples out there in California of where structures were lost. But then there's also an even larger data set of structures that weren't lost but are very proximate to those structures that were and we use those in our data set as well. So, our total training data, if you will, is over a quarter million structures within California, which is a very large dataset, and allows us to test and train different variables annually, typically, and to understand, what are the different series of indicators from every particular structure that would be potentially influencing its probability of loss? So, what you're seeing on the right here is a distribution of risk on a little snapshot level. With, in this case, red isn't the highest, because the red isn't in this particular frame, but orange being a higher risk profile than something that's lighter green or in this case, you know, kind of an even darker green, which would be the lower risk. So, this is something that, you know, we've done at much larger scales even than this particular area. But we have fairly high confidence in this particular method because we see such high statistical agreement with the existing chain of data that we've built and, you know, this particular area, for instance. So, what are those different variables that we're looking at? These are a series of different variable types. In this case, I believe it's over ten, maybe. I think it's closer to 16, in this particular case, that we evaluated for this particular area, but it's consistent with many of the different types of variables that you would see in the hazard side of it. But then lots of other kind of specific statistics that we can draw out based on structures and different sorts of variability related to their positioning, proximity and relationships to other structures as well. That's one of the really important things that we've learned in this and in doing this for so long, is that there's many different variables that are related to -- that are spatial variables, that are influencing whether or not a structure is lost or not lost. And then lastly, different levels of fire protection services actually do have that influence as well. And so, we combined all of these different variables, using regression techniques, to understand potential for statistical significance over that data set. And then we applied that probability of loss to all of these individual structures, so we can assess risk from that standpoint.

So, there's many different relationships that we're looking to evaluate, and we've even designed different variables that are intended to mimic that behavior that you're seeing when you have a structure influencing the loss of another structure. So, there's different proximity-based relationships which take that into account. So, we're always looking for variables that we think are going to lead to

insights into what are the real drivers of certain sorts of, kind of, large scale building structure loss. The graph that I'm just demonstrating here is that positive relationship between, on the X-axis, the probability of structure being lost and the fuel loading at any particular structure location. So, in this case, you're seeing that kind of positive correlation between, the more fuel next to that structure, more likely you're going to have a structure loss, a higher structure loss probability. So, these are the -- there's lots of different indicators that we look at when we're evaluating against. And this is one where, you know, it's fairly intuitive that these things would have positive correlation, but then we can statistically determine that, so that we can understand what might be occurring within a particular area. So, overall, what does that look like? We end up with a histogram, on the left side, of all of the structures within that study area and what their probabilities of loss look like. And then we would break that up into different classes or different data classes that we use to assign different kind of risk categories. And so, we can statistically determine what category of risk we would place any particular structure within this district. And that's kind of our method for analyzing, kind of, structure Risk. At this point, our results are ready for peer review. And then we're also in the process of using this risk data to inform our mitigation prioritization too. So, again, the things that we do on the hazard and risk side are intentionally designed so that we can then provide insights which lead to recommendations on mitigation, so that actions can be taken before an event would occur. And I'm imagining people are going to want to go back to a slide or two, but that's kind of the synopsis of what I want to provide today."

Director Miller thanked Oliver for the presentation and followed up with some questioning. He asked if FlameMapper was aware of other Cal Fire Maps or other fire severity maps that used structures as part of their assessment of hazard.

Oliver responded that he is not aware of any other maps utilizing structures.
Director Miller then asked if FlameMapper has been able to get a sense of how Cal Fire feels about their method. Flamemapper responded as follows.

"We have been in contact with CalFire talking to this particular thing. They want to differentiate -- part of the challenges when it comes to this particular project is, the district is in a huge advantage, given that we don't have to evaluate the entire state. So, we have a significant higher resolution, 24 times better resolution than what they're able to get for the entire state, because of the stymied resolution data that we have. That already gives us tremendous advantage. Some of the things that we tried to do, we did try to replicate some of their methods, which were successful in some regards. However, some of the stuff was categorical and less physical. So, it's a little bit of a guess and how they, particularly, how they want to do this. And they have leeway on how to, you know, about how they want to, you know, ride the risk of that jurisdiction. We're a little more, you know, rigid to the science. We want to understand essentially why we're doing something and have a, you know, scientific backing to everything we do. That being said, I think that we're trying to tread lightly here and come up with a method that potentially has the science behind it. So, we're not trying to be a competition with them. It's just a different method. Potentially, they can provide additional insight, which is our main goal here."

Director Miller then asked FlameMapper if they hadn't used structures, do they really think they would have, or do the use of structures really change what's in what we're now calling the WUI high and very high and what's not?

FlameMapper responded that is does make a difference, although not equal in all areas. They stated that it does show hazard levels penetrating deeper into the interface of the community.

Director Miller stated that he wants to use the most sophisticated work and wants to be ready to answer tougher questions. He also stated to FlameMapper that they are going about this a

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completely different way than Cal Fire. He stated that FlameMapper is using a grading on a curve and picking a midpoint. Which he sees as logical for someone with a data science background but a different fit from the public and by Cal Fire. He stressed to Flamemapper that they need to think more about how some of this questions will be answered so it can be presented to public.

FlameMapper agreed that they will need to spend more time as a team to and working with the District to provide best science.

Director Miller asked FlameMapper when they will be completed.

FlameMapper responded that they had an original completion date by March. But given a delay in responses by Cal Fire they are expecting to be completed around May.

Public Comment: The following comments are given as transcribed.

Rusty -

"The first question I have to do, I'm going to focus first on hazard and then I'm going to focus on risk. But the first question I have about hazard is, when the district announced this program in its press release in February 2022, the first step was to be to define the logic model by which hazard would be assessed and characterized, and the logic model by which risk would be assessed and characterized. And I tried very hard to follow the presentation on hazard, and I have to say I'm at a loss. I don't understand how you are calculating hazard. And I think it's -- the point I want to make about that is, I think it's terribly important that the methodology be transparent, fully explicated, and clear, not only so that it can be peer reviewed, but so that the public can understand it and trust it.

If it's public and transparent, then it can be replicated and it can be validated. And so, I would like to see a fuller and more comprehensive explication of hazard. And I think Pat can't put his finger on it. If you go to Ladera and you look at the assessment of hazard that you have on Ladera. I think most fire professionals would be hard pressed not to assess Ladera as a very high hazard area. Judging by the definition of hazard in the NFPA, a fuel complex, which by character, kind, arrangement, volume, is susceptible to the rapid expansion and spread of fire. Ladera is a paradigmatic case of the topography, vegetation, structures, close proximity, weather, and wind, where fire is likely to spread through the community if ignited very rapidly and expansively. That strikes me as a very high hazard. And yet, you're not showing it as said. And that runs against common sense. That doesn't mean it's wrong, it means it's nonsensical. So, what is the methodology by which you arrive at this conclusion and how do we validate that that's a correct assessment, so that we're actually dealing with a valid methodology that reasonably represents the existing hazard?"

Bob Turcott –

"I strongly suggest the district convene a public meeting where we can discuss and air the methodology by which this is being conducted. That's the end of my comment. Thank you."

Karen –

"I have a bunch of questions. In regards to using the bell curve. The bell curve was related to the Woodside Fire Protection Area, not like the bell curve of the entire state. So, how do I look at that? Is moderate in Portola Valley, would that be a moderate, let's say you did one in Palo Alto? No, it wouldn't be. So, that's kind of the question. I would think that the data set, would it need to be bigger than that to define the different areas? So, that's question one. Question two is considering the types of vegetation, where pine and eucalyptus. Let's say pine trees up in the Sierra Nevada are very flammable, but we have lots of oak trees here. Is that considered? And how would the algorithm deviate? I know that's a big question that's coming up in Marin County, where they know oak trees are protective and they're trying to deal with the state on ordinances around that.

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The third question is, the area below the L in Portugal Valley, which I believe I'm not sure exactly where that is, but it's near Alpine and Portola, maybe the ranch, has both low, moderate, high and very high in the same area. And I don't quite understand that, knowing the area myself. And then the other area that I -- the fourth question is about the area around Jasper Ridge. And the Cal Fire maps that were released, that were the state level ones, I think reduced that Jasper Ridge to moderate. And the area that you've got now around that -- in the Woodside Fire Protection District is very high. So, that seems kind of inconsistent, or perhaps correctly inconsistent, but I'd like an explanation on that. So, those are my questions. Thank you."

Due to this being public comment, Director Miller advised FlameMapper they are welcome to respond to a few of the questions quickly.

FlameMapper responded as transcribed.

"A couple of things, and to Rusty's comment as well. We will be as transparent as we can about the method and releasing you know, the model outputs that were done from -- the model inputs, rather, that were done from a simulation standpoint. We've talked about, tonight, exactly how we've applied structure loading into the fuel complex, which we think is a good step forward and a necessary step forward to further understand the implications of structures within a WUI and the potential hazard that those might -- the potential heat release and hazard as a result of that, that could result. I think the question on if there's small pockets of differing hazard level is a valid one, and that's where the aggregation of the information up to a larger area is important in order to remove smaller anomalies which might exist because of a variety of factors, but it could be a specific type of burn probability that's existing in an area because of the fuel. It could be an aspect of the intensity related to the vegetated fuel in that area, or it could be an inconsistency with the initial fuels that we applied for this simulation model, which aren't always 100% accurate either. So, there's a lot of different areas where you could see an anomaly from a field verified aspect of looking at a specific area. It is still a model, it's a representation. We think it's the best way to do these types of exercises, because we're not just -- we're using some outputs from simulation we think that are valid for this particular purpose, and have been tried and true from the standpoint of looking at likelihood and looking at intensity and applying those things together. I think the other question that we got that I remember specific to the bell curve and where Portola Valley's -- the area within Portola Valley, how that would -- how Portola Valley would compare to the rest of the state, is a very valid question. And that is a, to some degree, just a geographical question, right?
So, what is the dataset that you're working with in order to draw that curve? We would have to apply the exact same logic to the whole state to do that. If we did that, we would be forced to use much coarser information from the standpoint of hazard, because 5-meter resolution information isn't available throughout the entire state. So, we could apply, you know, the break points to a larger dataset, which is effectively what Cal Fire is forced to do. Although, it's all just a matter of relativity, right? Are we comparing ourselves? Is it important to compare yourself against an area in Malibu, or is it more important to just understand the kind of profile within your particular area? I think both have validity. I'm not sure that from the standpoint of a constituent within the area, it's necessarily so important to compare yourself against a further away community, which has a slightly different profile anyway. But we're happy to look at aggregating methods that could potentially remove some of that variability and/or use different breakpoint classifications, if we felt like there was a better, larger geographic representative area to be compared against. I think this is an issue with any kind of geographic data problem."

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Bob –
“I had two main sort of questions/comments. One, sorry, but more on this Gaussian curve and definition of hazard areas. Are you able to quickly move to that slide? Because there's a point about that that hasn't been made yet, that I'd like to. And that is, so I think I understand the rationale for your approach. The problem, as others have pointed out, is that if you apply this methodology to any localized area in the state, like the middle of the Central Valley, you will get the same percentage of that area being designated a very high fire hazard area. And I think there's a -- I'd like to suggest a way for you to consider to tie it to an absolute definition. And this suggestion will have its own problems, but it's a different approach, and I think it really gets to what's relevant about the designation of very high fire hazard severity area. And that is, Cal Fire has regulations that apply to such areas, in local responsibility areas, if the municipality has made that designation. So, a way to approach this is to simply ask the question, which regions of the district should we apply the Cal Fire safe development regulations to? That would define your cut off. In the middle of the Central Valley, there might be no regions like that. In the fire district, you know, maybe it's not just, you know, the upper 30% of the curve, maybe it's 50% of the area under the curve. That's just a suggestion to consider. That would require, you know, some expert to say; yeah, we should be applying Cal Fire regulations to these areas, and then you correlate that with your -- with your model output. That's just a suggestion.”

FlameMapper responded,
“The comments are pointing out some interesting points. I think they're all valid. I think where you create these break points relative to the particular locality is a legitimate question, obviously. We think that we probably need to go back and not have such a strict definition in the sense of very high, high, moderate. I think that there's -- that if we were to correlate it to a larger area, I think your comment about very high being potentially at a very different point within the break curve is valid. We have a larger dataset for our risk, because we do this at a much, much larger level. That would be one way that we could create break points that we think are reflective of risk, kind of throughout the state. We don't have this kind of high-level, high-fidelity methodology applied to the whole state of California.”

Bob –
“I just want to offer the suggestion that, hey, the definition of very high hazard in Woodside Fire District is those areas that really should have 20-foot road widths with new construction, etc.. So, it's just something to think about. The second point I want to make was a much more general one, and that is, first of all, I think this work is incredibly exciting. I have no doubt that, you know, some time into the future, this is the general approach that will be taken. It's objective, it's reproducible. The challenges, it seems that you guys are blazing some new ground here, and the challenge will be, for consumers of the results, if we're simply asked to accept that because that's what the computer says, there'll be a flurry of arrows, to use Matt Miller's metaphor, being shot. And so, you know, if it's a scientific process, then the methodology is public, it's reproducible, others can reproduce the same work. And part of that is that it's peer reviewed. Certainly, the community would like to engage in that, but when I say peer review, I also mean your technical and computational modeling peers, like a, you know, a peer reviewed publication and a solid academic journal will go a long way towards instilling confidence. The other thing that I think needs to happen is it needs to be validated against existing data, not just validated in the sense of people agreeing with the methodology but actually demonstrating against data, the challenges that any kind of computational modeling work like this has strengths and limitations. The limitations that are easiest to identify are those that are based on explicit assumptions. It's the implicit assumptions that the developers themselves aren't even aware of that are the challenging ones. And that's why, ultimately, validation against data, I think is going to be really key. Those were my comments. Thank you very much.”

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Director Miller acknowledged the concerns and stressed to FlameMapper the importance to use both data science and human knowledge if possible. He thanks FlameMapper for their presentation.

Item 10: Discussion – Trust for Public Land Finance Feasibility Study.

FM Bullard informed the Board that comments need to be submitted by the 23rd of February.

He then asked Director Miller how a 30-yr/$4 million bond would add money to the district's annual debt service.

Director Miller informed FM Bullard that the difference between a parcel tax is that people give the district money. A bond is borrowing money.

Director Miller added that after reading the document he would like to make two points. First, he is thrilled to be one of the first in the country to see if there is a public desire to raise money for wildfire protection hardening. His second comment is that if the money were raised, what would it be used for specifically? He expressed that he feels it is extremely important to have a clear vision of what the funds will be used for.

FM Bullard stated the mappings will show potential risk, priority areas for mitigation, choke points in evacuation routes, and help identify temporary areas of refuge.

Director Miller opened for public comment.

The following is provided as transcribed:

Karen –
"I just wanted to add some context to when I was on the Portola Valley Wildfire Committee, because we discussed this quite a bit. There is a little bit of resistance to funding private property and funding people who already have a ton of money, to give them grants for anything. Unlike Woodside, we don't have, you know, we don't have a program for that. But there is not -- there is also support for helping people who can't afford it. So, there is a percentage of the population that's lived here a long time that really doesn't have, you know, millions of dollars and can't afford to remove their eucalyptus, etc.. So, there's interest in that. And I also want to throw out the idea of, perhaps, the parcel tax should be progressive and that the more acres you own, the bigger your taxes. So, if you have a small cottage in Corte Madera. Why are you paying same as the guy who has a 5-acre, $10 million house? "

Director Miller responded that it would be done based on value, not acres. He then thanked FM Bullard on continuing to move ahead.

Staff Reports:

No comment.

Fire Chief's Report:

Fire Chief Lindner informed the Board that BC Slaughter has retired and interim Battalion Chief Zabala has been offered and has accepted the role as the new battalion chief.

Both Directors gave their congratulations to BC Zabala.

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Fire Chief Lindner then informed the Board that they have appointed a new interim BC, Vince Nannini. This is secondary to a BC currently on extended leave. The Board congratulated interim BC Nannini.

Fire Chief Lindner introduced Kim Giuliacci, new Inspector II for the prevention division. The Board congratulated her.

Fire Chief Lindner informed the Board that interviews were conducted for the position of Finance Manager, follow-up interviews will be held later this week.

Fire Chief Lindner updated the Board on the weather events. He mentioned that the first storm that hit on December 31st was more significant than anticipated. The district ran about 83 calls ranging from flooding, water rescue, tress and wires down. The second weather event came later in the first week of January. The Department Operation Center (DOC) was opened and the District increased staffing. They hired back and had 2 teams of fuel mitigation crews, which were a big help.

New Business:

WRITTEN COMMUNICATIONS:

1. A letter with a donation
2. A letter from a resident thanking the District for a service provided 24 years ago.

Meeting was adjourned at 8:45 P.M. and entered closed session.

Closed Session:

Chief Lindner gave the Board an update on personnel issues. There was no further action taken by the Board.

Chief Lindner gave the Board an update on the ongoing legal issue with the cell tower at Station 7 and the provider operating on site. There was no action taken by the Board.

Return from Closed Session: The Board returned from closed session at 9:15 P.M.

Adjournment: The meeting was adjourned at 9:15 P.M.

The next scheduled meeting will be held February 28th, at 7:00 P.M at the WFPD Administration Building, 808 Portola Rd. Portola Valley, CA 94028. (Or virtual or a combination of both depending on Covid-19 related concerns).

Respectfully Submitted,

Matt Miller – Board Secretary

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