

J. **POLICY MATTERS**

J.1 **Discussion and Update on Ladriz Software for Evacuation and Wildfire Modeling**

The City Council will receive a presentation from Ladriz CEO Leo Zlimen on the Ladriz software program. Further, the City Council will discuss and provide direction to Staff extending the use of the software for its disaster planning and community education purposes. The existing one-year agreement is set to expire at the end of August 2026. Staff is proposing to enter into two-year extension with an annual fixed cost of \$252,700, ensuring continuity of service as the City continues to refine its evacuation modeling and public education efforts.

RECOMMENDATION:

Receive the presentation and discuss the Staff recommendation to continue working with Ladriz for two additional years at a fixed annual cost of \$252,700.

City Manager Smith said this was an opportunity for the Council to have a more detailed discussion regarding the Ladriz software, used less than a year where the City has a one-year agreement as a result of the settlement agreement with OC. City staff is recommending they continue the arrangement with Ladriz for at least two more years and they wanted to talk with the Council about the value they believe they are getting from the services and software provided by Ladriz, and discuss working more collaboratively over the next couple of years. She introduced Leo.

Leo Zlimen, CEO of Ladriz Technologies, stated that the company is honored to provide wildfire evacuation modeling services to the City of Orinda and other U.S. communities. He commended Orinda for its transparency and proactive approach to wildfire risk and mitigation, noting that such openness is uncommon and commendable. He indicated he would first outline Ladriz' business operations before addressing Council questions.

He presented an overview of Ladriz as a risk management company focused on helping communities measure and reduce risk using software, data, personnel, and artificial intelligence. He described the company's service tiers, noting that Orinda is currently at the Enterprise level and is already exceeding typical usage for that tier, reflecting strong engagement with the platform.

He reported that Ladriz has invested approximately \$440,000 in support of Orinda over the past year, equating to roughly \$1.65 in platform investment for every \$1.00 of contract value, and stated the company's continued commitment to public education efforts intended to reduce the City's risk exposure.

He further outlined key wildfire planning priorities for the next two years, including contraflow analysis, protection of vulnerable populations, Red Flag Day street planning, and Safety Element and emergency vehicle access analysis.

He concluded by praising the City's leadership and community engagement, emphasizing that Orinda stands out among clients for its high level of transparency and effective use of evacuation modeling, and expressed appreciation to the Council before opening the floor for questions.

Mayor Iverson opened the public comment period.

Jud Hammon, a resident and SSTOC member, expressed ongoing concern about wildfire mitigation and the City's overall risk. He said that his initial impression of the Ladriss proposal was positive, viewing it as having strong potential to help address complex wildfire-related challenges, particularly the central question of how to reduce risk to life and property in Orinda. However, he noted a key limitation in his perspective of the current approach, stating that the emphasis appears to be primarily on evacuation modeling rather than on reducing total wildfire risk. He suggested that this focus does not fully address broader mitigation needs.

Mr. Hammon also raised concerns about aspects of the wildfire spread modeling, stating that certain simulated fire front behaviors did not appear fully accurate to him. He referenced prior comments he had shared via email and indicated he may follow up further on those technical questions. Despite these concerns, he acknowledged that if the model can continuously update based on real-time fire behavior, then initial inaccuracies in long-range projections may be corrected as new data becomes available. On that basis, he said he remains optimistic about the tool's value for evacuation planning.

He concluded by asking where the City should prioritize fuel reduction efforts, noting this remains an unresolved question. He suggested that either a different modeling approach or further development of the current system may be needed to better address long-term risk reduction strategies.

Councilmember Malkani asked whether Ladriss can incorporate near real-time wildfire data—such as updated fire front locations and changing wind conditions—into its model during an active incident to improve evacuation guidance when initial predictions change.

Mr. Zliten responded that the company is developing a system called "Prime," scheduled for announcement around August, which is designed to operationalize real-time updates, including fire perimeter changes and traffic data, to continuously reproject wildfire behavior. He noted that while this capability is already functioning internally, it has not yet been publicly released and was not part of the original scope of the City's engagement, though it is technically available.

Councilmember Malkani referenced public correspondence raising questions about the reliability and scope of the wildfire modeling.

Mr. Zlimen replied that the discussion should distinguish between evacuation modeling and strategies for property protection. He stated that the system already includes capabilities to simulate fuel breaks and other interventions intended to slow fire spread using available fuel data. He added that these features have been active within the system for most of the contract period and that City staff have received training on them, though he acknowledged they have not been fully implemented due to competing priorities. He further suggested that such capabilities could support vegetation management planning and potential grant applications.

City Manager Smith stated that staff have been evaluating multiple aspects of the system and are particularly focused on whether investments improve evacuation timing. She emphasized that their primary priorities are life safety, followed by evacuation effectiveness, and then property protection.

Mayor Iverson noted that wildfire management has traditionally been split between two domains: fire behavior modeling used by fire agencies for suppression planning, and evacuation/traffic modeling systems like those used by Ladriss. She asked whether these two approaches are converging and how the City should conceptualize their relationship.

Mr. Zlimen responded that Ladriss has been working to integrate these capabilities over the past year, combining wildfire, flood, and evacuation tools into a unified platform called "Core." He said the system now allows users to evaluate both life safety and economic impacts, and can incorporate parcel-level data to compare outcomes with and without mitigation measures, including modeled effects of suppression. He described these features as newly enhanced and evolving rapidly.

He added that the platform has advanced significantly over the past year and now aligns more closely with leading wildfire suppression modeling tools used in California, drawing on similar fire science and high-resolution (5-meter) data. However, he emphasized that limitations remain in fire modeling, particularly in predicting structure-to-structure fire spread due to unknown conditions within individual homes. While vegetation-driven fire behavior can be modeled with increasing accuracy, the variability of building contents prevents precise prediction of how structures ignite and propagate fire.

Mayor Iverson then asked how Orinda, despite its small size, has become such an intensive user of the system, and whether this level of investment is realistic or scalable, especially given limited participation from neighboring jurisdictions and budget constraints.

Mr. Zlimen replied that wildfire risk often lacks a clearly defined owner within government structures, unlike areas such as cybersecurity or finance. He argued that some jurisdictions have chosen to explicitly take ownership of wildfire risk as a managed responsibility and are investing accordingly, despite cost and complexity. He said adoption varies widely, and while change is slow, more jurisdictions are beginning to treat wildfire risk as a core function of government.

He stated that Orinda is not unique in making such investments, but is notable for its level of engagement and transparency. He added that broader adoption will likely require time and coordination across county and regional levels, and referenced examples where similar “federated” approaches have emerged over multi-year timelines. He concluded that while Orinda’s adoption is still relatively recent, the City is ahead of many peers in its willingness to invest and share its approach.

Councilmember Hoxie noted concerns about vulnerable residents, including students, schools, and especially isolated seniors who live alone, may not drive, and may live in difficult-to-access areas. She asked how the software could help identify and support these individuals during an emergency.

Mr. Zlmen responded that the issue involves two distinct challenges. First is identification: determining who needs assistance. He said this is largely a manual and opt-in process supported by community reporting tools and disaster registry systems, but noted that participation is typically low and requires active outreach, including door-to-door engagement and coordination with City departments.

Second is response: once vulnerable individuals are identified, ensuring they can safely evacuate. He said the platform is better suited to this phase by helping planners incorporate known vulnerable locations into evacuation strategies, including flagging high-risk properties and prioritizing them for targeted response. He added that effective use of this capability requires coordination with police, fire, and emergency management to integrate those locations into operational planning.

He concluded that improving disaster registries and better integrating community participation tools is an ongoing area of development, and indicated that Ladrin is working with City staff on approaches to strengthen these systems over time.

Vice Mayor Gee asked whether local fire and police professionals, including MOFD, support and find value in the software, noting concern that the system can appear like a “black box.” She emphasized that while public-facing tools may be useful for awareness, the key measure is whether they effectively support City staff and emergency responders, who ultimately make operational decisions during disasters.

City Manager Smith agreed and stated that MOFD Chief Isaacs has been actively involved in the development and refinement of the system, including recent work on ember casting assumptions. She explained that initial modeling approaches were adjusted after direct feedback from the Chief, who clarified operational realities and helped guide more appropriate assumptions for Orinda-specific conditions. She added that staff also consulted with Cal Fire and other fire professionals to refine the model and ensure it reflects field experience.

She further noted that multiple departments have been engaged, including emergency services leadership and the City Engineer, to review evacuation modeling, parcel data accuracy, and operational constraints. This collaboration has led to updates in the system and improved alignment with real-world response planning.

City Manager Smith said that this work has already informed upcoming multi-agency tabletop exercises, including scenarios such as the Orinda Oaks area, anticipated road closures (e.g., Moraga Way), and limited real-time decision-making during fast-moving wildfire conditions. She emphasized that the modeling is now being used to support coordinated planning among agencies rather than public exploration alone.

Vice Mayor Gee also asked whether the City could use the modeling and outputs to advocate for increased mitigation funding from agencies such as EBMUD and state legislators. City Manager Smith responded affirmatively, noting that City representatives have already presented the work to state officials, including Senator Grayson and an Assemblymember, who expressed interest in broader statewide application. She added that there is growing discussion with Cal Fire and neighboring jurisdictions about expanding the approach regionally.

City Manager Smith concluded that while regional collaboration is being pursued, the City still has outstanding internal planning needs—such as evacuation analysis, contraflow planning, and other Safety Element commitments—and emphasized the importance of continuing to develop these tools with support from partners like Ladriss.

Vice Mayor Gee closed by encouraging continued public education efforts and additional community forums to help residents understand the importance of the modeling and preparedness work.

Councilmember Riley suggested that if the City proceeds with a two-year contract, it should consider a structured reduction in services afterward, noting that it can be difficult to scale back once the City becomes accustomed to receiving detailed modeling outputs. She asked whether the contract could be framed in a way that anticipates a planned “weaning” from the service over time.

City Manager Smith responded that this is ultimately a policy decision. She explained that the current use of the system serves two main purposes: public education through a portal that allows residents to explore evacuation scenarios, and operational planning to support City decision-making. She noted that the City is still in the early stages of using the platform to fully answer key planning questions. After the two-year period, the City may have developed sufficient knowledge to transition to a reduced level of service or potentially rely on more regionalized capabilities, depending on outcomes.

She added that continuity of institutional knowledge is a consideration, with documentation being created to preserve learnings as staff and leadership continue to engage with the system. She also noted that fire leadership, including the Chief, is sharing insights with Battalion Chiefs to support operational use.

Mayor Iverson suggested in addition to asking for more time, she will suggest take a break between this matter and two matters. She asked how much more time they should vote to extend the meeting.

EXTEND MEETING

MOTION by Mayor Iverson, and seconded by Councilmember Riley, to **extend the meeting at 9:50 p.m. to 10:30 p.m.** Said motion carried by unanimous (5-0) vote.

Councilmember Malkani asked whether the modeling system can be used to evaluate how fuel reduction efforts—particularly on non-city lands such as EBMUD and East Bay Regional Park District properties—might reduce overall wildfire risk and improve evacuation conditions. She referenced longstanding concerns that even with local mitigation, broader landscape-level risk remains, and asked whether the model can demonstrate the impact of treating those larger areas.

Mr. Zlimen responded that the system can model the effects of fuel treatments, including estimating reductions in potential economic loss by comparing scenarios with and without mitigation. He noted that for large-scale wildfire behavior, they also have access to advanced atmospheric fire modeling tools, including work associated with Dr. Cohen's fire behavior research, which can help simulate how fire spreads under complex weather conditions.

He added that the system can also assess evacuation-relevant impacts, such as changes in heat intensity along roadways to determine whether routes remain safely passable under different fire scenarios. However, he noted that applying these analyses across multiple jurisdictions and landowners can be challenging, since responsibilities for mitigation, evacuation, and land management are distributed among different agencies.

He emphasized that wildfire risk management is inherently a fragmented, multi-agency problem involving overlapping responsibilities across utilities, land managers, fire agencies, and law enforcement, which can complicate coordinated action. Despite these challenges, he said that scenario modeling can help quantify potential benefits of mitigation, particularly in terms of avoided property loss.

He concluded that while risk levels fluctuate over time, the value of such modeling lies in identifying high-impact opportunities where targeted fuel treatments could meaningfully reduce losses in major fire events.

Mayor Iverson asked about the return on investment for the proposed two-year extension and how Mr. Zlimen views the value of continued higher-level service in years two and three, particularly in comparison to alternative uses of funds such as reserves or infrastructure projects like roads and storm drains.

Assistant City Manager Alessio responded that the value of the system is significant from both a financial oversight and risk management perspective. He noted that while the direct financial return is difficult to quantify in the absence of a disaster, the tool has the potential to reduce exposure to substantial wildfire-related claims and improve overall City preparedness and performance.

Mayor Iverson pressed further on opportunity cost, asking why continued investment in the platform would be preferable to other municipal priorities. Mr. Alessio replied that the greatest value lies in the potential to influence broader regional behavior around wildfire mitigation. He explained that wildfire risk is highly interconnected across jurisdictions, and that the modeling could help visualize and communicate that shared risk in a way that encourages neighboring communities to take action. He said such influence and coordination would be difficult to achieve without the data and visual outputs provided by the system.

Mayor Iverson then asked what guidance should be given to the City Manager ahead of further discussions and decisions in August.

City Manager Smith said staff had already identified four key focus areas for the next two years, primarily centered on evacuation planning and operational readiness. She noted that Council interest also appears to include expanded wildfire modeling applications, particularly in support of grant funding, fuel mitigation planning, and coordination with regional agencies. She clarified that staff's primary mandate remains evacuation and life safety, while acknowledging that fuel breaks and broader fire behavior modeling are typically handled by fire agencies. She indicated that if Council wishes to expand the scope to include these additional areas, staff could incorporate that work into the next phase of engagement with the vendor.

Councilmember Malkani emphasized that while evacuation planning must remain the City's top priority, she sees a strong opportunity to use the modeling platform to advance regional wildfire mitigation efforts. She noted improving coordination with MOFD, the East Bay Regional Park District, and EBMUD, and said the City may be able to use the tool to help highlight large-scale "unmitigated risk areas" that extend beyond City boundaries. She added that this could support efforts to secure additional grant funding for fuel reduction projects, particularly given that funding is currently available for such work, and expressed interest in using the model to strengthen regional investment and collaboration.

City Manager Smith responded that pursuing this direction would require close coordination with fire agencies to ensure alignment on priorities and responsibilities. She noted that a key first step would be confirming whether existing fuel breaks are sufficient and identifying where additional mitigation is needed. She referenced recent work, including mapping of existing fuel breaks by Contra Costa Fire Protection District and integration of GIS data, which allows the City to better assess how these features affect fire behavior and risk.

She added that understanding the effectiveness and maintenance needs of existing fuel breaks—such as those in North Orinda and the Happy Valley area—could help quantify their value and inform funding requests for ongoing maintenance and new projects. This type of analysis could support both local decision-making and regional advocacy by demonstrating where fuel treatments provide measurable risk reduction benefits.

Vice Mayor Gee expressed support for proceeding with the proposed contract extension, acknowledging the significant cost but noting her belief that additional funding sources may emerge over time, reducing the financial burden on Orinda alone. She suggested that regional funding opportunities, including potential enhancements to Contra Costa County tax measures such as Measure R, could help support continued investment in wildfire preparedness tools. She stated that, despite the expense, she supports continuing the program given its alignment with Measure R priorities.

Councilmember Riley said she felt the weight of the decision but ultimately could not oppose the proposal, while expressing concern about long-term dependency on the system. She supported a two-year term but emphasized the importance of planning for a future reduction in reliance on the service and maintaining internal City capacity. She questioned the prioritization of Red Flag Day analysis within the proposed focus areas, suggesting it may be less critical than regional coordination and mitigation efforts. City Manager Smith clarified that Red-Flag Day work primarily involves evaluating parking restrictions and street access adjustments, and is relatively straightforward compared to other modeling tasks.

Councilmember Riley reiterated that regional collaboration should be more central to the plan and suggested revisiting the priority structure of the four focus areas.

Councilmember Hoxie highlighted concerns regarding isolated seniors and the challenges of maintaining accurate disaster registries, particularly as residents move, age, or pass away. She emphasized the importance of integrating community-based systems, such as Senior outreach programs, to improve identification and evacuation planning for vulnerable individuals. She also supported continued attention to school-related evacuation planning and Red-Flag Day considerations, reaffirming that life safety must remain the City's top priority, followed by property protection. She expressed strong support for continued use of the software and deeper regional coordination.

Mayor Iverson concluded by emphasizing the City's leadership role in wildfire preparedness and expressed frustration that other jurisdictions and agencies, including the fire district, are not contributing at a comparable level. She praised the collaboration between City staff and Ladris, noting the significant effort required to develop and refine the system. She stated that she trusts the judgment of staff and subject-matter experts who recommend continuing the program and expressed her support for approving the extension.

City Manager Smith confirmed she had direction and she and Councilmembers thanked Mr. Zlimen.