

**Portola Valley
Emergency Preparedness Committee**

To: Emergency Preparedness Committee
From: Evacuation Subcommittee
Date: April 4, 2024
Re: Updated Evacuation Studies

Summary

In 2022, Fehr & Peers produced an Evacuation Traffic Capacity Study for Portola Valley. The study provided model-based evacuation times under three different scenarios: all roads open, Portola Road blocked, and Alpine/Arastradero blocked. The base assumptions included the evacuation starting at 6 am, and approximately 2 cars per household. The study highlighted that it could take longer than **3 hours** to evacuate if roads were blocked. The study did not include any impact from additional housing required by the recently passed Housing Element.

Subsequent to the Fehr & Peers study, WFPD and members of the EPC were introduced to Ladriss, a small company that had developed a flexible cloud-based evacuation modelling platform. WFPD and Portola Valley have since purchased access to the Ladriss system. After considerable efforts, we believe the Ladriss model is now positioned to provide reasonably accurate statistical modelling of evacuation scenarios for Portola Valley and surrounding areas. We have spent the time to model the additional cars that would be anticipated from the recent Housing Element and have run simulations of the resulting evacuation times that are presented in this report. Please read the rest of this memo for a more detailed discussion.

The results (in the following table) make sense; when all roads are open, there is a slight increase in evacuation times due to the new housing. However, evacuation times increase substantially when roadways are blocked. In particular, when Alpine/Arastradero roads are blocked the average evacuation times increase by almost 30 minutes, and the maximum evacuation time increases by almost an hour to an alarming **5 hours!** This increase also makes sense, since much of the new housing is concentrated along Alpine Road. We have always advised that the maximum evacuation times are the most relevant for emergency personnel and public officials. **The Fehr & Peers report offers several suggestions to begin to mitigate evacuation times and we strongly recommend that efforts should be made to improve evacuation before new housing is completed.**

Scenario		Fehr & Peers*	Ladris - Baseline	Ladris - Add HE cars
All Roads Open	Mean	23-40 minues	41 minutes	54 minutes
	Median		42 minutes	58 minutes
	Maximum	75-90 minutes	99 minutes	106 minutes
	Std Dev		+/- 21 minutes	+/- 23 minutes
Portola Road Blocked	Mean	60-84 minutes	62 minutes	84 minutes
	Median		67 minutes	85 minutes
	Maximum	120-165 minutes	160 minutes	178 minutes
	Std Dev		+/- 36 minutes	+/- 41 minutes
Alpine/Arastradero Blocked	Mean	76-114 minutes	168 minutes	195 minutes
	Median		192 minutes	209 minutes
	Maximum	165-225 minutes	237 minutes	301 minutes
	Std Dev		+/-60 minutes	+/- 77 minutes

*F&P mean is taken 30 minutes after evac starts; F&P max is at 90% population evacuated

Fehr & Peers Wildfire Evacuation Traffic Capacity Study

The final report can be found here: [Evacuation Traffic Capacity Study 2022](#). We recommend that readers take another look at this study. It was the result of three public meetings to discuss the methodology and scenarios, followed by three presentations of the final report. During the process, members of the EPC met weekly with the consultants and provided significant amounts of local data to produce the best possible report.

As with any study, significant assumptions were made on many variables during the process. The Fehr & Peers evacuation model is a proprietary model; thus a model from another source could have different results. As with any statistical model, we should expect different results under different boundary conditions, and actual situations are difficult to anticipate.

The most important result from the study is a verification that **Portola Valley has a serious problem evacuating its residents in an emergency, particularly if one of the two major exit routes is blocked**. The model is also unable to assess any incidents (car accidents, fallen power poles, etc.) that would further disrupt evacuation traffic. Reports from the Paradise Fire and others are quite alarming regarding suddenly blocked exit routes.

The Fehr & Peers Study offered several suggestions for improving evacuation times, such as widening Alpine Road and investigating emergency road clearance crews (see Section 4.2, page 33 and section 5 page 41). All efforts should be made to move forward on these suggestions and others to improve our roadways and reduce evacuation times. It is imperative that these mitigation projects are completed before significant additional housing is built in Portola Valley.

Ladris Evacuation Simulation Tool

In late 2022, members of the EPC were introduced to Ladris ([Ladris | AI for Climate](#)) by WFPD. Over the next two years, members of the EPC and other volunteers spent many days with Ladris to address software bugs, user interface deficiencies, core data discrepancies, and a myriad of other issues. Portola Valley, WFPF, and Woodside all purchased licenses with Ladris in 2023 and continued for 2024. Members of the EPC, primarily Rob Younge, continued to spend time with Ladris and by early 2024, we were comfortable that the platform was reasonably accurate for evacuations in Portola Valley.

The first test of Ladris was to make sure that its simulation results were comparable to those of Fehr & Peers in the same scenarios (“Ladris – Baseline” column). Again, it took a fair amount of time to adjust all the various parameters to align the scenarios. Also, it should be noted that the Ladris output is not exactly in the same format as Fehr & Peers, but they are reasonably close. Next, we loaded the additional cars that could be expected from the additional housing from the recently passed Housing Element. Those results are shown in the “Ladris – add HE cars” column. The results are interesting and somewhat intuitive. Average and Max evacuation times with all roads open increase only modestly – this makes sense, as much of the new housing will be built on the Alpine Road corridor (however, please note that it will take almost an hour for someone evacuating to actually get out of town). The most significant changes are noticeable as roads are blocked. For example, the maximum evacuation time if Alpine/Arastradero are blocked balloons to 5 hours. This is clearly alarming and demonstrates the danger facing an evacuation in Portola Valley during a wildfire.

Now that we have worked with Ladris, it is possible to fairly rapidly run new scenarios with different road blockages, number of cars, alternative exit routes, etc. As we move forward, we believe this will become a useful tool for first responders and the town.

4/10/24

Town Council Members, HCD and Community,

I am commenting as:

1. 24-year PV property owner/resident
2. Someone building the only Multi-Family Deed-Restricted Affordable project in town (Willow Commons).
3. And a perspective that our town needs a more diverse housing stock to cater to a wide range of needs rather than just large single-family zoned lots.

Comments on Draft HE Performance Report:

1. The town has been disingenuous in claiming in the Housing Element and related Performance Reports that it has assisted/streamlined etc the Willow Commons housing project. Here are just three examples:

1. No response from the Town manager to repeated requests for meetings to resolve issues- we are the verge of having to stop the project because we can't get answers to questions - this has happened numerous times.

2. There needs to be more support in working through issues where the town ordinances directly conflict with the West Bay Sanitation and PV zoning code requirements and lack of utility/Infrastructure support with West Bay, CalWater, and PGE. As a result, our project will cost significantly more and likely be delayed 6-12 months.

3. Fighting, Delaying, and Denying almost all financial assistance requests- denied multiple requests, including the only enacted town affordable housing program (Fee Waivers for affordable projects in General Plan) Permitting fees were waived for the project after initially being rejected and only when it was pointed out that the Town General Plan states explicitly a commitment to do so for a project such as this with

social and community benefit. Multiple denials on requests for support from the Affordable Housing Fund and our offer to more severely restrict units to Very Low Income from Low-Income categorization to help the town were denied. Santa Clara Supervisors just approved a \$1.5m award to the project to help cover the escalating costs. We are in discussions with San Mateo, but PV has yet to partner or support us outside of reluctantly agreeing to their only program fee waiver. Still, they are charging us fees, making us request reimbursement, and taking quarters to pay. (we are currently about \$75k in unreimbursed expenses)

So, Claiming in the HCD HE Performance Report that:

1.

for ways to improve efficiency.		
5-3: Facilitate and support pipeline projects during the planning period by working with applicants.	Ongoing	Develop 50 units by January 2031. In progress - Willow Commons project (11 units) currently under construction.

This claim about **Program 5.3** is disingenuous and incorrect from Willow Commons' perspective, and we would like to record that we object as the only pipeline project. We have numerous unresolved issues that threaten to stop construction and delay the project even further—almost all requests for changes to reduce the project's costs have dramatically escalated.

2.

		Complete. Policy established by Town Council.
4-4: Establish and implement an Affordable Housing Fund Policy.	December 2023	

As mentioned earlier, establishing an Affordable Housing Fund that doesn't support Willow Commons - a 100% affordable project that has the added town benefit of being permanent supportive housing for adults with Intellectual and Developmental delays calls into question the validity of the affordable housing fund that the town has been sitting on for over ten years and all of our requests were denied. Again, I think the town

missed the spirit of this program's objective. The fact that the county will support it but our town won't is illustrative. For an affordable project, a town typically contributes 10-25% of the project costs to make it happen since there is a public/town benefit and projects don't make economic sense. The town will contribute less than 1% on the current course through fee waivers. I had written to council members and subcommittees when the policy was being created. I don't think it was focused and objective, and as the only project that has made requests and been rejected, I believe this **Program 8-1** has not been achieved - so perhaps "technically" complete, it has failed in the spirit of what it is intended.

3.

8-1: Review approval findings for objectivity and make any necessary revisions with other zoning code amendments and rezonings in March 2024	March 2024 Tri-annually	Review and revise approval findings. Evaluate regulations on a regular basis.
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Name of Program	Timeframe in Housing Element	Status of Program Implementation
8-5: Rezone properties in Town to allow multi-family housing with a range of affordability levels and deed restrictions to ensure affordability over time.	2024	In progress - draft zoning code and zoning map amendments currently being reviewed by the Planning Commission. The Town Council anticipated to adopt in May 2024. Once projects are under construction, affirmatively market to under-represented households.

2 years ago, when the town was considering rezoning parts of the Nathorst area and as a property owner, we were asked to upzone; we asked for the development standards besides the fundamental zoning changes to understand what we would agree to. It was unfair then to property owners, neighbors, staff, and committee members to not have this thought out. As we can see today, the committees, property owners, and neighbors were given only a little advance notice of the 59-page draft of the building

code rules. So, the town kicked this complex topic down the road, and here we are with almost no time to evaluate and consider the implications. In the last three meetings; 1 Planning Commission, 1 Joint Planning/ASCC, and Monday's ASCC meeting, over 10 hours have been spent, not to mention the heavy lifting of subcommittees.

1. At the last meeting, the two possible affordable projects (Ladera and 4394 Alpine) repeatedly objected to the complexity and costs discouraging (not encouraging) affordable housing projects. After all of this, both of us are less inclined and have stated we should reduce the units in the housing inventory for a variety of reasons, including the complexity and difficulty.
2. The building complexity is designed for buildings that only use MF 20-23 unit density (Ladera Church) but are applied to ALL multifamily and mixed-use. I would estimate 10 of the 11 hours of discussion was on hypothetical three-story buildings and how to deal with facades, windows, doors, porches, roof angles, etc - all on something Ladera has flatly said they are not considering. Yet, projects that are likely affordable for 1-2 stories with the same height limitations as all single-family zoned houses in town are being encumbered with extensive regulations, and no technical evaluation has been shown to have cost-benefit or implications. In addition, there are arbitrary decisions used on possible limitations on unit sizes that could restrict a variety of housing solutions are being made. The goal stated several times in commission meetings is to drive projects through a subjective review, which clearly contradicts what the objective design standards were trying to accomplish - to make it easier for affordable projects to decide to do a project. Again, the spirit of the objective standards is to make so many and so complex to push projects into a discretionary process, which will be a significant deterrent for affordable projects.

3. We should have zoning that makes sense for low/medium (2-4 units MF, 3-6 MU) density and one for high Density (MF20-23). However, we only have *one*, and we are trying to force everything into the worst case, which Ladera and I have publically stated in *discouraging* the two properties on the housing inventory that have expressed an interest in creating affordable housing. I recommend using the single-family home building codes until new low-density MF/MU residential can be developed, given these have the same building height limitations and are residential.
4. Lastly, these complex regulations are not imposed on Ford Field, which is the only project to be high density like the regulations focus on; however, they do impose on the FIVE properties in MU(3) or MF(2) zoned areas. Ford Field, with 50 Very Low-Income units, is a highly challenging project in many dimensions. However, it should comply with all the proposed non-Portola Valley-owned property regulations.

Sincerely,

Jim White