

# Evacuation Risk Assessment

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## 2 tools to improve disaster evacuation

1. Zonehaven Platform: To Prepare, Train for and Manage a Live evacuation
  - ❑ Approved Jan 25th for 3 years
  - ❑ Set-up starts in February, expected completion in May
  - ❑ Multi-agency participation: Fire, Law Enforcement, OES, TAM, CalTrans, CHP, DPWs etc.
  - ❑ Uses “best available” GIS data and models
    - ❑ Geographic features; Vegetation type and density
    - ❑ Weather conditions; Threat direction
    - ❑ Structure / address count; Population estimates
    - ❑ Traffic loads and road type; Access to egress points; Clearance times
  - ❑ Rapid simulations: 1, 3 and 5 hour models, and related recommendations for evacuation zone sequencing, for training or during an event.
  
2. Evacuation Risk Assessment: To increase chances of a successful evacuation
  - ❑ Risk Assessment is the first step towards mitigation
  - ❑ Quantify risk, prioritize and implement mitigation, re-assess

Integration between these tools



# What is a successful evacuation?

- No casualties or fatalities
- Minimal challenge to Fire response activities
  
- Risk mitigation efforts lead to more time?
- Time it takes to clear a zone?



# Objectives of the Risk Assessment

To identify and quantify Risk Factors that affect the success of an evacuation

To obtain a complete picture of risk (visualization)

To obtain detailed picture of risk at different levels of aggregation and across different dimensions, so that funding and improvements can be prioritized by area, risk, agency, etc.

- Geographic
- Family of risks
- Individual risk

To evaluate proposed or completed improvements - before / after comparison



# Not all Risk Factors are created equal

- Examples of Factors that can be improved over short, medium and long term
  - Vegetation
  - Road conditions (width, surface etc...)
  - Intersections
  - Population preparedness (?)
- Examples of Factors that cannot be modified, but necessary to understand overall risk
  - Length of time at the residence
  - Demographics
  - Current road network
  - Human behavior
- Data?



## RFQ / RFP

- Up to MWPA: Scope, Available Data, Qualifications, Deliverables, Selection
- Up to consultant: What is feasible, Assumptions, Methodology & Deliverables

Scope: Preliminary list of Risk Factors

Available Data: To be clearly identified (CWPP, TAMDM, Lidar data, etc.)

Qualifications: Will require extensive data analysis and modeling experience

Selection: Fire review and scientific review



# Deliverables

1. Review of literature and field reports on evacuation
  - Due diligence in including all risks
2. Risk Assessment tool: Multiple layers of GIS and other data, integrated into one platform
  - Hosted and maintained
  - User-friendly interface, training and documentation
    - Change score of proposed or completed improvements
    - Visualization - Picture of risk
    - Reports by risk, area etc.
  - Can integrate with other platforms (Zonehaven or other)
3. Report explaining methodology and the assumptions behind the assessment / model
4. Final presentation?



# Timing

Zonehaven implementation starts mid-February, expected to finish May 2021

- Need to wait and see, what will be done in Zonehaven in terms of modeling, and with what data (“best available”)
  - Ingress / EVA is a good example: Zonehaven can model routes under different fire and traffic scenarios, Risk Assessment will look at widths, turn-points and physical characteristics that can be improved
- Set-up is an important multi-agency effort and will benefit Risk Assessment

Need to continue outreach

Projected release: April 2021 with responses due in June? Selection before summer?



## Next steps:

Review of draft RFP currently closed

- Discussion today and direction from Chief Weber and Mark Brown
- Continue vetting with experts
- Identify more clearly what data is available
- Determine required qualifications
- Determine selection panel
- Observe Zonehaven implementation
- Operations Committee review
- Executive Board review
- Release and outreach

Thank you!