El Granada Wildfire Risk Assessment and Recommendations

June 28, 2022

SAN MATEO RESOURCE CONSERVATION DISTRICT

vibrant planet

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PANORAMA ENVIRONMENTAL, INC.

Agenda

- Wildfire Risk Assessment Objectives
- Overview of Wildfire Risk Assessment Process
- Identify Areas of High Risk
- Key Findings
- Review Recommended Actions to Reduce Risk
- Questions & Answers

Wildfire Risk Assessment

Wildfire Risk Assessment Objectives

1. Identify and quantify risks posed by wildfire
2. Develop a set of recommended actions to reduce risk

This wildfire risk assessment is focused on identifying risk to El Granada.

Wildfire Risk Assessment

- What is Wildfire Hazard?
  - Wildfire Hazard is the **probability of a fire occurring** and the expected **intensity of the fire**.
  - Intensity can be affected by a variety of variables: vegetation, weather, and topography
- What is Wildfire Risk?
  - Risk is an appraisal of the interaction of hazard, exposure, and effect of fire on an asset, such as a structure.
  - Put simply: How exposed is an asset and how will it respond to fire?

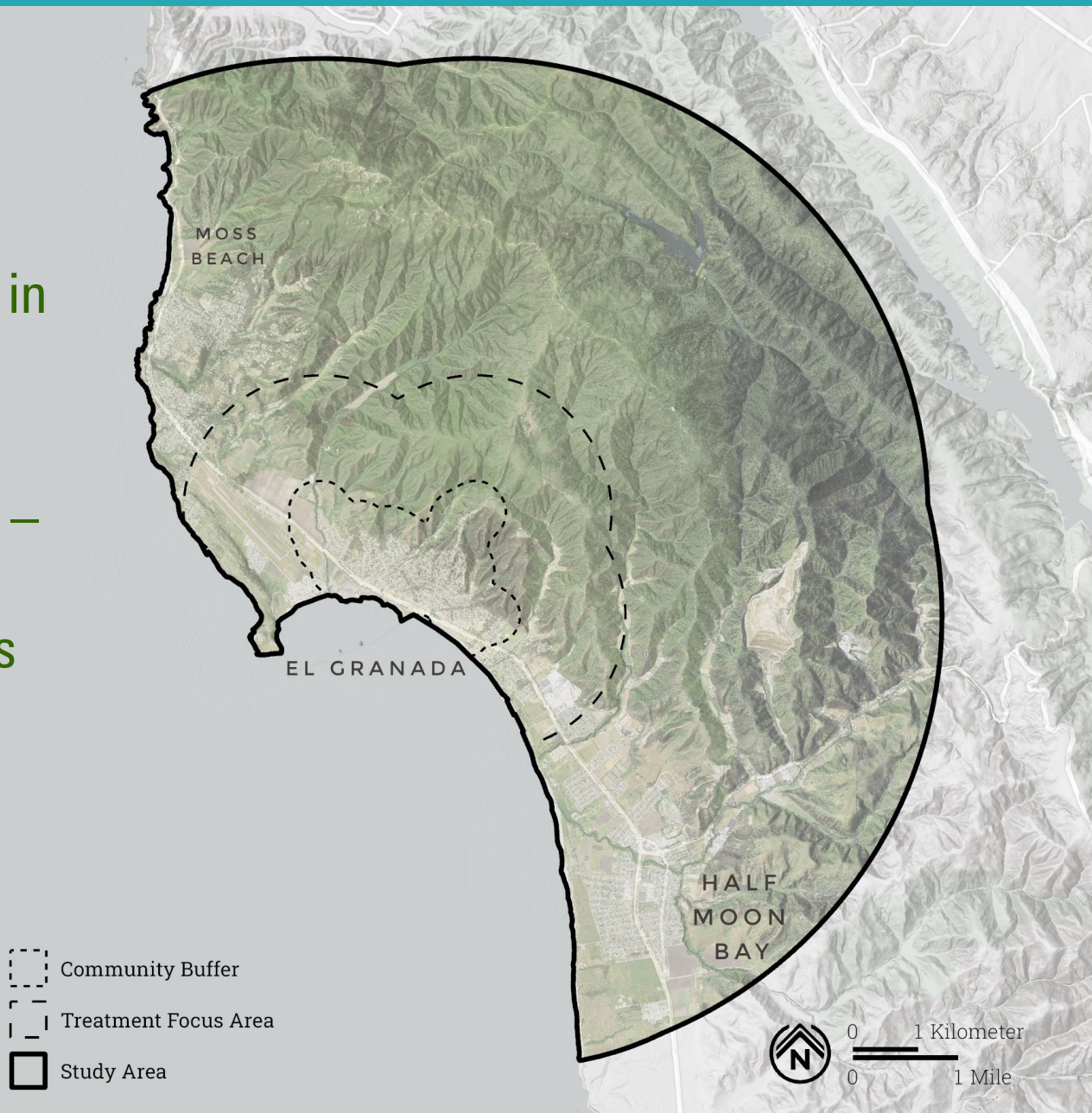
Once areas of high wildfire risk are identified, we can develop strategies for reducing risk.

Wildfire Risk Assessment Study Area

Community Buffer – Boundary around the majority of structures in El Granada

Treatment Focus Area – Location of recommended actions

Study Area – Area for fire modeling



Wildfire Risk Assessment

- Wildfire Risk Assessment Steps:
  - **Step 1:** Wildfire hazard characterization
  - **Step 2:** High Value Resources and Assets (HVRA) characterization
  - **Steps 3 & 4:** Risk Analysis/Treatment Effectiveness
    - Exposure analysis – Where hazard has potential to occur near HVRA
    - Effects analysis – How effective are vegetation treatments to reducing fire near HVRA

- Data refinements were made based on community input
  - Vegetation Classifications
  - Weather Scenarios
  - HVRA

Wildfire Risk Assessment – Vegetation Classifications

Vegetation

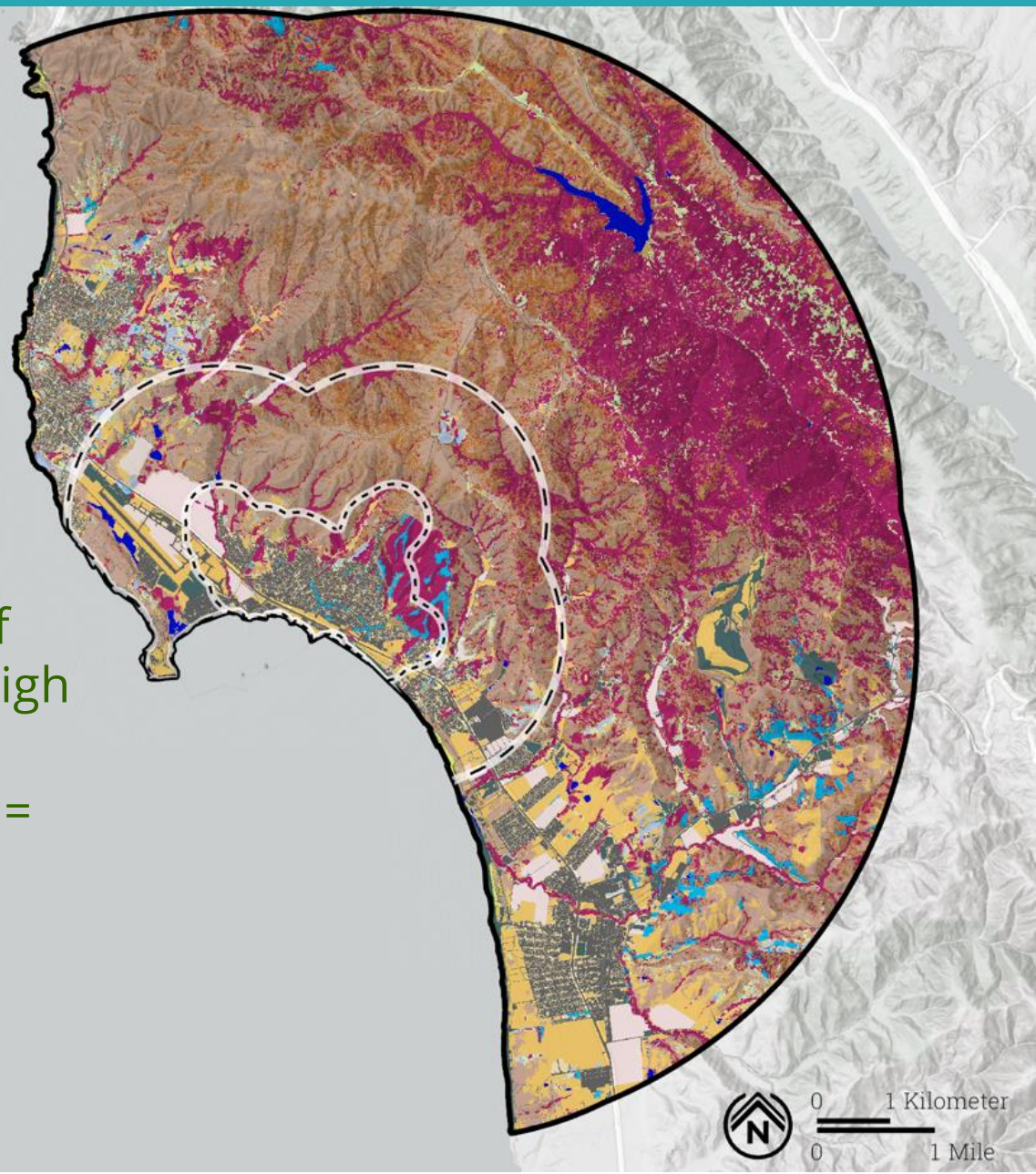
1. Started with County's fine-scale vegetation mapping dataset

2. Further segmented Quarry Park area using data from field verification

Wildfire Risk Assessment – Vegetation Classifications

Vegetation (cont.)

3. Modified fuel classifications to reflect ground verification and recently treated areas
   - Untreated stands of eucalyptus = Very high load
   - Treated eucalyptus = Moderate load



Wildfire Risk Assessment – Weather Scenarios

Weather scenarios are based on historical data for:

- Relative humidity
- Wind speed and direction
- Fuel moistures

Weather Scenario Process:

- Spring Valley and Half Moon Bay weather stations (data from 1998 through 2022)
- Peak Fire Conditions (most-likely scenario)
- Diablo Winds (extreme fire weather scenario)

Wildfire Risk Assessment – Wildfire Hazard Characterization

What is the likely fire behavior in the burnable landscape?

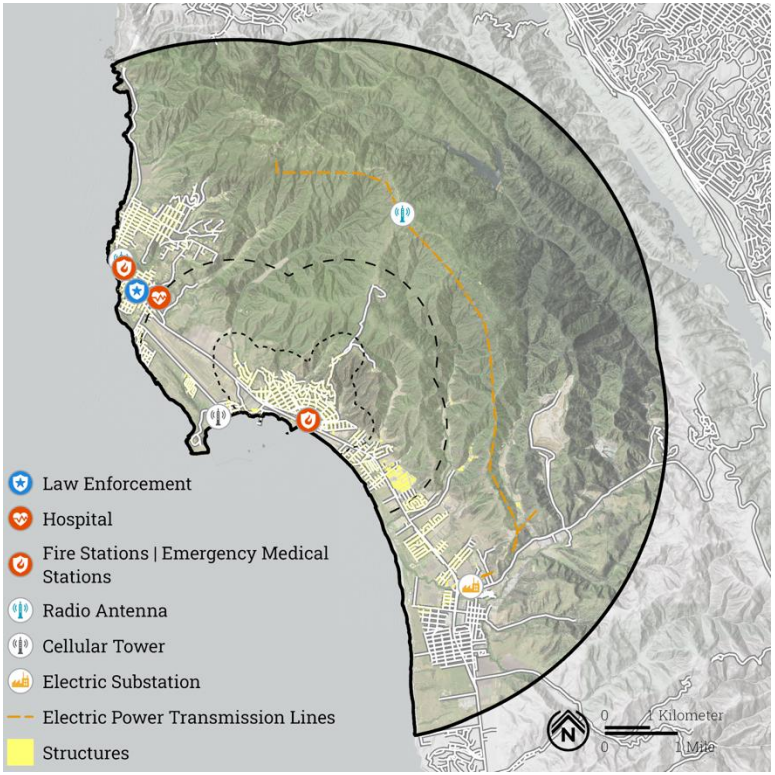
- Computer modeling program that randomly applies ignitions across the burnable landscape
- Allow the simulated fires to burn to identify higher and lower burn probabilities
- Burn probabilities are influenced by vegetation, weather, and topography.
- Modeling effort included 7,500 ignitions across the landscape for each weather scenario (Peak Fire and Diablo Wind conditions)

Wildfire Risk Assessment – HVRA Characterization

What do we want to protect?

1. Identified High Value Resources and Assets (HVRA) within the study area
2. Defined how HVRA would respond to fire

High Value Resources and Assets
Cellular Tower
Radio Antenna
Fire Stations | Emergency Medical Stations
Hospital
Law Enforcement
Structures greater than 500 sq ft
Structures less than 500 sq ft
Electric Substations
Electric Power Transmission Lines
Community Transmission Zone
Community Buffer

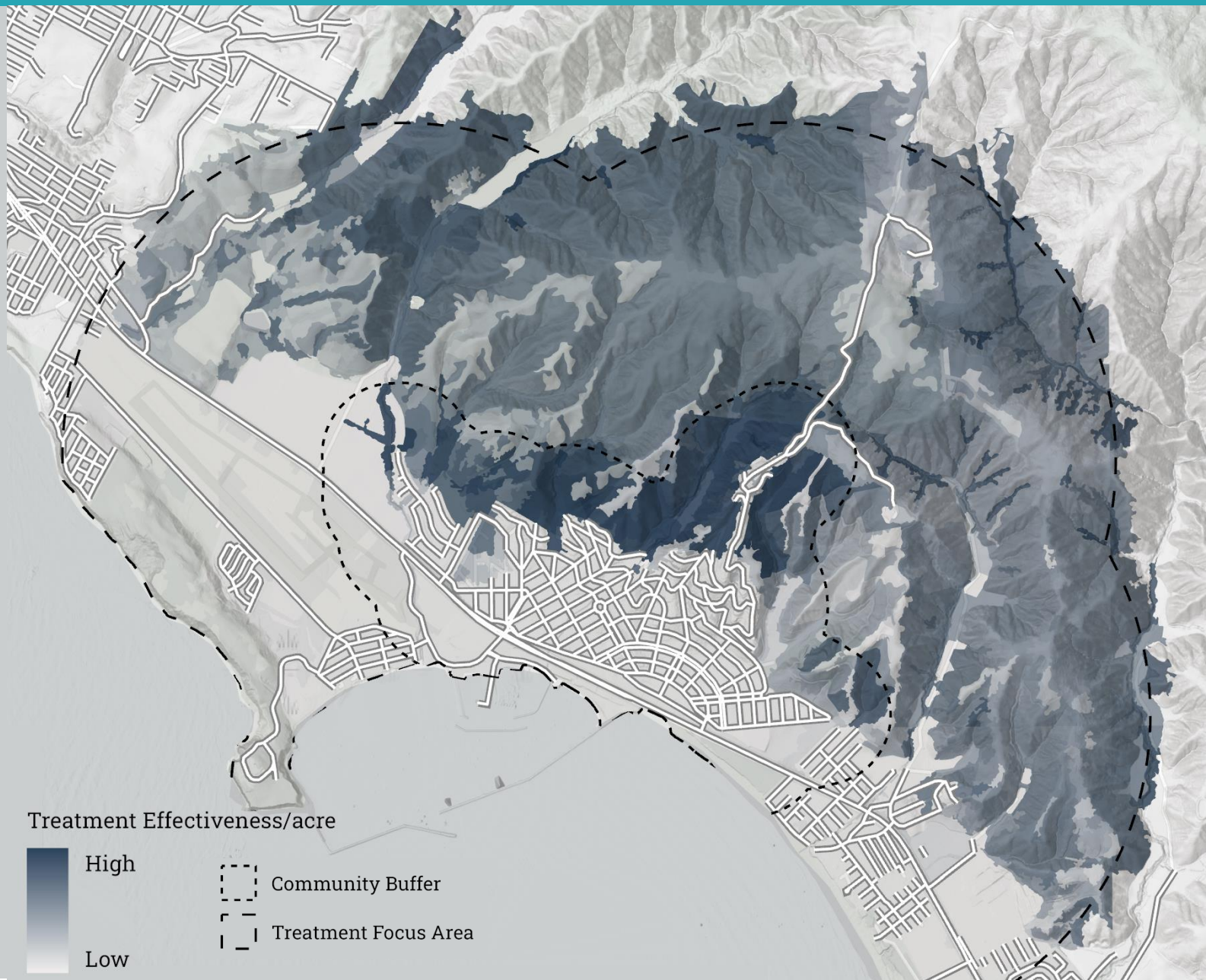


Wildfire Risk Assessment – Risk Analysis/Treatment Effectiveness

Where does wildfire hazard affect HVRAs and where can vegetation treatments be completed to effectively reduce the wildfire risk?

- Identified risk and treatment effectiveness simultaneously
- Apply likely treatments to each segment of the landscape based on topography and vegetation conditions.
- The process results in a quantification of risk reduction in post-treatment conditions ("Treatment Effectiveness")

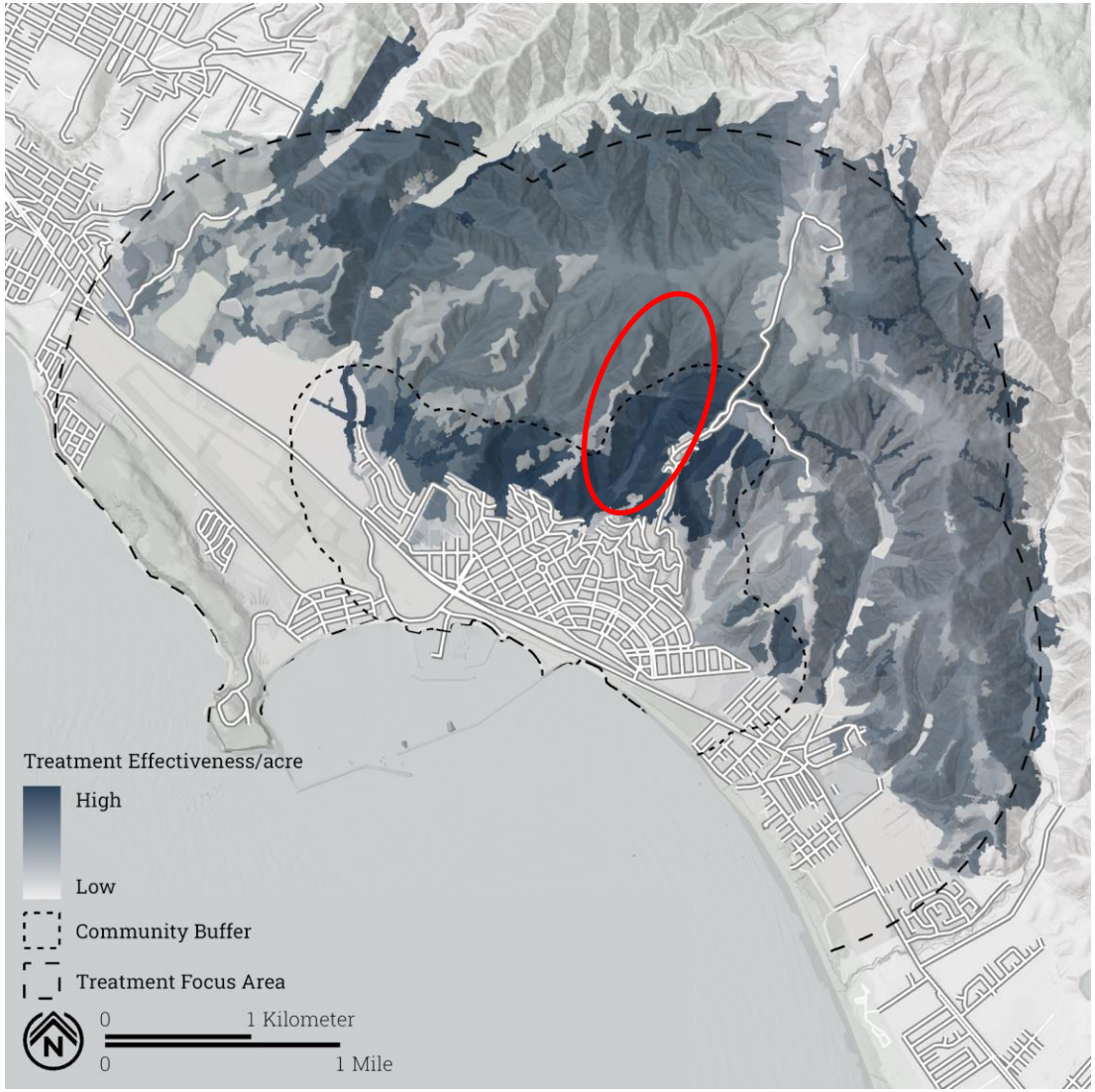
Wildfire Risk Assessment – Risk Analysis



Key Findings

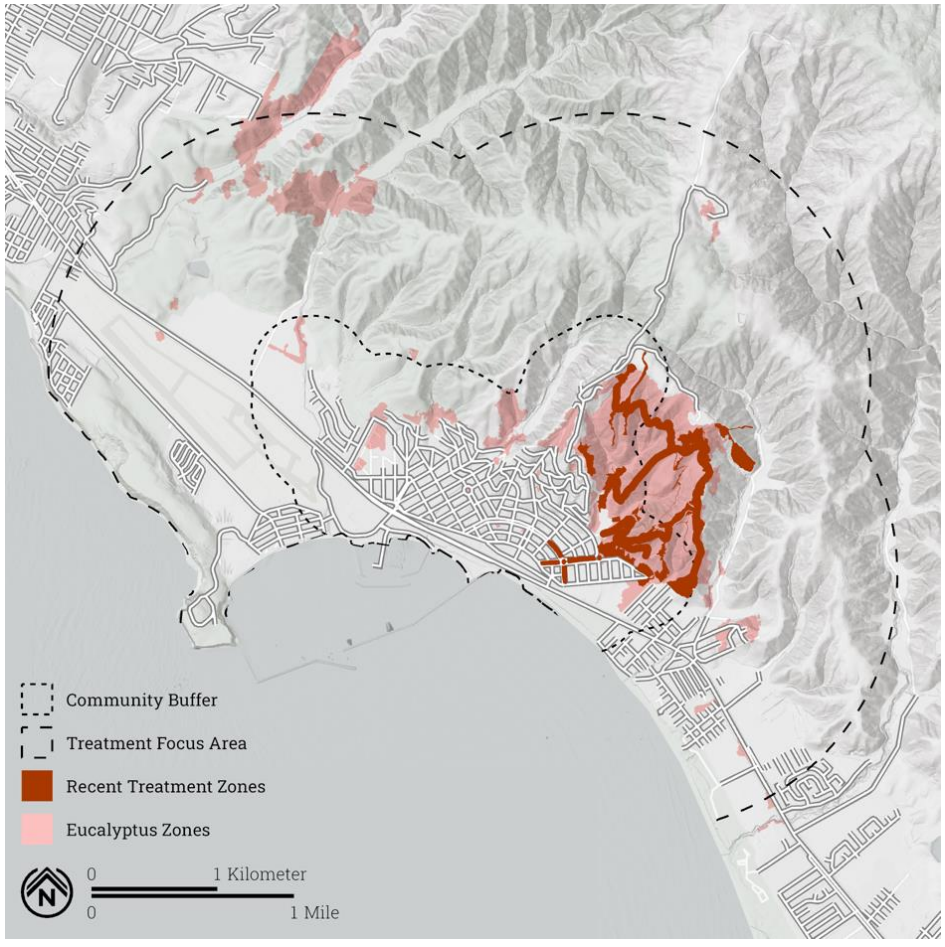
Finding 1: The most significant wildfire risk originates within Deer Creek Drainage

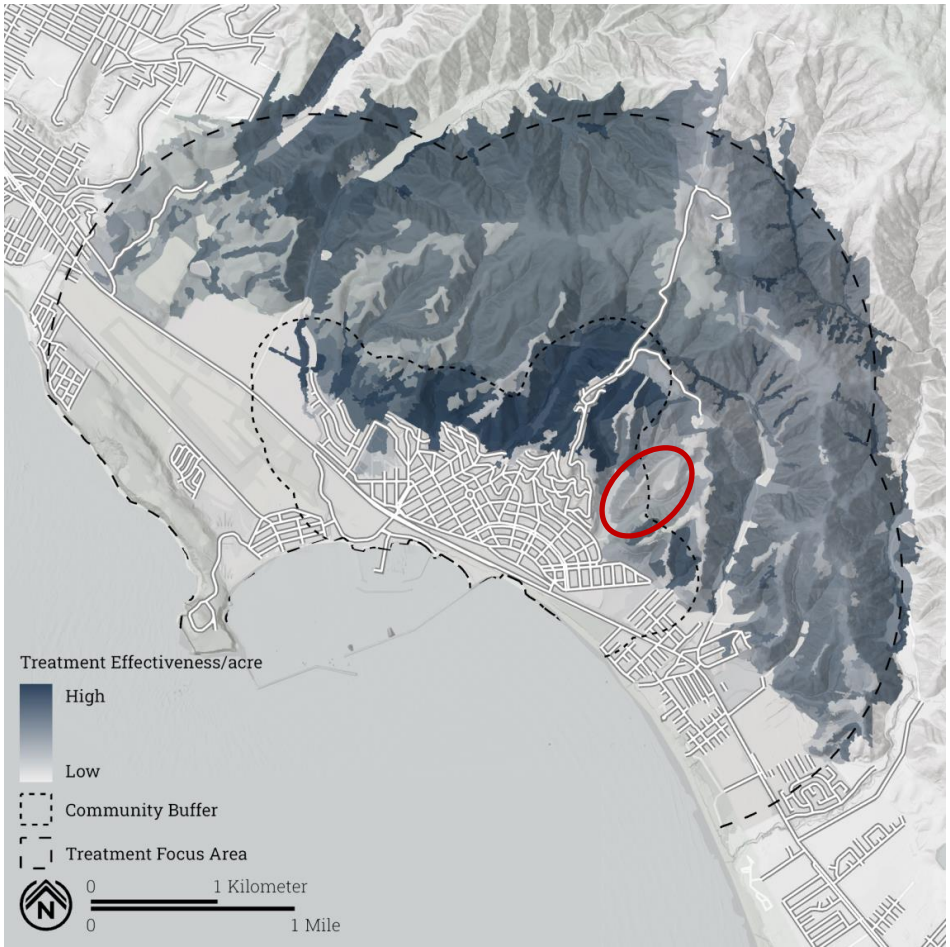
- Dense vegetation often found in drainages
- Drainage lines up with Diablo winds
- Provides direct access to the community



Key Findings

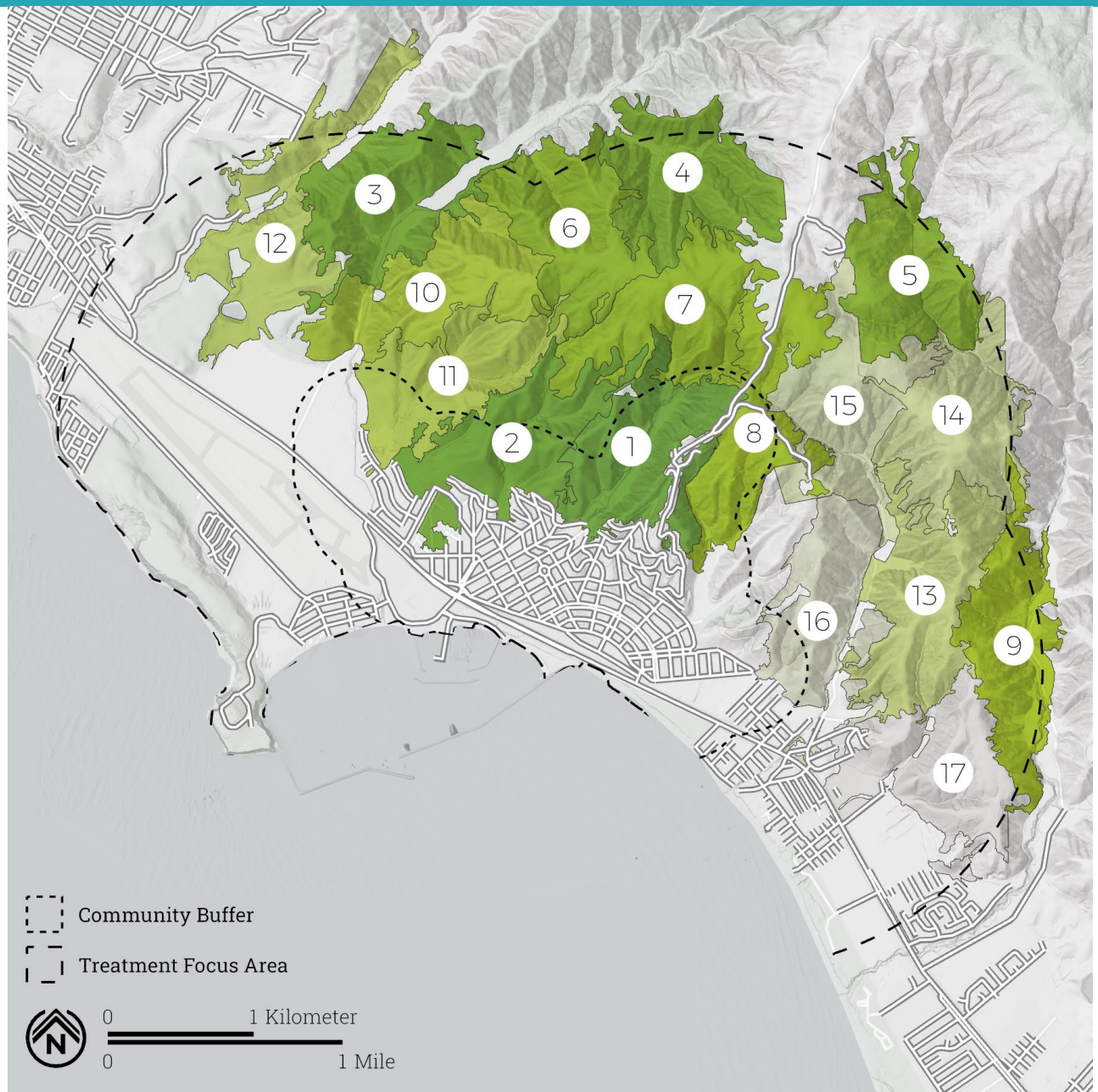
Finding 2: The wildfire hazard within the center of Quarry Park is lower compared to other areas in the study area.





Recommended Actions to Reduce Risk

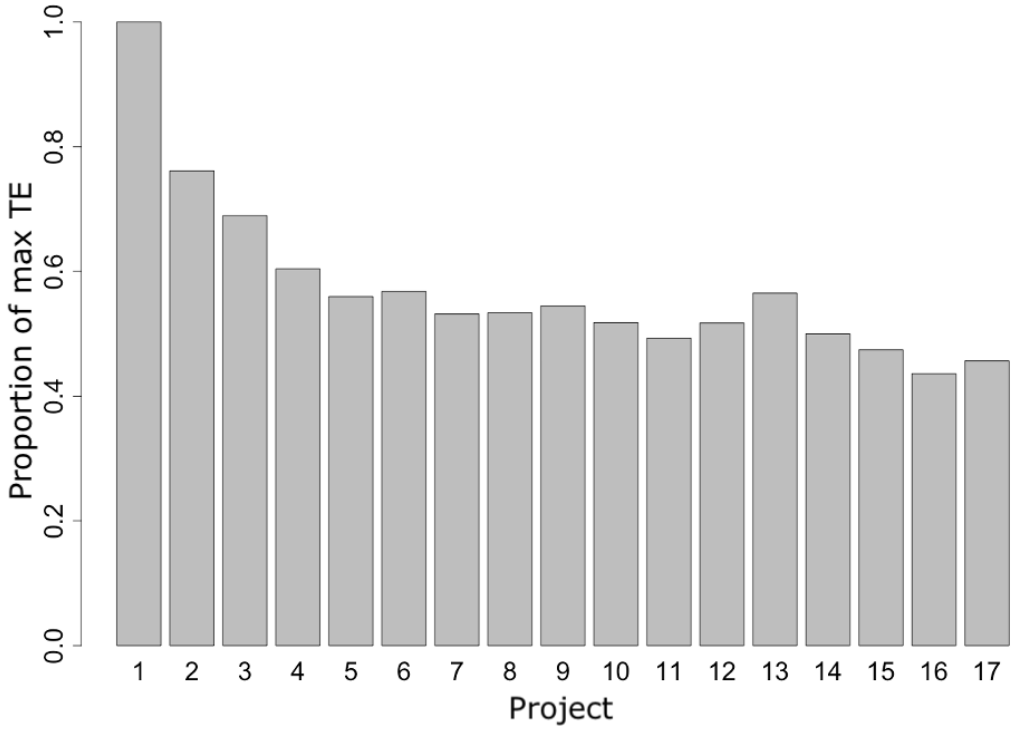
- 17 recommended projects
- Conceptual projects
- Projects were developed to target areas of high treatment effectiveness
- Require ground verification

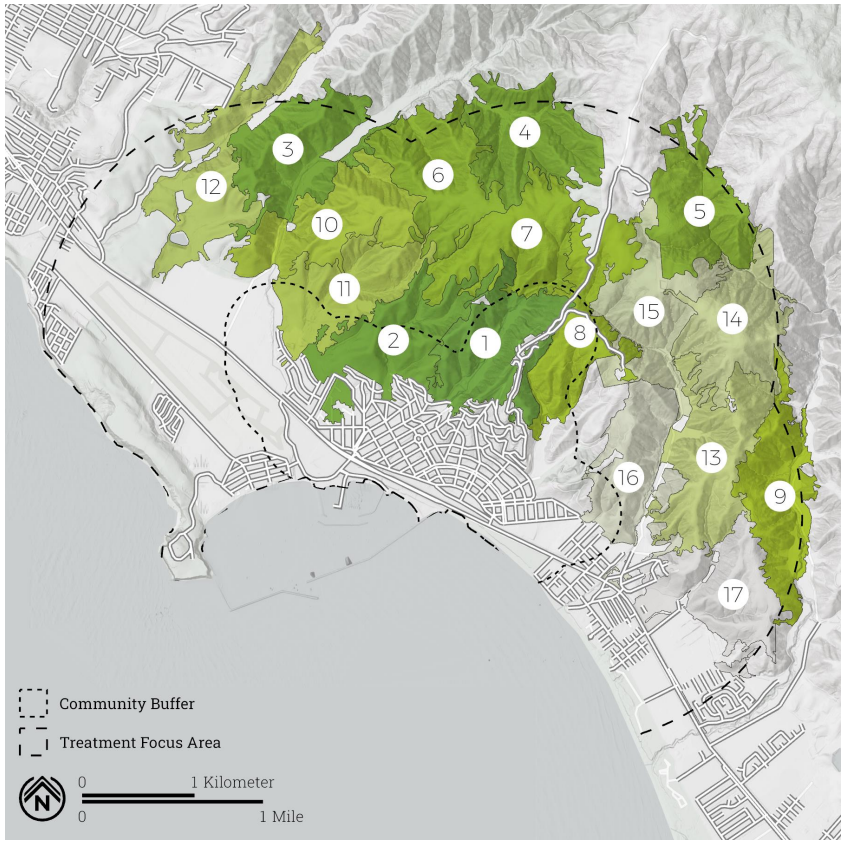


Key Findings

Finding 3: Projects 1, 2 and 3 are significantly more effective than all others.

- Projects 1-3 provide the greatest reduction in risk
- Projects 4 through 17 provide same risk reduction value





Project Implementation

Implementation may result in:

- Revised project boundaries
- Modified treatments
- Avoidance areas based on environmental resources