



EMERGENCY MANAGEMENT

*Evacuation Study
Proposal*



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EXECUTIVE SUMMARY

Washoe County is diverse in its populations, geography, and beauty. The unique experience it offers brings with it visitors, economic growth, and challenges. Washoe County Emergency Management is responsible for identifying, addressing, and helping to overcome obstacles to safety in emergencies. Washoe County Emergency Management would like to conduct an evacuation study in partnership with local departments, state agencies, and subject matter experts. A comprehensive, community-informed, and data-driven approach in analyzing fire behavior, human behavior, traffic management, and infrastructure capacity, will aid the region in developing updated actionable plans that establish a resilient strategy for effective emergency evacuations. The inevitability of disasters in the Washoe region necessitates proactive planning.

Emergency Management

Evacuation Study Proposal

1. INTRODUCTION

Emergency management programs are essential for ensuring the safety and security of communities in the face of disasters and crises. The Washoe County Emergency Management and Homeland Security Program (WCEM) facilitates an active all-hazards integrated program for public safety officials, first responders, public and private regional partners, and volunteer agencies. Our program focuses on prevention, preparedness, mitigation, response, and recovery. It utilizes planning, organization, exercises, training, and equipment to accomplish regional goals and close gaps.

Creation of effective capabilities-based program begins with a multi-year Integrated Preparedness Plan (IPP), which establishes overall exercise program priorities and outlines a multi-year schedule of training and exercise activities designed to address those priorities and validate core capabilities. Ultimately, the program aims to close gaps, strengthen capabilities, and increase resilience.

Base on a multitude of considerations outlined in the IPP, the following are the regional multi-year priorities:

1. Operational Coordination
2. Operational Communication
3. Mass Care Services
4. Community Resilience
5. Fatality Management Services

The costs associated with maintaining and enhancing plans and programs can be significant. In 2021 WCEM began a 5-step process of updating the mass care portion of the Regional Evacuation & Mass Care Plan. Since that time our annual grant funding has been cut 62% leaving WCEM with an annual operational budget of \$27,198.20. This covers one basic plan update, training, or exercise.

The communities within Washoe County have been outspoken in their concerns regarding evacuations. WCEM has spoken with emergency management and evacuation modeling professionals from around the country to determine the best path forward for our communities. We believe an evacuation study similar to one conducted in Nevada County, CA in 2023-2024 is the best option. The cost of the study was \$140,000.

2. METHODOLOGY

The evacuation study will utilize verified data to determine the top 5 geographic areas of evacuation concern in Washoe County. The components of the evacuation study include:

1. **Document Research:** Examine county, regional, and state planning efforts and conduct a literature review to identify evacuation planning best practices.
2. **Stakeholder Interviews:** Engage in in-depth discussions with local emergency services, community leaders, and decision-makers to gain insights into practical evacuation challenges and past experiences.
3. **Field Surveys:** Inspect crucial evacuation routes and critical infrastructure to assess real-world conditions, bottlenecks, and practical evacuation challenges.
4. **Data Analysis:** Conduct extensive data analysis using advanced traffic and fire behavior modeling techniques to comprehend and predict fire spread scenarios and traffic flow.
5. **Emergency Evacuation Traffic Assessment:** Utilize Ladriss evacuation modeling software for dynamic traffic assessment, along with a review of fire behavior studies and stakeholder input to develop comprehensive evacuation outcome improvements.
6. **Human Behavioral Considerations:** Emphasize public awareness, education, and the importance of clear and timely communication to address the critical human behavioral aspects of successful evacuation.
7. **Fire Behavior Analysis:** Conduct a historical and predictive analysis of fire behavior in and around Washoe County, incorporating various climatic and topographic factors to understand and plan for potential wildfire scenarios.

3. PROJECT OBJECTIVES

The evacuation study will utilize verified data to determine the top 5 geographic areas of evacuation concern in Washoe County. The goals of the evacuation study include:

1. **Understand Evacuation Behavior:** To analyze how people behave during evacuation scenarios, including decision-making processes, routes selected, and factors influencing these decisions.
2. **Optimize Evacuation Plans:** To improve evacuation plans and strategies for different types of disasters (e.g., natural disasters like hurricanes and earthquakes, or human-made disasters like industrial accidents and terrorist attacks).
3. **Identify Vulnerable Populations:** To identify groups or individuals who may face challenges during evacuation (e.g., elderly, disabled, children) and develop strategies to ensure their safety.
4. **Assess Infrastructure:** To evaluate the capacity of infrastructure (roads, shelters, transportation systems) to handle evacuations and identify potential bottlenecks or improvements.
5. **Predict Evacuation Times:** To estimate evacuation times and understand how they may vary based on different scenarios or conditions.
6. **Improving Response Coordination:** To enhance coordination among emergency responders, government agencies, and the public to facilitate a swift and organized evacuation process.
7. **Mitigate Risks:** To mitigate risks associated with evacuation, such as traffic congestion, accidents, and delays in accessing essential services.
8. **Enhance Public Awareness, Preparedness, and Education:** To raise public awareness about evacuation procedures, routes, and safety measures through education and outreach efforts.
9. **Learn from Past Events:** To learn from past evacuation experiences and incorporate lessons learned into future planning and response efforts.

Overall, the goal of a disaster evacuation study is to ensure the safety and well-being of individuals and communities by improving preparedness, response, and recovery capabilities in the face of emergencies.

4. PROJECT BENEFITS

WCEM believes there are incredible benefits to conducting this study and they should be highlighted. These benefits include but are not limited to the following:

1. Vendor

- a. A third party vendor is one that is vetted and selected by the established Request for Proposals methodology. Representatives from regional agencies rank and select the vendor.
- b. The chosen vendor is a neutral third party with a background and experience in conducting a study and providing a report with recommendations upon the conclusion.
- c. The vendor is able to dedicate resources to analyze verified data sources.
- d. The public often trusts a neutral third party over government. Our goal is to build public trust in regards to evacuations.

2. Study

- a. Provides the public an opportunity to have their voices heard.
- b. Analyzes road capabilities, human behavior, infrastructure, etc. to identify obstacles to a safe evacuation.
- c. Provides recommendations to improve evacuation efforts.
- d. Identifies top 5 geographic areas of concern in the region based on data.

3. Outcomes

- a. If Emergency Management and our partners are aware of the challenges we face, then we can work towards overcoming them.
- b. Updated information and situational awareness can aid first responders and senior leadership in more efficient and effective decision-making.
- c. Emergency Management can update the evacuation plan to accurately reflect populations and population swells at specific times of the year.
- d. Mitigation funding and efforts can be directed to projects in a more appropriate and focused manner

4. Cost Savings

- a. Investing in an evacuation study will streamline funding for resources before, during, and after a disaster.
- b. For every \$1 spent on mitigation, \$6 is saved on response and recovery.

5. BUDGET

The Washoe County Emergency Management Program spoke with multiple vendors and jurisdictions regarding cost and service provision. Based on those conversations WCEM was able to determine the budget listed below.

The total cost of the year-long study is **\$142,000**. The breakdown is as follows:

- Ladris – Evacuation Modeling Software
 - \$21,840
 - Includes a public facing page where the user can plan their evacuation
- Vendor – Conduct an evacuation study and provide a report with recommendations for improvements
 - \$120,160