

Project

Haley & Aldrich helps California rail partners understand and manage wildfire risk

Summary

- Haley & Aldrich delivered a repeatable way to assess wildfire risk to rail operations in California.
- We combined wildfire, climate, vegetation, terrain, and infrastructure information to create tools that railroads can use to evaluate risk.
- These tools aid planning and provide a framework for assessing risk in other regions.

Client challenge

Many communities and businesses depend on rail transportation to supply goods and move people safely and efficiently. But wildfires have become larger and more frequent, and they pose an increasing threat to rail service, infrastructure, and safety.

This threat is particularly high in California. The Federal Emergency Management Agency-funded National Disaster Preparedness Training Center wanted a repeatable way to assess wildfire risk to rail infrastructure and operations in California, with the potential for broader use across the western United States.

The center relied on Haley & Aldrich to develop this assessment tool given our wildfire expertise and integrated approach to risk assessment, emergency planning, and climate science.

Our approach

The Federal Highway Administration has defined a risk-based vulnerability framework that helps transportation agencies analyze how natural disasters such as wildfires impact roads, bridges, and other infrastructure. Haley & Aldrich adapted this framework to address the distinct challenges that wildfires present to rail systems.

Our team combined wildfire, climate, vegetation, terrain, and infrastructure information to evaluate exposure, potential consequences, and the ability of rail systems to withstand and recover from wildfire events. We translated our findings into a vulnerability assessment framework and a web-based mapping portal that enable rail operators, as well as state and local partners in California, to compare rail corridor conditions and identify higher-risk locations, which can in turn help them plan and implement mitigation measures.

Value delivered

- Delivered tools that enable rail partners in California to identify higher-risk railway locations
- Enable railroads to identify and prioritize asset improvements, vegetation management, operating plans, and emergency preparedness
- Created a framework that can be used in other regions to better understand wildfire risk



Daniele Spirandelli

Senior Associate, Climate Resilience Specialist



David Rother

Technical Specialist, Geoscientist