

Tree Mortality Crisis: Protecting County Infrastructure

OVERVIEW

Mariposa County's innovative approach to the tree mortality crisis utilized available state funding to safely mitigate public risk, with minimal County resources.

CHALLENGE

Several years of drought, exacerbated by a dense, overgrown forest, and a bumper crop of pine beetles, created a lethal chain of events that resulted in a massive die-off of Ponderosa Pine trees. Mariposa is at the epicenter of this Tree Mortality Crisis. The County's challenges were to protect County roads and other infrastructure by removing hazard trees, while at the same time minimize long-term collateral damage to roads and drainage structures ...all with limited County resources.

SOLUTION

In 2017, Mariposa County hired a private Tree Mortality Operations Consultant, Blue Ridge Services (BRS) to perform this work. Together, the County and BRS developed a comprehensive system for mitigating high-risk hazard trees.

INNOVATION

This comprehensive system for mitigating Tree Mortality began with an aggressive program of public outreach that included public meetings, community-wide video presentations, Facebook, pages on County and Consultant's websites, and a project update column in the local newspaper.

Before the actual work started, a risk matrix was developed to prioritize projects. For example, higher priority was given to roads that offered only 1-way ingress/egress for emergency vehicles, and for roads with higher traffic loading or denser concentration of hazard trees. This established an objective, logical, risk-based approach for scheduling individual projects.

BRS pre-qualified a pool of potential tree removal contractors through an RFQ process that was based on experience, capabilities, insurance, and safety. This allowed individual projects to be bid and awarded quickly.

County's contractor, BRS, maintains a full-time safety officer on-site, during all tree removal operations. BRS safety officers utilized GPS/GIS tablets for daily logs, incidents, photographs and related activities on literally a tree-by-tree basis.

The multi-step process for hazard tree removal was automated and based on an integrated platform of GIS and GPS. Main project steps included: conducting a preliminary (rough count) of hazard trees, identifying individual land owners, obtaining

signed Right-of-Entry (ROE) forms, marking thousands of individual trees with paint and logging them into a digital GPS/GIS database, grouping trees into manageable projects (that could be completed within 1-month to allow better billing and cashflow management), felling and removing trees, working with County Emergency Services staff and Cal OES staff to facilitate reimbursement to County.

In addition to actually performing this work, the County and BRS worked together to create a dynamic cash flow model. This critical management tool provided control for dozens of individual projects, while managing key financial components. These helped identify and maintain an acceptable ceiling on Mariposa County's out-of-pocket funding (the County bankrolled the projects and paid BRS and the tree subcontractors monthly, while in turn, waiting for reimbursement from CalOES and Local Assistance for Tree Mortality (LATM) funding through Cal Fire). This cash flow model also tracked market trends in regard to subcontractor's price-per-tree for felling and removal, and then using this pricing data to adjust monthly cashflow projections. Perhaps most importantly, this cashflow model helped ensure that Mariposa County maximized their use of LATM and CalOES reimbursements for this project.

RESULTS

Recent (5/31/2019) data indicate that of the 10 foothill counties that were eligible for LATM reimbursement, Mariposa County most fully utilized those state funds. Using this particular system of project management, Mariposa County currently expects to perform \$5,500,000 in hazard tree mitigation, with a final out-of-pocket cost of less than \$124,000.

REPLICABILITY

Many of the systems developed and used in this project can be replicated for use on other disaster mitigation projects. For example, BRS is currently providing similar Tree Mortality mitigation services for Madera County.

PROJECT OR PROGRAM CONTACT

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OPTIONAL SUBMISSION

Public education and outreach were an integral part of this project. Several videos, articles, and public presentations were offered across several media platform. See accompanying thumb drive.