

FEMA



# Best practices

Disaster Mitigation Working in Oregon

Springfield



## Electric Power Loss Mitigation: Invest in the Weak Links

*Hazard mitigation is about taking action before the next disaster to reduce human and financial consequences later.*



**Springfield, Oregon** - The Emerald Circuit is a vital part of an electrical power transmission system that connects three Springfield-area substations to hundreds of homes, businesses, a shopping center, schools, a fire station, traffic signals and two water reservoirs.

Sections of the overhead line run through an area with numerous trees, making damage to the system almost inevitable when severe storms bring high wind, wet snow or freezing rain. A mitigation measure for one segment of circuit was implemented in 2002, when a particularly damage-prone 2,700-foot section of the overhead system

### Overhead to underground power transmission project

was removed and replaced with wires installed in underground conduit and waterproof vaults.

The Springfield Utility Board worked closely with the Oregon Office of Emergency Management and the Federal Emergency Management Agency (FEMA) to secure Hazard Mitigation Grant Program (HMGP) funding to enable the \$163,642 investment in greater system reliability.

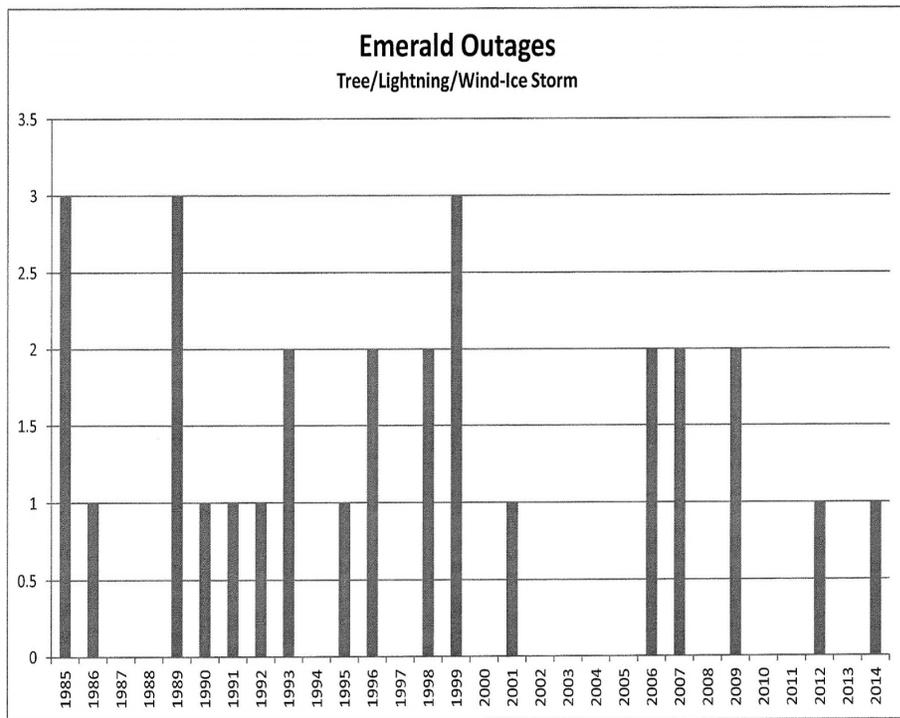
The HMGP funding required that costs, benefits and alternatives were carefully analyzed to ensure

the project was cost-effective and appropriate. The area's rugged and steeply sloping landscape meant that the estimated cost of replacing damaged poles and lines for the section was to be \$144,000 to \$180,000. Access issues added additional expenses and delay when past repairs were needed. Potential threats to public health and safety from a power outage, along with extremely high costs to utility customers, were also significant factors in the calculation of project benefits and losses that could be avoided.

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The 12 years since project completion have brought significant reduction of documented damage to the Emerald Circuit (*see chart on right*). During this period, the Springfield Utility Board made various investments in equipment upgrades as well as two additional “undergrounding” projects.

Severe winter storms still cause occasional power outages along another section of the Emerald line. This residual “weak link” in the system is a vulnerable 1,450-foot stretch of overhead transmission line adjacent to the earlier project and similarly accessible only on foot or with track equipment. A pre-application for HMGP funding to help pay for the undergrounding of this troublesome section is currently under review.



Power transmission easement bordered by 40-to 80-foot trees

**The Federal Emergency Management Agency (FEMA), along with its state partners, administers the Hazard Mitigation Grant Program (HMGP) to assist states and local communities in implementing long-term hazard mitigation measures following a major disaster declaration.**

**Following 2012’s Hurricane Sandy, the *Sandy Recovery Improvement Act* helped bring about a more streamlined HMGP process with an emphasis on more timely selection and implementation of projects.**

**State and local Hazard Mitigation Plans that are up to date and approved are critical to establishing eligibility and priorities in the selection of projects.**