Project Title: Community Resilience Extreme Event Portal (CREEP)

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Overall Project Goal:

The primary goal is to create a portal for enhanced alert and warning capabilities and decision-support tools to reduce fatalities and injuries, economic losses, and disruptions from extreme natural hazard events. Other goals include research and development, technology transfer, education programs to support workforce development, and improved economic opportunity. The decision support platform for hazards, DisasterAWARE®, will be used to develop CREEP.

Key Project Tasks/Approach/Objectives:

CREEP focuses on "creeping" slow-onset hazards that can result in sudden-onset failures. In addition to extreme natural hazard stressors, deferred maintenance and inadequate investment in human capital threaten the safety of transportation systems. The project has three phases, focusing on data analytics, modeling extreme natural hazard impacts, evaluating countermeasures designed to save lives, reduce economic loss, and minimize disruption, and prioritizing education, training, and workforce development.
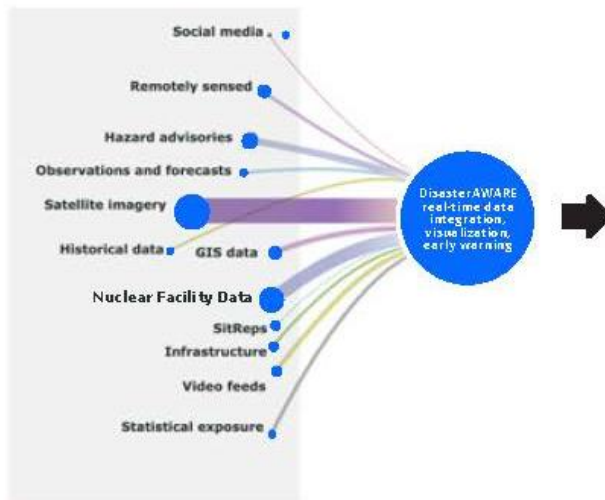
Project Outcomes/Benefits:

The Portal will provide the Federal Railroad Administration, rail industry, and other stakeholders with a practical tool to mitigate natural hazard risk and improve safety and security.

Phase 1	Phase 2	Phase 3
➢ Assess the needs, capabilities, and gaps within the rail transportation industry. ➢ Conduct stocktaking of existing data, models, research, risk reduction strategies, stakeholders, and other resources on extreme natural hazard risk and transportation. ➢ Identify/prioritize wildfire and risks affecting the industry, including operations, emergency response, and recovery.	➢ Pilot network analyses to identify high-risk regions for wildfire resilience projects. ➢ Evaluate costs/benefits of alternative resilience investments. ➢ Prototype and test various wildfire risk and burn probability models and implement within the CREEP for decision support. ➢ Engage rail stakeholders.	➢ Translate tools/findings into risk reduction and WFD. ➢ Design training course centered around the results of the project, and the use of the CREEP (DisasterAware) portal. ➢ Produce publications, presentations, and outreach videos to reach stakeholders

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Advanced alerting technology to protect nuclear facilities from natural hazard risks

How it works

1 Real-time multi-hazard data integration via DisasterAWARE

- Social media
- Remotely sensed
- Hazard advisories
- Observations and forecasts
- Satellite imagery
- Historical data
- GIS data
- Nuclear Facility Data
- SitReps
- Infrastructure
- Video feeds
- Statistical exposure

DisasterAWARE real-time data integration, visualization, early warning

2 Automated hazard creation, notification, and impact assessment

3 Event Notification Reports Distributed

Earthquake - 7.3 - 57 km ENE of Namie, Japan

Nuclear installations are simulated for testing purpose only.

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Natural Hazards Covered

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Phase 1   Phase 2   Phase 3