

# Economic Modeling and Emergency Management



## Why is Economic Modeling an Important Step for Emergency Management?

Regional economic modeling gives planners and responders valuable information about economic relationships in a given area. Understanding how local economies operate is crucial in developing more resilient regions and more effective recovery plans. There are many competing priorities within state and federal budgets and it is becoming more and more critical to ensure every dollar is being used effectively.

REMI Results:

- Jobs
- GDP
- Imports & Exports
- Demographic Changes
- Migration
- Fiscal impacts

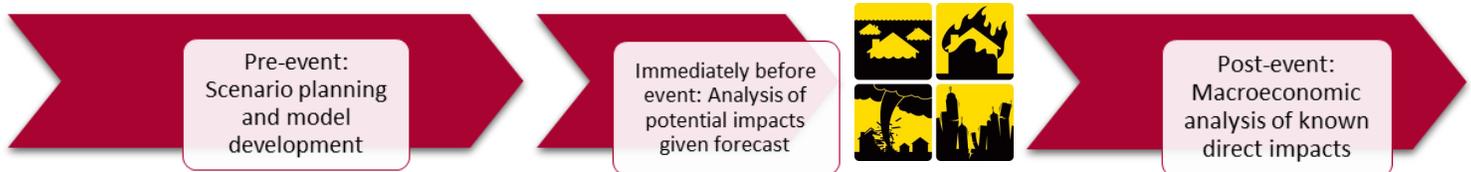


## About REMI

For over 35 years, REMI has been the leading provider to state, local, and federal governments on dynamic economic impact analysis. Because of an increase in threats and unforeseen events such as terrorism and natural disasters, it is crucial to implement strategies to limit the extent of damage when disaster strikes. Optimal strategies must be devised for before, during, and after scenarios to minimize loss and to maximize economic resilience and prosperity.

REMI's model analyzes the extent of economic impacts for a given scenario and how developments in critical infrastructure can enhance preparation before, during, and after disaster strikes. Enhancing planning and safety improvements to critical infrastructure such as transportation, communication, commerce, and government decreases the severity of negative unforeseen events.

## Emergency Event and Economic Modeling Timeline



- Preventative strategies and mitigation options are developed to minimize the probability and severity of the disaster. Model is used to simulate the potential macroeconomic impacts and economic benefits of mitigation resiliency strategies.
- The US Army Corps of Engineers used the REMI model to estimate that an unexpected closure of the Poe Lock connecting two of the Great Lakes along a vital point in the steel supply chain would cause 75% of US steel production to cease within 2-6 weeks as well as impose large costs to the entire US economy.

- If information is known immediately before disaster and modeling capability is set up properly, economic modeling tools can simulate potential impact given projected disruption.
- Pre-Landfall Hurricane Katrina, an economic impact analysis was conducted by NISAC at Sandia National Labs, using REMI and the information available at the time to examine the long-term effects of the hurricane on population, housing, output, and the specific sectors.



- Evaluations made after a disaster to prioritize investment and repair of strategic infrastructure. Helping to return the region's economic strength as quickly as possible.
- After a bridge collapse in Minnesota in 2007, the REMI model was used to determine that the loss of GDP resulting from longer commuter times was larger than the increased cost to build a new bridge sooner, resulting in lawmakers deciding to build a new bridge sooner, saving the state millions in GDP.

