



IUPUI

Innovative Solutions for Disaster Resilient Communities



“When agencies share data, lives are saved and public offices become more efficient.” — David Vice, Former Executive Director of the Indiana Integrated Public Safety Commission



Effective and efficient disaster preparedness and response requires getting the right information to the right people at the right time, using a platform suited to the unique needs of particular communities, and drawing on integrative and collaborative efforts from many disciplines.

Who We Are

The Polis Center is an applied research unit at IUPUI committed to linking university and community knowledge to address issues of mutual concern. We are multidisciplinary, community-oriented, entrepreneurial, and creative in our approach to problem-solving. By combining data and information technologies, we support research and analysis for better decision-making and help improve policy for the greater good of communities locally and nationally. We work in close collaboration with communities to produce actionable information, build capacity, and respond meaningfully to change.

What We Do

The Polis Center performs an important function in assessing different types of vulnerabilities and needs for local, state, tribal and federal government, private sector and nonprofits. We support community efforts to prevent or reduce losses from natural disasters by combining place-based analysis, geospatial modeling, and outreach activities in the areas of preparedness, mitigation, response, and recovery. We design and develop information systems through which to explore the interconnectedness of people, places, infrastructure, and events. We also assess the physical, social, and economic impacts of hazards.

How We Do it

We also leverage our expertise through partnerships that multiply the value of what we offer. Our resources include a community research infrastructure, staff, technical skills, extensive project and project management experience, and a long record of attracting external funding. Geospatial technologies, especially GIS, are our preferred tools because of their unique ability to integrate and visualize information by location.

Our Approach to Meeting Resiliency Needs

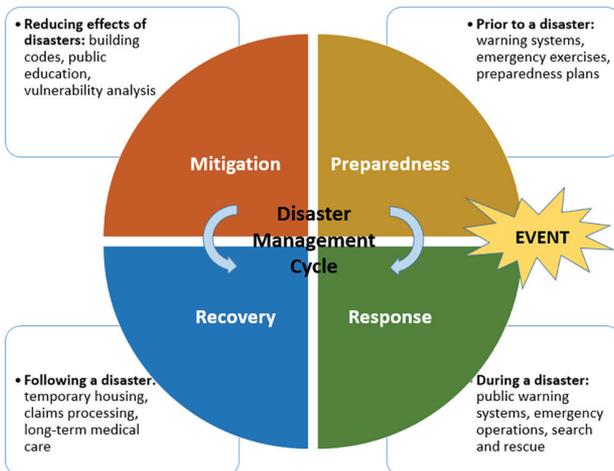
- » *Emergency Preparedness & Mitigation.* We work with local communities to enhance their capacity to interpret and transform knowledge into effective disaster planning for all natural hazards.
- » *Response & Recovery.* An up-to-date mitigation plan supports the ability of communities to rapidly respond and recover from disasters. We help communities develop effective plans and to search for potential funding sources.
- » *Building Disaster Resilient Communities.* We work with partners to plan and implement more resilient infrastructure to withstand future disasters.
- » *Training & Education.* We develop and support training and education in the tools and methods used in disaster risk assessment and mitigation planning. We have offered workshops, presentations and courses in over 100 cities in 35 states and 10 countries.

Mitigation benefit by hazard and mitigation measure

National Benefit-Cost Ratio Per Peril <small>*BCR numbers in this study have been rounded</small>		Federally Funded	Beyond Code Requirements
Overall Hazard Benefit-Cost Ratio		6:1	4:1
 Riverine Flood		7:1	5:1
 Hurricane Surge		Too few grants	7:1
 Wind		5:1	5:1
 Earthquake		3:1	4:1
 Wildland-Urban Interface Fire		3:1	4:1

Hazard mitigation planning

The Federal Disaster Mitigation Act of 2000 requires states and communities to develop and maintain a multi-hazard mitigation plan to remain eligible for certain federal disaster assistance and hazard mitigation funding programs. We have long experience in helping to produce these plans, with over 300 FEMA-approved multi-hazard mitigation plans to our credit. Our mitigation plans incorporate geospatial analysis and modeling to address hazard-related issues in economic development, emergency management, and land use planning.





Key Initiatives

State and Federal Government Disaster Informatics

- » *The Polis Center is a Cooperating Technical Partner (CTP) with FEMA, thereby allowing us to collaborate with it, regional, state and tribal agencies, and others to maintain up-to-date flood hazard maps and other flood hazard information. Under this program, we work closely with the Indiana Department of Natural Resources (IDNR) to update Indiana's flood hazard maps and data.*

- » *Risk MAP. We have a decade-long partnership with the Indiana Department of Natural Resources (IDNR) to expand the geographic extent of the FEMA's Risk MAP program, which is aimed at assisting local communities with their mitigation efforts.*

- » *State of Indiana Hazard Mitigation Plan. We worked with the Indiana Department of Homeland Security (IDHS) to develop the 2019 State Hazard Mitigation Plan. The plan outlines the natural hazard risks faced by the state's citizens, infrastructure, and economy, as well as opportunities for making communities resilient to those risks. The Indiana Geographic Information Council recognized this work in 2019 with a Special Achievement in GIS for creating "an outstanding information resource." We also work in partnership with many Indiana counties to prepare local mitigation plans.*

- » *The National Institute of Building Sciences. We played a significant role in developing the 2017 Natural Hazard Mitigation Saves Study. We were the lead investigators on the riverine flood*

hazard. The study identified an overall average 6:1 cost effectiveness of federal mitigation grant programs, as well as an average overall 4:1 benefit for exceeding building code requirements.

» *Georgia Department of Resources.* We have done much data development, collaboration, and research with the State of Georgia on how changing climate will affect its coastal communities. In collaboration with the Space Science and Engineering Center at the University of Wisconsin, we developed a detailed inventory of buildings and conducted sophisticated modeling of current and future climate conditions that analyzed 118 different scenarios to assess coastal and riverine flood hazards as well as impact from hurricane winds. The study also assessed the benefits that green infrastructure might have on reducing those impacts.

» *South Carolina Division of Emergency Management.* We developed an open source multi-hazard mitigation platform that provides interactive maps and spatial data to support mitigation planning. The platform includes tools to post and track local mitigation plans and a dashboard that provides automated maps, charts, tables, and more.

» *The Association of State Floodplain Managers (ASFPM).* We worked with the University of Wisconsin Space Science and Engineering Center to develop a Flood Recovery Index identifying at-risk populations that have a higher likelihood for longer recovery times after a flood disaster. The study was one component of a project conducted by the ASFPM to develop a capital improvement planning strategy for Toledo, OH.



How can we partner with you?
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