

Reducing New Orleans Storm-Surge Flood Risk in an Uncertain Future

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As the city of New Orleans recovers from the devastating hurricanes in 2005, government officials and individuals will continue to seek ways to reduce their risk to future hurricane storm surge beyond advocating for more storm-surge barriers. Climate change and other uncertain factors make it difficult (1) to predict future storm surge risk to New Orleans, (2) assess the benefits of locally-managed risk mitigation programs, and (3) effectively communicate the benefits and tradeoffs of different mitigation programs to the businesses and individuals that may choose to participate in them.

This research project will develop new approaches for incorporating state-of-the-art physical and social science information into city risk-mitigation planning. We will work with the New Orleans Office of Homeland Security (OHS) to implement hurricane risk reduction programs and communicate hurricane risk information and mitigation options to New Orleans' businesses and residents. This project will increase our understanding of how to inform decision making under uncertainty and will provide tangible and substantial assistance to the OHS.

This project is comprised of three interrelated activities:

- (1) Modeling of storm surge risk to New Orleans at the neighborhood level under a wide array of state- and city-supported locally-managed risk mitigation programs
- (2) Developing the decision-support information and tools needed by the New Orleans OHS to ensure that their risk mitigation programs achieve the desired goals
- (3) Improving ways to communicate hurricane risk information to the public to support individual choices regarding the participation in government-supported risk mitigation measures.

The project team seeks to work directly with the Office of Homeland Security Hazard Mitigation branch as well as other city offices to understand the risk mitigation options available to New Orleans and identify the information to best support their objectives. The project will also

engage the public through interviews and workshops to understand the public perception of storm-surge flood risk to provide recommendations for conveying information about risk mitigation programs.

This research project is designed to address the three key overarching goals of the NOAA Sectoral Applications Research Program (SARP). Specifically, the hurricane risk modeling work will develop new science-based knowledge regarding the vulnerability of the New Orleans region to future hurricane and climate change risk and specifically identify adaptation strategies that reduce these risks. Next, the project will develop and evaluate new decision support tools that utilize the newly created risk and climate information. Finally, the project will work directly with stakeholders which will usefully “contribute to the development of an increasingly effective and relevant climate research and decision support effort.”