

**BERKE, TAMU**  
**DHS Coastal Resilience Center**  
**Research Project Work Plan**  
**1/1/2016 – 12/31/2017**

1. **Project Title.** Local Planning Networks and Neighborhood Vulnerability Indicators
2. **Principal Investigator.** Philip Berke
3. **Other Research Participants/Partners.**
  - Jennifer Horney, Associate Professor, Texas A&M, will advise on indicator development for this project, and as principal investigator of the Coastal Resiliency Center-supported disaster recovery project will coordinate with the PI on potential joint opportunities for research and engagement.
  - Galen Newman, Assistant Professor, Texas A&M; Supervise digital mapping, visualization.
  - Walter Peacock, Professor, Texas A&M; Develop indicators, analysis of indicator data, report research; Texas Target Communities (engagement coordinator), Texas A&M University; lead and supervise all end user engagement activities.

4. **Short Project Description.**

A primary objective of the research is to develop a tool and user guidelines to assist local planners and emergency managers to integrate disaster risk into planning in all relevant sectors of urban development. Failure to coordinate networks of plans can significantly compound the growing risks to disaster events. Development and validation of the tool requires testing the tool in an assessment of how well networks of local plans (land use, hazard mitigation, economic development, transportation) integrate mitigation practices that govern land use and development in hazard areas.

5. **Abstract.**

Problem. Fragmentation and poor integration among the diverse range of sectors of planning has led to siloes in which mitigation planning is isolated from other planning. Hazard mitigation specialists have long been concerned about the implications of lack of integration of mitigation across local planning sectors, which can significantly compound future risks. Failure to coordinate integration of multiple planning activities that govern land use in hazard areas has become a national policy concern. This was acknowledged by the Federal Emergency Management Agency director Craig Fugate's call for more integration of hazard mitigation efforts into all types of local planning and more cooperation between emergency managers and planners (see, Fugate, W. C. 2010 "Integrating Hazards into Local Planning," Foreword to Hazard Mitigation: Integrating Best Practices into Planning, James Schwab, editor, Planning Advisory Service Report 560, American Planning Association, Chicago, IL, 2010: iii-iv).

Methods. We will initially review the literature in hazard mitigation planning to identify how mitigation can be supported through different types of local planning activities (economic development, land use, capital improvement programs, environment) that influence land use and development patterns in hazard areas. We then develop a conceptual framework to guide

the creation of two sets of geospatial indicators that measure the spatial variation of a community's social and physical vulnerability and how well a local network of plans are aimed at vulnerability reduction. Next, we apply the indicators to a set of six demonstration coastal communities to test the applicability of the framework in determining how well the network of local plans support mitigation, and how well they are spatially correlated with variation in local vulnerability to coastal floods and projected sea level rise.

### Deliverables

- Publications in peer reviewed journals.
- Research summary (2-3 pages) for each publication to be targeted to broad audience of end users.
- Conference presentations and webinars.
- End-user communities engaged.
- A plan integration assessment tool.
- Update of mitigationguide.org website to include plan integration assessment tool, and examples of application of the tool in local jurisdictions.
- Explore incorporating findings into update of APA guide on Integrating Mitigation and Comprehensive Planning-Check with Kathy Smith