HORNEY, TEXAS A&M

DHS Coastal Resilience Center

Research Project:

Annual Project Performance Report

Covers reporting period January 1, 2016 – June 30, 2016

1. **Project Title:** Implementing the Disaster Recovery Tracking Tool

2. **Principal Investigator / Institution:** Jennifer Horney, Associate Professor, Texas A&M University Health Science Center School of Public Health, Department of Epidemiology and Biostatistics

3. **Other Research Participants/Partners:** Phil Berke, Professor, Texas A&M University, College of Architecture, Department of Landscape Architecture and Urban Planning

4. **Short Project Description:**

   Long-term, coordinated, systematically collected, and shared data on recovery is needed to effectively improve community resilience to future disasters. Tools are needed that can be used to measure disaster recovery at the local, regional, and state level so that best practices can be adopted. Valid and reliable quantitative and qualitative measures of community disaster recovery are needed in order to be able to track recovery in different geographic locations, from different types of disasters, and over time. The proposed research will transition the existing Disaster Recovery Tracking Tool into a widely adopted web-based tool for end users to track the progress and quality of post-disaster recovery by entering baseline and post-disaster data for up to 84 metrics with two pilot communities. Technical assistance and training will be provided for the two pilot communities. Lessons learned will be incorporated into final marketing materials, a training module, and a user guide for additional end users. Final materials will also be shared with appropriate Federal partners, including FEMA / EMI Emergency Management Higher Education Program as well as Texas A&M's Engineering Extension Service, which provides training in emergency management and homeland security.

5. **Abstract:**

   Without monitoring recovery and comparing post-recovery status with pre-disaster benchmarks, it is difficult for communities to assess whether or not they are achieving a quality recovery, improving disaster resilience, or building back better. The Disaster Recovery Tracking Tool provides a framework for end users (e.g., planners,

emergency managers, long-term recovery committees) to track progress on 84 metrics of disaster recovery. The 84 metrics were identified and content validated through a literature review, recovery plan review, case studies, focus groups, key informant interviews, and pilot tests with communities impacted by Hurricane Sandy. Practitioners using this tool can compare pre- and post-disaster status using baseline and current data. Reports generated by the tool can provide end users with a useful means of prioritizing recovery goals and activities and identifying elements important to include in recovery planning, potentially making recovery more effective and efficient and communities more resilient.

6. End users:

The existing Disaster Recovery Tracking Tool currently has approximately 50 registered users were contacted to assess their interest in continuing to work with the project. These include Federal (EPA, FEMA, NOAA (ERMA), Small Business Administration, US Air Force Academy, Cooperation for National and Community Service); Regional (FEMA Regions 2, 6, and 8); Local Governments; Ga. Tech University; National Non-Profits (Red Cross, Natural Resources Defense Council); Other Non-Profits (SeaPlan.org); and private consultants. Additional new end users will include: 1) Municipal- and county-level planners, emergency managers, and members of long-term recovery committees (Additional municipal- and county-level partners will be engaged as the project starts); 2) FEMA national and regional-level recovery division staff (Region 6, Region 2); 3) Department of Health and Human Services, Assistant Secretary for Preparedness, Office of Emergency Management, Recovery; 4) Texas A&M Hazard Reduction and Recovery faculty, staff and students and Texas Target Cities partner communities (John Cooper, Associate Professor of Practice and Jamie Masterson, Program Coordinator, Texas Target Cities will assist with identifying the two willing community partners). In addition, 67 federal, state, and local public health and emergency management staff attended a DEMO session of the Tool, called Can We Measure Successful Disaster Recovery? at the National Association of County and City Health Officials Annual Preparedness Summit in April, 2016.

Table of End Users:

Name	Agency / Contact Information	Interactions
	Project Manager Research and Development Center U.S. Coast Guard Email: Alexander.Balsley@uscg.mil	The USCG has expressed interest in linking the Disaster Recovery Tool to its oil spill impact forecasting.
Branch, Tom	Emergency Management Coordinator Office of Emergency Management Liberty County, Texas Phone: (936) 334-3219 Email: tom.branch@co.liberty.tx.us	Liberty County, TX has agreed to serve as a pilot community for the Disaster Recovery Tool. Current disaster response and recovery plans are being reviewed and recommendations for improvement will be provided.

	Regional Building Science Specialist Region II - Hazard Mitigation Division Phone: (212) 720-9517 Email: samuel.capasso@fema.dhs.gov	The Disaster Recovery Tool will be leveraged by FEMA to assess the impacts of and opportunity for mitigation efforts on community-level disaster recovery.
Chung, John	Emergency Planner, Recovery Office of Emergency Management Los Angeles County Chief Executive Office Phone: (323) 980-2294 Email: JChung@ceooem.lacounty.gov	The Disaster Recovery Tool metrics are being incorporated in the Los Angeles County Recovery Plan/Framework. The Emergency Planner has agreed to provide feedback and suggestions for improvement related to the metrics.
Graham, Larissa	Oil Spill Science Extension Specialist Mississippi-Alabama Sea Grant Consortium Phone: (251) 438-5690 Email: Larissa.Graham@auburn.edu	The Disaster Recovery Tool could be used by the Texas Sea Grant College Program to assess recovery progress in oil spill-affected communities.
Hale, Christine	Oil Spill Science Outreach Specialist Texas Sea Grant College Program Texas A&M University-Corpus Christi Phone: (361) 825-6215 Email: chris.hale@tamu.edu	The Disaster Recovery Tool could be used by the Texas Sea Grant College Program to assess recovery progress in oil spill-affected communities.
Lowe, Sheila	Executive Director Long Term Recovery Team Bastrop County, Texas Phone: (512) 521-3001 Email: ed@bcltrt.org	Bastrop County, TX has agreed to serve as a pilot community and provide feedback for the Disaster Recovery Tool.
Zwolinski, Mia	Research Coordinator Texas Sea Grant College Program Texas A&M University Phone: (979) 458-0449 Email: mzwolinski@tamu.edu	The Disaster Recovery Tool may be used by the Texas Sea Grant College Program to assess recovery progress in oil spill-affected communities.

7. Explanation of Changes:

No changes to the initially approved work plan have been made.

8. Unanticipated Problems:

No unanticipated problems have occurred.

9. Project Outcomes:

The primary outcome of the proposed project is the systematic measurement of the disaster recovery process in various locations, across events, and over time. Throughout the project period, metrics and analytic approaches will be refined based on feedback from end users from this and other leveraged research projects. For example, a Building Science & Safety Team Lead in Hazard Mitigation at FEMA Region II, has been charged with leading resilience-building efforts in FEMA Region II. One component of this initiative is to assess the impacts of and opportunity for mitigation efforts on community-level disaster recovery. The community status tracking function of the Disaster Recovery Tracking Tool will be leveraged to quantify these impacts using publicly-available government datasets. To enhance the

usefulness of the tool for local and federal end-users, the needs, insights, and expertise of FEMA partners will be incorporated throughout the decision-making process.
Results may also contribute to increases in the number and improvements in the quality of pre-disaster recovery plans. For example, one of the primary indicators of a high-quality plan is a strong community fact base. It often difficult for smaller communities with limited capacity for recovery planning to develop a robust fact base focused appropriately on high-priority issues. Data collected for the 84 recovery metrics may be used to guide the development of a recovery plan element as part of a larger plan, or the development of a stand-alone recovery plan. For this purpose, we will develop a checklist based on the metrics for practitioners that can be used to update plans or begin the process of developing a fact base for a pre-disaster recovery plan.

10. Research Activity and Milestone Progress:

Research Activities and Milestones: Progress to Date

Reporting Period 1/1/2016 – 6/30/2016			
Research Activity	Proposed Completion Date	% Complete	Explanation of why activity / milestone was not reached, and when completion is expected
Refine the metrics for tracking disaster recovery as necessary based on results of leveraged research projects	3/31/16	100	There are currently 84 metrics included in the Disaster Recovery Tracking Tool. In response to end-user feedback generated using surveys and key informant interviews, the number of metrics that are automatically populated from publically-available datasets has been increased from 17 to 39.
Recruit local partners	4/15/16	100	Partnerships have been secured with Bastrop County, Texas and Liberty County, Texas.
Secure commitment of at least one local partner to begin pilot on 7/1/16	6/1/16	100	Representatives of Bastrop County, Texas and Liberty County, Texas have agreed to serve as pilot communities to evaluate the Disaster Recovery Tracking Tool.
Research Milestone			Next key milestone is in future projectperiod

11. Transition Activity and Milestone Progress:

Transition Activities and Milestones: Progress to Date

Reporting Period 1/1/2016 – 6/30/2016			
Transition Activity	Proposed Completion Date	% Complete	Explanation of why activity / milestone was not reached, and when completion is expected
Conduct horizon scan and explore the potential market for the Tool	6/30/16	100	A horizon scan of similar web-based tools dedicated to disaster recovery tracking and pre-disaster recovery planning revealed that this product is unique. Subsequent horizon scans were also performed by 3 undergraduate honors marketing teams. The searches conducted by these teams yielded no significant competitors.
Work with CHC / RENCI to research appropriate processes and actions for IP related to the web-based tool	4/1/16	100	Lisa Stillwell, a research software developer at RENCI, provided technical assistance during the development of the Disaster Recovery Tracking Tool. The results of this assistance include an improved user interface, the inclusion of additional tracking functions, and a greater number of automatically-populated metrics.
Transition Milestone			
Release open Beta version of the Disaster Recovery Tracking Tool website	6/30/16	100	
Place appropriate links to site on CHC website, as well as other virtual locations identified in horizon scan	5/31/16	100	The following organizations have placed the Disaster Recovery Tracking Tool link on their respective websites: Association of Schools and Programs of Public Health Coastal Resilience Center Environmental Grand Challenge at Texas A&M University Federal Emergency Management Agency (FEMA)

			North Carolina Planning Journal (article accepted for future publication) Office of the Assistant Secretary for Preparedness and Response (ASPR) Technical Resources, Assistance Center, and Information Exchange (TRACIE) – Technical Resources Texas A&M Foundation

12. Interactions with education projects:

We supported the successful application of Dr. Sonia Gilkey from Texas A&M Kingsville, a minority serving institute in Texas, to the U.S. Department of Homeland Security (DHS) Summer Research Team Program for Minority Serving Institutions. Although Dr. Gilkey and her student were selected to participate in the program, they subsequently declined to participate due to a scheduling conflict.

13. Publications:

Horney, J., Dwyer, C., Aminto, M., Berke, P., & Smith, G. (2016). Developing indicators to measure post-disaster community recovery in the United States. *Disasters.* Advance online publication. doi:10.1111/disa.12190

14. **CRC Performance Metrics:**

CRC Performance Metrics			
Metric	**Research**	**Education**	**Center**
Courses/certificates developed, taught, and/or modified		See Table	
Enrollments in Center-supported courses/certificates			
HS-related internships (number)	0	0	
Undergraduates provided tuition/fee support (number)	0	0	
Undergraduate students provided stipends (number)	0	0	
Graduate students provided tuition/fee support (number)	0	0	
Graduate students provided stipends (number)	1	0	
Undergraduates who received HS-related degrees	0	0	
Graduate students who received HS-related degrees	0	0	
Certificates awarded (number)		0	
Graduates who obtained HS-related employment	1	0	
SUMREX program students hosted (number)	0		
Lectures/presentations/seminars at Center partners	0	0	0
DHS MSI Summer Research Teams hosted (number)	0	0	0
Journal articles submitted (number)	1	0	0

Journal articles published (number)	1	0	0
Conference presentations made (number)	3	0	0
Other presentations, interviews, etc. (number)	4	0	0
Patent applications filed (number)	0		
Patents awarded (number)	0		
Trademarks/copyrights filed (number)	0	0	
Requests for assistance/advice from DHS agencies	1	0	0
Requests for assistance/advice from other Federal	3	0	0
Total milestones for reporting period (number)	3	0	0
Accomplished fully (number)	3	0	0
Accomplished partially (number)	0	0	0
Not accomplished (number)	0	0	0
Product/s delivered to end-user/s (description and	See Table		
External funding received	See Table		
Leveraged support			
Articles on Center-related work published on website			0
Coverage in media, blogs (number)			0
Social media followers (number)			0
Posts to social media accounts (number)			0
Events hosted (number)			0
Website hits (number)			0

Table for Documenting CRC Research Project Product Delivery

Product Name	Product Type	Approx. Delivery Date	Recipient or Anticipated End Users
Trackyourrecovery.org	Conference DEMO Session	April 2016	Various; 67 attendees from federal, state, and local
Measuring successful disaster recovery: A case study of six communities in Texas.	Oral Presentation	April 2016	Texas Public Health Association Annual Conference Attendees
Measuring successful disaster recovery: A case study of six communities in Texas.	Poster Presentation	April 2016	Texas A&M Public Health Week Delta Omega Student Poster Contest (Awarded 2nd Place)

Table for Documenting External Funding and Leveraged Support

External Funding			
Title	PI	Total Amount	Source
N/A			
Leveraged Support			
Description			Estimated Annual
N/A			