

**SMITH, UNC-CH  
DHS COASTAL RESILIENCE CENTER  
EDUCATION PROJECT  
YEAR 4 PROGRESS REPORT  
July 1, 2018 – June 30, 2019**

**Project Title:**

Continuation of the Natural Hazards Resilience Certificate Program and Assistance to FEMA

**Principal Investigator Name/Institution:**

Gavin Smith, UNC-CH Department of City and Regional Planning and Director, Coastal Resilience Center of Excellence (7/1/2018 – 12/31/2018); NCSU Department of Landscape Architecture, School of Design (1/1/2019 – 6/30/2020)

**Other Partners/Institutions:**

- Principal Investigator Gavin Smith joined the faculty at NC State University effective January 1, 2019. During Year 4, he taught one course in the Fall 2018 semester, and one course in the Spring 2019 semester at UNC-CH with CRC support.
- Other faculty at UNC-CH will continue to play a role in the UNCCH Graduate Certificate in Natural Hazards Resilience, pending internal departmental or institutional funding.
- Wei Mei, Assistant Professor, Department of Marine Sciences

**Short Project Description (“elevator speech”):**

The Graduate Certificate in Natural Hazards Resilience program at UNC-CH started in the Fall of 2015, with a focus on the nexus between the physical science underlying natural hazards phenomena and the policies, programs, and plans needed to help societies manage hazards and increase resilience. The program grew to incorporate direct student, faculty, and practitioner engagement as a way to enrich the student experience. The educational deliverables include classroom lectures and discussions, field trips to hazard-impacted communities, and the Natural Hazards Speaker Series Seminar, in which students learn about the field of hazards and disasters from guest speakers, including practitioners, academics, government agency officials, and local community members, among others. Students are also required to take at least one elective course in a related discipline. The delivery of these courses allows students enrolled in the program to earn the credits needed to graduate with the certificate notation stamped on their diplomas within two years, thereby increasing their marketability when seeking resilient-related employment in the HSE.

In addition to the educational deliverables, during Year 4 the PI developed a Scope of Work for Year 5 to provide assistance to FEMA in implementation of the Disaster Recovery Reform Act and to create a new Graduate Certificate in Disaster Resilient Policy, Engineering and Design, to include the development of a new 3-hour core course entitled Disaster Resilient Policy, Engineering and Design. The CRC will provide travel funds for Dr. Smith to meet with appropriate FEMA personnel to develop this Scope of Work.

## **1. Introduction and project overview:**

This project has enabled the continued operation of the Graduate Certificate Program in Natural Hazards Resilience, which provides a platform to educate the next generation of natural hazards and disaster researchers and practitioners. The growing demand for students with an education in natural hazards resilience is evidenced by the hiring of all graduates in the field upon graduation. Graduates of this program have gone on to work in a number of areas including FEMA, consulting firms, regional planning organizations and state and local government agencies, and to continue their education as PhD candidates.

## **2. End users:**

Primary end users of the educational component of this project include students at UNC-CH and other universities (e.g., NCSU, Duke) who participate in the Natural Hazards Resilience Certificate program. The education and training opportunities made available to students provide a unique combination of theory and practice, thereby better positioning them to serve as the next generation of natural hazards and disaster scholars and practitioners. Upon entering the workforce, these students have gone on to provide direct benefit to the agencies and organizations that have hired them to assist with issues tied to disaster recovery, mitigation, and hazards resilience. Employers have included emergency management and planning officials at federal, state, and local levels of government; regional planning organizations, design professionals involved in disaster resilient design, and private consulting firms engaged in hazard mitigation and recovery planning. In addition, some graduates have gone on to pursue PhD's, where they are focused on becoming faculty members focused on the study of natural hazards, disasters and climate change adaptation.

End users of the FEMA assistance component of this project include officials at FEMA who are directly engaged in the implementation of the Disaster Recovery Reform Act. In particular, the PI will advise the agency about policies and best practices to allocate disaster mitigation funding, as well other provisions in the act. In addition, research will be conducted on the role of states in fostering local capacity to implement the intent of the Disaster Recovery Reform Act.

## **3. Unanticipated Problems:**

Unanticipated problems surrounded my move from UNCCH to NCSU in the Spring of 2019 which meant the Graduate Certificate Program might be discontinued. In the interim, I agreed to teach the required 1-credit hour Speaker Series course at UNCCH in the Spring of 2019 even though I was now employed full time at North Carolina State University. UNCCH has hired an adjunct faculty member to teach the required coursework in the Fall of 2019 and is exploring a range of alternatives to ensure the continuation of the program.

## **4. Students and recent graduates:**

Student demographics were comprised of mainly master's students from UNCCH (14) and to a lesser extent Duke University (1). In addition, three UNCCH PhD students were enrolled in the program. In addition, a significant number of students enrolled in my classes that were not

members of the certificate cohort. For instance, my Fall 2018 course was comprised of 26 students. All graduates of the certificate program received jobs in the field, which totaled approximately 8 students, including 1 master's student who chose to pursue a PhD at MIT focused on natural hazards, disasters and climate change adaptation.

### **5. Project Impact:**

The certificate was explicitly designed to educate and train graduates to work in the field as either practitioners or scholars. This was accomplished through a range of actions, including: 1) grounding coursework in the latest research findings and technical reports, 2) inviting internationally-renowned speakers to come to class to share with students their research and field-based professional experiences, including tips associated with what it takes to work in this profession; 3) conducting field trips to areas where students can observe how research and practice based readings, lecture material and conversations with others is relevant to activities happening on the ground; and 4) in prior years, certificate program students were involved in deep community engagement through efforts like the Hurricane Matthew Disaster Recovery and Resilience Initiative, which sought to assist 6 hard-hit communities with a range of planning and policy-related issues that are not typically addressed by federal and state agencies. This effort lasted for 1 and ½ years and provided a very unique and rich learning environment for 10 students enrolled in the certificate program.

### **6. Institutionalization:**

The UNC Department of City and Regional Planning has expressed a commitment to continue the Certificate in Natural Hazards Resilience by creating a permanent faculty position to assume this task. At this time, an adjunct position has been created to teach the certificate classes beginning in the Fall of 2019. In addition, the UNCCH's Department of City and Regional Planning has hired a junior faculty member who is focused on natural hazards resilient research. The position is well aligned with a new initiative titled Environment, Ecology, and Energy Program at UNC-CH. The stated priorities of the emerging program include coastal and hazards resilience, enhanced experiential education, and developing stronger alliances with the Department of City and Regional Planning through graduate certificates.

### **7. Interactions with research projects:**

Interactions with SUMREX involved lectures provided by Dr. Ismael Pagan and Dr. Ricardo Lopez from the University of Puerto Rico at Mayaguez during my Spring Speaker Series class as well as a trip I took to UPRM to conduct a class lecture and explore future collaborative opportunities with Dr. Pagan, Dr. Lopez and other UPRM faculty. Lectures conducted by Dr. Pagan and Lopez were tied to their ongoing research and used to inform students participating in the UNCCH graduate certificate program. My lecture informed UPRM students working with Dr. Pagan and Dr. Lopez as part of their educational initiative.

## 8. Publications:

### Journal Articles

Horney, Jennifer, Carolina Dwyer, Bhagath Chirra, Kerry McCarthy, Jennifer Shafer and **Gavin Smith**. 2018. Measuring Successful Disaster Recovery, *International Journal of Mass Emergencies and Disasters* 36(1): 1-22.

**Gavin Smith**, Lea Sabbag and Ashton Rohmer. 2018. A Comparative Analysis of the Roles Governors Play in Disaster Recovery, Risk, Hazards & Crisis in Public Policy. 9(2): 205-243. DOI: 10.1002/rhc3.12133.

**Smith, Gavin**. 2016. Remembrances of the Past, Concerns for the Future, and the Potential Resilience of a Small Coastal Town, *Southern Cultures*. Summer: 64-87.

Horney, Jennifer, Caroline Dwyer, Meghan Aminto, Phil Berke and **Gavin Smith**. 2016. Developing Indicators to Measure Post-Disaster Community Recovery, *Disasters* 41(1): 124-149.

Lyles, Ward, Philip Berke and **Gavin Smith**. 2015. Local Plan Implementation: Assessing Conformance and Influence of Local Plans in the United States, *Environment and Planning B: Planning and Design*.

**Smith, Gavin**. 2014 (Autumn). Involving Land Use Planners in Pre-Event Planning for Post-Disaster Recovery. *Planner's Note, Journal of the American Planning Association*. 80(4): 306-307. Special Issue, Planning for Disaster Recovery.

Berke, Philip, Ward Lyles, and **Gavin Smith**. 2014. Impacts of Federal and State Mitigation Policies on Local Land Use Policy, *Journal of the Planning Education and Research*. 34(1): 60-76.

Lyles, Ward, Phil Berke and **Gavin Smith**. 2014. A Comparison of Local Hazard Mitigation Plan Quality in Six States, USA, *Landscape and Urban Planning* 122 (February): 89-99.

Lyles, Ward, Phil Berke and Gavin Smith. 2014. Do Planners Matter? Examining Factors Driving Incorporation of Land Use Approaches into Hazard Mitigation Plans, *Journal of Environmental Planning and Management* 57(2):792-811.

Sandler, Dylan and **Gavin Smith**. 2013. Assessing the Quality of State Disaster Recovery Plans: Implications for Policy and Practice, *Journal of Emergency Management* 11(4):281-291.

**Smith, Gavin**, Ward Lyles, Philip Berke. 2013. The Role of the State in Building Local Capacity and Commitment for Hazard Mitigation Planning, *International Journal of Mass Emergencies and Disasters* 31(2): 178-203.

**Smith, Gavin**, Dylan Sandler and Mikey Goralnik. 2013. Assessing State Policy Linking Disaster Recovery, Smart Growth and Resilience in Vermont Following Tropical Storm Irene, *Vermont Journal of Environmental Law* 15: 67-102.

Berke, Philip, **Gavin Smith**, Ward Lyles. 2012. Planning for Resiliency: Evaluation of State Hazard Mitigation Plans Under the Disaster Mitigation Act, *Natural Hazards Review* 13(2): 139-150.

**Smith, Gavin** and Tom Birkland. 2012. Building a Theory of Recovery: Institutional Dimensions. Special Edition on Developing a Theory of Disaster Recovery. *International Journal of Mass Emergencies and Disasters* 30(2): 147-170.

**Smith, Gavin**. 2010. Disaster Recovery Planning in the United States: Lessons for the Australasian Audience *Australasian Journal of Disaster and Trauma Studies*. *Natural Hazards Planning in Australasia*. ISSN: 1174-4707, Volume 2010-1.

#### Books

Glavovic, Bruce and **Gavin Smith**. 2014. *Adapting to Climate Change: Lessons from Natural Hazards Planning*. New York: Springer.

**Smith, Gavin**. 2011. *Planning for Post-Disaster Recovery: A Review of the United States Disaster Assistance Framework*. Washington, D.C.: Island Press.

#### Book Chapters

**Smith, Gavin**. "The Role of States in Disaster Recovery: An Analysis of Engagement, Collaboration, and Capacity Building." 2019. In *Building Community Resilience to Disasters: The Handbook of Planning for Disaster Resilience*, Routledge Press.

**Smith, Gavin**, Amanda Martin and Dennis Wenger. "Disaster Recovery in an Era of Climate Change: The Unrealized Promise of Institutional Resilience." 2017. In *Handbook of Disaster Research*, Second Edition, Eds. Havidan Rodriguez, Joseph Trainor and William Donner. New York: Springer.

**Smith, Gavin**. "Pre- and Post-Disaster Conditions, their Implications, and the Role of Planning for Housing Recovery." 2017. Chapter 18, pp. 277-292. In *Coming Home After Disaster: Multiple Dimensions of Housing Recovery*, Eds. Ann-Margaret Esnard and Alka Sapat. Boca Raton, Florida" CRC Press.

**Smith, Gavin**. "Planning for Sustainable and Disaster Resilient Communities." 2015. Chapter 9, pp. 249-279. In *Hazards Analysis: Reducing the Impact of Disasters*, Ed. John Pine (2nd edition). Boca Raton, Florida: CRC Press.

**Smith, Gavin**. "Creating Disaster Resilient Communities: A New Hazards Risk

Management Framework.” 2015. Chapter 10, pp. 281-308. In *Hazards Analysis: Reducing the Impact of Disasters*, Ed. John Pine. (2nd edition). Boca Raton, Florida: CRC Press.

**Smith, Gavin.** “Applying Hurricane Recovery Lessons in the U.S. to Climate Change Adaptation: Hurricanes Fran and Floyd in North Carolina, USA.” 2014. Chapter 9, pp. 193-229. In *Adapting to Climate Change: Lessons from Natural Hazards Planning*, Eds. Bruce Glavovic and Gavin Smith. New York: Springer.

Bruce Glavovic and **Gavin Smith.** “Introduction: Learning from Natural Hazards Experience to Adapt to Climate Change.” 2014. Chapter 1, pp. 1-38. In *Adapting to Climate Change: Lessons from Natural Hazards Planning*, Eds. Bruce Glavovic and Gavin Smith. New York: Springer.

**Smith, Gavin.** “Disaster Recovery in Coastal Mississippi (USA): Lesson Drawing from Hurricanes Camille and Katrina.” 2014. Chapter 14, pp. 339-368. In *Adapting to Climate Change: Lessons from Natural Hazards Planning*, Eds. Bruce Glavovic and Gavin Smith. New York: Springer.

**Smith, Gavin** and Bruce Glavovic. “Conclusions, Recommendations, and Next Steps: Integrating Planning for Natural Hazards and Climate Change Adaptation.” 2014. Chapter 16, pp. 405-450. In *Adapting to Climate Change: Lessons from Natural Hazards Planning*, Eds. Bruce Glavovic and Gavin Smith. New York: Springer.

**Smith, Gavin.** “Catastrophic Disaster Recovery: An Institutional Network Perspective.” 2013. Chapter 12, pp. 281-300. In *Preparedness and Response to Catastrophic Disasters*, Ed. Richard A. Bissell. Boca Raton, Florida: CRC Press.

**Smith, Gavin.** 2009. “Planning for Sustainable and Disaster Resilient Communities.” Chapter 9, pp. 221-247. In *Natural Hazards Analysis: Reducing the Impact of Disasters*, Ed. John Pine. Boca Raton, Florida: CRC Press.

**Smith, Gavin.** 2009. “Disaster Resilient Communities: A New Hazards Risk Management Framework.” Chapter 10, pp. 249-267. In *Natural Hazards Analysis: Reducing the Impact of Disasters*, Ed. John Pine. Boca Raton, Florida: CRC Press.

**Smith, Gavin.** 2009. “A Review of the United States Disaster Assistance Framework: Planning for Recovery.” Chapter 7, pp. 99-111. In *Emergency Management in Higher Education: Current Practices and Conversations*, Ed. Jessica Hubbard. Fairfax, Virginia: Public Entity Risk Institute.

**Smith, Gavin.** 2009. “Recovery and Reconstruction.” Session 10, pp. 1-32. In *Catastrophe Readiness and Response*, Ed. Richard Bissell. Emmitsburg, Maryland: FEMA Emergency Management Institute, Higher Education Project.

Accessed at: <http://training.fema.gov/EMIWeb/edu/catastrophe.asp>.

Berke, Phil and **Gavin Smith**. 2009. "Hazard Mitigation, Planning and Disaster Resiliency: Challenges and Strategic Choices for the 21<sup>st</sup> Century." Chapter 1, pp. 1-20. *Building Safer Communities: Risk, Governance, Spatial Planning and Responses to Natural Hazards*, Ed. Urbano Fra Paleo. NATO Science for Peace and Security Series, E, Human and Societal Dynamics, Volume 58. Amsterdam: ISO Press.

### Technical Reports

Smith, Gavin, Mai Thi Nguyen, Colleen Durfee, Darien Williams, Ashton Rohmer. September, 2018. *Resilient Design Education in the United States*. Chapel Hill, North Carolina: Department of Homeland Security Coastal Resilience Center of Excellence.

Smith, Gavin, Barry Hokanson, Link Walther, Jessica Southwell. 2017. *Hurricane Matthew Disaster Recovery and Resilience Initiative. A Project of the North Carolina Policy Collaboratory*. Chapel Hill, North Carolina: Hurricane Matthew Recovery and Resilience Initiative.

Smith, Gavin, Lea Sabbag, Ashton Rohmer. *Role of States in Recovery Video Training Guide*. March, 2016. Chapel Hill, North Carolina: Department of Homeland Security, Coastal Resilience Center of Excellence.

Horney, Jennifer and Gavin Smith. September, 2015. *Measuring Successful Recovery: A Case Study of Six Communities in Texas*. Tysons, Virginia: LMI Research Institute.

Tuckson, Reed V., et. al 2015. *Healthy, Resilient, and Sustainable Communities After Disasters: Strategies, Opportunities, and Planning for Recovery*. Washington, D.C.: National Academies Press (consultant).

Smith, Gavin. *Disaster Recovery Funding: Achieving a Resilient Future?* National Academy of Science, Institute of Medicine. June, 2014. Commissioned by the National Academy of Science, Committee on Post-Disaster Recovery of a Community's Public Health, Medical and Social Services.

Smith, Gavin, David Perkes, Andy Rumbach, Darrin Punched. September, 2014. *Community Planning Assistance Team Report. Lyons, Colorado: Designing a More Resilient Future*. Chicago, Illinois: American Planning Association.

Smith, Gavin, John Whitehead, Nikhil Kaza, Jae Park, John Pine, Randy Kolar. December, 2013. *Aggregate Flood Hazard Risk Reduction Scoping Project*. Chapel Hill, North Carolina: Department of Homeland Security Coastal Hazards Center of Excellence.

Smith, Gavin, Dylan Sandler, Mikey Goralnik. October, 2013. *Vermont State Agency Policy Options. Smart Growth Implementation Assistance Program: Disaster Recovery and*

*Long-Term Resilience Planning in Vermont.* Chapel Hill, North Carolina: Department of Homeland Security Coastal Hazards Center of Excellence.

Smith, Gavin and Dylan Sandler. July, 2012. *State Disaster Recovery Guide.* Chapel Hill, North Carolina: Department of Homeland Security Coastal Hazards Center of Excellence.

Lyles, Ward, Philip Berke and Gavin Smith. July, 2012. *Evaluation of Local Hazard Mitigation Plan Quality.* Center for Sustainable Community Design and the Coastal Hazards Center. Chapel Hill, North Carolina: University of North Carolina at Chapel Hill.

Burkett, V.R. and Davidson, M.A. 2012. *Coastal Impacts, Adaptation, and Vulnerability: A Technical Input to the 2012 National Climate Assessment. Cooperative Report to the 2013 National Climate Assessment.* Contributing author. Washington, D.C.: Island Press.

Berke, Philip, Gavin Smith and Sara Reynolds. 2011. *Community Rating System: Plan Evaluation & Model Practices.* Federal Emergency Management Agency. Chapel Hill, North Carolina: Department of Homeland Security Coastal Hazard Center of Excellence.

Berke, Philip, Gavin Smith, Dave Salvesen, Ward Lyles, and Dylan Sandler. December, 2011. *An Evaluation of Floodplain Management Planning Under the Community Rating System.* Final Report for the Federal Emergency Management Agency. Chapel Hill, North Carolina: Department of Homeland Security Coastal Hazard Center of Excellence.

Smith, Gavin and Victor Flatt. 2011. *Assessing the Disaster Recovery Planning Capacity of the State of North Carolina.* Research Brief. Durham, North Carolina. Institute for Homeland Security Solutions.

Berke, Philip, Gavin Smith, and Ward Lyles. August, 2009. *State Hazard Mitigation Plan Evaluation and Model Practices. Analysis of Federal Mitigation Policy in the U.S.: Mitigation Plans, Expenditures, Civic Engagement, and Local Capability.* Report to the Department of Homeland Security Center of Excellence – Disasters, Coastal Infrastructure and Emergency Management, University of North Carolina at Chapel Hill, Chapel Hill, NC.

#### Student Theses and Dissertations completed

Master's Project Committee, Master's Candidate. Margaret Keener. Department of City and Regional Planning, University of North Carolina at Chapel Hill. 2017-2019.

Department of Homeland Security, Workforce Development Grant Recipient. Master's Candidate. Jessamin Straub. Department of Marine Science. University of North Carolina at Chapel Hill. 2018-2019.

Master's Project Committee, Master's Candidate. Chair. Christian Kamrath. Department of City and Regional Planning, University of North Carolina at Chapel Hill. 2016-2018.

Master's Project Committee, Master's Candidate. Chair. Meredith Burns. Department of City and Regional Planning, University of North Carolina at Chapel Hill. 2016-2018.



Master's Project Committee, Master's Candidate. Chair. Estefany Noria. Department of City and Regional Planning, University of North Carolina at Chapel Hill. 2017.

Master's Project Committee, Master's Candidate. Kevin Fish. Sanford School of Public Policy. Duke University. 2017.

Master's Project Committee, Master's Candidate. Chair. Darien Williams. Department of City and Regional Planning, University of North Carolina at Chapel Hill. 2016-2018.

Master's Project Committee, Master's Candidate. Colleen Durfee. Department of City and Regional Planning, University of North Carolina at Chapel Hill. 2016-2018.

Master's Project Committee, Master's Candidate. Chair. Ashton Rohmer. Department of City and Regional Planning, University of North Carolina at Chapel Hill. 2015-2017.

Master's Project Committee, Master's Candidate. Chair. Abby Moore. Department of City and Regional Planning, University of North Carolina at Chapel Hill. 2015-2017.

Master's Project Committee, Master's Candidate. Chair. Jamar Nixon. Department of City and Regional Planning, University of North Carolina at Chapel Hill. 2016-2017.

Dissertation Committee, Doctoral Candidate. Sierra Woodruff. Curriculum for the Environment and Ecology, University of North Carolina at Chapel Hill. Local Climate Change Adaptation Plan Quality and Content in the United States. 2012-2017.

Master's Project Committee, Master's Candidate. Chair. Lea Sabbag. Department of City and Regional Planning, University of North Carolina at Chapel Hill. 2015-2016.

Master's Project Committee, Master's Candidate. Chair. Christina Hurley. Department of City and Regional Planning, University of North Carolina at Chapel Hill. 2015-2016.

Dissertation Committee, Doctoral Candidate (external committee member). Alex Greer. Disaster Science and Management, University of Delaware. Resettlement After Disaster: Case Studies following Hurricane Sandy. 2013-2015.

Master's Project Committee, Master's Candidate. Chair. Caroline Dwyer. Department of City and Regional Planning, University of North Carolina at Chapel Hill. Building Back Better? A Comparison of Intergovernmental Cooperation Frameworks Influencing Post-Sandy Recovery and Rebuilding in Coastal New Jersey and New York. 2013-2014.

Master's Project Committee, Master's Candidate. Chair. Fayola Jacobs. Department of City and Regional Planning, University of North Carolina at Chapel Hill. Hazard Mitigation Planning and Policy in the Caribbean. 2013-2014.

Master's Project Committee, Master's Candidate. Capstone Committee Member. Rachel Meyerson. Department of Public Administration, University of North Carolina at Chapel Hill. A Tool for Evaluating Plan Quality of Local Government Response Plans. 2011-2012.

Master's Project Committee, Master's Candidate. Chair. Rachel Meyerson. Department of City and Regional Planning, University of North Carolina at Chapel Hill. Assessing the Quality of Disaster Response Plans. 2011-2012.

Dissertation Committee, Doctoral Candidate. Ward Lyles. Department of City and Regional Planning, University of North Carolina at Chapel Hill. Stakeholder Network Influences on Local-Level Hazard Mitigation Planning Outputs. 2010-2012.

Master's Project Committee, Master's Candidate. Co-Chair. Dylan Sandler. Department of City and Regional Planning, University of North Carolina at Chapel Hill. Assessing the Quality of Disaster Recovery Plans. 2011.

Dissertation Committee, Doctoral Candidate (external committee member). Wendy Saunders. Department of Resource and Environmental Planning, Massey University, Manawatu, New Zealand. Innovative Land-Use Planning for Natural Hazard Risk Reduction in New Zealand. 2011.

9. Year 4 Education Activities and Milestone Achievements:

**Education Activities and Milestones: Status as of 6/30/2019**

<b>Reporting Period 7/1/2018 – 6/30/2019</b>			
<b>Education Activities</b>	<b>Proposed Completion Date</b>	<b>% Complete</b>	<b>Explanation of why activity/milestone was not completed / Other comments</b>
Teach one required certificate course in Fall semester 2018 (PLAN 755: Planning for Natural Hazards and Climate Change Adaptation (3 hours)	12/2018	100%	
Teach one required certificate course in Spring semester 2019 (PLAN 754: Natural Hazards Resilience Speaker Series Seminar (1 hour)	05/2019	100+%	In addition, taught same class at NCSU as part of new Graduate Program in Disaster Resilient Policy, Engineering and Design
<b>Education Milestones</b>			
Conduct one Certificate course-related field trip for students	12/2018	100%	Location: Charlotte, NC to see nationally-recognized floodplain management program
Teach 1 required certificate course in Fall semester 2018	12/2018	100%	

**10. Year 4 Transition Activities and Milestone Achievements:**

**Transition Activities and Milestones: Status as of 6/30/2019**

Reporting Period 7/1/2018 – 6/30/2019			
<b>Transition Activity</b>	Proposed Completion Date	% Complete	Explanation of why activity/milestone was not completed
Create faculty position at UNCCH to continue leading UNCCH Certificate Program in Natural Hazards Resilience, pending institutional support	Spring 2019	100%	
Recruit for permanent faculty member to lead UNCCH Graduate Certificate Program	Spring 2019	100%	
<b>Transition Milestone</b>			
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**11. Tables:**

**Table 1: Annual Courses and Enrollments**

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Courses Developed and Taught by University of North Carolina under Project Expanding Coastal Resilience Education at UNC					
PLAN 755	Course Title: Planning for Natural Hazards and Climate Change Adaptation	YR 1	YR 2	YR 3	YR 4
	Status: Developed (D), Revised (R), and/or Taught (T)	T	T	T	T
	Offering: Elective (E), Concentration (C), Minor (M)	C	C	C	C
	Enrollment	8	20	40	26
PLAN 754	Course Title: Speaker Series	YR 1	YR 2	YR 3	YR 4
	Status: Developed (D), Revised (R), and/or Taught (T)	T	T	T	T
	Offering: Elective (E), Concentration (C), Minor (M)	C	C	C	C
	Enrollment	14	31	28	32;22*
PLAN 756	Course Title: Survey of Natural Hazards and Disasters	YR 1	YR 2	YR 3	YR 4
	Status: Developed (D), Revised (R), and/or Taught (T)	T	T	T	NA
	Offering: Elective (E), Concentration (C), Minor (M)	C	C	C	
	Enrollment	9	15	26	

\*Taught 32 UNCCH students and 22 NCSU students in the Fall of 2019.

**Table 2: Performance Metrics**

**SMITH: Performance Metrics:**

<b>Metric</b>	<b>Year 1</b> (1/1/16 – 6/30/16)	<b>Year 2</b> (7/1/16 – 6/30/17)	<b>Year 3</b> (7/1/17- 6/30/18)	<b>Year 4</b> (7/1/18- 6/30/19)
HS-related internships (number)	2	14		4
Undergraduates provided tuition/fee support (number)				
Undergraduate students provided stipends (number)		1		
Graduate students provided tuition/fee support (number)	2	2	2	
Graduate students provided stipends (number)		13	23	
Undergraduates who received HS-related degrees (number)				
Graduate students who received HS-related degrees (number)		3	5	4
Certificates awarded (number)	1	3	5	4
Graduates who obtained HS-related employment (number)	1	3	5	4
Lectures/presentations/seminars at Center partners (number)	3	3	4	3
DHS MSI Summer Research Teams hosted (number)				1
Journal articles submitted (number)	1	1	2	3
Journal articles published (number)		2	2	
Conference presentations made (number)	6	12	29	22
Other presentations, <b>interviews</b> , etc. (number)		11	14	17
Trademarks/copyrights filed (number)				
Requests for assistance/advice from DHS agencies (number)		1	5	2
Requests for assistance/advice from other agencies or governments (number)		4	2	6
Dollar amount of external funding	--	\$614,966	\$1,204,382	\$54,329
Total milestones for reporting period (number)	10	11	11	3
Accomplished fully (number)	9	11	11	3
Accomplished partially (number)	1			
Not accomplished (number)				