

## A Look at the EPA and FEMA Pilot Projects in North Carolina

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Climate change is an important issue affecting our society and ecosystems in various ways.<sup>1</sup> Climate change “can increase or decrease rainfall, influence agricultural crop yields, affect human health, cause changes to forests and other ecosystems, or even impact our energy supply.”<sup>2</sup> Climate-related impacts are occurring all over the country and involve varied impacts on ecosystems.<sup>3</sup> Local governments are already preparing for impacts.<sup>4</sup> However, many of the beneficial adaptations are extremely costly and are difficult for local governments to finance independently.<sup>5</sup>

The Federal Emergency Management Agency (FEMA) and the U.S. Environmental Protection Agency (EPA) are currently working together on two community resilience pilot programs in North Carolina.<sup>6</sup> The idea for these programs came about as a result of the collaborative work of these two agencies in Iowa in 2009.<sup>7</sup> Iowa was ravaged by multiple floods and tornadoes in 2008.<sup>8</sup> In response to a great need in the impacted areas to rebuild in a smarter way, FEMA, the EPA, and local governments worked together to develop Smart Growth Strategies<sup>9</sup> and community resilience strategies in an effort to curb the effects of future natural

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<sup>1</sup> *Climate Change Impacts and Adapting to Change*, U.S. ENVTL. PROTECTION AGENCY, <http://www.epa.gov/climatechange/impacts-adaptation>, (last updated Aug. 22, 2012).

<sup>2</sup> *Id.*

<sup>3</sup> *Id.*

<sup>4</sup> *Id.*

<sup>5</sup> *Id.*

<sup>6</sup> See Linda B. Rimer, *Community Resilience Planning in Coastal North Carolina*, WPCOG.ORG (2012), available at <http://www.wpcog.org/index.asp?Type=SEARCH&SearchSection=&SEC={B8800CE9-DF01-48FD-BCE6-5C848DE86F04}&keyword=fema/epa%20memorandum%20of%20agreement&DocPage=1>.

<sup>7</sup> See Bertaina, Stephane, *Smart Growth Technical Assistance in Iowa*, U.S. ENVTL. PROTECTION AGENCY, [http://epa.gov/smartgrowth/iowa\\_techasst.htm](http://epa.gov/smartgrowth/iowa_techasst.htm) (last updated Sept. 18 2012).

<sup>8</sup> *Id.*

<sup>9</sup> Smart Growth Strategies are “creative strategies to develop in ways that preserve natural lands and critical environmental areas, protect water and air quality, and reuse already-developed land. . . . There are ten basic smart growth principles: a set of ten basic principles: (1) Mix land uses; (2) Take advantage of compact building design; (3) Create a range of housing opportunities and choices; (4) Create walk-able neighborhoods; (5) Foster distinctive,

disasters.<sup>10</sup> Some of the strategies used included analyzing and adapting building codes and practices in order to create greater stability in building structures, analyzing potential flood zones in order to direct future growth to less risky areas, and assisting in outlining and implementing green infrastructure<sup>11</sup> practices.<sup>12</sup> The collaboration was a great success, and the affected communities found the agencies' help to be invaluable.<sup>13</sup> As a result of their successful collaboration, the "EPA and FEMA entered into a Memorandum of Agreement (MOA) [in 2010] to continue collaboration on long-term community recovery, hazard mitigation and community resiliency efforts, and adaptation to the effects of climate change."<sup>14</sup>

The MOA was essentially a written agreement between the two agencies representing their mutual desire to encourage enhanced federal agency coordination, provide technical assistance on smart growth practices, and increase community resilience and climate adaptation efforts.<sup>15</sup> The agencies agreed to share training resources and to work together to create pilot programs to achieve mutual goals.<sup>16</sup>

In 2011, the EPA and FEMA set out to create an outreach plan and project description to address community resilience planning in coastal North Carolina.<sup>17</sup> The agencies decided to

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attractive communities with a strong sense of place; (6) Preserve open space, farmland, natural beauty, and critical environmental areas; (7) Strengthen and direct development towards existing communities; (8) Provide a variety of transportation choices; (9) Make development decisions predictable, fair, and cost effective; and (10) Encourage community and stakeholder collaboration in development decisions." *About Smart Growth*, EPA.GOV, [http://epa.gov/smartgrowth/about\\_sg.htm](http://epa.gov/smartgrowth/about_sg.htm), (last updated Oct. 30, 2012).

<sup>10</sup> Bertaina, *supra* note 7.

<sup>11</sup> Green infrastructure uses vegetation and soil techniques to provide storm-water management and flood mitigation. *Green Infrastructure*, U.S. ENVTL. PROTECTION AGENCY, <http://water.epa.gov/infrastructure/greeninfrastructure/> (last updated July 19, 2012).

<sup>12</sup> Bertaina, *supra* note 7.

<sup>13</sup> *Id.*

<sup>14</sup> *Id.*

<sup>15</sup> Memorandum of Agreement between the Department of Homeland Security, Federal Emergency Management Agency and the Environmental Protection Agency (May 12, 2010), *available at* [http://epa.gov/smartgrowth/pdf/2011\\_0114\\_fema-epa-moa.pdf](http://epa.gov/smartgrowth/pdf/2011_0114_fema-epa-moa.pdf).

<sup>16</sup> *Id.*

<sup>17</sup> *Community Resilience Project Planning in the Carolinas: Project Description*, N.C. DEP'T. OF ENVTL. AND NAT. RESOURCES [hereinafter *Project Description*], *available at*

“provide assistance to one large and one small coastal community in North Carolina facing impacts from sea level rise, more intense coastal storms, and changes in precipitation.”<sup>18</sup> The program was designed to benefit the local communities and provide a replicable approach for other communities that want to institute smart growth and community resilience policies.<sup>19</sup>

The project laid out four primary goals. The first was to pilot North Carolina’s iRisk tool for Hazard Mitigation Planning to help communities understand risks from sea level rise, intense coastal storms, changes in precipitation, and subsequent vulnerabilities for a specific project.<sup>20</sup> The agencies would then identify revisions to specific planning or infrastructure projects based on assessed vulnerabilities and identify changes to local plans, ordinances, and other codes that support project goals, reduce vulnerability to the impacts of sea level rise, and provide other social, environmental, and economic benefits.<sup>21</sup> The EPA and FEMA would then work with local leaders and stakeholders to develop a set of next steps that prioritizes resilience-building actions based on near-term project needs and long-term community goals.<sup>22</sup>

The agencies reached out to advisory councils, organizations, and neighborhoods in an effort to solicit applications from interested communities.<sup>23</sup> The agencies created a tentative timeline to help steer the project. Blocks of time were set-aside for various phases of the project. First, the agency was to finalize the project description and outreach plan.<sup>24</sup>

In October 2011, FEMA and the EPA selected Wilmington, North Carolina, as the large costal community and New Bern, North Carolina, as the small costal community for the pilot

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[http://portal.ncdenr.org/c/document\\_library/get\\_file?uuid=7386d433-55d1-452e-a4da-d157d1a1d2e3&groupId=61563](http://portal.ncdenr.org/c/document_library/get_file?uuid=7386d433-55d1-452e-a4da-d157d1a1d2e3&groupId=61563) (last visited Oct. 31, 2012).

<sup>18</sup> *Id.*

<sup>19</sup> *Id.*

<sup>20</sup> *Id.*

<sup>21</sup> *Id.*

<sup>22</sup> *Project Description*, *supra* note 17.

<sup>23</sup> *Community Resilience in Coastal North Carolina: Outreach Plan*, N.C. DEP’T. OF ENVTL. AND NAT. RESOURCES, available at <http://portal.ncdenr.org/web/guest/home> (last visited Oct. 31, 2012) [hereinafter *Outreach Plan*].

<sup>24</sup> *Outreach Plan*, *supra* note 24.

projects.<sup>25</sup> At the time, Wilmington was the largest coastal municipality in the state, with a population of 202,667.<sup>26</sup> Wilmington’s hazard mitigation plan specifically recognized sea-level rise as a high-risk hazard facing the region.<sup>27</sup> New Bern, a riverine community, has a population of 29,524 and sits at the intersection of the Neuse River and the Trent River giving it a high risk of extensive flooding.<sup>28</sup> Upon selection, FEMA and the EPA worked with these two communities to establish unique goals for each city.<sup>29</sup>

Wilmington has asked the agencies to help identify risks to the city infrastructure from climate change induced sea-level rise and increased storminess.<sup>30</sup> The city also has asked agencies to analyze the city’s land use and infrastructure for the purpose of creating strategies to help improve resilience.<sup>31</sup> The EPA and FEMA set out three specific goals to help address the city’s concerns.<sup>32</sup> First, the EPA will conduct a vulnerability assessment of the city’s water and sewer infrastructure to determine the potential flood risks caused by climate change.<sup>33</sup> As the city requested, the agencies will then analyze the city’s land use and infrastructure in an attempt to better understand how to reduce the flood risk to future infrastructure.<sup>34</sup> FEMA and the EPA will then “identify approaches to integrate land use and infrastructure strategies into existing plans and policies and anticipated plan updates.”<sup>35</sup>

New Bern has asked the agencies to help the city better coordinate their city planning and policies to “reduce the vulnerability of the community overall, and specifically of the greater

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<sup>25</sup> Rimer, *supra* note 6.

<sup>26</sup> *Id.*

<sup>27</sup> *Id.*

<sup>28</sup> *Id.*

<sup>29</sup> *Community Resilience Project Planning in the Carolinas: Pilots Description*, N.C. DEP’T. OF ENVTL. AND NAT. RESOURCES (May 8, 2012) [hereinafter *Pilots Description*]; *See infra* Appendix 1.

<sup>30</sup> *Id.*

<sup>31</sup> *Id.*

<sup>32</sup> *Id.*

<sup>33</sup> *Id.*

<sup>34</sup> *Id.*

<sup>35</sup> *Pilots Description*, *supra* note 34.

Duffyfield neighborhood (an environmental justice neighborhood) to flooding associated with sea level rise and increased storminess.”<sup>36</sup> The EPA and FEMA set out four goals to help address the city’s concerns.<sup>37</sup> First, the EPA will analyze the city’s infrastructure in order to identify opportunities for “utilizing sustainable community and green infrastructure approaches” to help prevent flooding.<sup>38</sup> Additionally, the agencies will review land use regulations to isolate barriers and potential opportunities for “sustainable community and green infrastructure solutions.”<sup>39</sup> The third goal is to “increase consistency between the Craven County Hazard Mitigation Plan[,] local comprehensive plans[,] and land development regulations” in order to create a more collaborative approach.<sup>40</sup> Finally, the agencies will focus on a campaign to increase public awareness of the flood risks associated with climate change and the role of land use and community design solutions in helping to mitigate that risk.<sup>41</sup>

At the end of the project, the agencies hope to create training modules that can be used to replicate the approach, a white paper or report on how current policies create support, or barriers for effective adaptation and a report for each selection community.<sup>42</sup>

The EPA and FEMA expect to have the pilot projects completed in December 2012, at which time they will release their findings in an effort to help other communities better understand the process and to call attention to possible barriers created by current governmental policies.<sup>43</sup> If more state and local governments can learn from the adaptations put into place by the EPA and FEMA pilot projects, it may help to prevent future crisis caused by climate change.

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<sup>36</sup> *Id.*

<sup>37</sup> *Id.*

<sup>38</sup> *Id.*

<sup>39</sup> *Id.*

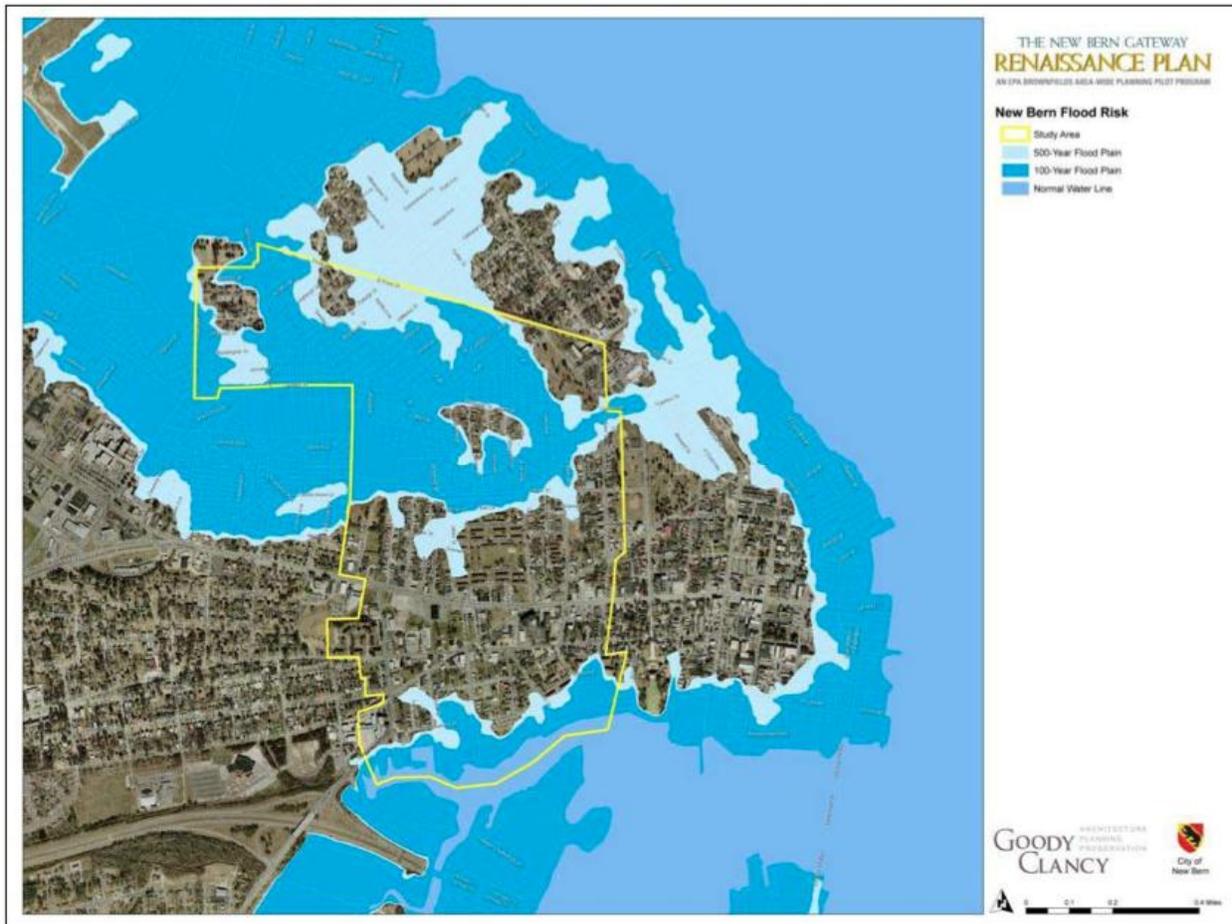
<sup>40</sup> *Pilots Description, supra* note 34.

<sup>41</sup> *Id.*

<sup>42</sup> *Project Description, supra* note 17.

<sup>43</sup> *Id.*

Appendix 1:



*Community Resilience Project Planning in the Carolinas: Pilots Description*, N.C. DEP'T. OF ENVTL. AND NAT. RESOURCES (May 8, 2012)