Kingston Flooding Task Force
New Central Baptist Church, 229 East Strand Street, Kingston, NY 12401
May 21, 2013 * 3:00-6:00pm

Draft Meeting 5 Summary

Next Meeting

Tuesday, June 18, 3-6pm, location TBD.

Action Items

- Task Force meeting 6 is scheduled for Tuesday June 18 (3-6 pm), with a focus on Task Force near-term adaptation recommendations.
- Task Force meeting 7 is scheduled for Tuesday July 16 (3-6 pm).
- Project Team members may contact Task Force members with further questions on boundaries and details of the COAST model.
- Mark Lowery will ask the NYSDEC floodplain manager about the option of incorporating enhanced floodplain regulations into zoning ordinances.

Welcome and Introductions

On May 21, 2013, members of the Kingston Flooding Task Force met at New Central Baptist Church for their fifth meeting. The 38 meeting participants are listed in Appendix 1. Meeting handouts included Adaptation Neighborhoods maps packet with survey results, Kingston Climate Smart Planning Summary, and a memo from Catalysis Adaptation Partners regarding using the COAST tool to test sea level rise and flooding adaptation scenarios. Meeting handouts and presentations can be found at www.kingstoncac.org .

Kristin Marcell (NYSDEC) introduced the day's overall goal: to evaluate and refine potential adaptation strategies for Kingston. Kristin also reinforced the accomplishments, goals, and timeline of the entire Kingston Flooding Task Force process. The next two meetings will take place on June 18, 2013 and July 16, 2013, with a final public meeting to share results in early fall.

Policy Tools for Kingston to Consider: Georgetown Climate Center's Adaptation Tool Kit

Mark Lowery (NYSDEC) presented information on the Georgetown Climate Center's *Adaptation Tool Kit: Sea Level Rise and Coastal Land Use.* (http://www.georgetownclimate.org/sites/default/files/Adaptation_Tool_Kit_SLR.pdf) Mark delivered a presentation written by tool kit author, Jessica Grannis, who was unable to attend. The Task Force had previously requested information about policy options. As Mark explained, the Adaptation Tool Kit is one of the best examples of tools Kingston can use. It is a free, publicly available PDF now posted on kingstoncac.org. The tool kit identifies a menu of options for decision makers, including 18 different land use tools. These tools are categorized as planning tools, regulatory tools, spending tools, and tax or market-based tools. The tool kit encourages communities to be opportunistic and consider how to address climate change by incorporating it into a community's current planning documents and process. It also describes the applicability of each tool for each of three strategies: protection, accommodation and retreat. The presentation included descriptions of the following approaches to addressing adaptation:

Rolling conservation easements. As described in the tool kit, the boundary between public and private land is the mean high water line (though this is not always the case in NY, see footnote). As sea level rises, this boundary will move landward. The boundary is not fixed because the high water line will move. To be sure that development does not restrict the migration of coastal resources landward, a rolling conservation easement recognizes the future loss of land by the property owner and pays him or her now for the future loss. Both the natural and public use of the land is protected, but compensation is given to the landowner.[1]

Tax incentives are another way communities can promote adaptation strategies. For example, tax rebates or credits can be given to building owners who agree to relocate out of the flood zone or retrofit their building to accommodate flooding (elevate or floodproof).

Transfer of development rights (TDR) designates sending and receiving areas for deverlopment. The area in the flood zone would be the sending area and development would be received by another designated area outside the flood zone. The sending property owner receives financial compensation for not developing his land and a conservation easement is placed on the property. The receiving property is located in an area in which the municipality wants to encourage development and in-fill. The buyer of development rights may be allowed to exceed standard zoning restrictions via increased building height or density. Down-zoning in both the receiving and sending areas may be necessary to implement a TDR program.

Zoning can be used to restrict reconstruction. Vulnerable areas can be rezoned to require that if buildings are damaged or destroyed by a flood, re-building must conform to new more stringent zoning. Some re-building restrictions may trigger "takings" lawsuits and must be carefully constructed. A local government can also create a sea-level rise zone with overlays for protection, accommodation, retreat and preservation.

Tax and market-based tools include tax rebates or credits given to property owners that agree to relocate out of the flood zone or for accomodation, transfer of development rights and real-estate disclosures.

Floodplain regulations are often based on flood insurance rate maps (FIRMs), developed by FEMA, but FIRMs are inherently flawed in that FEMA only uses historical data and does not take into account the increased future risk due to sea level rise. Municipalities can impose more stringent regulations for the flood areas. For instance, they could require that buildings be built to a 500-year flood standard.[2]

[1] Although not discussed during this presentation, in New York State, property boundaries may be defined by their relationship to mean high water or by metes and bounds relative to other geographic features. For a 500-year standard to be necessary to construct in, New York State municipalities do have authority to expand the regulated flood zone beyond the 100-year floodplain mapped by FEMA, e.g., to the 500-year flood boundary, but may only have authority to require that construction in this expanded flood zone meet the 100-year standard at the point of construction.

[2] Requiring construction to a 500-year standard is one tool municipalities do have authority to expand the regulated flood zone beyond the 100-year floodplain mapped by FEMA, e.g., to the 500-year flood boundary, but may only have authority to require that construction in this expanded flood zone meet the 100-year standard at the point of construction.

The tool kit indicates that *building codes* can be more restrictive than state codes[3] to encourage resilient design. This may include raising freeboard requirements. (Freeboard is the height in feet above flood level that a structure must be elevated to protect against uncertainty in flood height levels.)

*Shoreline protection***,** both by hard and soft methods, may be considered for balancing the protection of infrastructure and the natural environment. Municipalities can use both regulatory and spending tools to influence shoreline protection methods.

Spending tools include capital improvement programs, acquisition, buyout programs and conservation and rolling conservation easements.

Financing must be taken into account when considering among these options, especially for tax incentive and spending tools. One example cited was a Mecklenburg County, NC, which charges a stormwater fee for impervious coverage and uses the fund to purchase properties in flood-prone areas and restore natural floodplain protection.

Discussion with Task Force members included a question about incorporating enhanced floodplain regulations into zoning ordinances. Mark will check with the NYSDEC flood plain manager (see footnotes 2 and 3). And someone mentioned that Congress has been ordered to consider use of future conditions in development of flood insurance rate maps and that FEMA is producing additional risk mapping products. However, these products are not yet available for Kingston.

Kingston's Current Policies and Regulations: the Climate Smart Planning Assessment

Libby Murphy (Cornell/NYSDEC) presented the results from the Climate Smart Planning assessment of Kingston's current policies and regulations regarding climate change and flooding. The assessment provides a way for communities to identify their strengths related to climate change preparedness and resilience and to evaluate opportunities to increase their resilience. Kingston piloted this new tool for the NYSDEC. The assessment process required interviewing municipal officials including the police and fire chiefs and representatives from Parks and Recreation, Planning, Economic Development, Engineering and, Emergency Planning. Kingston already has numerous plans, ordinances and codes that address waterfront planning, flooding and emergency response issues. Some are up-to-date and others, such as the Kingston 2025 Comprehensive Plan update, will be completed soon. The team organized areas of opportunity identified during the assessment into three categories: planning, zoning, and outreach/collaboration and identified each as either a short or long-term action. Task Force members were invited to consider including some of these actions in their recommendations for a flood-resilient waterfront. Task force members have access to the full Climate Smart Planning spreadsheet and the recommendations summary on www.kingstoncac.org.

Examples of short-term planning opportunities include setting goals for flood resilience in the Kingston 2025 Comprehensive Plan and other city plans; including sea level rise in the Comprehensive Emergency Management Plan; and utilizing the USGS Rondout stream gauge for real-time emergency-management planning. One of the long-term

[3] In New York State, municipalities must request permission from the State Code Council to adopt local building codes that are more restrictive than local codes, including additional freeboard.

planning opportunities suggested was the creation of a city-wide Capital Improvement Plan that incorporates and prioritizes the funding needs and requests of all departments. Short-term strategies for zoning include adding zoning strategies to reduce flood risk in the Kingston 2025 Comprehensive Plan update process and evaluating ways to reduce the cost of flood insurance for property owners. Increasing flood resilience by revising local building codes and requiring property owners in flood-prone areas to go above the FEMA standards when rebuilding were identified as long-term planning opportunities. Short-term outreach opportunities include increasing public awareness of storm preparedness and flood-mitigation options. This could include installing high-water-mark signs in the waterfront area to educate the community about flood risk. Most importantly, a near-term focus could be sharing risk assessments and findings from the Kingston Flooding Task Force with Kingston officials, county officials, and neighboring communities. Longer-term initiatives could include collaborating with other local waterfront communities to plan for coastal hazards.

Task force members inquired about the timing of the Kingston Comprehensive Plan in hopes that the work by the Flooding Task Force can be incorporated in a timely way. Gregg Swanzey (City of Kingston) said there is another year in the plan process and that a draft may be available in the next month. Other Task Force members mentioned upcoming outreach opportunities.

Participants discussed a recent law mandating that flood insurance rates no longer be subsidized. As a result, flood insurance rates will be increasing 20-25% per year for the next four to five years until the rates landowners pay fully reflect the flood risk. This is expected to be a large financial burden to property owners.[4,5] The Ulster County Department of the Environment is participating in planning for a series of education sessions focused on these NFIP changes for communities in the west of Hudson New York City watershed areas. They are being organized by Cornell Cooperative of Ulster County through the Ashokan Basin Stream Management Program. A date is likely to be set in July, however, they are trying to keep the sessions relatively small so they will (unfortunately) be limited to WOH municipalities.

A Climate Smart Communities webinar on June 6 will address FEMA's Community Rating System, which may offer solutions for communities dealing with flood insurance premium increases.

Long Term Site-Based Vision For the Waterfront: Revised Kingston Maps and Survey Results

At the April Flooding Task Force meeting, Rob Lane, an urban designer, helped sketch ideas for adaptation suggested by Task Force members. After that meeting, Kingston Flooding Task Force members were asked to complete an online survey to share their input on various adaptation strategies developed by the Task Force. About 17 people gave their feedback via the survey. Libby Murphy, Kristin Marcell and Sacha Spector (Scenic Hudson) compiled and summarized the survey results. Sacha presented the key points/issues for each of the 11 segments of the Rondout-Hudson waterfront area under consideration. The Task Force will likely identify recommendations for each segment in

[4] http://www.dec.ny.gov/docs/water_pdf/fpmfemacfip.pdf and
[5] http://www.fema.gov/region-vi/national-flood-insurance-program-reform-frequently-asked-questions

its final report. The following is a brief synthesis of the survey results and discussion. For more complete detail see the detailed booklet provided, at www.kingstoncac.org.

1. Wilbur
   Two scenarios were proposed for this segment. The soft shore approach received very mixed opinions. There was more agreement for a hardened shore which could be elevated to maintain waterfront uses. Some Task Force members pointed out this might not be a feasible option for the long term; however it may be a short-term solution until inundation makes it infeasible. In order to use Route 213 as an access route and emergency entrance and exit, reengineering or elevation may be required.

2. West Abeel
   The majority of survey-takers agreed a wharf or pier system was the best approach.

3. Sass/Block Park
   While everyone agreed that the area should continue to support water dependent uses, there was no clear consensus on whether the area should be elevated or designed to flood safely. In order to use Route 213 as an access route and emergency entrance and exit, reengineering or elevation may be required. There needs to be a comprehensive look at the future of public recreation spots on the water.

4. Island Dock
   There was significant disagreement on appropriate long-term strategy for Island Dock. Is it protecting the marinas? Could it become a fringing wetland? The majority of responders agreed with proposed idea for a public park or considered the concept appropriate with some alterations. There are still questions and uncertainty about whether Island Dock is even feasible as a new developable space.

5. The Strand
   The majority of responders said that the proposed plan for elevating land and flood proofing structures needed further revisions. There was however a consensus on the need for water access and relocating the waste water treatment plant over the long term. Respondents said it is important to find a way to balance public access and commercial uses in the Strand. An additional alternative proposed by a Task Force member at meeting 4 (a non-linear shoreline and floating neighborhoods along the Strand) also received a significant amount of support in the survey.

6. Ponckhockie
   The initial proposed strategy (Alternative A) included an elevated road, flood proofed or elevated structures, and a waterfront greenway. Spector explained that this strategy is essentially a levee. About one third of responders were in favor of the proposed idea and half felt it needed improvement. Two new options were presented at the April meeting. These would require a substantial modification of city planning regulations, policies and building codes. Alternative B was to move the roadway landward and follow the contours of low-lying areas to avoid flood areas. Task Force members who are Ponckhockie residents

voiced concern that their houses will be "snorkeling" in this proposal. A third, Alternative C, suggested relocating and elevating the roadway to East Union Street with a series of wharfs or berms to create floating neighborhoods on the south side of the street.

At this (May) meeting, some Task Force members suggested an additional option that would include a raised (4-5') and bulkheaded walkway along the shoreline that would curve northward before the Millens property. This option might be most consistent with the Waterfront Development Implementation Plan. Stormwater management would be an important consideration in any strategy implemented in this neighborhood.

7. Lighthouse, North Street, and Kingston Point
   There was consensus that elevating the roads and trolley and creating a waterfront greenway are the best options as of now for all three of these areas. This strategy would require relocation of assets. One task force member noted that a report on oil storage facilities written in 1981 concluded that the best economical location for oil tanks is at Kingston Point because of high water use needs. Spector noted that loss of water dependent uses was the major downside for the Kingston Point strategy.

8. Sailor's Cove and AVR
   There was consensus for future development patterns (roadway elevation, floodproofing) to be consistent with other areas previously mentioned. When possible, people would like the greenway and soft shorelines maintained.

One member said residents may be more willing to bond for construction of a large scale waterfront strategy as they see their insurance rates rise. Another expressed concern that the regulatory climate is very uncertain and some levees are being decertified (like on the Esopus Creek) making it risky to finance long-term investments to fortify the shoreline. Spector concluded the discussion by saying that overall this body of work, which describes priorities and issues, will help the city plan for the future. Maps containing the final discussions by the Task Force will be included in the final report.

Selecting Scenarios for the COAST Model

JT Lockman (Catalysis) reminded everyone of the initial COAST runs, which used the 10- and 100-year storms, projected sea level rise and a USACE depth-damage function to illustrate losses Kingston should expect in 2060 and 2100. The next step in the Task Force process is to run the model again with potential adaptation scenarios. Like all models, it will not be a perfect representation; however, it can help the Task Force evaluate which strategies may be more cost-effective over time. Running three different adaptation strategies will enable us to begin comparing costs and to understand broadly how much damage would be avoided after implementing a particular strategy. Task Force members expressed concern at this meeting and prior meetings that the model only looks at hard costs though there are other important, less tangible costs that are not being represented such as employment revenue and environmental value. The Project Team acknowledged that those are also important, and noted that given the available time and budget for this project, this analysis can only consider damage to real estate with adaptation and without. Several members suggested beginning to make a list of

these other factors so that we can inform the city what has and hasn't been considered in this study.

Lockman distributed a memo from Catalysis on recommended scenarios for COAST to run. The group reviewed the suggested options. One community member pointed out that they didn't understand the height of elevation proposed in the adaptation scenarios and they didn't feel comfortable selecting a strategy without understanding the design height. Sacha Spector said the Task Force can select whatever heights they want. Lockman recommended for our discussion an elevation of 5-6 feet higher than the current elevation.

Task Force members discussed challenges the city would face in selecting adaptation strategies. For example, the city owns the road, but not the waterfront. Raising the road may be a more demanding construction process, but logistically it may be easier than implementing a bulkhead. Task Force members were very interested in getting average cost per linear foot for raising roads and increasing bulkheads, so that the information can be used later.

Task Force members agreed that it would be advantageous to do three different strategies in the same neighborhood. This ultimately led to the selection of three scenarios in the Ponckhockie area.

- Elevate road/trolley with curve inland (near church). Relocate some homes. Green infrastructure and pumps to manage stormwater.
- Buyout or relocate repetitive loss properties. Implement a rolling easement. Consider Allan Shope's waterfront concept. Floodproof structures. Change zoning and building code for resilient development on waterfront.
- Fortify/bulkhead with walkway levee, raised structure.

The Task Force briefly discussed how they wanted to define the length of the area to be studied. One Task Force member suggested including the WWTP. Some people were interested in completely combining neighborhood areas 5 and 6 when running the model. Areas 5 and 6 are the Strand and Ponckhockie, respectively. Others voiced concerned that we would basically be doing the entire waterfront. Lockman explained that we can think about development potential in these models; that is, adding development in vacant parcels. Task Force members agreed that by providing more transparency about unit pricing used in this exercise people in the community can reapportion in later years, which will make the exercise much more valuable in the long term.

<u>Near-Term Recommendations: Principles, Recommendations and Remaining Questions</u>

The remainder of the meeting focused on a group discussion of what needs to happen in Kingston in the next one to three years to move toward the long-term vision to address flooding. Ona Ferguson (Consensus Building Institute) led a group discussion, posing the following three questions. Responses were grouped by question.

A. What essential principles should guide us?

- Need to plan to preserve and protect the people and culture of Ponckhockie and the whole waterfront. A Ponckhockie resident stated that everyone's property, homes, and businesses along the entire waterfront must be taken into careful

consideration. We have to make sure that decisions are fair. If we show these proposals, we have to be clear that everyone's interests have been considered.
- We need to consider the increase in flood insurance and ways to help people with it.
- Whatever actions we take should not make the community more vulnerable than it is already.

B. What are ideas for the future that there is general agreement on?
- We need to plan to preserve and protect the people and culture of Ponckhockie and whole waterfront to City line.
- We need to consider the increase in flood insurance and ways to help people with it.
- We want to maintain our relationship to the water.

C. What outstanding questions require further study (which the Task Force can name to help them get addressed by the in the future)?
- Need great effort to show respect for properties and communities and to explain in lay language why some outcomes are likely not appropriate. There will need to be outreach and discussions with communities and neighborhoods to help residents and business owners understand the particular decisions the Task Force made.
- What will be done to preserve and protect the people who already have water in their backyard?
- What is the cost of moving buildings out of the floodplain?
- What is the monetary value of employment provided, historic preservation, cultural preservation, and ecology for different parcels, sites and buildings?
- If SLR doesn't happen, how do we plan for and deal with that?

Other suggestions for wrapping up Task Force's work
- We should produce a good timeline and visuals to explain what adopting various adaptation measures would mean over time. These should make it clear that change won't happen all at once and won't happen immediately.

Appendix 1: Meeting Participants

Task Force Members
Abel Garraghan, Heritage Energy
Ann Loeding, Friends of Kingston Waterfront and Resident
Arthur Snyder, Ulster County Emergency Mgmt
Deanna Roberston, representing Mike Oates Hudson River Ventures
Dennis Doyle, Ulster County Planning
Doris Edwards, Riverview Baptist Church
Gayle Johnson, New Central Baptist Church
Huntley Gill, Guardia Architects
Jennifer Schwartz Berky, Kingston Resident
Jon McGrew, Trolley Museum
Kevin McEvoy, Kingston Land Trust and Resident
Mark Brown, Kingston Fire Department
Steve Finkle, S. Finkle Associates, Inc. / Hudson Landing
Tim Feeney, Feeney's Shipyard
Tom Hoffay, City of Kingston - Common Council Ward 2

Project Team Members
Betsy Blair, NYSDEC HRNERR
Fran Dunwell, NYSDEC HREP
Ona Ferguson, Consensus Building Institute
Emilie Hauser, NYSDEC HRNERR
JT Lockman, Catalysis Adaptation Partners, LLC
Mark Lowery, NYSDEC Office of Climate Change
Kristin Marcell, NYSDEC HREP Cornell
Libby Murphy, NYSDEC HREP Cornell
Julie Noble, City of Kingston - CAC
Sacha Spector, Scenic Hudson
Gregg Swanzey, City of Kingston - Economic Development
Christina Tobitsch, NYSDEC HRNERR and SCA

Others Present
Louis Ballarin, U.S. Army Corps of Engineers
Diane Dintruff, Esopus Resident
Claudia Ford, Kingston Resident
Essie Ford, Kingston Resident
Amanda Lavalle, Ulster County
David Railsback, ARCADIS
Brenna Robinson, City of Kingston
Steve Rosenberg, Scenic Hudson
Nancy Schneider, Earth People
Joan Shea, U.S. Army Corps of Engineers
Joan Williams Washington, Kingston Resident