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Ensuring Resilient, Prosperous Waterfronts

Kingston Waterfront Flooding Task Force

Scenic Hudson spearheaded creation of a collaborative public planning process to help communities develop strategies for ensuring that investments and actions along their waterfronts enhance resilience, protect quality of life and the natural environment, and bolster economic development. The City of Kingston was the first community to engage in this process when Mayor Shayne Gallo established the Kingston Waterfront Flooding Task Force in December 2012.

THE TEAM

The task force was comprised of:

- City officials, municipal and emergency management employees, concerned citizens, and leaders in business and non-governmental organizations
- Experts from Scenic Hudson, the NYS DEC Hudson River Estuary Program and Department of State (DOS), the Consensus Building Institute and Catalysis Adaptation Partners

THE THREAT

- Sea level in the Hudson River Estuary at Kingston can be expected to rise between 15 and 72 inches by 2100.
- Area along the city's Rondout and Hudson waterfronts subject to tides or flooding could expand from 118 to 80 acres.
- If this flooding is not mitigated, the city could face tens of millions of dollars in future property damage.

THE PROCESS

STEP 1: Outlining a vision

At a kick-off meeting, the task force and members of the public—Kingston residents, business owners and other stakeholders—described their visions of a flood-resilient Kingston waterfront. The task force then selected key themes to guide their process:

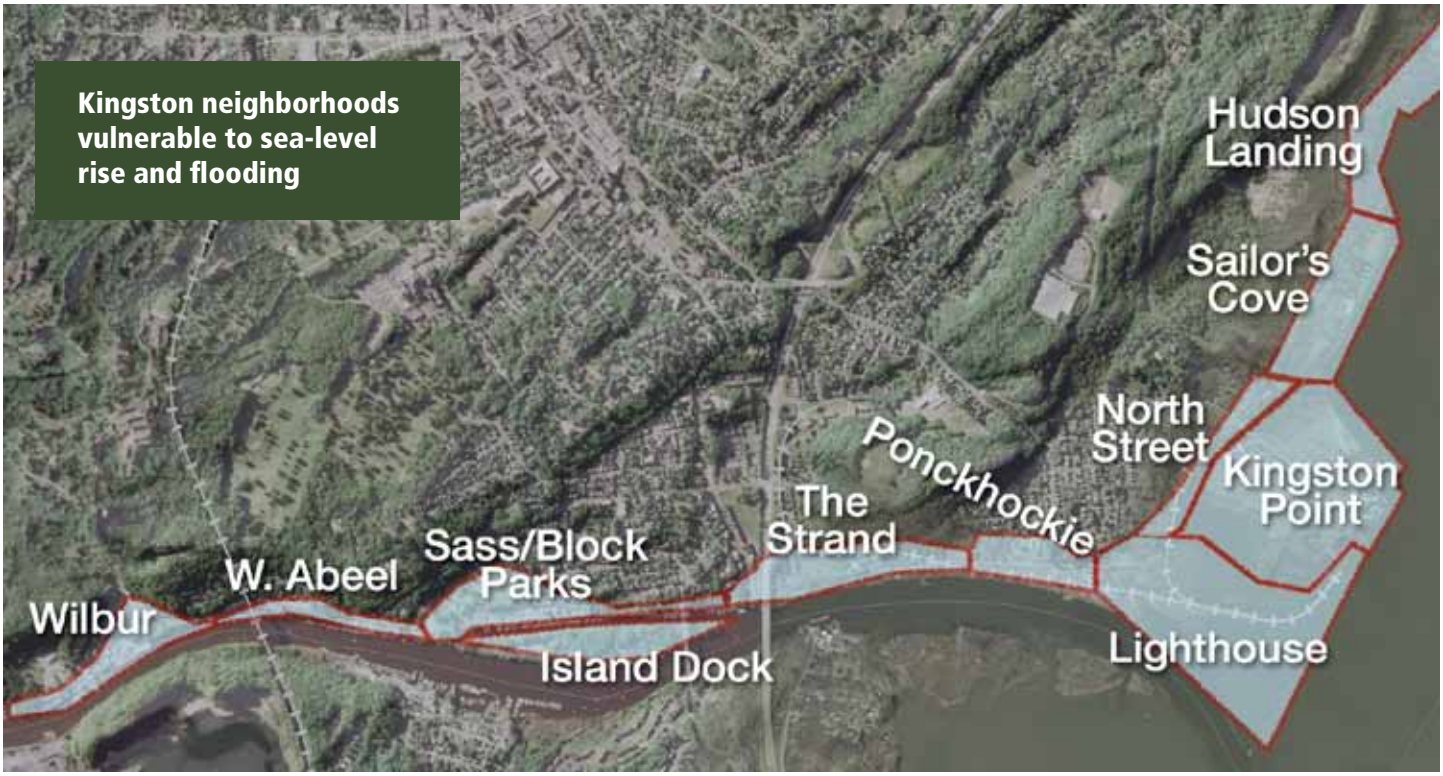
- Recognize waterfront history and preserve a sense of community and a "sense of place"
- Promote a waterfront economy and economic revitalization
- Prioritize health and safety
- Use natural systems to reduce flood risk
- Secure infrastructure
- Promote the implementation of Kingston's Climate Action Plan, including reduction of greenhouse gas emissions through green architecture

STEP 2: Assessing vulnerability

The task force identified and mapped 121 waterfront assets and assessed their vulnerability. Under the highest projected sea-level-rise, over 50 of these assets could be inundated within 50 years if no action is taken.

The task force also examined 11 neighborhoods, and areas along the city's waterfronts, and considered where:

- Shoreline protection may be needed;
- Natural shorelines and innovative architecture might be combined to create resilient neighborhoods; and
- Wetlands and high water should be allowed to migrate inland to safeguard natural resources.



STEP 3: Making Recommendations

The task force's final report, "Planning for Rising Waters," outlines 24 general recommendations (below) and 32 site-specific recommendations. All recommendations advance goals in the DEC Hudson River Estuary Program's Action Agenda—"helping waterfront communities proactively plan a future that balances and reduces risks to people, property and nature, and holds the promise of secure, thriving riverfront communities within a vibrant, healthy ecosystem."

City operations, funding and decision-making should strive to reduce vulnerability to flooding and increase resilience.

1. Adopt the sea-level rise and flood projections recommended by New York State and the Kingston Waterfront Flooding Task Force for planning purposes.
2. Incorporate the task force's findings and recommendations into other city and regional plans.
3. Develop a Kingston Waterfront Long-Term Resiliency Plan.
4. Reduce Kingston's greenhouse gas emissions and contribution to sea-level rise and other climate impacts through implementation of Kingston's Climate Action Plan, green infrastructure and green architecture.
5. Ensure that all relevant city staff and elected and appointed officials are fully trained in and expected to incorporate impacts of flooding and sea-level rise into their daily work.

Kingston Point Park on the Hudson River

The city should encourage safe and resilient structures in the waterfront area through zoning, permitting and building codes in existing and new development.

6. Ensure that zoning designations in the Kingston 2025 Comprehensive Plan consider increasing risk and vulnerability from flooding and sea-level rise.

7. Require that proposals for new development of any kind in the Flood Hazard Overlay District take flood risk into account.

8. Reduce stormwater, upland flooding and combined sewer overflows through green infrastructure and best stormwater-management practices.

9. Research, evaluate and implement changes to city building and zoning codes that will increase resiliency and are cost-effective and socially equable.

10. Study the feasibility of using policy, zoning and building codes to achieve creative, water-dependent and water-enhanced uses that are resilient, including elevated, amphibious or floating structures; wharves; berms; and elevated rights of way.

11. Evaluate the use of natural buffers and green shoreline infrastructure to reduce flood risk and erosion and conserve natural resource functions.

12. Ensure that local street networks, utilities and other infrastructure function and remain connected as the city implements adaptation strategies to sea-level rise.

13. Research and evaluate land-use tools and financing mechanisms or incentives to facilitate flood adaptation on the waterfront.

A busy Rondout Creek waterfront

Kingston should promote its waterfront as a world-class destination and promote its waterfront economy and economic revitalization.

14. Ensure opportunities exist for open space and recreation over the long term.

15. Consider future flood hazards in economic development planning.

16. Develop a plan to mitigate both near- and long- term risk to the city's wastewater treatment facility.

The city should engage with the community through collaboration and public outreach to raise public awareness about the risks of flooding, coastal hazards and sea-level rise.

17. Host an informational public meeting with the Federal Emergency Management Agency (FEMA).

18. Conduct public outreach to property owners, tenants and prospective buyers in the Flood Hazard Overlay District.

19. Encourage and assist community-based organizations in their efforts to communicate the risks of flooding and potential adaptation solutions to vulnerable or non-English speaking populations.

20. Collaborate with other waterfront communities and county and state governments to plan for coastal hazards like sea-level rise and storm surge.

Kingston should ensure the efficiency and effectiveness of emergency management strategies to promote the safety of residents and limit damage to infrastructure and properties.

21. Revise emergency management planning documents.

22. Employ new tools to improve real time emergency-management planning.

23. Ensure safe access and evacuation along the waterfront during regular flood events.

24. Develop a process to map and track repetitive storm damage.

STEP 4: Leveraging public & community support

The task force's report—unanimously approved by the Kingston Common Council in November 2013—provides guidance on how to implement the recommendations and compete for future state and federal support for waterfront improvements. It also encourages convening a cadre of community members and stakeholders with training and experience in planning for waterfront resilience.

"Planning for Rising Waters" is available online at **kingstoncac.org/initiatives**.

Scenic Hudson's participation in the Kingston Waterfront Flooding Task force was made possible by a grant from the Whitney Foundation and Sean Eldridge, founder and president of Hudson River Ventures.

Piermont

Catskill

NEXT STEPS

Convening forums in Piermont & Catskill

Building upon the success of the Kingston Waterfront Flooding Task Force and with support from, among others, the New England Interstate Water Pollution Control Commission, NYS DEC and the Dyson Foundation—we're spearheading collaborative public planning initiatives in two more communities that suffered from the ravages of tropical storms Sandy, Irene and Lee—Piermont (Rockland County) and Catskill (Greene County).

Both communities:

- Lie at the mouths of creeks: Piermont's namesake pier stretches a mile into the Hudson just north of Sparkill Creek; Catskill Point juts into the river immediately north of Catskill Creek.
- Have important tidal marshland in immediate proximity; and
- Are home to marinas, restaurants, shops and residences prone to flooding.

However, they also are very different:

- Piermont's successful commercial district likes along a narrow floodplain hemmed between the shoreline and steep bluffs, while riverfront condominiums, restaurants and shops fill part of the pier.
- Catskill occupies land that slopes gradually upward along both sides of Catskill creek. Catskill Point is home to two oil tank farms, marinas, a restaurant, and a museum and public park.

We hope the outcomes achieved via these locally driven task forces will enable both communities to breathe new life into their waterfronts while ensuring that life and property are protected against future flooding and major storms

Sharing critical data

Scenic Hudson has created an online "adaptation tool box" (www.scenichudson.org/slr) that offers an interactive map for visualizing various scenarios of where future high tides and flood zones will reach and how communities and natural resources might be affected.

By using our online technology, communities can:

- Create maps showing the extent and impacts of inundation and flood zone expansion;
- Understand the vulnerability of key built infrastructure to flooding; and
- Create graphics illustrating different sea level-rise scenarios down to the neighborhood and street level.