CIRCA Phase III: Resilient South End
Stratford

UConn Avery Point, Groton, CT
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Introduction

- **Project Study Area:** South End Neighborhood and Lordship Commercial and Industrial District

- **Objectives:**
  - Identify and document challenges to implementing Key Projects from 2016 Resilience Plan.
  - Identify additional beneficial projects or revisions to proposed projects.
  - Outreach to Stakeholders and community members.
Technical Advisory Committee

• Laura R. Hoydick, Mayor, Town of Stratford
• Christopher Pia, Council Chair, Stratford Town Council
• Mary Dean, Economic & Community Development Director, Town of Stratford
• Christopher Tymniak, Chief Administrative Officer, Town of Stratford
• Jay Habansky, Planning and Zoning Administrator, Town of Stratford
• Kelly Kerrigan, Environmental Conservation Superintendent, Town of Stratford
• John Casey, Town Engineer, Town of Stratford
• Susmitha Attota, Town Planner, Town of Stratford
• Matt Fulda, Executive Director, Metro COG
Workshop 1: Results

Format: Open House Event in South End with 7 Stations

Objectives:
- Inform participants of short- and long-term climate change impacts and climate resilience strategies in the 2016 Coastal Community Resilience Plan
- Identify local experiences and concerns about climate change and existing infrastructure, programs, and policies that already support community resilience
- Develop priorities and criteria for evaluating climate resilience projects in the South End neighborhood, including criteria in support of federal grant funding and PERSISTS* criteria:
  - *Permittable, Equitable, Realistic, Safe, Innovative, Scientific, Transferable, and Sustainable

Station 1: Introduction

Station 2: Hazards and Vulnerabilities

Station 3: Stratford Coastal Resilience Strategies and Projects—Progress So Far

Station 4: Resilience Strategies—Protect, Accommodate, Retreat

Station 5: South End Resilience Priorities

Station 6: Criteria for Evaluating Projects

Station 7 Closing Survey
### STATION # 2

#### Sea Level Rise

**Great Medows Marsh**
- Plant native phragmites.
- Sells the concept of nature-based protection.
- People want the view.
- Rocks won't save you.
- Plant trees, talk to landscapers about native species.

**Housatonic River high tide cycles higher every year.**

- Frequent flooding along Main Street near airport cuts off access for cars.
- Hamilton Ave. Floods with big drop in road.
- Surf Ave flooding under exit 30 overpass (astronomical high tide).
- Children & elderly have to walk in flooded waters to bus stop.

- 1 foot of water in building.
- Surf Ave Exit 30 underpass.
- Residents feel no one cares. Years old problem.
- Flooding Exit 30. Property value???
- Basement floods up to 2nd step leading to main level-Orange St.

#### Inland & Coastal Flooding

**House on Hamilton Ave between Corinthian Ave and South Ave. Main level floods. Floor had to be replaced.**

**Housatonic River incoming tide/storm water coming down creating flooding is more frequent.**

**Base flooding**
- Lack of insurance issue.
- Children and bus stops.
- Children have to walk through flooded streets.

- Exit 30 Stratford having a re-play of Katrina. Where is everyone going to go?
- Contained flooding not only causing structural damage to homes/devalues property, but increases mental stress and health problems, i.e. mold.

#### Extreme Temperatures and Drought

**Air pollution. Lack of trees.**

**Open space needs more funding to increase value of non-industry buildings.**

**The South End places and people that I’m most concerned about are...**

- **Housatonic River Marsh Areas**
- Sikorski Airport
- Natural areas along river/marsh

- **Increase in frequency and depth of the water flooding on Long Beach Blvd.**
- **Orange St. Hazard. Whole road floods making driving hazardous.**
- **Signage and evacuation plans. Not clear which any to go during a flood. Need signage.**
- **Children unable to play in front or back yards when it floods. 304 Orange St and surrounding areas.**
- **Cannot drive some roads when flooded. Finding alternate roads can be challenging. South End—Orange St, Garibaldi, Harding. Masarik.**
- **Elderly residents/young children stuck indoors when flooding is high. Anywhere it floods.**
- **Property damage to vehicles and basements and property. Orange St, Harding, Hamilton, Columbus.**
**Resilient Stratford South End**
**Stratford Coastal Resilience Projects**

**PROJECT DESCRIPTIONS**

1. **R))).ippy Levees**
   - The project concept is to construct a structural toe wall and a levee at the junction of the R))).ippy Street and the Title 5.1 Resilient Streets, coupled with 30% engineering and design, to enhance the levee's functionality.

2. **Wastewater Treatment Plant**
   - This project aims to improve the wastewater treatment plant's capacity, including modifications to the existing facility and construction of a new treatment facility.

3. **Greenway Levee and Living Shoreline**
   - The project involves constructing a levee along the coastline and implementing a living shoreline system to enhance coastal resilience.

4. **Former Stratford Army Engine Plant (SAP)**
   - The project involves converting the former army engine plant into a community center, including 30% engineering and design, and implementing 50% construction.

5. **Stratford Point Living Shoreline**
   - The project aims to restore and enhance the coastline along Stratford Point, including construction of a living shoreline and implementation of 50% construction.

6. **Great Meadows Marsh Restoration**
   - The project involves restoring the Great Meadows Marsh to its natural state, including construction of a levee and implementation of 50% construction.

7. **Long Beach Boulevard Flood Protection**
   - The project aims to provide flood protection to Long Beach Boulevard, including construction of a levee and implementation of 50% construction.
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<th>Frequency of bottom rankings (8)</th>
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<td>97</td>
<td>17</td>
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### Potential Criteria

<table>
<thead>
<tr>
<th>Rating</th>
<th>(use the numbered stickers to prioritize the criteria)</th>
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<tbody>
<tr>
<td><strong>Permitable</strong></td>
<td>Can be authorized through necessary Federal, State, and local permits</td>
</tr>
<tr>
<td><strong>Equitable</strong></td>
<td>Ensures that benefits are equitable among populations</td>
</tr>
<tr>
<td><strong>Realistic</strong></td>
<td>Can be realistically engineered and is plausibly fundable</td>
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<tr>
<td><strong>Safe</strong></td>
<td>Reduces risks to people and infrastructure</td>
</tr>
<tr>
<td><strong>Innovative</strong></td>
<td>Process has considered innovative options</td>
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<tr>
<td><strong>Scientific</strong></td>
<td>Apply and improve on the best available science</td>
</tr>
<tr>
<td><strong>Transferrable</strong></td>
<td>Can serve as model for other communities</td>
</tr>
<tr>
<td><strong>Sustainable</strong></td>
<td>Socially, economically, and ecologically sustainable and supported by the public and leadership</td>
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Implementation Challenges: Neighborhood Protect Strategy

**Protection** is Stratford’s long-term resilience strategy for the study area.
Implementation Challenges: Neighborhood Protect Strategy

2016 Plan identifies frequent flooding pathways where water enters the study area today during storms with a greater than 1% annual chance of occurring, such as Hurricane Sandy.
Implementation Challenges: Neighborhood Protect Strategy

A neighborhood flood protection strategy for the study area would need to close these current flood pathways. Mitigating impacts from less frequent floods, or similar frequency future floods, requires higher flood protection structures and a greater extent north along the Housatonic River.
Implementation Challenges: Protect Strategy

Permitting Challenges:

• **Connecticut Coastal Management Act**: “No-Net-Increase” in Shoreline Armoring, Prioritizing Natural and Nature-based Solutions, and avoiding **adverse impacts**, including:
  - degrading rocky shorefronts, beaches, or tidal wetlands
  - degrading natural or existing drainage patterns
  - degrading natural shoreline erosion and accretion patterns
  - degrading habitat
  - degrading visual quality
  - reducing existing public access

• **Work on Private Property**: avoiding scenarios where private sector decisions negatively impact publicly funded projects.

• **Coastal A Zone Regulation**: land seaward of the Limit of Moderate Wave Activity (LiMWA) is regulated as strictly as the Coastal VE zone
Implementation Challenges: Protect Strategy

Consensus Building and Public Support

• **Coastal Resiliency Team**: Providing adequate coordination with other Town boards, staff, commissions.

• **Public Investment**: Increasing property value and preventing gentrification

• **Communicating Realistic Benefits and Limitations**: Ongoing communications about the realistic benefits and limitations of flood protection will be critical to enable trust between government and residents and ensure that residents and businesses do not take on excessive economic risks.

• **Prioritizing Stormwater Flooding Hazards**: Town has retained a consultant to begin an engineering study
Implementation Challenges: Protect Strategy

**Funding**

- **Short Term Funding** – Municipal and grant matching funding needed

- **Short Term Funding – Grant Competitiveness:** FEMA Building Resilient Infrastructure and Communities (BRIC) funding requires that mitigation projects “must solve a problem independently or constitute a functional portion of a long-term solution with assurance the project as a whole will be completed.”

- **Determining a Target Level of Protection:** will this neighborhood flood protection system seek to mitigate the impacts of more frequent current flooding, less frequent/future frequent flooding? Will levees be designed to achieve FEMA Accreditation?

- **Long Term Funding** – Operation & Maintenance, elevating buildings and transportation infrastructure
Key Projects

1. Water Pollution Control Facility Flood Improvements and Birdseye Levee Connection

2. Greenway Berm

3. Access Road Flood Wall

4. Lordship Boulevard Flood Wall

5. Lordship Industrial Flood Wall/Vegetated Berm

6. Bruce Brook Culvert
Implementation Challenges: Project 2
Greenway Levee and Living Shoreline

Barriers to Overcome

• Property Ownership and abutters?
• Spatial and Topographic Constraints?
• Public Access?
• Visual Impacts?
• Environmental Impacts?
• Zoning?
• Maintenance?
• Other?
Implementation Challenges: Project 3
Access Road Flood Wall

Barriers to Overcome
Property Ownership and abutters?

- Spatial and Topographic Constraints?
- Public Access?
- Visual Impacts?
- Environmental Impacts?
- Zoning?
- Maintenance?
- Other?
Implementation Challenges: Project 4
Lordship Boulevard

Barriers to Overcome

- Property Ownership and abutters?
- Spatial and Topographic Constraints?
- Public Access?
- Visual Impacts?
- Environmental Impacts?
- Zoning?
- Maintenance?
- Other?
Implementation Challenges: Project 5

Lordship Industrial Flood Wall/Vegetated Berm

Barriers to Overcome

- Property Ownership and abutters?
- Spatial and Topographic Constraints?
- Public Access?
- Visual Impacts?
- Environmental Impacts?
- Zoning?
- Maintenance?
- Other?
Alternative Alignment: Project 3
Access Road Flood Wall
Alternative Alignment: Project 5

Lordship Industrial Flood Wall/Vegetated Berm
LESSONS LEARNED

• Integrating and connecting project segments is key to creating an effective Neighborhood-Scale Protect Strategy for coastal flooding
• Inclusive consensus building on solutions with socially vulnerable residents, community leaders, businesses, Technical Advisory Committee members and other stakeholders is essential.
• Need to also advance stormwater resiliency solutions within the South End residential area.
• Regulations for new development need to incentivize design for resiliency
• Sikorsky Memorial Airport location, elevation, FAA restrictions, ownersip complicates protect strategies
THANK YOU!