Conflicts and Cooperation

A Case Study of Historic Preservation and Flood Protection in Municipal Plans and Codes
Funding and Partners

• Disaster Relief Appropriations Act of 2013 (PL 113-2)
• Department of Interior – National Park Service
• Grant to SHPO
  • Funding limited to Sandy-impacted Counties

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Agenda

• Background
• Project Scope
• Results
• Best Practices
• Summary
• Questions
Background

The History and Future of Coastal Hazards in Connecticut

Damage in Milford following the hurricane of September, 1938
History of Coastal Hazards in Connecticut

Damage to Sound View, Old Lyme

Photo courtesy UCONN Libraries – MAGIC
History of Coastal Hazards in Connecticut

Destruction at Hawk’s Nest Beach

Photo courtesy UCONN Libraries – MAGIC
History of Coastal Hazards in Connecticut

Pine Creek Point, Fairfield County

Photo courtesy UCONN Libraries – MAGIC.
History of Coastal Hazards in Connecticut

Pine Creek Point, Fairfield County

Photo courtesy UCONN Libraries – MAGIC.
Ash Creek Corduroy Road is being undercut by shoreface erosion.
"In country after country, managers of national parks and other historic sites are realizing that climate change, with its coastal flooding and erosion, rising temperatures and more intense rainstorms, represents a profound risk to the heritage they are trying to preserve."


This project: Assist coastal municipalities by helping them incorporate historic preservation into resiliency planning.
Project Scope
Hazards Addressed and Documents Reviewed
Current Risks Considered

- **Inundation** from Storm Surge and Riverine Flooding
  - FEMA 1% Annual Chance Flood

- **Wind: Stress and Debris**
  - Approximately equal geographically
  - Some construction more vulnerable
  - Directly on water = higher risk

- **Winter Storms: Snow and Icing**
  - Approximately equal geographically
  - Some construction more vulnerable
  - Snow load on roofs is the greatest risk

**Future Risks Considered**

- **Temperature Change**
  - Heat, Humidity, Intensifying Storms, Wildfire

- **Precipitation Change**
  - Drought, Intensifying Precipitation Events, Flooding

- **Sea Level Rise**
  - Nuisance Flooding, Erosion, High Water Table, Human Migration

**Relative Sea Level on the Connecticut Coast is Projected to Rise 1-8 feet Above 2000 Levels by 2100**

Relative Sea Level (feet) relative to Historic Mean Sea Level at NOAA Tide Gauges, 1938 – 2015:

- New London Gauge: 0.1 – 0.24 inches/year
- Bridgeport Gauge
- New Haven Gauge

Historic Mean Sea Level at NOAA Tide Gauges, 1938 – 2015

• Temperature Change
  - Heat, Humidity, Intensifying Storms, Wildfire

• Precipitation Change
  - Drought, Intensifying Precipitation Events, Flooding

• Sea Level Rise
  - Nuisance Flooding, Erosion, High Water Table, Human Migration
Future Risks Considered

- **Sea Level Rise:** What *could* this look like?
What are the Planning and Regulatory Gaps?

- Gaps between historic resource preservation and resilience are present in all of the following:
  - Plans of Conservation and Development
  - Flood Damage Prevention Regulations
  - Other Local Ordinances and Regulations
  - Hazard Mitigation Plans
  - Resiliency Plans
  - Emergency Operations Plans
Results

Gap Analysis Findings
Gap Analysis: POCD

Historic Resource Chapter
Hazard or Flood Chapter
HR Protection from Hazards
Some Integration

Legend:
- Fairfield
- New Haven
- Middlesex
- New London
- Total

Fairfield
New Haven
Middlesex
New London
Total
Gap Analysis: POCD

**Integration**

- Notes that many historic resources have already been lost to both natural & human processes (1938 hurricane)
- Preserve historic character of historic districts located within the shore area
- Notes need to mitigate hurricane and sea level rise impacts on historic beach community

**Takeaways**

- Focus on protection from development pressure
- Express concern about protection, but few action steps
Gap Analysis: Hazard Mitigation Plan

Hazard ID & Risk Assessment
Capability Assessment
Specific Mitigation Strategies
Related Mitigation Strategies

- Fairfield
- New Haven
- Middlesex
- New London
- Total
**Gap Analysis: Hazard Mitigation Plan**

**Integration**

- Public Survey included questions about historic resources
- Risk Assessment lists NR and LR sites, number and value vulnerable to each hazard
- Risk assessment recognizes higher vulnerability of "old" buildings
- Actions:
  - Develop guidelines to retrofit existing structures in a manner that is respectful to significant or contributing structures and to overall neighborhood preservation.
  - Remove equipment from library basement (may include historic documents)
  - Install shutters on "old" buildings
- Mohegan & MPTN discuss sacred lands and burial grounds

**Takeaways**

- Aware of historic resources, but limited action
- Historic resources noted as high potential loss facilities, not addressed in strategies
- Concern about elevating & retrofitting historic buildings
- Participation of historical societies in plan development
Gap Analysis: Coastal Resilience Plan

- Maintain Related Plan
- HR in Vulnerability/Risk
- HR in Strategies

Fairfield | New Haven | Middlesex | New London | Total

Graph showing the percentage gap analysis for Coastal Resilience Plan across different categories and regions.
Gap Analysis: Coastal Resilience Plan

Integration

• Risk & Vulnerability: discusses exposure of NR historic districts to flood risk
• Actions:
  – a storm water pumping-station project will provide protection to the town’s historic center
  – one plan refers to this project as a source for preservation & protection actions

Takeaways

• Few existing plans
• Potential integration tool
Gap Analysis: Ordinances

- No Historic Exemption
- Historic Preservation Ordinance
- HPO Addresses Hazards
- Historic District Overlay
- HDO Addresses Hazards
- HR Hazard Protection Addressed

Categories: Fairfield, New Haven, Middlesex, New London, Total
Gap Analysis: Ordinances

Integration

• **Substantial Improvement:**
  – (44 CFR 59.1): “alteration to an *historic* structure does not constitute a substantial improvement, provided that the alteration will not preclude the structure’s continued designation as an historic structure.”

• **Variances:**
  – (44 CFR 60.6(a)): “Variances may be granted for the repair or rehabilitation of *historic* structures upon a determination that the proposed repair or rehabilitation will not preclude the structure’s continued designation as a historic structure and the variance is the minimum necessary to preserve the historic character and design of the structure.”

• Zoning regulations allow for relocation of historic structures if it is not possible to preserve the structure in its original location

Takeaways

• Historic resources tend to be addressed in generalities, and different resource classes usually are not called out.

• Confusion about historic preservation ordinances and floodplain management ordinances
Gap Analysis: Emergency Operations Plans

EOP

Addresses Historic Resources
- Fairfield
- New Haven
- Middlesex
- New London
- Total

0%
1%
2%
3%
4%
5%
6%
Gap Analysis: Emergency Operations Plans

Integration

- Old Saybrook: Historic Resources covered in Annex 14

Takeaways

- Not addressed
- Essential document for successful preservation
Gap Analysis: Takeaways

**Challenges**
- Integration is limited and nonspecific
- Integration is unintentional
- Concern is present more than actions
- Confusion across documents and departments
- Resources are not known or registered
- Almost no discussion of disaster recovery

**Municipal Feedback**
- How do we balance protection and preservation?
- How do we convince property owners?
- Protect all classes of cultural resources!
- Want clear, specific, template-style recommendations
- Will follow the leadership of the State
Best Practices
Guidance for Municipalities
Guidance for Municipalities

1. Integrate Preservation & Resilience in Planning
2. Strengthen Recovery Planning
3. Revisit Floodplain Regulations & Ordinances
4. Revisit Historic Preservation Regulations & Ordinances
5. Identify Historic Resources
6. Coordinate Regionally & With the State
7. Prioritize Adaptation Measures
1: Integrate Preservation & Resilience

- **Collaborate between departments**
  - Building, P&Z, Public Works, Emergency Management, etc.
  - Assign historic resource hazard resilience to specific person or department

- **Cross-reference Documents**
  - Consistent concerns, goals, strategies, & actions

- **Streamline Planning Documents**
  - Consolidate using POCD
  - Build actions into Capital Improvement Plan

- **Hazard Mitigation Plans**
  - Address historic resources specifically
  - Critical facility historic value

- **Plan of Conservation and Development**
  - Integrate preservation & mitigation
  - Consolidate other plans

- **Emergency Operations Plan**
  - Layout preservation responsibilities during response and recovery
• **Emergency Operations Plan:**
  • Incorporate historic resource protection into EOP so those assets are considered during initial response

• **Disaster Recovery Plan (DRP):**
  • Develop a DRP that designates roles and responsibilities
  • Include historic resource protection

• **Recovery Ordinances:**
  • Ensure ordinances protect historic resources during recovery activities
  • Delay-demolition, regulated activities, protected areas

• **Recovery Drills**
  • Run Emergency Recovery Drill to determine weaknesses and threats in recovery capabilities with regards to historic and cultural resources

• **Debris Management Plan (DMP):**
  • Review & revise DMP to ensure storage of debris after a storm will not negatively impact historic or cultural sites
3: Revisit Floodplain Regulations

• **Substantial Improvement:**
  • (44 CFR 59.1): “alteration to an *historic structure* does not constitute a substantial improvement, provided that the alteration will not preclude the structure’s continued designation as an historic structure.”

• **Variances:**
  • (44 CFR 60.6(a)): “Variances may be granted for the repair or rehabilitation of *historic structures* upon a determination that the proposed repair or rehabilitation will not preclude the structure’s continued designation as a historic structure and the variance is the minimum necessary to preserve the historic character and design of the structure.”

• **Insurance:**
  • Determine pricing impacts prior to starting any work
  • Certain funding sources prioritize historic preservation

• **Municipal Protocol:**
  • Maintain list of historic structures within SFHA
  • If variance is requested, check structure against list
  • Require variance requests include proof of registration
  • Establish local Historic Resource Commission
4: Revisit Historic Preservation Ordinances

- **Hazard Mitigation Retrofit Design Guidance**
  - Acknowledge need to retrofit historic structures to protect from hazards

- **Consider Future Historic Zones and Hazard Zones**
  - Village/design/floating overlay districts can be tools
  - Design language to allow changes as areas become historic or at-risk

- **Consider Other Cultural Resources**
  - Historic landscapes, cemeteries, agricultural areas

- **Implement a Historic Preservation Ordinance**
  - Create more broadly applicable regulations that will help protect historic resources not covered by other overlays or requirements

- **Permit and Grant Applications**
  - Require applicants include historic resource information
  - Pursue hazard mitigation projects that also help preserve historic and cultural resources
5: Identify Historic Resources

Historic sites *must be officially listed on a register* to be recognized and eligible for protections, exemptions, and funding opportunities.

- **Manage Identified Resources:** utilize GIS data, keep up to date
- **Survey Unrecognized Resources**
  - Survey potentially eligible properties
  - “Download” knowledge from employees or volunteers
  - Submit survey info to SHPO
- **Prioritize Hazard Areas:**
  - **Current** Hazards (such as FEMA flood zones)
  - **Other** Hazards: such as erosion hazard areas
  - **Future Hazards:** areas at risk from climate change effects
- **Consider Future Historic Sites** that will be eligible within the next 50 years
- **Consider Other Resources:**
  - Cemeteries, archaeological sites, historic landscapes
- **Educate:**
  - Local government, residents, landowners
  - Confusion over historic status of a resource can impact homeowners
  - Listing a property *does not restrict the rights of owners*
6: Coordinate Regionally and with the State

Help magnify the effectiveness of planning and response efforts

- **Collaborate**
  - on *local plan development & hazard response*

- **Share**
  - Reports, data, feedback

- **Cooperate**
  - *Mutual-aid* agreements
  - Cooperative *grant applications*

- **Participate**
  - *Regional Preservation Initiatives*
  - Incorporate preservation into *regional emergency response drills*
  - Establish regional “*recovery drills*” that address historic preservation
  - Create a *regional task force* for historic resources

- **Communicate**
  - Determine *State-level contacts* for emergency events
  - Invite State personnel to emergency drills
  - Contact *SHPO* about preservation & protection
  - Identify *State-owned historic properties* within community
7: Prioritize Adaptation Measures

- **Non-physical** measures:
  - Preparedness
  - Emergency response
  - Regulatory and Financial measures

- **Physical** measures:
  - Permanent and temporary flood barriers
  - Groins and jetties
  - Wet and dry floodproofing

- **Scale:**
  - Site → Neighborhood → Community or Region

- **Considerations**
  - **Cost** of implementation and maintenance over time
  - **Impact** of hard structures on adjacent properties
  - **Type of risk** (inundation, wave action, etc)
  - Effect of mitigation on historic character
8: Educate

The local community and government must understand the risks and vulnerabilities, and must buy-in to the value of continued preservation.

• **Retrofitting Historic Resources:**
  • Clarify rules of mitigating hazards without affecting designation
  • Provide technical guides and information in public areas

• **Guidance for Permit Applicants:**
  • Guide homeowners through applications
  • Help account for coastal resilience & historic preservation

• **Incentives:**
  • Illustrate economic benefits of preservation

• **Diversity of Resources:**
  • Increase awareness and appreciation of cultural resources:

• **Historic Records of Storms:**
  • Historic / archaeological resources can educate about hazards & change
  • *Hazard mitigation as part of the historic character*
Summary

• Gaps
  • Awareness exists at municipal level
  • Strategies are missing
  • Integration across plans & departments needed

• Needs
  • Consolidation of plans
  • Understanding of preservation-protection balance
  • Public education about historic value

• Recommendations
  • Dedicated responsibility
  • Regional coordination
  • Consolidate & Cross Reference
Questions?

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Products
A best practices guide will be provided for guidance to municipalities to prepare, withstand, adapt, and recover relative to historic resources.

**Prepare**
- Understand Resources & Vulnerabilities
- Plan for Risk and Integrate Planning Documents
- Educate stakeholders
- Plan for Mitigation

**Withstand**
- Implement Plans
- Execute Emergency Operations Protocols
- Execute Mitigation

**Adapt**
- Plan for Climate Change
- Revisit changing Historic Resources
- Update Planning Documents
- Implement Adaptation Measures

**Recover**
- Execute Disaster Recovery Protocol
- Enforce Design Guidelines & Requirements
- Communicate & Collaborate with partners

**ADAPT: BEST PRACTICES**

**A. Determine Future Risks**
- Identify Future Hazard Geography
  - Sea Level Rise
  - Changing Temperatures
  - Increased Participation
- Overlay in Relation to Existing Resources
- Identify Future Resources Eligible for Protection

**A. Adaptation in Planning Documents**
- Plan of Conservation and Development – State, Regional, and Local
- Hazard Mitigation Plans – State, Multi-Jurisdictional, and Local
- Coastal Resiliency Plans – Regional and Local

**A. Communication and Collaboration**
- Between Municipal Departments
  - Floodplain Manager
  - Planning & Zoning/Building Dept.
  - Emergency Manager
  - Emergency Response Personnel
  - Department of Public Works
  - Historic Commission, Historian, etc.
  - Conservation Commission
- Between Communities (Mutual Aid)
- Between Different Levels of Government

**A. Education**
- Municipal Staff
- Property Owners
- Historic District Commissions
State Historic Preservation Plan Chapter

- A resiliency report will be prepared to summarize findings and describe the eight strategies
- National Park Service guidance is incorporated into the report
- A condensed version of the report will be used as a chapter in the update to the State Historic Preservation Plan