Bank Street New London CT.
Mapping & Design for Coastal Flood Events

Document by:
UConn's Community Research & Design Collaborative
Director Associate Professor Peter Miniutti

CIRCA base data: Connecticut Institute for Resilience and Climate Adaptation
FEMA base data: Federal Emergency Management Agency

Date: May 11, 2018

UConn's Community Research & Design Collaborative (CRDC) is the umbrella organization for the outreach work of the landscape architecture faculty. Our mission is to be a regional leader in sustainable planning and design. We help our client's plan and design affordable, equitable, and ecologically healthy environments. Our mission is accomplished by providing our client's with objective, multi-disciplinary, state-of-the-art planning and design expertise. We promote and encourage academic-based collaborative research with an emphasis on “real world” projects as they apply to sustainable development.

For additional information, please see:
crdculum.wordpress.com
peteprojects.wordpress.com
or email Peter:
peter.miniutti@uconn.edu
Contents of Today’s Talk

1. UConn’s Program of Landscape Architecture:
   • UConn’s Community Research & Design Collaborative (CRDC)
   • UConn’s CRDC Role in New London Waterfront District Study with CIRCA

2. New London Project:
   • Bank Street Site and Projected Water Rise
   • Some Evidence of Long-term Consequences of Flooding

3. Design Interventions
   • Some Simple Principles of Community Planning
   • Four Preliminary Ideas on How to Fix Things
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Overview of CRDC

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- **Our mission is to be a regional leader in sustainable planning and design.** We help our client’s plan and design affordable, equitable, and ecologically healthy environments.

- Our mission is accomplished by **providing our client’s with objective, multi-disciplinary, state-of-the-art planning and design expertise.**

- **We promote and encourage academic-based collaborative research (service learning) with an emphasis on “real world” projects as they apply to sustainable development.**
Overview of CRDC

Associate Professor Peter Miniutti:

• Director of UConn's CRDC
• BS degree from UMass in Environmental Design and MLA from Harvard University
• 20+ years @ UConn, tenured in 2000

UConn Pete https://peterminiutti.wordpress.com/

UConn Pete's Homepage
Projects:

Past Projects:
• Downtown Storrs Mixed-Use Development (Original Master Plan Designer working w/Vince McDermott of Milone & MacBroom

• Lands of Unique Value East Lyme

• Eco-Tech Park for Bridgeport

Miniutti Current Funded Research:
• Sea Level Rise Studies for New London & Milford: with CIRCA

• Campus Master Plan for: Talcott Mountain Science Center

• Green infrastructure and Wayfinding Plan for: Town of Putnam

• Re-Design of Wolcott Park for: Town of West Hartford

• Creation of an Ecological Park for: Town of Fairfield

• Campus Master Plan for: Lebanon Historic Society
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UConn’s CRDC Role on New London Project

• Take CIRCA data on sea level rise and **produce graphic plans and sections to clearly communicate the affects of projected water rise over time** on the Bank Street area of New London.

• **Develop a series of design/planning scenarios** that will **mitigate the negative consequences of sea level rise while looking for opportunities to promote economic growth**, create sustainable cultural/ natural systems and improve ‘place-making/sense of place’ of affected parts of the urban fabric.

• **Prioritize the array of design/planning scenarios** by building consensus across populations, disciplines and agencies (local, regional, federal).

• **Position/support the municipality in the attainment of grant funding.**
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Bank Street Site
Bank Street Site
Thames River Aerial w/ structures, roads & contours

Structures affected by flood events

Inundated part of structure during flood events

CIRCA Data for:
2018 - 1% Flood Event
CIRCA Data for:
2018 - 1% Flood Event
2050 – 1% Flood Event

- Thames River
- Aerial w/ structures, roads & contours
- Structures affected by flood events
- Inundated part of structure during flood events
- CIRCA 1%
- CIRCA 2050 Year
- CIRCA 2100 Year
Thames River
Aerial w/ structures, roads & contours
Structures affected by flood events
Inundated part of structure during flood events

CIRCA Data for:
2018 - 1% Flood Event
2050 – 1% Flood Event
2100 – 1% Flood Event
CIRCA Data for:
2018 - 1% Flood Event
2050 – 1% Flood Event
2100 – 1% Flood Event
W/ FEMA 100 Year Data
Bank Street Section

Existing Situation during Flood events
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Great Hurricane of 1938

Boats and piers at New London, Conn., are a mess of broken wreckage after the hurricanes. Fire at the height of the storm added to the terror and destroyed a quarter of a square mile of the business district, Sept. 12, 1938. Sights like this were common all along the coast, as new New England faced a cleanup job which took weeks.
Great Hurricane of 1938

Boats and piers at New London, Conn., are a mess of broken wreckage after the hurricanes. Fire at the height of the storm added to the terror and destroyed a quarter of a square mile of the business district, Sept. 12, 1938. Sights like this were common all along the coast, as new New England faced a cleanup job which took weeks.
Over the last 100 years, a total of eight hurricanes have hit the southern Connecticut shoreline (1903, 1938, 1944, 1954, 1960, 1972, 1985 and 1991). The strongest storms to hit the area so far have been Category 3 hurricanes with sustained winds of 110 to 130 mph.
South Water Street
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South Water Street
**South of Bank Street:**
Total Value of Properties: $6,261,200
Total Footage: 100,933 ft²
Average Value: $62 per ft²

**North of Bank Street:**
Total Value of Properties: $10,977,130
Total Footage: 147,094 ft²
Average Value: $75 per ft²
Some Evidence of Long-term Consequences of Flooding On South Water Street:

- The buildings between Bank Street and South Water Street treat their east facing property as a back-yard or service area. This is evident in both façade treatment and use of the land.

- By treating the east area as service, the businesses do not energize the street, therefore it becomes vacant, desolate and lonely experience to be on the street. There is no reason for the general public to venture down the street.

- The street itself functions as a service road vs. a civic expression of a safe, public and welcoming path and/or destination for residents and guests.
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Some Simple Principles of Community Planning:

• Do not block pedestrian views with landscape walls over 5’ – 6’ and in close proximity of the user. High walls negate the concept of “defensible space” and can create a claustrophobic feeling in the user.

• Building uses need to support the street level. The more uses in the buildings the better. Roof tops and upper level balconies are great but do not substitute for street level activity.

• Successful streets function as both memorable pathways and landmark type of destinations. This is especially critical for South Water Street because it connects the two crossing over the tracks to the waterfront.
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General Model Location:
Existing Conditions:
Existing Conditions:

- Thames River
  - No Touch
- Zone: Waterfront
  - No Structural Touch
  - “In-Play”
- Zone: Amtrak
  - No Touch
  - “In-Play”
- Zone: South Water St.
- Bank Street
  - No Touch
Areas of Intervention:

- Thames River
- Zone: Waterfront
  - No Touch
  - No Structural Touch
  - “In-Play”

- Zone: Amtrak
  - No Touch
  - “In-Play”

- Zone: South Water St.
  - No Touch

- Bank Street
  - No Touch
2050 CIRCA Flood Event @ Elevation 12
How to Fix Things @ Waterfront Zone
How to Fix Things @ Waterfront Zone: Idea 1
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How to Fix Things @ Waterfront Zone: Idea 1
How to Fix Things @ Waterfront Zone: Idea 2
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Landscape Solution Type A: A series of berms/landforms running between the train tracks and river. Will need a method (movable gates, etc.) to “close” the ends of the berm system. This protects Amtrak, Water Street and buildings on eastside of Bank street from flood waters.
How to Fix Things @ Waterfront Zone: Idea 2

Section of Solution Type A
How to Fix Things @ Building Zone: Idea 1
The Mayor's Solution: A continuous wall running between Water Street and the train tracks. Will need a method (movable gates, etc.) to 'close' the ends of the wall system. This idea was proposed by the Mayor at one of our meetings. This protects Water Street and buildings on eastside of Bank street from flood waters.
How to Fix Things @ Building Zone: Idea 1
How to Fix Things @ Building Zone: Idea 1
How to Fix Things @ Building Zone: Idea 2
How to Fix Things @ Building Zone: Idea 2
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How to Fix Things ??
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UConn’s CRDC Role on New London Project

• Take CIRCA data on sea level rise and **produce graphic plans and sections to clearly communicate the affects of projected water rise over time** on the Bank Street area of New London.

• **Develop a series of design/planning scenarios** that will **mitigate the negative consequences of sea level rise while looking for opportunities to promote economic growth**, create sustainable cultural/ natural systems and improve ‘place-making/sense of place’ of affected parts of the urban fabric.

• **Prioritize the array of design/planning scenarios** by building consensus across populations, disciplines and agencies (local, regional, federal).

• **Position/support the municipality in the attainment of grant funding.**
UConn’s CRDC Role on New London Project

In summary our goal is to:

**Develop a design** that **mitigates** the negative consequences of sea level rise while looking for opportunities to **promote** economic growth, **create** sustainable cultural/natural systems and improve ‘place-making/sense of place’ of affected parts of the urban fabric.

Thank you.
Options for New London:
To direct future growth, we see the following potential scenarios for the Downtown Bank Street properties.

A Landscape Solution: A series of berms/landforms running between the train tracks and river. Will need a method (movable gates, etc.) to 'close' the ends of the berm system. This protects Amtrak, Water Street and buildings on eastside of Bank street from flood waters.

The Mayor's Solution: A continuous wall running between Water Street and the train tracks. Will need a method (movable gates, etc.) to 'close' the ends of the wall system. This idea was proposed by the Mayor at one of our meetings. This protects Water Street and buildings on eastside of Bank street from flood waters.

The Sole Proprietary Solution: Each building is treated independently of all other entities. This approach leaves Amtrak and Water Street vulnerable to flood waters.

The Retreat Solution: Let the water come in and remove the limited number of buildings that are susceptible to regular flooding. This creates a new "waterfront" and the buildings to the west of Bank street become waterfront properties. This idea was discussed during a meeting with Jim, Peter and Tao.

We will be building physical models of these four scenarios (along with permutations that come up) as well as developing matrices of the strengths and weaknesses of each scenario. We are confident that we will build consensus throughout the community on how to move forward given the seriousness of the future/current forces of water coming up from the Thames river and down from the hill New London is built on.
**UCONN’s Community Research & Design Collaborative (CRDC)** is the umbrella organization for the outreach work of the landscape architecture faculty. Their mission is to be a regional leader in sustainable planning and design. They help their client’s plan and design affordable, equitable, and ecologically healthy environments. Their institutional mission is accomplished by providing their clients with objective, multi-disciplinary, state-of-the-art planning and design expertise while promoting and encouraging academic-based collaborative research with an emphasis on "real world" projects as they apply to sustainable development.

**UCONN’s Connecticut Institute for Resilience & Climate Adaptation (CIRCA)** is providing the resources for this study with no cost to the city. CIRCA will also provide the most accurate and detailed information on the effects of current and future sea level rise on coastal municipalities.

This study will employ *The Lands of Unique Value (LUV)* methodology. The LUV methodology inventories and analyzes all existing site features (natural and cultural), then prepares a visionary plan of all proposed land uses. This inclusive, community based methodology determines the most logical and reasonable locations for future land uses, balancing conservation, preservation and sustainable development. The LUV methodology uses a ‘pro-sensible development’ attitude. Associate Professor Peter Miniutti (PM), Director of UCONN's CRDC, will have the primary responsibility for organizing, coordinating and implementing the proposed study.

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**CRDC’s Four-Step Planning/Design Process**

an inclusive pluralistic approach that builds consensus within the chosen community

1. **Program**
2. **Research**
3. **Analysis**
4. **Planning/Design**

**Next phases could include:**
- grant acquisition
- development of construction documents
- other

*(The scope of this agreement includes Phases 1 – 4)*

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**Phase 1 - Program (Development):** The Program defines client needs and describes how UCONN’s CRDC will meet client needs. Information provided from the client and representatives of the client will serve as the basis for determining the program.

**Phase 2 - Research:** This Phase is characterized as “fact-finding” of natural and cultural characteristics of the site. The maps generated in this phase serve as an inventory. Data is collected from a number of sources including client, site reconnaissance, site photography from ground level and bird’s eye view (drone), public agencies and planning offices.
Phase 3 - Analysis: This Phase lends meaning to the facts collected in Phase 2. The goal of the analysis phase is to translate the inventory maps into maps that identify opportunities and constraints in relationship to the Program Statement.

Phase 4 - Planning/Design: Conceptual studies are prepared to explore design alternatives, which take advantage of site opportunities and mitigate site constraints. These early studies are kept simple and diagrammatic to clearly explain the conceptual ideas as they relate to the site and program. As the “conceptuals” evolve, they are subjected to a comparative analysis for positive and negative attributes and net-yields. Unsuitable schemes are rejected or modified, promising concepts are improved, and other approaches suggested by reviews are added to the array of ‘contenders’. Where feasible, all plan concepts will be delineated and compared. The most appropriate plan will be developed into a schematic drawing. The final products will include:

- Annotated Illustrative Schematic Design Plan showing:
  - Buildings with potential additions/improvements
  - Streets and open space with Place-making elements
  - Green infrastructure and locations of future tides and river surges
- Cross-section(s) from Bank street to the Thames River
- Perspective(s) comparing existing conditions to proposed design
- 3-d model
- Matrices/documents aligning the proposed Schematic Design with existing and future grant opportunities

Schedule:

February/March 2018:
- Project kick-off with a series of individual meetings and/or survey with interested parties to collect information on the current “state of affairs” as well as short/long term planning goals.
  - Field reconnaissance to develop a comprehensive photographic inventory
  - Develop Program Statement (Phase 1 product)
  - Develop Inventory Maps (Phase 2 products)
  - Draft of Summary Analysis (Phase 3 product)

March/April 2018:
- Development of conceptual studies leading to the final Schematic Design
  - Series of meetings and/or workshops to build consensus as studies progress
  - Draft of appropriate agencies and grants
  - Finalize Summary Analysis (Phase 3 product)

May 2018
- Finalize all deliverable products. Submit.
UConn’s Role on Project

- **Facilitate** communication within the client group as well as with the general public/town officials (if needed).

- Build **consensus** among all participants during the creation of the Master Plan.

- **Create** a series of design interventions that will culminate in a long term, phased Master Plan package.

Landscape architecture is the creation of meaningful and memorable exterior spaces.
UConn’s CRDC

Four-Step Design Process

**Tentative Schedule:**

<table>
<thead>
<tr>
<th>Date</th>
<th>Meeting</th>
<th>Attendees</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Done</td>
<td>Informational</td>
<td>Jonathan &amp; Christine</td>
<td>Building &amp; Site surveys, discuss schedule</td>
</tr>
<tr>
<td>Done</td>
<td>Series of informal</td>
<td>TBD</td>
<td>Collect &amp; review mapping/Site Analysis</td>
</tr>
<tr>
<td></td>
<td>meetings &amp; site visits</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.19.2018</td>
<td>Design Charrette</td>
<td>Students, staff, etc.</td>
<td>UConn will provide: (1) Program Statement, (2) Site Model, (3) Mapping, (4) Design kit</td>
</tr>
<tr>
<td>In 2+ weeks</td>
<td>Review Charrette results</td>
<td>Same as the Charrette</td>
<td>PowerPoint presentation by UConn with discussion</td>
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<tr>
<td></td>
<td>&amp; discuss implications</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TBD</td>
<td>Master Plan presentation</td>
<td>Same as the Charrette</td>
<td>PowerPoint presentation by UConn with discussion</td>
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<tr>
<td>TBD</td>
<td>Series of informal</td>
<td>TBD</td>
<td>Master Plan coordination</td>
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<tr>
<td></td>
<td>meetings</td>
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<tr>
<td>TBD</td>
<td>Final presentation</td>
<td>Same as the Charrette</td>
<td>Discussion</td>
</tr>
<tr>
<td>TBD</td>
<td>Final package</td>
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and impending sea level rise, and the need to re-envision the future. The study is aimed at creating a coordinated vision for future development in the context of current economic conditions and impending sea level rise. The overarching goal of this study is to leverage future granting opportunities to best serve you and the Bank street environs. UConn’s Connecticut Institute for Resilience & Climate Adaptation (IRCA) is providing the resources for this study with no cost to the city. New London’s Bank Street location was chosen, in part, due to its historic development pattern on a hill, quality of architecture, and use types and riverfront location. Project outcomes will be a Master Plan aligned with current and future granting opportunities. We want to put you in an advantageous position to obtain grant funding for your property.

For this study to succeed, we need to know your thoughts, good and bad, on what you view as your biggest challenges and best opportunities at your Bank Street locale.

Questions? Please contact Peter @ peter.miniutti@uconn.edu