

**Grantee: Julie Campoli**

**Date Grant Received: May, 2012**

**Grant Project Date(s) Implemented: April 7 – April 9, 2013**

**Grant Project: (brief description)**

**Upstream – Downtown: Making room for the river and building resiliency in Vermont’s downtowns and villages.**

The project brought Loeb Fellows and Vermonters together to discuss how the state’s river-based urban centers can thrive in a changing climate. Both upstream measures (ecosystem health, floodplain protection, stream bank restoration) and downtown interventions (green infrastructure, flood-adaptive design) were addressed, drawing on the broad expertise of the visiting Loeb Fellows and Vermont river and land use experts.



Upstream-Downtown events examined how river systems interact with human settlements, using examples of flood resiliency from across the globe. The workshop set the Loeb Fellows’ presentations within a Vermont context by focusing on two towns along the Winooski River in small group design sessions.

**Participants**

|   | <b>Loeb Fellows</b>             | <b>Fellowship Year</b>   | <b>Location</b>                                |
|---|---------------------------------|--|--|
| 1 | Doug Meffert                    | 2008   | New Orleans, LA                                |
| 2 | Armando Carbonell               | 1993   | Cambridge, MA                                  |
| 3 | Bettina Wanschura               | 2011 (affiliate)   | Vienna, Austria                                |
| 4 | Herbert Dreiseitl               | 2011   | Germany and Singapore                          |
| 5 | Julie Campoli                   | 2010   | Burlington, VT                                 |
|   | <b>Other Participants</b>       | <b>Affiliation</b>   | <b>Expertise</b>                               |
| 1 | Barry Cahoon<br>Presenter       | VT Dept of Environmental Conservation<br>Agency of Natural Resources<br>River Management Program | Fluvial Geomorphologist,<br>Engineer           |
| 2 | Brian Shupe<br>Moderator        | VT Natural Resources Council   | Executive Director                             |
| 3 | Stephanie Hurley<br>Facilitator | GSD PhD ‘2009<br>University of Vermont<br>Plant and Soil Science                                 | Green infrastructure<br>Landscape architecture |

|   |                                |  |                                    |
|---|--------------------------------|--|------------------------------------|
|   |                                | Assistant Professor  |                                    |
| 4 | Richard Amore<br>Facilitator   | VT Dept. of Economic, Housing & Community Development<br>Community Planning and Revitalization | Landscape architecture<br>Planning |
| 5 | Kate McCarthy<br>Facilitator   | VT Natural Resources Council   | Sustainable Communities Program    |
| 6 | Steve Lotspeich<br>Site Tour   | Town of Waterbury  | Town Planner                       |
| 7 | Bill Shepeluk<br>Site Tour     | Town of Waterbury  | Town Manager                       |
| 8 | Justin Kenney<br>Site Tour     | VT Dept of Environmental Conservation<br>Watershed Management                                  | Green Infrastructure Coordinator   |
| 9 | Sarah McKearnan<br>Facilitator | VT Dept of Environmental Conservation  | Flood Resiliency                   |

|   | <b>Sponsorships, Collaborators, etc.<br/>(Names and Affiliations)</b>   | <b>Amount of \$ Support</b>      | <b>Describe Nature of Support or Engagement</b>                             |
|---|---|----------------------------------|---|
| 1 | John Adams, Planning Coordinator<br>VT Dept. of Economic, Housing & Community Development   | 50 staff hours,<br>plus<br>\$220 | Workshop planning<br>Logistics<br>Fund-raising                              |
| 2 | Kim Greenwood, Water Program<br>Brian Shupe, Executive Director<br>James Sharp, Office Manager<br>VT Natural Resources Council  | 20 staff hours                   | Workshop planning<br>Logistical support<br>Outreach<br>Grant administration |
| 3 | David Mears, Commissioner<br>Sarah McKearnan, Special Assistant<br>Mike Kline, River Scientist<br>Gretchen Alexander, River Scientist<br>VT Dept. of Environmental Conservation | 14 staff hours                   | Workshop planning<br>Information  |
| 4 | VT Planners Association   | \$400                            | Outreach, participation   |
|   | VT League of Cities and Towns   |                                  | Logistical support  |
| 5 | VT Chapter ASLA   | \$300                            | Outreach, participation   |
| 6 | Jenna Antonino DiMare<br>volunteer  | 14 hours                         | Registration<br>Logistics<br>Outreach                                       |
|   | <b>Total \$s Donated by Others</b>  | \$920                            |   |
|   |   | 90+ hours<br>combined            |   |

## Project Content

### Topic/Issue

*(Please describe the primary issue of the built or natural environment that this Grant Project addressed)*

One of the hard-earned lessons from Tropical Storm Irene was that impaired natural systems can wreak havoc on the built environment. Upstream-Downtown addressed that connection between built and natural environments, and showed how the well-being of Vermont's urban centers is dependent on the health of its rivers.



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The event promoted the concept of “making room for the river,” a shift away from past thinking that focused on flood control and prevention. It showcased examples of urban plans and designs that accommodate natural river functions while creating vibrant urban waterfronts.

Upstream-Downtown also addressed a crucial question facing Vermont communities: where to grow when many of its designated growth centers (historic downtowns) are located in flood hazard areas. Vermonters have a long tradition of commitment to and investment in historic centers and that deeply held value is conflicting with a growing concern for public safety.





## Project Activities

*(Please describe each activity undertaken with this Loeb Grant (e.g. charettes, community meetings, reports, etc.)*

Upstream – Downtown consisted of three events-

- 1) a day-long site tour of the Winooski River corridor, in which the Loebes visited two communities regularly affected by flooding and the sites of the workshop exercises. They heard stories of Irene and the Flood of 1927 from locals, reviewed recovery plans and toured the flood plains along a 20-mile stretch of the river,
- 2) an evening symposium in Burlington, at which the Loebes related their knowledge of climate change, flood resiliency, watershed management, public participation, and water design in other states and countries. This was followed by an extended question and answer session moderated by the director of the state's leading environmental advocacy organization. The symposium was open to the public and geared to a general audience.
- 3) a half-day design workshop in Montpelier, which targeted a group of professionals (planners, designers, river scientists, legislators and developers) charged with setting policy and implementing development. The morning began with a Vermont perspective—the history of flooding in the state, our past failure and current need to accommodate natural river systems and background information on the workshop sites. The Loebes' presented insights from their work (see above), and included some reflections on what they observed from the previous day's site tour. A discussion was followed by hands-on design exercises facilitated by teams made up of Loebes and local designers and planners. Five small groups developed solutions for two sites.



The exercises were designed to provoke discussion about two issues: retrofitting downtowns for greater resiliency, and dealing with growth in historic centers/urban hazard areas. For more detail on the program, see attached agenda and info packet sent to attendees prior to the workshop.

## Outcomes

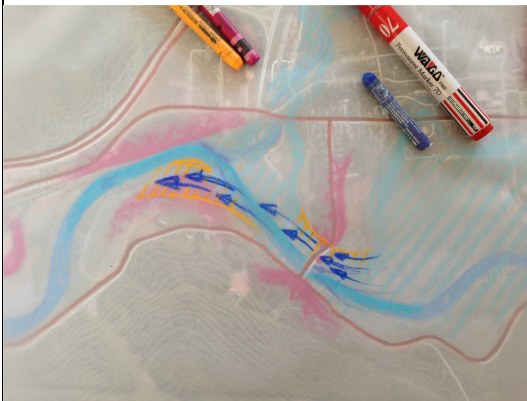


## 1 Objectives Met

*(Describe the objectives of the Grant Project and how they were achieved)*

Our goal was to advance the public dialogue about how Vermont's settlement pattern affects river dynamics and contributes to flood damage. We wanted to show ways to prevent future catastrophes through better design and development practices.

The workshop and symposium focused on positive examples of river planning and urban hydrology and demonstrated to the many Vermonters who participated, new ways of thinking about the relationship between the states' villages and the rivers that run through them.



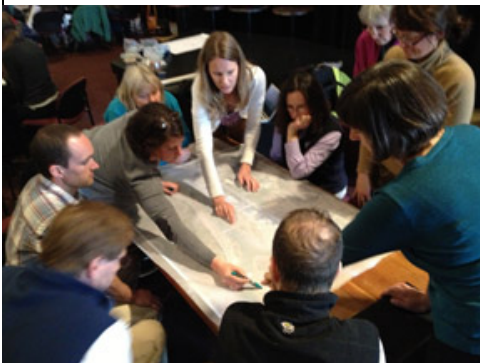
Residents of flood-affected areas as well as policy planners and other decision makers walked away from the events with a broader sense of that is possible—how building flood resiliency can create more beautiful and vibrant communities in addition to making them safer.

## 2 Outcomes

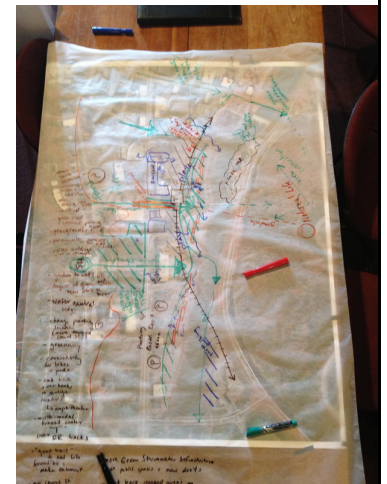
*(Describe outcomes anticipated or unanticipated that followed the work of the Grant Project by Participants or by Others)*

State officials who have been engaged in post-disaster planning in several Vermont towns were uplifted by the messages and examples presented by the Loeb. They were also impressed by the effectiveness of the design exercises as a tool to engage people in flood resiliency issues. As a result they have sought more information on how to incorporate the same technique in their planning processes.

One of the exercises focused on how to bring this approach to downtown Montpelier, replacing a large river side parking lot into a site that invites the public to the river, provides economic value, and receives and stores water during flood events.



Most of the participants were present because they are involved in land use and river issues at the state or regional level. But many of them are residents of Montpelier and plan to lobby the city to move forward with the ideas that emerged from the workshop.



### 3 Influence & Community Engagement

*(Please describe the wider influence of the project or how the community engaged with the Project)*

The symposium drew a standing-room-only crowd and the workshop was fully subscribed. Many who couldn't attend and those who did and wanted to spread the word in their towns have asked for access to an online video of the workshop presentations, which will be posted soon.





# Upstream Downtown

Making room  
for the river  
and  
building resiliency  
in Vermont's downtowns and villages

## Symposium

Monday, April 8, 2013, 7 pm. ECHO, 1 Collge St, Burlington

Sponsors: Harvard University Loeb Fellowship, VT Natural Resources Council, VT Dept. of Housing and Community Development, VT Planners Association, VT Agency of Natural Resources, VT Chapter, American Society of Landscape Architects



## Upstream-Downtown Workshop Information packet

**PLEASE REVIEW ALL the MATERIAL in this PACKET BELOW BEFORE TUESDAY!!**

*In order to give more of our limited time to the presenters, we will not be describing the exercises in detail. Reading the pages below will give you the information you need to get started at 11:30. leaving more time for group discussion at the end of the morning.*

You will be working on **one** of the two exercises described below. At 11:30, after the Q & A session, we will break into small groups of 6-10, each led by a facilitator. Choose the site you prefer and join a group at a table, which will be supplied with a base map.

To better understand the sites and see the areas we will focus on, download the base maps by clicking this link

[http://dl.dropbox.com/u/6150627/Charette\\_Maps\\_CVRPC.zip](http://dl.dropbox.com/u/6150627/Charette_Maps_CVRPC.zip)

You will download a folder named "Charette Maps." Inside are 4 pdf files a context and site map for each of the 2 locations.

If you live or work in Waterbury or Montpelier or find yourself there before Tuesday, take a few minutes to visit the site.

### Contents of this Packet

Agenda

Exercise Instructions

    Waterbury Site

        Background information

        Design Problem

    Montpelier Site

        Background information

        Design Problem

Supplementary Attachments- note text in red boxes

1. Irene Inundation area
2. Waterbury Municipal Plan excerpt
3. Office Complex Feasibility Report excerpt
4. Proposed office complex site plan
5. Montpelier Flood Areas map
6. 1998 Flood Plan excerpts
7. Capital District Master Plan excerpts
8. Growth Center Designation application

Upstream Downtown Workshop  
Tuesday, April 9, 8:30-12:30

## Agenda

- 8:15-8:30 Sign-in, coffee
- 8:35-8:45 Welcome and introductions
- 8:45-9:15 Barry Cahoon  
*Living with Rivers: Past mistakes, current conditions, future challenges.*
- 9:20-9:40 Armando Carbonell  
Planning for an Uncertain Climate  
*Anticipating unforeseen events and planning for a range of options*
- 9:45-10:05 Douglas Meffert  
From Floodplains to Wetlands: *Using natural systems to enhance environmental quality and safety*
- 10:10-10:25 Bettina Wanschura  
Making Room for the River: *Communication and participation processes to facilitate regional water management strategies in Europe*
- 10:25-10:50 Herbert Dreiseitl  
Resilient Waterscapes: *Towards an aesthetic water sensitive environment*
- 10:50-11:00 Break
- 11:00-11:30 Brian Shupe: Moderated Q & A with all presenters
- 11:30-12:00 Move to small facilitated groups of 6-10  
Attendees chose one of 2 design problems:
- A Village Growth Plan
- B Urban Design and Green Infrastructure Plan
- 12:00-12:30 Group Presentation / Discussion

## Site A: Waterbury Village Infill Exercise

### Background Information

Waterbury has designated its historic village as a growth center, yet a large portion of the village lies in a flood hazard area. The vulnerable areas are depicted on the base map (see link above) in light blue (100 yr. flood) and red (500 yr. flood). The Flood of 1927 took a devastating toll on Waterbury, washing out rail lines, roads and bridges and destroying many homes. Much of the village was inundated again during Tropical Storm Irene with resulting damage to many village buildings and the State Office Complex. Areas flooded by Irene are shown on a map in the attached pages.

The town's 2003 Municipal Plan states its commitment to reinforcing the commercial role of the village and supporting ongoing efforts to restore and protect historic buildings. The document cites the important role that residential neighborhoods as well as industrial lands play in balancing uses in the growth center. (See attached sheets)

The state is planning to return some state office functions to Waterbury in a partial reconstruction of the historic office complex. The current plan (attached below) calls for the demolition of many of the existing buildings and flood-proofing a core group of the most historically significant structures. In addition it will construct a new large office building on the site which will be set above flood elevation.

The town hired a consultant to study of the bridge on Winooski Street, downstream from the office complex to determine whether the bridge constricted river flow and exacerbated flooding during Irene. It was determined that the problem lay further downstream where the river takes a sharp bend and flood storage has been constricted by a railroad embankment. Plans are under consideration for floodplain restoration along that river bend.

### The Design Problem

With few undeveloped parcels remaining in Waterbury Village, how can the town add housing, commercial and industrial space?

Where should new homes and businesses be located and what form should they take?

Your group will look for infill possibilities and work together to locate development on parcels scattered throughout the village. Using the wooden blocks (3D!) add buildings and clusters of buildings where you see redevelopment potential.

Density and compactness of form will be required to maximize the potential of the few sites on higher terrain. You will also be expected to follow the requirements of Waterbury's town plan and respect the historic building pattern of the village and create a pedestrian friendly environment. Your group should also apply the lessons learned from



the morning's presentations and employ flood resistant building techniques in hazard areas and green infrastructure throughout the village.

## Site B                      Montpelier Urban Design / Green Infrastructure Plan

### Background Information

Montpelier's downtown has suffered repeatedly from winter ice jams (see 1998 Flood Plan below) and run of the river flooding that damage homes and businesses. A particularly vulnerable location is the confluence of the North Branch and Winooski Rivers in the heart of downtown. This area and the land extending to the west along the riverfront is now a large loosely organized and partially paved and partially gravel parking area. The confluence area becomes a gathering place once a week during the growing season when it hosts the farmers' market. The railroad corridor is used by pedestrians as a short cut. Otherwise most people experience this waterfront area while parking their cars.



In 2000 the city and state commissioned a study of the riverfront area to develop “mutually beneficial future development plans.” The Capital District Master Plan (excerpt attached) examined future office needs of the Capital, the alignment of a greenway along the river, and the potential for a multimodal transportation center and private development. Few elements of the plan have been pursued. The district heating plan is underway, and the city mentions the greenway and transit center in its growth center application (excerpts also attached).

### The Design Problem

Develop a plan for the site that uses the area in a far more productive way, providing public amenities, economic development opportunities and environmental benefits

- 1) provides Montpelier residents and visitors opportunities to connect more directly with the river through a series of public spaces
- 2) protects water quality with “green infrastructure” elements to capture and filter storm water,
- 3) creates pedestrian and bicycle connections throughout the site, and
- 4) offers opportunities for compact mixed-use infill development
- 5) lowers the potential for future damage from flooding

PETER SHUMLIN  
Governor



State of Vermont  
OFFICE OF THE GOVERNOR

April 15, 2013

Dr. Armando Carbonell  
Lincoln Institute of Land Policy  
113 Brattle Street  
Cambridge, MA 02138-3407

Dear Dr. Carbonell,

Thank you for coming to Vermont and sharing your expertise as part of the Upstream Downtown flood resiliency workshop and symposium.

Vermont has come a long way since Tropical Storm Irene and a tremendous amount of recovery work has been accomplished. However, we also need to recognize that, now more than ever, our communities need help preparing for the reality of floods in a changing climate.

As we continue to rebuild stronger and smarter than when Irene found us, I appreciate the fresh perspective and ideas you brought to our flood resiliency efforts. The creative solutions you shared with state and local officials provided inspiration for how we might best live in harmony with our rivers and strengthen our historic villages and downtowns.

I thank you again for helping us plan to 'make room for our rivers' and build resilient communities. My administration will keep your thoughts and suggestions in mind as we move forward. I hope you will visit Vermont again soon.

Sincerely,

A handwritten signature in black ink, appearing to read "Peter Shumlin", with a long horizontal line extending to the right.

Peter Shumlin  
Governor

PS/cw