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# BURLINGTON GEOGRAPHIC



**A Place-based Landscape Analysis and Community Engagement Project in Burlington, Vermont**

Prepared for:  
The PLACE Program

By:  
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The Rubenstein School of Environment and Natural Resources  
University of Vermont

**December 2016**



## Acknowledgements

*The Burlington Geographic 2016 initiative involved a remarkable number of partners and collaborators. Some happily welcomed clarifying phone calls about Burlington history, and others generously donated days or weeks to crafting and delivering polished resources for the benefit of all Burlingtonians. Thank you to all who contributed to this endeavor.*

*With deep gratitude to:*

*Alicia Daniel, Inez Berrizbeitia, Peter McConville, Ryan Morra, Walter Poleman, Deane Wang, Tom Visser, Samantha Ford, Ann Arms, Charlie Auer, Cherie Morse, the students of GEOG192, Allison Waring, and our entire cast of presenters and workshop leaders.*

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## Overview and Background

Sean Beckett was sponsored by the PLACE (Place-Based Landscape Analysis and Community Engagement) Program to coordinate a city-wide place-building initiative between June and November 2016, with the ultimate goal of deepening relationships between people and place in Burlington, Vermont. Activities included six evening programs, five field workshops, local school engagement, website development, and place-based landscape analyses of six city parks. This initiative and all its efforts are organized under the name Burlington Geographic (BG).

This report is intended to organize, explain, catalog, and evaluate the 2016 BG initiative. The report outlines the objectives and design principles of the overall initiative and summarizes the work involved in accomplishing each objective. This resource is intended to inform future PLACE Program and BG work, and to aid future PLACE Program students, collaborators, sponsors, and place-based educators in understanding the BG place-building model.

### PLACE Program Overview

The PLACE Program provides local communities with tools and opportunities to connect with their local natural, cultural, and human resources through the context of place. The PLACE Program is grounded in the assumption that communities are happier, healthier, and more sustainable when residents are deeply connected with their local landscape. The PLACE Program works to enrich these relationships between people and place.

A place-building leader, this collaboration between the University of Vermont, Shelburne Farms, and local partners has designed and implemented place-based programming in over 15 communities across Vermont since its establishment in 2001. The complex circumstances of each community require flexibility and adaptation, so the PLACE Program grows and changes with each iteration as various methodologies and frameworks are tested and evaluated. The PLACE Program's ever-evolving structure has been formalized and packaged into an overarching **mission**, directing a series of program **goals**, which are achieved via work in three integrated **core components** (see [uvm.edu/place](http://uvm.edu/place)).

**The mission** of the PLACE Program is "*to promote a sustainable relationship between people and their local landscapes by engaging community residents in exploring, understanding, honoring and celebrating the natural and cultural features that contribute to their town's character.*" This mission is inspired by the broader pursuit to create healthy communities and improve quality of life through improved connection with place.

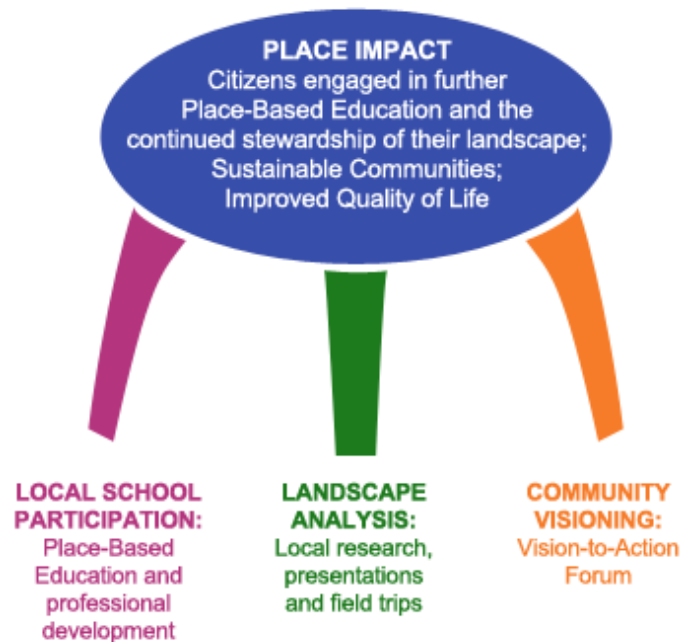
**The goals** of the PLACE Program enact this mission:

1. Encourage exploration and understanding of the local landscape by providing an engaging and accessible framework for residents to learn more about their town's natural and cultural heritage.
2. Showcase local knowledge and the efforts of individuals and organizations involved in local landscape stewardship and interpretation.
3. Facilitate the integration of place-based learning into schools by providing local educators with information, resources, and curriculum development support.
4. Support an informed and participatory community visioning process that builds upon an integrated interpretation of town landscapes and their transformation through time.
5. Provide meaningful service-learning opportunities for graduate students involved in landscape analysis.
6. Strengthen the sense of community identity and the connection between the past, present, and a sustainable future.

**The core components** of the PLACE Program define the three complementary domains in which it operates to accomplish these goals. The core components generally frame the approach that is designed to service each community.

- *Landscape analysis*: Analyze and interpret the physical, cultural, and ecological components of place, as well as the integration between them. This is typically investigated through the “layer cake” approach developed by McHarg (1967), refined by Steiner (2008), and honed by the UVM Field Naturalist and Ecological Planning Program. In this framework, abiotic, biotic, and human components of the landscape (i.e. soils, hydrology, geology, topography, climate, vegetation, land use history, demographics, local economics, etc.) are analyzed and reintegrated to craft holistic stories of place.
- *Community visioning*: Engage community members in a series of participatory and collaborative experiences. These experiences are designed to draw diverse residents to a common space where ideas can be learned and exchanged in a setting that fosters community, identifies common ground between diverse or disconnected audiences, and exposes people to new relationships between place and people. These experiences may be evening presentations, skill-based workshops, field walks, or community visioning forums.

- *Local school involvement:* Local schools are the ultimate common ground between residents of all walks of community life, and are targeted as essential channels of effective PLACE Program implementation. The Program works with local teachers to incorporate place-based (i.e. Education for Sustainability) curriculum in the classroom and engage students in the PLACE Program process, from assisting in research to participating in community engagement activities.



**Fig 1.** Methodological framework describing the overall PLACE Program mission, achieved via work in three complementary core components.

Each PLACE Program partnership is initiated to address goals and visions specific to that local community. Initial solicitations are typically instigated by school districts, town conservation commissions, or other entities seeking local place-building opportunities. The PLACE Program typically employs a Field Naturalist / Ecological Planning graduate student to co-design, coordinate, and implement programming organized by the three integrated core components, which are adapted to the character of each community (Fig 1).

The graduate student’s role generally culminates in a Community Engagement Series (CES) of integrated evening presentations, field trips, workshops, and/or visioning forums. In designing the CES content, the student conducts landscape analyses on focal places in the community, often through the model of community-based participatory research (CBPR). Meanwhile, the student typically works strategically with local schools and teachers to build place-based curriculum and engage k-12 classrooms. The student collaborates with town commissions, conservation organizations, historical societies, etc., to synthesize local expertise while identifying foci of community interest. The student also creates accompanying web materials and information to support the CES with lasting public resources for the town.



## Burlington Geographic Overview

The PLACE Program has been active in Burlington since 2014, but activities have been opportunistic and emergent. The bulk of these activities largely entail student-generated or student-curated materials in an online clearinghouse of place-based resources called Burlington Geographic ([uvm.edu/burlgeo](http://uvm.edu/burlgeo)). These materials include:

- Products of service-learning (SL) components of graduate and undergraduate courses (i.e. NR378: Place-Based Landscape Analysis).
- Kate Blofson's (2014) ethnographic history of Burlington's Intervale, a master's project sponsored by PLACE Program.
- Interactive maps of natural, cultural, and physical landscape layers (Bill Morris, Geosprocket LLC).
- Historic maps, photos, and articles courtesy of UVM Libraries' Special Collections.
- Synopses of place-based partnerships between UVM and Burlington k-12 schools, and examples of UVM Service Learning courses in which the PLACE Program has been instrumental.

"Burlington Geographic" now identifies all PLACE Program activities in Burlington. This 2016 project co-opts and formalizes "Burlington Geographic" as a brand to strategically market and unify the events and place-building work conducted this season and beyond.

BG diverges from other PLACE Program projects because of the city's unique role and community context compared to other PLACE locations. Burlington is Vermont's largest population center, the home of UVM, and a regional hub of conversations surrounding community planning and sustainability systems. Burlington is regarded as a global "incubator of sustainability," and has been recently acknowledged internationally as a Regional Center of Expertise on Education for Sustainable Development (see [www.RCNetwork.org](http://www.RCNetwork.org)). Other PLACE implementations focused heavily on participatory landscape analyses and visioning forums to catalyze conversations around sustainability and community health. Yet these conversations are already well underway in the Burlington community. There is a deeper body of knowledge around the physical and cultural landscapes of Burlington than perhaps any other community in Vermont. Local expertise is likewise broader and richer than elsewhere in the state.

Consequently, the emphases of BG differed from those of previous PLACE projects. This BG initiative was about unifying an array of diverse voices and disciplines into a coherent, integrated platform: featuring local expertise in a format that engaged diverse communities, showcased Burlington's place-based identity, and provided a deeper understanding of the city at multiple scales.

## Burlington Geographic 2016: Goals, Objectives, and Partners

The BG 2016 initiative was conceived by a collaboration of several key partners including:

- The University of Vermont (Walter Poleman)
- Shelburne Farms (Ryan Morra)
- Burlington Department of Parks, Recreation & Waterfront (Alicia Daniel)
- Burlington School District (Peter McConville)
- The Henry David Thoreau Foundation (primary sponsor).

BG benefitted from the support of dozens of other organizations and individuals throughout the season. See Appendix 1 for a complete list of partners.

The overall **goals** for this Burlington Geographic collaboration were to:

1. Deepen relationships between people and place in Burlington.
2. Create opportunities for Burlington School District students and educators to engage in place-based teaching and learning.
3. Promote Burlington's "Urban Wilds" parks while building connections between Burlington residents and public open space.

The following **objectives** were established to achieve these goals. These objectives describe the breadth and structure of the activities composing Burlington Geographic's 2016 initiative.

1. Design and carry out a Community Engagement Series (CES) in the fall of 2016.
2. Perform Place-Based Landscape Analyses (PBLA) of Burlington's "Urban Wilds" parks.
3. Host a Burlington High School Year-End Studies (YES) Program about sense of place and local sustainability systems.
4. Enhance the Burlington Geographic website presence, quality, and content.

The following four chapters of this report detail the work undertaken to accomplish each of these objectives.

## 1. Community Engagement Series

A broad Community Engagement Series (CES) was envisioned by project partners as the centerpiece of the BG initiative at the project's formal inception in April 2016. Though all three core components of the PLACE Program (see p.5) were critical to this initiative, the community component was intended to organize the bulk of the project work. Project partners anticipated that a CES platform would effectively achieve the goals of the BG collaboration (see p.8). Specifically, project partners envisioned the CES as an event series of six evening programs and six field workshops that celebrated and examined the Burlington landscape. The CES was reverse-designed to fit within this twelve-program framework.

Project partners selected the format for this CES based on the success of similar events in previous PLACE Program projects. Nevertheless, this project was BG's pilot initiative, and Burlington's first community-based place-building series of this scale. There were no previous local examples to reference or evaluate while designing this. Furthermore, the constraints of the project timeline and the graduate student sponsorship model precluded a precursory analysis to predict the effectiveness of this CES format for a Burlington audience.

Recognizing these limitations, The CES planning process developed guiding design principles at the outset to identify the qualities present in a "successful" program. These principles were the chief considerations in planning the structure, content, and execution of the series. These guiding design principles were also established to serve as guideposts in evaluating the CES afterward. Dr. Cheryl Morse's Vermont Field Studies undergraduate geography course used these principles to design a formal evaluation of the CES evening programs (see Appendix 3).

### Guiding Design Principles

#### A. Multiple perspectives

We attempted to anticipate and address potential pitfalls of a UVM-organized event series. The campus is geographically isolated at the "top of the hill" in Burlington. It is organizationally isolated from the community in terms of professional networks and funding streams. It is socially isolated in terms of demographics, institutional goals, and political priorities. We were sensitive to UVM's positionality and the potential for over-representation of UVM-centric perspectives. We attempted to physically and programmatically distance the CES from UVM in order to foster a sense of community ownership of these events. Events were therefore located away from campus at major community spaces: Main Street Landing Performing Arts Center, Arts Riot, City Hall (Contois Auditorium/Burlington City Arts), and Burlington High School. We selected a variety of venues to promote cross-city access while avoiding preferencing residents of particular neighborhoods.

We selected speakers who represented diverse perspectives. UVM's position as a hub of expertise benefits Burlington in many ways, but sometimes marginalizes experts operating

outside UVM. We therefore sought speakers from diverse professional affiliations as well as UVM academics: private business owners, state agencies, city agencies, local non-profit organizations, UVM extension affiliates, and UVM faculty. We sought ethnically and socioeconomically diverse perspectives in the CES programming as well. We evaluated the speaker lineup with attention to gender, age, and ethnicity, and we intentionally sought speakers whose professional affiliations represented minority communities. Speakers had substantial latitude to design their lecture content to showcase their own stories and perspectives, as long as the content was germane to the general evening topic.

We attempted to reach diverse audiences in our advertising. In addition to calendar postings in *Seven Days* and the *Burlington Free Press*, we hung posters in over 50 locations across the city, including schools, restaurants, cafes, supermarkets, ethnic grocers, senior centers, community centers, and local businesses. We relied on representatives of various organizations (i.e. AALV, the Vermont Refugee Resettlement Program, local non-profit advocacy groups) to distribute our email advertisements to broad networks. We also asked speakers and partners to promote our events among their communities.

## **B. Multiple, strategic entry points**

Diverse attendance depended on widely attractive content. We designed each evening program to feature a different theme with broad relevance to different audiences. Only a small cross-section of the Burlington community would naturally attend events billed as sustainability presentations. Instead, we used weekly themes as “entry points” into this series-long conversation around sense of place and Burlington. Each week functioned as a standalone program for those particularly interested in a given weekly topic, but the series was also tied together with a unifying format such that each program built upon the previous week’s content. Ideally, attendees attracted to a particular event would discover new perspectives or interconnections that generated curiosity and continued participation in subsequent events.

The weekly themes were selected to inform major Burlington community issues at the current forefront of city discourse. The PLACE Program strives to build healthier, more sustainable communities, and endorses the assumption that well-informed and deeply-connected communities ultimately make more sustainable decisions. We therefore selected topics to provide insight and context into major community controversies without explicitly advocating particular stances. For instance, some CES programs investigated the unique ecology and industrial heritage of the South End, contextualizing the rich community discourse around the installation of the South End Connector. Similarly, one program discussed the evolution of bicycling in Burlington, contextualizing the controversy around the new North Avenue bicycle lane without explicitly advocating for or against it. Other programs informed the Burlington College development plans, the future of the Moran Plant, downtown zoning, refugee resettlement, etc. In selecting themes that informed popular issues, we hoped to provide broadly attractive, informative, and useful programs for Burlington residents.

### C. Layer cake framework and cross-cutting inquiry

This framework is a fundamental approach used by the PLACE Program and UVM’s Field Naturalist and Ecological Planning program to identify and interpret the patterns and processes that drive and shape landscapes. Developed by Scottish landscape architect Ian McHarg (McHarg 1967), it is a strategy to disentangle the complexity contained within and between the physical, cultural, and natural dimensions of a landscape. The approach disassembles the landscape into constituents, and separately inventories the components composing each layer.

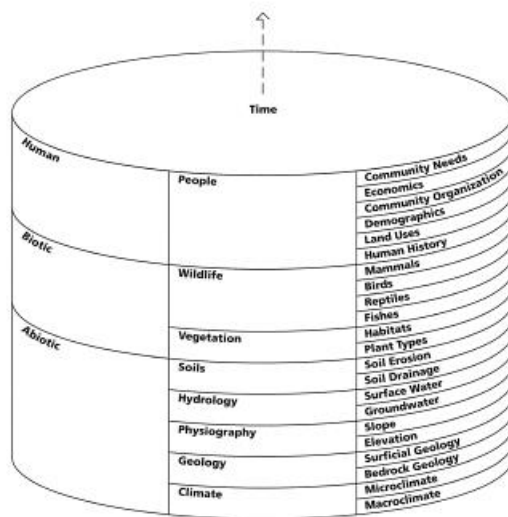


FIGURE 1.2 Layer-cake model. (Source: Adapted from Ian McHarg and drawn by Mookesh Patel)

**Fig 2.** Layer cake model, adapted from Ian McHarg (1967) in Steiner (2008, p.15)

The utility of this framework lies in the *reintegration* of the constituent layers. By juxtaposing isolated layers (suites of landscape components), the researcher can identify unifying and emergent processes broadly affecting the landscape. This technique of landscape deconstruction and reintegration is the root of the PLACE Program’s approach to building sense-of-place. Exposure and exploration of this interconnectivity enriches community understanding of local landscapes.

In Burlington, for example, McKenzie Park (see p.48) can be analyzed layer-by-layer through its soil composition, flora, river hydrology, Abenaki archaeology, European land use, and modern agricultural economics. But the process of teasing the site into these constituents reveals interconnections that add context, clarity, and meaning upon reintegration: Alluvial sediment deposited annually by the Winooski River created superb conditions that attracted both Abenakis (thousands of years ago) and European colonists (hundreds of years ago) to the Intervale. This same sediment deposition today simultaneously buries evidence of early Abenaki settlement deeper and deeper underground while providing fertile soils which non-profit organizations now offer to resettled refugee farmers. The reintegrated interpretation provides a deeper understanding of place, and diverse avenues for community members to

appreciate and engage in the local landscape. This approach is scalable from a single property through an entire biophysical region.

We utilized the layer cake approach to unify and scaffold our exploration of the Burlington landscape throughout the CES. The first evening program started with an explanation of this framework. Each following program featured an introduction crafted to revisit the framework and provide continuity that placed the evening's topic in context of the entire series.

The series themes built upwards and outwards through these landscape layers. Early programs were focused around the basal layers (geology, hydrology, vegetation, etc.). Later programs built upon these and focused on "upper" cultural landscape layers (economics, society, infrastructure, justice, ethnicity, etc.).

A deeper and richer understanding of place emerges from the juxtaposition, analysis, and reintegration of landscape layers. We therefore specifically chose cross-cutting weekly themes that were rooted in a particular zone of the layer cake, yet embodied connectivity across layers. We also selected speakers whose work exemplified this cross-cutting inquiry, and topics that highlighted intersections of landscape layers in ways that are unique or deeply significant to Burlington. The first CES program, for instance, featured research on Burlington's historic ravine: a topic rooted in geology and topography, yet tremendously influential on city planning, economics, and transportation infrastructure throughout the 19<sup>th</sup> century.

#### **D. More than Presentations**

The evening programs were each designed to feature local experts in lecture-style multimedia presentations. This format does not itself allow much opportunity for community-building and audience sharing. We therefore incorporated additional elements into each event to allow for audience mixing and conversation. Before, after, and during the intermission of each program we provided local foods, invited local organizations to table, and displayed photography galleries, museum pieces, and community design/build projects. We chose venues with secondary space outside the lecture hall that enabled community mixing.

We designed the evening programs to be easily packaged as a video lecture series. This allowed the CES content to be a permanent, free online resource with reach beyond the audiences who attended the live events. Introductory and conclusion slides for each presentation were standardized to create a unified design across all six programs. Featured presenters created their own slide decks, which then received design modifications to adhere to good design aesthetics where possible (i.e. large photos, minimal text, strong contrast between text and background, etc.). All presentations were recorded and produced by Regional Educational Television Network (RETN).

**Event recordings are available at:**

<http://www.uvm.edu/place/burlingtongeographic/schedule/index.php>

## Community Engagement Series Evening Program Summaries

### **“Burlington Underfoot”**

Tagline: Bedrock, soil, ravines and how the physical landscape influenced centuries of city planning.

Monday, September 19<sup>th</sup> @ Contois Auditorium at Burlington City Hall

Featured presenters:

Walter Poleman, Rubenstein School of Environment and Natural Resources, UVM

Jeff Marshall, Director of Bailey/Howe Library Special Collections, UVM

*Synopsis: Walter Poleman travels across a billion years of history as we watch powerful glaciers and enormous tectonic collisions sculpt our landscape into the Burlington we recognize today. Jeff Marshall shows us a hidden ravine that once defined our interaction with Burlington’s physical landscape.*

This topic was precluded by an explanation of the CES goals, an introduction to the layer cake framework, and an emphasis on finding intersections and integrations in our landscape. We provided a keystone example of an integrative feature demonstrating these intersections (the marble sculptures along the Perkins Pier waterfront). Walter Poleman then presented on the origins of Burlington’s bedrock in the Iapetus Ocean 500 million years ago, and the more recent origins of our surficial deposits (sand, till, clay, etc.). He featured several locations in the city with prominent bedrock exposures, and familiar topographies around Burlington that can be explained by the underlying geology. After intermission, Jeff Marshall presented on the history of a ravine that once bisected Burlington from North Prospect Street to the Maple Street waterfront. He traced the route of the now-hidden ravine using historic maps and photographs, and commented on the ways in which the ravine challenged city development and infrastructure in the 19<sup>th</sup> century. Jeff spoke of bridge projects spanning the ravine and railroad beds constructed along the bottom. He commented on the ravine’s implications for public health and sewage, and problems arising from the unstable fill in the ravine corridor today.

The event also featured additional displays to engage attendees before and after the presentations. We displayed a place-based photography gallery commissioned by the PLACE Program for this event series (see p.59). We also displayed historic maps showing the ravine corridor, and rock samples of typical Burlington bedrock. We introduced a large physical map of Burlington mounted to corkboard that attendees could insert pins into. Each week, an additional thematically-inspired prompt was added to the map represented by a new pin color (e.g. “where is your favorite park?” “Where was your fondest memory involving Lake Champlain?”).

Contois Auditorium (managed by Burlington City Arts) was strategically chosen as the launching venue for the CES. Its location in City Hall emphasized the community-centered quality of the series, and helped diffuse UVM’s positionality in the series.

## **“Urban Wilds of the Queen City”**

Tagline: What the stories hidden in our forests and trees reveal about our city and ourselves.

Wednesday, September 28<sup>th</sup> @ Burlington High School

Featured presenters:

Sean Beckett, Rubenstein School of Environment and Natural Resources, UVM

Elise Schadler, Vermont Urban and Community Forestry Program

*Synopsis: Sean Beckett brings us into Burlington’s lesser-known natural areas to unearth stories of Burlington’s history, ecology, community, and evolving relationship with open space. Elise Schadler shows us what our beautiful street trees have to say about our identity as Burlington residents.*

After a short introduction to BG and the PLACE Program, Sean delved into an integrative history of Burlington told through six lesser-known city-owned forested sites within Burlington’s park system. Sean’s talk emphasized the cultural values contained in our natural landscapes. Sean reviewed the origins of Burlington’s bedrock and glacial geology, Abenaki settlement, European colonization, land division, ethnicity and immigration, industrialization, park/land planning, modern conservation concerns, and other stories. Each topic was presented in a vignette about a particular feature or set of features found within Burlington forests (i.e. old roads, abandoned quarries, witness trees, etc.). After intermission, Elise Schadler shared Burlington’s uncommonly progressive system for managing city trees, and the decisions behind what species get planted where. She discussed the history of street trees in Burlington and the transition to today’s landscape following the arrival of Dutch elm disease. Elise shared stories of Burlington residents connecting with prominent, recognizable trees around the city. She also linked street trees to community themes such as water management, impervious surfaces, and community health.

Burlington High School was strategically chosen as the venue for this program in order to attract New North End residents. This ward contains most of the parks explored in Sean’s presentation. The location was also chosen to attract Burlington School District educators and families to the CES. The event lobby featured local snacks and the same photography gallery displayed at the Burlington Underfoot program.



## **“Burlington Flowing”**

Tagline: Water’s complex journey from tap to sewer and beyond.

Monday, October 3<sup>rd</sup> @ Main Street Landing Performing Arts Center

Featured presenters:

Megan Moir, Department of Public Works, Water Division

Douglas Brooks, Maritime historian and boatbuilder

*Synopsis: Megan Moir takes us through sewers, faucets, ponds and pipes to demystify Burlington’s water systems. Boat builder and maritime historian Douglas Brooks explores Burlington’s long relationship with recreation on Lake Champlain.*

The evening introduction featured a photo tour revisiting the layer cake framework. The photographs emphasized how the flow of water in Burlington touches many other layers of the city landscape. Photographs highlighted Salmon Hole (representative of geology and power generation), the Winooski River (land use history; agriculture, soils), Englesby Brook (impervious surfaces; ecology), and the Burlington Waterfront (industry; economy; recreation; community development).

Megan Moir’s presentation was a history of Burlington’s water systems (waste water, storm water, and drinking water) and a projection of the city’s water systems in the coming decades. She explained the evolution of Burlington’s water systems since the 18<sup>th</sup> century, including early sewage management, reservoir/water tower installation, city plumbing, lead pipes, and the iterations of water treatment facilities. She then looked at today’s major water-related challenges. After intermission, Douglas Brooks presented on the history of recreation on Lake Champlain. Douglas introduced the story of Burlington’s endemic racing sharpie that Lake Champlain Yacht Club members once built and raced at the turn of the 20<sup>th</sup> century. Douglas transitioned to the story of the Auer family boathouse, a business in operation at the mouth of the Winooski River since 1927. Following Douglas’ presentation, Mark Naud (director of the Lake Champlain Community Sailing Center) announced the organization’s new development milestones, and unveiled an emerging vision to construct a historic racing sharpie alongside UVM, Shelburne Farms, BG, and the Burlington community.

Main Street Landing hosted this and the remaining CES evening events in their 200-seat Film House. The “Lake Room” atrium outside the Film House was used to engage attendees before, after, and during the intermission of the programs. Recognizing that aquatic ecology was absent from this event, we invited the Lake Champlain Basin Program to table in the atrium and share resources about lake ecology and watershed health. Megan Moir displayed typical cross-sections of Burlington’s old, corroded water pipes. We provided local snacks and drinks. The atrium also featured a replica rowing skiff constructed as a design/build project in which students salvaged and replicated a vintage rowboat constructed by the parents of Charlie and Christine Auer ca. 1930 (see p.60).

## **“Burlington’s Edible History”**

Tagline: The intersection of Burlington’s food landscape and ethnic heritage through time.

Monday, October 10<sup>th</sup> @ Main Street Landing Performing Arts Center

Featured presenters:

Elise Guyette and Gail Rosenberg, Burlington Edible History Tours

Alisha Laramee, New Farms for New Americans/AALV

Pablo Bose, Department of Geography, UVM

*Synopsis: Elise Guyette and Gail Rosenberg share captivating stories of centuries of local foods and the Native Americans and immigrant communities who prepared them. Alisha Laramee and Pablo Bose paint a picture of our city's ethnic diversity today, and introduce a small farm redefining the future of Burlington's food landscape.*

This program used food as a lens to explore ethnic diversity in Burlington. While the first three programs used physical and environmental landscape layers as starting points, this was the first event rooted in cultural layers. The introduction bridged these layers with an audio clip from a local Abenaki leader, Charley Delaney Mageso, who described a classic Abenaki recipe for cooking Atlantic salmon caught at Winooski Falls. The clip wove together geology, vegetation, wildlife, water, and food, reestablishing the context and framework of the overall CES.

Elise Guyette and Gail Rosenberg shared their research around the different indigenous and immigrant communities present in Burlington over the last 500 years, including Abenaki, Yankee, Irish, Chinese, Jewish, Lebanese, Italian, French Canadian, Jews, and recent immigrants. They introduced each ethnicity with profiles of former residents, traditional foods, and the groceries and restaurants they operated. Their presentation exposed a rich cultural diversity in Burlington that is frequently overlooked. Their program underlined food’s role in connecting us to our families, communities, and history. After the intermission, Pablo Bose outlined the ethnic demographics and geography of Burlington today. He went over the dominant nationalities of immigrants in the last 30 years in Burlington, and the effects of this diversity on businesses and foods, especially in the Old North End. Alisha Laramee then explained AALV’s New Farms for New Americans program that provides gardens to new Burlington immigrants. Alisha described the foreign vegetables cultivated in the gardens, and the economic advantages and struggles for New Americans growing and selling ethnic foods. She also explored the particulars of growing international foods using unfamiliar techniques in Vermont’s cold climate.

The event featured local foods and drinks beyond what we regularly provided at intermission. In addition to Shelburne Farms cheddar and Champlain Orchards apple cider, we served maple seltzer donated by Sap! and momo dumplings catered by the Nepali Dumpling House. This snack showcased an example of the communities, foods, and businesses defining Burlington’s modern food/ethnic landscape.

## **“Burlington Illuminated”**

Tagline: Keeping Burlington’s lights on with energy systems of the past and future.

Monday, November 2<sup>nd</sup> @ Main Street Landing Performing Arts Center

Featured presenters:

Dan Fredman, Vermont Energy Investment Corporation and The Gund Institute

Roger Donegan, Burlington Electric Company

*Synopsis: Dan Fredman and Roger Donegan tell stories of smokestacks and solar panels, oil tanks, and wind turbines. This evening is a reflection on Burlington’s energy heritage and an inside look at Burlington’s role in the emerging future of electricity.*

This program used Burlington’s energy systems as a lens to continue developing sense of place through the exploration of intersecting landscape layers. The introduction featured photography of the defunct Moran Plant and an audio clip from Tom Carr, former superintendent of the Moran Plant and the McNeil Station. The clip voiced stories of workers playing good-natured practical jokes. The clip reinforced the human communities underpinning our power infrastructure, and emphasized how our power system integrates with our cultural landscapes.

Roger Donegan shared his experiences working with Burlington Electric Department for 36 years, and presented his research on Burlington’s early power generating systems. He discussed coal gasification and gas streetlights of the late 19<sup>th</sup> century, coal barges on Lake Champlain, and Burlington’s first steam plant. He shared photographs of the construction of the Moran and McNeil Stations, and explained how turbines generate electricity at traditional power plants. Roger connected energy systems to invasive species issues in Lake Champlain, and explored the similarities in chemistry between Burlington’s bedrock and the byproducts of power generation. After intermission, Dan Fredman explained Burlington’s position as a national leader in electric utilities thanks to developments in smart grid systems. He showed the generating stations that Burlington receives its electricity from, and explained the significance of Burlington’s recent accolade as the nation’s first 100% renewable energy city. Dan diagrammed the flow of electricity in traditional power networks versus “smart” systems. He showed how residents can monitor their home energy use in real-time with smartphone apps and other technologies. He suggested that the future of energy is one in which residents make decisions about power use and micro-grids at an individual and neighborhood scales—a community is strengthened by the connections of its electrical grid.

## **“Pathways and Pavement”**

Tagline: The corridors and machines connecting us through time and space.

Monday, November 2<sup>nd</sup> @ Main Street Landing Performing Arts Center

Featured presenters:

Brennan Gauthier and Kyle Obenauer, Vermont Agency of Transportation

Luis Vivanco, Department of Anthropology, UVM

*Synopsis: Brennan Gauthier and Kyle Obenauer take us on a tour of Burlington’s transportation heritage via railroad, streetcar, and even horse-powered paddleboat. Luis Vivanco explains Burlington’s long love of bicycling and turns our attention to the future of transportation planning.*

This evening used Burlington’s transportation system as a lens to explore aspects of the city’s cultural heritage. The introduction featured a reflection on the five previous CES events, and highlighted how our transportation systems explained layers of the Burlington landscape introduced at each previous event (i.e. the geology of the New North End enabled the construction of Burlington’s famous railroad tunnel).

Brennan Gauthier and Kyle Obenauer used historic maps and photographs to travel through Burlington’s transportation heritage. They showed early explorers’ navigational maps of Lake Champlain, early road networks in Burlington, and traced the evolution of turnpikes, canals, railroads, streetcars, and automobiles. They also discussed the relationships between transportation evolution and industry, shipping, and manufacturing. After intermission, Luis Vivanco described Burlington’s early position as a national epicenter of bicycling in the late 19<sup>th</sup> century. He delved into bicycling culture from an anthropological perspective, uncovering themes of women’s suffrage, class divisions, race, and health. Luis connected the bicycle’s popularity with the unusually good quality of 19<sup>th</sup>-century Burlington roads and the appearance of numerous bicycle shops around the city. Luis reflected on the bicycle-related transportation issues facing Burlington a century ago, and compared them to the strikingly similar themes the city wrestles with today.

We welcomed Local Motion and Old Spokes Home and Bike Recycle Vermont to table in the atrium. Local bike historian and collector Glenn Eames displayed a 1870s-vintage bicycle and historic cycling photos, maps, and other paraphernalia. VTrans displayed large prints of Burlington street cars and railroad engines. We also provided local snacks and drinks.

## Community Engagement Series Evening Program Evaluations

BG collaborated with Dr. Cheryl Morse and students of Vermont Field Studies (GEOG 192) Service Learning course to evaluate the CES evening programs. Students worked with BG to develop a participant survey to elicit feedback on attendee demographics, advertising effectiveness, program effectiveness, and suggestions for future programs. The surveys were solicited during intermission and after each CES event by the students. An electronic follow-up survey was sent to a subset of participants to evaluate cross-program attendance and influence of CES programming on participant behavior. The students analyzed the surveys and presented findings and recommendations to BG in a formal presentation and report. See **Appendix 3** for the full report. See **Appendix 4** and **5** for the surveys the designed and administered.

### Summary of CES evaluation results

*Participant demographics and advertising reach:* Of 188 evaluations collected over the six CES evening programs, 92.2% of participants were white (compared to 91.9% white in Chittenden County), 60% were female, and the largest age group of participants was 46-64 years old (see table below). The second-largest age group (18-24 years old) were chiefly UVM students from NR 001 and NR 095. Of participants > 45 years old, 87% had lived in Vermont at least 15 years, while 72% of participants under < 35 years old moved to Vermont within the last 5 years. Overall, 76% of participants held bachelor’s degrees and a remarkable 50% held graduate degrees (compared to 40% of Chittenden County residents holding bachelor’s degrees as highest level of education). Most common occupations were business (29%), education (16%), student (20%) and retired (14%). Fifty-three percent of attendees indicated regular participation in volunteer work.

Word of mouth and UVM-related advertising (RSENR email threads and class announcements) drew 73% of attendees, while flyers, Front Porch Forum advertisements, and calendar and feature press in Seven Days collectively attracted 23.1% of participants.

Participant Age	%
0-17	1.1
18-24	19.9
25-35	16.1
36-45	10.8
46-64	34.9
65+	17.2

How did you hear about these events?	%
Seven Days	8.9
Flyer	7.7
Front Porch Forum	6.5
Word of Mouth	52.1
BG Website	3.0
Other (primarily UVM-related emails)	21.3

*Program effectiveness:* Of 186 responses, 90% attendees found the programs to be “pretty effective” or “very effective.” All five attendees who rated the program as “not very effective” were responding to the “Burlington Illuminated” program. Of the 15 respondents who completed the follow-up electronic survey, 67% rated the entire series 5 of 5, and the remaining 33% rated the series 4 of 5. All but one of these 15 respondents expressed that the

series influenced their behavior and/or prompted community action. All respondents reported sharing CES content after the programs.

*Program suggestions:* Seventy-five attendees provided comments or suggestions for future programs. Aside from affirmations and gratifications to continue the series, the most common complaints included lecture length (too long) and lecture time (too late). Some complained of speaker styles (i.e. talking too quickly or reading from a script), introduction length, and parking challenges (though all venues except Contois Auditorium had free parking lots immediately outside the venue). Many suggested abandoning traditional lecture format in favor of more interactive, community-sharing events. Common topical suggestions included landscape change, climate change, Abenaki heritage, planning/development controversy, immigrant and refugee experiences, watershed history, lake ecology, and outdoor recreation.

### **Summary of recommendations for future CES programs**

Participants rated the CES highly and expressed overall positive feedback, indicating that the lecture series was generally successful, informative, and effective for most attendees. However, the audience was overwhelmingly white, highly-educated, and disproportionately UVM-affiliated. Most participants heard about the series through word-of-mouth or through UVM channels, despite a healthy online and print advertising campaign. These results underscore the major challenges that we attempted to consider in the CES guiding design principles. In particular, the CES was intended to attract diverse audiences across a range of ethnicities, socioeconomics, education levels, and experiences. We intended to accomplish this via multiple conceptual entry points, broadly engaging topics, a variety of event locations, and multi-channel advertising. The discrepancy between the actual and intended audience demographics shows great room for improvement.

Future lecture-based programs should be shortened and hosted on rotating days to accommodate difficult evening schedules. Two-hour lectures running until 9:00 PM was too draining for many attendees, and post-intermission attendance was always significantly lower. Shortening lectures will also enable more Q&A, which was a consistent demand of survey respondents. We intended to diversify the CES events with engaging intermission exhibits and tables, but the challenging time constraints of this series both diminished audience engagement with these intermission activities, and de-emphasized the community-mixing goal of the evenings. Shorter lecture programs would allow much more time for these accessory activities. Though we selected speakers with an eye toward stage presence and lecture experience, some presenters were notably flat and scripted, which significantly impaired ratings and program effectiveness. Successful community-based lecture events require engaging, dynamic speakers.

Future CES programs should also strive to diverge from the traditional lecture format. The 2016 CES audience demographics reinforce that lecture events only attract and engage a narrow cross-section of the Burlington community. Furthermore, perceived institutionalization is demonstrably counter-productive to place-based education (Sousa et al 2016). Instead, place-based engagement programs can be packaged as beach days, bike rides, design-builds, harvest

potlucks, pop-up events at community gatherings, “treasure hunt” walking tours, trivia nights, etc. Locations should continue to be an integral component in place-based event design, and events should be highly participatory. Varying the type, timing, style, location, and target audience of each event should be a future design priority.

Designing events with particular audiences in mind will also enable more effective, targeted advertising. Poster canvassing and “shotgun” ads on Front Porch Forum and Seven Days were not nearly as effective as word-of-mouth advertising. This is likely a function of the nature of the CES events, and the realities of advertising in a community saturated with competing event ads. Future advertising efforts should prioritize the direct outreach to targeted audiences, and a focus on social media advertising. Additional marketing and advertising was beyond the budget and timeframe of this CES, and this was a significant barrier to reaching diverse communities.

See **Appendix 3** for full results and recommendations by GEOG 192 students.

## Field Workshops

The CES also involved field workshops exploring Burlington landscapes as direct follow-ups to the themes discussed in the public evening programs. The PLACE Program is dedicated to working directly with school districts and teachers at various scales to design and implement place-based curriculum. This field workshop series was our main avenue for engaging Burlington teachers in content and conversation around place-based teaching and learning. We specifically targeted educators and local leaders in order to build legacy and continuity of the PLACE Program's mission through infusion in local schools.

The goals of the workshops were to:

- Further explore the content and frameworks discussed at CES evening programs.
- Explore various field sites and topics for application in place-based curriculum and community discourse.
- Create “containers of emergence (Kolan and Poleman 2009)” that percolate cross-city connections between engaged Burlington leaders.

Teachers from all primary and secondary schools in Burlington were invited to attend. To formalize these workshops as official educator opportunities, Shelburne Farms' Education for Sustainability Program offered professional development certificates to attendees reflecting the number of hours that each participant accrued between workshops and evening programs.

Other invited groups included the Sustainability Faculty Fellows, Burlington Master Naturalist students, and the EFS network of Shelburne Farms. Remaining spaces were opened to attendees of the public evening programs. Workshops were limited to 20 attendees.

The workshops were attended by 47 different participants. Fourteen attended at least two workshops, and 10 attended at least three. Participants came from various backgrounds, interests, and professional affiliations. The workshop cohort included educators from C.P. Smith Elementary School, Hunt Middle School, Sustainability Academy at Lawrence Barnes, Burlington High School, Winooski High School, Community College of Vermont, Champlain College, and University of Vermont, as well as coordinators of local education initiatives Parent University and Our Curriculum Matters. Other participants were affiliated with the Lake Champlain Maritime Museum, Lake Champlain Basin Program, Burlington Edible History, Burlington Department of Parks, Recreation & Waterfront, and Seven Days. The “Land and Lake” workshop was attended by the CEO of the North Bay Conservation Corps in San Rafael, California. Seven undergraduates from CCV and UVM's Rubenstein School attended, as well as two students from UVM's Historic Preservation graduate program. The remaining attendees joined as interested residents without explicit professional affiliations. These residents indicated employment in geology, botany, and local food systems.



## Workshop Synopses

### **“Reading the Landscape”**

Date: Saturday, September 24<sup>th</sup>

Time: 9:00 – 12:30

Starting Location: Burlington High School entrance

Synopsis: *What makes a place? In this kickoff workshop, we explore Burlington’s Arms Grant Forest and the neighboring wilds of the Episcopal Diocese at Rock Point. We practice “reading” the forested landscape to uncover stories of Burlington’s natural and cultural heritage. From bedrock to wildflowers to dairy farming, we’ll walk through time and between the “layers” of place. This workshop is led by UVM Ecological Planner, **Sean Beckett**, and Burlington’s Field Naturalist, **Alicia Daniel**.*

This workshop was designed as an introduction to the layer cake framework. It was also an introduction to common “reading the landscape” techniques practiced in the FNEP program. The program was a follow-up to the geology/topography topics introduced in the first “Burlington Underfoot” evening program, and a preview of the topics and lenses to be introduced at the “Urban Wilds of the Queen City” evening program the following week.

The program explored the Arms Grant Forest (see p.33), which we selected for its proximity to several schools and its rich landscape history. We began with an exercise to practice the “pieces, patterns, and processes” framework of landscape interpretation. Attendees broke into small groups and identified significant “pieces” (i.e. hemlock trees, rock outcrops, old road), “patterns” (hemlocks are on one side of the road, not the other), and potential “processes” that arranged the pieces into the patterns observed (i.e. logging, aspect, etc.). Each group was instructed to focus on a particular landscape layer. We discussed our observations as a whole group, and emphasized the intersections between landscape layers that explain the features we observed. We visited a 200-year-old oak tree at the boundary of the Diocese property and introduced another FNEP-style activity to read landscapes. We visited a dolostone outcrop crisscrossed by technical mountain bike trails and populated by rare yellow lady-slipper orchids. We invited discussion about the role of different user groups in public parks, and the weighing of potentially incompatible uses and values. Finally, we visited an old quarry and invited participants to use techniques covered during the workshop to “read” the site. We debriefed the intersection of geology, botany, industry, architecture, and other layers integral to the site.

### **“Get to Know your Street Trees”**

Date: Friday September 30<sup>th</sup>

Time: 4:30 – 6:30

Starting Location: ECHO Center front entrance

Synopsis: *What stories do our trees tell? **Elise Schadler**, Burlington’s Urban and Community Forester, takes us on a walking tour across Burlington’s waterfront and Old North End for an exploration of our most iconic street trees. In addition to learning to identify our most common (and unusual) species, we’ll learn to coax stories from our built environment, and discover what our street trees say about Burlington’s culture, history and future.*

This workshop was a direct follow-up to the “Urban Wilds of the Queen City” evening program. Elise Schadler worked with attendees to identify and learn about the common species in Burlington’s “urban forests” (a.k.a. street trees) today. Participants learned about linden, green ash, crabapples, silver maples, cottonwoods, and more. Elise discussed the role of Burlington’s staff arborists and their rarity in Vermont and elsewhere in the U.S. Participants learned about the decisions involved in planting, pruning, and caring for street trees. Elise shared stories of her favorite trees, and the future of Burlington’s urban forests. This workshop took attendees on-foot around the Burlington Waterfront from ECHO to Perkins Pier and along Battery Street.

### “Land and Lake”

Date: Saturday, October 8<sup>th</sup>

Time: 9:00 – 12:30

Starting Location: Local Motion @ Burlington’s waterfront

Synopsis: *Saddle up for this bicycle-bound quest to learn about the nature and culture intersecting along Lake Champlain’s shoreline. Burlington Field Naturalist, **Alicia Daniel**, UVM Field Naturalist, **Ellen Gawarkiewicz** and her students showcase the lessons and learnings of this summer’s pilot undergraduate natural history program at UVM’s Rubenstein School of Environment and Natural Resources. We’ll explore birds, bedrock, beaches, and more on this place-based exploration of the Burlington Bike Path.*

This program followed the “Burlington Flowing” evening presentation about the city water systems. The workshop also incorporated elements of the first 2 weeks of presentations and field programs. This bicycle-bound workshop toured features along the Burlington bike path that are touchstones of integrated natural and cultural history. The bicycling element introduced the role of transportation corridors and machines in understanding the Burlington landscape, which was the central theme of the upcoming “Pathways and Pavement” evening program. We partnered with Local Motion, which facilitated bicycle rentals and opened early to provide us exclusive service.

The first half of the workshop was co-led by Field Naturalist Summer Program students, an undergraduate internship piloted by Field Naturalist graduate student Ellen Gawarkiewicz. Each of the four students interpreted a different focal area between Oakledge Park and the Urban Reserve: the artificial filling of the waterfront, the marble statues at Roundhouse Park, the Barge Canal, and Dunder Rock. This portion of the workshop was designed to both teach interesting facets of natural and cultural history of Burlington, and to showcase this innovative place-based undergraduate program to an audience of educators. In the spirit of leveraging the emergent qualities of the workshop cohort, participants were encouraged to build upon concepts introduced by the students.

The second half of the workshop began with a passage from John Stilgoe’s “Outside Lies Magic,” a book about the power of interpreting the natural and built landscapes of “ordinary” places. Participants then bicycled up the bike path to Killarney Beach, where they met Alicia Daniel for an explorative exercise to interpret the Champlain Sea delta landform and a recent landslide event. This exercise was an opportunity to practice the tools developed in the first

“Reading the Landscape” workshop, and to incorporate hydrology into landscape interpretation—namely the relationship between percolation rate, sediment size, and landslide sensitivity. The group returned to the starting location via North Avenue, following the new and controversial bicycle lane.

### **“New Farms, New Foods”**

Date: Sunday, October 16<sup>th</sup>

Time: 10:00 – 12:00

Starting Location: Ethan Allen Homestead main parking lot

Synopsis: *We continue our exploration of food and ethnicity in this direct follow-up to our October 10<sup>th</sup> public evening presentation, “Burlington’s Edible History.” Alisha Laramee, Program Specialist of New Farms for New Americans, leads this hands-on workshop at the NFNA farm down in the Winooski River floodplain. We’ll join the community in tending to the late-season fields, while learning about Burlington’s ethnic landscape through the international foods growing in Burlington’s richest soils.*

This workshop followed the “Burlington’s Edible History” evening program about food and ethnicity in Burlington. Alisha Laramee, a featured presenter at this evening program, hosted this field workshop at the New Farms for New Americans community fields in the Winooski Valley Parks District property beyond the Ethan Allen Homestead. Alisha explained the history of the program and the diversity of nationalities represented in the farm fields, referencing themes and stories introduced during the evening program. Alisha highlighted many of the foreign vegetable varieties grown in the fields, how to prepare them, why they’re grown, and where they may be found in Burlington shops and restaurants. Alisha showed some of the unusual farming techniques practiced by community members from different regions of the world, and introduced a Nepali farmer harvesting the last of his season’s crops. Following the tour, workshop participants assisted Alisha and the New Farms community in cleaning and clearing the fields in preparation for winter. Participants removed drip irrigation lines, removed twine and trellises, and pulled row stakes across the 5-acre field.

### **“Roads and Rails”**

Date: Saturday, November 12<sup>th</sup>

Time: 9:00 – 1:00

Starting Location: ECHO Center front entrance

Synopsis: *How does Burlington get from A to B? Brennan Gauthier and Kyle Obenauer, VTrans Archaeologist and Historic Preservation Specialist, lead this adventure through time and space following the story of Burlington’s transportation heritage. Travel corridors are among the oldest human imprints in our city, and this is our opportunity to learn how to examine them.*

This final workshop was a follow-up to the “Pathways and Pavement” evening program. We visited by foot and van several key features of Burlington’s transportation heritage. Along the waterfront, we visited Burlington’s old rail depot, the “new” station currently owned by Main Street Landing, the Pine Street Barge Canal, and discussed the link between railroads and Burlington’s industrial age. We then met Luis Vivanco for a street-side presentation on 19<sup>th</sup>-

century cycling in Burlington. Luis explained Burlington's role as a national leader in bicycling while the group visited the site of two former bicycle shops on Loomis Street. We viewed the former Burlington Traction Company streetcar depot on North Winooski Ave, then traveled to Winooski to trace two centuries of history in the Burlington-Winooski bridge. We returned to the waterfront by way of the old ravine that ran diagonally from North Prospect Street to Maple Street. We noticed old cut banks, strange dips in the road, buildings with second-story front entrances, and other imprints of the ravine's former presence.

## 2. Place-based Landscape Analyses: Burlington Parks, Recreation & Waterfront

### Background Information

Burlington Parks, Recreation & Waterfront (BPRW) was eager to use this BG initiative as an opportunity to shed light on a series of parks that receive little public attention. These “Urban Wilds” are a category of city-managed land acquired through the Conservation Legacy Program (CLP), an initiative of the City of Burlington’s Open Space Protection Plan (OSPP; City of Burlington 2014). This plan, drafted in 2000, is an adapting planning document designed to guide comprehensive land conservation within Burlington. The CLP is the OSPP mechanism to ensure the proactive conservation of high-priority lands. The CLP is tasked with:

- Prioritizing lands that are most important and suitable for long-term protection based on the City’s open space vision and the presence of important natural or recreational features.
- Administering a land conservation fund to assist with the costs of purchasing land or conservation easements.
- Ensuring the stewardship of City owned conservation lands.

The CLP designates as “Urban Wilds” those lands that “provide habitat for rare and endangered plant and animal communities, wetlands and other riparian systems, flood plain, unique geological and hydrological features, important wildlife habitat and travel corridors, areas important for scientific research and education, scenic vistas, trails, passive recreation, sustainable forest communities, and cultural features (City of Burlington 2014).” The general management goals for the Urban Wilds are to preserve natural and cultural features unique to the property, encourage multiple, compatible user groups seeking passive recreation, and to conserve the spaces for the benefit of future generations. There are currently six designated Urban Wilds, including Ethan Allen Park, Mount Calvary Red Maple Wetland, Arms Grant, Arthur Park, McKenzie Park, and Crescent Woods (Fig. 3).

These six sites have received various degrees of investigation over the years to document rare or sensitive ecological features at these properties, but no work has analyzed these Urban Wilds for their landscape context and broader community value. Virtually no information about these sites is publically available. We used the PLACE Program’s Place-Based Landscape Analysis (PBLA) approach to investigate the Urban Wilds for the goal of building context and deepening relationships between Burlington residents and the local landscape.

The products of the Urban Wilds PBLAs were delivered in several formats. The “Urban Wilds of the Queen City” CES program was specifically designed to celebrate these parks. This event presented the compelling stories of their natural and cultural history in an effort to embrace Burlington’s community identity and explore Burlington’s evolving relationship with open

space. Secondly, the PBLA research was prepared into multimedia articles published on the BPRW and Burlington Geographic websites ([www.enjoyburlington.com/conservation](http://www.enjoyburlington.com/conservation)). These park synopses provided information and context designed to inspire curiosity and interest in visiting these forests. Finally, Arms Forest was chosen as the site for the initial CES field workshop (see “Reading the Landscape,” p. 21). This program exposed Burlington educators and leaders to the Urban Wilds network as places for educational programming and community-building.



Fig 3. Burlington’s “Urban Wild” parks.

## Methods

### **Landscape deconstruction and reintegration**

The PBLA approach employed by the PLACE Program is a transdisciplinary site assessment integrating natural science (geology, hydrology, ecology, wildlife science, etc.) and social science (archaeology, geography, economics, historic preservation, etc.) methodologies to investigate the unique character of a site for the purpose of building deeper, richer connections between communities and the local landscape.

Many of these parks (all except Crescent Woods and Arthur Park) have received some sort of landscape assessment commissioned by the Conservation Legacy Program (e.g. Carlson 2003) during their inclusion into Burlington's city-owned open space network. These analyses inventoried the natural (and to some extent, cultural) features within the properties, but did little to synthesize or interpret these resources. The goal of our PBLAs was to investigate the sites to understand their contribution to Burlington's landscape identity and sense-of-place.

The PLACE Program uses the "layer cake" approach as the basis of landscape investigation and interpretation. By separating a site into conceptual layers, researchers compartmentalize its complexity into suites of patterns and processes shaping the land. By juxtaposing these constituent layers, this framework exposes the relationships *between* them, allowing for rich stories to emerge upon reintegration. Landscape complexity is thus disentangled through this process of parsing, juxtaposition, and synthesis-upon-reintegration (See p. 11 for more about this approach). These integrative syntheses were the PBLA outputs.

### **Synthesis through landscape features**

Some compelling syntheses emerge by the simple act of juxtaposing the patterns and processes of different landscape layers. Other integrative threads are not as obvious, and benefit from a system for recognizing and unpacking them. Previous PLACE students have used the "integrative touchstone" concept as a starting place for interpreting natural landscapes (Nytch 2007, Poleman 2010). These touchstones are physical features demonstrating processes originating from multiple landscape layers. Ethan Allen Tower, for instance, can be interpreted as a memorial to a decorated Revolutionary War leader, or as a monument to the local Dunham dolostone bedrock from which it was built.

Using integrative touchstones to interpret natural landscapes is analogous to the Character Defining Features (CDF) used by historic preservationists to interpret cultural landscapes. CDFs are specific elements of a landscape or structure that contribute significantly to its historic *context* (i.e. a site's historic significance is diminished when a CDF is removed). For example, a particular type of porch column may be the signature of a well-known architect; a smokestack on an apartment complex may indicate the building's original use as a steam-powered woolen mill. Cases for preserving historic sites are made by assembling site context, or "...those trends in history by which a specific occurrence, property, or site is understood and its meaning within

history is made clear (NPS 2002).” This context is assembled through the identification and interpretation of CDFs.

The PBLAs in this project borrow from this approach. The myriad relationships we find between all landscape layers (physical, natural, and cultural) emphasize that “the dichotomy between nature and culture is an artificial one (Poleman 2011).” Thus, the CDF framework can be applied in landscapes beyond those traditionally considered by historic preservationists. Applied to “natural” landscapes, CDFs are discrete features contributing to the context and significance of the site. They become portals into landscape complexity, revealing rich textures otherwise overlooked in typical ecology-centric landscape analyses. For example, a group of blueberry bushes may reveal a site’s former land use as a berry orchard, while indicating an acidic, nutrient-poor soil (see p. 52). An old dirt road may underscore a site’s former identity as a major travel corridor, while exposing the local geology (see p. 38). CDFs are thus tools for recognizing and interpreting site significance, and centerpieces for deepening community connections with place. Such CDFs were the starting point to develop integrative syntheses.

Site investigation was organized into three research categories, biophysical inventory, place-based ethnography, and historical research:

#### *A. Biophysical Inventory*

While the PLACE Program and the Field Naturalist and Ecological Planning program has built upon the layer cake framework to help resolve all landscape components, the approach was originally designed as a tool for inventorying physical and environmental landscape layers. It therefore remains an effective framework for conducting biophysical assessment. Through direct site visits, reviewing existing ecological inventories, and Geographic Information Systems (GIS) data, we assembled a profile of site topography, climate, bedrock, surficial geology, soil type, hydrology, botany, natural communities, and wildlife usage. The Vermont Nongame and Natural Heritage Program, Vermont Center for Geospatial Information (VCGI) and the Vermont Agency of Natural Resources (ANR) Atlas provided important spatial datasets for analysis. Historic U.S. Geological Survey quadrangles provided important comparative information on topographic and hydrological dynamics over time. After completing an initial inventory, we selected for further investigation those components interpreted as CDFs.

#### *B. Place-Based Ethnography:*

Developing integrative syntheses ultimately amounts to crafting compelling narratives about a place. Talking to community members about their experiences in these places is therefore a critical step. Place-based ethnographies clarify landscape complexity by threading together patterns and processes across landscape layers. Place-based stories are useful “in producing facts *and* subjective meanings, as well as extremely “thick” historical description about the social and cultural landscape, illustrating oral history’s potential for bringing forward integrative and inclusive stories (Blofson 2014).” Oral history often reveals facts and perspectives about a landscape that would be impossible to derive from other research methods.

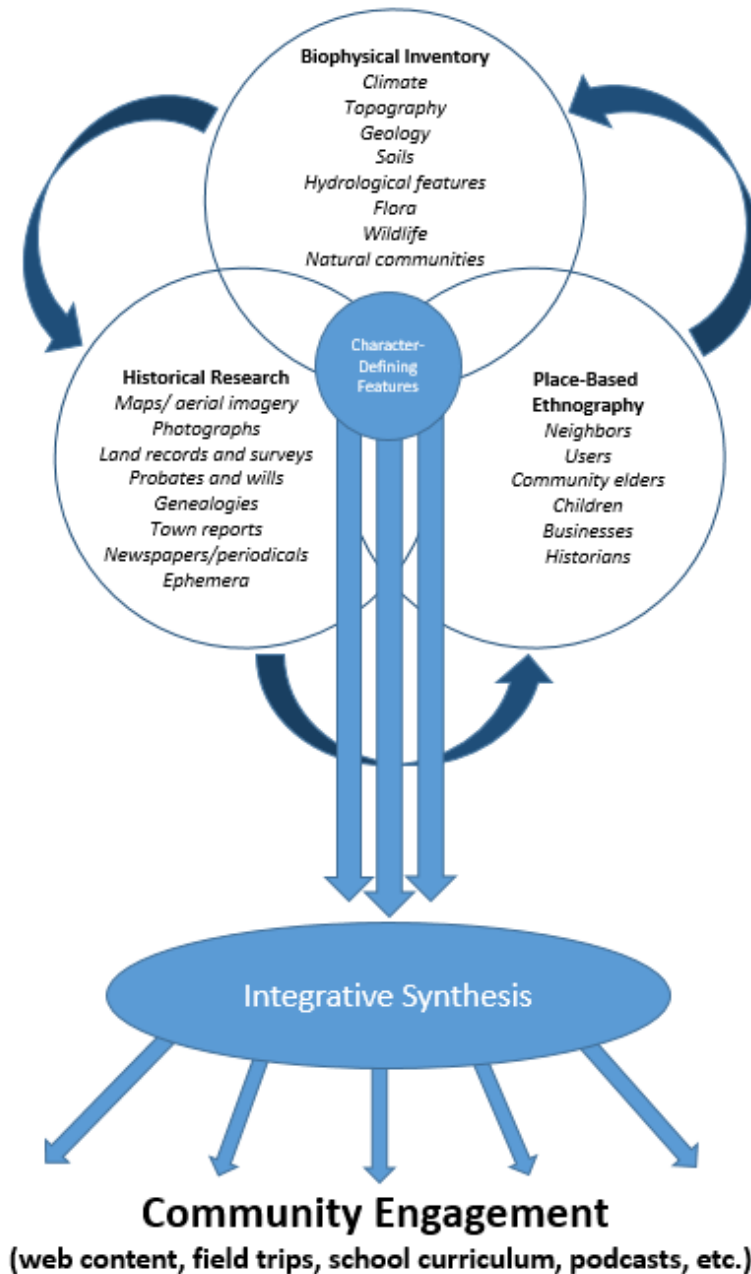


Ethnographies expose the richness and meaning of a place by shedding light on the “entry points (Kolan and Poleman 2009)” of human engagement, thereby identifying the site’s position in local place identity. At Crescent Woods, for instance, oral history revealed the site’s use as a Halloween “haunted forest” to a generation of neighborhood children in the 1990s (see p. 41). This park’s identity is therefore much different than that of Arthur Park, where kids once raced toboggans on an old road used by farmers to move cattle into the intervalle (see p. 38). Collectively, the body of stories about a place is a significant component of its place identity. Recognizing this, we cast a wide net to include a range of perspectives about each site. For each park we solicited neighbors, user-groups, nearby businesses, community elders, children, local historical societies, etc.

### *C. Historical Research*

Historical research is also a fundamental component of the PBLA. To comprehensively understand landscape context, we must study its dynamic timeline. Historical research uncovers place-based oral histories of deceased community members (via poetry, narratives, editorials, etc.), providing comparative place identities between generations. It also adds depth to integrative themes identified by CDFs, as these features are frequently imprints of extinct cultural processes. Historical research may also uncover integrative themes not emerging elsewhere in analysis. For the purposes of these PBLAs, our research investigated: historic maps, surveys, photos, postcards, ephemera, land records, U.S. Census records, Vermont Agricultural Census records, wills and probate records, newspapers and periodicals, town reports, city directories, archaeological reports, and secondary resources. These resources are available at UVM Libraries’ Special Collection, UVM’s Center for Digital Initiatives, and Burlington City Hall.

Together, these research methods describe a three-sided approach entailing biophysical inventory, historical research, and place-based ethnography. Information revealed in one component often initiates follow-up in the other two. These efforts are organized around identifying and unpacking CDFs on the actual landscape, which compose the core of an integrative synthesis explaining site context and meaning. These syntheses are then packaged into various interpretations (web content, interpretive materials, planning documents, etc.) to engage community members in deepening place relationships. See **Fig. 4**.



**Fig 4.** Place-Based Landscape Analysis (PBLA) framework for researching and interpreting Burlington’s “Urban Wilds.” This method is a three-part, iterative investigation into the site using biophysical inventory, historical research, and ethnographic interviews. These investigations center around understanding “character defining features” present at the site. These features form the basis of integrative syntheses, which are then packaged for dissemination in community engagement outlets.

## Integrative Syntheses

These synopses are the written content of the PBLAs of Burlington's Urban Wilds. They were created as a resource for all Burlington residents to build appreciation for and connection to these parks. These materials, as well as photographs, historical imagery, cartography, sound clips, and other multimedia are compiled and published on the Burlington Parks, Recreation & Waterfront website, available at: <http://enjoyburlington.com/type/conservation/>

Note: bibliographic citations for this section are located at conclusion of each synopsis.

### Arms Forest

The old forest landscape of the "Arms Grant" rewards visitors with rare natural communities and brims with clues of centuries of land use history. Visitors will find an extensive trail network lined with unusual plants, glimpses of deer and fox, and old farm roads shaded by rich canopies of centurion oaks. A hidden quarry even connects us to a Burlington that was once the national center of marble manufacturing. A rare gem in the necklace of Burlington's open landscapes, this 30-acre park is located in the New North End's largest area of contiguous undeveloped lands, nestled between Rock Point and the Intervale floodplain across North Avenue.

#### Forest Riches

A visitor to the Arms Forest may immediately notice a lush, diverse assemblage of wildflowers and vegetation unlike most Burlington forests. In the spring, before leaves emerge, explorers of the ledges and outcrops throughout the park enjoy wild ginger, red and white trillium, hepatica, meadow-rue, columbine, and other colorful wildflowers. The ubiquitous bedrock exposures are made of a nutrient-rich limestone called dolostone. Though exposed at this site, dolostone underlies much of the rest of Burlington beneath feet of nutrient-poor sediment. This unusual geology enables uncommon plants that require abundant calcium. In fact, these outcrops in the Arms Forest are home to some plants, like yellow lady-slipper orchids, found nowhere else in Burlington.

Visitors may also note that the trees are uncommonly large for Burlington forests. The ledgy, thin-soiled nature of the property prevented its cultivation, allowing the forests to escape some of the agricultural clearing pressure experienced later in the area during the 20<sup>th</sup> century. The forest was largely used as evening pasture for livestock and a source of firewood for the farmstead's stoves. Though none of the trees on the property pre-date 18<sup>th</sup> century European settlement, aerial photos from 1937 show that the majority of the forest today was present then. Older pines and oaks on the property have been aged at 100-120 years old.

This large, interior forest with immediate connectivity to adjacent tracts of undeveloped land provides excellent habitat for wide-ranging large mammals like deer, fox, coyote, fisher, and raccoon. Cavity-nesting birds like barred owls, screech-owls, and pileated woodpeckers live in

the large, dead trees available in these old woods. In the spring, several small ephemeral pools trapped in the depressions of the shallow bedrock are perfect nurseries for forest amphibians like spotted salamanders.

### **Generations of Dairy Farming**

Before the City acquired this parcel in 1962, this forest was part of a large, 400-acre 19<sup>th</sup> century farm. The Manwell Farm, so-called, stretched from the Episcopal Diocese property on the west, across North Avenue, and down to the Winooski River on the east. Philip V. and Esther S. Manwell purchased the property in 1868 from renowned local philanthropist Thaddeus Fletcher (namesake of the Fletcher Allen Hospital) [1].

A brick farmhouse, constructed by Fletcher to house tenant farmers, stood on the land where Burlington High School's parking lot is today [2]. It is unclear what other structures were on the property, but the Manwells cultivated a successful dairy farm over the next forty years. The fertile intervalle lowlands provided exceptional soil for growing silage corn and hay for the cows, while the forested uplands on the western side of the property allowed excellent pasturage and fuel wood. The farm's location along North Avenue provided convenient access for buying, selling, and transporting goods.

After Phillip died in 1898, the farm began to decline. In 1903, his widow, Esther, married wealthy city plumbing inspector Allen B. Kingsland, and the pair moved to Cliff Street [3]. When Esther died in 1910, the farm did not have enough value to settle her debts. Rather than selling the land, relieving the debts and pocketing the extra cash, Allen kept the farm in operation. His intention was to revive the property in order to pay off his late wife's debts, without any personal profit.

Through his oversight, the farm actually increased in value and became remarkably successful [4]. He brought in new bulls to "revive" the stock, horses were purchased to plow the old cornfields, and the milk tanks were fixed. The house and barns saw new coats of paint and roof repairs. In an effort to create more cash flow, Allen sold yards of high-quality Intervale soil to the neighbors and Lakeview Cemetery. The sale of the soil brought in enough capital to fund the revitalization projects.

Because of Allen's highly unusual decision to revive the farm, the land avoided the residential subdivision experienced throughout much of the New North End. For twelve years until his own death in 1921, Allen's vision to keep the farm operable kept the agricultural legacy of the Manwells and Burlington's North End intact [4].

Neither Esther nor Allen had direct heirs, so the farm passed to Esther's adoptive nephew, Philip V. Sherman. Philip had lived with his aunt on the North Avenue farm, and later graduated from Norwich University with a degree in engineering. In a twist of fate, he was aboard the S.S. Tuscania in 1918 when a German U-boat destroyed it, killing 210 of the 2,000 men aboard,

including Philip [5]. After a half-century of Manwell history on the farm, the property transferred to new Burlington residents Willard and Florence Arms [6].

At \$19,500 (about \$279,000 today), the Manwell Farm was certainly a good deal for Willard and Florence [6], especially considering Allen's dedicated management of the property in the years leading up to the sale. Willard and Florence moved into the North Avenue farm after renovating and electrifying the old brick farmhouse. They then turned their sights toward expanding the dairy operation into one of Burlington's largest: the Intervale Jersey Farm. Each morning and evening, Willard drove his cattle across North Avenue (to the dismay of many a motorist) moving the herd between the upland pastures for the night and the Intervale lowlands for the day [7].

Shortly after Florence and Willard's establishment at their new farm, they leased the majority of the Episcopal Diocese lands at Rock Point as additional pasturage. In return, they would provide their Rock Point neighbors some friendly furnishings: three free quarts of milk per day to the bishop, wholesale milk prices to the Rock Point School for Girls, and plowing of the school's gardens whenever necessary. Despite the formality of the lease, Willard occasionally received phone calls from the Bishop asking him to kindly remove cattle from the flower gardens [8].

In addition to producing raw milk and cream, the farm housed a processing and bottling plant. Each bottle rim was engraved with the phrase "a bottle of milk is a bottle of health." On College Street, in the storefront west of today's Leunig's Bistro, locals enjoyed fresh ice cream at the Arms Dairy Bar long before Ben and Jerry would arrive downtown [9].

Willard and Florence were both graduates of the University of Vermont, and major supporters of environmental conservation. Willard served as the chairman of the Champlain Valley Soil and Water Conservation Service, and Florence was known for supporting local movements for the protection of urban open lands.

In 1962, the expanding population of Burlington necessitated a new high school, and the Arms property was chosen as the prime location. Historically at the "end of the line," the Arms farm was now centered between the already densely populated Old North End and the next era of New North End suburbs. In a contentious process, the aging Willard and Florence agreed to sell their farm for the construction of the high school. The sale went through with the stipulation that the land behind the school remain undeveloped for recreation and education [10]. This was the first time a Burlington forest was protected for education.

### **Burlington's First and Last Marble Quarry**

Vermont was regarded in the late 19<sup>th</sup> century as the nation's premier marble exporter. The long seams of limestone running north-south across the entire western side of the state were sufficiently compressed and metamorphosed to form marble deposits in some areas, particularly near Rutland and Proctor. Unfinished marble from these world-renowned quarries

(examples of these blocks can be seen today along the Burlington Waterfront and the Colchester Causeway) were brought via rail to Burlington's industrial waterfront, where several marble companies finished and polished the stone into tile, counters, and monuments. But for all the marble manufacturing that took place in Burlington, the city had no marble quarries.

At the southwestern corner of the Manwell Farm in 1887, a portion of outcrop was quarried to build Bishop Hopkins Hall at the nearby Rock Point School. This excavation revealed a dolostone formation beautiful enough to be considered marble by industry standards [11]. Previously, the only other attempt at harvesting local "marble" was in 1855 at Malletts Bay, at a quarry owned by George Perkins Marsh. This "Malletts Bay Marble" was highly durable and tough, but the hardness rendered the cost of extraction and processing much higher than the material was worth [12]. The Burlington Marble Company eagerly arrived at the Manwell Farm site in 1899, but testing revealed the stone to be similar to the Malletts Bay Marble. The possibility of a more successful local quarry that could furnish valuable resources could not be overlooked. The Company nevertheless signed a 20-year lease with Esther Manwell Kingsland for the old quarry. When Willard and Florence Arms purchased the property in 1922, the deed was subject to the lease and quarry operations continued [13].

The Burlington Marble Company installed an access road directly to North Avenue and erected a tool house at the site, under the agreement that the quarry not interfere with livestock pasturage or farmstead operations. While there is little evidence of the whereabouts of the specialty "marble" extracted from this site, the Smithsonian Museum of Natural History received "two slabs of marble from the quarries of H.E. [sic] Gittins in Burlington, Vermont," in 1916 when George W. Gittins was the director of the Burlington Marble Company [14]. The lease ended in 1925, and due to the high cost of processing combined with the departure of Burlington's marble manufacturers, the quarry was permanently closed [15].

Today this hidden quarry collects lichen, moss, and curious inquiry from visitors. Leftover car-sized cubes of cut stone lay at the base of a small, exposed cliff. Though the property is crisscrossed by several miles of official and user-created trails, the old east-west running access road connecting the quarry site to North Avenue stands out, but is slowly being obscured by the surrounding forest.

### **Flowers and Footpaths**

The outcrops around the Arms Forest showcase a curious conflict of modern property use. Rare and showy wildflowers blanket the park's ledges each spring, some of which are the only examples of their species in the whole city, such as the spectacular yellow lady-slipper. Recognizing these rare plants as a key element in Burlington's natural heritage, Burlington Parks, Recreation & Waterfront designated the city as an Urban Wild to protect these resources into the future.

Incidentally, the geology that is so perfectly suited for the yellow lady-slipper and its allies is also perfect for technical singletrack mountain biking. Avid cyclists seeking this terrain must

otherwise drive at least half an hour to access similar “rock gardens” outside Burlington. The city’s Urban Wilds are managed to conserve sensitive natural and cultural resources, but this natural management approach over the years has resulted in community members constructing unofficial trail networks through the forest, causing significant erosion and trampling of the park’s most sensitive vegetation.

The Arms Forest was not designed as mountain bike park, yet the cycling community is one of the dominant and most passionate user groups of the property. While the current pattern of mountain biking is unsustainable, the cycling community is collectively one of the most prominent groups advocating for the long-term conservation of the park land and protected open space across Burlington.

The creation of a sustainable multi-use trail network within Arms Forest is one of Burlington’s major ongoing park planning conversations: How do Burlington residents value open space? What does responsible stewardship of these common grounds look like? How do we weigh conservation and recreation at the scale of a single flower, a single park, and the entire network of Burlington’s open spaces?

## **Forest Legacy**

Today’s Arms Forest is used by a small number of passionate residents. The forest is popular for walking, running, dog walking, mountain biking, and is routinely used by Burlington High School and Rock Point School classes and athletic teams. While the quarry is an obvious human feature, the farming heritage of the Manwells and Arms touches the entire landscape. The size, age, and richness of the forest, conserved into the 21<sup>st</sup> century, is a testament to generations of successful farming, and the land use priorities of a single family and an entire city. Hopefully the next chapter in this park’s history will include the thoughtful management of a modern backyard wilderness.

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Available at: <http://enjoyburlington.com/arms-forest/>

## Arthur Park

Burlington writer Levi Smith wrote beautifully of Arthur Park's environs in 1907: "In few places does nature reveal herself in so many and such diverse aspects as here at the Devil's Den. On the one hand a sense of grandeur, a great cave which stretches back into darkness spanned by massive vaults and arches of weather beaten rock which ascend in unbroken curves and cast dark shadows and reflections in the water at their base... The approach to the Devil's Den, although at certain times of the year a bit boggy and difficult is not entirely without charm. These are the haunts of the swamp sparrow and hermit thrush. On one side there is always the view and the luxuriant marsh foliage, while on the other are high rocks festooned with thick hanging masses of nightshade, as deadly as it is beautiful. Here are found the rarest ferns. But perhaps the greatest charm of this place lies in its seclusion. It is to all appearances as unfrequented and remote from the world as if it were situated in the wilds of Africa [1]."

Little has changed in the intervening century since Smith described the area. Inconspicuously tucked into the hillside across North Avenue from Burlington High School, Arthur Park is a small forested oasis spanning the hill between the North End plateau and the fertile Intervale lowlands below. At a surprising 70 acres, the park is a literal cross-section of Burlington's natural and cultural history, and accesses a nearby ancient cavern known for generations as the "Devil's Den" or "Intervale Sea Caves."

### An Old Road

The main pathway at Arthur Park is a dirt road, lined by old, stately oaks that runs downhill from the congested traffic of North Avenue, terminating at a secluded pond and cattail marsh. Old photos and oral histories reveal that this old road once connected North Avenue all the way to the Winooski River prior to Route 127's construction [2,3]. Local farmers used this road in the 19<sup>th</sup> and early 20<sup>th</sup> centuries to access the intervale farmlands from their evening pastures and farmhouses along North Avenue. For four decades beginning in the 1920s, Willard Arms would drive his Intervale Jersey Farm cattle each day from his farm where Burlington High School stands today, across North Avenue (much to the chagrin of motorists and trolley cars), and down this old road [4].

When cattle traffic waned in the winter, North End children congregated to race toboggans down the dirt roadway on snow-filled wooden chutes purportedly built by the City of Burlington. At the bottom of the hill, large jumps rocketed the children and their sleds into the air and across the frozen pond and farmlands. A good run coasted the toboggans all the way to where Route 127 now bisects the fields. The tracks were installed in honor of the 1932 Lake Placid Olympics and the U.S. bobsled team [5]. To the dismay of the local kids, the toboggan chutes accidentally went up in flames during a routine vegetation burn along North Avenue [6].

### A New Pond



The Intervale farmlands sit in the Winooski River floodplain, where annual spring floods historically drenched the entire lowland beneath North Avenue. Old residents recall paddling their hunting boats from the river channel out across the flooded fields in search of migratory waterfowl each spring. By summer these waters receded, depositing the rich sediment that produces the area's unparalleled soil fertility [4].

But the creation and expansion of the old floodplain road into today's Route 127 severed the flow of water across this lowland, and the trapped hydrology soon yielded a wetland sandwiched between the base of the hillside and the highway [3,4]. Known as Long Pond by kids growing up in the 1940s, this is the pond where visitors of Arthur Park today can find elusive black-crowned night herons, basking painted turtles, and warbling marsh wrens.

### **An Ancient Cave**

Arthur Park provides direct access to one of Burlington's most unique natural features: The Intervale Sea Caves. Visitors could once stroll right up to the cavern in dry summers, but the pond today requires explorers don ice skates and visit in winter. Once inside, explorers will look down to find schools of fish swimming beneath the clear ice, or look up to enjoy a palette of rose, ochre, and red rocks polished by millennia of waters and winds.

For thousands of years, Native American communities farming, fishing, and inhabiting the Winooski River's Intervale took advantage of the Sea Caves' natural shelter. The moderating temperatures and protection from the prevailing wind made the site a perfect meeting location and storehouse. In the winter, families congregated in the caves to find a warm retreat from the season's most bitter temperatures. In the summer, the caves were a favored storehouse for goods like dried fish and corn, critical commodities traded by the local *Winooskiok* Abenaki community [7].

More recently, the caves inspired myths of buried treasure. Legend suggests that the crew of the notorious *Black Snake* smuggling vessel stashed their stolen wares in the Sea Caves during their flight up the Winooski River in 1808. Their pursuers, U.S. Customs militiamen, caught up with the *Snake* and apprehended the smugglers shortly thereafter [8]. Treasure hunters would be tempted to search for the riches until learning that the *Snake* carried a rather inauspicious cargo of potash.

The caves are the product of two ancient salt water bodies. Long before the dinosaurs, Burlington sat quietly under the tropical, shallow Iapetus Ocean, collecting sand, silt, volcanic ash, and dissolved marine life percolating to the seafloor over 200 million years. The sediment congealed and hardened under the weight of the water and the forces of time into the beige limestones (locally known as dolostone) seen across northern Burlington today.

Fast forward to the end of the last ice age, 11,000 years ago, when the entire Champlain Valley was inundated by another warm and shallow water body, the Champlain Sea. Resting 100 feet higher than today's Lake Champlain, the Champlain Sea intercepted the Winooski River much

farther upstream than its current mouth. This larger, ice-age Winooski River deposited enormous quantities of sand and silt into a giant, flat delta situated over much of South Burlington, Burlington, and Colchester, draping yards of sediment over the landscape. The Champlain Sea receded to our present lake level, and the modern Winooski River narrowed, carving down through its former delta like a knife through butter, settling into its current floodplain. As the Winooski meandered over millennia, the river channel periodically hugged the Arthur Park hillside, excavating down through old the delta sands, exposing the dolostone beneath, and polishing out the pre-existing cracks and fissures into the wide, smooth Sea Caves we see today.

Leaving the Sea Caves and proceeding back up the pathway, the explorer traverses a veritable timeline of Burlington's history. He starts beside the showpiece of Burlington's bedrock origins, continues uphill past a cross-section of ancient delta sand, walks atop the abandoned access road to the colonial Intervale farms, parallels an old toboggan slide, and emerges alongside 21<sup>st</sup> century-Burlington's main traffic artery between downtown and the New North End.

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## Crescent Woods

Tucked alongside Route 7's busy corridor, this Urban Wild attests that rich stories and peaceful retreats hide in even the smallest of Burlington's open spaces. Just beyond the sweet scent of black locust trees lining the street, a clandestine entrance through a brambly hedge welcomes explorers into a small forested oasis. The footpath follows fox and raccoon tracks to the edge of Englesby Brook, where the sound of traffic is replaced by tinkling water and wind sweeping through monarch pines above. The path continues over an enchanting stone bridge, through a garden of ostrich ferns, and between large maple, ash, and oak trees. Old, gnarly black willows sink their roots into the rich, wet soils at the edge of the brook. In the spring, rivulets form trickling waterfalls over the deep redstone quartzite formations exposed in the ravine edges.

Crescent Woods is best understood as a remnant of its surroundings. Englesby Brook originates from tributary springs seeping from cracks in the redstone bedrock around the hillsides of the neighborhoods just beyond the park. The waters collect and flow through the park's namesake crescent-shaped forested ravine connecting South Prospect Street to Shelburne Road. The brook once extended all the way to Oakledge Park, but has since been sunk under fill and culverts for most of its journey to the lake. Early-morning joggers and dog-walkers enjoy sauntering through this protected stretch of this historic ravine. Beloved by its neighbors, Crescent Woods has even been the site of Halloween haunted forests for youngsters in the vicinity.

### A Mysterious Bridge

As visitors follow the trails, their first crossing of Englesby Brook takes them over a beautiful stone bridge of exquisite masonry. The careful mortar work, attractive river-smoothed stones, and its elegant design—complementing the natural landscape from which it emerges—is testament to the skill and artistry of architects of a different era. The inquiring eye notices the odd juxtaposition of this significant cultural landmark in a landscape that seems to have received much less attention. In reality, the stone bridge reveals the early plans for this ravine.

The bridge was ultimately the vision of a well-known New York City Publisher, Henry Holt, who arrived in Burlington in 1890 [1,2]. Impressed by the beauty of the city and surrounding landscapes, Holt purchased large tracts of land over the next few decades extending from Shelburne Road east to Spear Street, north to Ledge Road and south to Swift Street [2,3]. On the highest point of land, Holt invited famous landscape architect Frederick Law Olmsted to survey the property and design a pleasure ground estate commanding unmatched views of the Green and Adirondack Mountains for himself and guests [4]. The "Fairholt Estate" still exists today as the Burlington Country Club, and Holt's house remains on the property.

After completing his estate, Holt turned his eye to his remaining lands west of South Prospect Street. Holt recognized a growing incongruity between Vermont's picturesque landscapes and Burlington's gridded, industrialized development trajectory at the turn of the 20<sup>th</sup> century.

Manufacturing along the waterfront was progressing at fever pitch, fueled by coal-fired mills along the railroad tracks paralleling Pine Street. The city's growing population funneled new residents either into overcrowded tenement housing, or into unimaginative, regimented residential blocks expanding from the city fringe. Inspired by a growing national movement to buck this development trend, Holt envisioned a new neighborhood that would be Burlington's statement against industrial urbanization [5].

To accomplish this, Holt looked to Frederick L. Olmsted, Jr. and John Charles Olmsted, sons of the late Olmsted Sr., to continue their father's design legacy. In 1914, the Olmsted brothers drafted their first plan of this "Prospect Park" neighborhood. The name was likely an homage to their father's more-famous Brooklyn park, and chosen to create a sense of familiarity for the wealthy New York transplants that Holt intended to court as future residents [6, 7].

The neighborhood was perhaps Burlington's first fusion of park design principles and residential community planning, blending nature and recreation into the living environment. Winding pedestrian paths and spacious house lots were designed to complement the fields, forests, and brooks that defined the preexisting landscape. Around today's Crescent Woods, houses were sited to feature views down Englesby Ravine, with Lake Champlain as the backdrop. Recommendations for precision logging to improve the view shed were noted directly on the plans: "A little cutting will develop from this site a very charming local outlook down the ravine and also a valuable glimpse of distant views [6]."

At the edge of Shelburne Road, the Olmsted brothers proposed multiple layouts for "glen paths," or natural wooded promenades, that ascended through today's Crescent Woods, routed along the brook, over a bridge, up the ravine, and into to the neighborhood. The Olmsted Brothers emphasize preserving a stand of "cathedral pines" along the top bank of the ravine. Visitors today will recognize these giant trees towering over the park edges. Intriguingly, the proposed paths are drawn around a reservoir pond at the edge of Shelburne Road, created by damming Englesby Brook at its road culvert [6]. Whether the pond was a design element of the Olmsted Brothers or a preexisting feature remains unknown. Today, Prospect Parkway and the adjacent Kinney Drugs sit atop the former pond site.

The Prospect Park vision stalled out right at the advent of its implementation. Henry Holt died in 1926, shortly after the first subdivision was built along Hillcrest Road. The project continued to stagnate through the Great Depression and World War II. The Prospect Park Company, incorporated in 1902 by Holt and advisors to hold the land interest, continued to champion the neighborhood's vision throughout this challenging period. The company references the Crescent Woods area of Englesby Ravine in an advertising pamphlet in 1937: "Those nature lovers who for many years, both winter and summer, have enjoyed the glenway that runs from lower Prospect Street to Shelburne Road will readily visualize its future development, banked with wild-flower and rock gardens, ferneries, and shading groves, with a path following the brook course for the enjoyment of all residents of the Park [5]."

Despite decades of careful planning, the post-World War II housing boom welcomed speculators who purchased and subdivided the large vacant lots in Prospect Park. The neighborhood quickly filled with small, middle-class family homes typical of post-war developments [7]. Today, a discerning explorer may recognize the winding roads between Proctor Avenue and Ledge Road as a legacy of the Olmsted design. And visitors to Crescent Woods will immediately recognize the stone bridge as something dissonant with the neighborhood unfolding above the ravine's banks: an emblem of a different era in Burlington's relationship with open space.

Woodland wildflowers still grace the park's ledges and springs, but Burlington's cultural landscape has evolved since the peaceful glenway was first imagined. The park is a far cry from the intent of its original architects, though it serves the same purpose over a century later: a respite where residents may escape the frenetic pace of growth and progress while tuning-in to the sights, sounds, and stories of an open, natural space. As the Prospect Park Company explained, "The park is happily situated just where town and country meet. Its development contemplates that it shall always remain a part of both [5]."

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## Ethan Allen Park

The bluffs of Ethan Allen Park rise above Burlington as a 60-acre wildland showcasing some of the city's greatest vistas and richest natural and cultural history. For a century, visitors to the park have enjoyed shaded promenades on carriage paths through old oaks and maples on hot summer days, family leisure at the playgrounds tucked in the monarch pines, and picnics in the gazebo at the grassy overlook called the "Pinnacle." Blankets of spring wildflowers garnish the base of pastel cliffs, and thrushes sing in the dense forest understory all summer long. Erupting from the tallest canopy is the stately Ethan Allen Tower, an emblem of the New North End, which rewards visitors with unparalleled views and sunsets over Lake Champlain.

### From Rock to Tower

Though Ethan Allen Tower was officially erected to celebrate one of Vermont's most recognized personalities, the 40-foot-tall monument is an equally appropriate memorial to the environment from which it was built. The tower designers reported that the structure was "intended to be built of stone which will be quarried near the spot, as there is an excellent opportunity to obtain it close by the proposed site. This will obviate all expense for material or for transportation. The stone is of the same character as what is known as Malletts Bay Marble, being very similar to that which has been quarried for the last year or two on the property of Mrs. A.B. Kingsland [1]." Explorers of the park may discover machine marks in the ledges and discarded boulders in the forest beneath the tower (visitors to the nearby Arms Forest, another Urban Wild, will even uncover Mrs. Kingsland's quarry).

The strong, colorful stone across the entire park is a type of limestone, called dolostone, that has been strengthened and warped by the same tectonic pressures that caused the bluff to rise high above the surrounding city in the first place. Much of our topography is the product of a primeval tectonic collision in which Vermont was squeezed against the New York landmass over millions of years. The Green Mountains are the main site of the resulting buckling and uplift, but a grand view of the Champlain Valley reveals dozens of smaller buckled faults. Like a throw-rug pushed from one side, the landscape formed north-south running ripples, represented today by features like Mt. Philo, Snake Mountain, and Ethan Allen Park. The presence of an exposed rock outcrop, and the perfect building material conveniently on-site, are both of a single process.

### Natural History Through the Ages

The park's rich natural history deserves as much celebration as its tower. A 1904 Burlington Free Press article expressed as much: "Another matter of interest to our people who are interested in botany is the extensive and unusual flora to be found there. A very large variety of trees and shrubs grow upon the property and also an extensive variety of the native wild flowers, including some rare orchids. There are also a number of very interesting ferns, including the rare walking fern [2]." Today, naturalists recognize the park's nutrient-rich

dolostone as the source of this bountiful botany, as the soil it creates enables growth of a wide range of plants.

This nutrient-rich, dry landscape in the warm Champlain Valley nurtures a community of handsome trees like white oak and shagbark hickory uncommon to other parts of the state. Explorers will immediately notice the atypical size of these trees. Though some clearing was done in 1902 to open up 360-degree views at the park's northern outcrop, the "Pinnacle," the forest has been mostly undisturbed since. Even early visitors recognized the large trees as a main attraction.

Situated a stone's throw from both the Arms Forest and the Winooski River floodplain, the park is as much a travel corridor for wildlife as for cyclists. This forested island surrounded by neighborhoods is a critical bridge for wildlife traveling across Burlington. Coyote, fisher, deer, and even moose move between the river corridor and upland habitats by way of this fragment of old woodland.

Because of its size and location in the context of Burlington's network of open spaces, the park hosts a remarkable array of wildlife. Birdwatchers at the "Pinnacle" admire migratory warblers foraging in treetops. Coyote and fox droppings reveal the nocturnal users of the trail system. The old, naturally-managed forest produces a collection of large, rotting trees, providing cavities perfect for nesting barred owls, wood ducks, and woodpeckers.

White-tailed deer wander the edges of the park, bedding in the forest through the night and warm days, and venturing into private flower gardens at dawn and dusk. Though these deer receive varying degrees of appreciation by neighbors today, Burlington Parks & Recreation actually purchased and re-introduced deer into the park between 1912 and 1919, the herd managed and fed by a Parks employee [3].

### **From Tower to Community Park**

Though the Tower was built in 1905, humans have been attracted to its summits for millennia. The park's southernmost outcrop has long been known as a strategic overlook used by the Abenaki to survey for Iroquois and Mohawk boats approaching from across Lake Champlain [4]. This fact has been fondly reiterated by white settlers for generations, who named the site "Indian Rock," but there is little doubt of the outcrop's strategic significance as Burlington's best vantage point of the Lake Champlain basin. Perhaps because of these qualities, the outcrop was included in Ethan Allen's own 300-acre farmstead extending all the way eastward to the banks of the Winooski River in 1787.

Following Ethan Allen's tenure, the farmstead and its outcrop changed hands unceremoniously for over a century until it was purchased by William J. Van Patten in 1902. Former Burlington mayor, philanthropist, and industry leader in Burlington's South End, Van Patten recognized the bluff as an opportunity to provide the Burlington community with a world-class pleasure ground. Van Patten deeded 15 acres of the bluff to the Sons of the American Revolution (of

which he was a presiding member), with the goal of erecting a tower to memorialize the property's celebrated original tenant [5]. The SAR canvassed Burlingtonians to raise, in short order, the \$2,450 needed to build the tower. They contracted Van Patten's own business venture, the Champlain Manufacturing Company, to erect it [6]. Meanwhile, Van Patten informally consulted landscape architects and park planners across the country to inspire his design and installation of the recreational carriage roads he installed in anticipation of the tower's completion.

In 1905, the tower was officially opened and dedicated in a lavish ceremony brimming with pomp and circumstance. Star-spangled bunting hung from buildings across Burlington, a marching band played in the city park, and a cavalry-led parade traversed the city, leading dozens of dignitary carriages to the entrance gates. President Theodore Roosevelt was invited to participate in the ceremonies, and thousands of visitors arrived by ferry and rail for the occasion [6].

Though Van Patten was the nearly-unilateral driver of the tower and initial 15-acre park, Burlington residents quickly developed pride and attachment to the new space. Residents found solace in this Progressive Era pleasure ground, a centerpiece of "Beautiful Burlington," during this period of smoggy, unbridled industrialism. Burlington residents voted in 1907 to appropriate \$10,000 to purchase the bluff's remaining acreage from Van Patten: the first time in which the Burlington community collectively invested in land for a city park [7].

Residents enjoyed easy access to the park for decades. Madelyn Brewster recalled, "... it was a summer day, the year possibly 1918, when we boarded an open trolley, traveled to the end of the line and Ethan Allen Park. After eating a picnic lunch, rides on the swings and slides, we would walk upward, through a narrow path that led to Ethan Allen Tower, and then another long trek to the top. I can still remember the panoramic view of Lake Champlain and the Adirondack Mountains to the west, and Mt. Mansfield and Camel's Hump to the east, etched against a blue sky [8]."

The city's attention eventually turned elsewhere and the tower fell into disrepair. With carriage roads overgrown, the tower vandalized, the park entrance gated to cars, and the trolley line long-extinct, the park became an inaccessible, myopic blank spot in the New North End for decades. Eventually, an infusion of interest by motivated Burlingtonians synergized with new city leaders who cherished open space began growing. In 1983, the tower was repaired, and Ethan Allen Park was reopened [9].

Today, the tower gates are unlocked each morning from Memorial Day to Columbus Day by passionate neighborhood volunteers. Along with their set of keys, these "Tower Keepers" carry a long legacy of community pride in one of Burlington's most celebrated parks. Recreational users continue to seek out this preserved forestland for the same reasons as those visiting Ethan Allen Park over a century ago: to enjoy one of Burlington's most beloved natural landscapes and unmatched overlooks.



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## McKenzie Park

One of the most dynamic parklands in the Champlain Valley is tucked along the Winooski River between the Ethan Allen Homestead and the Intervale agricultural fields. Dewy ears of sweet corn hang over the edge of a dirt bike path. Mink and otter tracks meander around the river's edge. Orioles and goldfinches sing at the forest edge above juicy blackberry bushes. McKenzie Park's rare sandy shores, cathedral-like riverside woods, and historic farmlands are an ideal place to retire from the hustle-and-bustle of downtown Burlington. Park visitors will find themselves immersed in stories of human heritage, rich ecosystems, and powerful natural processes.

### A River-sculpted Ecology

The lush, open floodplain woods of McKenzie Park are unlike most other forests in Vermont. Natural floods annually scour the forest floor with rushing water, ice, and floating debris. The frequency and intensity of these powerful events prevents all but a certain suite of flora from growing. Towering overhead are old silver maples, evolved to grow quickly (nearly 3 feet per year) and establish deep, stabilizing roots that withstand seasonal flooding. A century of ice abrasion carves deep scars into the bases of the largest maples. Chest-high seas of jewelweed and wood nettle grow in the summer shade of the maple canopy. These annual wildflowers grow prolifically in the exceptional soils deposited by the floods, and easily colonize the ground exposed in these disturbance events. Since little other vegetation can establish in these forests, visitors are treated to a cathedral-like experience, with arching maple boughs intertwining high above a dense carpet of forbs and ferns.

The river's edge boasts one of Vermont's most uncommon and sensitive natural communities. Though a sandy beach may not initially strike the explorer as a candidate for Vermont's rarest of features, there are few other places where sandy river edges remain undeveloped and undisturbed. In this zone of the river's most intense water and ice abrasion, even floodplain-tolerant species like silver maples are quickly destroyed. Yet rare and specialized grasses and sedges thrive along the sandy shore. These paradoxical plants are easily trampled by dog-walkers and fishermen, but evolved to eke out a tenuous existence in the face of frequent and intense natural disturbance. Explorers enjoying this beach are therefore encouraged to keep off the grass while enjoying the diving kingfishers, sprightly beavers, and the peaceful flow of the river that both creates and destroys McKenzie Park's dynamic ecology.

### Flowing Through Time

Beneath the floodplain forest, the historical movement of the Winooski River sculpts every corner of the surrounding landscape. A much larger Winooski River once flowed out of the Green Mountains following the retreat of the glaciers 14,000 years ago. During this period, the river emptied into glacial Lake Vermont, and later the Champlain Sea, depositing massive amounts of sediment at its prehistoric mouth in a giant delta encompassing much of today's

Burlington, South Burlington, and Colchester. As the Champlain Sea receded over time into modern Lake Champlain, the dwindling Winooski River carved and meandered down through its old delta, creating today's Intervale (a term referring to the rich lowlands between hills). Standing at the edge of the Winooski River, explorers look across McKenzie Park toward the upland plateau of Burlington's North End, and imagine the river slowly excavating this entire landscape over the ages. The current river course is just a snapshot in the evolution of this living, evolving floodplain.

Though the Winooski sculpts its floodplain and inhabitants over millennia, drastic changes can happen within human lifetimes. Surveys up to 1890 show the river channel running through the western edge of the park, directly bypassing the meandering loop that bounds the park's shore today [1]. By 1913, however, the river had abandoned that corridor and settled into its present channel along the park's eastern boundary [2]. Originally part of Colchester, McKenzie Park was scooped up by this new meander, situating it squarely on the Burlington side of the river. Thanks to this variable boundary, the land under McKenzie Park immigrated to Burlington just a century ago!

### **The Original Burlington**

A major travel corridor, the Winooski connected Native American communities upstream in the Green Mountains all the way to Lake Champlain. The name *Winooskiok* translates to "the beautiful river along the land of onions." It was also the name of the Abenaki village along the shores surrounding McKenzie Park. From Winooski Falls through the Intervale, *Winooskiok* was the heart of Abenaki civilization in the Champlain Valley long before Burlington ever appeared on a map [3].

At this familiar fishing ground, Abenaki communities built weirs across the Winooski to trap and propagate fish. Once dried, the fish were traded as a commodity, and their prolific harvest enabled a year-round Abenaki population to thrive. Beyond the riverbanks, the same fertile soils enjoyed by farmers today were used by Abenaki for growing staples like squash, corn, and tobacco. Surplus fish were composted and added to the soil to supplement its already-exceptional fertility. The community dwellings moved across the floodplain, alongside the migrating river channel [3,4]. "If you came here, you had friends and family...there was always a place for you, and that's why people gravitated here. That McKenzie Park, and that area down there, was the original Burlington" [3].

The land-clearing forces of the powerful river buried or destroyed most evidence of Native American presence in the Intervale. Over the last 200 years, farmers routinely turned up projectile points while tilling their fields. These plow-zone artifacts, buried within a few feet of the surface, are often as much as 1,500 years old. But the perpetual sedimentation from the Winooski River buried the region's oldest artifacts even deeper [4]. Excavation projects penetrating deep through the floodplain soils have turned up flakes, shards, and even human remains over 4,000 years old [5]. A visitor to McKenzie Park can imagine traveling deeper into

the past with every shovel of earth, eventually uncovering the soil walked by Burlington's earliest paleoindian communities.

## **European Contact**

Colonial settlers dramatically changed the natural and cultural landscape of the Winooski and its floodplain throughout the 18<sup>th</sup> and 19<sup>th</sup> centuries. Many of Burlington's first colonists, lauded for "improving" the area, were responsible for eliminating the Abenaki presence on the landscape. Native communities were determinedly driven and exterminated from the region to facilitate European settlement. Abenaki land use traditions suddenly surrendered to European-style rectilinear property boundaries and ownership laws.

In Ira Allen's original survey of Burlington, he designated the town's first 40 lots in the Intervale, recognizing the area's prime agricultural potential. Each property contained long, thin 100-acre lots of fertile soils, each with a section of river frontage for easy access. In these early settlement years, rivers were often the most reliable means of transportation. Abenaki farming traditions were replaced with gridded plowed fields of barley, wheat, rye, and corn. The floodplain forests were harvested for lumber and potash, and the cleared land became cropland or pasture for cows and swine [6]. Visitors will notice abrupt divides between rectangular cultivated farmlands and old floodplain forests, a cultural imprint of this conversion from native to colonial land use. Discerning explorers may even notice the long ditches through the woods, perpendicular to the river, revealing evidence of farmers draining annual floodwaters from their cornfields well into the mid-20<sup>th</sup> century [7].

Other impacts of European colonization in the Intervale came from further afield. The wholesale logging and clearing of forests across Vermont in the early- to mid-1800s exposed thousands of square miles of bare earth. Major erosion followed, washing Vermont's topsoil into the Winooski in an episode approaching the Dust Bowl in severity. Nearly ten feet of the soil underfoot at McKenzie Park originated from this early-19<sup>th</sup> century erosion event [8]. With the magnitude of sand and silt re-depositing into banks and berms throughout the floodplain during this time, the Winooski River re-drew its course, finding new paths-of-least-resistance. Compounding this, few stabilizing tree roots remained in the Intervale after colonial conversion to agriculture, so the river had little trouble carving new channels through its floodplain.

In one step, visitors of McKenzie Park walk on the heritage of both Burlington's youngest earth and its oldest stewards. The exceptional soil, the floodplain forest, the generations of farming, and the millennia of human connection with this landscape is all part of an evolving tapestry painted by a single river.

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## **Mount Calvary Red Maple Wetland**

Squeezed on all sides by the core of Burlington's post-World War II suburban neighborhoods, this is perhaps the last place one expects to find one of Vermont's most bizarre landscapes. Visitors to the 12-acre Mount Calvary Red Maple Wetland (MCRMW) discover a landscape defying our expectations of what a forest—and a park—can be. That this open space exists at all is a tantalizing artifact of its odd natural history, fused with centuries of city planning evolution. An unusual geology enables dense flora more reminiscent of a jungle than a Burlington woodlot. Old boundary markers crisscrossing the parcel trace centuries of land use and development philosophies. And a surreptitious entrance through a break in an overgrown chain-link fence reveals the evolution of Burlington's ethnic landscape.

### **Vermont's Wettest, Driest Forest**

Curious combinations of plants thrive in this woodland pocket. MCRMW is a far cry from the typical northern hardwood forests seen on Vermont postcards. Looking down, an explorer finds cinnamon and royal ferns: specimens that dazzle in red and orange autumn colors, but are generally relegated to the soggiest growing conditions of any Vermont fern. Looking up, the explorer notices pitch pines and black oaks: once-ubiquitous members of pre-settlement Chittenden County that prefer Vermont's driest, sandiest growing conditions. The trails meander across dry forest floors, then pass over boardwalks spanning mucky water.

The naturalist looks for geological clues to explain the unusual juxtaposition of plants and soils. The adjacent New Mount Calvary Cemetery lies opposite the nearby chain-link fence. Flat, well-drained sandy sites enable deep, obedient graves, so the cemetery reveals that the region is situated on a dry sand plain. Dig a hole in the wet areas, however, and the explorer unearths a shovelful of fine silts and clays instead of sand. Eleven thousand years ago, the ancient Winooski River emptied into a much higher post-glacial Champlain Sea, depositing the enormous sandy delta composing much of Colchester, South Burlington, and Burlington's North End. As rivers approach their deltas, main channels divide and feather into myriad rivulets and conduits coursing over the delta surface. Across MCRMW, imagine a near-stagnant, grimy side-channel of the Winooski flowing over this sand plain, moving so slowly that fine particles—those normally carried out into the lake—settled at the stream bottom.

The river has since receded into its modern-day margins, but evidence of those ancient backwaters are revealed today in the fine silts holding pockets of standing water across the site. A primeval outlet of the Winooski River thus yields a modern botanical mystery in this alternating dry and waterlogged forest.

### **Burlington Blueberries**

World-famous 19<sup>th</sup> century landscape architect Frederick Law Olmstead (designer of New York's Central Park and our own Shelburne Farms) said of Burlington fruits, "I have eaten a better apple from an orchard at Burlington, Vermont than was ever grown in the south of England

[1].” Burlington’s renowned fruit cultivation heritage is now obscured by New North End neighborhoods, but early 20<sup>th</sup> century residents recognized the New North End as Burlington’s pastoral end-of-the-line where children earned extra pennies picking berries and apples at the local small farms [2].

Mount Calvary Red Maple Wetland is the one place in the North End, perhaps the whole city, where children today can still go wild blueberry picking. Visitors will find the trailside lined with towering highbush blueberry shrubs reaching far overhead, the species perfectly suited to the unusually wet and sandy soils characterizing this site. And these bushes are likely the relics of this area’s berry farm history. A juicy pint of wild blueberries proves that treasure hides in the most unlikely of places.

### **Property Boundaries across International Borders**

Unlike some of Burlington’s larger parks, MCRMW is not a product of a big philanthropic purchase, generous donation, nor generations of farming heritage. Instead, it is a lucky accident—the result of centuries of chopping, sub-dividing, and re-stitching of property boundaries in ways that allowed it to inadvertently dodge development. From British royalty to Somalian immigrants, MCRMW is a story of cultural evolution in Burlington.

**Early Settlement:** Burlington’s first property boundaries were drawn shortly after its 1763 chartering. In a single survey, millennia of dynamic Abenaki land practices were supplanted by rectilinear lines representing, for the first time, private property. For decades, Burlington’s original lots were traded like Monopoly tiles by speculating absentee proprietors. The land was traded from afar by lot numbers, with little knowledge of the features within.

Early town charters were issued under the authority of the British Crown. In English tradition, the King required that each town reserve certain lots as lease parcels. These rental lands were to be farmed, pastured, or logged, with rents earmarked to finance various services. The earliest rents supplemented the costs incurred by the King in establishing churches and schools. MCRMW sits in the corner of a 100-acre rental parcel designated as a School Lot, intended as a supplemental pasture or woodlot to be leased by neighbors [3, 4]. While these property laws are generally forgotten today, many small forests in New England towns exist because of their early history as long-term leases.

By the mid-19<sup>th</sup> century, Burlington had lost interest in its lease parcels, and many were sold outright. In 1843, Thomas and Amanda Northrop arrived from Connecticut to establish a humble family farm straddling North Avenue near its intersection with Plattsburgh Ave, including the entire School Lot [3]. Unlike some of the larger commercial farms that emerged towards the end of the century, the Northrops employed no tenants or laborers. They instead kept the work entirely in the family, except for the help of their two oxen and two horses. The fertile soils that attracted so many farmers to the Champlain Valley during this time eluded the Northrops, who eked out their 100 bushels of potatoes and “Indian corn” atop the poor, thirsty sand [5]. Today, old drainage ditches cutting through the wettest parts of MCRMW property

reveal efforts of old owners, perhaps the Northrops, to redirect the wetland's moisture to the parched fields nearby.

**20th-century Development:** By 1859, the Northrop's son, John, had already put the farm up for sale, but it would take another eleven years before he found buyers for the last 60 acres, including today's MCRMW [6, 7]. As commercial dairying expanded in the early 20<sup>th</sup> century, it exacerbated the divide in value between the sandy, landlocked farms on the North End, and the fertile intervale fields below. Meanwhile, a new housing market was emerging out of Burlington's growing immigrant population. The New North End became an ideal site for new residences, and old farms were sold off as residential lots. The last 60 acres of Northrop farm were ultimately subdivided around 1910 into narrow, 100-foot-wide strips, each fronting North Avenue. The MCRMW area persisted as a mosquito-infested "back woods" of seven different residential properties—an un-farmable wetland set impractically far from the only road [8-13]. These property strips are easily seen in old aerial photos, which show abrupt changes in forest cover and density between each narrow parcel [14]. Though the forest has remained undeveloped as a whole, an explorer at MCRMW may notice these old property stripes by differences in the size of big oaks, old fence posts, and abrupt changes in the size of logged maple stumps around the property.

### **An International Forest**

The neighbors and owners of these backyard strips of MCRMW land hailed from across the world. The 1910 owners of the pre-division parcel were a Jewish couple, immigrating from Russia and Poland, who ran a grocery store on First Street. They subdivided their lot into the seven strips and sold to a farmer from Holland, an Italian police officer, another policeman of a French mother and Canadian father, a firefighter from Germany, French-Canadian painters, and homegrown Vermont carpenters, teamsters, and railroad conductors [15-18].

In 1968, Burlington Housing Authority acquired these seven property strips and recombined them into one large parcel, developing the front half, along North Avenue, into the Franklin Square community apartments. The undesirable back half, MCRMW, was designated as conservation land to be managed by the City of Burlington [19]. Today, Franklin Square is a hub of Burlington's New American immigrant community. As you walk through the neighborhood's community garden plots to access the forest, you may be greeted by Somalians, Bantus, and Bhutanese. Not long ago, Bosnians, Serbs, and Herzegovinians might have been enjoying the park's blueberries and fall foliage [20].

This 12-acre forest, against tough odds, remained intact through dozens of property transfers, divisions, and combinations over the last two hundred and fifty years. Its existence is the fusion of several coincidences: a near-arbitrary designation as a rental School Lot in the 18<sup>th</sup> century; a unique soil composition resulting in a rare, soggy natural history; economic relegation of the forest to a dissected and overlooked series of backyard mires. Today, MCRMW has been preserved, intentionally and unintentionally, as a landmark of Burlington's natural, social, and ethnic tapestry. In a sense, MCRMW is a manifestation of Burlington's evolution as a community.



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### 3. Burlington High School Year-End Study: Burlington Geographic

The Year-End Study (YES) Program is Burlington High School's annual initiative to provide alternative learning experiences to students in the final three weeks of the school year. Students are placed by preference in programs designed and led by BHS teachers around themes ranging from fly fishing to documentary filmmaking to dance. The program was conceived to energize the learning environment in a time of year when concentration is difficult and motivation is lacking. The program also explores learning opportunities that engage students with community partners.

BG partnered with the YES Program as an extension of the PLACE Program's goal to foster place-based learning in local schools. In this course, BG hosted BHS English teacher Peter McConville and his class of ten high school students in a cross-city exploration to reinvent the traditional classroom education model. Students visited community partners to brainstorm place-based curriculum ideas that could offer students high school credit through community-based, hands-on learning. The students met daily at the GreenHouse Residential Learning Community's Ecological Design Collaboratory workspace, and ventured across the city on-foot to meet with different local organizations. Following each visit, students de-briefed the experience and generated ideas for potential BHS partnerships, internships, and other alternative learning opportunities.

The students concluded the YES program by synthesizing their experiences over two workdays and prepared a group presentation to the BHS community. In this presentation, featuring student photography and graphic design, the class reflected on the merits of each potential community partnership and advocated for formal and expanded partnerships with these organizations as examples of "flexible learning pathways" moving forward.

BG provided the classroom space, workshop funding, logistical support, and classroom support throughout the program. BG also collaborated with Peter to design the workshops and arrange visits with community partners.

BHS YES Program Community Partners:

- **Lake Champlain Community Sailing Center.** Students met with associate director Jen Guimaraes to learn about the Center's innovative, place-based programming. Students learned about "floating classrooms," leadership programs, water quality initiatives, and more. Students spent half a day sailing on Lake Champlain, learning to operate a sailboat while using the boat as a venue to discuss issues like community development, environmental protection, local geography, and social justice in Burlington— themes highly influenced by Burlington's position at the shores of Lake Champlain.

- **Vermont Folklife Center.** We invited Andy Kolovos and Kathleen Haughey from the VFC to lead a day-long skill-building workshop on taking and recording ethnographic interviews. This activity was intended to empower students by introducing a tool for students to leverage their positionality as teenagers in the Burlington community. As members of one of the most diverse high schools in the state, BHS students have access to a broader cross-section of ages, ethnicities, and socioeconomic circumstances than virtually any other group in Burlington, and are therefore uniquely positioned to encounter and collect stories from many unrepresented perspectives. Other graduate students and faculty members were strategically invited to this workshop to develop these interview skills for their own research, and to place the high schoolers in an intergenerational learning environment.
- **Bike Recycle Vermont.** Students met with Outreach Director Christine Hill at their location on North Winooski Avenue. Christine explained the organization’s mission and program while touring the bike shop. Christine and students discussed opportunities to engage with diverse members of the Burlington community in a collaborative, peer-mentored environment centered around building and repairing bicycles to provide transportation to disadvantaged residents.
- **UVM Special Collections.** Public Services Librarian Prudence Doherty led an exploration of historic resources connected to Burlington High School and the surrounding geography. Prudence curated resources of interest to Burlington teenagers. For instance, students browsed journals written by Burlington teenagers at the cusp of the Civil War, and explored newspaper clippings about the controversy of building Burlington High School in 1962. Prudence selected early 20<sup>th</sup>-century postcards and photographs of the New North End, Lone Rock Point, and other areas familiar to the students. The workshop gave students the space to engage these resources in an unstructured, open-ended format that encouraged pursuit of individual curiosity.
- **The ECHO Center.** STEM Outreach and Education Director Chris Whitaker introduced students to resources available and the work happening at ECHO. Students explored the museum exhibits and discussed opportunities for students to work with ECHO in different capacities. The class discussed possibilities for supporting the organization’s work while learning about environmental science topics such as aquatic ecology and water quality.
- **Burlington Parks, Recreation & Waterfront.** City Naturalist Alicia Daniel and Land Steward Dan Cahill met students at the entrance to Arms Forest (see p.33) behind Burlington High School and introduced the challenges involved in managing large public spaces with multiple user groups. Students generated ideas around student-led stewardship initiatives for managing the forest, and suggested possibilities for BHS to assume a leadership role in protecting and advocating for the property. Students joined Alicia on a natural history walk through the property, focusing on the conflict of mountain biking in areas with sensitive rare plants. Students then visited the nearby

Killarney Beach to continue the discussion of park management, and finished the workshop with a “reading the landscape”-style investigation of a recent landslide at the beach.

### **Strategic Opportunity**

BG is an emerging nexus of place-based community partnerships, and is therefore an excellent platform for connecting students with community-based learning opportunities. Starting in 2017, Vermont high schools will be required by the Vermont Agency of Education (Act 77) to provide “flexible learning pathways” as alternatives to traditional classroom approaches and evaluate students based on proficiency in core competencies. BHS conceived the YES program to pilot different possibilities for achieving these alternative pathways. BG involvement in the YES Program strategically poises BG to become a city leader in school-city collaboration, especially as the Burlington School District begins to seek outside systems and pathways for connecting students with community partners.

## 4. Additional Elements

### **Burlington Geographic Website**

While the revitalization of the BG website was a main objective of this project, large-scale web redevelopment was outside the timeframe and budget for the project. Instead, the website was polished in anticipation the CES to give BG a more professional and elegant web-presence.

BG graphic and web design consultant Ines Berrizbeitia designed a sleek, modern logo and page header that was repurposed for advertising materials and CES slide designs (see Appendix 2). The website landing page was redesigned to better convey the BG and PLACE Program mission. Site content was edited for spelling, grammar, and content accuracy. Content failing to match the standards of professionalism established for the CES was removed from the website.

Geospatial web designer and programmer Bill Morris (Geosprocket LLC) was hired to refurbish and augment his interactive map launched in 2014. This interactive map was envisioned as a resource for residents to virtually explore the city by overlaying different layers of Burlington's physical, cultural, and environmental landscapes (i.e. elevation, census blocks, city parks, etc.). We worked with Bill to enhance the user interface and overall useability. We created a page for users to download and export map layers as KML files for easy import into other mapping programs.

The most significant improvement to the interactive map was the addition of georeferenced historical maps and imagery. These layers let users explore 1790, 1830, 1890, and 1937 representations of the city against modern satellite imagery. Users can also overlay the preexisting layers atop these historical base layers.

### **Photography of Place**

High-quality photography of the Burlington landscape was a key component of the CES. Photographs were assembled over the course of the summer depicting scenes highlighting the six CES themes, with special attention to places exemplifying intersecting landscape layers. This photography collection was used in designing title and introductory slides for the CES programs and to create advertising materials. Select photos were printed and mounted for display as a physical gallery exhibited at the first two CES event programs. This gallery was then displayed in the Aiken Center atrium display space for the remainder of the season. Photographs were taken by Sean Beckett and BG photography intern Diana Gurchich (RSENR '18). The entire gallery is available at the PLACE Program's Flickr Page:

<https://www.flickr.com/photos/7415656@N03/albums/72157671360050016>

## **Auer Skiff Launch**

Date: Friday, October 14<sup>th</sup>

During the Burlington Flowing evening program, featured speaker and boatbuilder Douglas Brooks discussed the history of recreation on the waterfront. Douglas highlighted the Auer Family Boathouse, a business that opened in 1927 and has spanned most of the modern timeline of recreation on Lake Champlain. In the spring of 2016, students of NR 16 (Ecological Citizenship) worked with Douglas Brooks to construct a replica of the Auers' original fleet of handmade rowing skiffs built by the Auers in the 1930s. The students worked with Christine and Charlie Auer to extract a half-decomposed original skiff from the Auers' woods. The students reconstructed its design blueprints using CAD software, and built a full-sized replica based on these designs. The replica and its original were displayed at the Burlington Flowing program.

Following the evening program, the students brought the new skiff to the Auer Family Boathouse and presented it to Charlie Auer. Charlie discussed design features with the students, commented on slight differences between the new boat and the original, and explained the methods his mother and father used to build their original fleet. The students launched the boat into the mouth of the Winooski River, and Charlie instructed the students in proper rowing technique. After the students were finished, Charlie (age 85) also climbed into the skiff and rowed up and downriver. The event honored the Auers' legacy and connected a young generation to place through learning new skills and kindling relationships with local elders. In context with BG, the event served as a follow-up to the Burlington Flowing CES program, and highlighted the sort of place-based experiential learning championed by the Ecological Design Collaboratory. This event took place during the CES, but was not part of the official field workshops.

## **Seven Days Feature**

Burlington Geographic was featured in the October 5<sup>th</sup> issue of Seven Days, Vermont's weekly independent newspaper published in Burlington. Pamela Polston, editor and co-owner of the newspaper, interviewed Sean Beckett and Elise Schadler during the CES week that focused on Burlington's urban forests (see p. 14). Pamela's article emphasized Elise's role as one of Burlington's chief street tree advocates, and highlighted BG's work connecting residents to place in Burlington for the goal of conservation, sustainability, and stewardship of the local landscape. Article available here: <http://www.sevendaysvt.com/vermont/burlington-geographic-puts-people-in-their-place/Content?oid=3720916>

## **Derek Watkins Workshop**

New York Times Graphic Design Editor and cartographer Derek Watkins was invited by Assistant Professor of Geography and Environmental Studies Ingrid Nelson to lead an on-campus workshop on behalf of Burlington Geographic. Watkins' visit was sponsored by the UVM Department of Art and Art History, and the UVM Department of Geography. Workshop

participants represented undergraduate students, graduate students, and faculty from these departments, as well as representatives of the Ecological Planning Program, Center for Teaching and Learning, and UVM Special Collections. In this open-ended workshop, Watkins shared examples of his team's most recent cartography and infographic projects, and discussed his team's design strategies, artistic style, and software choices. Watkins and workshop participants ruminated on the ethical considerations in cartographic journalism, and discussed the applications of cartographic storytelling for Burlington issues. This workshop was structured to use BG as a broad starting point to engage Watkins in Q & A around topics relevant to participants' research interests.

### **“Reading the Landscape” at Rock Point School**

The Rock Point School is a non-traditional boarding school in Burlington that offers a college-preparatory program for high school students with learning disabilities or educational gaps. “Cultivations” is a six-week summer program at the Rock Point School that engages students in place-based environmental learning by immersing students in the Rock Point landscape. Students grow and harvest vegetables, learn about edible and medicinal wild plants, and explore the natural and cultural history of the property. Jessie Mazar, “Cultivations” instructor and UVM Food Systems Graduate Program student, invited Burlington Geographic to lead a half-day workshop on “Reading the Landscape” at the contiguous Arms Forest (see p. 33).

This workshop focused on elements of the landscape representing physical and historical connectivity between the two adjacent properties. Students visited a > 200-year-old oak tree at the property boundary and inferred the types of landscape changes that the tree had seen. Students learned to read clues in barbed wire, and make land-use inferences based on the orientation, location, and growth form of “witness” trees. While at the tree, students listened to interviews with the Arms family and read historic documents explaining their historic relationship with the Diocese (e.g. pasturing cows on the Diocese property in exchange for plowing the Rock Point School gardens). Students then traveled to the Burlington High School parking lot and examined 1937 aerial images to discover that the Arms' farmhouse and barns once occupied the site. Finally, students visited the abandoned quarry behind the Burlington High School and investigated the geology to discover that the stone from this site was excavated to build the Rock Point School building where the students reside. This workshop was an opportunity to build connections with local schools while piloting elements of the “Reading the Landscape” CES workshop curriculum (see p. 22).

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<https://www.uvm.edu/place/>

flickr: PlaceUVM

**Burlington Geographic:** <http://www.uvm.edu/place/burlingtongeographic/>

## Appendix 1: Burlington Geographic Partnership Network

<b>Collaborating institution</b>	<b>Contact</b>	<b>Role in BG 2016 Initiative (point person)</b>
<b>UVM Center for Research on Vermont</b>	Richard Watts	CES event promotion
<b>UVM Landscape Change Program</b>	Paul Bierman	Historic imagery
<b>UVM Bailey/Howe Libraries Special Collections</b>	Jeffrey Marshall Prudence Doherty Chris Burns	CES Speaker BHS YES Program community partner High-resolution historic maps for BG website
<b>UVM Department of Geography</b>	Pablo Bose Cheryl Morse	CES Speaker CES Evaluation: VT Field Studies SL Course
<b>UVM Department of Anthropology</b>	Luis Vivanco	CES Speaker and workshop support
<b>UVM Historic Preservation Program</b>	Tom Visser	CES Promotion; advising
<b>UVM Rubenstein School</b>	Walter Poleman	BG/PLACE Director
<b>Shelburne Farms</b>	Ryan Morra	BG collaborator; CES Promotion
<b>Burlington Dept. of Parks, Recreation &amp; Waterfront</b>	Alicia Daniel Diana Wood Dan Cahill	BG collaborator; workshop leader, PBLA advising CES Promotion
<b>Burlington School District</b>	Peter McConville	BG collaborator; BHS YES Program leader
<b>Main Street Landing</b>	Mariah Riggs	BG collaborator; CES venue support
<b>Regional Educational Television Network</b>	Jackie Marshall	BG collaborator; CES video production
<b>The Henry David Thoreau Foundation</b>		BG/PLACE primary grant sponsor
<b>Berrizbeitia Design</b>	Inez Berrizbeitia	BG collaborator; web and graphic design
<b>Burlington City Arts</b>	Zach Williamson	CES venue support
<b>Burlington Department of Public Works</b>	Megan Moir	CES Speaker
<b>Burlington Electric Department</b>	Roger Donegan	CES Speaker
<b>Vermont Energy Investment Corporation</b>	Dan Fredman	CES Speaker
<b>Vermont Agency of Transportation</b>	Brennan Gauthier Kyle Obenauer	CES Speaker; workshop leader CES Speaker; workshop leader
<b>Burlington Edible History</b>	Elise Guyette Gail Rosenberg	CES Speaker CES Speaker
<b>VT Urban and Community Forestry Program</b>	Elise Schadler	CES Speaker; workshop leader
<b>Lake Champlain Community Sailing Center</b>	Mark Naud Jen Guimares	CES involvement BHS YES community partner
<b>Douglas Brooks Boatbuilding</b>	Douglas Brooks	CES Speaker
<b>Lake Champlain Basin Program</b>	Laura Hollowell	CES tabling
<b>New Farms for New Americans and AALV</b>	Alisha Laramie	CES Speaker; workshop leader
<b>Bike Recycle Vermont / Old Spokes Home</b>	Christine Hill Glenn Eames	CES tabling Historic bicycle CES exhibit
<b>Local Motion</b>	Jason Van Driesche	CES tabling; CES field workshop assistance
<b>SAP! Maple Beverages</b>	Alex Rosenberg	Beverage sponsorship
<b>Arts Riot</b>	Felix Wai	CES venue support
<b>Geosprocket LLC</b>	Bill Morris	BG interactive map design
<b>Seven Days</b>	Pamela Polston	Feature article on BG
<b>Our Curriculum Matters</b>	Amy Demarest	BG integration in "Watershed for Every Classroom" curriculum
<b>Vermont Folklife Center</b>	Andy Kolovos Kathleen Haughey	BHS YES community partner BHS YES community partner
<b>Greater Burlington Sust. Ed. Network</b>	Anne Bijur	CES promotion, future collaborations
<b>The Rock Point School</b>	Jessie Mazar C.J. Spirito	"Reading the Landscape" workshop CES promotion
<b>Heritage Preservation</b>	Samantha Ford	PBLA collaborator
<b>Other Collaborators:</b>		
RSENR student	Diana Gurvich	BG Photography intern
RSENR student	Carli Motto	BG CES logistics intern

Field Naturalist Program student	Ellen Gawarkiewicz	CES Workshop leader
Former superintendent, Moran Plant)	Tom Carr	CES Interviewee
Marble sculptor	Justin Rose	CES/PBLA Interviewee
Burlington Abenaki leader	Charles Delaney	CES/PBLA Interviewee
Historian, resident	Ann Arms	CES/PBLA Interviewee
Resident	Charlie Auer	CES/PBLA Interviewee; boatbuilding course partner
Historian, resident	Silvia Holden	CES/PBLA Interviewee
Historian, resident	Muriel More	CES/PBLA Interviewee
Appletree Point Historical Society	Tim / Suzanne Prim	CES/PBLA Interviewee

## Appendix 2: Community Engagement Series Advertising Materials





# BURLINGTON GEOGRAPHIC FALL 2016

## A Six-Part Presentation Series

Join us for an exploration of Burlington focusing on themes that bring us to the heart of Burlington's place-based identity. Each week showcases Burlington experts whose work and passions are deeply rooted at the intersection of our physical, cultural, and environmental landscapes.

- 1. "BURLINGTON UNDERFOOT"**  
 Bedrock, soil, ravines, and how the ancient origins of our physical landscape influenced centuries of city planning  
**Monday, September 19<sup>th</sup>**  
 Contois Auditorium  
 7:00pm
- 2. "URBAN WILDS OF THE QUEEN CITY"**  
 What the stories hidden in our forests and trees reveal about our city and ourselves  
**Wednesday, September 28<sup>th</sup>**  
 Burlington High School  
 7:00pm
- 3. "BURLINGTON FLOWING"**  
 Water's complex journey from tap to sewer to lake and beyond  
**Monday, October 3<sup>rd</sup>**  
 Main Street Landing (Film House)  
 7:00pm
- 4. "BURLINGTON'S EDIBLE HISTORY"**  
 The intersection of Burlington's food landscape and ethnic heritage through time  
**Monday, October 10<sup>th</sup>**  
 Main Street Landing (Film House)  
 7:00pm
- 5. "PATHWAYS AND PAVEMENT"**  
 The transportation corridors and machines connecting us together through time and space  
**Wednesday, October 19<sup>th</sup>**  
 Arts Riot  
 7:00pm
- 6. "BURLINGTON ILLUMINATED"**  
 Keeping Burlington's lights on with energy systems of the past and future  
**Wednesday, November 2<sup>nd</sup>**  
 Main Street Landing (Film House)  
 7:00pm

**Free and Open to the Public**  
**WWW.UVM.EDU/BURLGEO**

Poster to advertise CES evening programs. Printed on heavy, glossy cardstock 8.5" x 14". Text by Sean Beckett, design by Ines Berrizbeitia. Printed by Minuteman Press, Colchester VT.

**BURLINGTON GEOGRAPHIC FALL 2016 PRESENTATION SERIES**

Free and open to the public  
[www.uvm.edu/burlgeo](http://www.uvm.edu/burlgeo)

Burlington Geographic promotes healthy, sustainable communities by providing Burlington residents with opportunities to deepen their understanding of our shared city. This presentation series is an exploration of Burlington using weekly themes bringing us to the heart of Burlington's place-based identity. Each week showcases Burlington experts whose work and passions are deeply rooted at the intersection of our physical, cultural, and environmental landscapes.

**BURLINGTON UNDERFOOT** *Mon, September 19, 7pm @ Contois Auditorium (City Hall, Church St)*  
 Walter Poleman (Senior Lecturer, Rubenstein School of Environment and Natural Resources, UVM) travels across a billion years of history as we watch powerful glaciers and enormous tectonic collisions sculpt our landscape into the Burlington we recognize today. Jeff Marshall (Director, Bailey/Howe Library Special Collections, UVM) shows us a hidden ravine that once defined our interaction with Burlington's physical landscape.

**URBAN WILDS OF THE QUEEN CITY** *Wed, September 28, 7pm @ Burlington High School*  
 Sean Beckett (Ecological Planner, Rubenstein School of Environment and Natural Resources, UVM) brings us into Burlington's lesser-known natural areas to unearth stories of Burlington's history, ecology, community, and evolving relationship with open space. Elise Schadler (Vermont Urban and Community Forestry Program) shows us what our beautiful street trees have to say about our identity as Burlington residents.

**BURLINGTON FLOWING** *Mon, October 3, 7pm @ Main Street Landing Performing Arts Center (60 Lake St)*  
 Megan Moir (Assistant Director, Burlington Department of Public Works) takes us through sewers, faucets, ponds and pipes to demystify Burlington's water systems. Boat builder and maritime historian, Douglas Brooks, explores Burlington's long relationship with recreation on Lake Champlain.

**BURLINGTON'S EDIBLE HISTORY** *Mon, October 10, 7pm @ Main Street Landing Performing Arts Ctr. (60 Lake St)*  
 Elise Guyette and Gail Rosenberg (Burlington Edible History Tours) share captivating stories of centuries of local foods and the Native Americans and immigrant communities who prepared them. Alisha Laramie (Program Specialist, New Farms for New Americans) and Pablo Bose (Associate Professor of Geography, UVM) paint a picture of our city's ethnic diversity today, and introduce a small farm redefining the future of Burlington's food landscape.

**PATHWAYS AND PAVEMENT** *Wed, October 19, 7pm @ Arts Riot (400 Pine St)*  
 Brennan Gauthier (VTrans State Archaeologist) and Kyle Obenauer (VTrans State Historic Preservation Specialist) take us on a tour of Burlington's transportation heritage via railroad, streetcar, and even horse-powered paddleboat. Luis Vivanco (Professor of Anthropology, UVM) explains Burlington's long love of bicycling, and turns our attention to the future of transportation planning.

**BURLINGTON ILLUMINATED** *Wed, November 2, 7pm @ Main Street Landing Performing Arts Ctr. (60 Lake St)*  
 Dan Fredman and Roger Donegan (Burlington Electric Department) tell stories of smokestacks and solar panels, oil tanks and wind turbines. The season's final program is both a reflection on Burlington's energy heritage, and an inside look at Burlington's role in the emerging future of electricity.

Burlington Geographic is a collaborative initiative of the University of Vermont and  
 Shelburne Farms | Burlington Parks, Recreation & Waterfront | Burlington School District | RETN | Main Street Landing  
[www.uvm.edu/burlgeo](http://www.uvm.edu/burlgeo) ■ [place@uvm.edu](mailto:place@uvm.edu)

Flyer advertising CES evening programs in-detail. Sent as PDF email attachment and available for free at programs. Text by Sean Beckett, design by Ines Berrizbeitia. 8.5" x 11".

**FALL 2016**  
**BURLINGTON GEOGRAPHIC** 5 **FIELD WORKSHOPS**

Healthy, sustainable communities develop from rich connections to place. From forest to farm, waterfront to railway, Burlington Geographic explores and celebrates the natural and cultural features contributing to Burlington's unique character. In this field workshop series, we bring educators, community leaders, and passionate residents to Burlington's common grounds to learn how to interpret our city's natural and built environments.

► [www.uvm.edu/burgeo](http://www.uvm.edu/burgeo)

Burlington Geographic is an initiative of the PLACE Program, a Shelburne Farms and University of Vermont partnership.



These workshops complement our series of **Burlington Geographic Public Presentations**. Workshop participants are strongly encouraged to attend! See the [calendar of events](#). All programs are free; registration is required for field workshops. Contact [place@uvm.edu](mailto:place@uvm.edu) for information and to register. Professional development certificates available. The Burlington Geographic presentation and workshop series is available for credit through the UVM Extension program upon request.

**READING THE LANDSCAPE**  
 Saturday, September 24th  
 9:00 – 12:30  
 Starting Location: Burlington High School entrance

What makes a place? In this kickoff workshop, we explore Burlington's Arms Grant Forest and the neighboring wilds of the Episcopal Diocese at Rock Point. We practice "reading" the forested landscape to uncover stories of Burlington's natural and cultural heritage. From bedrock to wildflowers to dairy farming, we'll walk through time and between the "layers" of place. This workshop is led by UVM Ecological Planner, Sean Beckett.

**GET TO KNOW YOUR STREET TREES**  
 Friday, September 30th  
 4:30 – 6:30  
 Starting Location: ECHO Center front entrance


What stories do our trees tell? Elise Schaedler (VT Urban & Community Forestry Program) takes us on a walking tour across Burlington's waterfront and Old North End for an exploration of our most iconic street trees. In addition to learning to identify our most common (and unusual) species, we'll learn to coax stories from our built environment, and discover what our street trees say about Burlington's culture, history, and future.

FRONT

**LAND AND LAKE**  
 Saturday, October 8th  
 9:30 – 1:00  
 Starting Location: Local Motion @ Burlington's waterfront

Saddle up for this bicycle-bound quest to learn about the nature and culture intersecting along Lake Champlain's shoreline. Burlington Field Naturalist, Alicia Daniel, UVM Field Naturalist, Ellen Gawarkiewicz and her students showcase the lessons and learnings of this summer's pilot undergraduate natural history program at the Rubenstein School of Environment and Natural Resources. We'll explore birds, bedrock, beaches, and more on this place-based exploration of the Burlington Bike Path. Bring your own bicycle. Rentals available @ Local Motion.




**NEW FARMS, NEW FOODS**  
 Sunday, October 16th  
 9:00 – 11:00  
 Starting Location: Ethan Allen Homestead main parking lot

We continue our exploration of food and ethnicity in this direct follow-up to our October 10th public evening presentation, "Burlington's Edible History." Alisha Laramée, Program Specialist of New Farms for New Americans, leads this hands-on workshop at the NFNA farm down in the Winooski River floodplain. We'll join the community in tending to the late-season fields, while learning about Burlington's ethnic landscape through the international foods growing in Burlington's richest soils.

**ROADS AND RAILS**  
 Saturday, October 22  
 9:00 – 1:00  
 Starting Location: ECHO Center front entrance

How does Burlington get from A to B? Brennan Gauthier and Kyle Obenaus, VTrans Archaeologist and Historic Preservation Specialist, lead this adventure through time and space following the story of Burlington's transportation heritage. Travel corridors are among the oldest human imprints in our city, and connect us to our energy, our food, and our neighbors. This is our opportunity to learn to interpret the stories and significance of our transportation systems.



**BURLINGTON GEOGRAPHIC** FIELD WORKSHOPS [www.uvm.edu/burgeo](http://www.uvm.edu/burgeo)

BACK

Flyer advertising CES field workshops in-detail. Sent as PDF email attachment and available for free at programs. Text by Sean Beckett, design by Ines Berrizbeitia. 8.5" x 11".



**BURLINGTON**  
**GEOGRAPHIC** FALL 2016


**PATHWAYS AND PAVEMENT**






The corridors and machines connecting us through time and space

**Monday November 7<sup>th</sup> 7:00 - 9:00 PM**  
*Main Street Landing Performing Arts Center (60 Lake Street)*

**Brennan Gauthier** (VTrans State Archaeologist) and **Kyle Obenauer** (VTrans State Historic Preservation Specialist) tour Burlington's transportation heritage via railroad, streetcar, and even horse-powered paddleboat.

**Luis Vivanco** (Professor of Anthropology, UVM) explains Burlington's long love of bicycling, and turns our attention to modern transportation planning issues.



Example of flyer advertising individual CES programs. Sent as email attachments to target groups and local organizations for further distribution (e.g. Local Motion, Old Spokes Home, Young Professionals in Transportation, etc.).

## Appendix 3: Community Engagement Series Evaluation

This section summarizes the research conducted by the students of Vermont Field Studies (GEOG 192) under the instruction of Dr. Cheryl Morse (UVM Department of Geography). This section was authored by students Harry Silbaugh, Jamie Duke, Zeb Bolduc, Brittany LeBeau, Jenny Millan, Izaak Herman, Joe Krayewsky, Liam Paus, Alice Urbiel, and Lucy Crane.

### Summary

The Vermont Field Studies class partnered with the University of Vermont's Place Program to conduct an evaluation of the Burlington Geographic public lecture series in fall 2016. The goal of the series was to raise awareness of different aspects of the Burlington community as a place and encourage attendees to develop their own sense of place. The Place Program asked the Vermont Field Studies students to evaluate the lectures and determine who the attendees were, and to make recommendations on how to broaden the audience.

The students used a mixed methods approach to their research. Methods included a survey of audience members, a follow up survey and participant observation. Research was guided by findings from a literature review of work on place-based education.

The research found that attendees rated the series highly. The Burlington Geographic series appealed to a highly educated group of people; 50% of the people who took the survey had a graduate degree. Furthermore, the series drew repeat attendees. However, while the Burlington Geographic lecture series presented a wealth of information and those who responded to the follow up survey indicated they were motivated to change their behavior as a result of the lectures, the series did not appeal to a wide variety of people. The goal of this report then is to provide Burlington Geographic with a set of recommendations in order to increase the diversity of their audience. Recommendations include: adding more diverse lecture locations, holding shorter lectures that may provide child care and or food, partnering with specific community groups to offer presentations tailored to their interests, and creating activity-based events that would engage attendees in experiential learning.

### Introduction

UVM's Place program seeks to *"explore the intersection of natural and cultural history, and to deepen the connection between people and the landscape in which they live."* Burlington Geographic is one of their community initiatives. The Burlington Geographic public lecture series intended to share knowledge about aspects of the city's physical, social, and cultural geographies with local residents. The series included six free public lectures held at three locations in the city between September and November, 2016. The topics were diverse; ranging from food culture to tree health to energy systems.

The Vermont Field Studies course is an intermediate level, service-learning geography course that provides students the opportunity to learn and apply several research methods through



conducting a meaningful project for a community partner. The student project designed for Burlington Geographic aimed to use survey and participant observation methods to evaluate the Burlington Geographic lecture series, and provide recommendations for diversifying the audience. This report is the result of student research and analysis. It is written from the students' perspective.

### **Research on Place-Based Learning and Education**

The existing literature on place-based learning and education provides a context for our findings in this study on the Burlington Geographic lecture series that is helpful in deciding whether or not the lectures were conducted in a meaningful and relevant way. We read and discussed a selection of scholarly articles that were related to or were in pursuit of the same goal as the lecture series and synthesized our research into the following.

Environmental education works best when it is *hands-on and works in a specific place*, is *not institutionalized*, *reaches all groups* within a community, and ideally starts at an *early age*. In other words, environmental conservation or place-based learning is most successful when it possesses all of the aforementioned qualities, and is still moderately successful if it only satisfies one or two facets in comparison with not retaining any. While Burlington Geographic was focused on a specific place, thus allowing the lecture series to explore Burlington in depth and through a variety of lenses, the lectures were not hands on, making the embodied learning that is key to successful place-based education virtually nonexistent (Sousa et. al 2016). The lectures also created a sense of institutionalization since they occurred on a specific schedule and were conducted with structured timing for presentation and discussion. In the literature, structured place-based learning was found to diminish the recipient's ability to apply a holistic mindset to the information being provided and contextualize it in a way that promoted broader thinking (Dickinson 2011).

The lecture series also tended to cater towards upper middle class, educated, white individuals. This audience, while they may be well equipped to disseminate the information they gleaned from the lectures, did not include the other populations that exist in Burlington (ie. refugees, transient, blue collar) who might not have the privilege to develop a deep sense of place and therefore should in theory be the target audience of this lecture series. Intervention in a community at multiple levels allows for greater changes in behavior and practices to occur both individually and communally (Ng and Madyaningrum 2014). There also were very few children present at any of the lectures. Developing a sense of place at a young age improves future place related decision-making abilities and natural resource planning (Sharon and Ardoin 2011).

Overall, while the Burlington Geographic lecture series did provide a comprehensive look at a specific place, it did not do so in a way that engaged a variety of people. This conclusion however is based on the context provided by four sources of scholarly literature and is therefore limited in its reliability of presenting the entirety of successful place-based learning techniques.

## Methods

We employed a mixed-methods approach, using both qualitative and quantitative research methods that included participant observation and questionnaires with quantitative and qualitative questions. We attended each lecture in groups of three or four. We conducted participant observation at the lectures, a method common to human geography and cultural anthropology. In participant observation, the researcher does more than just seeing and observing, he or she becomes a participant in what is being studied (Kearns 2010). Thus, we joined the audience in listening and participating in the BG lectures, while simultaneously taking notes of observations that were important to the central questions of this project.

Additionally, questionnaires were designed to help gauge who attended the lectures, elicit how they felt about the lectures and collect suggestions for future Burlington Geographic lectures. These surveys were, for the most part, administered to the audience during intermission. However, a few were also distributed after the lecture series ended. It is important to note that the majority of people returned their surveys during intermission, which means the survey results do not necessarily represent the public's opinion on the second lecture in every series. A follow-up online questionnaire was administered to audience members who had provided their email in the questionnaires at the lectures. In addition, we read other studies of place-based education to provide a context for our study.

The statistical program SPSS 23 was used to analyze the quantitative results while the qualitative responses were hand-coded. Together these two methods helped organize the data and break it up into themes. Altogether, this mixed-methods approach that employed participant observation and questionnaires with qualitative and quantitative questions, has helped us gauge to how we can help Burlington Geographic better achieve their goal of fostering a sense of place for people in Burlington, Vermont.

## Results of Burlington Geographic Lecture Evaluations

We collected a total of 188 evaluations from the six lectures. Overall, the attendees found the BG lectures to be effect or very effective in information sharing, entertainment, and presentation style (4.4 average on 1-5 Likert scale, with 5 as very effective). They also generally found the time and location to be convenient (4.3 out of 5, and 4.4, respectively). Just one lecture received a significantly lower overall rating. Demographic data from the evaluation respondents shows the groups of people the lecture series attracted.

The vast majority of those who responded to the surveys were white, well-educated people who grew up outside of Vermont. The BG audience was 92.2% white, falling between the State of Vermont's and Chittenden County percent white populations of 95.1% and 91.9% (US Census data) . More female than male respondents to the survey: 60% female and 39% male, with 'Gender Neutral' and 'Transgender' making up for the last 1%.

The state of Vermont differs from Chittenden county in age demographics. Where the state is much older, Chittenden has a much larger population of people under 25. The largest age group who attended the BG lectures was 46-64 year olds. The other main age group was 18-24 year olds. The 18-24 crowd was almost entirely comprised of students from out of state who have lived in Vermont for 0-5 years. They heard about the lecture series from word of mouth, email, and opportunities given by professors for extra credit. The people aged 46-64 were almost all from out of state as well, having moved to Vermont 15 or more years ago. Most of them work in the business or education, or are retired, and heard about the lecture series through word of mouth. This indicates that the people who came to the lecture series fell into two main categories: students who are new to Burlington and have a desire to learn about it, and people who have chosen to live in Burlington and work as educators or have an enthusiasm for place-based education.

Respondents by Age and Duration in Vermont									
			Age?						Total
			A. 0-17	B. 18-24	C. 25-35	D. 36-45	E. 46-64	F. 65+	
How long have you lived in Vermont?	A. 0-5 years	Count	2	29	19	2	3	2	57
		% within Age?	100.0%	78.4%	63.3%	10.5%	4.6%	6.3%	30.8%
	B. 6-15 years	Count	0	1	5	10	3	5	24
		% within Age?	0.0%	2.7%	16.7%	52.6%	4.6%	15.6%	13.0%
	C. more than 15 years	Count	0	1	1	4	47	23	76
		% within Age?	0.0%	2.7%	3.3%	21.1%	72.3%	71.9%	41.1%
	D. All of your life	Count	0	6	5	3	12	2	28
		% within Age?	0.0%	16.2%	16.7%	15.8%	18.5%	6.3%	15.1%
Total		Count	2	37	30	19	65	32	185
		% within Age?	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 1. Cross-tabulation of Age and Duration in Vermont

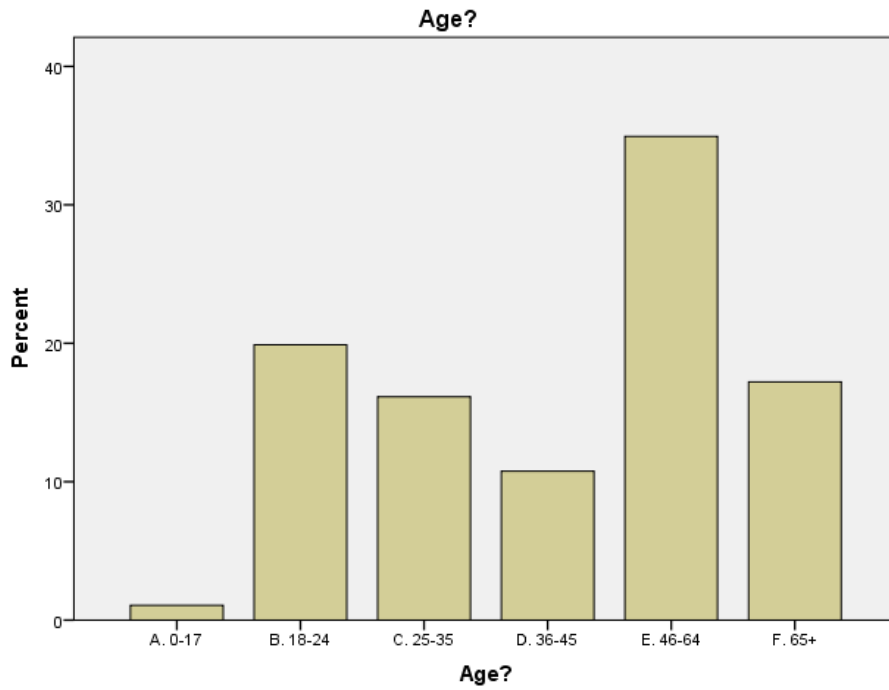


Figure 1. Evaluation Respondents by Age Category

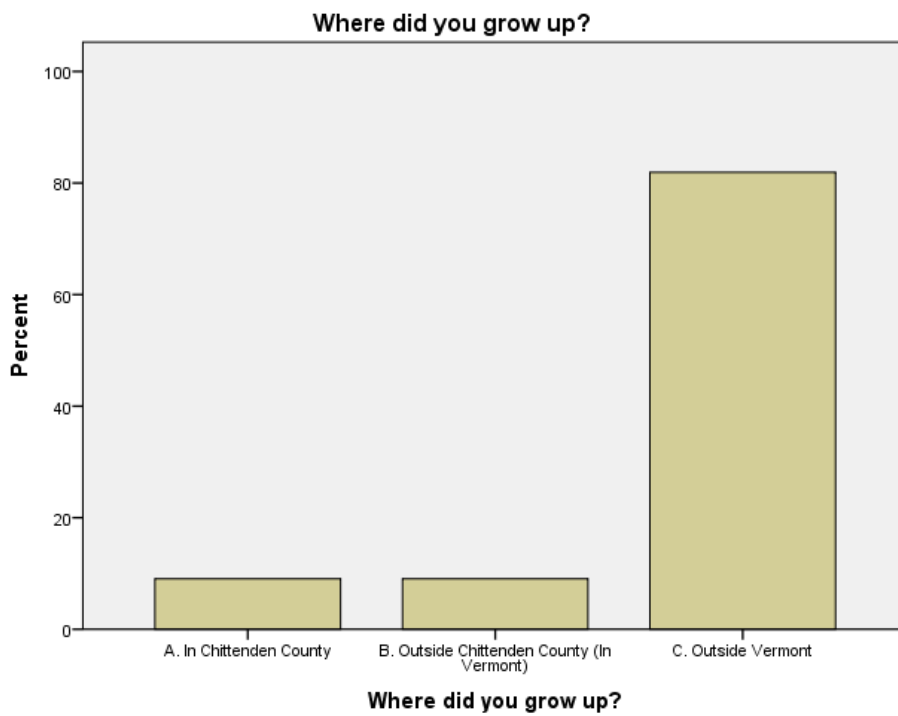


Figure 2. Evaluation Respondents by Where They Grew Up

Respondents by Where They Grew Up and Years in Vermont							
			How long have you lived in Vermont?				Total
			A. 0-5 years	B. 6-15 years	C. more than 15 years	D. All of your life	
Where did you grow up?	A. In Chittenden County	Count	0	0	1	16	17
		% within How long have you lived in Vermont?	0.0%	0.0%	1.3%	57.1%	9.1%
	B. Outside Chittenden County (In Vermont)	Count	1	0	4	12	17
		% within How long have you lived in Vermont?	1.7%	0.0%	5.3%	42.9%	9.1%
	C. Outside Vermont	Count	57	24	71	0	152
		% within How long have you lived in Vermont?	98.3%	100.0%	93.4%	0.0%	81.7%
Total		Count	58	24	76	28	186
		% within How long have you lived in Vermont?	100.0%	100.0%	100.0%	100.0%	100.0%

Table 2. Cross-tabulation of Where Respondents Grew Up and Duration in Vermont

Of the 188 people who participated in the Burlington Geographic survey, 186 responded to the question regarding their highest level of educational attainment. All of the participants who responded to this question were high school graduates, and approximately 50 % of them (93 people) stated that they had earned a graduate degree. The other half of respondents stated that they had attained a bachelor’s degree (26.1%) or were still enrolled in college at the time of the lecture (18.1%). Very few people who responded to the survey listed Associate’s degree (3.2%), some college (2.1%), or High School Diploma or GED (.5%) as their highest level of educational attainment. These results indicate that all of the respondents, with the exception

of one, had some degree of upper level education, and that roughly half of those with upper level education were highly educated, meaning that they had a received a graduate degree. This is remarkable because in Chittenden County, less than 40% of adults hold a bachelor's degree or higher (US Census). Since not everyone who attended the lectures filled out the survey, this information is not a completely accurate representation of who attended the events. However, this data does indicate that Burlington Geographic appealed to and / or was advertised to individuals with higher levels of educational attainment.

The people who attended the lectures came from several different occupational fields. These fields included business, medicine, education, student, trade, academic research, government, media, caregiver, retired, and religion. The most common occupational field listed was the business field, which consisted of attorneys, accountants, managers, business owners, marketing consultants, etc (29.3%). Besides this, the majority of the other respondents were either students (20.4%), educators (16.3%), or retired (13.6%). Other occupational fields such as medicine (2.7%), trade (2%), academic research (4.1%), government (3.4%), media (1.4%), caregiver (5.4%), and religion (1.4%), were poorly represented in the survey. These results reveal that most of the respondents, roughly 80 percent, were students, educators, retirees, or people in the business sector, which might indicate that people in these occupation fields turned out at higher rates than people in the other occupational fields. In turn, these results might also imply that the content / topics of the lectures were more appealing to students, educators, retirees, and people in the business field, than they were to people in other occupational fields. It could also be that the lecture format is familiar to people with higher education exposure. Or perhaps, the methods of advertising utilized by Burlington Geographic attracted more individuals from these specific occupational fields.

Of the 188 people at the Burlington Geographic lectures who filled out the surveys we administered, a total of 99 people had said they have and/or are doing some sort of volunteer work. There are various types of volunteer work that these people are participating in. Many are involved in some sort of environmental/nature related volunteer work that pertains to the biophysical world. For example, some of this environmental volunteering includes work with programs and organizations such as the Burlington Conservation Board, the Green Mountain Club, and the ECHO Aquarium. A number of volunteers also do work relating to food projects, education and issues such as community gardening, city market, and other volunteer work. Many noted that they do religious work with groups and institutions such as Unitarian Universalist Church, Ottavei Zedik Synagogue, NPA church, and other volunteer work involving religion affiliation. Another theme of the volunteer work these people had listed was social services/justice; organizations and volunteer work for this theme includes guardian ad litem, domestic violence, search and rescue, Vermont refugee resettlement program, among other related positions and organizations. Volunteers also noted they work at museums such as the Lake Champlain Maritime museum and the Shelburne Museum. Additionally, volunteers listed they do work with school boards. There were many other volunteer positions and organizations marked down, but they ranged quite a bit; some of these include Therapy Dogs of VT, Donate Life Vermont New England, and Land Trust among others (see attached list of all volunteer positions/organizations people listed).

### **Comments and Suggestions from Evaluation Responses**

Of the 188 people at the Burlington Geographic lectures who filled out the surveys we administered, a total of 75 people had made comments/suggestions of the Burlington Geographic lecture series. Many of these people were pleased and had a positive take on these lectures and often cited to the BG series to “keep it up”, “please continue”, among other positive comments. However, there were some common complaints and suggestions for these series. It was commonly noted the lectures were too long and people would leave early because it would be getting too late; these comments were mixed between being too long and too late. Other frequent complaints were of the lectures and speakers themselves; again, people for the most part were pleased with the content, but complained about how the speakers talked too fast, read from a script. Some wrote that the introduction and breaks were too long. People also complained about difficulty finding free and close parking.

There were many different suggestions for future lecture topics and format; some of the common ones included: Abenaki topics, Burlington’s development controversies, Burlington immigrant/refugee experience, history, outdoor recreation culture and history, and various lectures pertaining to biophysical matters such as landscape change in Vermont or Burlington’s response to climate change (see attached list for all suggestion for future lecture topics). What is inherent in some of the complaints and suggestions is that people were displeased in the traditional lecture format of one-way information. Some people even suggested more interactive activities such as a ravine walk and edible plant and herb walks. Lastly, some people noted how they enjoyed and were looking forward to the RETN feature on the website as this would allow them to watch lectures they missed.

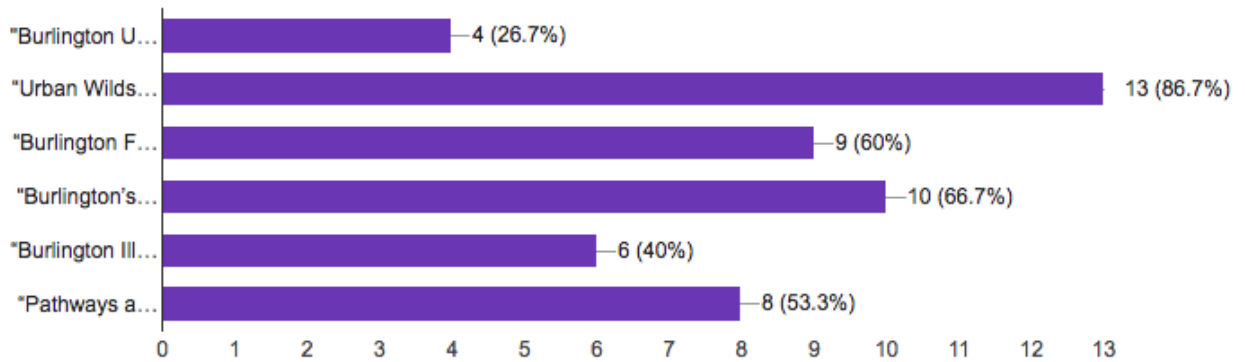
### **Findings from Burlington Geographic Attendee Follow Up Survey**

After the Burlington Geographic lecture series was over and data had been collected, we compiled a follow up survey to send to the people who gave us emails on the initial survey. Out of about 30 emails, 15 responses were returned. Even though the return rate for the follow up survey was about half, the initial number of 30 is not nearly enough to make any assumptions about the attendees of the lecture series. Still, we offer the findings from the survey below.

**Demographics:** The majority of responders live in the South End neighborhood (6), are women (8) and are between the ages of 46 and 64 (7). Responses were received from people in all age categories, but the highest response rate was from people ages 46-64 years. Six respondents (the majority) attended two lectures. Four responders attended all six lectures. Two responders attended one lecture. One responder each attended three, four or five lectures. Thirteen respondents attended Urban Wilds of the Queen City (the highest attended). Ten responders attended Burlington’s Edible History. Nine people attended Burlington Flowing and 8 people

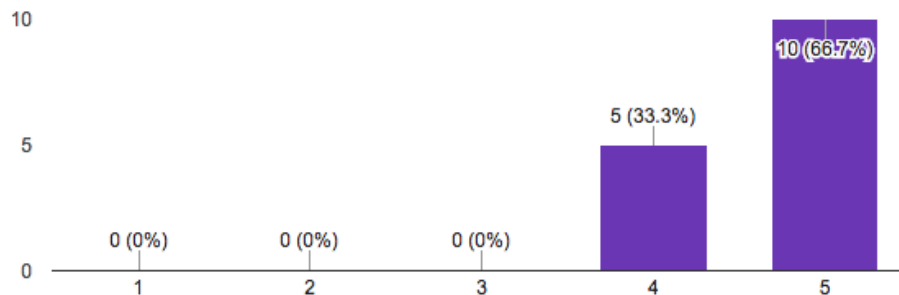
attended Pathways and Pavement. Six people attended Burlington Illuminated. Four people attended Burlington Underfoot.

### Which BG lecture(s) did you attend? (15 responses)



The respondents gave the series high overall ratings: 10 said the series was very successful and five respondents gave it a pretty successful ranking (5 and 4, respectively, on the Likert scale of 1-5). The ratings were high overall with 10 responders marking a 5 (very successful) and 5 responders marking a 4 (pretty successful).

### How would you rate the lecture series overall? (15 responses)



**Influence to take action:** Only one responder was not influenced by the series to take action in their community. Everyone else responded that they had been moved to some action as the result of attendance at one or more BG lectures. While some responses were not physically applied actions (like “just being more mindful and appreciative of the infrastructure around me”) others were concrete responses to lecture material (“trying out the foods on North Street”, visiting urban wilds, and joining the Master Naturalist program).



**Outside the lecture:** All responders reported that lecture material was brought up outside of the lecture. Some places where the topics were discussed included over the dinner table, in UVM classes, with friends and family with the intent of visiting urban wilds or other locations mentioned in the lectures or to encourage those friends and family to attend other lectures or watch the online, and in a board meeting. While the sample size is too small to declare an affirmation here, hopefully those who attended the lectures on a whole (not just the ones represented in the follow up survey) were discussing the lecture content in a variety of places, encouraging the spread of sense of place within Burlington communities.

**Respondent Suggestions for Future Burlington Geographic Lectures:** Respondents to the follow-up survey offered several topic suggestions including: aquatic life and watershed history for Lake Champlain, Abenaki history, agricultural geography, public trail stewardship, creating “commons” property and more comparison within lectures between Burlington and other cities in Vermont were all suggested.

**Other venues:** A variety of alternative locations were also suggested. The ECHO Center, churches, elementary and middle schools, UVM and Champlain campuses, Ohavi Zedek synagogue, restaurants, and Union Station, as well as outdoor locations like a public park and Rock Point were recommended. Several responders commented that they liked Main Street Landing as a location.

**Recommendations for events:** The most common recommendation was for better advertising for the lectures. Responders also recommended reinventing the series with “community potlucks and “beach days”” because lectures “only bring a certain type of people and traditional advertising only reaches certain types of people.” Some suggested spreading out the series over the whole year, holding a longer Q and A section, and not having the lectures on religious holidays (like Yom Kippur).

## **Overall Recommendations**

After analyzing the responses from the participants of the Burlington Geographic lecture surveys, consulting with place-based education research, and participating in all of the lectures, we offer the following recommendations for future Burlington Geographic events. These recommendations are grouped into suggestions for location and accessibility, length of event, topics, and types of event, with suggestions for ways to diversify audiences.

**Location, Accessibility and Advertising:** We suggest that future Burlington Geographic events be held in more diverse locations. These locations could include the North End, North Beach, and the South End. These locations could be based on accessibility and parking options. There is free public parking for two hours during weekdays in all city garages (Marketplace Municipal Garage, Macy’s Municipal Garage, and College Street Municipal Garage), free parking on Sundays in all city garages (all three listed above plus Burlington Town Center garage), and free parking after 3pm and on weekends at the Jeffords Hall lot on UVM campus and the UVM

Medical Center parking lots. With a wider variety of locations, it is possible that a more diverse audience will attend future Burlington Geographic events.

In terms of event outreach, a few additional venues are recommended. Advertising on public transportation, such as the CCTA bus system, may help attract crowds that may not necessarily be on college campuses, go to City Market, or read *Seven Days* and *Front Porch Forum*. Utilizing social media, such as Facebook, Instagram, or Twitter, could also reach people who may be interested in the material but may not go into Burlington that often. In addition, advertising at convenience stores or more general grocery markets such as Price Chopper, would be good marketing venues.

**Event Time:** It is difficult to find a time that fits around most people's work schedules, but one recommendation would be to schedule the event either an hour earlier, or to schedule the event to last for a shorter amount of time. Another idea is to provide food at every event, and possibly even sitter services for families who may not be able to leave their kids at home. This may increase the number of middle-aged attendees at Burlington Geographic events.

**Event Topics:** There was a wide variety of suggested topics that survey respondents gave for future Burlington Geographic events. These included:

- cultural heritage of Burlingtonians,
- urban wildlife
- winter transportation
- Abenaki culture and history
- aquatic ecology
- Lake Champlain history
- history of the Winooski River
- climate change and Burlington
- immigration history
- religious history
- history of outdoor recreation
- history of Burlington architecture and development
- music history
- education in Burlington
- Burlington compared to other towns and compared to the nation

These topics will help Burlington and greater Burlington residents gain a greater sense of place and knowledge about their community.

**Event Types and Tailoring Presentations to Specific Groups:** We considered how to reach more diverse audiences and interest groups throughout the course. We have three categories of suggestions: engaging activities, new venues, and tailored presentations.

*Engaging activities and experiential learning:* The first is that in addition to lectures, BG could offer interactive events. These would be either learning events where participants make or do

something (such as manipulating artifacts, trying out the energy app on cell phones, tasting different foods, etc.), or they could be mobile events such as walks or “wheels”. This latter idea is to have a “walk” around parts of the city that must be done with wheels--bikes, wheelchairs, scooters, strollers--to show which areas are accessible to those using wheels, and which are not. Specific ideas:

- *Interactive moments at the lectures*
- pair/share discussion activities
- food tastings
- manipulating and discussing objects
- trying out relevant apps
- games

*Engaged learning activities*

- crafts using local natural materials
- food preparation
- map making
- ‘treasure hunt’ walks (cultural, ecological, etc)
- wheeled events
- pub quizzes
- ‘pop up’ events

*New Venues:* Events could be held at a variety of locations at different times of the year. The Champlain Valley Fair, Church Street, farmer’s markets, Fourth of July events, bars, comedy club, or American Legions could reach a wider demographic. A pop-up event on Church Street, or a kiosk in the mall would allow for those who cannot attend formal events to still receive the information. Our literature review found that lectures may not be the best form of communicating with the general public, as it can be less engaging and less understandable than other forms of sharing information. If a lecture is held, it is recommended that the audience be engaged in neighbor-to-neighbor conversation, group activities, or some form of embodied learning.

*Tailored Presentations:* A final suggestion is to partner with an organization and tailor a program to their area of interest. For example, BG could approach the American Legion or VFW leadership with the offer to do a historical presentation, or they could partner with Burlington Parks to do an evening presentation of the night sky, or the history of camping at the North Beach campground. Youth groups may be interested in the history of punk rock music in Burlington, and seniors might like to share their memories of Burlington teen life in the 1950s. Bar patrons might like a Burlington trivia game. To reach people other than those who already attend lectures as part of their daily lives, it will be necessary to go to new venues with tailored programming.

## Appendix 4: Community Engagement Series Participant Survey

This survey will help Burlington Geographic to evaluate the impact of their programs. They are seeking to reach a broad audience and to provide relevant information in their lecture series. This research is being conducted by University of Vermont students enrolled in a geography course titled Vermont Field Studies (GEOG 192) taught by Dr Cheryl Morse. Please contact Dr Morse with any questions: [cheryl.morse@uvm.edu](mailto:cheryl.morse@uvm.edu). Your information will be kept anonymous.

*Thank you for taking the time to help with this research!*

Where did you grow up?

- A. In Chittenden County
- B. Outside of Chittenden County (in Vermont)
- C. Outside of Vermont

Where do you live now?

- A. Old North End (Burlington)
- B. New North End (Burlington)
- C. South End (Burlington)
- D. The Hill Section (Burlington)
- E. Downtown Burlington
- F. South Burlington
- G. Williston
- H. Colchester
- I. Winooski
- J. Shelburne
- K. College campus
- L. Other town: \_\_\_\_\_

How long have you lived in Vermont?

- A. 0-5 years
- B. 6-15 years
- C. More than 15 years
- D. All of your life

How did you hear about this lecture?

- A. Newspaper
- B. Poster
- C. Front Porch Forum
- D. Word of Mouth/Friend
- E. Burlington Geographic Website
- F. Other: \_\_\_\_\_

Gender?

- A. Male
- B. Female
- C. Gender Neutral
- D. Transgender
- E. Other: \_\_\_\_\_
- F. Prefer Not to Say

Race?

- White
- Black and/or African American
- Native American
- Asian
- Pacific Islander
- Other: \_\_\_\_\_
- Prefer not to say

Age?

- A. 0-17 years
- B. 18-24
- C. 25-35
- D. 36-45
- E. 46-64
- F. 65+

Highest Educational Attainment?

- A. Did not graduate high school
- B. High School or GED
- C. Enrolled in college now
- D. Some college
- E. Associates (2-year degree)
- F. Bachelor's (4-year degree)
- G. Graduate Degree

What is your occupation?

Please list any service or volunteer work you do (civic boards, organizations, informal service, etc):

Have you attended other lectures in this series?

- A. Yes
- B. No

Do you plan to attend another lecture?

- A. Yes
- B. No
- C. Maybe/unsure

On the scale below, please rate how effective the presentation was for you (clear and concise information, entertaining, valuable).

Very Effective      5            4            3            2            1            Not Effective  
comments:

Why did you attend this lecture?

What is your biggest takeaway from this lecture? (what did you learn?)

On the scale below, please rate how convenient the time of the presentation was for you.

Very Convenient      5            4            3            2            1            Very Inconvenient  
comments:

On the scale below, please rate how convenient the location of the presentation was for you.

Very Convenient      5      4      3      2      1      Very Inconvenient

comments:

Do you have any comments or suggestions for Burlington Geographic? Any topics you would like to see in the future?

If you are willing to take part in a follow up survey in November, please write your email address here:

## Appendix 5: Community Engagement Series Electronic Follow-Up Survey

This survey was administered via Google Forms to respondents of the previous survey who provided an email address for purposes of receiving a follow-up survey.

### **Burlington Geographic Follow-Up Survey**

Thank you for taking the time to help us with this research. Your responses will help both the UVM PLACE program and our class who is conducting service-learning research on this topic. The survey should take 3 minutes to fill out, and will be available until Sunday, Nov 27, 2016.

Respectfully, the students of Vermont Field Studies (UVM Geography 192) and Burlington Geographic

\* Required

Email address \*

How many Burlington Geographic lectures did you attend this fall? \*

- |   |   |
|---|---|
| 1 | 4 |
| 2 | 5 |
| 3 | 6 |

Which BG lecture(s) did you attend? \*

"Burlington Underfoot" Sep. 19

"Urban Wilds of the Queen City" Sep. 28

"Burlington Flowing" Oct. 3

"Burlington's Edible History" Oct. 10

"Burlington Illuminated" Nov. 2

"Pathways and Pavement" Nov. 7

How would you rate the lecture series overall? \*

Not great

- 1
- 2
- 3
- 4
- 5

Excellent

Has attending the BG lecture series influenced you to take action in any way?: (use water/electricity differently, visit city forests, try a local food, get involved in the community, commute differently, etc.) \*

Yes

No

If you answered "Yes" to the question above, what actions did you take?

Have the topics of the lecture(s) you attended been brought up outside of the lecture? (at dinner, with colleagues, friends, or family, at a different event, etc.) \*

Yes

No

If yes, please describe how the topic came up:

Are there any topics that you would like to see covered in the next BG lecture series?

What are some other venues BG could use to hold public events?

Do you have any recommendations or suggestions for event style, timing, advertising, etc.?

In which town/city do you live? \*

Old North End (Burlington)

New North End (Burlington)

South End (Burlington)

The Hill Section (Burlington)

Downtown Burlington

South Burlington

Williston

Colchester

Winooski

Shelburne

College campus

Other:

Gender? \*

Male

Female

Gender Neutral

Transgender

Prefer not to say

Other:

What is your age? \*

0-17 years

18-24

25-35

36-45

46-64

65+