

# REQUEST FOR PROPOSALS



# COASTAL FACILITIES FEASIBILITY STUDY

MERCHANT'S WAY



AUGUST 31, 2023

*presented by*

**WDG** | Waterfield Design Group

August 29, 2023

Town of Wareham  
Memorial Town Hall  
54 Marion Road  
Wareham, Massachusetts 02571

Attention: Mr. Derek Sullivan  
Town Administrator

Reference: Downtown Coastal Facilities Study  
Request for Proposals and Qualifications

Dear Mr. Sullivan:

With great pleasure we submit to you our company's proposal and qualifications for the above referenced project.

Waterfield Design Group is a full-service site design and land development company, specializing in all aspects of design, planning and permitting for the outdoor natural and built environments. We offer the following professional disciplines in-house:

- **Civil Engineering**
- **Landscape Architecture**
- **Land Surveying**
- **Environmental Permitting**

Within these 4 service areas, we work equally within the public and the private sector. We have worked for **181 of the Commonwealth's 352 cities and towns** as our client. We have an intimate knowledge of how municipal projects work and how to make them as successful as possible. We are deeply experienced in environmental permitting, review and analysis. We have worked extensively with local Conservation Commissions and the Massachusetts Department of Environmental Protection. We are specially trained in hosting public outreach forums and have guided our municipal clients through these often complex waters yielding exceptionally great results.

Our firm's private sector focus is equally as robust. A major part of our firm's capabilities has been in the creation, planning, and development of award-winning destination, places, and facilities. When you review our sample project portfolio included with this proposal, you will see why our company is unparalleled in the creation of **wildly popular environmental destinations**.

It is this unique combination of municipal / state environmental knowledge and experience creating of remarkable destinations that has lead us to submit this proposal to you today. We believe we are a near perfect fit for the outcome that the Town of Wareham has long desired for this interesting location.

As we hope you will see, we have assembled an impressive collection of project examples that mirror each of the key categories of work this project seeks to complete. These categories include the following:

- **Waterfront Destination Development**
- **Walking & Multi-use Paths**
- **Public Outreach**

Our firm is also highly qualified to help the Town of Wareham pursue state and federal grant monies after we help you create an award winning location. We are currently assisting the Town of North Andover in the pursuit of public and private money to support their \$8 million recreation and open space complex. We have recently assisted the Town of Oak Bluffs in their pursuit of **MassWorks** grants and were instrumental in the Town of Sturbridge's pursuit of local and state funding. For the last 4 years, we have been successfully helping the Town of Belmont secure Community Preservation Act funding for multiple public park and open space / playground projects. Our 2019 North Attleborough project was a **MassWorks** grant recipient.

I will serve as your Project Manager. As the owner and founder of this company, I bring a wealth of planning, design, and development experience to this project from my 35 years of professional experience. As the owner of this firm, I can assure you that this project will receive our company's top priority throughout the life of this project. You will be receiving our firm's top talent throughout the life of this project. Other competing firms will not be able to offer you this same level of service and commitment. **We are, by design, not the biggest engineering firm who will be proposing to you for this work but I assure you that we are without question the best** (bigger is not better).

Our company has read, understood, and will comply with the requirements and conditions contained in this RFQP. Our company is a Massachusetts based corporation and is proposing to you as the sole entity who can perform this work, if selected. We acknowledge the desired project schedule and can ensure that we will meet or exceed those expectations.

We are eager to win this work with you and will do whatever it takes to ensure that our company is your top choice firm for this work.

Very truly yours,

**WATERFIELD DESIGN GROUP, INC.**

  
Craig R. Miller, PE  
Founder, President, CEO

# SECTION 1

---

## PROJECT APPROACH

## **Project Approach**

As required by Part A, Item 4, we include below our firm's unique approach to meet and exceed your goals and objectives for this project.

### **Overview**

As noted in our Cover Letter, our firm is responding to this RFQP specifically because we believe we can help the Town of Wareham create a compelling, dynamic, and unique waterfront and open space destination at this Downtown Village location.

We also believe that if the right ideas are cultivated by this project for this location, these improvements can help catapult the brand and identity of Wareham Village, enhancing the Town's reputation as a Cape Cod destination and activity center.

All of this is only possible if the right type of ideas and the right sequence of their development is established.

Just about any civil engineering firm can help you define how to build a fishing pier, a kayak launch, and a coastal pathway. These elements, even in a coastal location like this, are simple elements to design and to obtain the necessary conservation permits. If this is all that you hope to achieve with this project (mere design and construction of these elements), you don't need the abilities that our firm can bring to the table.

Our focus, and our background and experience, is heavily favored in the direction of helping our clients create exceptional places that stand out in the crowd. As you will see, we have all the required engineering experience to figure out the conservation and coastal environmental permitting. Most any firm in our industry has this capability. Very few firms can deliver the excitement and creativity that will be required, in our opinion, to meet and exceed the brand and development goals desired for this location.

We are confident in this location and our ability to help you transform it into an important and popular all-season destination for residents and visitors to your 'full of future potential' downtown village.

## 1.0 Starting at the Beginning – Defining the Proper Context

We know the main elements that you want to create for this location. We also know that the context around these desired new elements is critically important to the overall success of the three new elements. If we ignore the context or the contributions that these surrounding features provide, the ultimate success of the three new elements will be diminished. Defining all the external factors that will impact access to and development of the waterfront land is the most important first step. As we look to get creative with the coastal lands, we need to first understand how the areas adjacent to the coast can influence the use and perception of what gets created along the coast. Ultimately, we need to create the proper relationship and marriage between the Wareham Village setting and the new coastal elements and ideas specially so that we can enhance the use and access of the downtown waterfront.

## 2.0 Dream Big Dreams & Adapt for this Setting

People never show up when someone chooses to put forward an average or an ordinary vision. They might participate once but boring locations seldom attract repeat customers. These are the **non-negotiable principles** behind private sector retail and entertainment projects. Build exciting and people come. Build boring and be prepared for a poor response. The same is true with this project and this location. Our team will evaluate the setting of this project and define new ways and new ideas for how this desired investment can yield significant results to the Town's main overall objective (this is why the context discussion from above is so important). We will dream big with you and then identify how these big dream ideas and special creativity can be applied at this location. This process always involves a lot of back and forth with our clients and the discussion and brainstorming aspect of this part of our process will be both fun and invigorating. **Great outcomes always start by cultivating and then teasing out great dreams.**

## 3.0 Put Pen to Paper -

### Conceptual Development Sketches & Comparable Image Galleries

After we together wrestle the Big Dreams to the ground, we now start the process of preparing conceptual design sketches that begin to establish how we can make the final cut of the big dreams come into reality. Often times, the work in this phase is like a continuation or a sequel to the Big Dreams phase. The difference in the sequel is that we are now customizing the Big Dreams to the specific land, access, sightlines, visibility and other factors that will define how the completed project can reach and influence the public. In this task, we will create a Vision Plan of the project

# Downtown Coastal Facilities Study

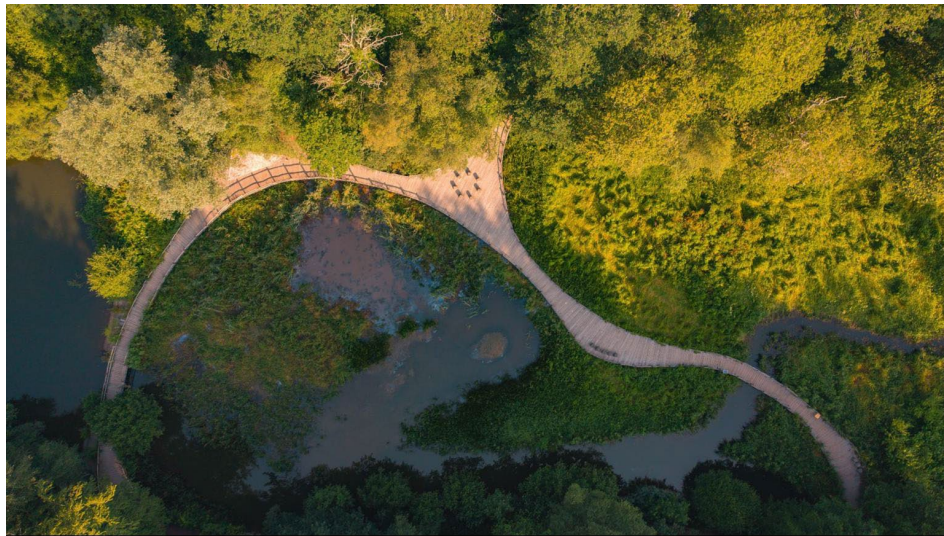
Town of Wareham, Massachusetts

area and its surrounding areas. The Vision Plan will illustrate how our new ideas can accomplish the impressive outcomes we believe are possible here. We will also assemble a collection of imagery from all over the world showcasing the ways in which other locations have achieved special success with each of the elements we propose be built by this project. The **Comparable Image Gallery** is a powerful communication tool that will not only illustrate firsthand our proof of concept but it will generate lots of enthusiasm for the total package that we believe is needed to achieve your ultimate outcomes for the Downtown Village. Almost always, our **Comparable Image Gallery** helps get stakeholders of all backgrounds on board faster and with greater enthusiasm. These Galleries also help us define how to customize the project for Wareham's unique circumstances and constraints.



# Downtown Coastal Facilities Study

Town of Wareham, Massachusetts





## 4.0 Engineering Due Diligence Analysis

Even though this task is labeled Task 4.0, its really a prequel to the very first task. As experienced civil engineers and environmental permitting specialists, we already know what environmental and municipal/state permitting constraints will impact the project. Because we are development and brand experts **and also** civil engineers, we are able to work with you through the first 3 phases of our approach while being fully informed about what can and cannot be done on the land being used by this project. During this phase, we will layer in the engineering and environmental constraints and identify them for you. We will illustrate why we think the dreams that were put forward can work and how specifically we will get them across the finish line.

## 5.0 Public Process

The RFQP shows the Public Process as a potential Task 2. While we are open to using this order, our past experience has taught us that it is more productive and efficient if your professional design team starts working on ideas out ahead of the project's public process component. When organized this way, the public forums are more productive. This occurs because our professional background will bring ideas and knowledge to the table that the general public does not possess. We always espouse a very open-minded introduction to the project process. This means that we don't feed the public our ideas but we react to their ideas with our knowledge and experience and then we fold in our ideas. At the end, the marriage of our expertise and their feedback always results in a lot of excitement from the public and the project's major stakeholders.

## 6.0 Concept Reconciliation

After the public process is completed, we modify our project ideas and concepts to reflect the input we received. At this point in time, we will also prepare a final environmental permitting review. We present the reconciled concept plan to our client team for further input and discussion. At this stage, we can also meet with the local Conservation Commission to review our approach and our technical opinions on the proposed development elements. We will coordinate with all known partners and other stakeholders.

Once endorsed we will create color renderings of the two-dimensional plan and will accompany the plan view exhibits with any three dimensional sketches or comparable photography that will help fully describe the desired outcome. Our completed conceptual level development plan will contain all the necessary conceptual level definition needed to use for future funding applications and to serve as the blueprint for the next stages of design and final permitting.

## **Scope of Work**

Using the Project Approach as a guide, we suggest the following Scope of Work outline. Of course, the best outcome is where we meet with you to discuss the scope of work and use that initial pre-project meeting to refine and finalize the scope of work.

1. Define Project Context - Review project goals; site inspection with client; analyze relationships of abutting elements; define overall impact of project direction on the downtown village; review pedestrian, bike, marine, and vehicle access; reconcile parking needs for desired new elements; perform overall assessment of desired elements and the context within which the new elements will perform and operate; meetings with client and abutters (if needed at this time).
2. Develop Project Vision - Identify possible project directions and establish vision for the new development ideas. Search for build comparable projects or comparable elements locally, nationally, globally for inspiration and influence. Meetings as needed with project team and relevant stakeholders
3. Build Conceptual Sketches - Create concept sketches to illustrate potential of vision and ideas from previous two tasks. Assemble and organize comparable imagery to support direction that is created from conceptual sketches. Meetings as needed to discuss and refine. Adapt sketches.
4. Survey - The conceptual direction established by each of the preceding tasks will define the possible project work areas. It is from this level of definition that the project limits regarding survey and environmental impact definition is first known and created. From this direction, a land survey and bathymetric survey will be performed of the desired areas. We have assumed that a survey for the walking trail is not needed at this time. We will identify environmental resource areas (wetland flagging) and meet with the local Conservation Commission to discuss our approach to the environmental permitting direction. A completed land survey will be drawn to scale of the relevant project areas. The sketch below identifies a preliminary limit of work for the survey part of the project.



5. **Engineering Review & Analysis** - From the survey task, we will then be in a position to identify all engineering constraints. We will identify design, planning, and constructability challenges for each of the conceptual design directions chosen in the preceding tasks. We will develop an order of magnitude construction cost estimate for the various new development directions. Meet with client to discuss options and results.
6. **Public Outreach** - Using all the information prepared and collected to this point, we will then develop a comprehensive public outreach plan. The public outreach plan will first show all existing conditions and will explain in layman's terms how engineering and environmental constraints can impact various ideas. The conceptual ideas generated by the design team will be held back during this first phase as we receive input from the public regarding their ideas and desires. As the discussion continues, inevitably the various ideas we created will become relevant to the public discussion and we will review these directions in concert with the on-going public dialogue. We will record all input received. If necessary, we will host a 2<sup>nd</sup> public meeting where further discussion and refinement can occur. We will create a project public comment website where communication in both directions can occur. We will host web based polls and offer ways in which the public can offer input without having to attend a public meeting. We will review the collection of public comments with our client team and reconcile their impressions of the input received.
7. **Development Refinement** - Modifications to various aspects of the conceptual design drawings and sketches will be performed based on the results of the preceding task. The conceptual level cost estimate will be updated. A short report style memo will be prepared summarizing the entire process and documenting the final outcome of the public input elements. Final color rendered plans will be prepared showcasing the final desired project direction. Where necessary, a written summary can accompany the final concept plan sketches to further clarify and describe the various elements of the desired direction.
8. **Meetings** - Meetings will be held with the client team as needed. We expect that not more than eight (8) meetings will be needed. If more are necessary, these can be added to our scope along with the required additional fees.

## **Evaluation Criteria**

Part A, Items 6 and 7 of the RFQP asks us to identify how our firm meets or exceeds the Minimum Evaluation Criteria and the Comparative Evaluation Criteria.

### **Minimum Evaluation Criteria**

#### **A. Demonstrated experience completing “coastal facility feasibility studies” or similar closely related urban renewal plans / projects in coastal locations.**

Our proposal includes 20 different project examples (we call them ‘Project Sheets’) that illustrate in detail our company’s past project experience. Of these 20 similar project examples, 13 involved coastal or riverfront projects located in very sensitive waterfront environmental areas. In each of these 13 coastal and waterfront projects, our company provided the conceptual design and prepared a detailed environmental permitting due diligence analysis in the same exact manner as will be required here. The 13 projects we reference in our proposal are listed below as follows:

1. Riverfront Park, South Carolina
2. Balfour Riverfront Park, Attleboro, Massachusetts
3. Cooke’s Hollow Mt. Pleasant Cemetery, Arlington, Massachusetts
4. Adams Visitor’s Center, Adams, Massachusetts
5. Wareham Village Streetscape, Wareham, Massachusetts
6. Wareham Village Director, Wareham, Massachusetts
7. Royal Caribbean Oasis of the Seas Central Park (*admittedly not a permitting juggernaut but a really cool ocean based entertainment project, nonetheless*)
8. Pigeon Falls Village Mixed Use Development, Pigeon Forge, Tennessee
9. Spy Pond Park Improvements, Arlington, Massachusetts
10. Fore River Shipyard Mixed Use Development, Quincy, Massachusetts
11. Forge Pond Park Trail, Canton, Massachusetts
12. Cape Cod Rail Trail
13. Scituate Rail Trail

#### **B. Proposals much be complete, accurate, and responsive.**

We believe after reviewing our submitted proposal, it will be found to be accurate, complete, and that it diligently followed the requirements outlined in the RFQP.

## C. Evidence of insurance coverage

Our firm has the required insurance and will provide an insurance certificate if selected for the award.

## Comparative Evaluation Criteria

### D. Consultant must demonstrate experience completing “coastal facility feasibility studies” or comparable types of work or has a thorough knowledge of the requirements needed to obtain approval of coastal facilities.

Our proposal includes 20 different project examples (we call them ‘Project Sheets’) that illustrate in detail our company’s past project experience. Of these 20 similar project examples, 13 involved coastal or riverfront projects located in very sensitive waterfront environmental areas. In each of these 13 coastal and waterfront projects, our company provided the conceptual design and prepared a detailed environmental permitting due diligence analysis in the same exact manner as will be required here. The 13 projects we reference in our proposal are listed below as follows:

1. Riverfront Park, South Carolina
2. Balfour Riverfront Park, Attleboro, Massachusetts
3. Cooke’s Hollow Mt. Pleasant Cemetery, Arlington, Massachusetts
4. Adams Visitor’s Center, Adams, Massachusetts
5. Wareham Village Streetscape, Wareham, Massachusetts
6. Wareham Village Director, Wareham, Massachusetts
7. Royal Caribbean Oasis of the Seas Central Park (*admittedly not a permitting juggernaut but a really cool ocean based entertainment project, nonetheless*)
8. Pigeon Falls Village Mixed Use Development, Pigeon Forge, Tennessee
9. Spy Pond Park Improvements, Arlington, Massachusetts
10. Fore River Shipyard Mixed Use Development, Quincy, Massachusetts
11. Forge Pond Park Trail, Canton, Massachusetts
12. Cape Cod Rail Trail
13. Scituate Rail Trail

Because we have included 13 coastal facility design plans, we believe our proposal to be **Highly Advantageous**.

**E. The proposal establishes the professional qualifications, experience and capacity to successfully complete the project in a timely manner.**

Because of the depth and breadth of our related project experience, our firm has a proven track record of completing projects on time. We would not be chosen time and again by our clients if our services were not always delivered on time and in a responsive and focused manner.

**F. Quality of Work Products**

We took great pains to include project samples and experience examples that are highly professional and served our clients very effectively.

**G. References**

**Balfour Riverfront Park**

City of Attleboro

77 Park Street, Attleboro, MA 02703

508-223-2233, ext 3143 Gary Ayrassian, Director of Planning;

[cityplanner@cityofattleboro.us](mailto:cityplanner@cityofattleboro.us)

508-261-7370 Kevin Dumas (former Mayor of Attleboro, now Town Manager Mansfield MA)

**Cooke's Hollow Conservation Area & War Veteran's Park**

Town of Arlington

730 Massachusetts Avenue

Arlington, Massachusetts 02476-7307

Michael Rademacher, PE – Director of Public Works

781- 316-3101; [mrademacher@town.arlington.ma.us](mailto:mrademacher@town.arlington.ma.us)

**Adams Visitors Center Parking / Drainage, Riverfront Park & Trail Enhancements**

Town of Adams,

8 Park Street, Adams, Massachusetts 01220

Donna E. Cesan, Acting Town Administrator / Community Development Director

[dcesan@town.adams.ma.us](mailto:dcesan@town.adams.ma.us)

8 Park Street, Adams, MA 01220

413-743-8300 x131 (phone)

**North Adams Downtown Cycletrack**

Berkshire Regional Planning Commission (BRPC)

1 Fenn Street, Suite 201, Pittsfield, Massachusetts 01201

Clete Kus, AICP – Transportation Program Manager

413-442-1521, ext 20; [ckus@berkshireplanning.org](mailto:ckus@berkshireplanning.org)

# Downtown Coastal Facilities Study

Town of Wareham, Massachusetts

## **Blackinton Infrastructure Improvements**

City of North Adams, Office of Community Development  
10 Main Street, North Adams, Massachusetts 01247  
Michael F. Nuvallie, Director  
413-662-3025 x3 ; [mnuvallie@northadams-ma.gov](mailto:mnuvallie@northadams-ma.gov)  
Zachary Feury, Project Coordinator  
413-662-3025; [zfeury@northadams-ma.gov](mailto:zfeury@northadams-ma.gov)

## **Wareham Merchant's Way Streetscape & Downtown Directory**

Town of Wareham  
54 Marion Road  
Wareham, MA 02571  
Salvador Pina  
Former Wareham CEDA Director – Now Roxbury Community College  
857-701-1604  
[spina@rcc.mass.edu](mailto:spina@rcc.mass.edu)

## **Wareham Merchant's Way Streetscape**

Don Sullivan, Director  
Community & Economic Development  
Southeastern Regional Planning & Economic Development District (SRPEDD)  
88 Broadway  
Taunton, MA 02780-2557

## **Spy Pond Conservation Area & Recreation Improvements**

Town of Arlington  
730 Massachusetts Avenue  
Arlington, Massachusetts 02476-7307  
Michael Rademacher, PE – Director of Public Works  
781- 316-3101; [mrademacher@town.arlington.ma.us](mailto:mrademacher@town.arlington.ma.us)

## **Mansfield Plymouth Street Playground**

Town of Mansfield  
6 Park Row, Mansfield, MA 02048  
Kevin J. Dumas, Town Manager  
508-261-7466  
[townmanager@mansfieldma.com](mailto:townmanager@mansfieldma.com)

## **Forge Pond Trail**

Town of Canton  
801 Washington Street  
Canton, Massachusetts  
(781) 821-5023  
Mike Trotta, DPW Director

# SECTION 2

---

## PROJECT TEAM



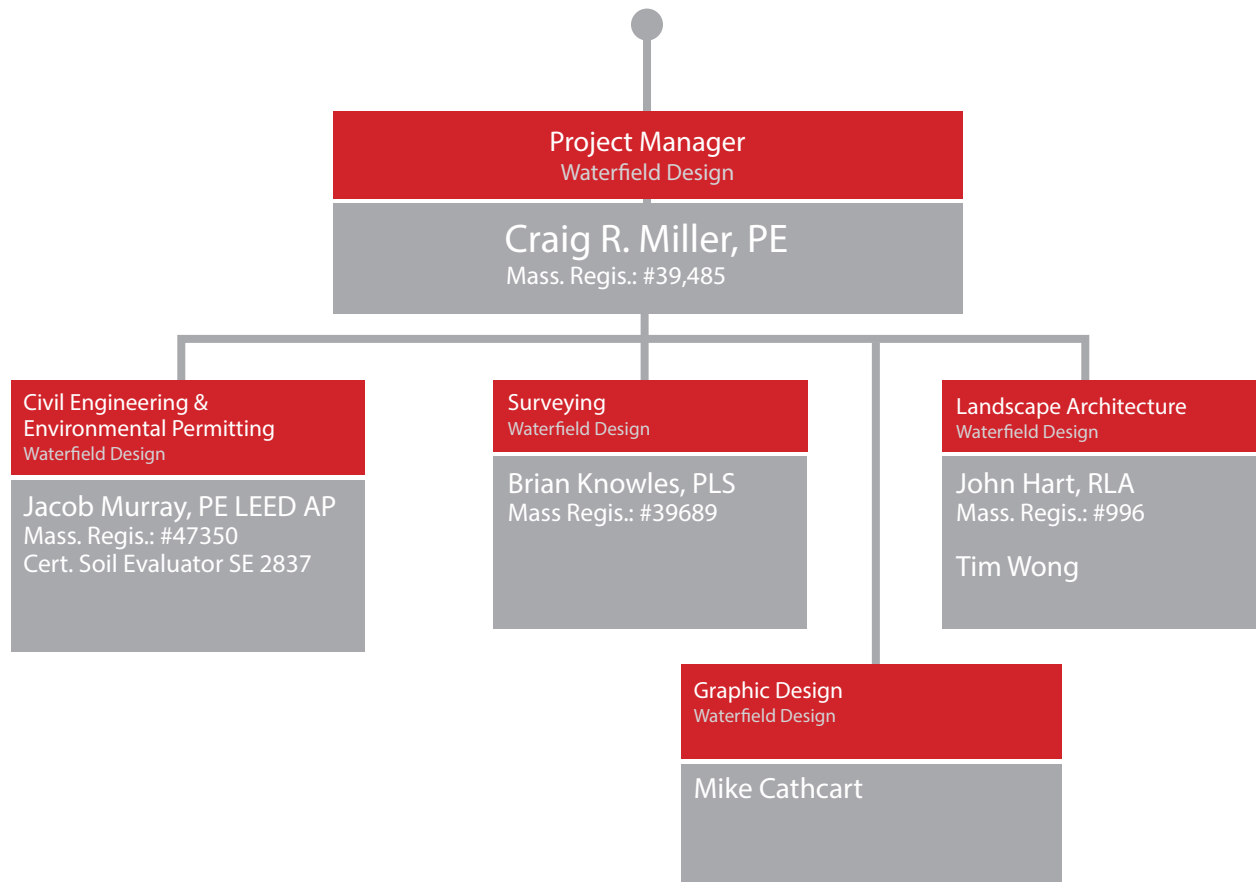
# Organizational Chart

## MERCHANT'S WAY, WAREHAM, MA COASTAL FACILITIES FEASIBILITY STUDY



# Town of Wareham

## Wareham Redevelopment Authority



# **CRAIG R. MILLER, PE**

## **Director of Civil Engineering**

### **President & Principal-in-Charge**

*As a senior civil, structural, and transportation engineer, Mr. Miller has extensive experience in mass transit, roadway design, urban planning, higher education facilities, national and regional economic growth strategies, community development, international development, permitting, heavy infrastructure, public communication, luxury housing, major entertainment facilities, retail & commercial development, and construction.*

*Craig has been involved in all aspects of the design process from planning and concepts through final design and construction. He is especially skilled in creating great vision for projects, creating consensus, and communication where many diverse goals and objectives may exist.*

*He has experience working in all aspects of the outside built and natural environment as well as buildings and structures.*

*Craig has extensive experience working in infrastructure and economic planning and development for Developing Nations in Africa, South America, and the Caribbean.*

#### **EDUCATION**

University of Lowell, Bachelor of Science Civil Engineering 1989  
Bentley College, selected course work towards Masters in Business Administration

#### **PROFESSIONAL REGISTRATIONS**

Professional Engineer, Civil / Structural - MA, ME, OH, VT, RI, FL, TN  
FHWA Certified - Safety Inspection of In-Service Bridges  
FHWA Certified - Stream Stability & Scour at Highway Bridges  
FHWA Certified - Non Destructive Test Methods for Steel Bridges  
FHWA Certified - Bridge Coatings Inspection  
Harvard Univ. & Nat'l Charrette Institute - Complex Public Meeting Facilitation Training  
Form Based Zoning Code Certification

#### **PROFESSIONAL AFFILIATIONS**

Vice President—Metro Chapter, Mass. Society of Professional Engineers (1999-2002)  
Chairman—National Engineers Week Committee Boston-MSPE (2001)  
National Chairman—NSPE Prof. Engineers in Private Practice (PEPP) National Young Engineers Committee 2003  
President—Hope for the Children of Haiti (1998-2002)  
President Elect—ROME Foundation International, Tampa, Florida

Boston Society of Civil Engineers (BSCES)  
American Society of Civil Engineers (ASCE)  
National Society of Professional Engineers (NSPE)  
Massachusetts Society of Professional Engineers (MSPE)  
Women's Transportation Seminar (WTS)  
National Trust for Historic Preservation  
Middlesex Canal Commission Member

Board of Directors—Boston Greenspace Alliance (2003 to 2005)  
Board of Directors—UMass-Lowell Civil Eng. Dept. Advisory Board (2004-Present)  
Board of Directors—The ROME Foundation, Tampa, FL (1999 to Present)  
Board of Directors—Hope for the Children of Haiti (1996—2002)  
Board of Directors—National Engineers Week Committee Boston-MSPE (1994-2001)  
Board of Directors—MSPE Metro Chapter 1995-2001

Co-Founder – UMass Lowell Institute for Sustainable Infrastructure (ISI)

#### **AWARDS**

Ralph Horne Award—Boston Society of Civil Engineers —2001  
Massachusetts Young Engineer of the Year—Mass. Society of Prof. Engineers —2002  
National Young Engineer of the Year—National Society of Prof. Engineers —2002  
Outstanding Service Award—NSPE Prof. Eng. in Private Practice (PEPP)—2003  
Top 40 Under 40 Business Leaders Award—Boston Business Journal—2003  
Francis Cabot Lowell Alumni Award for Engineering—UMass Lowell —2003

## **AFFORDABLE & PUBLIC HOUSING SIDEWALK AND ROADWAY DESIGN/CONSTRUCTION**

### **Old Colony Apartments, East 9<sup>th</sup> Avenue**

#### **Boston Housing Authority, Boston, MA**

Project Director for site improvements for courtyard renovation. Scope of work included ADA compliant sidewalks and building entrances, parking, site grading, protection of underground utilities, dumpster layouts and design, curb cuts, and traffic circulation pattern updates.

### **Franklin Field, Stratton Street**

#### **Boston Housing Authority, Boston, MA**

Project Director for site improvements for ADA compliant sidewalk and road renovations. Scope of work included ADA compliant sidewalks and building entrances, site grading, protection of underground utilities, lighting updates, and repaving of interior housing authority roads.

### **Saltonstall Building Site, 121 Riverside Avenue**

#### **Medford Housing Authority, Medford, MA**

Project Director for curb and sidewalk replacements. Scope of work included ADA compliant sidewalks, minor site grading, and granite curb replacement.

### **Moistureproofing & Miscellaneous Site Improvements Project**

#### **Gallivan Boulevard, Blue Hill Avenue & Winston / Harwood**

#### **Boston Housing Authority / Mass Department of Housing & Community Development (DHCD)**

Project Director for general site improvements contract where groundwater and (above ground) stormwater runoff flows around each of the developments listed caused significant flooding of yards, walk areas, and basements. Designed "curtain wall" drainage lines throughout sites to intercept above and below ground water flows and remove them off site. Repairs designed for existing City of Boston drainage and sanitary trunk lines located in the streets at Gallivan. Sidewalk and roadway reconstruction also performed along with ADA compliance throughout. Extensive existing conditions and schematic design report prepared to present alternatives for solution along with estimated construction costs. Driveway reconstruction designed at each unit at Gallivan Boulevard.

### **Site Design Improvements at 12 Elderly & Disabled Housing Development Locations**

#### **Boston Housing Authority Division of Elderly & Disabled Housing**

Project Director for miscellaneous site improvements design & construction management at 12 Elderly & Disabled housing development locations throughout the City of Boston. Project involved improvements to site amenities, removal of obstacles in exterior path of travel, parking improvements, retaining walls, fencing & security, aesthetic beautification, concrete steps & handrails, drainage improvements, pedestrian bridge ramps, at the following City of Boston locations: Spring Street Apartments, Patricia White Apartments, Groveland Apartments, Malone Apartments, JJ Carroll Apartments, Lower Mills Apartments, Bellflower Apartments, Hassan Apartments, Washington Street Apartments, West Ninth Street Apartments, Heritage Apartments, Pasciucco Apartments.

### **Somerville Housing Authority**

#### **Mystic View Apartments, Winter Hill, Somerville, Massachusetts**

Project Director for site plan improvements project for this 215 unit Federal family housing development. Project involves upgrading of the ADA access to the site, renovation of parking and streetscapes, new courtyards, replacement of aging play equipment with new, safer, age appropriate models, enhancement of the fall zones and fall zone materials, fencing, signage, and plant materials.

### **Road & Walkway Modernization Project, Lowell, Massachusetts**

#### **Lowell Housing Authority**

Project manager, lead design engineer and construction management director for road and walkway rehabilitation project. US Housing and Urban Development project utilized pavement reclamation (grinding) to enhance the existing gravel subbase, re-installed existing granite curbing and new concrete sidewalks. Project also included ADA compliance, misc. site improvements and extensive construction management.

### **Parking and ADA Compliance Project, Attleboro, Massachusetts**

# **CRAIG R. MILLER, PE**

*(continued)*

## **Attleboro Housing Authority**

Project manager and lead design engineer for at-grade parking enhancements and ADA walkway compliance for existing roadway network in housing development. Project included drainage design, parking circulation analysis, parking design, permitting and variances with City of Attleboro.

## **Stormwater Runoff Improvement Project, Northbridge, Massachusetts Northbridge Housing Authority**

Project included design engineering to prevent flooding of housing units at two developments. Drainage analysis, collection design, coordination with municipality, and road and pavement repairs.

## **George W. Flanagan (MA 1-2) Road & Sidewalk Modernization Project Lowell Housing Authority**

Design of new roadways and sidewalks throughout existing development. Full depth pavement reconstruction design via milling and recycling (no utility work). New concrete sidewalks, crosswalks and full ADA compliance throughout. New landscape improvements to beautify existing site at select locations. Roadway design included full drainage design, grading, and profiles. Street acceptance plans also provided. Coordination with City of Lowell also needed for reconstruction of adjacent City streets as part of this LHA project. Construction Management.

## **Miscellaneous Site Improvements & New Parking Project Dewey G. Archambault Towers (MA 1-6) & North Common Village (MA 1-1) Lowell Housing Authority**

Reconstruction and expansion of 2 existing parking lots at Archambault Towers, ADA compliance, new walkways, new flagpole, drainage design. Replacement of extensive site bollards and site furniture throughout large area of North Common Village. Construction Management.

## **Stormwater Runoff Mitigation Project Colonial Drive (667-2) and Lake Terrace (667-1) Northbridge Housing Authority and Mass. Department of Housing & Community Development (DHCD)**

Stormwater analysis, watershed evaluation, and design of new site grading and stormwater intercept surface features to prevent flooding of both developments. New rip rap swales and site grading required to eliminate flooding of walkways, tenant areas, and basements. Construction Management.

## **Handicap Parking Improvements Project Oakhurst Development (667-1 & 667-2) Attleboro Housing Authority and Mass. Department of Housing & Community Development (DHCD)**

Re-design, reconstruction and expansion of existing parking areas so that development could provide ADA parking. In many cases parking areas were expanded and reconstructed to allow for ADA compliance. Drainage, parking lot design and minor roadway design. Designed new shelter for dumpsters. Construction Management.

## **General Site Improvements Project Howe Village (667-1 & 667-2) Spencer Housing Authority and Mass. Department of Housing & Community Development (DHCD)**

General site improvements project included stormwater analysis and mitigation design to prevent flooding of tenant areas, new parking design, ADA compliance, full reconstruction of walkways throughout expansive site, design of outdoor patio re-surfacing to improve traction resistance for tenants and barrier removal at walkways to reduce tripping opportunities for elderly residents. Construction management.

## **Sidewalk, Roadway, Parking, Drainage & Site Aesthetic Improvements Project Bluefield Village (667-1 & 667-2) New Bedford Housing Authority and Mass. Department of Housing & Community Development (DHCD)**

General site improvements project included design of new roadways and sidewalks throughout this large 160 unit 1950's era housing development. Fifteen (15) acre site located in the heart of the City of New Bedford required intricate balance between new road (civil) improvements and salvaging of the site's large, majestic, and characteristic beechwood trees which line all of the neighborhood's main streets (over 50 years old!). For drainage purposes, the profile of the entire site at each building were raised, requiring significant re-grading and re-design of the entire site.

**CRAIG R. MILLER, PE**  
*(continued)*

Design of abutting city roadways was also included. Work required analysis of ADA compliance for the entire site as these extensive pedestrian circulation areas were rehabilitated and updated.

**Playground Re-Construction & Enhancements**

**Watts Street Playground & Fitzpatrick / Prattville Apartments Playground**

**City of Chelsea & Chelsea Housing Authority**

Project involved total re-design and updating of existing playgrounds that are shared by the City of Chelsea but located on Chelsea Housing Authority developments. Joint access of each site meant heavy use of the new playground. Inner city location required that durable and vandal resistant play structures and site design be employed. Special attention to better function, orientation, location, visibility, security, attractiveness and desirability was included in the design of each heavily used site. Coordination with residents, dual clients, and abutters was required at all stages of the design.

**Parking, Roadway and Handicap Ramp Improvements Project**

**Hope Street (689-1)**

**North Attleborough Housing Authority and Mass. Department of Housing & Community Development (DHCD)**

Roadway reconstruction design to improve emergency service access to entire development, new ADA parking stalls at each unit throughout, new parking lot design, drainage analysis & design, permitting. Construction management.

**Road & Sidewalk Reconstruction and New Parking Project**

**Nemasket Apartments (667-1 & 667-2)**

**Middleborough Housing Authority and Mass. Department of Housing & Community Development (DHCD)**

Roadway and sidewalk reconstruction design via milling & recycling throughout. ADA compliance, new parking design, drainage analysis & design. Construction Management.

**DHCD Statewide Engineering & Landscape Architecture Services**

**Various Housing Authority Locations Statewide**

Working in an on-call basis over a 2 year period, this project involves providing an entire range of civil engineering, site design, and site enhancement (beautification) services to Local Housing Authorities located throughout the Commonwealth of Massachusetts. Services available to DHCD from Waterfield Design include design of roadways, walkways, sidewalks, overall ADA compliance and Universal Design, sanitary sewer system design & repair, stormwater drainage improvements, parking, and all aspects of landscape architecture, etc. Services provided thus far include on-site sanitary sewer improvements, expansion, permitting, and code compliance at the **Wilmington Housing Authority**, the **Dennis Housing Authority**, and the **Scituate Housing Authority**.

**STREETSCAPE REVITALIZATION, SIDEWALKS AND ROADWAY DESIGN/CONSTRUCTION**

**Merchant's Way Streetscape, Southeastern Regional Planning and Economic Development District (SRPEDD), Town of Wareham, Massachusetts**

Project Director for master planning of new coastal commercial, recreational, and transportation hub. Project involved meetings with Town department heads, boards and commissions, business and property owners, and the general public. Conducted extensive studies of vehicular and pedestrian circulation options and coordinated with the GATRA transportation authority to develop plans for a regional bus station. Developed presentation plans and street level renderings to inspire public support for design and construction of the project.

**Gloucester Main Street Sidewalk Improvements – 3 Separate Design & Construction Contracts  
Community Development Department, City of Gloucester, Massachusetts**

Project Director for each of the 3 separate design and construction contracts that were successfully completed for this \$2 million roadway, sidewalk, ADA, and community development effort. Project involved extensive consensus building among diverse stakeholders in dense urban Main Street environment. New road & streetscape design and construction management for 1 mile stretch of roadway located in the heart of the city's downtown central business district core. Project required proper treatment for historic setting, pedestrian safety, image building, and communication between diverse client and abutter constituencies.

**Cohasset Village Infrastructure and Streetscape Improvements,  
Cohasset, Massachusetts.**

**CRAIG R. MILLER, PE**  
*(continued)*

Project Director for the design and coordination of several projects within the historic downtown Village, this complex project includes full reconstruction of infrastructure including all surface features of streets, sidewalks and curbs; electric, telephone and cable undergrounding; St. Stephens sidewalk expansion involving ledge removal; drainage and flood control; water main and gas line replacement; and Greenbush Commuter Rail Expansion Mitigation. Duties include design and management of drawing production, budget management, presentations for Town officials and public hearings, coordination with numerous consultants and special interest groups within the Town.

**Conway Downtown Streetscape Improvement Project Town of Conway,  
Conway, Massachusetts**

Project Director for streetscape improvements through the historic core of Conway. The streetscape links town fields to the historic Burkeville Covered Bridge through a 1.3 mile corridor of streetscape and new walkways. With the Town's Streetscape Design Committee we created unique signs for entering the Town and new Town Green. Close coordination with the Massachusetts Highway Department (MHD) yielded a successful enhancement program that could be built together with two MHD projects, the resurfacing of Route 116 and the renovation of the covered bridge. Requirements for MHD ISTEA enhancement funding, the local and State Historic Commissions, and the Conservation Commission were also a large part of the project.

**Somerville Avenue Streetscape, Somerville, Massachusetts  
City of Somerville, Office of Housing and Community Development**

Project Director for improvements to Somerville Avenue, a portion of the historic "Milk Row" boulevard that travels through Union Square. This project is the first phase of a recently completed Revitalization study and transportation plan for the entire Union Square economic district. The streetscape design will economize and re-direct vehicular traffic into marked lanes, widen and improve sidewalks, add much needed street furnishings and opportunities for historic interpretation and public art, while increasing the health and number of street trees.

**Jackson Road Gateway, MassDevelopment, Devens, Massachusetts**

Project Director for design of a new gateway and entrance drive for the emerging Devens community. This project exemplifies a creative and inventive design approach to an environmentally sensitive landscape. The design emphasized a place-based identity by incorporating the area's natural features and highlighting historic elements of the past US Military base. This approach helped us meet goals for a cost-effective and low maintenance design by utilizing native plantings and elegant landscape structures and signage of natural stone and wood.

**Attleboro Phase II Streetscape Improvements, GATRA and the City of Attleboro, Attleboro, Massachusetts**

Principal-in-charge for the revitalization of downtown Attleboro. Translated the community goals of a more pedestrian friendly downtown that supports new and existing business, into sidewalk and crosswalk accent paving, curb extensions to shorten roadway crossings and street trees set in decorative tree grates with up-lighting. Using state of the art LED lighting, the historic train station underpasses and granite block arches were highlighted with curved rays of blue light and subtle washes of white light which will tie the commuter rail station to the core of the City at night. Private partnerships were extensively explored to incorporate elements which strengthened streetscape opportunities.

**Dennisport Revitalization Master Plan  
Village of Dennisport & The Dennisport Revitalization Committee  
Dennis, Massachusetts**

Project Director for a master planning project focusing on the central business district of the Village of Dennisport in the Town of Dennis, Cape Cod Massachusetts. Working with the Dennisport Revitalization Committee, the Master Plan document outlined the vision for the village core including enhancements to the streetscape, traffic safety recommendations and strategies for securing funding for final design and construction.

**Merrimack Street Reconstruction Project, Haverhill, Massachusetts  
City of Haverhill / Massachusetts Highway Department**

Resident engineer for full depth reconstruction of 1.2 miles of roadway located in the heart of the city's Central Business District. Project included installation of completely new roadway utilities including new connections to each business and residence, roadway excavation and paving, and storm water and waste water separation. Responsibilities included daily monitoring of contractor compliance with contract documents, daily record keeping, recording of pay quantities and payment execution, project schedule, public liaison, coordination of contractor activities with city, state

**CRAIG R. MILLER, PE**  
*(continued)*

and federal project personnel, and the design and issuance of field change sketches where necessary. Project value \$1.6 million. (Reynolds Bros., Inc. served as general contractor for the project.) *As a result of Mr. Miller's involvement, saved City an estimated \$80,000 from potential contractor claims.*

**MASS TRANSIT – SIDEWALKS, ADA COMPLIANCY AND PARKING**

**Cape Ann Intermodal Center Feasibility Study (CATA)**

**Cape Ann Transportation Authority, Gloucester, Massachusetts**

Project Director for site analysis and schematic design implementation possibilities for proposed new CATA operations and maintenance facility. Project involved engineering evaluation of possible locations, facility size, and coordination elements determination with the planned adjacent MBTA Commuter Rail Station. Combination of CATA bus facility with MBTA commuter rail station made this an exercise in intermodal transit planning and preliminary design.

**Mansfield Intermodal Station Project**

**Greater Attleboro-Taunton Regional Transit Authority (GATRA), Massachusetts Bay Transportation Authority (MBTA) - Mansfield, Massachusetts**

Assistant Project Manager for design of the largest intermodal commuter rail station within the MBTA system outside of the City of Boston. Planned 1,600 car parking facility is combined with commuter rail station for significant suburban intermodal facility. Responsible for all aspects of the civil design, structural design, and assistant project management. Project Manager for over 10 years for the planning and community approval process at this challenging residential location. Also will be responsible for construction phase services.

**North Billerica Intermodal Station Project (LRTA)**

**Lowell Regional Transit Authority, Lowell, Massachusetts**

Project Manager for highly successful suburban Intermodal Center located just outside City of Lowell limits. \$2.8 million project involved new parking, LRTA bus stops, commuter rail station construction, ADA access improvements, and the historic restoration of 1830's era former station house. Project won Massachusetts Historic Preservation Award for successful adaptive re-use and restoration of the project. Project became the cornerstone of the LRTA's new initiatives in improving transit in the region. Responsible for construction management and technical guidance.

**Lowell Trolley Extension Project, Lowell, Massachusetts**

**United States Department of the Interior (National Park Service), City of Lowell**

Intermodal project involves significant "Transportation Master Planning" and Engineering Analysis in addition to various urban planning issues. Project will develop and new *entire fixed rail system* within City of Lowell Central Business District to reduce auto congestion and make better use of existing city infrastructure elements (parking garages, etc.) New Light Rail system will connect with existing National Park Service exhibit trolley. Project is in the planning stages and our efforts have been instrumental to its progress to date. Project also involves substantial consensus building among all potential stakeholders in the region and the coordination of several proponents including the National Park Service, Lowell Regional Transit Authority, City of Lowell, Northern Middlesex Council of Governments, Massachusetts Highway Department and Federal Transit Administration.

**North Station to South Station Rail Link Feasibility Study, Boston, Massachusetts**

**Federal Transit Administration, Washington, D.C.**

Project included the study of alternative planning options for the construction of a new underground commuter rail (and possibly freight) tunnel directly connecting Boston's North and South Stations. Tunnel alignments included those under Atlantic Avenue (current Central Artery alignment), under Congress Street, and out to Logan Airport and back.

**Multi Station Improvement Project, Attleboro, Mansfield, & South Attleboro, Massachusetts**

**Greater Attleboro-Taunton Regional Transit Authority / Massachusetts Bay Transportation Authority**

Served as Project Manager for GATRA to improve parking at three Commuter Rail Stations located in Mansfield, Attleboro & South Attleboro, Massachusetts. Project included: ADA Accessibility Upgrade, Station Building Improvements Design, General Station Area Improvements, Parking Expansion Planning & Schematic Design and

**CRAIG R. MILLER, PE**  
*(continued)*

Roadway Design. Managed construction of parking improvements at the Attleboro Station (Lorusso, Inc., general contractor).

**Park & Ride Transit Improvement Project, Phase III-A**  
**Massachusetts Bay Transportation Authority**

Served as Project Manager on the MBTA Park & Ride Transit Improvement Project, Phase III-A. Project included at-grade and multi-level parking facilities; canopies; handicapped access road and pedestrian bridge.

**Commuter Rail Maintenance Facility, Boston/Somerville, Massachusetts**  
**Massachusetts Bay Transportation Authority**

Project Manager during the design phase for all industrial equipment in this \$50 million state-of-the-art twelve (12) bay heavy railroad passenger and locomotive repair and maintenance facility. Completed in 1997, this sprawling 6 acre building had to be located in the heart of Boston's most congested railroad switching yard abutting the Charles River, Interstate 93, and Boston Sand & Gravel.

**North Station Transportation Center, Boston, Massachusetts**  
**Massachusetts Bay Transportation Authority**

Provided design engineering services during construction phase of this 5 level underground parking structure which later became the foundation for the new Fleet Center basketball, hockey, and multi-purpose arena.

**MUNICIPAL STORMWATER & SANITARY**

**Sanitary Sewer Separation & Drainage Improvement Project, Montague, Mass.**  
**Town of Montague, Massachusetts**

Project manager and lead designer for significant sewer separation project which includes stormwater improvements as well. Substantial grade changes make the drainage and sewer design challenging. Active urban and residential setting makes construction phasing crucial to project's success.

**Stormwater Runoff & Roadway Improvements, Lynn Woods Reservation**  
**City of Lynn & Massachusetts Department of Environmental Management (DEM)**

Project involved design engineering to prevent substantial erosion of gravel roadways in this 2,000 acre historic wooded wildlife and nature reservation. The Lynn Woods is the largest city owned reservation in the country and it suffers greatly from erosion of walkways and paths. Project involved significant drainage evaluation and design, stormwater collection system design, and roadway improvement design. Entire project needed to keep the natural integrity of the reservation intact.

**Regional Municipal Interceptor Project, Lowell, Massachusetts**  
**City of Lowell, Massachusetts**

On-site designer and resident engineering services for this \$ 90 million extensive sewer separation and treatment project. Project included full roadway reconstruction of streets and utility reconstruction where this new sewer transmission line was installed.



# JACOB MURRAY, PE, LEED AP

## Senior Civil Engineer

*Mr. Murray is an experienced Civil Engineer with expertise in all phases of civil engineering and infrastructure design from planning and conceptual development through all phases of design and into the construction phase.*

*Jacob has performed detailed design for roadways; utilities; site design; land development; sanitary system; stormwater management, modeling, and mitigation. He has wide experience in permitting and has guided many civil projects through complex state and local processes successfully.*

*Mr. Murray's greatest abilities are found in his extensive site, sanitary sewage and stormwater management design.*

### EDUCATION

Geneva College, Beaver Falls, Pennsylvania  
Bachelor of Science, Civil Engineering

### PROFESSIONAL REGISTRATIONS

Registered Professional Engineer, Massachusetts No. 47,350  
Certified Soil Evaluator, Massachusetts No. SE2837

### NOTEWORTHY PROJECTS INCLUDE

#### **600/800 Federal Street Leggat McCall Properties, LLC Andover, MA**

Project Engineer for site improvements for building renovation and expansion. Scope of work included ADA compliant parking, site grading, underground utilities expansion and reconfiguration, stormwater system design including catch basins, suspended solid removal systems, underground infiltration chambers and detention ponds for five separate areas of the site.

#### **30 Shattuck Road The Hanover Company Andover, MA**

Project Engineer for site improvements for design and permitting of five new residential buildings, five detached garage buildings, and a club house. Scope of work included underground utilities expansion and reconfiguration, sanitary sewer capacity study, stormwater system design including catch basins, suspended solid removal systems, underground infiltration chambers and wet basins.

#### **36 River Street TC Saracen LLC Waltham, MA**

Project Engineer for site improvements for design and permitting of residential apartment building. Scope of work included underground utilities expansion and reconfiguration, stormwater system design including catch basins, suspended solid removal systems, underground flood storage chambers.

#### **357 Main Street Monarch Homes, LLC, Woburn, MA**

Project Manager and Engineer for site improvements for Alzheimer patient facility building. Scope of work included ADA compliant parking, sidewalks and building entrances, site grading, underground utilities expansion and reconfiguration, stormwater system design including catch basins, suspended solid removal systems, underground infiltration chambers.

#### **Cathea Street & Washington Avenue Apartments**

##### **Stoneham Housing Authority / Abacus Architects, Stoneham, MA**

Project Engineer for site improvements for building renovation and expansion and creation of a family accessible facility. Scope of work included ADA compliant parking, sidewalks and building entrances, site grading, protection of underground utilities, stormwater updates including infiltration chambers and internal circulation system reconfiguration and updates.

#### **Old Colony Apartments East 9<sup>th</sup> Avenue Boston Housing Authority, Boston, MA**

Project Manager and Engineer for site improvements for courtyard renovation. Scope of work included ADA compliant parking, sidewalks and building entrances, site grading, protection of underground utilities, dumpster layouts and design, curb cuts, and traffic circulation pattern updates.

#### **Franklin Field Stratton Street Boston Housing Authority, Boston, MA**

Project Manager and Engineer for site improvements for sidewalk and road renovations. Scope of work included ADA compliant sidewalks and building entrances, site grading, protection of underground utilities.

#### **Providence Street & North Street**

##### **Worcester Housing Authority, Worcester, MA**

# JACOB MURRAY, PE LEED AP

Project Civil Engineer for site improvements and permitting at two sites with existing eroded slopes and inefficient stormwater systems which created unsightly ponding and restricted site use by residents. A full stormwater infrastructure and site walkway and patio redesign created useable, accessible and aesthetic areas for families to enjoy which included both private patios and common spaces that utilized terraced seatwalls to accommodate the sloping terrain. Extensive landscaping, new dumpster storage areas, parking and roadway entrances were also improved to provide safer and more efficient use of the limited space.

## **Mystic View Apartments Playground Renovations**

### **Somerville Housing Authority / HUD, Winter Hill, Somerville, Massachusetts**

Project Engineer for playground and general site plan improvements to this 215 unit Federal family housing development. Project involved upgrading of the ADA access to the site, replacement of aging play equipment with new, safer, age appropriate elements, enhancement of the fall zones and fall zone materials, water play area, fencing, and a raised intersection to safely connect the two playground sites.

## **Mystic River Site Improvements**

### **Somerville Housing Authority / DHCD, Somerville, Massachusetts**

Project Engineer for a 240 unit family (state) development located in a dense urban area in the heart of Somerville. Mystic River directly abuts a 215 unit Federal family housing development and also serves as the SHA's main administrative campus headquarters, including a vibrant community center. It abuts several major highways and mass transit, making it a very active mixed-use area. This project transformed the entire 11 acre site- functionally, visually and socially- through creative site improvements. A series of dynamic courtyards and a completely renovated open space plan and playground design was created to realize a 600% increase in open, landscaped and recreational space. The playground area doubled in size and included a waterspray area, colorful play equipment on new synthetic surfacing and plentiful seating. Resident parking was increased and a strong pedestrian circulation system with fully accessible entries to buildings and a centralized raised intersection for traffic calming was created. A durable family of seatwalls, address piers and entry signs were complemented with modern site lighting, and a rich and dynamic palette of plantings.

## **Forest Street, Arlington, Massachusetts**

Project manager and lead design engineer for reconstruction of 0.5 miles of collector roadway located in a major residential neighborhood in the town. Project included design of a completely new roadway and sidewalk alignment, profile and cross-sections and associated roadway excavation and paving. As the project developed it was determined that the raising and lowering the intersections with seven side streets could be improved, but only while maintaining the existing stormwater system. The sidewalks and ramps were designed towards ADA compliance.

## **Wilson Farm Subdivision, Spencer, Massachusetts**

Technical engineer for revising the multi-lot subdivision. This project involved responding to town and state revision requests to modify the proposed entrance way, infiltration stormwater system, sewage disposal system layout and utilities. A turning radius and automobile light direction study was conducted to determine the effects of the proposed residential road on the existing residential dwellings in the community. The stormwater system consisted of specialized Stormceptor catch basins which would separate the oils and greases from the stormwater and then send the water into a detention basin where any residual solids were settled out. The detention area was modified to work around the existing wetlands. Likewise on-site sewage disposal systems were located in such away to most economically accommodate the proposed dwellings while avoiding sensitive wetland and other environmental areas.

## **Lattof Lane Subdivision, Rockport, Massachusetts**

Technical engineer for revising the sanitary sewer, water and stormwater layouts for the twelve lot subdivision. This project involved responding to town and state revision requests to modify the proposed utility layouts for the subdivision. The proposed sewer line needed to be modified to meet the town's requirements for the modified road layout. The gravity fed sewer line needed to keep the existing pitch while maintaining the appropriate amount of ground cover.

## **Boston College, Chestnut Hill, Massachusetts**

### **Stormwater Design & Analysis**

Project Manager and technical engineer for the design of an overflow storage chamber situated outside of the College's hockey arena to prevent overflow flooding during intense storm events. This project was one of the projects which were recommended to the college in the Stormwater Analysis phase of Master Planning. This effort required implementing a site specific stormwater retention area to trap and hold flooding stormwater during significant storm events. This storage area removes the necessity of costly man hours spent sandbagging the entrance to the arena to prevent floodwater from inundating the complex.

# JACOB MURRAY, PE LEED AP

## **Boston College, Chestnut Hill, Brighton, and Boston, Massachusetts**

### **Stormwater Analysis & Master Planning**

Lead engineer for the analysis, planning, and design to identify and resolve massive and chronic campus-wide stormwater flooding issues. This project involved reconciling incredibly complex existing drainage infrastructure, revising campus-wide mapping, and the creation of a state-of-the-art dynamic stormwater model for Upper, Middle, and Lower campuses (nearly 120 acres). Once the engineering model was completed, it was reconciled against known flooding events. Analysis of defective conditions in surrounding infrastructure elements was also performed. The goal of this critical project is to use stormwater needs as the lens through which all future planning and development objectives will be managed and pursued. This effort required our insight into how campus development & planning goals could be met or adjusted under these new engineering-related influences.

## **Essex Park Drive Subdivision**

### **Essex, Massachusetts**

Technical engineer for designing grading, road and lot layout for a twenty lot subdivision. This project involved determining and designing towards road and lot layout and grading requirements and sewage disposal standards to comply with local and state regulations. Taking the initial survey and septic test pit data Mr. Murray laid out the lots and roads in a way that could produce the most aesthetic results while meeting the developer and owners stated needs. During process Mr. Murray was mindful of the environmentally sensitive nature of the site given its proximity to wetlands and the local and state regulations governing the locations and set backs to all dwelling and underground subsurface sanitary sewage disposal systems.

## **Residential Subdivision 98 Forest Road**

### **Salisbury, Massachusetts**

Technical engineer for grading and road layout, stormwater management and subsurface sanitary sewage disposal system designs for six lot subdivision. This project involved determining and designing towards road layout and grading requirements and sewage disposal standards to comply with local and state regulations. Taking the initial survey and septic test pit data Mr. Murray laid out the lots and road in a way that could produce the most aesthetic results while meeting the developer and owners stated needs. During process Mr. Murray was mindful of the environmentally sensitive nature of the site given its proximity to wetlands and the local and state regulations governing the locations and set backs to all dwelling and underground subsurface sanitary sewage disposal systems.

## **Sturbridge Recreational Fields**

### **Athletic Fields Planning, Engineering, and Design**

#### **Sturbridge, Massachusetts**

Project Engineer/ Project Manager for a new sports complex project that creates a diverse 'Family Recreation Destination' – attractive for members of the family to spend quality time together while their family's student athlete participates in the numerous organized athletic events. Toward this end, we added playgrounds, a concession stand, bathrooms, bocce courts, basketball courts, picnic areas, a linear stonedust walking trail and compelling connections to the abutting natural environment.

## **Bradley School Yard Initiative, Boston, Massachusetts**

Civil Engineer during this project. Bradley School Yard Initiative is an outdoor classroom sponsored by the Boston Foundation. The classroom featured carefully selected trees and plants, boulders and logs that create habitats for bugs and other small creatures, and quiet sitting areas. Access to the classroom included engineered of walls, ramps, and walkways throughout the steep site conditions. Mr. Murray provided grading and stormwater tie in support to allow the proposed layout changes to take place without causing a disturbance to the existing drainage situation and taking the construction opportunity to improve the site's overall stormwater flow and treatment.

## **McEvoy Field Renovation, North Andover, MA**

Project Engineer for the renovation of an existing recreational facility that includes a number of youth softball and soccer fields in dire need of underdrainage and irrigation. Completed site survey, conducted soil tests to determine design of new facilities and developed stormwater report and SWPPP for site plan approval process.

# JACOB MURRAY, PE LEED AP

## **Winchester Soccer Club Athletic Fields Planning, Engineering and Design Winchester, Massachusetts**

Project Engineer for providing project technical due diligence and feasibility, helping the WSC determine if their goals for this site can be achieved given the host of technical engineering, permitting, and design challenges. Responsible for project programming, land use evaluations, final design plans, and the securing of all local environmental and zoning permits.

**Dartmouth Sports Fields Feasibility Study and Schematic Plans**, Town of Dartmouth and Dartmouth Schools, MA  
Project Engineer for an in-depth study of Town, School and Youth Sports Association facilities in an effort to consolidate facilities and share resources between these entities affording greater cost efficiency for targeted improvements. Conducted soil testing to determine underdrainage and soil amendment needs and developed corresponding cost estimates.

**Brooks Park Improvements**, Harwich, MA  
Project Engineer for expansion and renovations to a historic park in the heart of the Village of Harwich. Developed schematic plans and cost estimates for stormwater infiltration for phased expansion of courts, playgrounds and facilities. Designs included the addition of a restroom/concession/storage building, outdoor iceskating rink / ice hockey / basketball court, additional pervious parking areas, and a loop trail system.

**Middlesex Canal Mill Pond, Billerica, Massachusetts**  
Civil Engineer during this project. The Middlesex Canal at the intersection of the Concord River has retained much of its original character and 19<sup>th</sup> Century atmosphere. As such it is the ideal location to highlight the canal and its economic and cultural significance to the Massachusetts landscape. The difficulty of any canal restoration is that being built along a body of water the design and layout of any restoration measures now have to meet stringent local and state water protection regulations. The engineering on this site then took on the complex form of permitting parking and canal access that both provide access to the restored canal while protecting the environmentally sensitive habitat.

## **Middlesex Canal Restoration Towns of Chelmsford, Billerica, Wilmington, Winchester; Cities of Woburn & Medford, Massachusetts**

Project Manager and technical engineer for program study of nineteen segments of the old Middlesex Canal and concept plans for two of these segments. This project involved identifying the areas of the canal where historical restoration would be viable and presenting a clear and concise cost estimated historical restoration analysis. Once the program study was complete two of the highest priority segments were identified and concept plans were developed showing the layout and features that would be incorporated into the restored sites.

## **Middlesex Canal Restoration Woburn, Massachusetts**

Project Manager and technical engineer for 25% design for walking and biking paths along a 0.5 mile segment of the canal. Project included laying out and grading a renovated canal walking path and laying out and grading a shared bike path over an existing railroad bed. The two paths were then linked together and connected to two town parking areas and a city sidewalk for easy bicycle and pedestrian access. Included in the design are incorporating environmentally sensitive construction techniques to revitalize the canal tow path and canal while being aware of the wetland and habitat that the canal has developed into during its years of neglect.

## **Maranatha Resorts, Cocke County, Tennessee**

Stormwater and Environmental Design Engineer for the seven public roads providing access to future luxury cabins at the base of the Smoky Mountains. Maranatha Resorts specializes in luxury cabins that provide modern amenities to those seeking a quiet getaway at the beautiful Smoky Mountains. In the process of subdividing and permitting the 106 acres partial two culverts were needed to cross the existing creeks on site. Mr. Murray designed and developed the details for these culverts according to the local and state regulations. Mr. Murray also created soil and erosion control plans for the site which accompanied the Aquatic Resource Alteration Permit. These plans included the stormwater drainage plans necessary to contain and transport the stormwater from the road both during and after construction. This included the design of drainage ditches, road crossing culvert, slope stabilization plantings, stone construction dikes, and silt fence and haybale locations all of which met or exceeded the state regulations for sediment control and containment.

## **James Lee Fox Farms, Pigeon Forge, Sevier County, Tennessee**

Environmental Design Engineer for the utility crossing of two streams for the development of a 103 acre subdivision in Pigeon

# JACOB MURRAY, PE LEED AP

Forge Tennessee. In order to provide sewer and other utilities to the James Lee Fox Farms subdivision the sewer lines needed to be laid under two existing full flowing rivers. Mr. Murray provided the design assistance through an Aquatic Resource Alteration Permit that assured that the river was crossed in such a manner as to limit the negative environmental impact of the construction. Where ever possible the most up to date jack-n-bore construction methods were designed for which could keep the stream flowing while laying the sewer lines beneath the river bed. This required careful planning and the appropriate sedimentation capturing methods to contain the solid filled water that is excavated during construction.

## **Hope for the Children of Haiti, Inc.**

### **Earthquake Relief Housing Design, Port-au-Prince, Haiti**

Provided land surveying and site design assistance (including site layout, grading, sanitary waste disposal design, stormwater analysis, flood mitigation, and rainfall capture) for the design of new 10 unit apartment building as part of the HFC Orphanage and School campus located in the Bolosse section of Port-au-Prince. Apartments are being built to provide new housing for staff at the orphanage who were displaced by the January 12 earthquake.

## **Forest Street, Arlington, Massachusetts**

Project manager and lead design engineer for reconstruction of 0.5 miles of collector roadway located in a major residential neighborhood in the town. Project included design of a completely new roadway and sidewalk alignment, profile and cross-sections and associated roadway excavation and paving. As the project developed it was determined that the raising and lowering the intersections with seven side streets could be improved, but only while maintaining the existing stormwater system. The sidewalks and ramps were designed towards ADA compliance.

## **Washington Street Revitalization, Canton, Massachusetts**

Civil Engineer during this project. The vision for the Revitalization of Washington Street was developed through a totally inclusive public process that spanned at least a six year period. The community goal of re-instilling the historic character of New England villages into the center of Canton translated into sidewalk and crosswalk accent paving, curb extensions to shorten road crossings, granite edged planters with a lush diversity of plants, a healthy variety of street trees, and period style furnishings that complemented the newly installed historic lights. The revitalization, which was funded by a MassHighway PWED grant, included traffic improvements to develop consistent travel lanes and parking, coordinate signal interconnections and make the downtown more pedestrian friendly.

## **Center for Balance, Gordon College, Wenham Massachusetts**

Civil Engineer during this project. The Center for Balance is a modern state of the art on educational building that was built to provide the infrastructure for a through training experience for the undergraduates and graduate degrees seekers in the physical therapy and medicine fields. As one of the Civil Engineers on the project Mr. Murray provided revised design revisions and construction specifications for contractors throughout the construction of the project.

# JOHN HART, RLA

## Senior Landscape Architect

*Mr. Hart is a Senior Landscape Architect and Project Manager. He has over 30 years of design, project management, and construction administration experience.*

*Mr. Hart has been responsible for all phases of project development for the public and private sector, from large-scale site analysis and master planning to site specific design, contract documentation, and construction phase services. His work has also included environmental permitting and public agency review and funding.*

*Mr. Hart's project work has focused on urban design and streetscapes; waterfront parks; parks and recreation projects; open space planning; and residential, commercial, and industrial development throughout the New England region.*

### **Bristol Community College New Science Building Site Improvements**

Lead landscape architect for landscape site design to support construction of a new 75,000 square foot science and technology. Site design included pedestrian access, drainage, landscape architecture, utility support, and integration of new building into the culture and aesthetic of the existing campus.

### **EDUCATION**

University of Massachusetts,  
Bachelor of Science, Landscape Architecture

Boston Architectural Center,  
Landscape Architectural Professional Development Seminars

### **PROFESSIONAL REGISTRATIONS**

Registered Landscape Architect, Massachusetts, No. 996  
Registered Landscape Architect, Rhode Island, No. 207

### **NOTEWORTHY PROJECTS INCLUDE**

#### **University of Rhode Island As-Needed Campus wide Landscape Architecture**

As project manager and lead landscape architect, led all aspects of this diverse 3 year assignment. Assisted client with initial project definition and scoping, conceptual design sketching and costing. When authorized, led the DD and CD production of bid documents. Assisted owner in all aspects of construction administration and review. Project involved development of student oriented open spaces, creation of new streetscape character and refinement of the university's brand within the built environment. Also responsible for enhancing the pedestrian environment around existing buildings.

#### **University of Massachusetts Lowell South Campus Phase I Site Improvements**

Project evaluated the 45 acre South Campus, home to the University's well regarded Nursing, Physical Therapy, Music, and Liberal Arts Colleges. The Phase I design and construction effort built the recommendations made by the Master Plan surrounding the Campus' main entrance, its aesthetic identity, its admissions facility, and its shuttle bus accessibility.

#### **Gordon Conwell Theological Seminary Student Union Outdoor Courtyard**

Lead landscape architect for concepts, DD, CD and CPS for development of new outdoor student commons as an extension of the seminary's main indoor student commons and cafeteria. Area also serves as key identifying feature and focal point for the main entrance for the campus' anchor academic building. Responsible for all aspects including lighting, signage, plantings, hardscape and pedestrian conveyances.

# **JOHN HART, RLA**

## **Senior Landscape Architect**

### **United States Naval War College - Strategic Maritime Research Center (McCarty-Little Hall) Department of the Navy, Newport, Rhode Island**

Lead landscape architect for site design effort to support construction of new state-of-the-art facility supporting the development of U.S. policy issues facing the nations national security interests worldwide. Site elements included parking, access, landscape aesthetics, and outdoor entrance elements.

### **Framingham State University - Linsley Hall Dormitory Renovation Massachusetts State College Building Authority (MSCBA)**

Lead landscape architect for site design for renovation to major dormitory facility. Site elements included access, circulation, utilities, outdoor seating areas, landscape architecture, and parking. Of particular note was the desire by the college to visually integrate the existing building more into the culture and atmosphere of the existing campus.

### **LaSalle University Connelly Library**

Lead landscape architect for site design for landscape improvements surrounding this signature existing building. As a campus located in an urban neighborhood of Philadelphia, special attention had to be given to the dual purpose of this section of the campus' border with the community.

### **University of Massachusetts Amherst Silvio O. Conte National Center for Polymer Research Building**

Lead landscape architect for site design for the development of this 162,000 square foot, \$60 million national showcase for excellence in polymer science and engineering. Located on the north side of this sprawling campus, the site design needed to accommodate a wide variety of conflicting issues arising out of the need to coordinate with each competing abutting use. Site elements included access, circulation, utilities, outdoor seating areas, landscape architecture, and parking.

### **John F. Kennedy Park Fall River, Massachusetts**

#### ***Project Manager***

**Client:** Massachusetts Department of Environmental Management

**Owner:** City of Fall River, Office of Economic Development

Project Manager as prime consultant for the park Master Plan and Phase I design and construction for the Massachusetts Olmsted Historic Landscape Preservation Program. The Phase I project of the master plan had a construction budget of \$900,000.

### **Warwick City Park Warwick, Rhode Island**

#### ***Project Manager***

**Client:** City of Warwick Recreation Department

**Owner:** City of Warwick, Rhode Island

Project Manager as prime consultant for 1.2 million park-wide Phase I and Phase II Open Space and Recreation Bond Fund projects for this 280 acre waterfront urban park. Phase I improvements included development of an athletic field complex with baseball, softball and multi-use play fields, parking facilities and bike path and pedestrian circulation. Phase II included a complete park entrance re-design, incorporation of public art, view shed enhancement and park area reclamation, vehicular circulation and parking, bike path expansion and re-design, and maintenance storage and office building facilities.

# **JOHN HART, RLA**

## **Senior Landscape Architect**

### **Central Artery D018A - Congress Street to Kneeland Street Surface Restoration**

**Boston, Massachusetts**

***Project Manager***

**Client:** Bechtel Parsons Brinkerhoff

**Owner:** Massachusetts Highway Department

Project Manager for the streetscape and surface restoration from Kneeland Street to Dewey Square in downtown Boston. The improvements included paving, planting, lighting and site amenities. The project require close coordination with other on-going improvement projects and the Central Artery Tunnel work. Chinatown Gateway Park, Leather District Park and Dewey Square Plaza were included as part of the project.

### **Providence Park and Playground Improvement Project**

**Providence, Rhode Island**

***Project Designer***

**Client:** City of Providence Recreation Department

**Owner:** City of Providence, Rhode Island

Project Designer as prime consultant for a city-wide park and playground improvement projects, from renovation through complete re-design and new park development.

### **MWRA Deer Island, Public Access Plan**

**Boston, Massachusetts**

**Client:** Malcom Pirnie

**Owner:** Massachusetts Water Resource Authority

Landscape Architect for the site planning and site design studies for a three mile long public waterfront promenade on Deer Island in Boston Harbor. Following the perimeter of the island this public access system includes bicycle and pedestrian pathways and look-out points which afford magnificent views of the Boston skyline. The pathways wind among earth forms sculpted to screen views of the Deer Island wastewater facility from the neighboring town of Winthrop. The landforms were planted with native coastal vegetation to restore the natural habitat and ecology.

### **Pease International Tradeport**

**Portsmouth, New Hampshire**

***Project Manager/Landscape Architect***

**Client:** Vanasse Hangan Brustlin, Inc.

**Owner:** Pease Tradeport Development Authority

Project Manager and Landscape Architect for the entrance Gateway and Phase 1 Infrastructure Improvements Project for the Pease Air Force Base Conversion. Design and coordination with the New Hampshire Department of Transportation and the Spaulding Turnpike Interchange Project for the tradeport gateway entrance. The project also included the development of a street tree Master Plan and preservation of existing vegetation.

### **Central Artery D009C - I-90/I-93 Interchange**

**Boston, Massachusetts**

**Client:** Bechtel Parsons Brinkerhoff

**Owner:** Massachusetts Highway Department

Project Manager and Senior Landscape Architect for design services relating to the South Bay Interchange I-90/I-93 highway and CA/T gateway surface restoration. Services included urban design and impact mitigation from preliminary design to implementation.



# **JOHN HART, RLA**

## **Senior Landscape Architect**

### **Chinatown Streetscape Boston, Massachusetts**

**Client:** Frederic R. Harris, Inc.

**Owner:** City of Boston Public Works Department

Project Manager for the implementation phase of the urban design streetscape in Boston's Chinatown. Renovations and enhancements included special granite pavers with engraved Chinese characters and a street sign and banner system welcoming visitors in both English and Chinese.

### **Adams Village Streetscape Boston, Massachusetts**

**Client:** City of Boston Public Works Department

Project Manager for the implementation phase of Adams Street streetscape improvements in Dorchester. The landscape architectural services included planning, urban design, construction documentation and construction phase services. Brick paving, street furniture, lighting, and street tree and container planting were among the site improvements.

# TIMOTHY WONG, LA

## Landscape Architect

*Mr. Wong has three years of experience in landscape design, planning, drawing, and 3D modeling. He has worked on a wide range of institutional, public, residential and commercial development projects, through initial concept planning to design, permitting, and construction stages.*

*A landscape designer with a background in geology and liberal arts study, his design goal is to merge programming, site history, landforms, horticulture, and ecological management into innovative landscape designs.*

*Mr. Wong has been working with the Waterfield Design Group for two years and has construction inspection and shop drawing review experience.*

### **EDUCATION**

Harvard University Graduate School of Design, Masters in Landscape Architecture

Harvard University, Bachelor of Arts in Earth & Planetary Sciences

### **PROFESSIONAL AFFILIATIONS**

American Society of Landscape Architects, Member

Boston Society of Landscape Architects, Member

Massachusetts Audubon Society, Member

### **PROFESSIONAL EXPERIENCE**

#### **Massachusetts Avenue Streetscape Revitalization, Arlington, Massachusetts**

Landscape Designer for over 1 mile of complex streetscape and urban downtown revitalization project, located in the heart of one of the most diverse roadway environments in Massachusetts. Involved in design for all streetscape elements. The revitalization, which was funded by MassHighway, included traffic improvements to develop consistent travel lanes and parking, coordinate signal interconnections and make the downtown more pedestrian friendly.

#### **Mt Pleasant and Laviscount Playgrounds, City of Boston Parks and Recreation, Roxbury, MA**

Landscape Designer for renovations of two key open spaces within densely populated urban neighborhoods. An extensive public process was essential in the successful design of these two spaces which include water features, playground re-surfacing, re-paving and playground equipment renovations to comply with the ADA. Responsible for playground and park design and detailing.

#### **City of Attleboro Phase II Streetscape Improvements, Greater Attleboro-Taunton Regional Transit Authority (GATRA) Attleboro, Massachusetts**

Landscape Designer for the revitalization of downtown Attleboro. Translated the community goals of a more pedestrian friendly downtown that supports new and existing business, into sidewalk and crosswalk accent paving, curb extensions to shorten roadway crossings and street trees set in decorative tree grates with up-lighting. Using state of the art LED lighting, the historic train station underpasses and granite block arches were highlighted with curved rays of blue light and subtle washes of white light which will tie the commuter rail station to the core of the City at night. Private partnerships were extensively explored to incorporate elements which strengthened streetscape opportunities. Responsible for streetscape and landscape design, detailing, grading and construction inspections.

#### **City of Attleboro DPW Yard Relocation and Master Planning, Greater Attleboro-Taunton Regional Transit Authority (GATRA)**

##### **Attleboro, Massachusetts**

Project Designer for relocation of a City DPW Yard and fueling depot to a former factory building site near downtown Attleboro. Close coordination with various city department heads to balance competing land use needs in a single design. Also, research and master planning was conducted for the possible conversion of the City composting yard and adjoining land to advanced windrow composting methods. Additional master planning research into technologies for anaerobic digestion of wastewater and commercial food waste to create electricity and fertilizer products. Responsible for precedent research, site layouts, creating graphic presentations to communicate research and design to the Mayor and other City officials, and incorporating client feedback into designs.

# **TIMOTHY WONG, LA**

## **(continued)**

### **Gordon Conwell Theological Seminary, Main Entrance Enhancements South Hamilton, Massachusetts**

Landscape Designer for reconstruction to the parking area and pedestrian approach for Gordon Conwell's main admissions, administration, student lounge, cafeteria, and dormitory building, located in the heart of its Upper Campus. Project created a new Identity for the main pedestrian entrance to their most highly utilized multi-use facility. Project included new lighting, landscape aesthetics, stonework, outdoor café areas, drainage, parking reconfiguration, ADA accessibility, and minor utility relocation.

### **Clark University Mid-Campus Streetscape / Boulevard, Worcester, Massachusetts**

Landscape Designer for the conversion of a City street at the eastern edge of the campus into a green pedestrian environment that functionally and aesthetically links the northeastern residential quad, main library and athletic center to the heart of campus. A dignified gateway entrance and pedestrian drop-off area will welcome campus users from the south and a new plaza will replace two large flights of stairs at the northern entrance for a completely barrier free access while providing a scenic overlook. Design was taken from master planning thru construction.

### **Winchester Soccer Club**

#### **Athletic Fields Planning, Engineering and Design**

#### **Winchester, Massachusetts**

Project Designer for civil engineering services for providing project technical due diligence and feasibility, helping the WSC determine if their goals for this site can be achieved given the host of technical engineering, permitting, and design challenges. Responsible for final design plans, and the securing of all local environmental and zoning permits.

### **Tri-Community Bikeway**

#### **Winchester, Woburn and Stoneham, Massachusetts**

Landscape Designer for this Congestion Mitigation and Air Quality funded MassHighway Project. Project included extensive public participation and outreach as the multi-use trail traverses through between Commuter Rail Transit Stations, historically sensitive downtowns, cemeteries, parks, schools and abandoned railroad corridors. Interpretive signage, gathering and sitting spaces, bike rack locations and a wide variety landscape functions were included.

### **Northern Baptist Theological Seminary Campus Master Plan**

#### **Lombard (Chicago), Illinois**

Project Designer for complete campus master plan and re-use study. Situated on 27 acres in the heart of one of the most lucrative retail and office/commercial districts in suburban Chicago, our study focuses also on the economic development capacity of the property and its potential as a long term annual source of revenue. As such, our work is both campus master planning, retail / commercial / mixed-use planning, and economic development consulting. Campus planning work accounts for all aspects of the institution's delivery of its higher educational product including student life, commuter accommodations, access, circulation, instructional spaces, maintenance, operations, and long term growth. Responsible for campus interviews, evaluating programmatic and spatial needs, site analysis, campus building layout, commercial development layout, and presentation graphics.

### **Princeton University, Holder and Hamilton Courtyards**

#### **Princeton, New Jersey**

Assistant Landscape Designer for paving design and tree plantings at two historic residential quad courtyards. Responsible for fine-scale brick and bluestone paving design and preparation of drawing sets.

*Project experience with Michael Van Valkenburgh Associates*

### **Lawrenceville School Circle Green**

#### **Lawrenceville, New Jersey**

Assistant Landscape Designer for design of a large campus green at a historic boarding school. Responsible for schematic design, landscape plan graphics, and 3D modeling of campus.

*Project experience with Michael Van Valkenburgh Associates*

# **BRIAN KNOWLES, PLS**

## **Land Surveyor**

*Mr. Knowles has 29 years of surveying experience including over 20 years as a Survey Chief and Manager. He has been involved with all aspects of land surveying for municipal, commercial, industrial, and residential projects, from field work to legal review to survey plan preparation.*

*As a Survey Manager, he has performed and been responsible for plan and deed research and the writing of legal descriptions of property areas. He has been responsible for zoning bylaws, subdivision regulations, and wetland by laws for both state and local government as they relate to surveying.*

*As a Survey Chief, Mr. Knowles has an expert knowledge of field surveying and is proficient with many types of survey equipment, surveying software, AutoCAD, and HydroCAD. He has managed field crews and the acquisition of field equipment and supplies.*

### **Camp Dennison Project – Georgetown, MA**

Lead surveyor in the boundary line change between the towns of Georgetown and Boxford. Coordinated meetings with Mass Highway Survey Department regarding survey and plan requirements in order to facilitate the change in the town boundaries.

### **Highfields Realty Corp - Salisbury, MA**

Survey crew to field locate delineated wetland line, site topography, existing buildings, perimeter, utility, and data accumulation surveys for 40 acres and 1500' of existing roadway. Prepared petitioners plan for land court submittal for boundary line determination, deed and plan research.

### **EDUCATION**

Southeastern Massachusetts University (UMass Dartmouth),  
Bachelor of Science in Engineering/Mathematics, 1988

### **PROFESSIONAL REGISTRATIONS**

Registered Professional Land Surveyor: Massachusetts # 39689 (1997)  
Connecticut # 70302 (2008)  
Maine # 228 (1996)  
OSHA Certification: # 001955025

### **PROFESSIONAL AFFILIATIONS**

Massachusetts Association of Land Surveyors and Civil Engineers  
Connecticut Association of Land Surveyors, Inc.

### **NOTEWORTHY PROJECTS INCLUDE:**

#### **CVS Sites – Massachusetts, Maine & NH**

Responsible for the perimeter, utility and data accumulation surveys for sites ranging in size from 2-5 acres and 1000-1500' of existing roadway. Prepared a Land Title Survey per ALTA survey standards and procedures for the above said properties. Worked with attorneys to meet closing deadlines. Wrote legal descriptions for boundary, easement and lease areas. Provided certified as-built survey and plan. Provided construction stakeout of foundation corners, column lines and column points.

#### **Lebanon Plaza – West Lebanon, NH**

Responsible for the research, perimeter, utility, and data accumulation surveys for 14 acres and 2500' of existing roadway and the location of wetland flags, low and high water line of the Mascoma River. Prepared a Land Title Survey per ALTA survey standards and procedures for the above said property.

#### **NorthPointe Village – Salisbury, MA**

Responsible for the research, perimeter, aerial, and data accumulation surveys for 64 acres and 3000' of existing roadway and the design and layout of 48 housing units under a comprehensive permit application. Attended Zoning and Conservation hearings during the year and obtained approvals. Prepared layout for design which included drainage, roadways, sewer and water. Prepared a Land Title Survey per ALTA survey standards and procedures for the above said property. Staked out roadway centerlines, drainage structures, and utilities of the proposed roadways.

# **BRIAN KNOWLES, PLS**

*(continued)*

## **Winchester Woods - Winchester, MA**

Responsible for aerial, data accumulation and boundary surveys for 8 acres of land along the Winchester-Woburn town line. Responsible for land court plans and documents. Coordinated the construction layout of the 16 proposed dwellings, and associated roadways. Prepared final road acceptance plans per Winchester DPW requirements, and the setting of permanent roadway bounds along the right-of-way limits.

## **Clark University – Worcester, MA**

Supervised survey crew to locate existing site features, and monumentation. Provided horizontal and vertical controls using GPS receiver. Surveyed spot grades to produce 2-foot contour intervals with required accuracy in order to provide an existing conditions plan.

## **Wilder Company - Canton, MA**

Supervised survey crew to locate existing site features of the Village Shops including pavement, curbing, signage, signalization, manholes/catch basins with inverts, pipe sizes, and flow direction, location of wetland flags, and drainage outflow in order to produce an existing conditions plan for design and future development.

## **Gershman Brown Crowley Inc. - Arlington, MA**

Supervised survey crew to field locate existing site features per ALTA/ACSM standards 1-18 and client's specific requirements in order to produce an ALTA Land Title Survey Plan. Provided field layout of foundation corners, column lines and points, with offsets.

## **Costco- Avon, MA**

Supervised survey crew to field locate existing site features of current Costco site and abutting property. Provided detailed survey of existing roadway intersection in order to provide an existing site survey for engineering design purposes.

## **Boys and Girls Club of America-Billerica, MA**

Supervised survey crew to locate boundary markers, existing site features including buildings, and pavements to produce a plan showing existing features, plus proposed addition. Field layout of building addition corners with offsets.

## **Captain Corners - Salisbury, MA**

Supervised survey crew to field locate existing site features, plus GPS control points to place boundary on Mass Coordinate system to produce a plan for planning board endorsement.

## **Smith Legacy Partners - Belmont, MA**

Survey crew to field locate county bounds along adjoining street, bounds along town street, in order to provide updated perimeter boundary plan for town council review, also provide legal description for discontinuance of a portion of roadway.

## **Second Generation Development - West Lebanon, NH**

Survey crew to field locate delineated wetland line, site topography, existing buildings, perimeter, utility, and data accumulation surveys for 14 acres and 2500' of existing roadway. The location of edge of bank flags, low and high water line of the Mascoma River. A Land Title Survey per ALTA survey standards and procedures for the above said property.

## **Dickinson Development - Woburn, MA**

Survey crew to field locate existing site features including drainage structures and inverts, drainage ditches and swales, plus buildings, pavements, signage in order to produce an existing conditions Survey Plan. Field layout of modified roadway centerline. As-built survey and plan showing erosion control, modified roadway improvements and drainage with invert data.

## **Gershman Brown Crowley Inc – Peabody, MA**

Survey crew to field locate existing site features per ALTA/ACSM standards 1-18 and client specific requirements, in order to produce an ALTA Land Title Survey Plan. Provided field layout of foundation corners with offsets, column lines, drainage structures, and stone pile locations. Prepared as-built survey and plan showing site improvements, utilities, and building location with offsets.

# SECTION 3

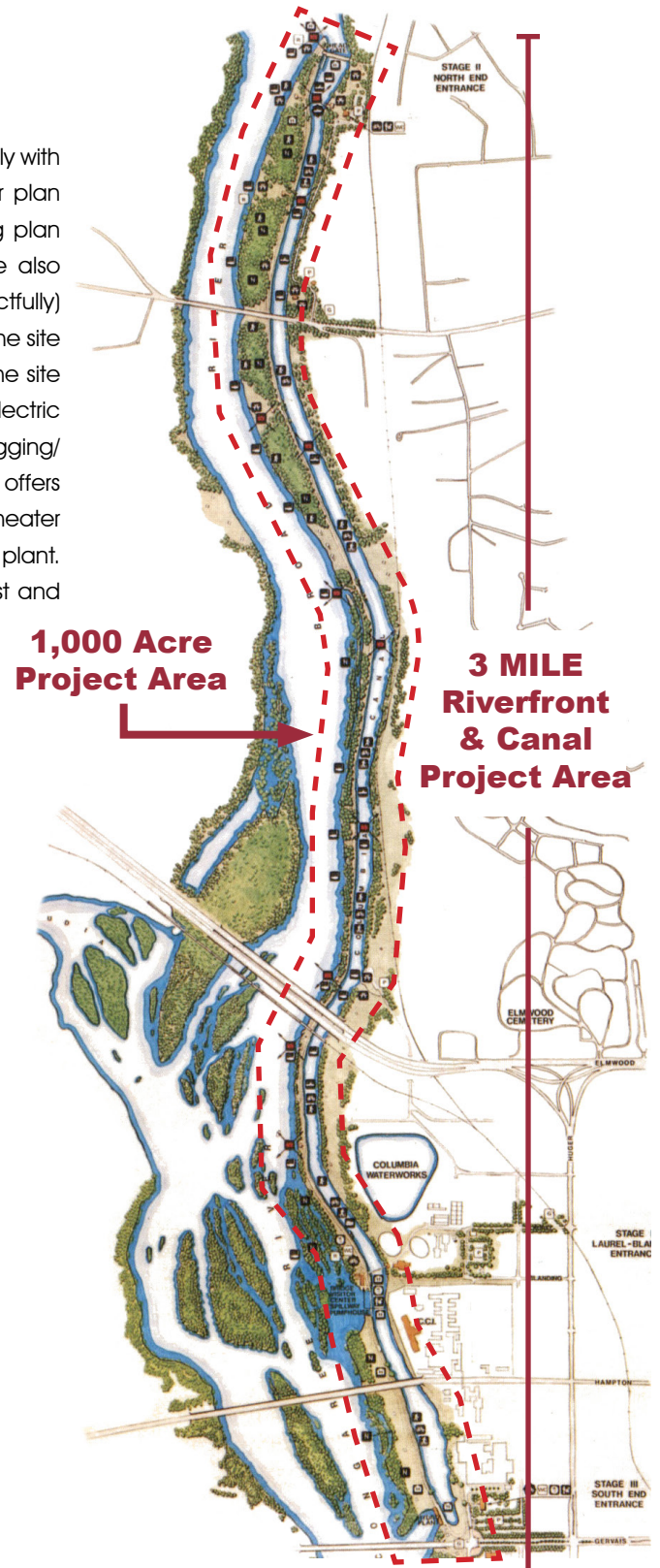
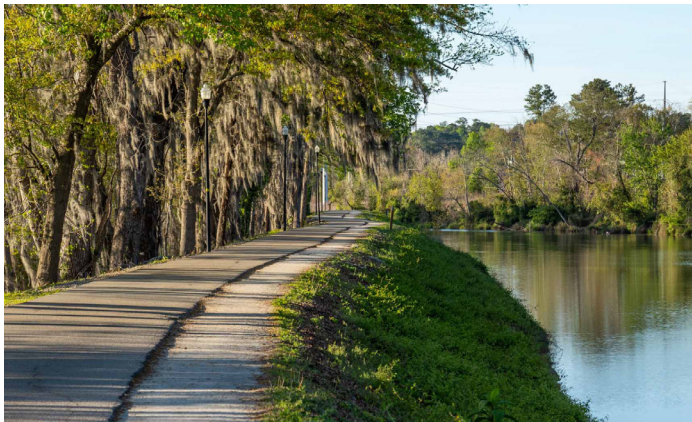
---

## SIMILAR PROJECT EXPERIENCE

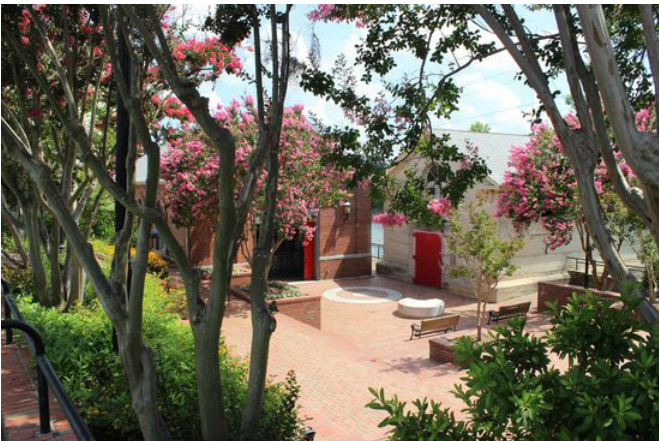
# Riverfront Park & Historic Columbia Canal

Master Plan & Park Design  
City of Columbia, South Carolina

Over a period of 4 years, Waterfield Design personnel worked closely with the City of Columbia to create a park and open space master plan for 1,000 acres of downtown historic riverfront land. The resulting plan created an urban **Visitors Center** and **Canal Heritage Park** while also creating a large network of access points and nature pathways (tactfully) throughout the 1,000 acre wildlife refuge. This 167-acre park was the site of the original waterworks for the City of Columbia. This was also the site of the world's first electrically operated textile mill and the hydroelectric plant, the oldest one in the state, is still operating. A popular jogging/walking trail runs two and one half miles along the linear park and offers wonderful views of the river. There is also a beautiful brick amphitheater as well as a self guided walkway by the old parts of the water plant. The park hosts several events annually such as Riverfest, Greekfest and several smaller concerts.



# Riverfront Park & Historic Columbia Canal



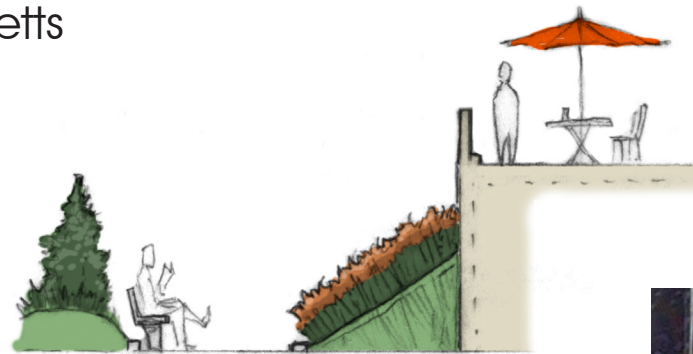


# Balfour Riverfront Park

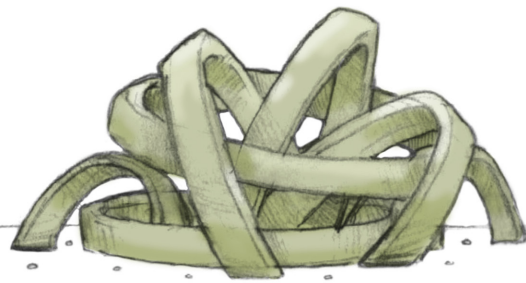
City of Attleboro, Massachusetts

Balfour Park is located on a former jewelry plant property in Attleboro- a city once known as the 'Jewelry Capital of the World'. It occupies a prime location on the bank of the Bungay River, and is located in the heart of the CBD area of Attleboro's downtown mill district.

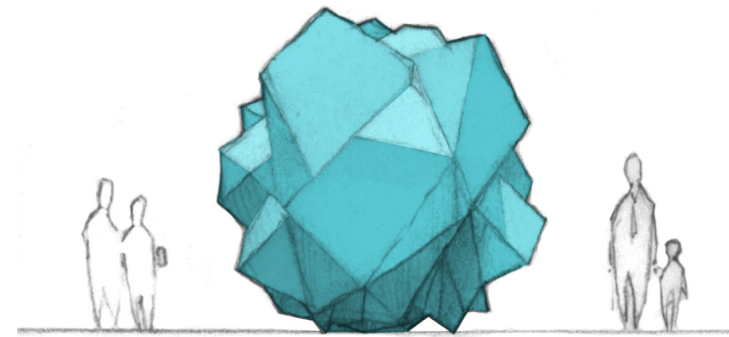
Drawing inspiration from Olmsted's 'Emerald Necklace' concept for Boston, Balfour Park was reenvisioned as part of Attleboro's own 'string of gems' connecting most of its major green spaces. Each section of the linear park would have a unique theme- the naturalized, dechannelized river; rocky terraces and multiterred playground; a great lawn; a raised overlook that connects to outdoor cafe seating. Landmark art pieces at the park entrances harken back to the site's (and the city's) glamorous history as the 'Jewelry City'.



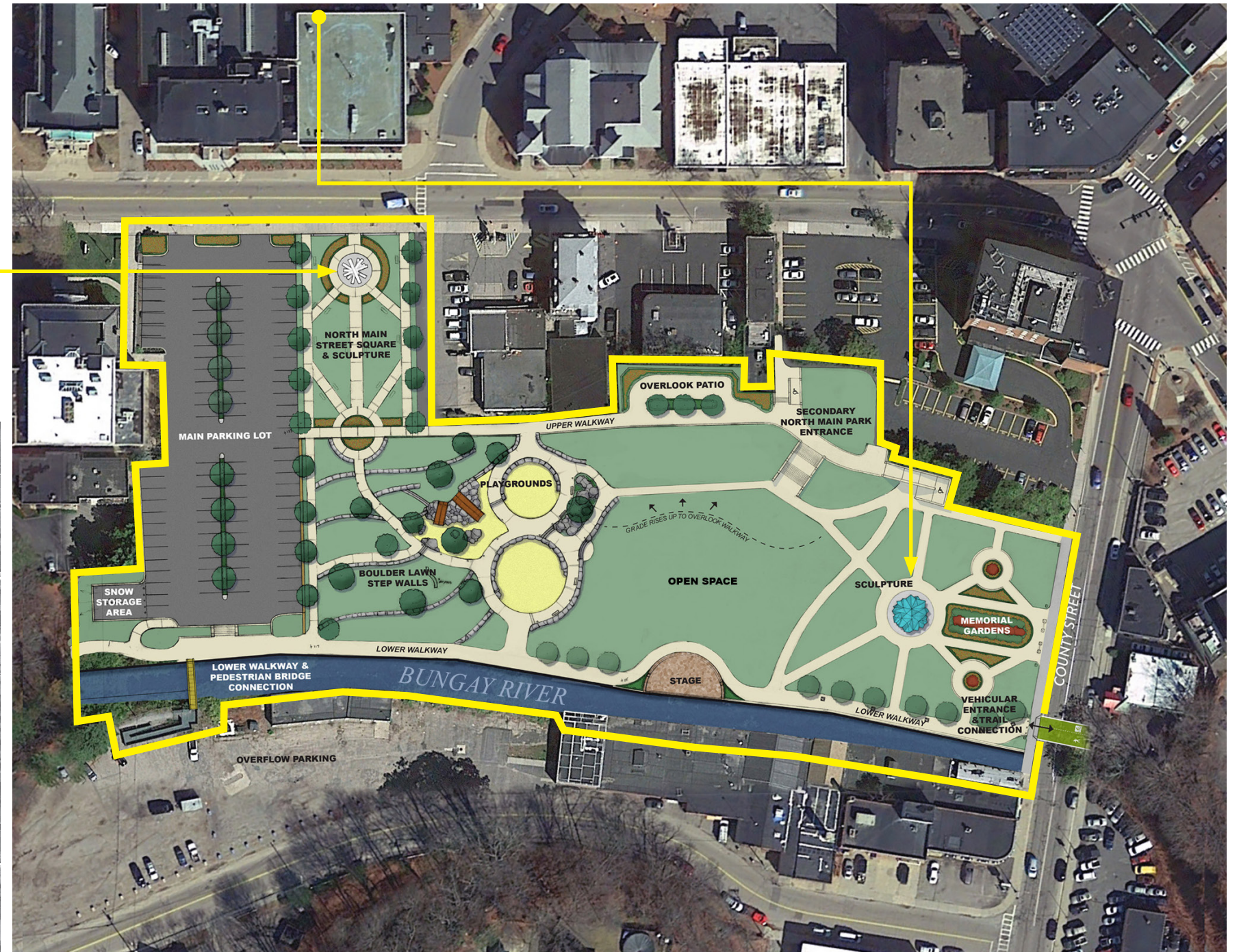
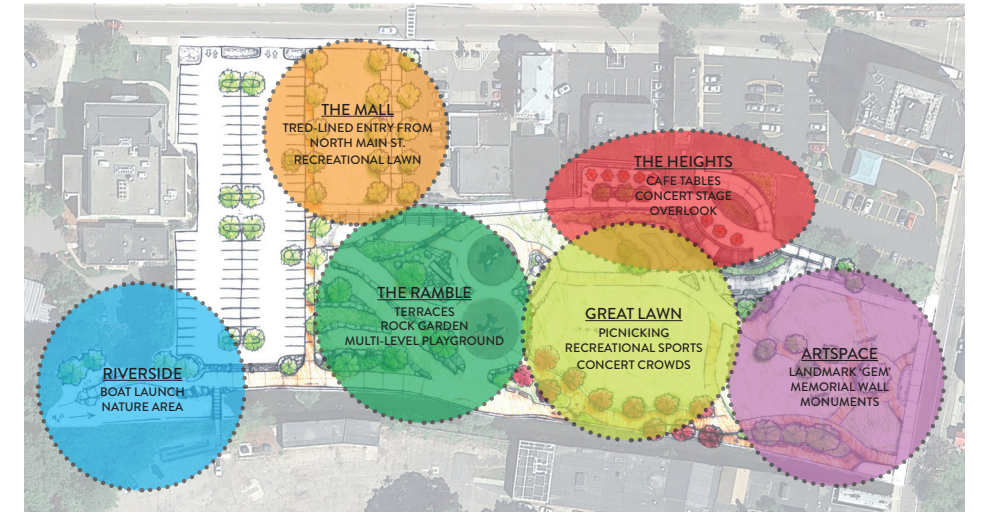
park overlooks



"The RINGS"  
North Gateway Entrance



"The GEM"  
South Gateway Entrance



Attleboro's own "Emerald Necklace"

# Cooke's Hollow Conservation Area & Mt. Pleasant Cemetery Expansion

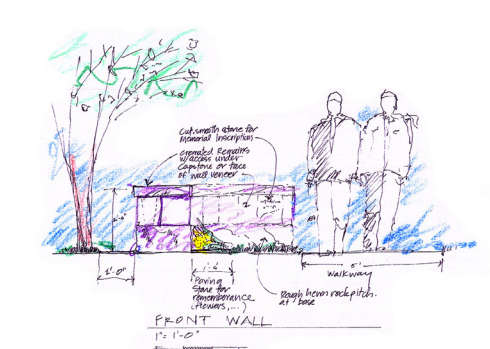
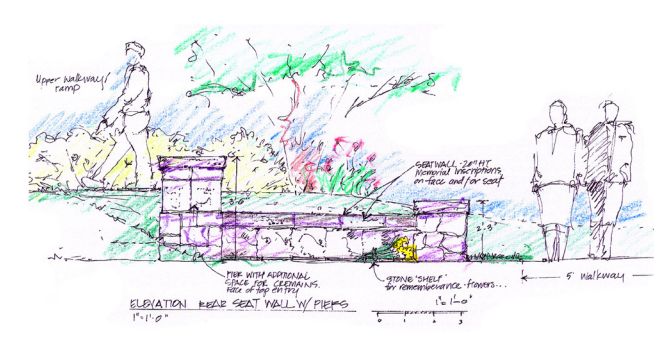
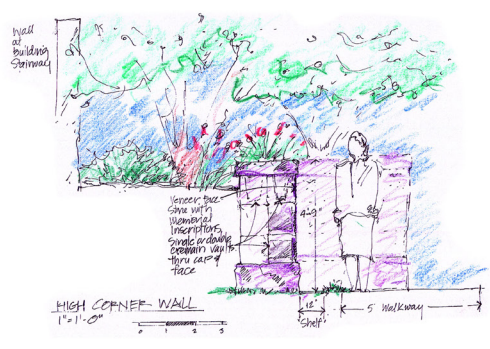
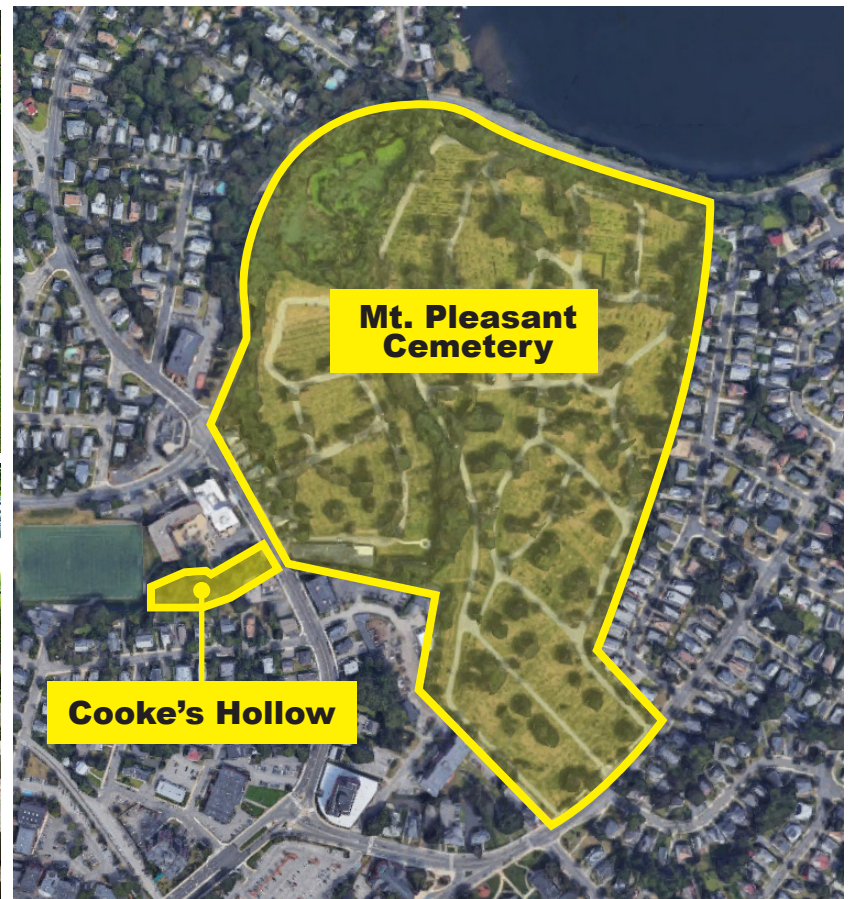
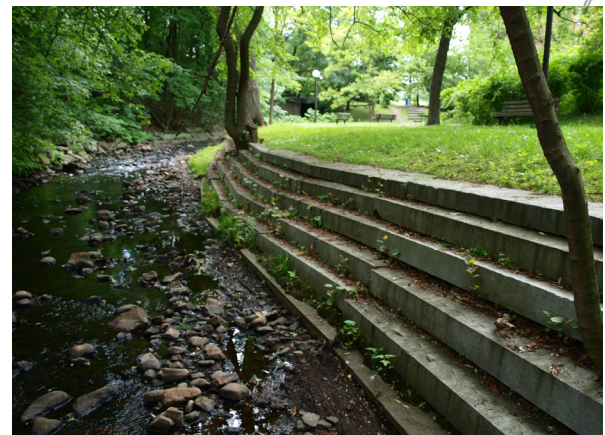
Master Plan, Design & Community Process  
Town of Arlington, Massachusetts

Named after Captain George Cooke, this historic area was the site of the first Mill that was constructed in (the area now known as) Cambridge, Arlington, and Lexington, dating back to 1637. This first Mill became the birthplace of modern day Arlington.

Waterfield Design hosted an extensive community visioning process, coordinating the input from several Town departments including Community Development, Planning, Engineering, Public Works, Conservation, the Cemetery Commission, the Historic Commission, the Police Department, the Arlington Housing Authority, and several independent public interest groups.

After successfully working to integrate input from this wide constituency, a Site Analysis was performed, creating 3 different Master Plan concepts for further discussion and refinement. The final product of this extensive study creates a final Master Plan for the re-development of Cooke's Hollow Park, including the following elements, to be constructed in a phased manner over several years:

- Reconditioned stream edges
- River overlooks
- ADA accessible walking paths
- Integration with adjacent athletic fields
- Passive park
- Removal of invasive plants
- Enhanced flood storage & stormwater management
- Restoration of native environment
- New park amenities
- New signage & period lighting
- Area dedicated to the burial of cremated remains
- Memorialization remembrance opportunities



Columbarium Conceptual Sketches

# Blackberry Farm / Blackberry Mountain Resort Development

## Land Use Planning & Development Feasibility Analysis

Walland, Tennessee (20 miles southeast of Knoxville)  
Client: Blackberry Farm Resort

Covering just over 5,200 acres, the Chilhowee Mountain tract (commonly known as the Three Sisters tract) is located less than 15 miles from the Great Smoky Mountain National Park. Tucked into the valley downhill from Chilhowee, Blackberry Farm Resort ranked as one of the top luxury small hotels in America by Zagat surveys.

The owners of Blackberry Farm hired WDG to evaluate 5,200 acres of pristine mountain land for use as a residential development extension of the elite brand of their nationally ranked hotel and spa.

Our company performed extensive environmental assessments. We identified the physical constraints that would impact the development of the property including topographic assessments, site development engineering feasibility, wetlands impacts, sun/solar studies, vehicle access, roadway construction, wastewater capacities, and water supply needs.

When our development assessment was complete, we prepared a Development Impact Report that also discussed the permitting and design strategy that would be needed for construction.

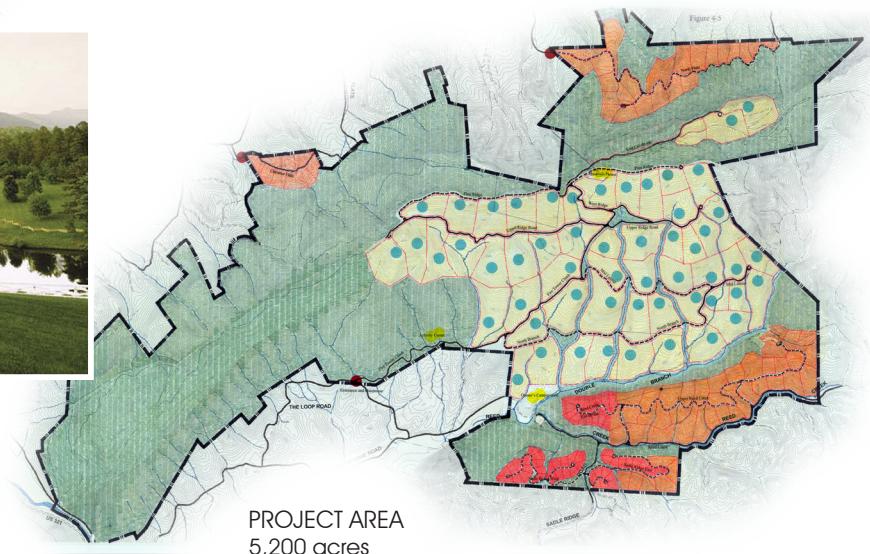


BLACKBERRY FARM



BLACKBERRY MOUNTAIN

- 5,200 acres
- 55 multi-million dollar single family house lots
- 2,500 acre conservation designation
- 25 miles of roadway
- Extensive Federal, state & county permitting

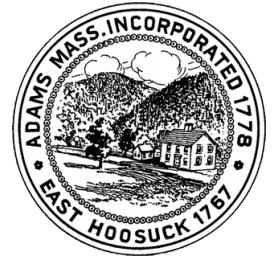


# Blackberry Farm / Blackberry Mountain Resort Development



# Adams Visitors Center Parking, Drainage, Riverfront Park & Trail Enhancements

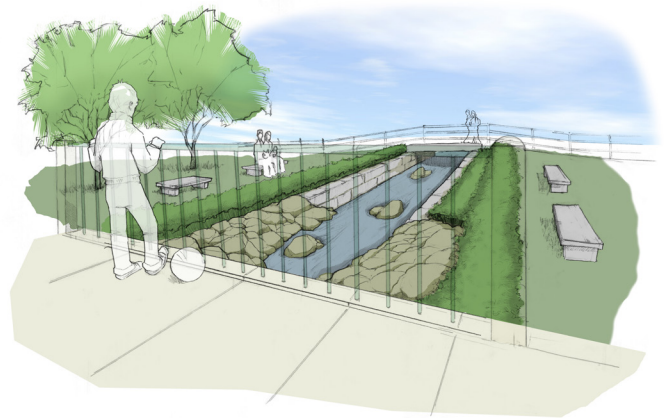
Adams, Massachusetts



The Town of Adams bills itself as the 'Gateway to the Berkshires', and its Town Visitors Center is a nexus for tourists coming into the region. The Ashwillticook Rail Trail, the main visitor parking lot, and a newly running Dinner Train are all based at the Visitors Center. The Visitors Center is also the gateway and anchor for the town's CBD with all pedestrian and vehicular roads connecting directly to this important hub.

After performing an on the ground survey, WDG conducted an existing conditions study of the Visitors Center parking area, including pavement, walkways, a 60" diameter drainage culvert, utilities, lighting, and streetscape elements. All these elements were enhanced in the new design, which expanded parking and introduced rain gardens to aid in stormwater management. WDG also designed enhancements to the park adjacent to the Visitors Center, including a naturalized stream that daylights from the (60") 75 year old culvert. Finally, WDG designed landmark art pieces to draw attention to the Visitors Center as the gateway to the Town, including a special roadway crossing for the bike trail. The project was completed in 2019.

Our company also worked collaboratively with the Town and the private owner of a very large adjacent Mill Building to find ways that the Town's public sector project could stimulate the re-development of the dormant Mill complex. The synergy created by the multi-faceted public sector project worked as a perfect complement to the retail and residential directions of the large Mill Buildings.



# Adams Visitors Center



## Construction



## Completed Project



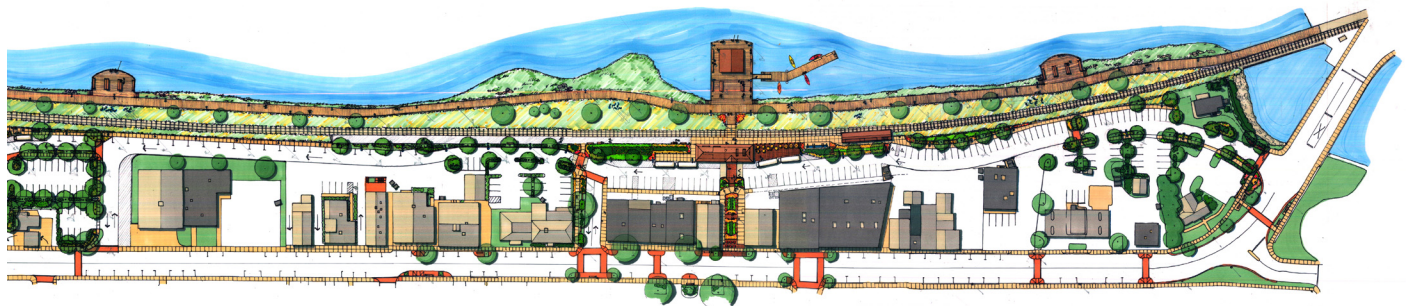
# Merchants Way Streetscape

## Wareham, Massachusetts

Client: Southeastern Regional Planning and Economic Development District (SRPEDD)

Between the Wankinco River and Main Street, Merchants Way has the potential to be a vibrant commercial, recreational and transportation hub at the core of Wareham Village. At the start of the project, however, Merchants Way was a back-of-building alleyway used for parking and dumpsters. Waterfield created a Concept Plan and Street Level Renderings to redesign Merchants Way as an attractive and bustling regional center for Southeastern Massachusetts.

Waterfield worked closely with a broad range of constituencies to design the project. Meetings were held with municipal department heads, boards and commissions, business and property owners, and the general public. In the design, Waterfield balanced competing needs such as transportation (a commuter rail stop, a GATRA regional bus station, commercial deliveries and recreational parking), recreation (piers for boating, cross-town bikeways), aesthetics (gateway arches, native vegetation, plazas), and ecology (stormwater management and rain gardens). Waterfield conducted an extensive study of vehicular and pedestrian circulation options and created street level renderings of the design to be viewed by the general public.





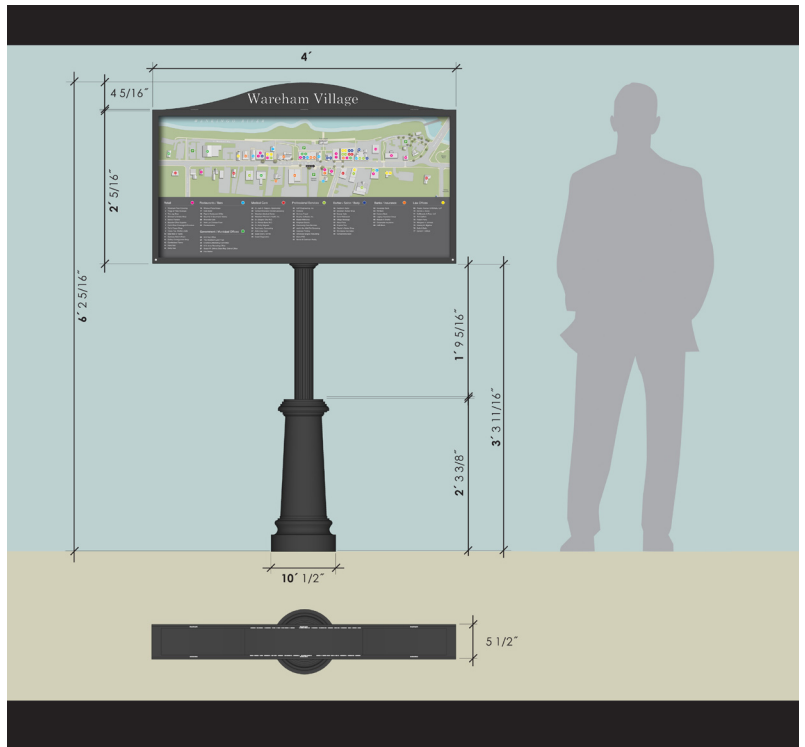
# Main Street Directory

## Wareham, Massachusetts

Client: Wareham Community and  
Economic Development Authority

From initial concept to final fabrication, Waterfield created a landmark Directory Sign for Main Street in Wareham. Waterfield mapped all the local businesses and created attractive and easy to read graphics for the display. Waterfield also designed the sign itself, which was custom fabricated using cast aluminum.

The finished product was a convenient and stately guide to businesses in the commercial center of Wareham Village.



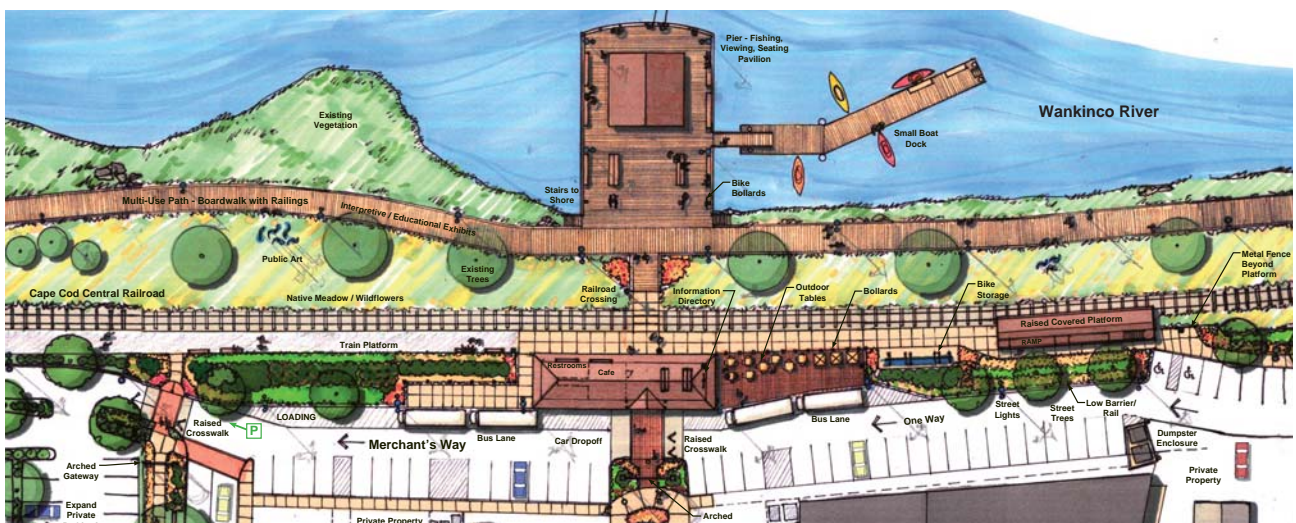
# Multi-Use Path / Boardwalk

## Wareham, Massachusetts

Client: Southeastern Regional Planning and Economic Development District (SRPEDD)

Wareham Village has the potential to be a vibrant commercial, recreational and multi-modal transportation hub connected to bordering towns of Marion and Bourne thru train, bus and multi-use pathway systems. The Wankinco Riverfront in Wareham's Village Center presented the Town with a rare opportunity and important asset that was being completely underutilized. With the anticipation of a Cape Flyer train stop in Wareham for the recently re-activated and very popular summer train service, a plan to guide future development was critical for accomplishing the Town and SRPEDD's goals for a pedestrian friendly Village Center focused on creating a vibrant Waterfront District.

Working closely with the CEDA and GATRA, Waterfield Design facilitated a series of interactive workshops to develop a vision and conceptual plans for a multi-use pathway, streetscape and intermodal transportation center. Balancing the sensitive coastal environment with revitalization, transportation and recreation needs, plans were developed for a vibrant multi-use boardwalk system, piers and docks that paralleled the active rail lines and provided a safe and controlled crossing. Expansion and conversion of the existing historic train station into an intermodal transportation center and creative plans for adjacent streetscapes were also developed. Illustrative design plans, renderings and cost estimates are being used to secure funding for the development.

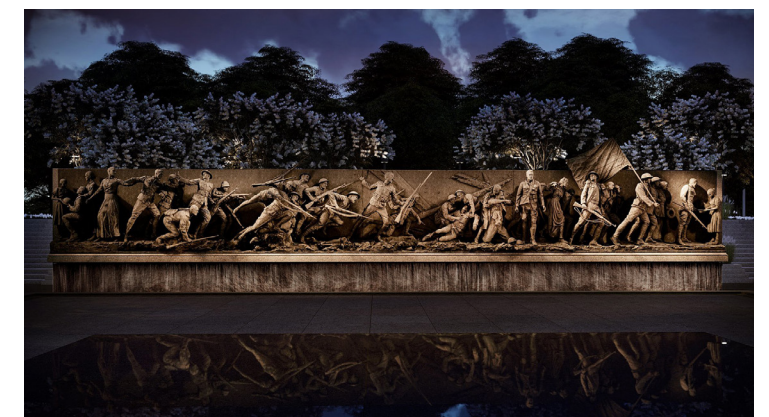
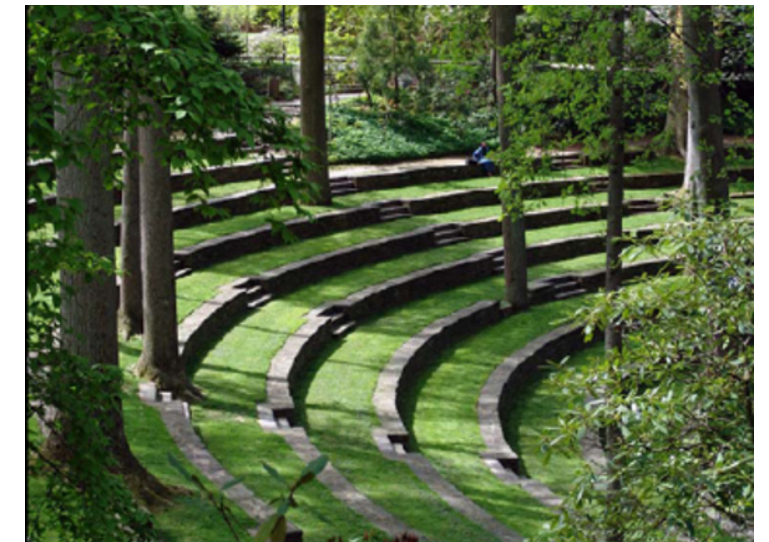


# D.L. Moody Center

## Northfield Campus Landscape Master Plan



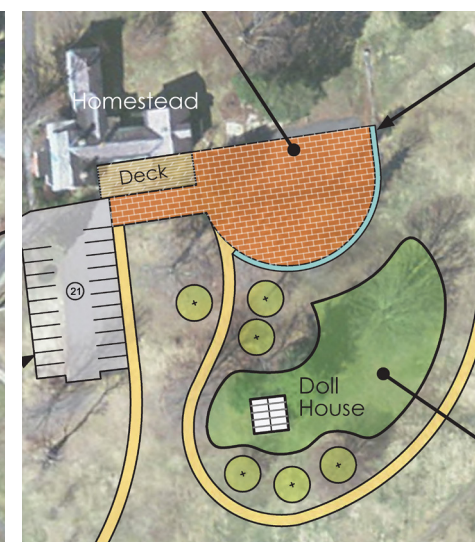
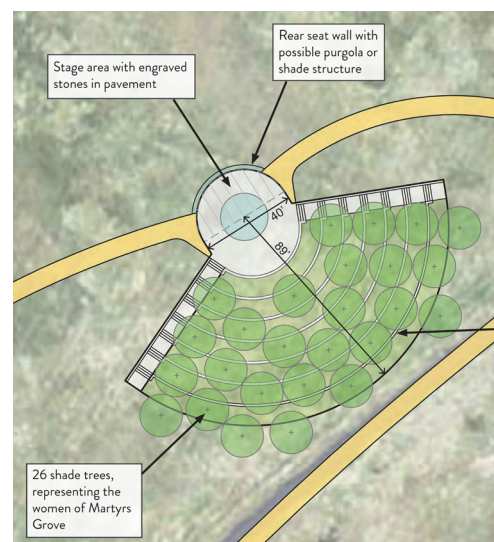
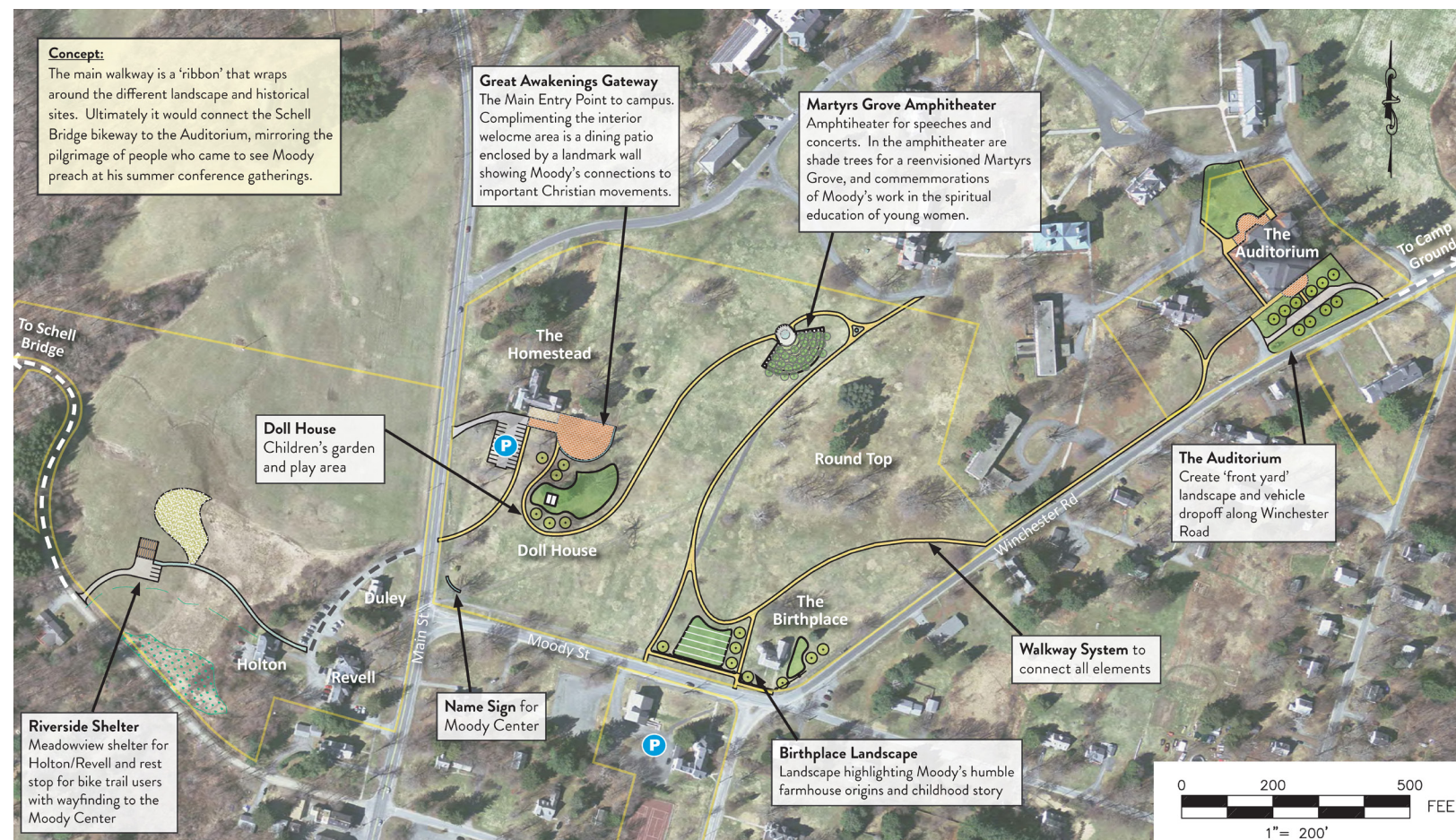
### LANDSCAPE NODE INSPIRATIONS



The campus of the D.L. Moody Center, a non-profit which seeks to extend the legacy of the evangelist and educator D.L. Moody, has a rich history and environment. It includes the grand auditorium where Moody spoke to grand conferences, the historical landmarks of Moody's birthplace, and connects to the Northfield School, a pioneering institution for the education of girls and the poor. The campus is marked by dramatic vistas overlooking the Connecticut River valley.

Waterfield developed a Landscape Master Plan to join the history of each site with landscape art and spaces that bring that history to life. A landscape concept was developed at each historical node. For example, at the Homestead building where Moody would give dinnertime lectures, we envisioned an outdoor cafe patio, bordered by a timeline wall. On this wall is a sculptural timeline that illustrates how Moody influenced the course of American and world spiritual history. Another example is the Martyrs Grove Amphitheater, which commemorates the young Northfield graduates who dedicated their lives to overseas service. 26 shade trees (one for each woman) are spread throughout the tiers of the amphitheater seats, providing shade for those watching the Moody Center's outdoor performances and talks. Other landscapes highlight Moody's humble origins and love for children. By their abstract nature, they seek to not only tell Moody's history but also link his life with some of our current generation's most compelling challenges.

The vision of the Master Plan was to use landscape to raise the profile of the Moody Center's campus, from a purely historic landmark to one with contemporary attraction and social relevance. By transforming the campus into landscape art, akin to destinations such as the DeCordova Sculpture Park or the Storm King Art Center, the Moody Center could attract dramatically more visitors to the campus, and further its reach and mission.



# "Central Park"

Oasis of the Seas  
Royal Caribbean Cruise Lines

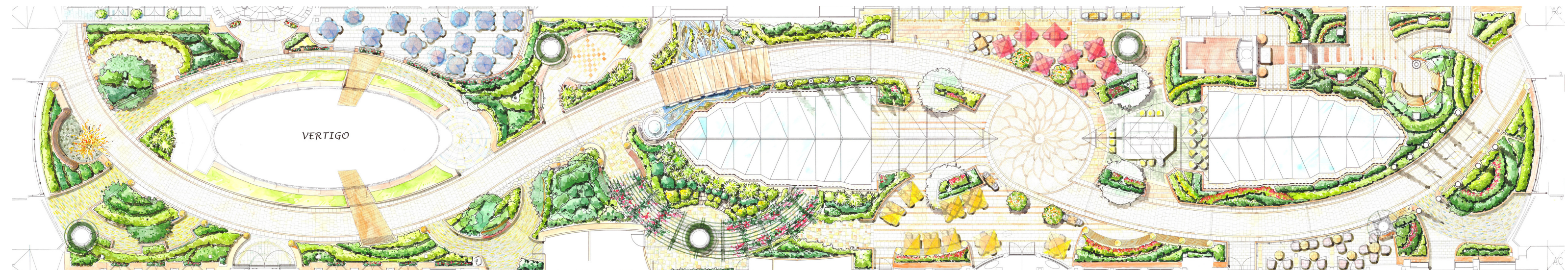
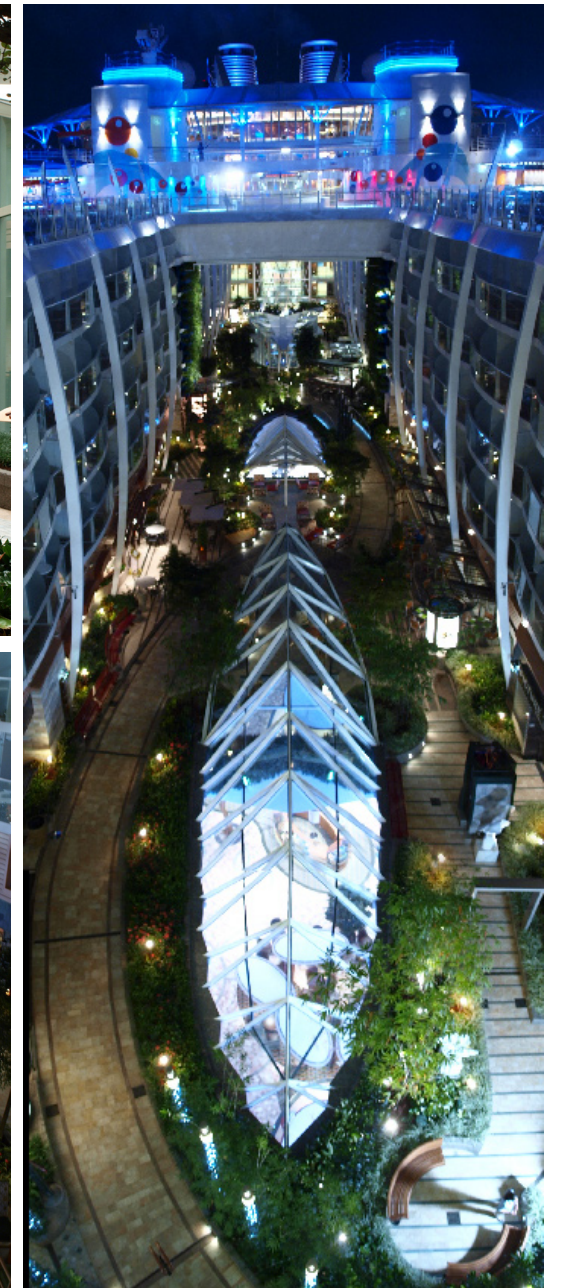


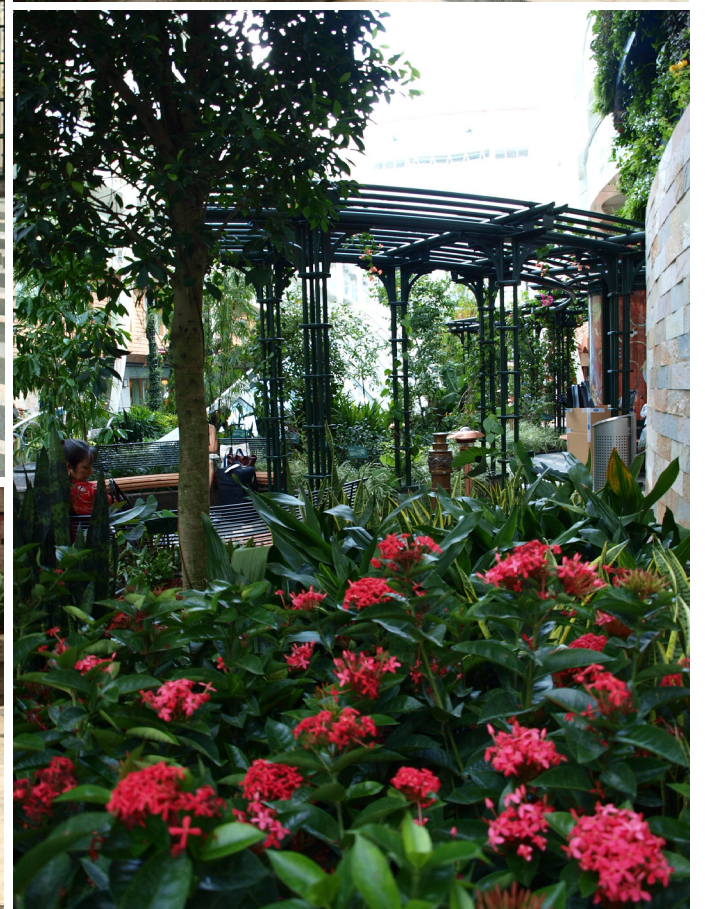
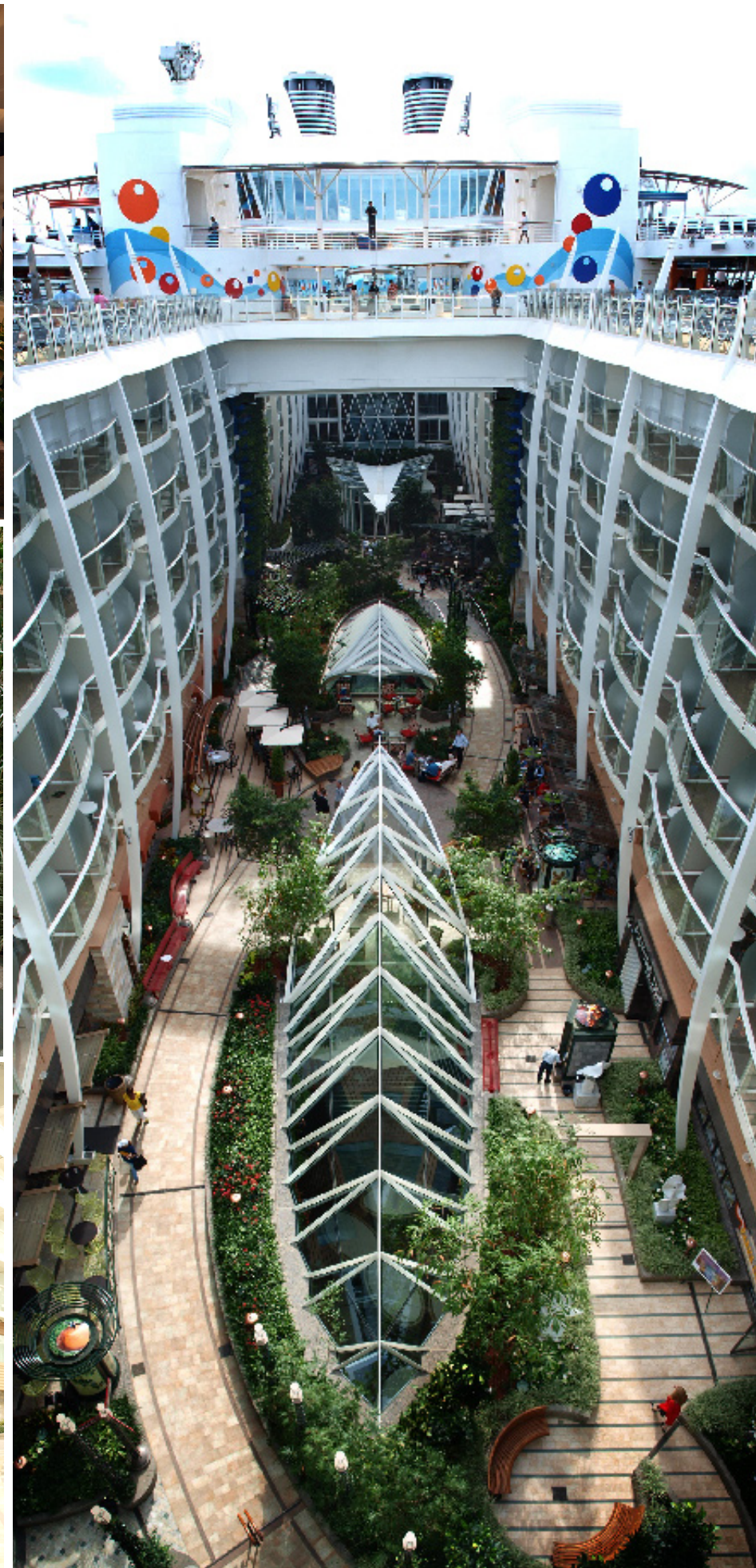
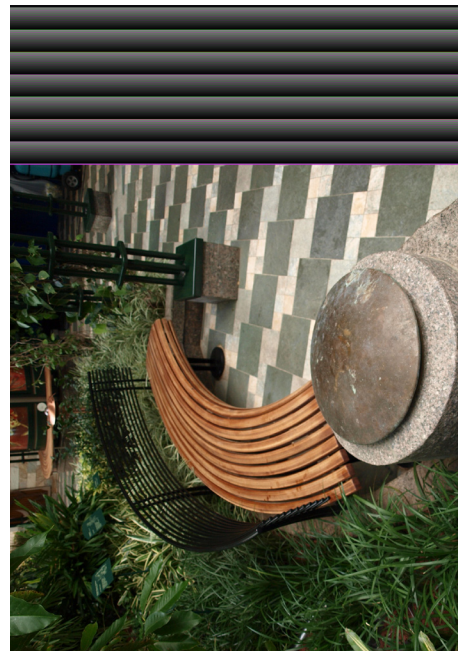
Waterfield Design provided planning, space programming, design, and construction phase services for the development of the world's largest floating festival marketplace and natural park.

Central Park is 22,000 sf. and robustly planted with an amazing variety of plants, trees, vines, flowers and aromatics. It took just under three years to design and build and cost \$25 million. Central Park is one of the top features on Royal Caribbean's newest luxury liner, *Oasis of the Seas*. Oasis launched in December 2009 and is the largest cruise ship in the world, carrying 5,500 guests. The Park combines gardens and meandering paths with an upscale café retail scene. Boutique restaurants and stores open onto the Park, while guest rooms in the upper decks offer views down into the Park. A telescoping bar, outdoor life-size chess, performance space, and intimate garden seating encourage an atmosphere of people watching and outdoor promenading.

Waterfield provided planning, proof of concept analysis, and design including layout, grading & drainage, material selections, utilities coordination, and a tropical planting plan. This has required close construction coordination with the shipyard (in Turku, Finland) who built the \$1.5 billion vessel, including a complex analysis of the underlying steel structure, and intense design coordination with the architects of the 8 venues that open into the Park. During our design process, we facilitated studies of solar accessibility, solar reflection impacts, wind impacts, evapo-transpiration, retail visibility and compatibility, fire safety, pedestrian circulation, open space programming, access restrictions, irrigation, life cycle, replacement logistics, and maintenance programming.

Two duplicate ships are planned for release in 2010 and 2011.





# OASIS of the SEAS<sup>SM</sup>

INTRODUCING THREE OF SEVEN NEIGHBORHOODS, AND NEW ACCOMODATIONS

## Loft Suites

- Multilevel Lofts featuring up to 2,000square feet of combined space

- Floor-to-ceiling windows
- Sitting and dining areas

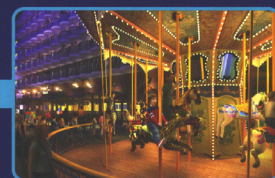
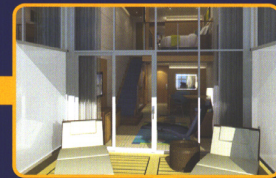
- 1 Royal Loft suite
- 2 Sky Loft suites
- 25 Crown Loft suites

## Central Park

- Pergola & Sculpture Gardens
- The Crystal Canopies

- Restaurants and cafés: Antonio's Table, Chops Grille, 150 Central Park, Central Park Café, and Vintages wine bar

- Rising Tide bar and Canopy Bar
- The Parkside Gallery & Picture This
- 324 staterooms overlooking Central Park, 254 with balconies



## Boardwalk featuring AquaTheater

- AquaTheater
- Carousel
- Two Rock-Climbing Walls

- The Boardwalk Bar
- Seafood Shack, Johnny Rockets', Ice Cream Parlor, Boardwalk Donut Shop

- Candy Beach, Star Pier and Pinwheels
- Madame Zamar's psychic and tattoo parlor
- 6 AquaTheater suites with private balconies
- 229 staterooms overlooking the Boardwalk, 221 with balconies

## Royal Promenade

- Sorrentos, Mondo Coffee Bar, Café Promenade
- Schooner Bar, Champagne Bar & Boleros
- Guest Relations and Explorations!

- Upscale shopping including jewelry, apparel, gifts and more
- Focus photo gallery
- A Close Shave - men's salon

- On-Air Club
- Diamond Club
- 18 staterooms overlooking the Royal Promenade

All images of Oasis of the Seas<sup>SM</sup> are artistic renderings and reflect proposed design and layout. Design, venue names and layout are subject to change without notice. Oasis of the Seas<sup>SM</sup> is a registered or pending service mark of Royal Caribbean Cruises, Ltd. © 2008 Royal Caribbean Cruises Ltd. All rights reserved. Ships registered in the Bahamas.

**WE DON'T JUST BUILD SHIPS. WE BUILD INCREDIBLE.**



# Pigeon Falls Village

## Mixed Use Entertainment Resort Land Use Planning, Permitting & Feasibility Analysis

Pigeon Forge, Tennessee  
Client: Strategic Leisure

Working for Strategic Leisure, a Maryland based entertainment developer, Waterfield Design was retained to perform land planning and feasibility analysis for the construction of a \$600 million mixed-use resort located within minutes of the Great Smoky Mountain National Park.



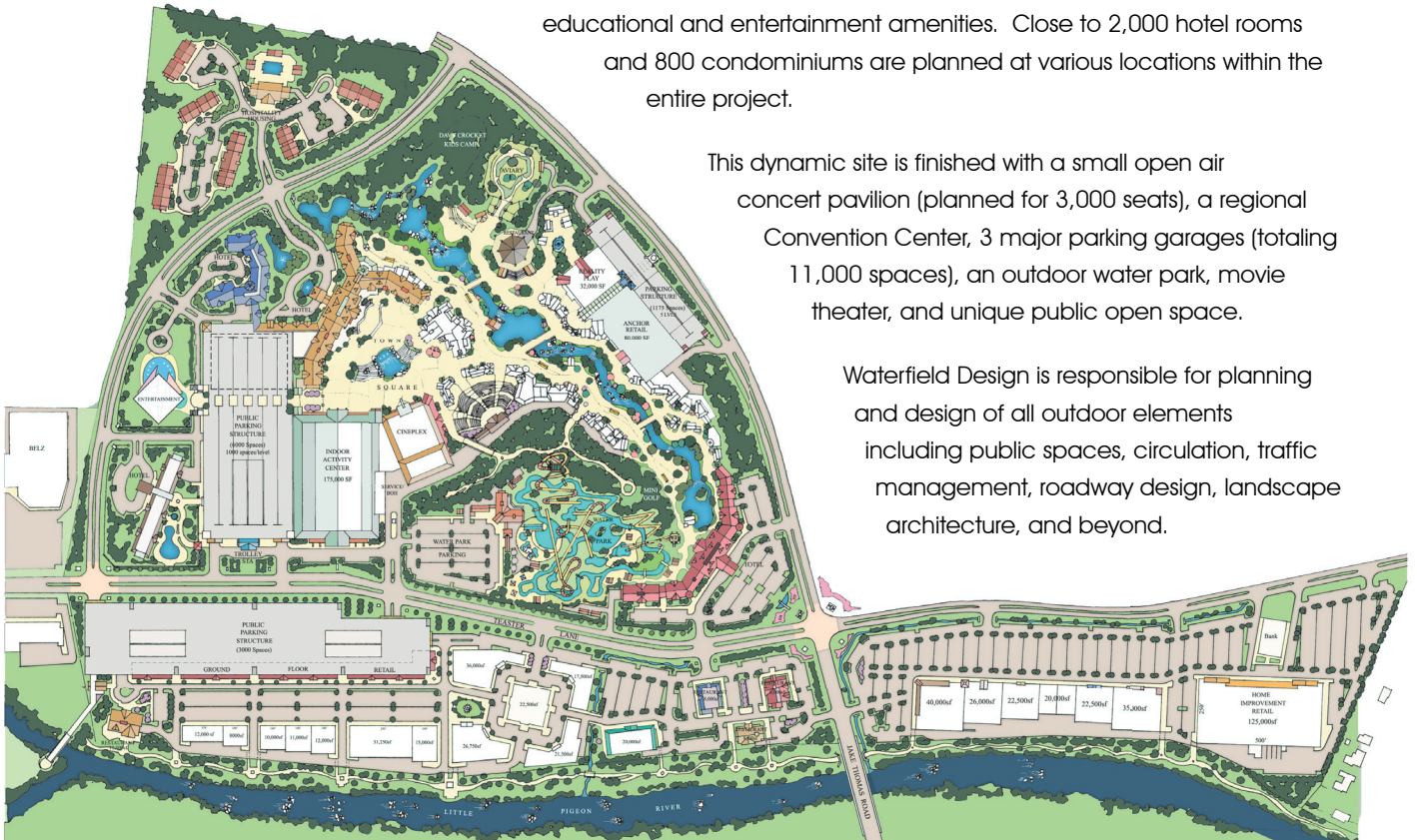
Taking advantage of over 200 feet of vertical relief in the natural landscape, the entire campus will be centered on the creation of a major faux natural WaterFall Stream – dropping 150 feet at various pools and overlooks within its 2,250 foot length. Surrounding this Smoky Mountain stream is scores of retail shops artfully tucked away into the programmed nooks and crannies of the new ‘forest’.

Anchoring the Stream on both ends are major signature hotels capable of accommodating close to 1,000 rooms.

Between these majestic Lodges are an enormous variety of recreation, wildlife, educational and entertainment amenities. Close to 2,000 hotel rooms and 800 condominiums are planned at various locations within the entire project.

This dynamic site is finished with a small open air concert pavilion (planned for 3,000 seats), a regional Convention Center, 3 major parking garages (totaling 11,000 spaces), an outdoor water park, movie theater, and unique public open space.

Waterfield Design is responsible for planning and design of all outdoor elements including public spaces, circulation, traffic management, roadway design, landscape architecture, and beyond.



# Spy Pond Park

## Conceptual Design, Planning, & Community Process Town of Arlington, Massachusetts

The beautiful and charming Spy Pond Park & Recreation Fields are conveniently sandwiched between the core of Arlington's central business district, the Minuteman Bikeway, and the northern shores of Spy Pond.

This multi-purpose space includes a historic concrete bleacher structure built smartly into the side of a mild hillside with Works Progress Administration (WPA) funds. The bleacher structure is in various states of disrepair and no longer attracts the spectators who once watched youth sporting events.

Our project created conceptual design plans for various reconfigurations of the entire Spy Pond open space areas, maximizing athletic field use in a way more responsive to today's demands.

Town of Arlington

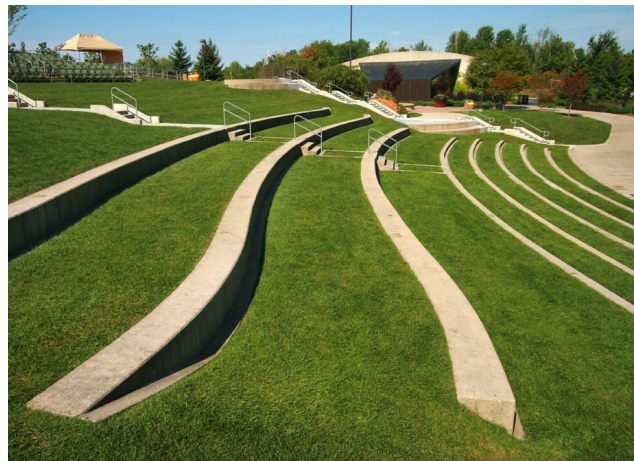
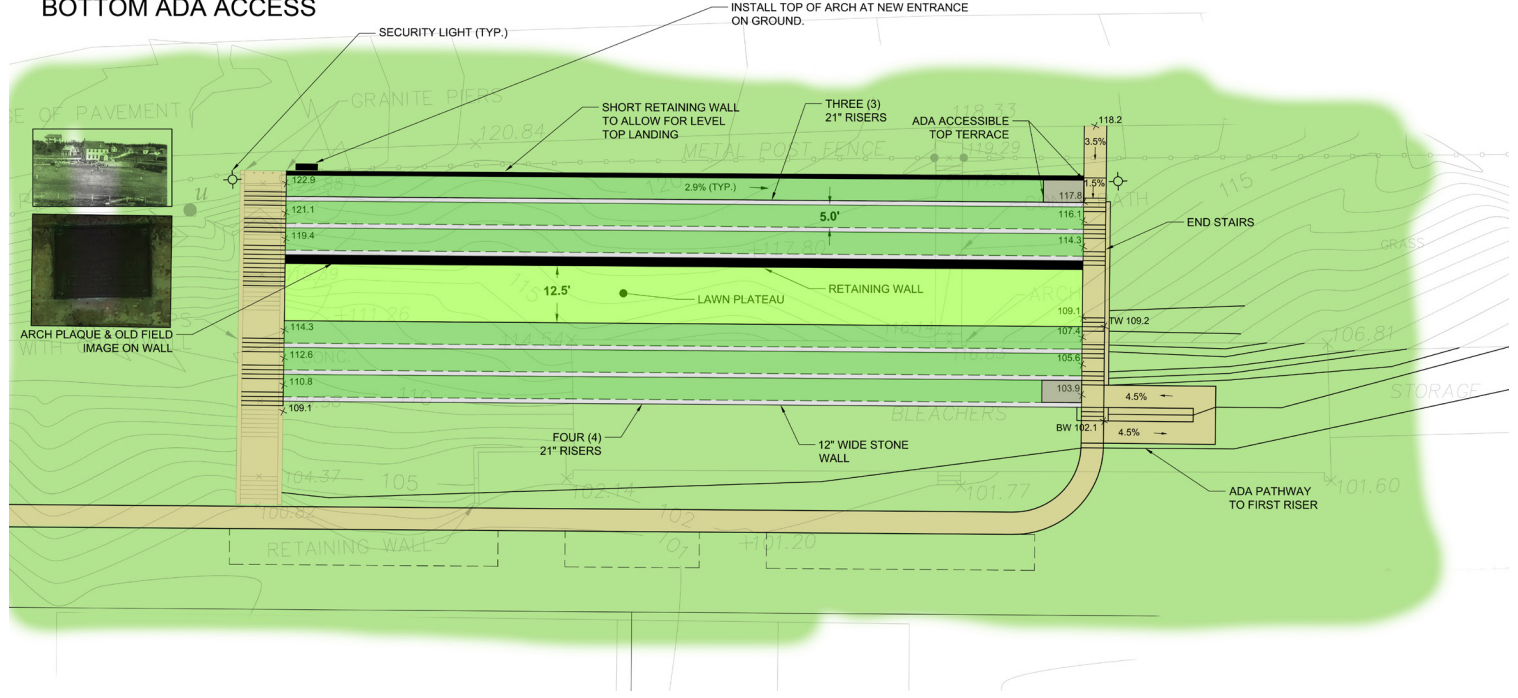
This project seeks to improve ADA accessibility for spectators to the sports fields while also removing the advancing deteriorated concrete bleacher structure. This important structure acts as a barrier to the abutting neighborhood and is no longer used as it once was.

Our design removes the large concrete structure and replaces it with a series of each terraces, enhancing the sustainability of the landscape. New walking paths are created for ADA access to the spectator areas of the new terraces. Additional walking paths are planned for the entire Spy Pond park footprint. New athletic fields are designed to be more responsive to the new spectator terraces. New parking, lighting and signage will also be considered. Certain unique features and elements of the WPA-era bleacher structure will be retained in the new park environment.





**TERRACE OPTION B:  
TOP & BOTTOM TERRACE  
WITH WALL & TOP AND  
BOTTOM ADA ACCESS**



# Plymouth Street Park

## Conceptual Design, Planning, & Community Process Town of Mansfield, Massachusetts

Plymouth Street Park is situated near conservation land in an industrial/shipping district of Mansfield. Recent upgrades were made to turf sports fields and tennis courts. However, the playground area held outdated equipment and a sand play surface that did not meet current safety standards. The park also had a great need for shade, as it was surrounded by woodlands but had no trees inside. Waterfield designed a playground that addressed the need for updated play structures and surfacing, while also providing shade with both shade sails and trees. Overall, the design transforms the park from merely a place to play sports, into a place for families of mixed ages to relax, commune and play. The design also allows the motifs of the surrounding area to come into the park. The play structures have an aesthetic that reflects the surrounding transport industry, including an 'industrial tower' climber and a zip line and globe spinner to experience the speed and movement of the area. Meanwhile, we bring shade and flowering trees into the playground to break down the boundary between the woodlands and the play area. To enhance the tradition of sand play in the playground, we include a redesigned sand area with water pumps and rock outcrops to make the playground also a place to build and create.



# Original Concept Design



# Fore River Shipyard

## Major Ocean Front Residential, Retail & Entertainment Community



Quincy / Boston, Massachusetts

During World War II, the Fore River Shipyard built more naval warships than any other shipyard in America. At its peak production, Fore River employed over 50,000 men working around the clock to support our country's efforts to liberate Europe.

The Fore River Shipyard was founded in 1883 by Thomas Watson, Alexander Graham Bell's trusted assistant during his creation of the telephone ("Watson, come quickly.....") Looking for a challenge after leading Bell's Telephone Development Division, Watson turned his energies to the new fledgling industry of motorized shipbuilding.

In modern times, this historic shipyard was later owned by Bethlehem Steel Corporation and then finally by General Dynamics. This amazing parcel by the ocean located less than 5 miles has seen many incredible world events. With the advent of cheaper overseas materials and labor, a long and steady decline of this majestic Shipyard mercifully ended in the 1980's. Since that time, it has languished as one suitor after another emotionally tried to resurrect shipbuilding.

Facing no known industrial marine uses, Waterfield Design was retained to re-invent the shipyard into a much more effective use. Its remarkable seaside location, deep dry docks, and strategic location within one of the most densely populated areas of the northeastern U.S., makes it a perfect candidate for a major new mixed-use development.

Anchored by over **1,800 units of new housing**, on **120 acres** the site boasts extensive waterfront views and public and private waterfront access. Our innovative plan uses many of the existing deep water dry-docks, converting these massive ship carriers into incredible amenities. The large amount of housing is expertly buffered by **stunning landscape view corridors, public park-land and open space**, and convenient and dynamic placements of **restaurants, shops, office, and retail space**. The wide variety of the design of this site is only exceeded by its potential.



# Mill Pond Nature Trail

## Canton, Massachusetts

Mill Pond lies at the heart of Canton's Main Street travelling beneath the street thru a series of thundering waterfalls. The pond and waterfall fueled the Town's historic industrial mills including Paul Revere's Copper Rolling Mill and the famed Canton Shovel Mill. During our work to revitalize Main Street we convinced the Town to unlock the potential of this unique and overlooked attraction by developing a sitting area and trailhead for a future nature trail that will connect the center of town to nearby residential areas.

The Town's industrial heritage was highlighted with interpretive exhibits and relics set within a new overlook and landscaped sitting area that reflected elements of the new streetscape design. The trail system was designed to enhance the ponds edge, respecting wetlands and maximizing views across the pond. Dry laid stonewalls with stone dust paths and wood boardwalks secured with helical pile foundations will provide a safe and accessible nature trail on the steep and sensitive terrain. Trailhead signage and a sensory garden were incorporated along the trail. Waterfield assisted the Town in preparing funding applications.



# Mill Pond Nature Trail

Canton, Massachusetts



# Cape Cod Rail Trail

Landscape Architecture: Schematic Design, Design Development, Construction Documents, Construction Administration  
Cape Cod, MA



Cape Cod, Massachusetts  
Massachusetts Department of Conservation & Recreation (DCR)

The Waterfield Design Group provided landscape architecture services for the rail trail between Eastham and Wellfleet on the Cape Cod peninsula. The Cape Cod Rail Trail (CCRT) provides an opportunity for bicyclists, hikers, skaters, and horseback riders to enjoy a special encounter with Cape Cod's charm and beauty.

It passes by many local points of interest and several kettle ponds in recreational areas including Nickerson State Park in Brewster. The CCRT is a safe and enjoyable way to spend a Cape Cod summer day. Traveling through the towns of Yarmouth, Dennis, Harwich, Brewster, Orleans, Eastham and Wellfleet, its smoothly paved surface (akin to gravel asphalt) makes the path ideal for cyclists, walkers, inline skaters and runners.



# Tri-Community Bike Path / Greenway

Landscape Architecture: Schematic Design, Design Development, Construction Documents, Construction Administration

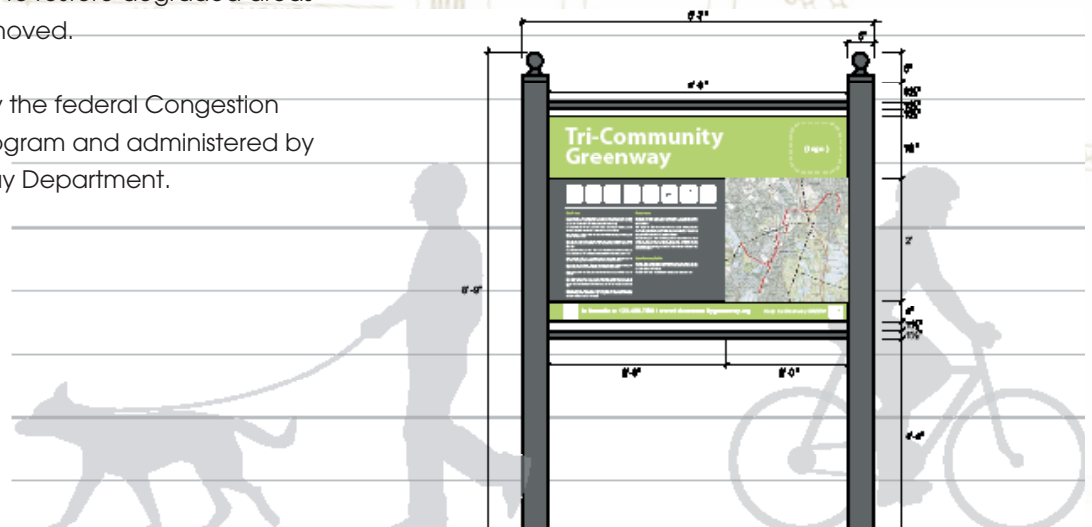
Winchester, Woburn, & Stoneham, MA

The Tri-Community Bikeway/Greenway project links public transportation systems, schools, civic areas, parks, residential areas, business and retail centers in three communities to create a safe alternative mode of transportation for residents. The bikeway significantly enhances opportunities for the public to access open spaces and provides outstanding recreational benefits while simultaneously enhancing and preserving the historic landscape along the Aberjona River greenway and rejuvenating an abandoned Boston & Lowell Railroad right-of-way.

The 6.6 mile bikeway connects to existing smaller bikeways as it passes through the retail center of the three communities, each with its own character, history and landscape. One of the design challenges was to respect each of the Town's unique identities while creating a unified design throughout. In Winchester, opportunities to realize unfinished portions of the historic Kellaway Greenway that has created the quaint town center were explored.

Granite benches, trail markers and interpretive exhibits with trail maps were designed specifically for this project. Site appropriate native plantings and seed mixes were specified to restore degraded areas where invasives will be removed.

This project was funded by the federal Congestion Mitigation & Air Quality Program and administered by the Massachusetts Highway Department.







# Manhan Bike Path

A Mass DOT Project  
Northhampton, Massachusetts



**Length:** 1.3 miles

**Trail end points:** Coleman Rd. (Easthampton) to The Oxbow and Coleman Rd. (Easthampton) to King St. at Norwottuck Rail-Trail (Northampton)

**Trail activities:** Bike, Inline Skating, Fishing, Wheelchair Accessible, Walking, Cross Country Skiing.

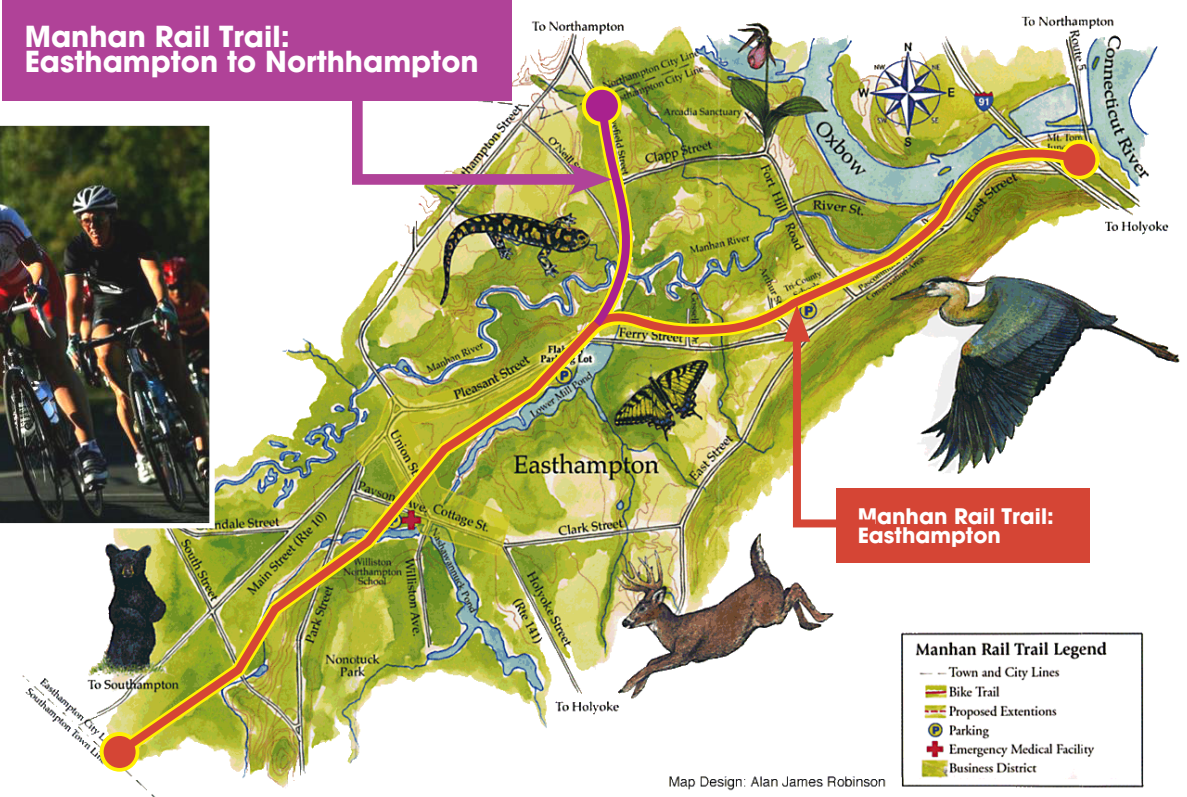
The Manhan Rail Trail, well integrated into the local communities it serves, offers a pleasant ride or stroll. It conveniently weaves together parks, community points of interest, neighborhoods, and business centers.

Shaped like a Y tipped to its side, the northwest section—also known as the New Haven and Northampton Canal Line—leads into the charming city of Northampton, which is the seat of government for Hampshire County. At its northern end at King Street, the trail also connects to two sections of the Mass Central Rail Trail, extending the mileage options for longer rides, jogs, and walks.

**This project is for the Northampton section of the multi-community bike path project.**



**Manhan Rail Trail:  
Easthampton to Northampton**



Map Design: Alan James Robinson

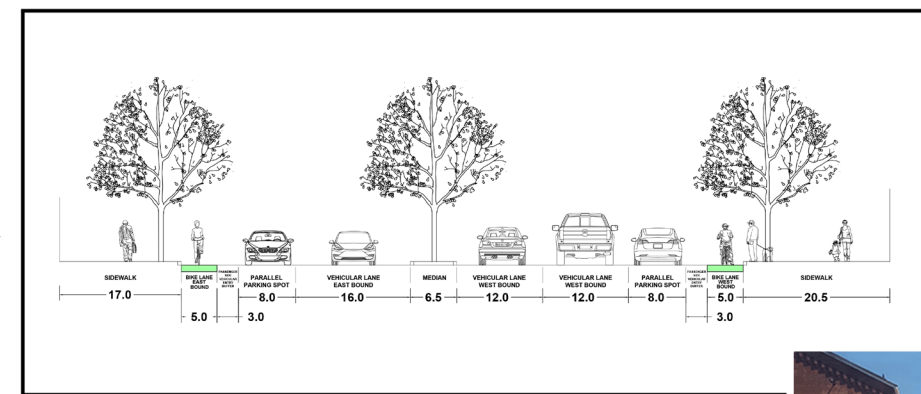
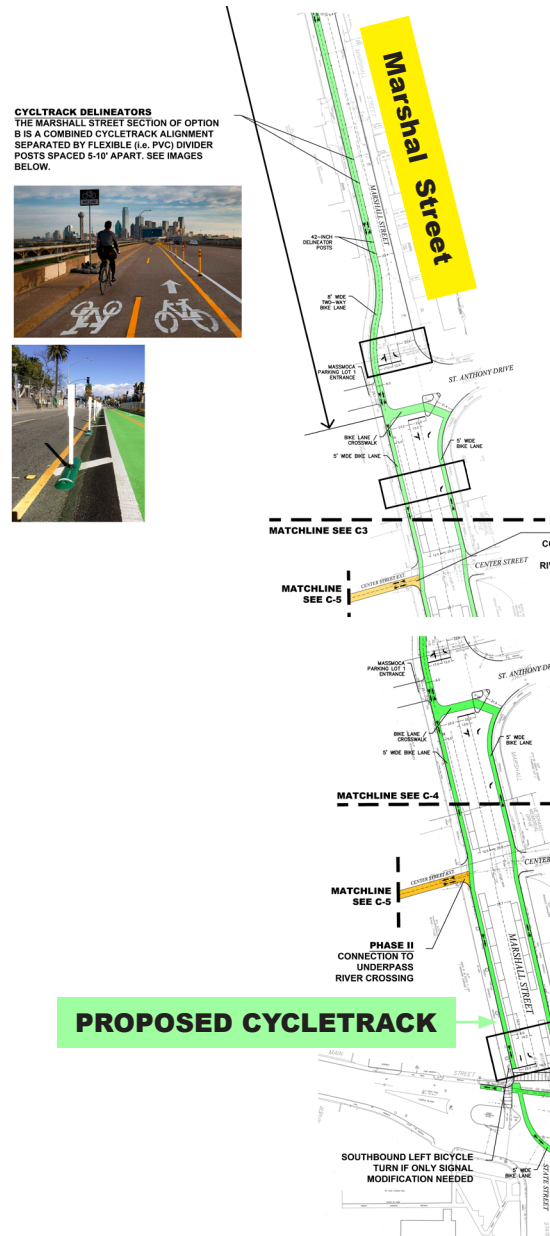
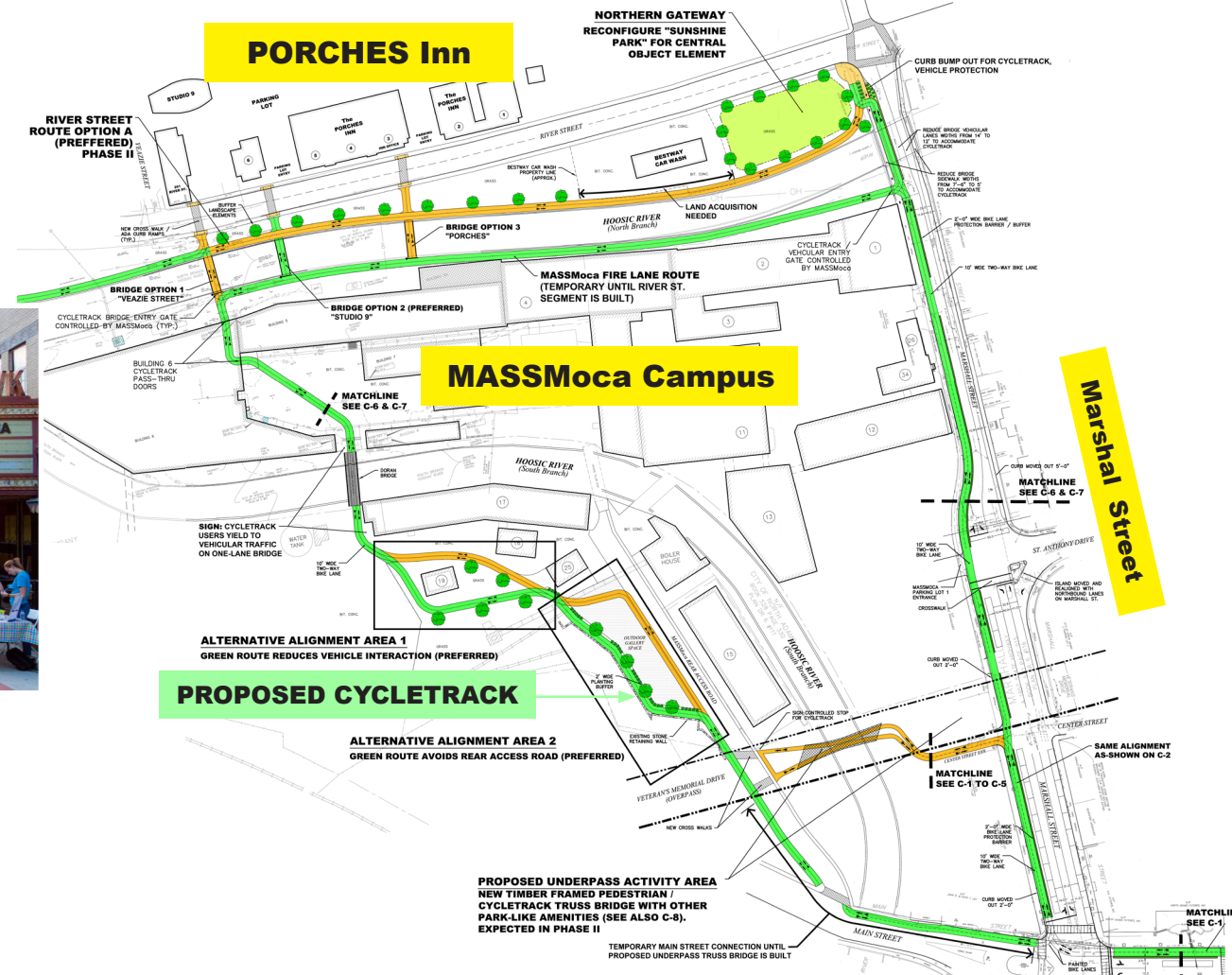
# Downtown Cycletrack

## Master Plan & Conceptual hDesign North Adams, Massachusetts

Working jointly for the Berkshire Regional Planning Commission (BRPC) and the City of North Adams, we provided conceptual level civil engineering services for the analysis of alignment route options for this important urban bike path. The Cycletrack alignment creates a vital link between the Ashuwillticook Rail Trail and the future Adventure Trail planned to connect North Adams to Williamstown. Unlike either of these abutting trails, the Cycletrack route is located in the heart of downtown North Adams and is therefore a trail that competes for space with the rights-of-way of critical central business district (CBD) roadways. Fortunately, the City's robust industrial heritage created generous roadway spaces that today allow interesting opportunities to surgically insert new bike path uses while providing a dedicated cycletrack route. Other areas required precise evaluations of automobile and bicycle co-habitation resulting in shared travel lane use.

A significant focus was placed on finding ways to maximize linkages between the Mass MOCA campus and the downtown CBD. Multiple alignment routes were studied that offered various ways to allow cycletrack users to pass through the Mass MOCA campus. This very unique arrangement needed to give Mass MOCA the flexibility to host special events requiring that cycletrack access through the campus be reduced or restricted.

Conceptual level alignments were studied and prepared accompanied by cost estimates. Interactions with existing traffic signals were reviewed along with pedestrian and vehicle safety impacts. ADA compliance was considered throughout. User-friendly sketches and drawings were created to assist with public interaction and comment.



**CROSS SECTION B - MAIN STREET  
(LOOKING WEST)**



**Town of  
North Adams**



# Devens Gateway & Trail

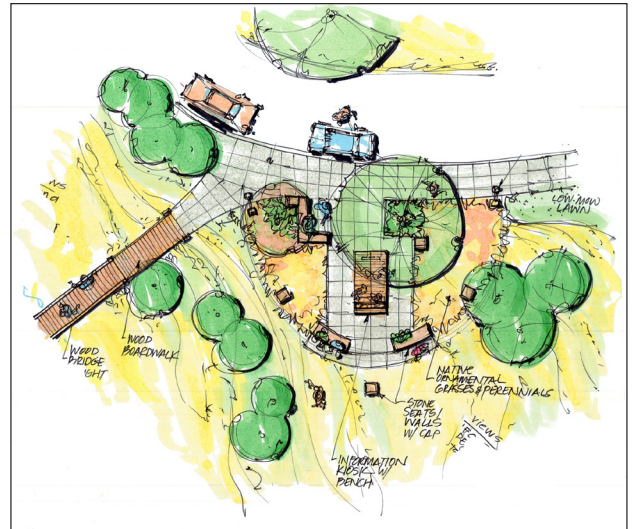
Sidewalk, Walkway & Park Entrance  
(Fort) Devens, Massachusetts



Clients: MassDevelopment, Devens

The Devens Gateway project exemplifies a creative and inventive design approach to an environmentally sensitive landscape. WDG developed a place-based identity by incorporating and enhancing the area's natural features and highlighting historic elements of the past US Military base. With a simple and cost-effective design approach, walkway materials, landscape signage, native plantings, and elegant landscape structures of natural stone and wood are used in concert to create an image that will help guide the development of the new Devens community.

The existing wetlands, lawn areas and ponds along both sides of Jackson Road were enhanced with native plant and seed mixes, enlarged wetlands, reduced mowed lawn areas and stabilized pond slopes. A stabilized stonedust trail was field-located to connect the entrance trails to pond areas and community walkways while taking care to retain existing mature trees and sensitive understory. Our boardwalk and bridge design was installed using handheld equipment to drive helical piles into the existing wetland areas with minimal disturbance.



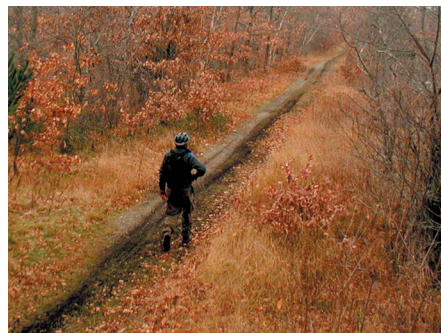
# Scituate Rail Trail

## Feasibility Study

Scituate, Massachusetts  
Client: Town of Scituate

Under construction through Boston's south shore communities, the Greenbush commuter rail line has spurred some communities to consider building trails along the rail corridor to promote walking, biking, skiing and other forms of recreation and transportation. The Town of Scituate hired The Waterfield Design Group, Inc. to conduct a feasibility study to determine the potential for a rail-with-trail from the northern town line at Cohasset to the end of the line at Greenbush Station, and extending beyond to the Herring Brook Marsh with its beautiful views.

Because this rail-with-trail path would contain an active train line, safety is a primary concern. Another concern is the impact of an active rail line dividing neighborhoods by eliminating circulation between them. The community benefits of a trail include off-road connections to neighborhoods including assisted living, schools, parks, village centers and train stations, as well as recreation and views to scenic wetlands and woods.



# SECTION 4

---

## FORMS



**WDG** | Waterfield Design Group