



# TANNERY PARK

PROPOSAL FOR THE REDEVELOPMENT OF THE  
FORMER APOLLO TANNERY SITE  
INTO AN INDUSTRIAL ECO-VILLAGE

116 WASHINGTON STREET  
CAMDEN, MAINE  
OCTOBER 16, 2020

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## CONTEXT AND HISTORY

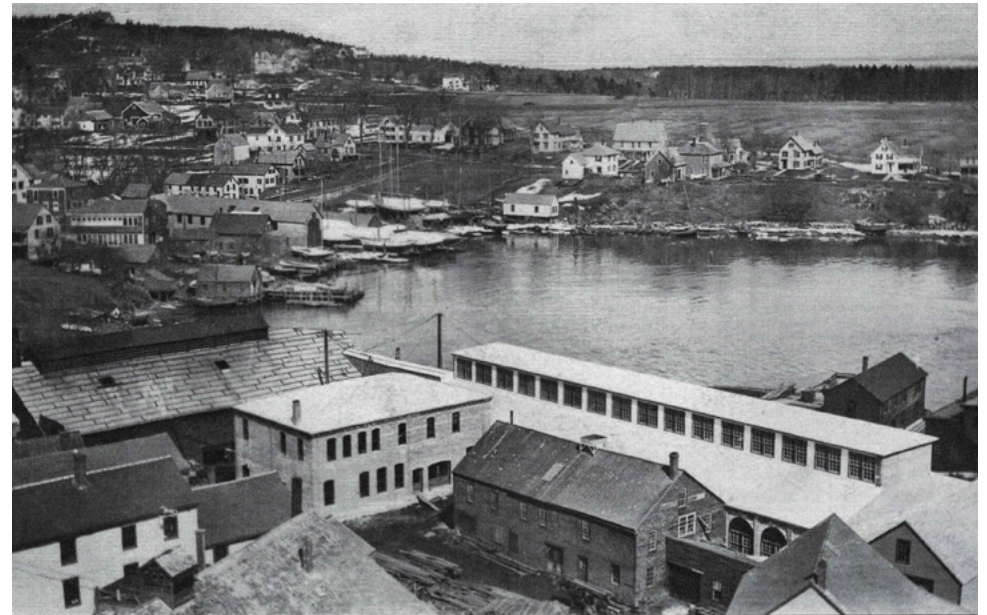
The Camden Tannery is a three and a half-acre site where the Apollo Tannery stood and operated it was damaged in a fire in 1999. The Town acquired the site in 2003 through a lien foreclosure, and funded the demolition of the damaged structure. The site was contaminated with chemicals and pollutants related to the tanning process. The site has gone through a series of ongoing environmental cleanups, funded by both the Town and the EPA. The site is currently used as the Camden Farmer's Market location in the summer and by pedestrians on the pathway Riverwalk that borders the site beside the Megunticook River. Over the years, there has been community interest in redeveloping the site. In 2014, a majority of Camden voters supported commercial and business uses for the site, as opposed to preserving it as a park and open space.



The Elnathan H. Young jewelry repair and watch stop on Mechanic Street in Camden, c. 1883.



The Apollo Tannery site in Camden, c. 1960.



The inner harbor in Camden, from the Chestnut Street Baptist Church Steeple. c. 1900. Today, many of these buildings are gone, and the site of the anchor factory is now a parking lot.

## PREVIOUS STUDIES

In 2017, the Camden Tannery Working Group Presented their recommendation to the town. Their Objectives for the site are to:

1. Preserve green space and enhance the aesthetics of the Riverwalk and overall Tannery site.
2. Enable a wide variety of uses: recreational, commercial, special events.
3. Be used and enjoyed by a broad cross-section of the community: young & old, year-round & summer.
4. Bring acceptable levels of noise and vehicular traffic.
5. Bring positive economic benefits to the Camden community: new jobs and new economic activity.
6. Protect or enhance Camden Town Finances (avoiding expenses and increasing tax or fee receipts).

The proposed development for the site, the Tannery Park, respects and responds to the guiding principles for the redevelopment site, which were set by the Apollo Tannery Redevelopment Working Group, including:

1. The site will be acquired and held as a single parcel.
2. The public right-of-way and easement access to the riverwalk path will be preserved and enhanced.
3. The trees that line the street will remain.
4. The redevelopment of the Tannery Park will create sustainable, year-round, well-paying jobs by providing affordable workshop spaces and creating year-round event space.
5. The Tannery Park and incubator space will stimulate new businesses and services.
6. A new customer base will be created, which will not take business away from any established employers and businesses in the area.
7. The Tannery Park is creating a unique market for the area and supports local makers and entrepreneurs.
8. The workshops are sustainable, locally sourced, and the structures are flexible and adaptable for future uses.
9. The redevelopment will be attractive and aesthetically compatible with the neighborhood.
10. The Tannery Park creates jobs in the Creative Economy sector.
11. Our team will enhance the riverwalk and restore the river.
12. There will be an educational component to the Tannery Park and opportunities for partnerships with local institutions.
13. The development team agrees to conduct a traffic analysis to study the impact of increased traffic to the area.

# LOCATION

The former Apollo Tannery site is located on Washington Street, bordered by Rawson Avenue. Residential, single-family homes surround it. The Megunticook River borders the site to the east, with the riverwalk running along the edge of the site next to the river. The site is a 6-minute walk and a 2-minute drive from Camden-Rockport Middle School. Across the street from the site is the Mt. View Cemetery. The site is about a mile from downtown Camden, a 15-minute walk, and a 3-minute drive.



# EXISTING CONDITIONS

The site currently consists of a series of concrete slabs, the largest of which partially covers an area of groundwater contamination enclosed by a slurry wall pursuant to a VRAP filed by the Town. There is a large paved area surrounded by a lawn. The soil is mostly filled with a low level of industrial contamination, and a riverbank consisting of fill, natural stone, and solid waste. There is a study underway on recently discovered contamination in the river bank.







Aerial satellite imagery of the site.

# GOALS

The proposed development of Tannery Park is based on 6 key principles:

**COMMUNITY**



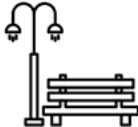
**SUSTAINABLE CONSTRUCTION**



**ECONOMIC DEVELOPMENT**



**STREET LIFE**



**PLACEMAKING**



**PRESERVING ECOLOGY**





## COMMUNITY

The proposed Tannery Park's focal point is a public space (.3 acres) that can be used for various community occasions and gatherings throughout the seasons. It is an ideal gathering space for the Camden Farmer's Market, concerts, festivals, or other community events during the summer, and an ice skating rink during the winter. The Camden Farmer's Market currently operates on the site during the summer months, and preserving this use is essential.



Camden Farmer's Market (Google Maps, 2020)



## ECONOMIC DEVELOPMENT

The Town and the Camden residents have expressed the need for the development of the site to stimulate economic growth and support the creation of year-round employment opportunities. The creative economy in Maine, and New England, in general, is growing, and as a result, the demand for affordable maker spaces, artist workshops, and spaces for small businesses or start-ups is increasing.

The state of Maine has a robust creative workforce. The intention is to provide spaces for local makers, artists, and entrepreneurs to grow their businesses locally so that the Town of Camden can both retain and attract the creative workforce.

The development of Tannery Park will provide 19 new workshops, which can be adapted to fit each unique tenant's needs. A number of workshops could double as retail spaces to attract and sell products directly to local and regional consumers. The clustering of entrepreneurs and the creation of community spaces provides an environment in which the creative workforce will grow and thrive.

*"The quality of our workers is second to none, Mainers are the gold standard. The economic engines that create opportunity are our people — our youth, our creative workers and our creative entrepreneurs — and we must provide them with the resources and support to be able to succeed,"*  
*73rd Governor of Maine, John Elias Baldacci (2003-2011).*



## PLACEMAKING

Tannery Park is designed as a welcoming environment for creatives, entrepreneurs, and makers to thrive, and for people of all ages to play and enjoy. The Camden Riverwalk Tannery Section that runs along the site is a public multi-use path that will remain a key recreational feature. In addition, there will be a dock to access the river to accommodate a variety of activities from fishing to relaxing. The public square will be a place for the Camden's Farmer's Market and the community to use for outdoor activities such as concerts, ice skating in the winter, or other community gatherings.

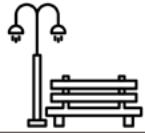


## SUSTAINABLE CONSTRUCTION

The design of the workshops and Big Barn utilizes sustainable timber frame construction.

A kit of parts is available for tenants to customize their spaces, including shop windows, large barn doors, and benches.





## VIBRANT STREET LIFE

The urban design of Maker Park emphasizes community gathering, natural landscape features, and safe streets for bikers and pedestrians. The public square, called Washington Green, will front on Washington Street and provide a flexible green space for neighbors to enjoy. The Gateway Lawn and Greenway preserve the existing trees along Washington Street as well as an open lawn that will help to open up the site to the west, creating a natural gateway into this area of Town. Shared outdoor spaces and natural landscaping complement the workshops.



## PRESERVING ECOLOGY

The site was designated as a brownfield site and has undergone an extensive cleanup funded by the Town and the EPA. The developer agrees to work with the Town to continue the brownfield cleanup.

Approved by Camden voters in 2008, the existing 25-foot easement along the river for the Camden Riverwalk is an asset to the community and enriches the site. The Riverwalk will be maintained along the site, the riverfront restored, and there will be public parking to access the river for recreation or leisure.



# PROGRAM

## APOLLO TANNERY TO TANNERY PARK

The Tannery Park proposed development consists of several features:

- A Public Plaza that will be the permanent home for the Camden Farmer's Market. The Plaza will host a variety of community events in addition to the Farmer's Market throughout the year.
- A Gateway Lawn and Greenway that preserves the existing trees along Washington Street as well as an open lawn that will help to open up the site to the west, creating a natural gateway into this area of Town.
- 19 Workshops for makers, artists, and entrepreneurs to support economic development in Camden.
- A central Barn and Event Center.
- Parking for easy access to the workshops and the river.
- Restoration of the riverfront and riverwalk.
- Facilities and utilities to support the Farmer's Market.
- Public seating and landscaping near the River.
- Pavilion for publicly accessible restrooms.
- A central trash and recycling building.

### PROJECT IMPACT

	Area (sf)	Area (ac)	
Parcel Area		3.500	
Riverwalk Trail		0.770	
<b>Parcel remaining</b>		<b>2.730</b>	
New Streets	12,007	0.276	
New Parking and Loading	25,286	0.580	
New Parking spaces	67	-	
Workshops 20x30	6	3,600	0.083
Workshops 30x40	13	15,600	0.358
Side Buildings 20x20	2	800	0.018
Main Barn	1	4,800	0.110
Main Plaza		7,560	0.174
Washington Green		6,532	0.150
Landscaped Area		29,120	0.641
Walkways, Sidewalks		14,810	0.340
			<b>2.730</b>



1. River Restoration Zone and Brook Trout Fly Fishing Area #1.
2. Brook Trout Fly Fishing Area #2.
3. 20' x 30' Flexible Workshops
4. 30' x 40' Flexible Workshops
5. Barn with a view of the river, & Rollup doors onto the main square.
6. Main community gathering space for summer farmer's market & winter ice skating.
7. Small Pavillion (Bathrooms, Storage, etc.)
8. New Greenway. Retain the existing trees on Washington Street.
9. Flexible parking fields with easy access to both the workshops and the public Riverwalk.
10. Great lawn celebrating the view coming into town on Washington Street.
11. New Public Square that can be used for events, markets, and recreation.
12. Landscape buffer from existing residential neighbors.

# AFFORDABLE INDUSTRIAL ECO-VILLAGE

Tannery Park is a proposed industrial eco-village on the bank of the Megunticook River. The project is an *affordable* industrial village, made of locally sourced, sustainable materials using simple, economic construction and focused on three primary 'active' uses:

- A Common Market
- Light Industrial Incubator Spaces
- An Event Venue

The purpose of this affordable industrial park is to foster entrepreneurship by offering workshops and spaces at affordable rents, below the market cost for purpose-built, freestanding commercial buildings. Tannery Park will offer flexible lease terms to support startups that have outgrown the proverbial 'garage' and are in the prototyping or early production phase, but are not yet ready to move into larger, purpose-built industrial space requiring a multi-year commitment.

This unique program is targeted at one stage of the Entrepreneurial Ecosystem- a model in which each phase of the development of a business is supported by right-sized spaces, and social infrastructure, such as meeting spaces, and colocation of other businesses at a similar stage. This model facilitates networking, innovation, and the raising of investment capital.

The project will also support passive uses, such as a village green, an arborway, quiet lawns, and an enhanced Riverwalk with moveable seating. The project will provide funding for restoration of the east bank of the Megunticook, a heavily impacted section of the river. This restoration provides the potential to construct a model habitat for brook trout and other fish species.





This view shows the proposed Maker Barn and Gateway Green from Washington Street. The Farmers Market is on the public plaza.

## FIVE STAR AND URBAN WATERS PROGRAM

The proposed purchase price for the Tannery Park property is \$250,000, earmarked as a local match for the Five Star and Urban Waters Restoration Grant Program, funded by the EPA and administered by the National Fish and Wildlife Foundation. The program supports improving water quality in streams and rivers impacted by past development:

*“The Five Star and Urban Waters Restoration Program seeks to develop nation-wide community stewardship of local natural resources, preserving these resources for future generations and enhancing habitat for local wildlife. Grants seek to address water quality issues in priority watersheds, such as erosion due to unstable streambanks, pollution from stormwater runoff, and degraded shorelines caused by development.”*

– [www.nfwf.org/five-star-and-urban-waters-restoration-grant-program](http://www.nfwf.org/five-star-and-urban-waters-restoration-grant-program).

Eligible projects approved by NFWF receive a 100% matching grant. If approved, it would provide \$500,000 in funding to restore this heavily impacted section of the Megunticook River.



## A YEAR-ROUND FARMER'S MARKET AND EVENT VENUE

The centerpiece of Tannery Park is a boulevard entrance leading to a large barn and hardscaped plaza that will be home to a year-round farmer's market, Pop-Up Camden, summer and winter festivals, and also a venue for private events such as film screenings and weddings.

The barn, a monitor, consists of a 4,800 square foot central hall with high ceilings and an 800 square foot wing on either side. The wing facing the plaza opens to reveal a stage for performances facing south. The barn will be post-and-beam construction, using locally harvested timber. It will be unheated but contain attachment points and ducting for temporary heating (portable forced hot air heating trailers).

The 7,500 square foot plaza contains enough space for 30-40 pushcart vendors or one or more large tents for events. It is framed to the North by the barn, to the South by workshops, open to Washington Street to the East, and the Megunticook Riverwalk to the West. The plaza can be flooded in the winter to create an ice-skating rink.





Grand Prairie Farmer's Market. Photo credit: Michael Barera.

## POTENTIAL PROGRAMMING FOR THE FARMER'S MARKET AND EVENT VENUE

- Summer and Fall Farmers' Market
- Pop Up Camden Vendor Market
- Outdoor Movie Theater
- Outdoor Playhouse
- Overflow Venue for ClIFF/PopTech/  
Camden Conference (indoor)
- Corporate Events
- Weddings
- Oktoberfest Biergarten
- Christmas Market
- Winter Carnival
- Fire and Ice Fridays



This view shows the proposed public plaza during the fall. People are seated in the plaza watching a movie screening at an outdoor film festival and enjoying the fall weather.

## FIRE AND ICE FESTIVAL

Studies have shown that people in Nordic countries are happier during long winters because they look forward to fun winter activities. Outdoor sports such as skiing, sledding, ice-fishing, and snowshoeing draw people out of their homes, provide exercise, and an opportunity to build skills.

Fire and Ice is a form of winter activity counterprogramming that is equal parts social and physical. Fire and Ice is a winter festival every Friday during January and February, in which the plaza is converted to an ice rink with live music or DJs from 4pm to 8pm. The plaza and a section of adjoining parking are flooded and frozen and equipped with portable seating islands and braziers, around which ice skaters and the sure-footed can sit and mingle or skate in a winding loop while listening to music. Aimed at teens and adults of all ages, Fire and Ice is intended to be a unique winter attraction where intergenerational socializing can occur.

Ice skate and rubber ice cleat rentals will be provided in a kiosk. Hot beverages and treats of various persuasion will also be offered, subject to local permits and entrepreneurial interest.







This view shows the proposed public plaza during the winter Fire and Ice Festival. Ice skaters enjoy a skating rink on the public plaza, vendors are selling goods, and people are enjoying the band playing on stage.

## INDUSTRIAL WORKSHOPS

Tannery Park will include 19 modular workshops. These simple, post-and-beam gabled workshops are designed to be affordable and flexible. They will be built in two sizes, 20-by-30 and 30-by-40. The workshops are either standalone or clustered in 2-4 connected modules, allowing for various flexible shop sizes due to the ability to combine the spaces internally.

The workshops encircle three shared flexible outdoor areas for loading, storage, 'laydown', and parking shielded from the street and abutting neighbors. This configuration allows for the messy business of logistics and materials handling to occur while keeping the streetscape clean and attractive.

## VILLAGE GREEN AND ARBORWAY

The village green and adjacent arborway beautify the Washington street neighborhood and preserve the existing tree line with an expanded and improved sidewalk from the Megunticook Market and Megunticook River Bridge to the subject property.





This bird's eye view of the proposed Tannery Park shows the workshops which face towards Washington Street, and a new proposed street that connects Washington Street to Rawson Avenue. Parking is placed throughout for access to the workshops. There is an open space on the Gateway Green along Washington Street, and the Camden Farmers Market on the public plaza. The Barn faces the public plaza. The restoration of the riverfront allows pedestrians to stroll along the riverwalk, and to access the river to fish.

# THE CASE FOR AN ENTREPRENEURIAL ECOSYSTEM

Economic development is a term for the facilitation and encouragement of economic drivers within a specific geography. It can refer to the recruitment and relocation of large companies to a state or the sale and development of a commercial parcel in a village. Economic development is generally measured in terms of jobs (permanent or temporary); units of development (housing units, square feet of commercial space); or monetary units (new taxes, sales revenue, total development cost, etc). Municipalities and states often pursue defined economic development strategies to obtain a desired objective, such as gaining more high-quality jobs, growing the tax base, or rejuvenating a district.

Many municipalities and states try to encourage business relocation or offer incentives for the construction of new facilities, and in some cases, compete by offering a direct subsidy to the companies they pursue, for example, the Amazon HQ2 competition. The problem with relocation as an economic development strategy is twofold; one is the Goldilocks problem. Generally speaking, companies seek specific key criteria during a search for a new location. These criteria are the business' priority, and regardless of incentives offered, the business pursued will tend to migrate to the same handful of venues it would have seriously considered anyway. The second is that companies may relocate because they are flexible and not tied to a specific location, which means any company willing to relocate temporarily cannot be retained. Even businesses that mean to relocate permanently often cannot be retained. Most companies are either growing or shrinking, and as they do, their spaces need to change. Like hermit crabs, they proceed to swap spaces and locations as time passes.

The result is a zero-sum game, a slippery slope in which the more incentives municipalities offer to businesses, the more likely businesses are to move, and in a great number of cases do not move at all, preferring instead to negotiate incentives to stay where they are. When one state or municipality competes against another, they both enter into a frustrating game of incentives and deals. The economics of the commercial real estate market confirms this notion because as vacancy reduces in any given market, rents rise, resulting in more economic incentives to move as

the commercial market seeks equilibrium.

Worse, there is a substantial moral hazard to this game – offering incentives to 'outside' firms acts as an implicit tax on existing firms, either those who cannot relocate, for example, mines, or small businesses that aren't big enough to negotiate incentives.



## THE ENTREPRENEURIAL ECOSYSTEM

Instead of competing for corporate relocations, municipalities and states should foster and develop an entrepreneurial ecosystem. An Entrepreneurial Ecosystem is a network of resources supporting small business formation and growth, including different facilities and support for companies at various development stages.

An entrepreneurial ecosystem is a powerful economic development tool because it focuses on creating new businesses and growing existing small businesses, rather than competing. This generates organic demand for capital and labor and an ever-growing supply of goods and services.

The path of small business formation and development can be thought of as an escalator, beginning with ideation and team formation, then leading to prototyping, early production, business development, and later on, production, a growth phase, and scaling-up.

New ventures and startups flourish when they can easily access the appropriate physical spaces for their activities (buildings), social support (networking and training), and financial resources (capital). A vibrant entrepreneurial ecosystem combines all three. The secret to why places like Silicon Valley, New York, and Cambridge, MA have strong startup growth is because they combine bright people with venture capital and have the social and physical infrastructure (university campuses, tech districts, business accelerator competitions, etc.) that they need. In these clustered environments, 'collisions' naturally occur, leading to the creation of ideas, the formation of teams, and the financing of ventures.

The Mid-Coast of Maine is in a local-made entrepreneurial renaissance with what is known as the Maker Movement. The Mid Coast's small towns, good schools, and cultural offerings attract young (at heart) entrepreneurs looking to practice new trades, revive lost arts, and launch all manner of ventures. We have a shortage of appropriate spaces and social support, such as entrepreneur training and angel capital networks.

## TANNERY PARK AS INFRASTRUCTURE FOR ENTREPRENEURSHIP

Tannery Park will support early-stage startups in several overlapping ways. Every aspect is designed for maximizing productivity and interactions that support innovation and growth of nascent firms.

First and foremost, it will provide multiple affordable and flexible workshops that will support a peer cohort of small businesses to maximize lateral learning.

Second, an on-site event venue provides space for networking events, training programs for various business skills, or demo days to interact with potential mentors and investors.

Third, robust pedestrian-friendly infrastructure ensures visitors will feel welcome in the public areas, unlike conventional industrial parks. A welcoming environment integrates the companies located at Tannery Park with the community and provides crucial social support as friends, family, and investors can visit and see the work and progression of members' projects.

Fourth, a central location close to downtown, but away from the tourism, provides an essential attribute – a high quality of life – that will attract bright minds who are serious about both work and play. The Town of Camden offers a marriage of excellent schools, leading sports and recreation opportunities such as the harbor, Camden Hills State Park, and the Snow Bowl, and cultural institutions such as Ciff and the Camden Conference that are invaluable.



Close up of the proposed workshops at Camden Tannery Park.

## UNDERSTANDING THE NEEDS OF ENTREPRENEURS

Eric Ries defines a start-up as a human institution designed to deliver a new product or service under extreme uncertainty. New start-ups work to achieve something called product-market fit, a state where the new product or service fits a need in the economy that provides value to both the business and customer.

Because early-stage start-ups tend to bring novel solutions to existing problems, their plans for growth are based on assumptions, some of which can only be validated over time. For this reason, almost all start-ups do not know how much space or how many employees they will need in the next three years. Most don't know how much space they will need in six months.

The result is a natural mismatch between the commercial real estate market and the needs of start-ups. Most start-ups do not need 5,000 square foot buildings with long-term leases. They need flexibility and to minimize excess space so they can direct their resources to product and business development.

Most freestanding single-tenant commercial buildings were purpose-built for one particular use or another, for example, a law firm office or a restaurant. Larger, warehouse-type facilities are a risky proposition. Small businesses are the 'tail on the dog' when negotiating with warehouse landlords. Generally, they will have to accept lease provisions that allow the landlord to relocate them to allow a more prominent tenant to move in.

For similar reasons, small businesses need the right spaces and landlords equipped to work with small businesses, whose goal is to support and cultivate them. Tannery Park's purpose is to cultivate and support new businesses. The managerial philosophy is to design tenant services, leases, utility sharing, and tenant improvement build-outs in ways designed to assist new companies at this critical, early phase.





## CHARACTERISTICS OF TANNERY PARK INDUSTRIAL INCUBATOR:

### Affordable Industrial Spaces

Projected base rents of \$6 per square foot, or \$300 per month for a 20 by 30 workshop.

### Flexible Lease Terms

Leases range from three months to one year. Tannery Park provides flexible financing and support for capital improvements and fixtures such as compressors and ventilation systems.

### Modular Footprints

19 Workshop Modules, 600 or 1200, can be conjoined with adjacent units to create a range of sizes from 600 to 4,800 square feet.

### Shingled Barn Architecture

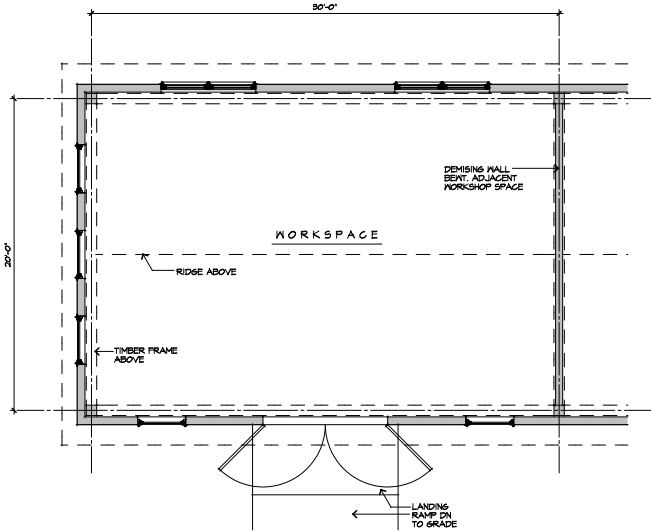
Post-and-beam framing allows for large penetrations for mechanical systems without impacting structure, and wood shingle siding is architecturally 'self-healing' with the ability to patch shingles when penetrations are opened or closed.

Tannery Park will be able to achieve this by utilizing:

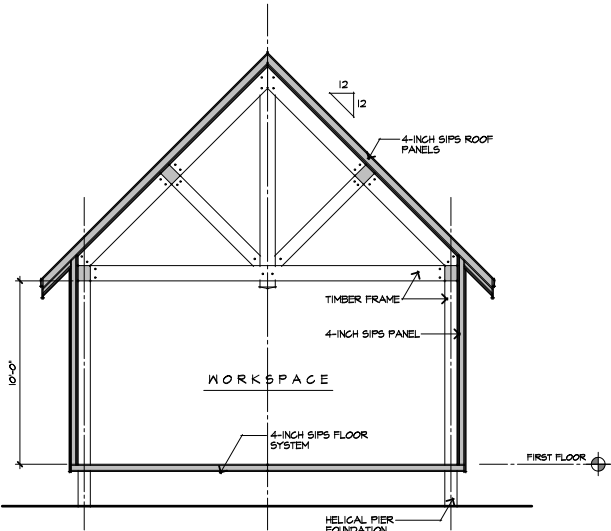
1. economic post-and-beam modular construction
2. reasonable land costs
3. low leverage
4. low-impact site development, including adaptive re-use of existing structures, utility lines, and surfaces wherever possible
5. appropriate density to spread infrastructure costs across meaningful square footage of rentable space
6. specialized experience in supporting small businesses on the part of the sponsor.

# BUILDING TYPES

## 20 X 30 WORKSHOP



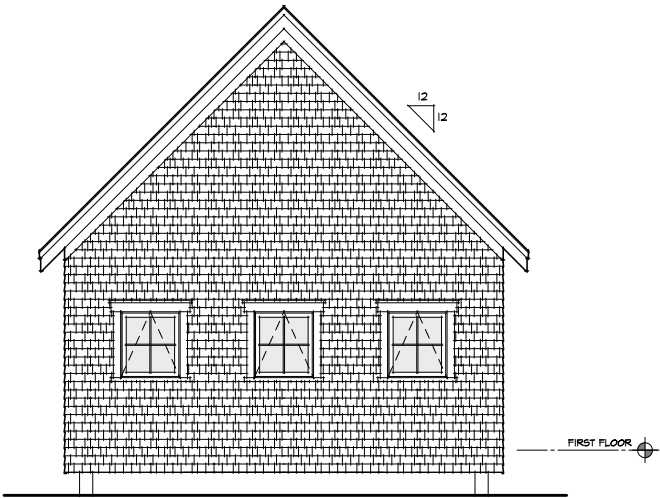
20 x 30 Workshop Floor Plan



20 x 30 Workshop Section

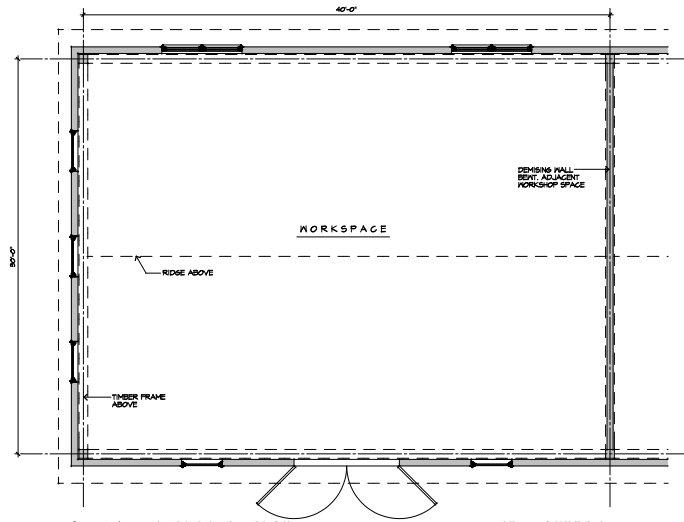


20 x 30 Workshop Side Elevation

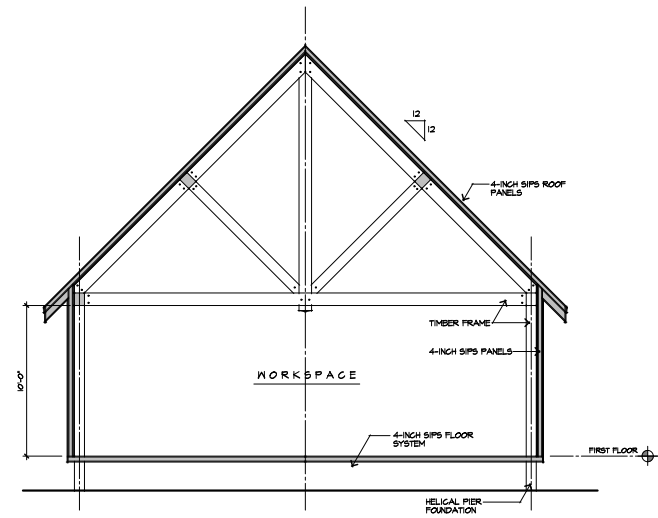


20 x 30 Workshop Gable Elevation

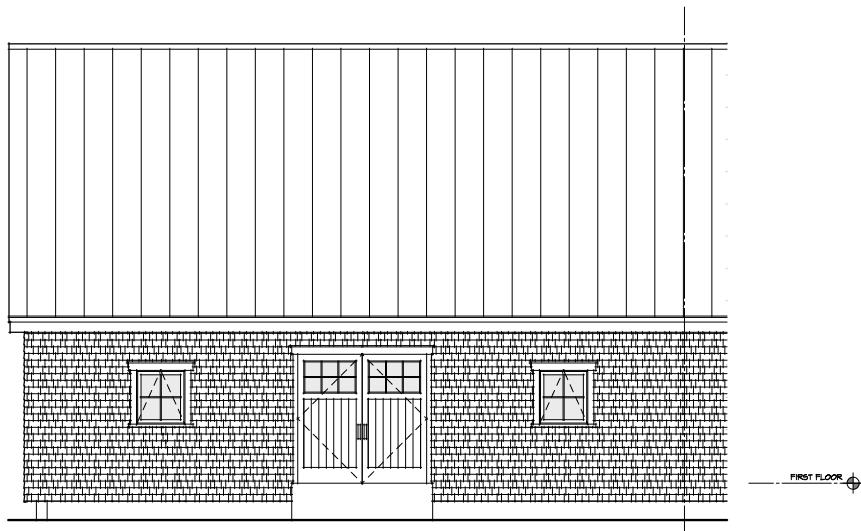
# 30 X 40 WORKSHOP



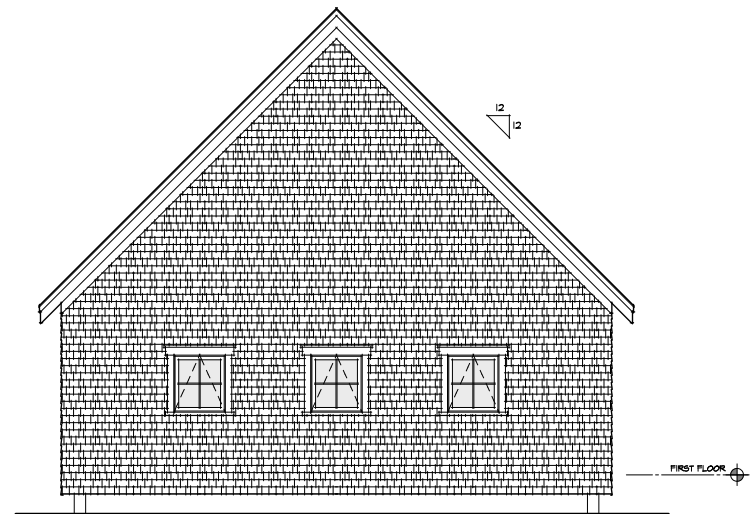
30 x 40 Workshop Floor Plan



30 x 40 Workshop Elevation

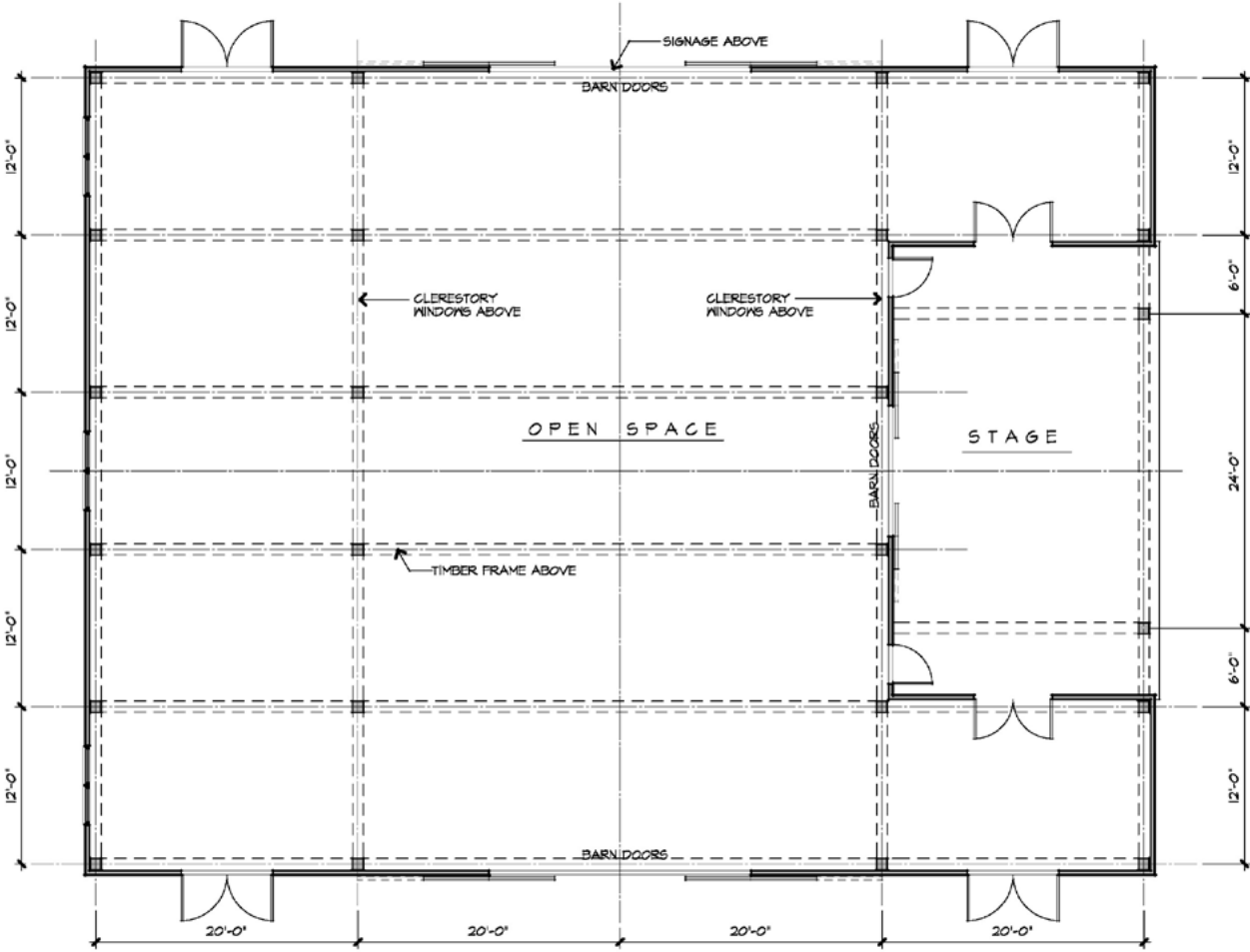


30 x 40 Workshop Side Elevation

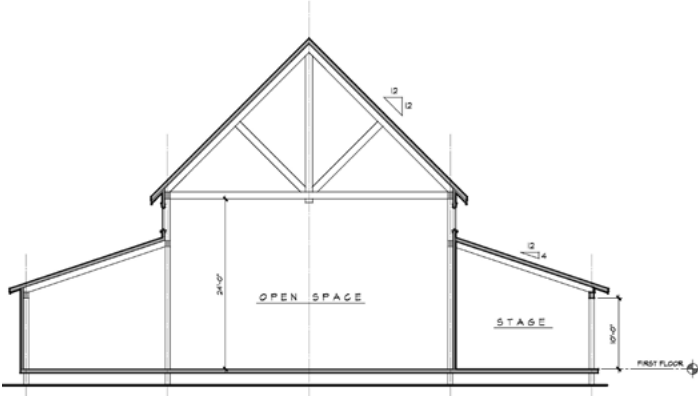


30 x 40 Workshop Gable Elevation

# COMMUNITY BARN BUILDING



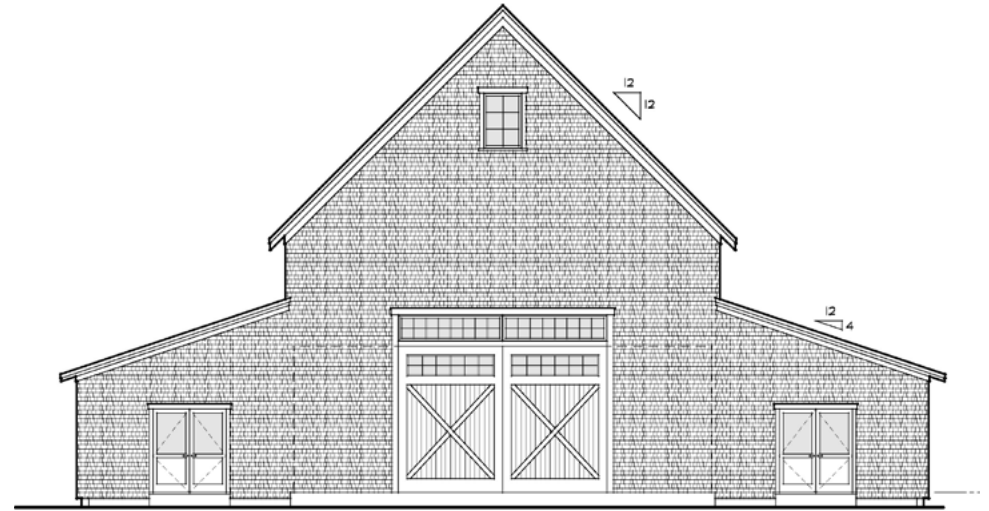
Barn Floor Plan



Barn Building Section



Barn Front Elevation



Barn Rear Elevation



Barn Side Elevation



Barn Side Elevation

## ENVIRONMENTAL NET BENEFIT

Tannery Park's approach to buildings and infrastructure, paired with river restoration funding, provides a clear Net Benefit to the Environment while maximizing economic activity.

### MINIMAL DISTURBANCE

One of Tannery Park's infrastructure principles key to affordability is a minimally-invasive approach to infrastructure and building footprints. Several concrete slabs are reused rather than demolished.

The Town of Camden has a large stockpile of fill material plus a grant for additional material to cap the low-level industrial soil contamination in the upland portion of the site. In the Park's utility plan, utility lines are reused, and connections made before the cap is placed, meaning less disturbance of contaminated materials. Shallow trenches are dug to lay new water and sewer lines, which are backfilled and then topped with clean cap material to achieve the required finished depth.

The post-and-beam barn and workshops, while beautiful, will also be lightweight. Instead of spread footings, they will be installed over helical piles requiring minimal soil displacement.

The entire development plan is to build 'up and out' instead of digging down and moving large quantities of soil, resulting in dramatically lower civil costs and less exposure of hazardous materials present on-site, lowering the risk of accidental exposure.



Existing concrete slab on the site leftover from the former Apollo Tannery.



## RIVER RESTORATION AND TROUT FISHING ZONES

It was recently discovered that the north-east bank of the Megunticook River at Tannery Park has a large quantity of industrial solid waste left over from the Knox Wollen Mill and Apollo Tannery. While it is an obstacle to redevelopment, and a threat to water quality, the remediation of this contamination presents an opportunity. The cleanup may be fundable from grant sources, and the rebuilding of the edge of the river allows for a river restoration with a rebuilt 'model' habitat for river species.

### FIVE STAR AND URBAN WATERS RESTORATION PROGRAM

The Five Star and Urban Waters Restoration Program is an untapped resource for the Town of Camden. While more study on the program is needed, the site may be a good fit for funding from the Five Stars Program because it appears to meet all of the program's criteria.

The riverbank restoration would:

- Enhance habitat for local wildlife,
- Address water quality issues in a priority watershed,
- Prevent erosion from unstable streambanks,
- Eliminate or reduce pollution from stormwater runoff caused by the redevelopment.

Further, based on a review of past rewards, the project appears to be right-sized for funding. It is particularly attractive because it would eliminate the only known significant source of pollution in the watershed.

### RIVER RESTORATION ZONE AND BROOK TROUT FLY FISHING AREAS

The plan contains two areas where impacted areas containing fill and solid waste will be restored and enhanced to create an ideal habitat for the existing brook trout population. This is designed to create a local destination for fly-fishing and exploration of the river ecosystem.







## SCOPE OF RIVER RESTORATION

The Megunticook River, which forms the southwest boundary of the site, has long been a cultural, ecological, and economic centerpiece of the historic Camden region. The river is presently home to several fish species of interest to anglers, including eastern brook trout, rainbow trout, and largemouth and smallmouth bass. The transformation of the site provides an opportunity to proactively restore and enhance the channel bed and banks for the benefit of aquatic organisms as well as recreational users of the waterway. Inter-Fluve is familiar with the Site and the broader Megunticook River. We are currently evaluating fish passage opportunities for sea-run fishes, such as rainbow smelt, alewife, and Atlantic salmon throughout the watershed.

The site has approximately one thousand feet of frontage on the Megunticook River between Washington Street and Rawson Avenue. This reach of the river comprises a series of pools and riffles, with occasional gravel and cobble point bars on the inside of the meander bends. At low water, these pools maintain a residual water depth of between 0.5 and 1.5 feet. The aquatic habitat within this reach is considered poor, with limited geomorphic complexity and habitat opportunities. While canopy cover provides some shade, the reach is devoid of in-stream large wood, deep pools, undercut banks, or overhanging vegetation that all contribute to healthy, complex aquatic habitat. Legacy structures from the site's industrial past, such as buried tanks and hardened banks, remain in and along the channel, degrading natural aquatic and riparian habitat quality.



The Megunticook River, looking upstream towards the northern end of the reach. The Washington Street crossing is visible in the distance. The tannery site is to the right of the photo.



Looking upstream at the middle of the reach. The tannery site is to the right of the photo.

Fortunately, opportunities to enhance fish habitat and public access to the site are plentiful. Potential habitat improvements include enhancing channel pool depths, the initiation of alternating gravel bar sequences, and creating “pocket water” refugia environments. These geomorphic adjustments will enhance aquatic habitat opportunities while providing a more natural-looking stream and using native streambed substrate rather than imported riprap or other hard infrastructure. The channel bank and riparian edge of the channel are important ecologically, aesthetically, and recreationally. Enhancement of the riparian vegetation along the channel will further enhance overhead cover across the stream, provide terrestrial habitat for mammals, birds, and other species, as well as provide a buffer to the river to support the infiltration of surface water during storm events. Public access to the river can be improved by integrating river access points with the existing foot path that runs along the edge of the site. Coordination between the channel and bank enhancement designs and the recreational opportunities will be necessary so that access paths have minimal impact on the habitat discussed above. The implementation of all, or some combination of these restoration and enhancement efforts will improve the ecological health of the river and its value to the community..



Looking downstream towards the lower end of the reach at the Rawson Avenue crossing. The tannery site is to the left of the photo.



Typical view of the channel bank, with the tannery site in the background.

## CONCEPTUAL DETAILS OF POTENTIAL CHANNEL AND CHANNEL BANK REHABILITATION ALTERNATIVES



Remnants of a buried tank on the left bank of the channel. The tannery site is in the background.



A concept drawing of channel bank treatment options.



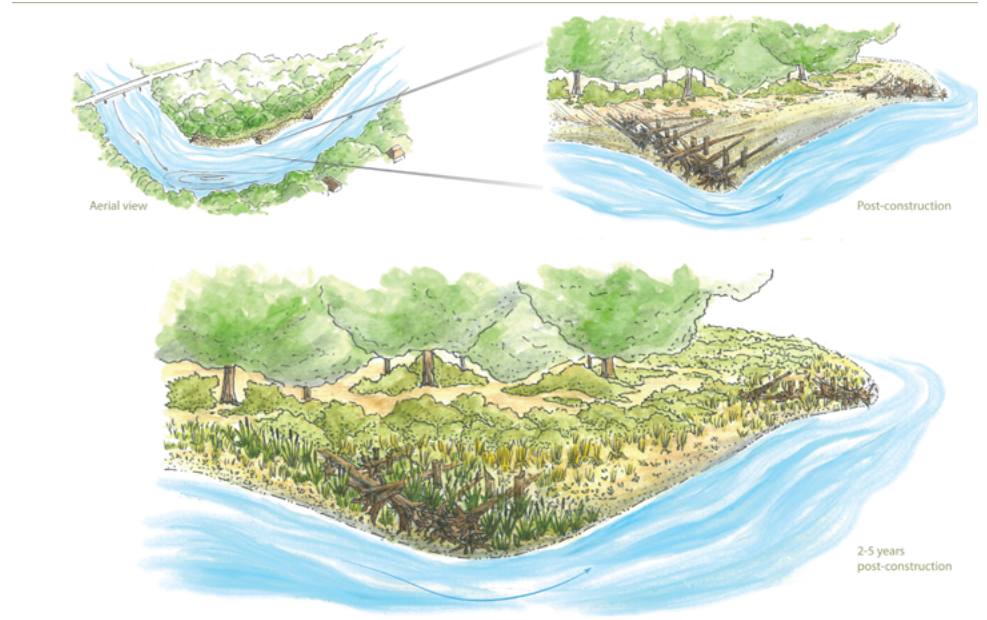
Stone bank protection on the right bank of the channel, across from the tannery site. Bank hardening, which is present on both sides of the channel, is a legacy of the river's industrial past that impairs habitat quality.



A concept drawing of wood bank stabilization treatment option.



Precedent photo of the proposed alcove habitat connected to the stream.



A concept of channel bedform and bar development.



A concept drawing of the proposed alcove habitat connected to the stream.

# ECONOMIC IMPACT REPORT

## ECONOMIC IMPACT REPORT

The Town and Camden's residents have expressed the need to develop the Apollo Tannery site to stimulate economic growth and support the creation of year-round employment opportunities. The creative economy in Maine, and New England, in general, is growing. As a result, the demand for affordable maker spaces, artist workshops, and small businesses or startups is also increasing. The state of Maine has a robust creative workforce. The intention is to provide spaces for local makers, artists, and entrepreneurs to grow their businesses locally so that the Town of Camden can both retain and attract the creative workforce.



## JOB CREATION

The development of Tannery Park will provide 19 new workshops and 1 Big Barn to accommodate a wide range of smaller startups and tenants. The design of the buildings will adapt to fit the needs of each unique tenant. The project has the potential to create between 53 and 99 new, permanent jobs. These jobs' will range from startup employees, makers, fabrications, and general light industrial positions. The companies occupying the various workshops might go from artisans working on furniture or pottery to food production or brewing to startups needing fabrication space to build new products.

The Big Barn will also provide additional options for companies, freelancers, and startups to find a shared place to work. This building will have flexible sized spaces that we envision working for a variety of small businesses. We hope that a community of makers, small business owners, and employees will find a home for their companies here and can grow and thrive.

The construction of the project will create construction jobs. We expect there to be positive economic impacts from the new jobs created by the project that will support existing businesses nearby and can develop some direct, indirect, and induced impacts on the local economy.

## COMMUNITY BENEFITS

In addition to providing new commercial and light industrial space and new tax revenue, the project will provide many other community benefits. These benefits have all been conceived around how the public can access, visit, and enjoy the Tannery Park. We will provide parking for visitors to the River and will create a plan to help further restore the River. This focus on celebrating this natural feature has also led our team to develop several new open spaces that the public will enjoy year-round. These include:

- A 6,500 new sq.ft. Public Square, called Washington Green, will front on Washington Street and provide a flexible green space for neighbors to enjoy.
- A 7,500 SF Public Plaza that will be the permanent home for the Farmer's Market. The Plaza will host a variety of community events in addition to the Farmer's Market throughout the year.
- A Gateway Lawn and Greenway that preserves the existing trees along Washington Street as well as an open lawn that will help to open up the site to the west, creating a natural gateway into this area of Town.
- In addition to these open spaces amenities, the project will also create:
  - Publicly accessible bathrooms.
  - Facilities and utilities to support the Farmer's Market.
  - Public seating and landscaping near the River.
  - Available parking for River Access.



# ZONING

The Tannery site is currently zoned River Business District (B-R). Some of the allowed uses, detailed in Article VIII, Section 13 of the Town's Zoning Ordinance, that are relevant to the current proposed development include:

- (1) Natural Resource Protection District Uses. Fishing
- (23) Theatres and entertainment
- (26) Function Hall
- (27) Parking Facilities
- (31) Manufacturing
- (35) Tradesmen's shops
- (36) Warehousing

Additionally, the Tannery parcel can benefit from being included in a Business Opportunity Zone (BOZ). According to Article VIII, Section 17, when a BOZ is used in the development of a parcel, the permitted uses, design standards and district regulations should supersede and/or replace those of the overlaid parcel's existing Zoning District.

All relevant uses for the proposed development included in the current zoning B-R, are also included in the BOZ allowed uses.

In terms of Design Standards, the BOZ defines:

Minimum Lot Area: 1 acre

Minimum Set Backs (Front, side and back): 10 ft

FAR (max): 2.0 (excluding below grade floor)

Buildings are encouraged to be taller with more floors (rather than low and wide). Height is limited to three usable floors above grade. Maximum height for a building with a flat roof – 33 feet; with a parapet added – 37 feet; and with a sloped roof - 46 feet maximum height.

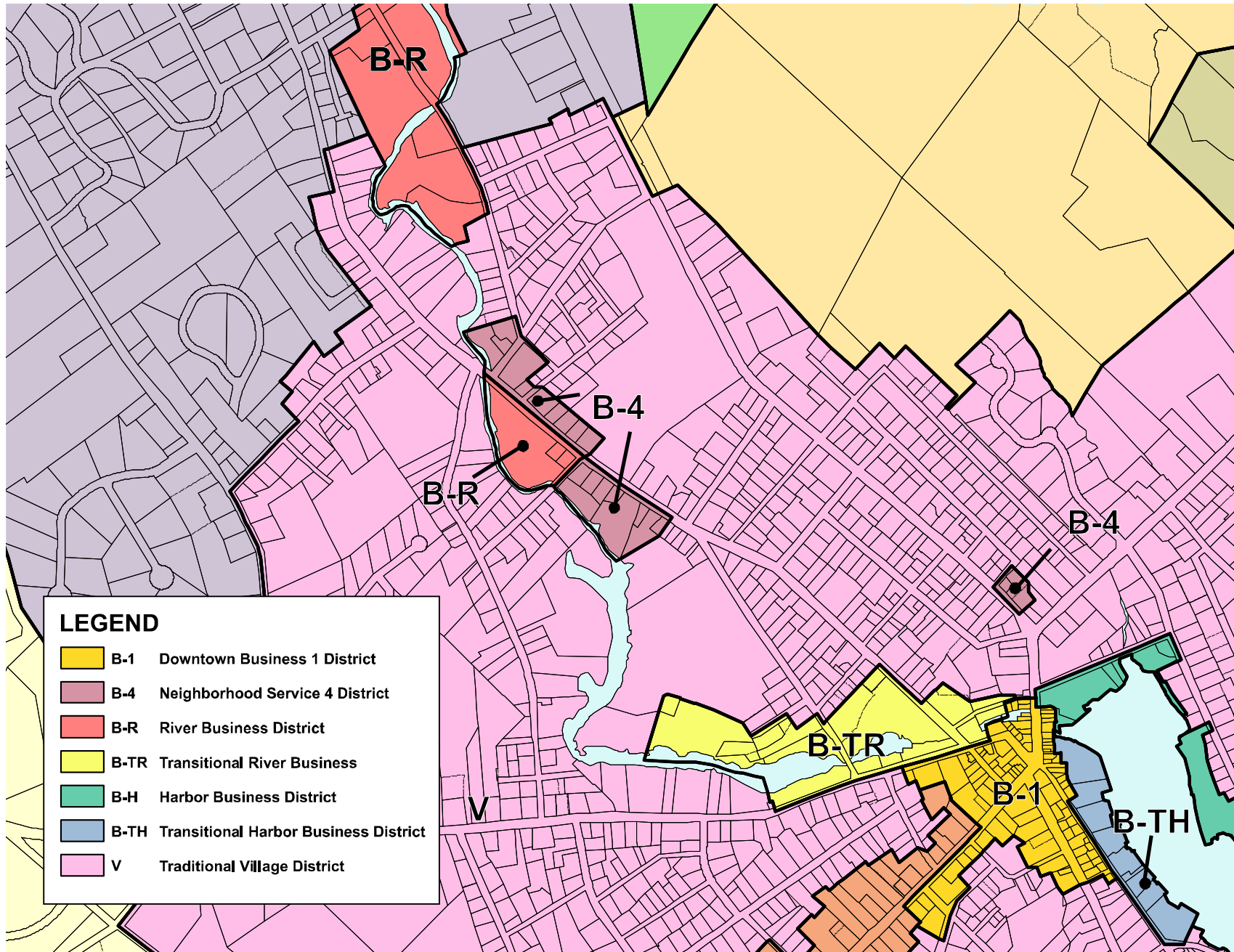
Any continuous wall greater than fifty feet in length shall be interrupted by a different wall plane or an architectural feature of at least eight feet in length.

Nonresidential uses should be screened from residential parcels or districts with a landscaped perimeter, as detailed in Article X, Part II, Section 3 of the Zoning Ordinance.

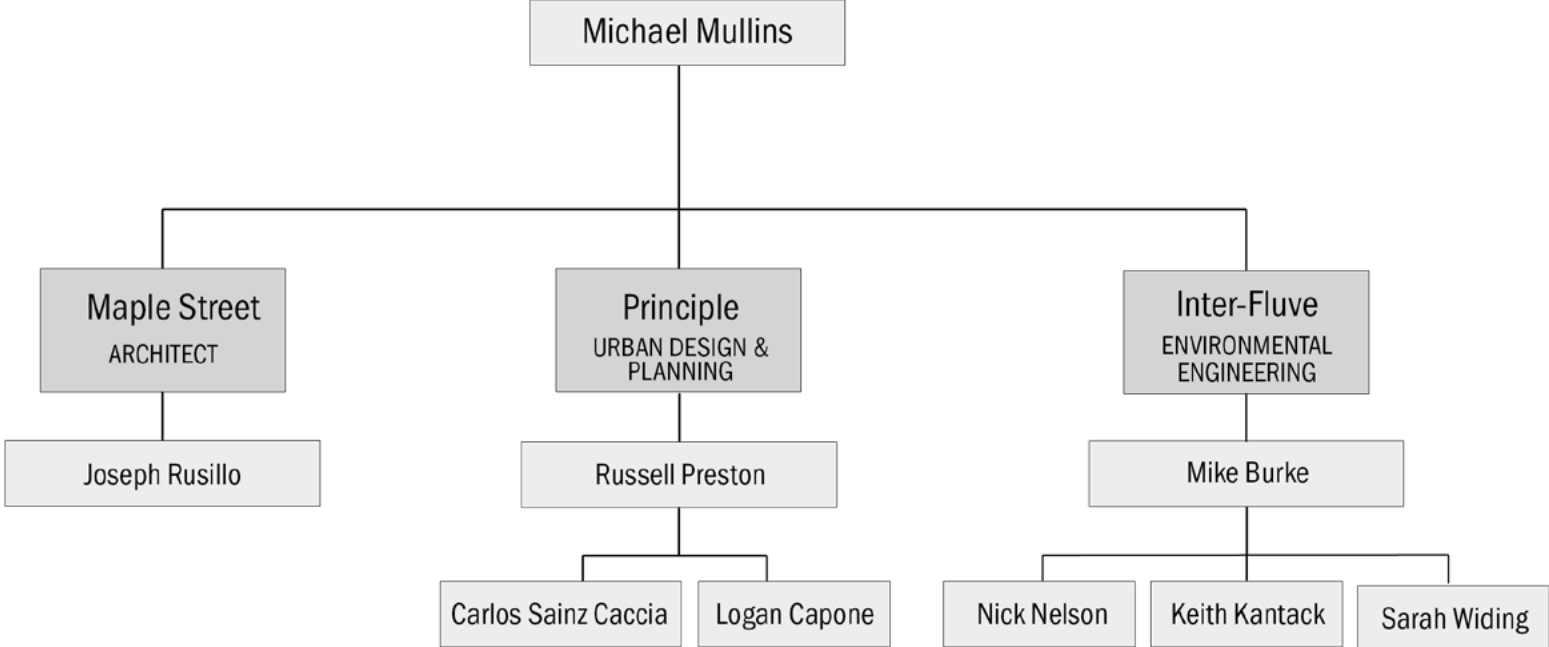
Any development should comply with the Performance Standards outlined in Article X, Part I, Section 1. For River Business (B-R) districts, the nearest horizontal distance of all principal and accessory structures shall be set back 30 (thirty) feet from the normal high-water line.

The proposed development for the Tannery site complies with all the applicable requirements and standards defined for both the B-R and/or the BOZ.





# DEVELOPMENT TEAM



# DEVELOPER

## PROJECT:

Camden Tannery Maker Park

## DEVELOPER/SPONSOR:

Michael Mullins, Cranesport, LLC

## ESTIMATED DEVELOPMENT COST

\$2.48m + \$250k Site Aquisition

## JOB CREATION

99 jobs calculated at 24,800sf divided by 250sf per worker

## TAX BASE

Estimated at \$2.5 million

## COMMUNITY BENEFITS

- 19 Workshops
- Community Barn
- Open Space along Washington Street
- Street Beautification and preservation of street trees
- Enhance Riverwalk
- Environmental Net Benefit: River Restoration
- Fly Fishing Zones
- Farmer's Market
- Infrastructure for Farmer's Market and other public events
- Passive Recreation
- Event Venue
- Pubic Restrooms
- Public Parking

## PROJECT SCHEDULE

Due Diligence and Negotiation of Purchase Agreement	2 Months
Town Meeting Outreach and Decision	6 Months
Design and Permitting	6 Months
Phased Construction	2 Years
Anticipated Opening	August 2022

# BROWNFIELD CLEANUP AND REDEVELOPMENT EXPERIENCE

Michael Mullins, the project sponsor and the owner of Cranesport, LLC, has relevant experience. Michael as a principal in RM Developer (Rudzinski-Mullins), the sponsor for the redevelopment of Massachusetts Mills III / The Picker Building.

This historic textile mill is within the Downtown Lowell National Park, a historic preservation district. The mill building was in a state of extreme disrepair and contained a large amount of asbestos-containing materials. The site contained several hundred yards of contaminated soils including fuel oil, asbestos, and other contaminants in an area of just 3,000 square feet. RM Developer completed a \$1.7 million cleanup on behalf of the property owner, in addition to the environmental remediation within the building.

Working in a small area between two buildings and the edge of the Concord River presented unique challenges, including complicated logistics. The building was completed in 2017, and remediation work continues today, with monitoring wells to measure groundwater contamination and protective booms to capture any oil displaced by rising and falling river water.

Michael's experience involves working with the general contractor, the Massachusetts DEP, and the environment consultant (referred to as a Licensed Site Professional or LSP) test, scope, and remediate on-site contamination. The project generated a Massachusetts Lead Abatement Tax Credit and a Massachusetts Brownfields Tax Credit.

Project: Mass Mills Picker Building

Developer: RM Developer, LLC

Architect: Russell, Scott, Steedle & Capone

Lender: MassHousing

Tax Credit Investor: Mass Housing Investment Corp

Contractor: Dellbrook Construction

Environmental Contractor: Dectam

Civil Engineer: HW Moore

Structural Engineer: Simpson Gumpertz & Heger

LSP: Goldman



Michael Mullins also has relevant experience working with contaminated sites in Maine as the principal of 25 Rankin LLC, the sponsor for the redevelopment of the Antiques Marketplace property into the Maine Museum of Industry.

This 1920's car dealership is in downtown Rockland and contains a number of hazardous materials including hydraulic oil, asbestos containing materials, PCB's, and gasoline. Prior to the purchase of the property, Michael worked with Ransom Environmental to do a phase I and phase II Environmental Site Assessment. The project will require a VRAP similar to the process the Town of Camden has followed with the Tannery site.

Project: 25 Rankin Street

Architect: Zshaw Architecture

Environmental Consultant: Ransom

Structural Engineer: Jesse Nash Consulting



# WOONASQUATUCKET VISION PLAN

## PRINCIPLE

**LOCATION** Woonasquatucket Corridor, Providence, RI

**CLIENT** City of Providence

**YEAR** 2017-2018

**STATUS** Adopted

**TEAM** Principle, Horsley Witten Group, Urban Advisors,  
Kyle Zick Landscape Architecture, TND Engineering

**MORE INFO** [www.providenceri.gov/planning/woonasquatucket/](http://www.providenceri.gov/planning/woonasquatucket/)

Principle worked with the City of Providence and the EPA to develop a long term strategic vision for the 560-acre Woonasquatucket River corridor, including several diverse neighborhoods in a growing arts-industrial section of Providence. Challenges included incorporating several large catalyst brownfield sites into the plans, engaging the community in a dialogue about the area's future, and planning to keep affordability and the industrial character intact.

## TEAM APPROACH

Principle facilitated engagement with a diverse community of stakeholders during an intensive public process, including public picnics, a weeklong design charrette, and dozens of focus group meetings. During the weeklong design charrette, the team worked in real-time with the public to create a cohesive vision for the neighborhood. This iterative process leveraged existing community assets to address effects from land contamination as well as issues such as displacement and preservation of neighborhood identity.

## PROJECT IMPACT

The Woonasquatucket Vision Plan will guide development and the City's capital improvements along Providence's Woonasquatucket River. The Plan aims to stimulate economic growth that benefits neighborhood stakeholders as it strengthens environmental and social resilience. It will be used to guide and prioritize the many investments planned and underway in the Woonasquatucket Corridor, determine other needed investments, visualize what desirable reinvestment looks like, and advocate for and secure resources for implementation. In 2019, the City began design on the first phase of infrastructure improvements.



Existing conditions of Promenade Street.



Several key infrastructure investments can transform Promenade Street into an actual world class Promenade.



Vision for the development of Atwells Avenue.



Vision for the redevelopment of Dead Street with infill maker and industrial buildings, a linear skate park, and outdoor public gallery.

# THE TREMONT: MIXED USE HOUSING

## PRINCIPLE

**LOCATION** 1480 Tremont Street, Mission Hill, Boston, MA

**CLIENT** New Urban Partners, LLC

**YEAR** 2011-2016

**STATUS** Completed

**TEAM** Principle, Utile, New Urban Partners, LLC

**MORE INFO** [www.thetremontboston.com](http://www.thetremontboston.com)

The Boston Clutchworks Site had sat undeveloped for nearly a generation. Several prior developers were unable to secure support from the local community; our approach to the redevelopment was to design a community-oriented project. This building was also the first phase in a multi-phase master plan that required setting the character and quality for new development in the area. The site was designated as a brownfield, and the site cleanup was funded by a grant awarded by the EPA's Brownfields Program.

### TEAM APPROACH

The project conformed to the height, density, and design guidelines set forth by the community. The resulting building incorporates 66 rental apartments ranging in size, type, and affordability. The project includes a 60 car parking garage and 82 bike storage spaces as well as other transportation demand management plans to encourage residents to take advantage of the nearby orange line and green line MBTA stations. The design includes over 15,000 square feet of outdoor space, a fitness facility, and roof decks to take advantage of striking views.

### PROJECT IMPACT

The Tremont provided a new housing type that was not available in the neighborhood before this development. The property leased entirely in under six months, which is a testament to how desired these types of homes are in a growing city. Mission Hill has an eclectic mix of architectural styles, which inspired the building's design. The ground floor was planned to accommodate several neighborhood-oriented shops and restaurants, adding to Tremont Street's foot-traffic and vitality as an eating and shopping destination.



The Tremont looking southeast.



Interior of a unit at The Tremont.



View of the site prior to construction.





The Tremont looking southwest.

# MASHPEE COMMONS MASTERPLAN AND CODE

## PRINCIPLE

**LOCATION** Mashpee Commons, Mashpee, MA

**CLIENT** Mashpee Commons LP

**YEAR** 2016 - Present

**STATUS** In Progress

**TEAM** Principle, Duany Plater-Zyberk & Company, Imai Keller Moore Architects, Simon Consulting

**MORE INFO** [mashpeecommons.com](http://mashpeecommons.com)

The plan and code for Mashpee will guide development from a suburban retrofit of a typical strip mall into a new town center for the Town of Mashpee. After years of struggling to gain local support for the idea of building a compact, walkable neighborhood in a community that has lacked a mixed-use downtown, the developer sees change take place.

### TEAM APPROACH

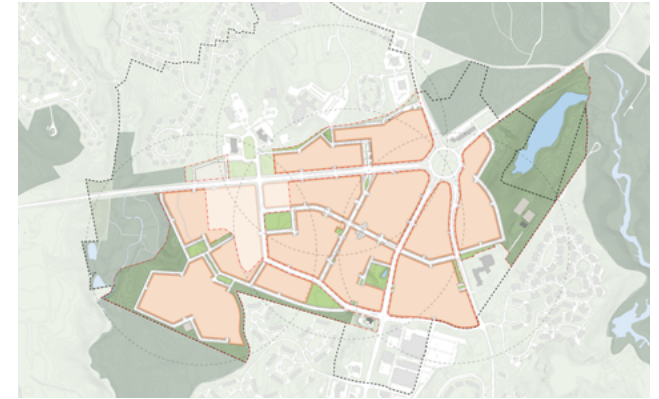
Principle and the Mashpee Commons by Design Team worked with the Town and the Cape Cod Commission closely to further plans for residential neighborhood development at The Commons. The objective is to strengthen the existing commercial core and provide a whole neighborhood where people can walk from home to work, dine, and enjoy the community. Principle is leading the design of the master plan, including new regional and local street designs, schematic building designs for development, and crafting the form-based code that will shape the community. The public process began in the fall of 2017, and the Vision Plan is currently in production.

### PROJECT IMPACT

The proposed form-based zoning code is designed to create a new variety of buildings and housing types in Mashpee Commons, such as townhomes and low-rise apartments. Over time, the zoning code guides development, enabling The Commons to transition into a mixed-use, walkable neighborhood and maintain the charming character of the Cape. The goal is to position the Commons to attract both young and aging residents looking for an alternative to single-family homes and wish to be closer to amenities. The public process focused on engaging the community through a series of talks and a pop-up studio to result in a cohesive vision to guide growth and development rooted in local precedent.



Visioning Meeting, Mashpee Commons 2017.



The neighborhood framework plan to guide the future expansion of the town center.



Rendering of a proposed greenway with a variety of building types surrounding it that include small and large multi-family buildings and townhouses.



Rendering of the future Jobs Fishing Road converting it from an auto-orient bypass road to a walkable and pedestrian friendly street with a mix of building types that are both residential, mixed-use, and hospitality.

# MINNEHAHA CREEK PLANNING & RESTORATION



**LOCATION** St. Louis Park, MN

**CLIENT** Minnehaha Creek Watershed District

**YEAR** 2003-Present

**STATUS** Ongoing

**TEAM** Inter-Fluve

**MORE INFO** <https://www.minnehahacreek.org/>

By the mid-1900's, Minnehaha Creek had become ditched, straightened, incised, dammed, and disconnected from its floodplain. The Creek had mainly become a conduit for trash and stormwater. Over the last 17 years, the Minnehaha Creek Watershed District has teamed with key partners and acquired properties along the corridor to advance the restoration of the stream corridor and adjacent properties. Inter-Fluve has worked closely with the District and Partners to improve the ecology of the system commencing with a 21-mile geomorphic assessment (in 2003 and again in 2012) of the main stem and tributaries in order to assess erosion, prioritize future projects and provide valuable geomorphic and hydraulic modeling information.

We have completed the highest prioritized projects that include bank stabilization, in-stream habitat, and riparian restoration plans, natural channel restoration, fish passage barrier removal, canoe access, infiltration design, road closure, and wetland restoration as well as a boardwalk that connects the river to Methodist Hospital that is frequently used by the community and hospital staff to promote healing in patients. We designed and provided construction oversight for 2,000 feet of meandering wetland channel and an off-line pond adjacent to the Hospital. The project concept, coined "Healing Spaces," emerged in

the early 2000s, when Methodist Hospital embraced the nearby Minnehaha Creek and wetland as an asset instead of a barrier. Instead of building a parking lot, the hospital committed to utilizing the creek as a human-and-nature healing experiment. Future trails will connect the regional trail with the proposed Light Rail Transit stations in St. Louis Park. The most recent work includes restoration of Arden Park in Edina, which included removal of a historic dam, new channel construction, and recreational amenities. This project included natural channel design, small dam removal, floodplain restoration, riparian zone restoration and park renovation. The project will improve water quality by treating over 100 acres of otherwise untreated urban runoff.



Boardwalk overlooking Minnehaha Creek, Minnesota.



Boardwalk with informative graphics, Minnehaha Creek, Minnesota.



The boardwalks are frequently used by both hospital staff and patients.



Stream crossing and restored river channel with public access at Arden Park along Minnehaha Creek, Edina, Minnesota.

# FIRM OVERVIEW

## CRANESPORT, LLC

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Cranesport, LLC is a Camden, Maine based commercial real estate company. Cranesport is the owner of 100 Mt. Battie Street, a former MBNA garage and small business incubator.

The beneficial owner of Cranesport, LLC is Michael Mullins of 215 Cedar Street in Rockland, Maine. Michael was formerly President of Mullins Management Company, Inc., and also a Director of CMJ, Inc, both firms are owner and operators of affordable (mixed-income) rental housing. In the case of Mullins Management, that firm has developed and manages over 800 units of housing and two town center style developments that are in the permitting process. CMJ, Inc. has a portfolio of approximately 4,800 units of mixed income rental projects in Massachusetts and California.



Massachusetts Mills in Lowell, MA



MNTB Garage



Massachusetts Mills in Lowell, MA



# MICHAEL MULLINS

MANAGER

(207) 691-7291

mullins01@gmail.com

Mike Mullins is the owner and manager of Cranesport Garage, a business incubator in Camden, Maine. In 2015, Mullins purchased and restored the former Crockett's Quarry across Maverick Street from the Rockland Golf Club. In 2017, he gained notice for a proposal to buy and convert the MET building in Camden into a makerspace, a shared multidisciplinary workshop with programming for adults and children. Mullins is on the board of directors of Mullins Management, a Boston based developer engaged in mixed-income housing and historic preservation. In the past he sat on the boards of Dublin School, CNU New England, and Caritas Communities, a non-profit dedicated to the preservation of Single Room Occupant Housing. He was a fellow in the 2009 Class of Startup Leadership, and Founder of the Lean Startup Challenge business accelerator, in partnership with MassChallenge in 2011. Mullins is the Founder of Maine Relief, a Maine Title 13 Non-profit producing masks for the community under Mid-Coast Pop Up Factory.

## EDUCATION

MBA, Strategy, Entrepreneurship, Corporate Valuation  
University of Chicago, Booth School of Business, 2012-2014

MSRED, Real Estate Finance & Development  
Massachusetts Institute of Technology, 2003-2004

BBA, Finance  
University of Miami, 1997-2000

## PROJECTS AND EXPERIENCE

### MAINE MUSEUM OF INDUSTRY

Purchased historic car dealership in Rockland. Completed Environmental Site Assessment for this Brownfield property. Project to consist of adding building to the National Register of Historic Places, completing a full restoration to National Park Service Standards, and preparation and exhibition of exhibits on the industries that shaped Maine. Rockland, Maine. 2020 to Present.

### TENNYSON QUARRY

Remediation and restoration of a 20 acre quarry site in Rockland. Work consisted of cleanup, removal of industrial solid waste, installation of erosion control and revegetation of soft banks of working pit, installation of constructed wetland for improvements to water quality. Restoration of original limestone railroad bed and granite rail bridge. Rockland, Maine. 2014 to Present.

### MASSACHUSETTS MILLS III / PICKER BUILDING

Development Principal and sponsor for a redevelopment of this 100,000 square foot industrial mill building into 70 units of rental house, 80% of which are affordable. Renovation work included replacement of 30% of the wood structural components and decking; and exterior preservation to National Park Service Standards; and over \$2,000,000 in environmental remediation including solid waste inside the building and contaminated soil on the bank of the Concord River. Lowell, Massachusetts. 2002 to 2017.

### MUSTER SQUARE

Planning and pre-development for this 70 acre proposed mixed use neighborhood center in Winslow, Maine under the principles of New Urbanism. This project will create a new town center for a Town, which does not have one. To be built

on former paper land, this project will link three neighborhoods with the existing High School and include pocket parks and civic uses such as the site for a proposed new library. Winslow, Maine. 2012 to Present.

### OLD ENGLISH SQUARE

Approved 211 unit mixed income community with over 50,000 square feet of commercial space for community retail including a bowling alley and brewery. This triple mixed-use development also includes an agricultural component, with over 30 acres dedicated to a model farm for teaching farm management skills to those interested in becoming farmers themselves. Slated to start construction in 2021. Holbrook, MA 2004 to Present.

# FIRM OVERVIEW

## PRINCIPLE



Principle Group is an award-winning planning and urban design firm committed to creating authentic places. We design and build quality environments that people love. We believe in out-of-the-box engagement and creative public processes to facilitate quality outcomes for our clients and partners. We have a deep understanding of changing market preferences and an innovative practice of modern comprehensive planning that allows local economies to grow in the direction of a community's vision. Our planning work facilitates quality human-scaled development and long-range planning that reflects the aspirations and character of the local community. We start from a user-friendly framework that makes updating zoning straightforward and—dare we say—fun.

Our core business is building comfortable spaces for people. We pride ourselves on shaping enjoyable experiences for living, working, and relaxing. We consult with organizations interested in the strong environmental, economic, and social returns that building engaging, pedestrian-oriented environments can produce.

Our passion is the art of building community. We approach all our projects with curiosity, insight, and creativity. The studio uses a mix of time tested principles, short-term prototypes, and common-sense solutions to build places and products people love. Our team is comprised of experts in architecture, business, commercial real estate, design, ecology, planning, and public art.



### WHAT WE DO

COMPREHENSIVE PLANNING

URBAN DESIGN

MASTER PLANNING

PUBLIC PROCESS / CHARRETTES

WALKABILITY STUDIES

TACTICAL URBANISM CAMPAIGNS

BUILDING DESIGN

COMPLETE STREET DESIGN

CORRIDOR PLANS

PROJECT IMPLEMENTATION

FORM-BASED ZONING

DESIGN REVIEW

SEMINARS & WORKSHOPS

BRANDING & MARKETING

SITE SELECTION & ASSEMBLY

INVESTMENT PROCUREMENT

FEASIBILITY STUDIES





# RUSSELL PRESTON

DIRECTOR  
(786) 361-5285  
russell@principle.us

Russell Preston is the founder of Principle, a planning, design, and development firm focused on creating authentic places. His work as a designer and urbanist during the last two decades has included a variety of public and private projects of all scales throughout the U.S., as well as contributions to industry publications such as the Tactical Urbanism Guides, Smart Cities, Living Urbanism, and ArchDaily. Russell understands the complexities of building significant places first hand when it comes to placemaking, from his work developing several mixed-use infill buildings in Greater Boston to the creation of PlaceCode, an open-sourced zoning code designed to allow more communities to benefit from improving their regulations. Before founding Principle, Russell worked with Cornish Associates on the redevelopment of Downcity Providence, and Mashpee Commons, a mixed-use neighborhood on Cape Cod. In 2010, he received the Faculty Award for Outstanding Contribution to the Profession from the University of Miami. Russell lives in Boston with his wife and son.

## EDUCATION

M.Arch., Urban Design Program  
University of Miami School of Architecture, 2003  
  
B.Arch, School of Architecture  
University of Notre Dame, 2002

## SERVICE

Air Pollution Control Commission 2013-Present  
City of Boston Commissioner-at-Large  
  
Washington Gateway Main Street Board of Directors 2013-2018  
  
Congress for the New Urbanism Board of Directors 2009-2017  
  
CNU New England Board of Directors 2004-2017

## PROJECTS & EXPERIENCE

**LANEWAY MISSION HILL**  
Lead the design and development of the Laneway at 9 Burney Street, a 24-unit transit oriented apartment building. The Laneway is a pocket-park inspired publicspace designed to connect the block, provide seatingfor businsses, and serve as a gathering space for the community. Approved. Boston, MA. 2018-Present.

**HELLO WASHINGTON STREET**  
Lead the creation of a plan for the Washington Street Vision Plan, which includes a vision for the corridor, an update to the zoning code, and an innovative public outreach plan including an intensive week-long design charrette. The City Council has adopted the Vision Plan and is in the process of reviewing the zoning code. Newton, MA. 2018-2019.

**MASHPEE COMMONS MASTER PLAN & CODE**  
Work with the developer of nationally-recognized suburban retrofit project to redesign the regional road system, expand the neighborhood with a mix of housing, and draft form-based code to manage development. Currently in the adoption process. Mashpee, MA. 2016-Present.

**WOONASQUATUCKET VISION PLAN**  
Lead a comprehensive planning process to create a vision plan for an Innovation District focused on Arts and Food for the City of Providence. The 560-acre study area includes several former industrial properties that the team intensively studied to evaluate their brown field status and to create a pathway forward for redevelopment. An overall strategy was created for encouraging the long term growth of artists, arts businesses, and local food producers, manufactures, and companies. This project was funded by the EPA. dopted with early action infrastructure upgrades in design. Providence, RI. 2017-2018.

**UNION SQUARE MASTER PLAN**  
Lead a complex public private partnership planning team to create a comprehensive plan for redevelopment of the Union Square neighborhood, including new Green Line subway station areas. This plan will create up to 7,000,000 square feet of new development including 2,349 housing units and 12.32 acres of new public parks. New zoning was created following the adoption of the plan. Infrastructure upgrades and several development sites are now under Construction. Somerville, MA. 2014-2016.

**NEWCASTLE MASTER PLAN & CODE**  
Lead the development of the comprehensive plan and form-based code, including creating a master plan for Main Street and Rte. 1 and two new neighborhood plans. This project included an innovative public outreach plan with signage and social media campaign, walking workshops, and strategic editorials. Newcastle, ME. 2016-2018.



# CARLOS SAINZ CACCIA

URBAN DESIGNER

(786) 361-5285

carlos@principle.us

Carlos is an urban planner and designer originally from Guadalajara, Mexico. He believes that successful city development should always put people at the center while balancing a diverse array of interests from different sectors of a community. He is particularly passionate about the public realm, which is where these interests are expressed and where a sense of community is built.

His work has included a diverse set of projects throughout Mexico and the U.S. He has been focusing on the concept of Transit Oriented Development (TOD) and its impact in the urban form and the construction of public space as a key for TOD success. Before joining Principle, he worked in public and affordable housing projects and the elaboration of various planning reports and comprehensive plans in the Boston area. Additionally, he temporarily joined the MIT Department of Urban Studies and Planning as a guest lecturer for a TOD practicum class and advised the elaboration of the Masterplan for Guadalajara's Historic Downtown as a TOD consultant.

Before moving to Boston, he worked for several years at an architecture and urbanism firm in Mexico, managing urban design and planning projects, and as a consultant to several public dependencies from Mexico City and Guadalajara.

## EDUCATION

Master in City Planning + Certificate in Urban Design  
Massachusetts Institute of Technology, 2017

Bachelor in Architecture, Instituto Tecnológico de Estudios Superiores de Occidente (Mexico), 2012

## PROJECTS AND EXPERIENCE

### CAMDEN MAKER MASTER PLAN

The master plan for a brown field site incorporates several different building types aimed at makers, fabricators, and small industrial businesses. The site also incorporates a natural greenway along the river and a central square for the region's farmer's market. 2019-Present.

### HELLO WASHINGTON STREET! VISION PLAN

Collaborating on the production of the place-based code, graphic production, and urban design for Newton MA's Washington Street Vision Plan. It includes a vision for the corridor, an update to the zoning code, and an innovative public outreach plan including an intensive week-long design charrette. The City Council has adopted the Vision Plan and is in the process of reviewing the zoning code. Newton, MA. 2018-2019.

### MASHPEE COMMONS MASTER PLAN & CODE

Work with the developer of nationally-recognized suburban retrofit project to redesign the regional road system, expand the neighborhood with mix of housing, and draft form-based code to manage development. Currently in the adoption process. Mashpee, MA. 2016-Present.

### GUADALAJARA MASTER PLAN, MEXICO

Consulting in the production of urban policy and design guidelines for Transit Oriented Development strategies within Guadalajara's downtown. This is part of a long personal process that initiated in 2012 and involved personal academic research,

collaborating with academic groups as teacher and collateral professional projects. 2012-Present

### COMPREHENSIVE PLAN FOR CONCORD, MA

Producing the smart growth analysis which consisted in designing a methodology to identify the optimal parcels for development based on transportation accessibility, location, zoning and natural conditions, and estimate the development scenarios following on a place-based approach to define the most suitable development scales. 2018

### MILLERS RIVER REDEVELOPMENT MASTER PLAN, MA

Producing and leading the urban design component of a master plan for an existing Cambridge Housing Authority senior housing property which involved the engagement of the existing tenants and assessing real estate development scenarios and phasing. 2017-2018



## LOGAN CAPONE

PLANNER

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Logan Capone is a city planner interested in creating a liveable public realm by planning places for people. At Principle, Logan is responsible for project management of planning, design, and development projects, as well as public engagement. Before joining Principle, Logan worked in Preservation Planning for the City of Somerville, planning public events, managing public outreach campaigns, as well as assisting with the management of historical sites. As a graduate student, Logan was the Vice President of the Boston University Urban Planning Association, as well as the Digital Media Manager for the City Planning Department, playing an essential role in the planning and outreach of lectures, forums, and other academic events.

### EDUCATION

Master of City Planning,  
Boston University

B.A. Architecture,  
Boston University

### PROJECTS & EXPERIENCE

#### CAMDEN MAKER MASTER PLAN

The master plan for a brown field site incorporates several different building types aimed at makers, fabricators, and small industrial businesses. The site also incorporates a natural greenway along the river and a central square for the region's farmer's market. 2019-Present.

#### SOMERNOVA

Collaborating in the planning and design of short and long-term actions for Somernova, an innovation campus in Somerville. It has involved from tactical urbanism strategies to long-term vision plan definition for the campus. 2018-Present.

#### LANEWAY MISSION HILL

Assisting with the design and development of the Laneway at 9 Burney Street, a 24-unit transit oriented apartment building. The Laneway is a pocket-park inspired public space designed to connect the block, provide seating for businesses, and serve as a gathering space for the community. Approved. Boston, MA. 2018-Present.

#### MASHPEE COMMONS MASTERPLAN & CODE

Work with the developer of nationally-recognized suburban retrofit project to redesign the regional road system, expand the neighborhood with mix of housing, and draft form-based code to manage development. Currently in the adoption process. Mashpee, MA. 2016-Present.

#### PPRESERVATION PLANNING, SOMERVILLE HISTORIC PRESERVATION COMMISSION, 2018-2019

Worked under the Office of Strategic Planning & Community Development to promote preservation and execute planning projects. Provide project management for events, grants, and other programs. Design and editing for brochures, newsletters, and social media.

## FIRM OVERVIEW

# MAPLE STREET DESIGN STUDIO

Maple Street Design Studio is a small, versatile practice located in the beautiful seaside town of Camden, Maine. We have long believed that thoughtful, responsive design is crucial to successful projects and happy clients.

Maple Street has a wealth of experience in both residential and commercial work, in many different project types and architectural styles. This allows us to be more versatile than many other firms, and to bring our relevant knowledge and experience to your project. Our strength lies in the diversity of our experience, our vision, and our ability to transform challenges into opportunities. We feel that careful attention to detail results in distinctive and diverse design solutions that clearly articulate the client's vision.

In any design undertaking, there are numerous factors to be weighed and considered – user, site, context, history, stylistic intent, and environmental impact, among others. Maple Street Design Studio believes that looking beyond the obvious and responding to the subtleties of each of these elements is the challenge, as well as the means to a successful project. We subscribe not to a single style of architecture, but rather allow the careful balance of client personality, site opportunities, architectural vision, and appropriate contextual response to guide the final form.

We prefer the design process be collaborative, and as such we emphasize strong communication – not just with our clients, but with the entire team, from the builder to engineering consultants to sub-contractors. This emphasis leads to successful projects, and well-informed (and happy)

clients. Because we're passionate about our work, we devote the personal attention, focus and energy that each project deserves, no matter the size.

We have a strong belief that involvement in our local community not only makes our community stronger, makes us stronger as well. Mid-Coast Recovery Coalition, the Camden Food Pantry, Mid-Coast Habitat for Humanity, and the PAWS Animal Adoption Center are just a few of the organizations that we have donated significant efforts towards, and we're proud to be associated with them. A focus on helping local organizations and companies to be successful will always be a part of our firm's mission. Because we live and work in these communities, it's understood that if we work to make our community stronger, we all benefit.

Our principal ambition is to collaborate with clients, builders and consultants who have the same energy and enthusiasm for good architecture as we do, and to work together to create thoughtful and exceptional spaces.





# JOSEPH RUSSILLO

PRINCIPAL ARCHITECT

207-236-8400

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Joseph Russillo is the founder and principal of Maple Street Design Studio, a small and energetic architectural studio in Camden, Maine. Joseph has been a licensed architect since 2001, with over twenty-five years of diversified experience, managing both residential and non-residential projects with a wide range of building type, size and complexity. Included on his project list are several community-focused and mixed-use projects. It is through these and numerous other commercial, institutional and residential ventures that Joseph has honed his skills for creating thoughtful and inspired design, preparing accurate yet efficient documents, working with code requirements, and managing budgets, while at the same time not forgetting the vital importance of personal service to the client. A graduate of Roger Williams University and lifetime resident of New England, Joseph has a deep appreciation for the details and character of local architectural vernacular – new and old. Joseph lives in Camden with his wife and two sons.

## EDUCATION

Bachelor of Architecture, Roger Williams University, 1995

## SERVICE

Mid-Coast School of Technology, Professional Advisory Committee (Architecture & Engineering); 2014-Present

Mid-Coast Recovery Coalition, Building Committee Member & Advisor; 2019-Present

Camden-Rockport Middle School Building Committee, Member; 2016-2020

Camden Budget Committee, Member; 2015-2016

## PROJECTS & EXPERIENCE

### MAINE CULTURAL CENTER / RES EAST DEVELOPMENT

Developed a comprehensive site and building plan for a regional cultural center and multi-use facility as a gateway to Rockport, Maine at an old elementary school site. The site plan includes cultural exhibit space, classrooms, an auditorium, botanical gardens, retail space, a restaurant, and outdoor gathering spaces. The design integrates several distinct yet connected pieces, each offering a unique setting to explore a wide range of exhibits, art, crafts and educational possibilities. There are opportunities to view exhibits on a wall, an opportunity to learn the history behind them, touch them, and possibly even create them. It is through these combined encounters that the center presents that make it an exceptional experience, distinctive to Rockport & the surrounding area. (In association with ARS Architecture)

### UNION COMMONS

Worked with a local developer to create a series of thoughtful and carefully crafted duplex residential units on a large parcel in Union, Maine. Focused on addressing the lack of quality housing for people over the age of 55, the units offer single-floor living, low-maintenance materials, environmentally-conscious design, and homes that have a strong connection to the outdoors. The site design offers open private and public outdoor spaces, on a secluded property within walking distance of downtown Union and the local library.



## WINCHESTER PLACE

Led the design team to develop a multi-use building in a challenging downtown location in Winchester, Massachusetts. Worked with local developers, community leaders and town officials to create a design vision that fit with the historic local architectural vernacular. The building houses unique multi-family residential units, many with their own outdoor garden space, as well as retail and office space at the street levels. With the elevated train tracks just across the street, the building utilizes a state-of-the-art vibration isolation system to create safe and comfortable living and working spaces. (In association with OKS Architecture)

## PAWS ANIMAL ADOPTION CENTER

Planned a multi-use campus which included a significant expansion of the local animal adoption center building, a dog park and community shelter, outdoor greeting spaces, outdoor dog kennels and gardens. The building expansion transformed challenging land use ordinance limitations into opportunities, organizing distinct and secure wings for dog and cat operations. Details around solar orientation, window shading and air flow were all carefully considered for efficiency and comfort.

## HABITAT FOR HUMANITY

Developed a unique and contemporary design vision for a low-income housing village and extended locations for the Mid-Coast Habitat for Humanity chapter. The design was flexible and adaptable to variations in house size, location and solar orientation. The plan feels open and spaces have strong connections to the outdoors, creating a feeling of spaciousness, despite limitations on square footage, materials and construction costs. Passive House strategies were employed to limit long-term operational costs.

## OTHER EXPERIENCE

In addition to the above, Joseph has decades of experience designing both residential and commercial projects, crafting unique spaces that fit seamlessly into the definitive and wonderful vernacular of Maine, in both the classic and modern senses.

# FIRM OVERVIEW

## INTER-FLUVE



### OUR STORY

Interfluve is an employee-owned, interdisciplinary firm that specializes in investigations, design, and restoration of rivers, lakes and wetlands. Our team of scientists, engineers, and technicians collaboratively work with clients to develop solutions to complex aquatic challenges that balance human and environmental needs.

### HISTORY

We got our start in 1984 when a few fly-fishing scientists combined their passion for rivers with knowledge of geomorphology, fish biology, and hydrology to return abused trout streams into the Blue Ribbon fisheries they once were. At a time when most restoration work was performed by individuals with specific interests, we took a team approach utilizing an array of disciplines that actively accounted for many interests, including natural processes. Our team took a risk on advancing this new approach. We launched the business with \$4,000, an IBM typewriter, and desks made of old doors and file cabinets.

### TODAY

Over three decades later, we continue to develop cutting-edge designs for river restoration projects that range from tidal restoration, to dam removal, to urban habitat improvements – just to name a few. To learn more, stop by any of our offices – located in Hood River, Oregon; Bozeman, Montana; St. Paul, Minnesota; Madison, Wisconsin; Cambridge and Williamstown, Massachusetts; and Damariscotta, Maine – and you’ll see why our employees love to work here. It’s their passion, teamwork, and respect for one another that’s led to more than 2,000 successful projects across 4 continents and all regions of the United States.

### OUR WORK

DAM REMOVALS

LARGE WOOD DESIGN

FLOODPLAIN RECONNECTION

FISH PASSAGE

OFF CHANNEL HABITAT

WATERSHED PLANNING & LONG-TERM IMPLEMENTATION

ESTUARY RESTORATION

WETLANDS & PEAT BOGS

URBAN PLANNING COLLABORATION

TOPOGRAPHICAL SURVEY, UAV & HYDRAULIC MODELING

TOOLS FOR VISUAL COMMUNICATION

TECHNICAL DESIGN GUIDELINES





# MICHAEL BURKE, PE, P.ENG.

PRINCIPAL WATER  
RESOURCES ENGINEER  
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Mike Burke is a professional engineer with 25 years of experience including every step in the project process: data acquisition, hydrologic, hydraulic and fluvial process analyses, applied restoration and fish passage planning and design, and construction oversight. Mike has extensive experience with detailed hydraulic and hydrodynamic modeling of regulated rivers across the country. His interests include addressing the ecologic impacts of water resources development and habitat restoration based on understanding of large-scale physical influences and ecologic response. He has worked with diverse project partners throughout his career, including remote village councils in the mountains of Nepal, individual landowners, Native American tribes, local, state and federal agencies, water and power utilities, and regional transportation authorities.

## EXPERTISE

- Water Resources Data Acquisition
- Hydrologic, Hydraulic and Fluvial Process Analyses
- Dam Removal Planning
- Applied Aquatic Restoration Planning
- Stream Channel Design
- Fish Passage Design
- Project Management
- Construction Oversight

## EDUCATION

M.S., Civil Engineering,  
Center for Ecohydraulics Research, University of Idaho, 2006  
B.S., Civil Engineering,  
University of Wisconsin, 1993

## PROFESSIONAL AFFILIATIONS & REGISTRATIONS

Professional Engineer: CA, ID, MA, ME, MD, MI, NH, OR, RI, WA, WI  
American Society of Civil Engineers (ASCE)  
American Council of Engineering (ACEC) of Maine

## PROJECTS & EXPERIENCE

### MEGUNTICOOK RIVER, MONTGOMERY DAM REMOVAL FEASIBILITY STUDY

Inter-Fluve was contracted by the Town of Camden to conduct a feasibility study to evaluate options for Montgomery Dam. The ultimate solution for the Montgomery Dam site will achieve the ecological, infrastructure and management objectives, while also honoring the historical significance of the site. Mike is project manager. Camden, ME. 2018-Present.

### MEGUNTICOOK RIVER WATERSHED FISH PASSAGE & FLOOD PREVENTION

Inter-Fluve was contracted by the Town of Camden to help develop a comprehensive plan to address fish passage, watershed connectivity barriers, flooding hazards, vulnerable infrastructure, and degraded stream and wetland habitat in the Megunticook River watershed. The project will include site assessment and alternatives analysis for all six dams. Mike is project manager. Camden, ME. 2019-Present.

### HOOSIC RIVER NATURALIZATION

MA DER contracted Inter-Fluve and our partners to develop concepts to bring transformative change and additional investment into the downtown City of North Adams through revival and renaturalization of Hoosic River. This \$8.7M

restoration and reconnection of the 1.5-mile South Branch of the Hoosic River, provided an opportunity to reconnect residents and visitors to the River, create economic development and restore the river ecosystem. Mike served as a senior technical advisor on the project, steering hydrodynamic modeling activities and engineering design. North Adams, MA. 2015-2016.

### ST. CROIX RIVER MILLTOWN DAM REMOVAL

Contracted by NBPower, Inter-Fluve is part of a team for the removal of one of the oldest operating hydroelectric generating stations in Canada. The removal of the head-of-tide dam is expected to restore the Salmon Falls and open spawning habitat to alewives, American shad, American eels and Atlantic salmon. The project includes dismantling and removing all structures, fish passage and ecological restoration. Mike is Inter-Fluve's project manager and technical lead. St. Stephen, NB. 2019-Present.

### SHEEPSCOT RIVER, COOPERS MILLS & HEAD TIDE DAMS

The Atlantic Salmon Federation and their partners contracted Inter-Fluve to assist on a collaborative visioning and site design for two historical dam sites on the Sheepscot River. Mike was the project manager, technical lead, and engineer of record. Alna, ME. 2015-2018.

### GUILFORD DAM REMOVAL FEASIBILITY STUDY

TNC contracted Inter-Fluve to lead a dam removal feasibility study along a section of the Piscataquis River that runs through the town of Guilford to assess the building, infrastructure and channel and develop a plan that results in a free-flowing river through the town. Mike is project manager and technical lead. Guilford, ME. 2019-Present.

### PENOBSCOT RIVER, HOWLAND DAM FISH BYPASS CHANNEL

This project resulted in construction of a major bypass channel around the Howland Dam. Mike has led the design of the bypass channel and assisted the Penobscot Trust through project construction and three years of monitoring. Howland, ME. 2014-2019.



## NICK NELSON, CERP

SR. GEOMORPHOLOGIST  
& REGIONAL DIRECTOR

(617) 714-5547

nnelson@interfluve.com

### EDUCATION

MS, Watershed Science, Utah State University, 2007

Teton Science Schools' Graduate Program in Enviro. & Experiential Education Jackson, 2004

BA, Geosciences, Williams College, 2003

### PROFESSIONAL AFFILIATIONS & REGISTRATIONS

Society for Ecological Restoration, Certified Ecological Restoration Practitioner (CERP)

### PROJECTS & EXPERIENCE

#### SHEEPSCOT RIVER, COOPERS MILLS & HEAD TIDE DAMS

The Atlantic Salmon Federation and their partners contracted Inter-Fluve to assist on a collaborative visioning and site design for two historical dam sites on the Sheepscot River. Nick was the fluvial geomorphologist. Alna, ME. 2015-2018.

#### PENOBSCOT RIVER, HOWLAND DAM FISH BYPASS CHANNEL

This project resulted in construction of a major bypass channel around the Howland Dam. Nick assisted with the assessment and monitoring. Penobscot River, ME. 2014-2019.

#### HOOSIC RIVER NATURALIZATION

MA DER contracted Inter-Fluve and our partners to develop concepts to bring transformative change and additional investment into the downtown City of North Adams through revival and renaturalization of Hoosic River. This \$8.7M restoration and reconnection of the 1.5-mile South Branch of the Hoosic River, provided an opportunity to reconnect residents and visitors to the River, create economic development and restore the river ecosystem. Nick was the project manager and fluvial geomorphologist. North Adams, MA. 2015-2016.

#### DON RIVER MOUTH NATURALIZATION & PORT LANDS FLOOD PROTECTION PROJECT



Inter-Fluve is part of a multi-disciplinary team contracted by MVVA and Waterfront Toronto to assist with the revitalization project re-routing the mouth of the river and restoring it as a major feature of Toronto's waterfront. It will be the centerpiece of new mixed-use neighborhoods, parks and greenspaces and also provide the flood protection necessary to develop the larger Port lands. Nick provided design assistance and contributed to the report. Toronto, ON. 2015-Present.

#### ST. CROIX RIVER MILLTOWN DAM REMOVAL

Contracted by NBPower, Inter-Fluve is part of a team for the removal of one of the oldest operating hydroelectric generating stations in Canada. The removal of the head-of-tide dam is expected to restore the Salmon Falls and open spawning habitat to alewives, American shad, American eels and Atlantic salmon. The project includes dismantling and removing all structures, fish passage and ecological restoration. Nick is the fluvial geomorphologist. St. Stephen, NB. 2019-Present.

#### TIDMARSH FARMS & WETLAND RESTORATION

Inter-Fluve was contracted by MA DER to develop designs for the over \$3M restoration of Tidmarsh Farms, a 250-acre cranberry bog complex converted into a conservation easement. Designs included 20,000-ft of channel restoration; 250 acres of fen and Atlantic white cedar bog restoration; fish passage design; and the removal of a 20-foot-high dam in the headwaters. Nick was project manager and fluvial geomorphologist. Plymouth, MA. 2011-2016.

#### NAHANT THICKET WILDLIFE SANCTUARY RESTORATION

The Nahant Thicket Wildlife Sanctuary (4.5 acres) is a significant element of the Nahant Bay Important Bird Area and provides habitat for resident and migrating birds. Contracted by MassAudubon, Inter-Fluve completed a preliminary investigation of the site hydrology as well as design and construction of site and channel modifications to improve the hydrology, recreation, and ecology of the Sanctuary. Nick is project manager. Nahant, MA. 2017-Present.

Nick has 13 years of experience as a fluvial geomorphologist and manages Inter-Fluve's New England office in Cambridge, MA. He is currently working on all phases of dam removal and river restoration projects around the country, leading project management, construction oversight, topographic surveying, and restoration design. His work with Inter-Fluve has focused on dam removal and urban channel restoration/rehabilitation planning and design, cranberry bog restoration design, geomorphic and habitat assessments, and GIS analyses. Nick has taught at Northeastern University, the University of Minnesota, Harvard University Graduate School of Design and was an invited instructor at Tongji University in Shanghai, China in 2017. Nick was a recent technical advisor for the Fluvial Geomorphology Task Force with the UMass RiverSmart Communities program.

### EXPERTISE

Urban Erosion and Hazard Assessment

Urban River Restoration and Revitalization Design

Effects of Dams on River Systems

Dam Removal Assessment and Design

Retired Cranberry Bog Restoration Design

Topographic and Bathymetric Surveying

Sediment Sampling

Project Management

Construction Oversight





# SARAH WIDING, PE

SR. WATER RESOURCES ENGINEER

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## EDUCATION

MS, Water Resources Engineering, Tufts University, 2004

BS, Civil Engineering, magna cum laude, Tufts University, 2001

## REGISTRATIONS & PROFESSIONAL AFFILIATIONS

Professional Engineer: MA, ME

Town of Shirley Planning Board (Vice Chair), 2015-present

Montachusett Regional Planning Commission (member), 2015-present

## SELECTED PROJECT EXPERIENCE

### MEGUNTICOOK RIVER WATERSHED FISH PASSAGE & FLOOD PREVENTION

Inter-Fluve was contracted by the Town of Camden to help develop a comprehensive plan to address fish passage, watershed connectivity barriers, flooding hazards, vulnerable infrastructure, and degraded stream and wetland habitat in the Megunticook River watershed. The project will include site assessment and alternatives analysis for all six dams. Sarah is providing hydrologic and hydraulic modeling and engineering design support. Camden, ME. 2019-Present.

### COASTWISE INITIATIVE CROSSING GUIDELINES

Inter-Fluve is leading a team for the development of design guidance and best practices for restoration of tidal hydrology at road crossings in Maine that will empower restoration practitioners, municipalities and resource agencies. Wells, ME. 2019-Present.

### GUILFORD DAM REMOVAL FEASIBILITY STUDY

The Piscataquis River, within the Penobscot River Habitat Focus Area, runs through the heart of Guilford. While the river has long powered the economy and livelihood of the Town, the effects of the dam have threatened the integrity



of the structures, influenced flooding patterns in the Town center, and created a fish barrier to Atlantic salmon and other native sea-run fish. TNC contracted Inter-Fluve to lead a dam removal feasibility study to assess the building, infrastructure and channel and develop a plan that results in a free-flowing river through the town. Sarah completed FEMA mapping research.

### DON RIVER MOUTH NATURALIZATION

Inter-Fluve is part of a multi-disciplinary team contracted by MVVA and Waterfront Toronto to assist with the \$1B revitalization project re-routing the mouth of the river and restoring it as a major feature of Toronto's waterfront. Sarah is project manager and is contributing to design, document review, H&H and data collection. Toronto, ON. 2015-Present.

### ST. CROIX RIVER MILLTOWN DAM REMOVAL

Contracted by NBPower, Inter-Fluve is part of a team for the removal of one of the oldest operating hydroelectric generating stations in Canada. The removal of the head-of-tide dam is expected to restore the Salmon Falls and open spawning habitat to alewives, American shad, American eels and Atlantic salmon. The project includes dismantling and removing all structures, fish passage and ecological restoration. Sarah is providing modeling analysis and design. St. Stephen, NB. 2019-Present.

### BAGADUCE RIVER WATERSHED, WALKER POND FISH PASSAGE

Inter-Fluve was contracted by TNC to provide feasibility alternatives for two sites historically important as a productive nursery for alewife. Current goals are to promote alewife habitat and passage improvements which may range from rehabilitation and stabilization to removal of the current mill dam structures. Sarah provided hydrologic and hydraulic modeling and engineering design support. Brooksville, ME. 2018-Present.

Sarah is a professional engineer with 16 years of experience serving public and private clients. Sarah's technical and project management experience include hydrologic, hydraulic, and floodplain modeling; stormwater management system permitting and design; dam safety applications including Phase I studies, breach analyses, and inflow design flood determinations; and culvert and bridge crossing design for structural stability and habitat continuity. Recently, Sarah has worked on several dam removal planning and dam safety projects throughout New England and was project engineer for the Exeter Great Dam Removal in New Hampshire, which won a 2017 ACEC Engineering Excellence Award in the category of Water Resources.

## EXPERTISE

Hydrologic and Hydraulic Modeling

Floodplain Modeling

Stormwater Management

System Permitting and Design

Dam Safety: Phase I Studies

Culvert and Bridge Crossing Design

Permitting

Project Management

Construction Oversight



# KEITH KANTACK

GEOMORPHOLOGIST

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Keith has over seven years of experience in the field as a researcher and soil scientist and an additional two years of experience as a teaching and research assistant in the Earth and Sciences Department during his Master's program at Dartmouth. This background has honed his skills to include: fluvial geomorphic assessment and analysis, modeling of sediment transport and channel equilibrium, LiDAR collection and analysis, topographic surveying, ArcGIS, and groundwater contamination assessment. Keith's research has taken him to rivers from the Canadian Rockies to Grand Canyon and all over New England. His masters research focused on flooding and long-term equilibrium of fluvial systems and developed a LiDAR-based model of erosion and deposition based on stream power thresholds and gradients.

## EXPERTISE

Applied Geomorphic Restoration Techniques

Restoration Design

GPS and GIS Mapping and Analysis

Geomorphic and Habitat Assessment

Topographic Survey

Construction Oversight

## COMPUTER APPLICATIONS

ArcGIS

CloudCompare

RiScan Pro

HECRAS

## EDUCATION

MS, Earth Sciences,  
Dartmouth College, 2016

BA, Geosciences with Honors,  
Williams College, 2011

## FIELD & LABORATORY

Geomorphic and hydrologic evaluation

Restoration project planning and implementation

LiDAR collection and processing

Suspended Sediment, Groundwater, and Soil Sampling

Topographic survey - total station and RTK GPS

Site mapping Construction Oversight

## PROJECTS & EXPERIENCE

### MEGUNTICOOK RIVER, MONTGOMERY DAM REMOVAL FEASIBILITY STUDY

Inter-Fluve was contracted by the Town of Camden to conduct a feasibility study to evaluate options for Montgomery Dam. The ultimate solution for the Montgomery Dam site will achieve the ecological, infrastructure and management objectives, while also honoring the historical significance of the site. Keith assisted with field survey, data analysis, design, and reporting. Camden, ME. 2018-Present.

### MEGUNTICOOK RIVER WATERSHED FISH PASSAGE & FLOOD PREVENTION

Inter-Fluve was contracted by the Town of Camden to help develop a comprehensive plan to address fish passage, watershed connectivity barriers, flooding hazards, vulnerable infrastructure, and degraded stream and wetland habitat in the Megunticook River watershed. The project will include site assessment and alternatives analysis for all six dams. Keith assisted with field survey, data analysis and reporting. Camden, ME. 2019-Present.

### SHEEPSCOT RIVER, COOPERS MILLS & HEAD TIDE DAMS

The Atlantic Salmon Federation and their partners contracted Inter-Fluve to assist on a collaborative visioning and site design for two historical dam sites on the Sheepscot River. Keith assisted with construction oversight. Alna, ME. 2015-Present.

### ST. CROIX RIVER MILLTOWN DAM REMOVAL

Contracted by NBPower, Inter-Fluve is part of a team for the removal of one of the oldest operating hydroelectric generating stations in Canada. The removal of the head-of-tide dam is expected to restore the Salmon Falls and open spawning habitat to alewives, American shad, American eels and Atlantic salmon. The project includes dismantling and removing all structures, fish passage and ecological restoration. Keith assisted with field survey, data analysis and alternatives analysis. St. Stephen, NB. 2019-Present.

### PENOBSCOT RIVER, HOWLAND DAM FISH BYPASS CHANNEL

This project resulted in construction of a \$5M major bypass channel around the Howland Dam. Keith assisted with field monitoring and reporting. Howland, ME. 2014-2019.

### GUILFORD DAM REMOVAL FEASIBILITY STUDY

TNC contracted Inter-Fluve to lead a dam removal feasibility study along a section of the Piscataquis River that runs through the town of Guilford to assess the building, infrastructure and channel and develop a plan that results in a free-flowing river through the town. Keith assisted with field survey, data analysis, hydraulic modeling, and reporting. Guilford, ME. 2019-Present.

### BAGADUCE RIVER WATERSHED, WALKER POND FISH PASSAGE

Inter-Fluve was contracted by TNC to provide feasibility alternatives for two sites historically important as a productive nursery for alewife. Current goals are to promote alewife habitat and passage improvements which may range from rehabilitation and stabilization to removal of the current mill dam structures. Keith assisted with field survey, data analysis and report writing for the alternatives analysis. Brooksville, ME. 2018-Present.

# OUR TEAM



## CONTACT INFORMATION

### **Mullins Management**

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### **Principle - Boston**

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