

**TOWN OF PLYMOUTH CAPITAL IMPROVEMENT PLAN REQUEST
FY24 FALL ANNUAL TOWN MEETING**

Department: Marine and Environmental Affairs	Priority #:	4
Project Title and Description: Design of Dark Orchard All Persons Trail	Total Project Cost:	\$16,103

Department/Division Head: David Gould

Check if project is: New ☒ Resubmitted ☐ **Cost estimate was developed:** Internally ☐ Externally ☒

For project re-submittals, list prior year(s):

List any funding sources and amounts already granted: Environmental Affairs Fund

Basis of Estimated Costs (attach additional information if available)			If project has impact on 5 Year Plan and future operating budgets, insert estimated amounts.		
Capital:	Cost	Comments	Fiscal Year:	Capital	Operations & Maintenance
<i>Planning and Design</i>	\$16,103		FY23		
<i>Labor and Materials</i>			FY24		
<i>Administration</i>			FY25		
<i>Land Acquisition</i>			FY26		
<i>Equipment</i>			FY27		
<i>Other</i>					
<i>Contingency</i>					
Total Capital	\$16,103				

Project Justification and Objective: The project is to design and permit an all persons trail in Jenney Park. This allows for easy access, parking and proximity to all types of trail users. It would be the first of its kind trail on town land and connect to existing ADA paths and sidewalks.

For Capital Project Requests:

Will this project be phased over more than one fiscal year? If yes, enter it on the 5 Year Plan Yes ☐ No ☒
Can this project be phased over more than one fiscal year? Yes ☐ No ☒

For Capital Equipment Requests:

☐ Check if equipment requested is replacement and enter the year, make & model, VIN and present condition of existing equipment

What is the expected lifespan of this new/replacement equipment: _____

Attach backup information, estimates, or justification to support this request.



January 23, 2023

Nathan J. Cristofori, PWS
Natural Resources Specialist
Division of Natural Resources
Town of Plymouth
26 Court Street
Plymouth, MA 02360

Nate,

Thank you for considering Timber & Stone, LLC's proposal for the design of the Dark Orchard Preserve Trail in Plymouth, MA. This project involves many technical design elements that pair well with our construction talents. We would welcome the chance to work alongside your department to be sure the final design is both sustainable to the environment while also being experiential for the public.

As you may know, Timber & Stone, LLC is a trail planning, design, and construction business based in East Montpelier, VT. Over the years, we have successfully provided trail design and construction expertise to land management agencies located throughout the Northeast and Central US. Our recent accessible trail design and construction projects have included a trail system for The Nature Conservancy located in Monkton, VT, an accessible trail and viewing platform located within Smugglers Notch State Park, VT and an accessible boardwalk and pathway for the Town of Meredith, NH.

This design project will involve pinpointing the alignment of the trail and boardwalk, installing test piles to determine proper depth and torque for the boardwalk foundations, calculating material quantities, and developing a thorough report for use with fundraising and permit applications. Construction costs, schematic designs of all structures, and a detailed description of the trail's character will also be included. Should your department require structural engineering that is stamped, we can collaborate with an engineer on those details, but their fees and our consultation would be an additional expense.

Nate, thank you for your serious consideration of Timber & Stone, LLC's proposal for the design of the Dark Orchard Preserve Trail. We are highly motivated to include this work within our 2023 Trail Season.

Please contact me with any questions related to this introductory letter or the attached material.

Onward,

Josh Ryan
Trail Designer / Builder



Dark Orchard Trail Assessment and Design – Plymouth, MA

Task 1: Project Kick-off and Initial Site Assessment

Scope: Attend (1) Project Kick-Off meeting in Plymouth, MA and perform site assessment. Finalize trail alignment, inventory and measure trail structures, and photo document trail alignment.

Cost Summary:

Item Description	Unit	Cost Per Unit	Total
Meeting and Fieldwork – Level I Trail Designer	10 Hours	\$ 150.00	\$ 1,500.00
Roundtrip Travel – Level I Trail Designer	8 Hours	\$ 85.00	\$ 680.00
Meeting and Fieldwork – Level II Trail Designer	10 Hours	\$ 125.00	\$ 1,250.00
Roundtrip Travel – Level II Trail Designer	8 Hours	\$ 85.00	\$ 680.00
Mileage – 2 Vehicles	900 Miles	\$.58	\$ 522.00
Overnight Accommodations	1 Night	\$ 350.00	\$ 350.00
Memo and Correspondence	4 Hours	\$ 150.00	\$ 600.00
		Task 1 Total =	\$ 5,582.00

Task 2: Test Pile Installation and Assessment

Scope: Install 2 test piles for helical pile foundations. Record torque values and coordinate with structural engineer for suggested torque values and depths.

Cost Summary:

Item Description	Unit	Cost Per Unit	Total
Fieldwork - Level I Trail Designer	12 Hours	\$ 150.00	\$ 1,800.00
Roundtrip Travel – Level I Trail Designer	8 Hours	\$ 85.00	\$ 680.00
Fieldwork - Level II Trail Designer	12 Hours	\$ 125.00	\$ 1,500.00
Roundtrip Travel – Level II Trail Designer	8 Hours	\$ 85.00	\$ 680.00
Equipment Delivery Mileage	450 Miles	\$ 1.50	\$ 675.00
Mileage – 1 Vehicle	450 Miles	\$.58	\$ 261.00
Equipment Rental			\$ 575.00
Structural Engineer Fees			\$ 1,500.00
		Task 2 Total =	\$ 7,671.00



Task 3: Trail Report Assembly and Delivery

Scope: Development of construction specification for all components of trail construction, assembly of trail photo pages and trail logs, final coordination of trail report and digital delivery to client.

Cost Summary:

Item Description	Unit	Cost Per Unit	Total
Trail Report Assembly - Level I Trail Designer	16 Hours	\$ 150.00	\$ 2,400.00
Memo and Correspondence	3 Hours	\$ 150.00	\$ 450.00
		Task 3 Total =	\$ 2,850.00

Total Project Cost = \$ 16,103.00 *

***Time estimates serve as a minimum level of participation by Timber & Stone, LLC. Additional cost of consultation will revert to hourly rate as it relates to each task.**



TIMBER & STONE, LLC

Firm Overview

Since 2004, Vermont based Timber & Stone, LLC has provided technical advice and construction expertise to land managers seeking to build or improve recreational trails. Conservation Minded Construction is the adage that guides our work.

Our goal—sustainably built, multi-use trails that provide users with a safe and enjoyable outdoor experience. We work with a variety of clients and project sponsors—from municipalities to private landowners—on projects throughout the Northeast.

Timber & Stone, LLC is dedicated to providing clients with professional, customized trail design and quality, conservation-minded construction. Whether working independently or alongside volunteers, Timber & Stone, LLC is committed to making the trail construction process, from initial consultation to the final ribbon cutting, a rewarding experience for the entire community.

WHAT WE BELIEVE

Trails provide people with opportunities to recreate, educate, and contemplate.

They are an essential component of our culture. Trails offer a safe and sustainable way to access wild areas. They are also a vital part of building vibrant community; offering a recreational outlet to the public. With thoughtful, informed consideration paid to design and construction, trails enhance the intrinsic value of natural areas to the human community.

WHAT WE DO

Trail Design. Construction. Education.

For the last fourteen years, Timber & Stone, LLC has assisted clients—from municipalities to private landowners—in transforming their trail aspirations into reality. Our goal is to build safe, appropriately designed trails and pathways in a sustainable and efficient manner; trails that balance recreational needs while preserving the character and sanctity of the natural landscape.

Simply put, we build trails that stand the test of time.

Founded and based in Central Vermont, Timber & Stone, LLC has completed projects throughout the Northeast. We are available to work as a contracted crew or alongside volunteers, students, and stewards. With a keen eye to safety, we empower groups of volunteers by building skills and camaraderie while effectively managing the worksite to attain a high quality product.



Timber & Stone, LLC

Recreational Trail Design and Construction

Project Portfolio: Universally Accessible Trail Design and Construction



Barnes Camp Accessible Boardwalk (2017)

The Long Trail, Stowe, VT

Overview:

- 600 foot elevated wetland boardwalk on a helical pile foundation system
- Multiple viewing platforms installed along this scenic section of the Long Trail

Contact:

Tasha Wallis, Executive Director
Lamoille County Planning Commission
tasha@lcpvvt.org or (802) 888-4548

Camp Smith Accessible Trail (2016)

Little River State Park, Waterbury, VT

Overview:

- 1/2 Mile accessible trail system with interpretive overlooks for public engagement
- Meanders through a historically significant former Civilian Conservation Corps encampment

Contact:

Sue Bulmer, Northeast Parks Regional Manager
Vermont Department of Forest, Parks & Recreation
susan.bulmer@vermont.gov or (802) 476-0181



Bomoseen State Park Accessible Boardwalk (2016)

Bomoseen, VT

Overview:

- 200 foot boardwalk supported by helical pile foundations and located within a sensitive wetland environment
- Decking and railing constructed of naturally rot resistant Black Locust and White Oak

Contact:

Frank Spaulding, Parks Project Coordinator
Vermont Department of Forest, Parks & Recreation
frank.spaulding@vermont.gov or (802) 522-0798



Mount A Accessible Trail (2014-2016)

Mount Agamenticus Conservation Area, York, ME

Overview:

- Design and construction of a one mile accessible trail that navigates granite ledges and rock outcroppings
- Installed multiple boardwalks, bridges, and a 30' circular observational platform

Contact:

Robin Kerr, Conservation Coordinator
robin@agamenticus.org or (207) 361-1102

Eshqua Bog Accessible Trail and Boardwalk (2014-2015)

Eshqua Bog Natural Area, Hartland, VT

Overview:

- Design and construction of a 460 foot accessible boardwalk supported by helical pile foundations
- Multiple viewing platforms allows for photography and appreciation of rare wetland flora

Contact:

Lynn McNamara, Director of Stewardship
The Nature Conservancy in Vermont
lmcnamara@TNC.org or (802) 229-4425



Shaftsbury State Park Accessible Trail (2015, 2017)

Shaftsbury, VT

Overview:

- Design and construction of 100' accessible boardwalk supported by helical pile foundations
- Upgrade of existing boardwalk to comply with accessible trail guidelines

Contact:

Lisa Thorton, Stewardship Forester
Vermont Department of Forests, Parks, & Recreation
lisa.thorton@vermont.gov or (802) 777-7480

Reservoir Accessible Trail (2010, 2015)

Waterbury Center State Park, Waterbury, VT

Overview:

- Constructed 1/4 mile accessible trail that allows access and viewing of the Waterbury Reservoir
- Installed connector paths allowing access to boat launch, swimming area, and picnic tables

Contact:

John Medose, Northeast Parks Facility Manager
Vermont Department of Forests, Parks & Recreation
john.medose@vermont.gov or (802) 426-3050





Entrance Bridge (2015/2016)

Birds of Vermont Museum, Huntington, VT

Overview:

- Design and construction of 100' accessible elevated boardwalk and bridge supported by helical pile foundations
- This custom built structure serves as main entry point to museum facilities

Contact:

Erin Talmage, Executive Director
Birds of Vermont Museum
museum@birdsofvermont.org or (802) 434-2167

Long Beach Boardwalk (2013)

Barnstable, MA

Overview:

- Construction of 350' accessible boardwalk that serves as public access to Long Beach
- Installed innovative foundation in beach ecosystem

Contact:

Rebecca Nickerson, Project Manager
Town of Barnstable
508-790-6316



Front Bay Park (2012)

Wolfeboro, NH

Overview:

- Design and construction of a one mile accessible trail system that borders Lake Winnepesaukee
- Design, construction, and installation of an accessible timber framed gazebo

Contact:

Rob Houseman, Former Wolfeboro Town Planner
robert.houseman@hanovernh.org or (603) 640-3212

Longwood Gardens Trail System (2008)

Kennett Square, PA

Overview:

- Served as member of specialized construction crew that designed and installed this accessible treehouse and elevated ramp system

Contact:

Eyrich Stauffer, Lead Design/Builder
Stauffer Woodworking
eyrich@staufferwoodworking.com or (802) 272-9535



Project Portfolio: Trail Assessment, Planning and Design

Overview: For nearly a decade, Timber & Stone, LLC has prepared comprehensive trail design plans and reports for dozens of organizations and municipalities for properties throughout the Northeast.

Each of the document titles below indicates the completion of extensive field work. Foot-by-foot analysis of a trail is required in order to generate thorough construction and/or maintenance specifications for each site.



Enders Falls Trail Design

Prepared for: Connecticut Department of Energy and Environmental Protection
Granby, CT (2018)

Raven Ridge Natural Area Accessible Boardwalk and Trail Design

Prepared for: The Nature Conservancy
Hinesburg, VT (2017)

Norwalk River Valley Trail Layout and Design

Prepared for: Friends of the Norwalk River Valley Trail (NRVT)
Ridgefield, CT Section (2018), Norwalk, CT Section (2017),
Redding, CT Section (2016) and Wilton, CT Section (2013)

Rock Point Trail Assessment and Design

Prepared for: The Rock Point Center
Burlington, VT (2017)

Pine Island Cemetery Trail Design

Prepared for: Norwalk Redevelopment Agency
Norwalk, CT (2017)

Ossipee Pine Barrens Accessible Trail Design

Prepared for: The Nature Conservancy
Ossipee, NH (2017)

Lubberland Creek Accessible Trail Design

Prepared for: The Nature Conservancy
Newmarket, NH (2017)

Marshall Conservation Area Trail Master Plan

Prepared for: Town of Conway, NH (2016)

Hawkins Brook Nature Trail Accessible Trail and Boardwalk Design

Prepared for: Town of Meredith, NH (2016)

"The trail layout and design document Timber & Stone, LLC prepared was thorough; sufficiently so, that it has given funders the confidence to make substantial contributions and was used to successively support permit applications."

-Pat Sesto, Chairperson
Norwalk River Valley Trail

North Branch Cascades Trail Assessment and Design

Prepared for: The Vermont River Conservancy
Worcester/Elmore, VT (2016)

Mills Riverside Park Trail Assessment Plan

Prepared for: Jericho/Underhill Park District
Jericho, VT (2016)

Black Mountain Trail Assessment and Design

Prepared for: The Nature Conservancy
Dummerston, VT (2015)

Wiessner Woods Trail Management Report

Prepared for: Stowe Land Trust
Stowe, VT (2015)

Birds of Vermont Museum Accessible Trail

Prepared for: Birds of Vermont Museum
Huntington, VT (2014)

Shoreline Greenway Trail Maintenance Plan

Branford, CT (2014)

Eshqua Natural Area Accessible Trail Design

Prepared for: The Nature Conservancy
Hartland, VT (2013)

Burlington Multi-Use Trail Design

Prepared for: Burlington Parks and Recreation
Burlington, VT (2013)

Sustainability Academy Multi-Use Trail

Prepared for: Burlington Sustainability Academy
Burlington, VT (2012)

Front Bay Park Accessible Trail Design

Prepared for: Town of Wolfeboro
Wolfeboro, NH (2011)

Maple Street Park Multi-Use Trail Design

Prepared for: Essex Junction Recreation and Parks
Essex Junction, VT (2011)

Indian Brook Reservoir Trail Maintenance and Management Plan

Prepared for: Town of Essex
Essex, VT (2010)

"Timber & Stone, LLC has been helping us to make our trail networks more durable, accessible, and enjoyable for the past decade. Their work is high quality and well designed. It reflects a clear understanding of what makes for a positive and memorable recreational experience for the range of user groups and abilities that frequent our trails. "

-Kristen Sharpless,
Conservation Program Manager
Stowe Land Trust

From: Town of Plymouth Open Space Committee

Sept 5, 2023

To: Capital Improvements Committee

Select Board

Advisory and Finance Committee

Committee of Precinct Chairs

To All Concerned,

This is a letter of support for the proposal submitted by the Department of Marine and Environmental Affairs to the Fall 2023 Town Meeting to begin the design and permitting process for:

A new trail around Jenney Pond which would enable the walkers to explore the back of Jenney Pond in an area historically named "Dark Orchard," and, by connecting along Newfield Street and over the wooden foot bridge, make a nearly full circuit of the Pond. The trail will have some features of an "All Persons Trail," meaning that it would be accessible to the general public and partially accessible to people having disabilities. There are a number of unique features of this route, including planned boardwalks passing through vegetated wetlands, by an active spring, offering water views, and a closer experience of the birds and other animals living in the pond. People of limited mobility, small children, the elderly, the vision impaired would all be well served by this trail for All Persons.

This planned trail presents yet another opportunity for healthful recreation and beautiful vistas in the heart of the downtown.

The Open Space Committee urges that all concerned join in supporting this exciting project.

Diane Peck

Vice Chair OSC

August 30, 2023

To Whom It May Concern:

I am submitting this letter in support of Marine and Environmental Affairs FY24 Fall Annual Town Meeting Capital Improvement Request, "Design of Dark Orchard All Persons Trail." The project funding, in the amount of \$16,103 is to design and permit an All Persons Trail in Jenney Park.

The All Persons Trail is the first of its kind on town land in Plymouth and is a progressive step towards inclusion and equity in allowing ease of access with All Persons Features for all residents and visitors to enjoy the beauty of this trail and its connectivity to ADA paths and sidewalks.

As the Director of Elder Affairs and Chair of the Select Board appointed Senior Task Force, I wholeheartedly endorse this groundbreaking project. The Senior Task Force is actively seeking a formal, state endorsed Age and Dementia Friendly Designation for the Town of Plymouth. A healthy Age and Dementia Friendly Community provides *"An inclusive and accessible community environment that optimizes opportunities for health, participation and security, promotes respect and inclusion for all ages, enables people of all ages and abilities to participate in activities, fosters meaningful connections in the community, and provides opportunities for meaningful engagement in accessible environments for those living with Dementia and their caregivers."*

An All Persons Trail is designed to provide an inclusive outdoor experience for all ages, including those with walkers, canes, wheelchairs, and strollers. The All Persons Trail is a universally accessible trail that aims to break down barriers to the outdoors. Features could incorporate a multitude of seating areas for rest and enjoyment of surroundings, a wide, flat obstacle free path, and secure handrails to assist those needing mobility support while enjoying nature and the natural beauty of Plymouth.

Forty percent of Plymouth residents are aged 55 plus, and an All Persons Trail would be a perfect integral project that is thoughtful in design and incorporates the tenets of an Age and Dementia Friendly Plymouth Community. I hope you will consider supporting this important request at Fall Town Meeting.

Respectfully submitted,

Michelle Bratti

Michelle Bratti

Director of Elder Affairs/Center for Active Living

Town of Plymouth