Fox Field and Forest Trail Assessment for Accessibility Lunenburg-Gilman Outdoor Recreation, Trails, and Tourism Task Force

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Prepared by
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UVTA is part of the Vermont Trails Accessibility Hub, funded by the Vermont Outdoor Recreation Economic Collaborative (VOREC)

Introduction

The Upper Valley Trails Alliance is a 501(c)(3) non-profit organization whose mission is to advocate for the maintenance, use, and development of recreation trails. The bulk of UVTA's work is focused on the Upper Valley region of Vermont and New Hampshire.

UVTA has become a regional leader for accessible trail design and construction. Since its founding in 1999, UVTA has built dozens of accessible trails including wheelchair accessible trails at VINS in Quechee, VT, The Montshire Museum in Norwich, VT, Chaffee Wildlife Sanctuary in Lyme, NH, and the Mascoma River Greenway and Ruth Shepard Trail in Lebanon, NH.

UVTA is part of the Vermont Trails Accessibility Hub. The Hub was developed with funding from the Vermont Outdoor Recreation Economic Collaborative Community Grants Program. The Hub consists of the Vermont Trails and Greenways Council, Upper Valley Trails Alliance, Northern Forest Canoe Trail, Vermont Mountain Bike Association, Vermont Adaptive Ski and Sport, and Community Geographics.

Trail Planning

When reviewing and assessing existing trails to be upgraded or new trails to be built for accessibility, we adhere to the Access Board Standard Guidelines based on the Architectural Barriers Act. These guidelines contain scoping and technical requirements for accessibility to sites, facilities, buildings, and elements by individuals with disabilities. The requirements are to be applied during the design, construction, addition to, alteration, and lease of sites, facilities, buildings, and elements to the extent required by regulations issued by Federal agencies under the Architectural Barriers Act of 1968 (ABA).

By designing and building to accessible standards, particularly with the guideline to limit slopes, these trails inherently become safer and more sustainable. Detailed information about the trail accessibility standards can be found at https://www.access-board.gov/aba/#aba-1017.

In general, trails built to Access Board Guidelines have an average running slope of 5% but can go up to 12% in certain intervals and a cross slope of 2-3%. Trail treadway width, treadway materials, parking facilities, restroom facilities, picnic and bench facilities, and informational kiosks are all important considerations for accessible trail projects.

Fox Field and Forest Trail

The proposed trail is located on an ~11-acre town-owned parcel at Fox Field. The site is a former recreation area that has a restored soccer field, a gravel parking area, fenced tennis courts in need of repair, an unnamed stream, and a diverse forest habitat.

The Fox Field Revitalization Project is being managed by Lunenburg-Gilman Outdoor Recreation, Trails, and Tourism Task Force.

UVTA Staff along with the Lunenburg-Gilman Outdoor Recreation, Trails, and Tourism Task Force Chair, Kathryn Baxter, and 2 other members of the community walked the property to identify a location to install an accessible trail built to accessible standards. We walked approximately .65 miles through the fields and woods.

Based on our site visit, conversation with Kathryn, and assessment, we propose that the project be implemented in phases as described later in this document.

Aerial photo showing the Fox Field property including soccer field, parking lot, tennis courts and woods.

Permitting and Landowner Permissions

There should be no landowner permission issues because Fox Field is owned by the Town. Throughout any planning and building process, we encourage outreach to all key constituencies to ensure community investment and support. These events have already been planned by the task force.

Given that the park already has some recreation features such as a soccer field and tennis courts, we do not anticipate the need for permits. Regardless, guidance on permitting issues is not a part of our assessment, and the Task Force should consult with the Select Board and any other relevant agencies to ensure projects are permitted as needed.

Trail Construction Process

All four phases of the project, encompassing 3,380 feet, can be fully built to accessible standards.

On trail sections where the proposed trail is located around the soccer field, a small excavator should be used to prepare the trail to a general width of 5 feet, removing any grass and sod to mineral soil. On trail sections that are located in the woods, a small scale excavator should rough in the trail and remove existing vegetation, roots, rock and stumps. In excavated areas, a layer of ¾ inch ledgestone from a local quarry will be laid in the trail treadway to a depth of 4 inches. A vibrating plate compactor will be used to compact this first layer of ledgestone to a depth of 3 inches. Then non-woven geotextile cloth (filter fabric) will be laid on the ledgestone (to help reduce vegetation and maintain the integrity of the top layer of hardpack.) Then, a layer of ⅜ inch hardpack from a local quarry will be laid to a depth of 4 inches. Again, a vibrating plate compactor will be used to compact the hardpack to a depth of 3 inches.

In addition there are 2 bridges that need to be constructed to accessible standards (32 feet each) to cross the local unnamed stream for phases 3 and 4. Design standards are included below.

Potential Issues and Trail Features to Consider

The current parking area at Fox Field will need to be graded and hardened. It is currently being used by FEMA for materials storage from flood remediation from summer 2024, so any parking work should not be initiated until the FEMA work is complete. Ultimately there should be a total of 4 handicapped parking spaces

designated, 2 on the north side of the parking lot where the phase 1 trail will begin and 2 on the south side of the lot where the phase 2 trail will begin (phase descriptions and maps follow in this document).

Current parking area with tennis courts in the background.

There is an existing short steep trail from the existing parking lot to the soccer field. This section is too steep for an accessible trail. It is recommended to install a staircase to enhance that entry and reduce future erosion at the site. The elevation change is 6 feet. A stone staircase can be installed using locally quarried stone or dimensional lumber can be used to build a cribbed staircase.

Two wooden 32-foot bridges will need to be constructed to cross the unnamed stream that runs along the property. These would be constructed during phases 3 and 4. The design uses 16-foot dimensional pressure treated lumber laminated together using lagbolts to create the stringers, 6 inch by 6 inch by 8 foot pressure treated dimensional lumber for the sills and 2”x 6” rough cut hemlock for the deck boards. We recommend a 5 foot width with curbs.

The trail sections in the woods have been laid out to go near historic stone walls and an old cellar hole. Interpretive signs should be considered once the trail is complete.

Phase 1: North Loop from Parking Area Around Soccer Field

Phase 1 consists of approximately 1,485 feet. This section of trail begins on the North side of the parking lot and heads West through existing vegetation to keep the grades minimal to the height of land at the Southwest corner of the soccer field. From there it continues in a clockwise direction around the field. At the North edge of the field, the trail will need to cut up and across the slope using a bench cut to accommodate the steep grade and get the trail to accessible standards. The loop connects back to the height of land at the Southwest corner of the soccer field and then back to the parking lot.

Assessing the North Loop

Phase 2: South Loop from Parking Area Through Woods

Phase 2 consists of approximately 1,055 feet. This section of trail begins on the South side of the parking lot. This proposed loop utilizes the best grades and slopes to allow this section of trail to meet accessible standards although there is one short section at the Southeast corner of the loop where a couple of short switchbacks will be needed to reduce the slope. The trail layout also includes features such as an old cellar hole and an impressive view of the power of flooding from the summer 2024 flood event. Signage should be considered for these features.

Identifying the best route in the South loop through the woods.

Phase 3: Woods/Stonewall Loop off Northeast Corner of Soccer Field Loop

Phase 3 consists of approximately 585 feet. This short loop trail section in the Northeast corner of the property would bring users across the unnamed stream to a wooded section of the property and include views of a historic stone wall. A 32-foot bridge would be required to cross the stream.

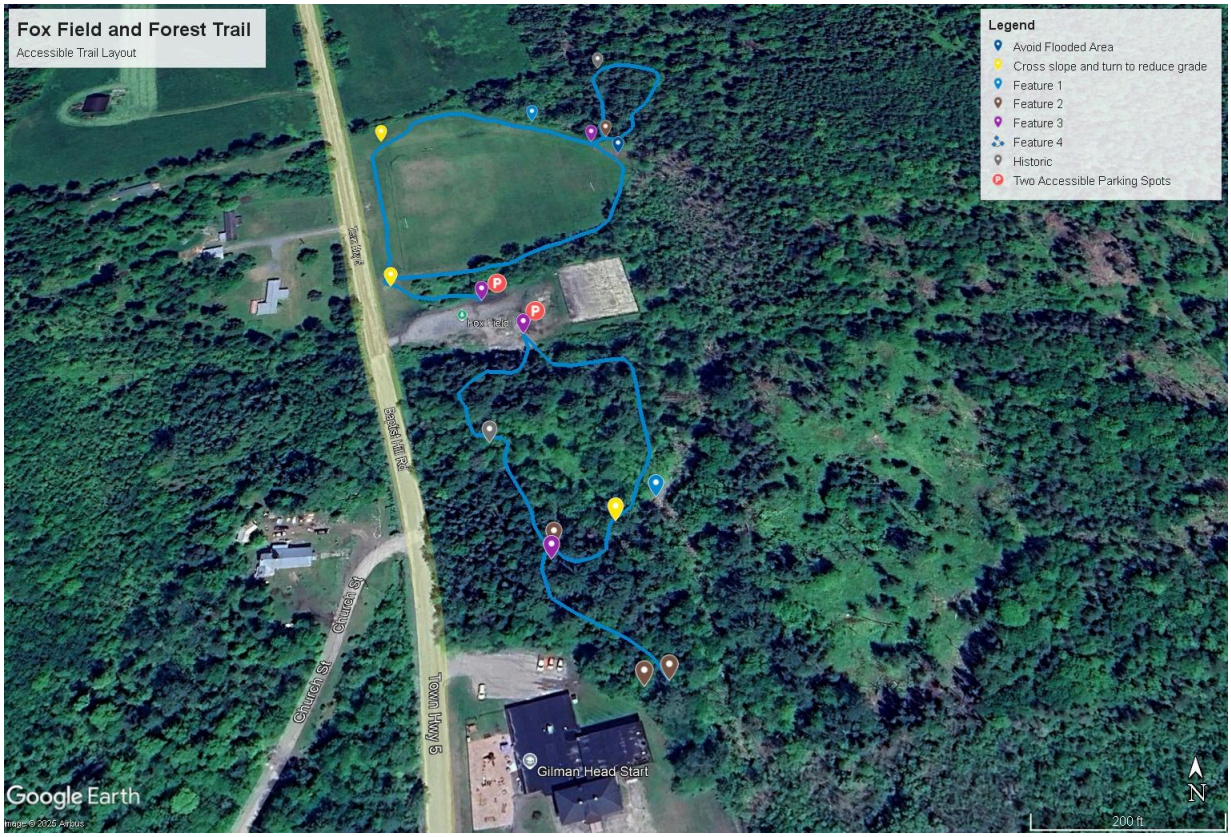
Identifying the best location for an accessible bridge for the Woods/Stonewall Loop

Phase 4: Outdoor Classroom Connection with Bridge to Former Middle School Building

Phase 4 consists of approximately 255 feet. This proposed section of trail will connect the South loop to the existing outdoor classroom on the property. A 32-foot accessible bridge will be needed to connect the end of the trail to the former middle school that is currently used as a Headstart facility. It is suggested that this phase not be implemented until the final status of the building is determined by the town.

Outdoor classroom at South end of Classroom extension. Bridge crossing location is on the left.

Please click on the map below to access the google map online.



Materials and Labor Budget Estimate - Phase 1

- Materials
  - ¾ Inch Ledgestone (135 tons - 6 truckloads) $3,220 (including trucking)
  - ⅜ Inch Hardpack (135 tons - 6 truckloads) $3,582 (including trucking)
  - Non-woven Geotextile cloth (5 rolls at 360 ft) $625

    Materials Total $7,427

- Equipment
  - 5 Foot Mini Excavator Rental (2 weeks) $3,000
  - Vibrating Plate Compactor Rental (2 weeks) $800
  - Mechanized Dumper Rental* (2 weeks) $1,000

    Equipment Total $4,800

- Labor
  - 4-person crew/2 weeks (including staging, etc) $14,400

- Project Total (including 20% contingency) $31,952.40

Materials and Labor Budget Estimate - Phase 2

- Materials (hardened trail)
  - ¾ Inch Ledgestone (97 tons - 5 truckloads) $2,451 (including trucking)
  - ⅜ Inch Hardpack (97 tons - 5 truckloads) $2,694 (including trucking)
  - Non-woven Geotextile cloth (3 rolls at 360 ft) $375
    Materials Total $5,520

- Equipment
  - 5 Foot Mini Excavator Rental (7 days) $2,100
  - Vibrating Plate Compactor Rental (7 days) $560
  - Mechanized Dumper Rental* (7 days) $700
    Equipment Total $3,360

- Labor
  - 4-person crew/7 days (including staging, etc) $8,960

- Project Total (including 20% contingency) $21,408

Materials and Labor Budget Estimate - Phase 3

- Materials (Trail)
  - ¾ Inch Ledgestone (54 tons-3 truckloads) $1,403 (including trucking)
  - ⅜ Inch Hardpack (54 tons -3 truckloads) $1,538 (including trucking)
  - Non-woven Geotextile cloth (2 rolls at 360 ft) $250
    Materials Total $3,191

- Materials (32 Foot Bridge)** $1,921

- Equipment
  - 5 Foot Mini Excavator Rental (4 days) $1,200
  - Vibrating Plate Compactor Rental (4 days) $320
  - Mechanized Dumper Rental* (4 days) $400
    Equipment Total $1,920

- Labor
  - 4-person crew/6 days (including staging, etc) $7,680

- Project Total (including 20% contingency) $17,654

Materials and Labor Budget Estimate-Phase 4

- Materials (Trail)
  - ¾ Inch Ledgestone (24 tons-1 truckload) $565 (including trucking)
  - ⅜ Inch Hardpack (24 tons - 1 truckload) $625 (including trucking)
  - Non-woven Geotextile cloth (1 roll at 360 ft) $125
    Materials Total $1,315

- Materials (32 Foot Bridge)** $1,921

- Equipment
  - 5 Foot Mini Excavator Rental (2 days) $600
  - Vibrating Plate Compactor Rental (2 days) $160
  - Mechanized Dumper Rental* (2 days) $200
    Equipment Total $960

- Labor
  - 4-person crew/4 days (including staging, etc) $5,120

- Project Total (including 20% contingency) $11,179

Costs for materials, labor, and rental equipment are based on the usual costs for UVTA to do the work in 2025. Volunteer support, skilled equipment owners and operators, and donations of materials and labor can significantly decrease project costs. A hybrid approach to trail building could be considered: contracting a professional machine operator/trail builder to rough-in the trail, and paid labor/volunteer labor to spread material and finish the trail. In addition to the mechanized equipment, work crews will need basic trail tools (shovels, hoes, loppers, rakes, etc.).

*UVTA owns 2 CanyCom Tracked Haulers. If possible, a comparable machine should be procured to carry and dump the crushed stone.

**Detailed materials list for bridge construction:

32'x5' Bridge Laminated Stringers Estimate

(10) 2"x4"x10' PT (curbs) @ 8.38 = **$84**
(24) 2"x"8"x16' PT @ 14.72 = **$354**

(12) 2”x8”x10’ PT @ 14.88 = **$179**
(2) 6’x6’x8’ PT @ 36.88 = **$74**
(52) 2’x6’x10’ Rough cut hemlock’ @ $14 = **$728**
(12) Angle Brackets @ 1.45 = **$18**
(1) 3 ½” deck screws 25lbs @ $120 = **$120**
(1) ½”x4” galvanized carriage bolts (25 pack) @ 60.53 = **$61**
(2) ½”x8” galvanized carriage bolts (25 pack) @ $103 = **$206**
(2) Washers 50pk @ $22.45 = **$45**
(2) Hex Nut ½” 50pk @ $25.98 = **$52**
Estimated Total Materials 32’ x 5’ = **$1921**