

Barre City & Cow Pasture Stewardship Committee
Request for Proposal: Trail Work and Trail Assessment

January 17, 2024

On behalf of the City of Barre, Vermont, the Cow Pasture Stewardship committee invites professional trail builders to submit proposals for the completion of work identified in this request for proposal (RFP) for projects located on the Barre City Cow Pasture property as specified in the 2023 Enhancement of Recreation Stewardship and Access (ERSA) Trail Grant.

Projects to be completed include:

1. Trail Work: Construction and design of a new approximately 1-mile trail and pedestrian bridge, improvements to existing trails, trail closures, and trail reroutes.
2. Trail Assessment: A trail assessment for the 77-acre property with recommendations focused on improving the existing trail network and updating way-finding signage.
3. Signage: Design, construction and installation of at least eight (8) new way-finding signs. Update and replace existing kiosk signage and three existing wayfinding signs.

Project Requirements:

1. All work must be completed, and deliverables received no later than November 1, 2025.
2. All work must be completed according to the State of Vermont; Department of Forest, Parks and Recreation trail design standards found in the *ERSA Grant Agreement: Attachment F – Standard Guidelines for Outdoor Recreation Assets*.
3. Applicants must review and take into consideration the recommendations provided within the Cow Pasture Stewardship Management Plan (Brodsky 2017); and the Barre City Cow Pasture Inventory, Assessment, and Recommendations (Sharpless 2013), when drafting their proposal. Links to both documents can be found on the [Barre City Cow Pasture Stewardship Committee's Web page](#).
4. Participation in an introductory meeting and on-site visit with Committee members to understand the Committee's conservation and wildlife management goals and to become familiar with property boundaries and sensitive areas.
5. Perform the Trail Stewardship requirements found in the *ERSA Grant agreement: Attachment A – Scope of Work to be Performed (Sections E, F, G, H, I)*, including a complete trails assessment and digital files of updated maps with geospatial locations.
6. Participation in periodic meetings/conversations with the Cow Pasture Stewardship Committee and City representatives to discuss design recommendations for trails, the pedestrian bridge, and way-finding signs. The applicant must provide progress updates every two months and make the Committee and City aware of any changes to the proposed timeline.
7. Provide proof of minimum liability insurance. The Consultant shall submit a Certificate of Insurance showing \$1,000,000 in Professional Liability Coverage; Commercial General Liability Coverage, and Worker's Compensation Insurance and Employers Liability with a minimum limit of \$500,000 for any one occurrence.

Submission Requirements:

The successful Proposal will include the following:

1. Qualifications of the preparer.
2. Examples of three similar trail projects completed, including locations, photos, project descriptions and references.
3. Example(s) of a trail assessment the preparer has completed.
4. Itemized Cost Proposal not to exceed \$24,000 that includes material, supplies, and labor estimates for:
 - a) Trail work,
 - b) Design and construction of a new pedestrian bridge and trail,
 - c) Trail assessment,
 - d) Signage: Kiosk (1) and wayfinding signs (3), (update/installation). A minimum of 8 new wayfinding trail signs (design, construction and installation.
 - e) Deliverables (see 'Deliverables' Section of this RFP)
5. Detailed timeline for the entire project, with all deliverables received by November 1, 2025.
6. Proof of Liability Insurance.

Background:

The Barre City Cow Pasture is an approximately 77-acre municipally owned parcel of land zoned as conservation/open land. The property has a network of heavily used trails. In 2013, the Cow Pasture Stewardship Committee recognized the need for a professional assessment of the property. The [Barre City Cow Pasture: Inventory, Assessment, and Recommendations \(Sharpless 2013\)](#) provided the Committee with a framework for stewardship of the property. The document provides an overview of the property's physical features, land use, water, wildlife, trails, and access. Most recommendations in the document have been achieved, including the creation of a Management Plan for the property.

The [Management Plan for the Barre City Cow Pasture 2017-2027](#) (Brodsky 2017) established goals and objectives, property usage policies, and specific recommendations for the management of trails, infrastructure, invasive species, water resources, and forest stands. The Stewardship Committee, in partnership with the City of Barre, has been actively maintaining trails and managing the property according to the 2017 Management Plan. Appendices to the Plan provide detailed maps of the property's trails (some now closed) and natural resources.

In May of 2023, Barre City purchased an additional 22 lots along the paper street known as Mead Avenue. The land was merged by deed to the 70-acre Cow Pasture property. Currently this parcel does not appear on existing maps.

ERSA Grant Requirements:

Reference *ERSA Grant Agreement: Attachment A – Scope of Work to be Performed (Sections E, F,G,H and I)*. Note: the ERSA Grant incorrectly references Attachment G in Section F. The correct reference is Attachment F

ERSA Grant Agreement: Appendix D – Project Maps (Map 1 & 2).

Trail Work:

Reference *ERSA Grant Agreement - Attachment D - Project Maps and Attachment F – Standard Guidelines for Outdoor Recreation Assets*.

Note: All new pedestrian trails, the Rt. 14 access route, and the pedestrian bridge must be designed and built to standards in Attachment F.

Major trail maintenance or reconstruction/renovation of existing trails

Trail work will include improvements to existing trails, including the closure of some trail segments, realignment of trails, and the installation of water bars and stone steps.

- M4-1 to C-5 to M1-3. Reestablish an old trail corridor to improve access for maintenance equipment. The trail will meet specifications for equipment passage. This improved trail corridor will be used to transport brush-hog equipment to the meadow. Invasive plants are found along this route, they should be managed as recommended by the State of Vermont (i.e., removal when necessary, and disposed of in a manner that will not promote infestation in other areas).
- C-7. This unofficial trail will be closed. Approach to M1-1 is extremely steep and prone to erosion.
- C6-1 to C6-2. Reroute the approach that is currently steep, difficult to navigate and prone to erosion.
- A new GPS track for the entire trail network is required.

New construction of trails, pedestrian bridge and trail linkages

- Construction of approximately one mile of new trail through a wooded area that will include trail assessment work, flagging, tread work, and the closure of a steep, eroded trail. The new trail will intersect three side trails.
- Construction of a pedestrian bridge over a small stream crossing. The bridge will be constructed in-line with the new trail. The bridge design and location proposed will require Committee approval. The bridge will be constructed in an environmentally friendly way and have minimum impact on the riparian area.
- Obtain all required state and/or local permits associated with the construction of the trail and bridge.

Trail Assessment:

The trail assessment shall take into consideration property management goals and provide recommendations on trail use and improvements. Parcel size, preservation of wildlife habitat, sensitive areas, and safety hazards shall be taken into consideration when proposing new trails or decommissioning existing trails. All proposed recommendations must design and build the trails to standards specified in the *ERSA Grant Agreement: Attachment F* and reference the standard to be used for construction of the proposed trails. The final document shall include updates to the Management Plan Maps found in the Appendices of the existing Management Plan. The updated maps must include the location of the new trails and pedestrian bridge and removal of closed trails. A map that includes proposed new trails and trail realignments shall be included in the assessment with the proposed locations for the updated way-finding signs and

recommendations for signage of property trail entrances on City land that are not currently signed (2). The assessment will need to be completed prior to installation of way-finding signs. Committee review and input must be considered prior to finalizing the document.

Signage:

The sign posted on the existing kiosk will be updated and redesigned. The kiosk sign will include new trails and routes and closed trails will be removed. Three maps/signs located where trails enter private property (1) and at the entrances where City owned ‘paper’ streets enter the Cow Pasture Property (2) will be updated and installed. The signs will be unique and include a “You Are Here” marker. A minimum of eight new wayfinding signs will be designed and installed across the entire trail network. Signs and posts must be durable and weatherproof.

Committee review of the design and materials used for the kiosk sign/trail maps/wayfinding signs is required. In addition, the location of way-finding signs and the trail identification recommendations need to be approved by the Committee.

Reimbursement:

For the City to be reimbursed from the grant for the work detailed, the consultant must provide the following:

1. A W-9 and proof of insurance for the City to be able to pay the Consultant.
2. All Invoices containing at a minimum: a unique invoice number, invoice date, Grantee name and address, amount, and a description of the work completed to date and an itemization of any incidentals used.
3. Any labor report form used by the consultant while in the field.
4. A record of time spent for which the Consultant is invoicing.
5. All reimbursement requests shall be submitted to the City by November 1, 2025.

Deliverables:

1. An electronic copy of the Trail Assessment and all updated maps including electronic data, a new GPS track for the entire trail network, geospatial layer files, and all associated files.
2. Two paper copies of the Trail Assessment with associated maps.
3. Photos to document the trails pre-improvement, pre-construction, pre stewardship, and the completed project components.
4. Secure and submit all permits identified in the Agency of Natural Resources Project Review Sheet.

ERSA Grant Agreement Attachments to this RFP:

Attachment A - Scope of Work to be Performed. Sections E, F, G, H, I.
Attachment D – Project Maps
Attachment F – Standard Guidelines for Outdoor Recreation Assets

ATTACHMENT A
SCOPE OF WORK TO BE PERFORMED

Project Overview:

The purpose of this grant is to protect public access and accessibility to the City of Barre's Cow Pasture property (hereinafter called "Cow Pasture property"), owned and managed by the Grantee, and improve existing recreational trail infrastructure within the Cow Pasture property. Grantee will achieve this purpose through the following project components: 1) acquire property adjacent to the Cow Pasture property as outlined below, to add and protect access to its recreational trail resources; and 2) to develop, maintain and provide stewardship of existing recreational trails within the Cow Pasture property.

The purpose of the acquisition of the property by the Grantee is to protect a major access trail (shown as S3 in the map in Attachment D- Project Map) and surrounding forest, permanently conserving the main trailhead parking area at the end of Maplewood Avenue. Its side trail S3 is a Barre City owned trail that traverses through mature forest. Development of the lots, currently for sale would remove mature trees above a steep embankment and interrupt the forested path to the trail system and a 30-foot Right-Of-Way would be turned into an access road to this parcel of land, resulting in the loss of the only parking area which in turn, would create potential safety hazards and nuisance concerns for existing neighbors.

The project location of the property to be acquired and locations of project components in this agreement are generally depicted on the maps in Attachment D-Project Maps.

This grant provides funding to assist the Grantee in acquiring property for the purposes in this agreement and to provide funding for trail construction and maintenance of existing recreation trails on the Cow Pasture Property as set forth herein. The Grantee shall use the grant funds to cover allowable land acquisition costs and for trail and trailhead costs associated in items A – H below, in accordance with the budget in Attachment E.

1. The Grantee shall provide the following:

A. Establish the Fair Market Value of the Property to be acquired as follows:

- a) The Grantee shall obtain an independent appraisal for the Property, to be performed by a qualified appraiser, that meets the Uniform Standards of Professional Appraisal Practice (USPAP), or a higher appraisal standard approved by the State. If the interest to be acquired is below \$10,000, or the amount to be paid is significantly below the market value, the Grantee may perform a market analysis, or an alternative valuation method approved by the State and provide justification for not needing a USPAP appraisal and the value of the interest to be acquired. The Grantee shall provide the State with a copy of the appraisal or valuation justification and a detailed invoice of the costs of the appraisal or market analysis. The grant award shall be adjusted if the expense of the market analysis is less than an appraisal.

- b) The Grantee shall provide in writing, the appraised value of the Property to the Landowners.
- B. Obtain a Purchase and Sale Agreement as follows:
- a) The Grantee shall obtain a written commitment from the Landowners to sell their Property to the Grantee, through an executed purchase and sale agreement for acquisition of the Property. Grantee shall share a copy of the executed purchase and sale agreement with the State.
- C. Complete Acquisition Due Diligence and a Title Search as follows:
- a) The Grantee shall inspect the title, boundaries, and environmental conditions of the property to ensure the title is free from title defects and that any legal or physical conditions do not infringe on the purposes for which the Property is being acquired.
 - b) The Grantee shall secure a real estate attorney, or other qualified attorney, to perform a title search and produce a report on the title of the property. The title search and subsequent report shall identify any title issues pertaining to property boundaries, environmental or physical conditions, liens, mortgages, protective covenants, deed restrictions, and conditions or defects that infringe upon the purposes for which the Property is being acquired. If such title issues or encumbrances are identified, the Grantee shall work with a qualified attorney to resolve such issues or encumbrances, so that the purpose for which the Property is being acquires is no longer impacted. The Grantee shall share a copy of the title report and any documents pertaining to title resolution with the State.
 - c) The Grantee shall ensure property boundaries have been substantiated.
 - d) The State reserves the right to review the Title Report, inspect the property's title, review the resolution of identified title issues, and require resolution of identified title issues to the State's satisfaction.
 - e) The Grantee shall obtain a title insurance policy for the Grantee's fee ownership, to be reviewed and approved by the Grantee's qualified attorney. The Grantee shall share a copy of the title insurance policy with the State.
- D. Acquire the Property:
- a) The Grantee shall acquire the Property owned by Frederic (deceased 11/11/2022) and Marilyn D. Ford (the "Landowners"), located at 0 Duffy Avenue lots 0485-VL00.0002, 0485-VL00.0004, and 0485-VL00.0005, in Barre, VT 05641, in fee simple, and add this parcel to the Cow Pasture property for the main purpose of providing public access

to the public outdoor recreational assets within the Cow Pasture property, and to also provide vehicular access for emergency ingress and egress, and for maintenance and management purposes of the Cow Pasture property. The Landowners shall be willing sellers to the grantee.

- b) The Grantee shall accept the Property via Warranty Deed from the Landowners with language included to ensure permanent public outdoor recreation access. The Grantee's qualified attorney shall review and approve the deed prior to closing. The Grantee shall provide the State a copy of the final Warranty Deed with, or prior to, a request for final grant reimbursement. After closing and recording of the deed, the Grantee shall provide the State with a copy of the fully executed, recorded deed.
- E. Using standard guidelines for new trail construction found in Attachment F - Standard Guidelines for Outdoor Recreation Assets, perform the trail construction components below to build a new 1-mile trail in the Cow Pasture property at the location depicted on Map 5 in Attachment D-Maps,
- a) Secure a professional trail designer and trail builder to design and build the new one-mile trail. The professional trail designer and trail builder shall use standards in trail design, trail construction, and for the footbridge for its public uses, using Attachment F.
 - b) Provide oversight to ensure the new one-mile trail includes trail layout, flagging, tread work, closure and revegetation of a steep/eroded unofficial trail, and construction of one footbridge over a small perennial brook. This new trail will link three side-trails and provide a safe crossing over the brook for all users. This trail and footbridge will provide an alternative route to connect with the main trail system, avoiding a VAST secondary connector trail.
 - c) Obtain all required state and/or local permits associated with the construction of the trail and bridge.
- F. Using standards in trail construction and trail maintenance techniques found in Attachment F - Standard Guidelines for Outdoor Recreation Assets, perform the following trail maintenance components at the locations described below and generally depicted on Maps 1 and 2 in Attachment D-Maps.
- a) The following five components will be completed using hand tools by both professional trail builders and volunteers, all which are trail and infrastructure projects found in Table 4, pages 12 and 13 of the [Management Plan for the Barre City Cow Pasture 2017-2027](#).
 - (i) Point #3 (trail M1-2) - Maintain existing water bars north of the stream and add new ones if necessary; the trail from the junction is widening, trail width will be reduced to match other trails in the vicinity. Fix steps; improve, add, or maintain water bars as needed to restore eroded areas. Point #6 (trail M2-1).

- (ii) Point #7 (trail M3) – Install appropriate drainage using standards in trail construction to prevent erosion along trail near S1 trail junction.
 - (iii) Point #12 (trail C8) - Build in drainage at switchbacks. Add steppingstones where needed. Block areas where walkers are cutting switchbacks and creating unauthorized trails to help keep users on the authorized trail.
 - (iv) Point #17 (trail S2) - Repair and improve the steep/eroding trail segments paralleling the stream; add drainage to the city-owned portion of trail using standards in trail construction and maintenance. This is also the location of the proposed pedestrian bridge crossing a perennial stream described above in No. 1, E (b).
 - (v) Point #18 (trail S3) - Steep section. Install new drainage using standards in trail construction and maintenance (paper street/City-owned land).
- b) The grantee shall complete the two components below, with their locations generally depicted, circled in orange, on Map No. 2 in Attachment D-Maps, with trail numbers M4-1 to C-5 to M1-3.
- (i) Re-establish an overgrown trail corridor to improve access for maintenance equipment and provide an access corridor to avoid and prevent driving large equipment across the stream. Downed and hazard trees will be removed from this trail corridor and the trail will be opened and maintained to clearances specified in the guidelines to be used, selected from Attachment G. This trail will also provide vehicle access for work crews and emergency vehicles. The location of this trail is circled in orange and labeled as C7.
 - (ii) Close an unofficial trail which has an approach that is steep, difficult to navigate, and prone to erosion and restore this area to its natural condition using decommissioning guidelines selected from trail construction and trail maintenance guidelines found in Attachment G. The location of this trail is circled in orange and trail numbers are C6-1 to C6-2.

G. Perform the following trail stewardship project components within the Cow Pasture property:

- a) A trail assessment of all trails on the Cow Pasture property will be performed by a professional trail designer. The following outcomes are expected:
 - (i) GPS points and routes for a new trail and pedestrian bridge. As part of this trail assessment, it is likely additional trail and infrastructure improvements will be identified, and geospatial locations provided.

(ii) Maps will be updated to include the new trail and pedestrian bridge. Closed trails will be removed to make trail use safer and more navigable.

(iii) Online maps will be updated and made available through the Grantee on a website, made available to the public and new trailhead maps will be posted at the main entrance kiosk, and the S3 and M4 entrances. Updated maps shall also be uploaded by the Grantee into Trailfinder with updated trail access information. To learn how to upload and update information into Trailfinder go to: [Contact Us \(trailfinder.info\)](#)

(iv) At least eight wayfinding signs will be added to the entire trail network. Type of sign and material to be determined.

H. Deliverables to share as separate digital files:

- a) Photos to document the condition of the trail's pre-improvements, pre-construction, pre-stewardship, and the completed project components.
- b) Digital copy or link to the updated online map being made available to the public on the website and at the main entrance kiosk.

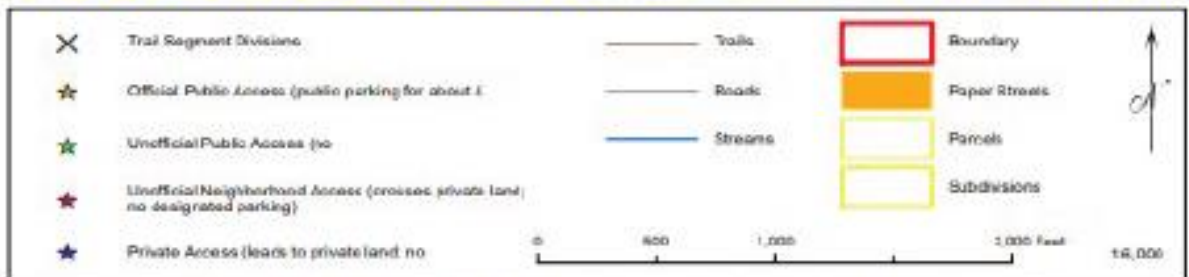
I. Project completion requirements:

- a) All items in A – H above, with their project components and deliverables to share as separate digital files.
- b) Final project performance report, in format provided by the State, to summarize the completion of the land acquisition components listed above.
- c) Final reimbursement request in accordance with payment provisions found in Attachment B. Eligible costs for the Grantee to submit to the State for reimbursement of this grant may include costs associated with the purchase of the property, title work, title insurance, environmental assessment, survey work, appraisal/market analysis work, baseline documentation for appraisal and purchase and sale agreement, legal fees associated with closing and related document review, and recording costs (hereinafter called "Direct Project Costs").

ATTACHMENT D: PROJECT MAPS

Map 1 – Depicts location of public trails, public access points, public parking & shows location of trail maintenance and stewardship project components.

Barre City Cow Pasture Trails, Access Points, and Parking



Map created by Emily Brotsky, February 2017. Data Sources: VOGI, City of Barre, ESRI, Sharpless Ecology LLC, Emily Brotsky

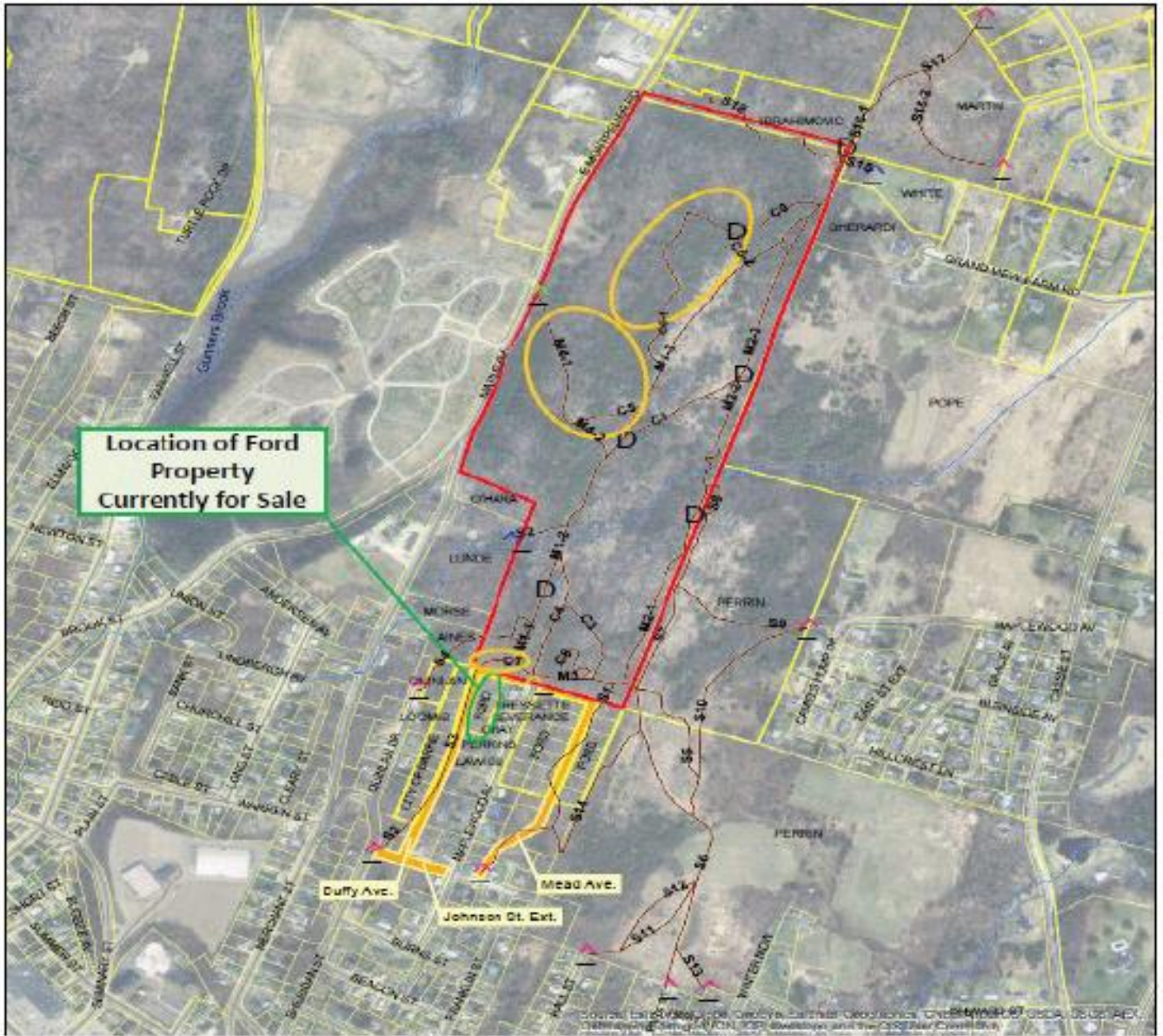
Disclaimers

Trails beyond the Cow Pasture property boundary are on private property. Please be aware that permission to access these trails may be revoked at any time. Please observe and respect posted signs and trail closures. Map is not intended for survey purposes.

Map 2 – Depicts the location of Property to be acquired and shows locations of trail maintenance and stewardship project components

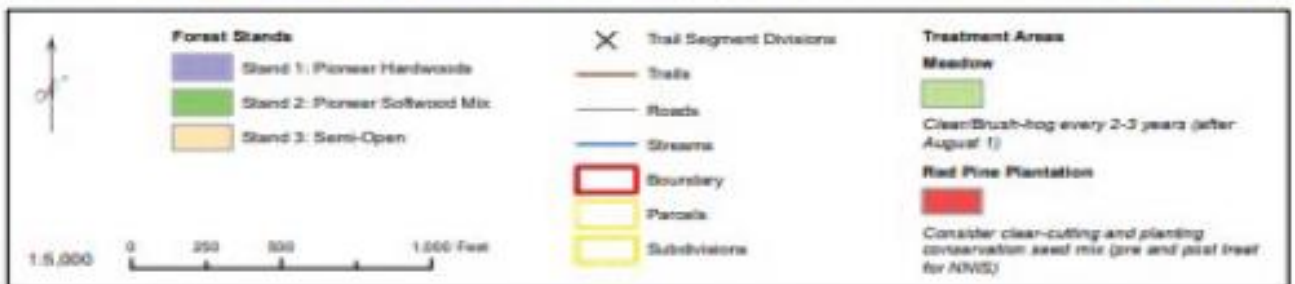
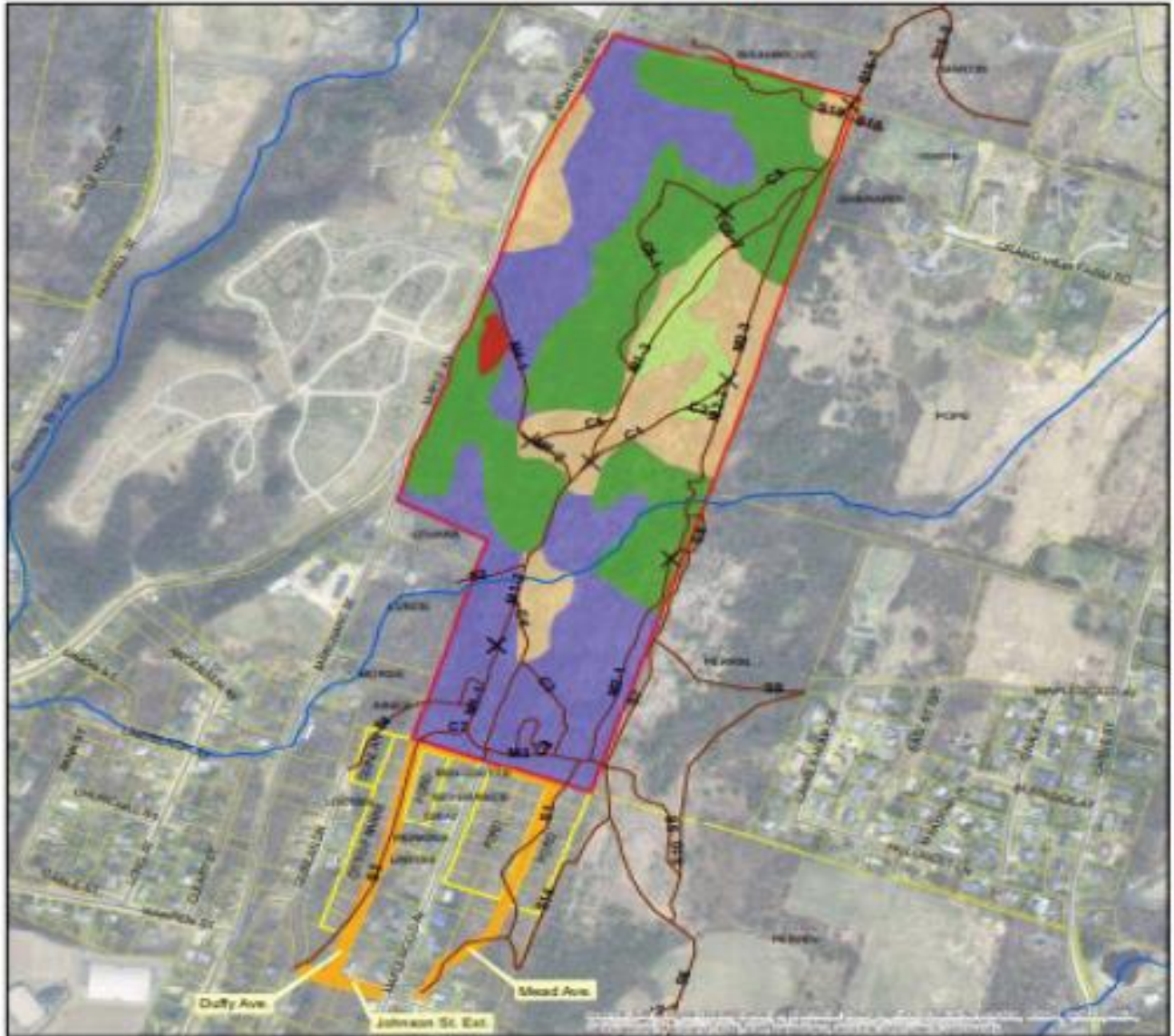
Barre City Cow Pasture

Trails, Access Points, Parking, and New Trail Projects Identified in 2021



Map 3 – Depicts forest stands and stewardship/trail maintenance priorities in the Cow Pasture property

Barre City Cow Pasture Forest Stands and Stewardship Priorities

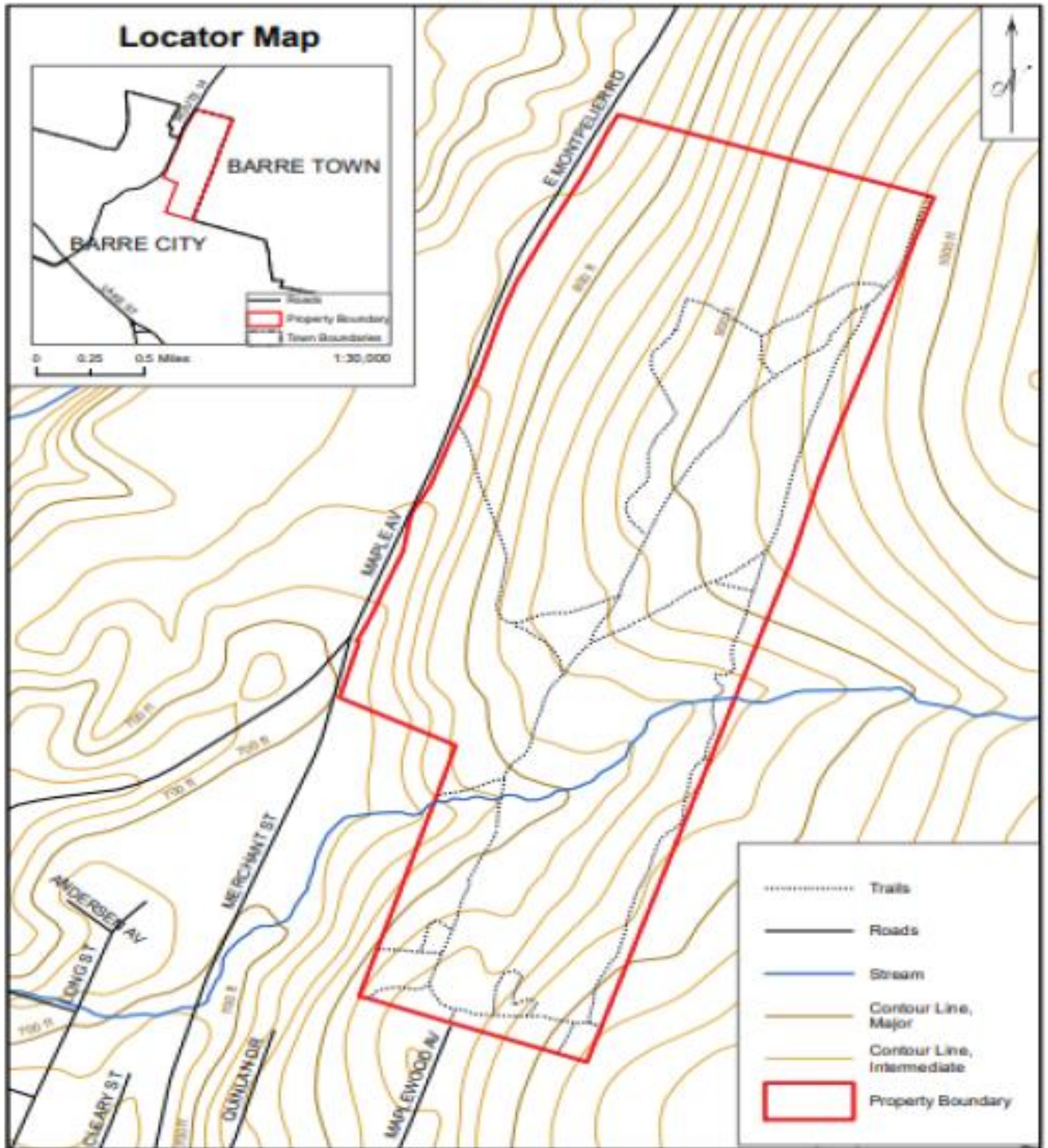


Map created by Emily Brodsky, February 2017. Data Sources: VCGI, City of Barre, ESRI, Sharpless Ecologic LLC, Emily Brodsky

Disclaimer:
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 Please observe and respect posted signs and trail closures.
 Map is not intended for survey purposes.

Map 4 – Depicts location of trails in the Cow Pasture property

Barre City Cow Pasture Trail Map

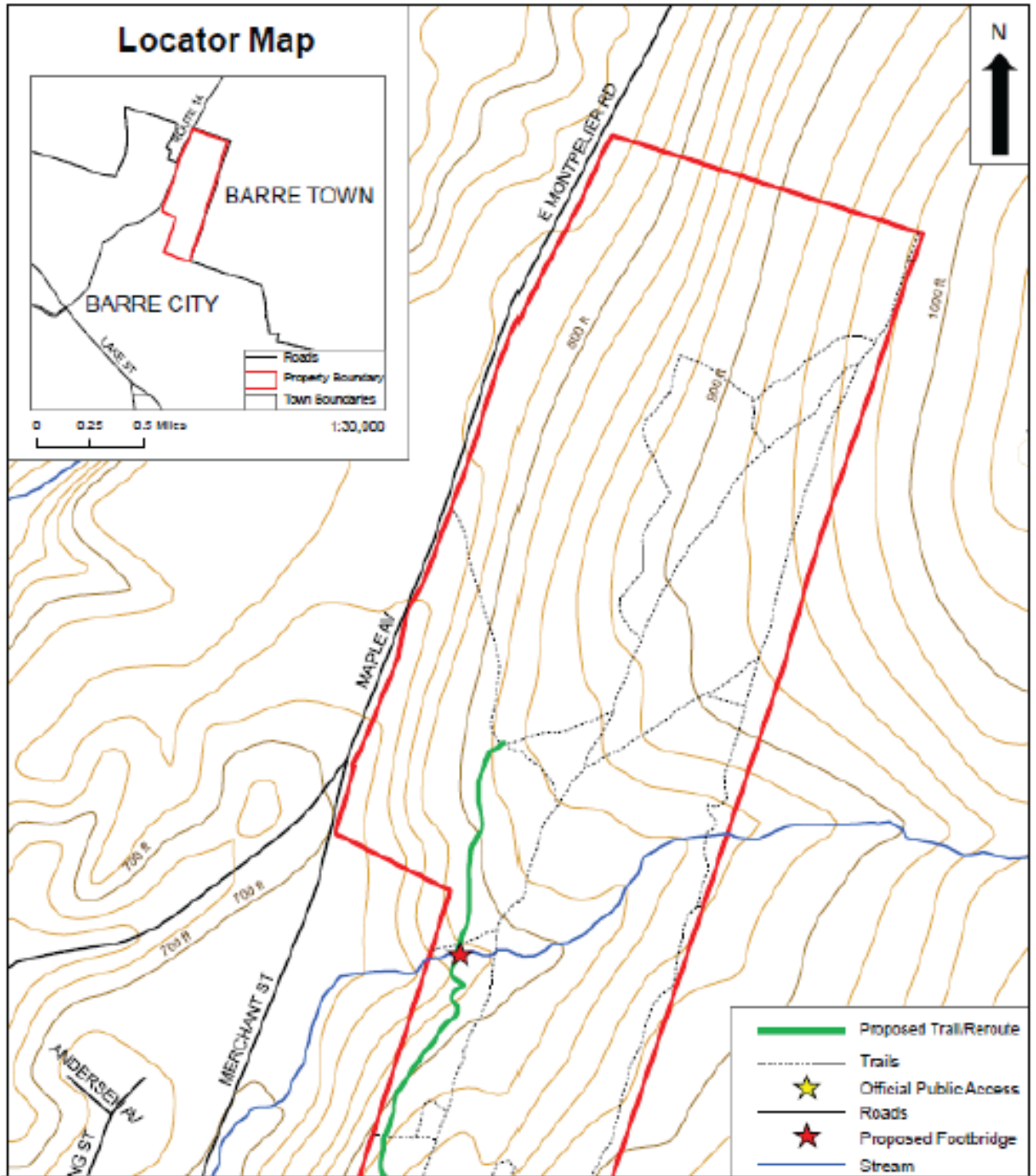


0 250 500 1,000 Feet

Map created January 2017
Disclaimer: Trails beyond the Cow Pasture property boundary are on private property. Please be aware that permission to access these trails may be revoked at any time. Please observe and respect posted signs and trail closures. Not for survey purposes.

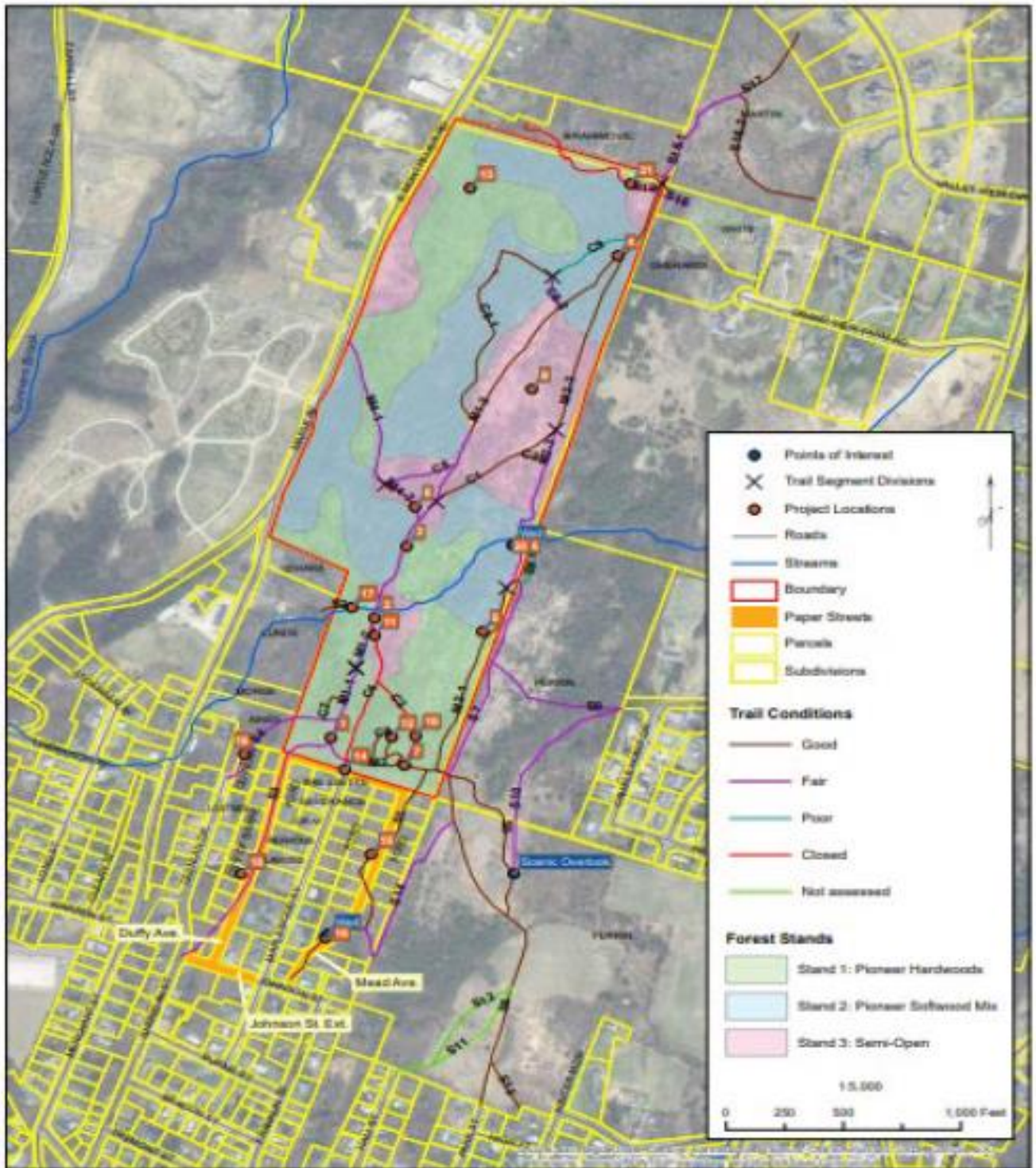
Map 5 – Depicts the general location of the proposed one-mile trail construction project and its footbridge

Barre City Cow Pasture Trail Map with Proposed Trail and Footbridge Location



Map 6 – Depicts locations of trail assessments and management priorities

Barre City Cow Pasture Trail Assessment and Management Priorities



Map created by Emily Brodsky, February 2017. Data Sources: VCGI City of Barre, ESRI, Sharpless Ecologic LLC, Emily Brodsky

Disclaimers:
Trails beyond the Cow Pasture property boundary are on private property. Please be aware that permission to access these trails may be revoked at any time.
Please observe and respect posted signs and trail closures.
Map is not intended for survey purposes.

INSTRUCTIONS

Required Guidelines. Grantees must review this section and adhere to the guidelines that match the project components outlined in Attachment A - Scope of Work.

1. Guidelines are sorted by general activity(ies) under which there is a brief description of the types of work that activity(ies) includes. Grantees must review the Required Guidelines to confirm whether there are guidelines they need to follow to complete any of the project components outlined in their Attachment A, paragraph 1.
2. If no required guidelines match a project component outlined under Attachment A, paragraph 1, grantees may follow their own standards.
3. When there are overlapping guidelines that apply, grantees must adhere to the more stringent set of standards.
4. When a grantee submits for reimbursement, they will be asked to note the guidelines they adhered to for completing their work. Grant program staff will check that the guidelines match the requirements outlined in this attachment and that the completed work meets guideline standards before a reimbursement can be issued. Contact the FPR Recreation Grants Team using the contact information below for any questions regarding which guidance is applicable.

Recommended Guidelines. These guidelines are recommended as best practices for completing work and achieving successful outcomes for project components outlined in Attachment A – Scope of Work. They are not required.

For questions, please contact the Recreation Grants Inbox by email at:

ANR.FPRRecreationGrants@Vermont.gov

REQUIRED GUIDELINES

Trail Design and Construction

For project components that include building and/or maintaining natural surface trails and installing signage along trails (e.g., trailhead kiosks, trail intersection signs, other informational signage).

For Bicycle & Pedestrian Facilities (Paved bike paths, roadways, and facilities):

The guidelines and requirements applicable to multi-use trails, or bicycle and pedestrian facilities in the Vermont Pedestrian and Bicycle Facility Planning and Design Manual or an acceptable equivalent trail standard:

<https://vtrans.vermont.gov/sites/aot/files/highway/documents/ltf/PedestrianandBicycleFacilityDesignManual.pdf>

AASHTO, Guide for the Development of Bicycle Facilities, 3rd Edition, American Association of State Highway and Transportation Officials, Washington, DC; 888-227-4860, www.aashto.org, 1999.

For Mountain Bike Trails:

Best management practices in mountain bike trail construction in the International Mountain Bike Association (IMBA) guidelines, with resources available online:
<http://www.imba.com/resources>

International Mountain Bike Association's (IMBA's) Trail Solutions: IMBA's Guide to Building Sweet Singletrack: <https://imba.com/resource/trail-solutions>

National Park Service, Guide to Sustainable Mountain Trails: Trail Assessment, Planning, and Design Sketchbook, September 2007.
http://www.nps.gov/dsc/docs/GuideToSustainableMountainTrails_2007.pdf

The guidelines in the United States Department of Agriculture Forest Service (USFS) Trail Construction and Maintenance Notebook: 2007 Edition.
https://www.fhwa.dot.gov/environment/recreational_trails/publications/fs_publications/07232806/toc.cfm

USFS Trail Design Parameters of the United States Department of Agriculture Forest Service:
https://www.fs.fed.us/recreation/programs/trail-management/documents/trailfundamentals/03-TrailDesignParaHandout_Sec508_01-24-17_150dpi.pdf

USFS Trail Fundamentals and Trail Management Objectives. 2011. USFS. [Trail Fundamentals and Trail Management Objectives | US Forest Service \(usda.gov\)](#)

For Human-Powered Hiking, Pedestrian and Multiple Uses:

The guidelines in the United States Department of Agriculture Forest Service (USFS) Trail Construction and Maintenance Notebook: 2007 Edition.
https://www.fhwa.dot.gov/environment/recreational_trails/publications/fs_publications/07232806/toc.cfm

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USFS Trail Fundamentals and Trail Management Objectives. 2011. USFS. [Trail Fundamentals and Trail Management Objectives | US Forest Service \(usda.gov\)](#)

For trails in Vermont town forests:

Vermont Town Forest Trail Design Guide:

https://vtcommunityforestry.org/sites/default/files/pictures/Town_Forest_Toolkit/Implementation_Pod/trail_design_guide.pdf

For trails in National Parks:

National Park Service Resources: [Sustainable Trails \(U.S. National Park Service\) \(nps.gov\)](#)

For trail work along the Appalachian Trail:

Appalachian Trail Design, Construction and Maintenance. [A.T. Design, Construction, and Maintenance - Appalachian Trail Conservancy \(atctrailstore.org\)](#)

For Cross-Country and Back-Country Ski Trails:

USFS Trail Fundamentals and Trail Management Objectives. 2011. USFS. [Trail Fundamentals and Trail Management Objectives | US Forest Service \(usda.gov\)](#)

USFS Trail Design Parameters of the United States Department of Agriculture Forest Service: https://www.fs.fed.us/recreation/programs/trail-management/documents/trailfundamentals/03-TrailDesignParaHandout_Sec508_01-24-17_150dpi.pdf

Catamount Trail Association Chief Handbook: <http://catamounttrail.org/wp-content/uploads/2016/11/TrailChiefHandbookUpdatedNOV2016.pdf>

Cross-Country Back-Country Ski Trail Etiquette: <https://catamounttrail.org/ski-the-ct/trail-etiquette/>

For Snowmobile Trails:

VAST Trail Policy Manual: <https://vtvast.org/Forms/2019/Trail%20Policy%20Manual%206-26-18.pdf>

VAST Best Practices for the Development of Snowmobile Trails: <https://vtvast.org/Forms/2020/Trails%20Manual2019.pdf>

Guidelines for Snowmobile Trail Signing & Placement: <https://vtvast.org/Forms/2020/Guidelines%20for%20Snowmobile%20Trail%20Signing%20&%20Placement%20FY19.pdf>

For Wetlands and/or Waterways:

Wetland Trail Design and Construction.

http://www.fhwa.dot.gov/environment/recreational_trails/publications/fs_publications/01232833/toc.cfm

The guidelines in the United States Department of Agriculture Forest Service (USFS) Trail Construction and Maintenance Notebook: 2007 Edition.

https://www.fhwa.dot.gov/environment/recreational_trails/publications/fs_publications/07232806/toc.cfm

USFS Trail Design Parameters of the United States Department of Agriculture Forest Service:

https://www.fs.fed.us/recreation/programs/trail-management/documents/trailfundamentals/03-TrailDesignParaHandout_Sec508_01-24-17_150dpi.pdf

USFS Trail Fundamentals and Trail Management Objectives. 2011. USFS. [Trail Fundamentals and Trail Management Objectives | US Forest Service \(usda.gov\)](#)

For Equestrian Trails:

Equestrian Design Guidebook for Trails, Trailheads and Campgrounds. December 2007. US Department of Agriculture, Forest Service.

http://www.fhwa.dot.gov/environment/recreational_trails/publications/fs_publications/07232816/index.cfm

Recreational Horse Trails in Rural and Wildland Areas: Design, Construction, and Maintenance by [Dr. Gene W. Wood](#), Professor Emeritus, Clemson University

For ATV/OHV Trails and other trail uses:

The guidelines in the United States Department of Agriculture Forest Service (USFS) Trail Construction and Maintenance Notebook: 2007 Edition.

https://www.fhwa.dot.gov/environment/recreational_trails/publications/fs_publications/07232806/toc.cfm

USFS Trail Design Parameters of the United States Department of Agriculture Forest Service:

https://www.fs.fed.us/recreation/programs/trail-management/documents/trailfundamentals/03-TrailDesignParaHandout_Sec508_01-24-17_150dpi.pdf

USFS Trail Fundamentals and Trail Management Objectives. 2011. USFS. [Trail Fundamentals and Trail Management Objectives | US Forest Service \(usda.gov\)](#)

Universal Accessibility and Improving Accessibility

For project components that aim to address adaptive recreation, universal accessibility and/or accessible facility needs.

Universally accessible guidelines for boating facilities: <https://www.access-board.gov/attachments/article/589/boating.pdf>

Americans with Disabilities Act standards for Recreation Facilities: <https://www.access-board.gov/guidelines-and-standards/buildings-and-sites/about-the-ada-standards/ada-standards/chapter-10-recreation-facilities>

Universally accessible guidelines found in the Accessibility Guidebook on Outdoor Recreation and Trails, found online at: <https://www.fs.usda.gov/sites/default/files/Accessibility-Guide-Book.pdf>

For Adaptive Mountain Bike (aMTB) Trails: Trail Information and Rating Systems Adaptive Trails (US based rating and trail reviews) <https://adaptivetrails.com/ratings>

Kootenay Adaptive Sport Association's Adaptive Mountain Biking (aMTB) Trail Standards 2020 with Appendix for Adaptive Mountain Biking (aMTB) Trail Difficulty Rating System: https://kootenayadaptive.com/wp-content/uploads/2021/03/KASA-Adaptive-Standard_FINAL-EDIT2.pdf

Arborist Industry Standards

For project components that will require tree cutting.

Certified arborist industry standards:
http://www.tcia.org/TCIA/Build_Your_Business/A300_Standards/A300_Standards.aspx?hkey=96ef3b27-af56-4ada-8670-d848787d1e30&WebsiteKey=b9a41e1f-978d-4585-9172-c411c78c5c14

Safety requirements for arboricultural operations found online at: <https://www.isa-arbor.com/store/product/122/#:~:text=2017%20ANSI%20Z133,General%20safety>

Street Signage Requirements

For project components that are installing signage on streets for traffic control, such as where there are trail crossings, bicycle and pedestrian lanes, or upcoming trailhead parking areas.

The Manual on Uniform Traffic Control Devices (MUTCD) produced by the Federal Highway Administration (FHWA): [Manual on Uniform Traffic Control Devices \(MUTCD\) - FHWA \(dot.gov\)](#)

Land Acquisition

For project components that use grant program funding to acquire property.

Uniform Standards of Professional Appraisal Practice: [Item Detail - 2020-21 eUSPAP \(PDF\)](#)
(appraisalfoundation.org)

RECOMMENDED RESOURCES

Bicycle & Pedestrian Facilities (Paved bike paths, roadways, and facilities):

The guidelines and requirements applicable to multi-use trails, or bicycle and pedestrian facilities in the Vermont Pedestrian and Bicycle Facility Planning and Design Manual:
<https://vtrans.vermont.gov/sites/aot/files/highway/documents/ltf/PedestrianandBicycleFacilityDesignManual.pdf>

Vermont Agency of Transportation Bicycle & Pedestrian Program: [Bicycle and Pedestrian Program | Agency of Transportation \(vermont.gov\)](#)

Complete Streets: A Guide for Vermont Communities: [Complete Streets - A Guide for Vermont Communities \(healthvermont.gov\)](#)

For Wetlands and/or Waterways:

Logical Lasting Launches: Design Guidance for Canoe and Kayak Launches. 2004. National Park Service Rivers, Trails & Conservation Assistance Program.
<http://www.nps.gov/ncrc/programs/rtca/helpfultools/launchguide.pdf>

Developing Water Trails in Iowa. Revised 2010. Iowa DNR.
<http://www.iowadnr.gov/Recreation/CanoeingKayaking/WaterTrailDevelopmentTools/WaterTrailsToolkit.aspx>

USFS Standard Trail Plans & Specifications: <https://www.fs.fed.us/managing-land/trails/trailmanagement-tools/trailplans>

Off-Highway Vehicle (OHV) Trails:

ATV/OHV Trail planning, design, development, and management guidelines from the National Off-Highway Vehicle Conservation Council: [Online Resource Hub – NOHVCC](#)

Snowmobile Trails:

International Association of Snowmobile Administrators (IASA) Resources:
<https://www.snowiasa.org/guidelines-resources/>

Universal Accessibility and Improving Accessibility

Break the Boundary (Based in Australia) <https://breaktheboundary.com.au/>

Other Trail Construction and Design Resources

A long list of additional resources for guidance and manuals with standards are available from the Federal Highway Administration (FHWA) online at: resources, guidance and manuals can be found at: http://www.fhwa.dot.gov/environment/recreational_trails/guidance/manuals.cfm

American Trails is the leading national clearinghouse for trail information and provides additional professional resources: <http://www.americantrails.org/resources/accessible/index.html>

Ontario's Best Trails: Guidelines and Best Practices for the Design, Construction and Maintenance of Sustainable Trails for All Ontarians [Microsoft Word - TAOC Draft C 2006-11-07.doc \(recpro.org\)](#)

Trail Planning, Design & Development Guidelines. 2007. MN DNR, Trails & Waterways Div., St. Paul, MN. https://www.dnr.state.mn.us/publications/trails_waterways/tgmanual/index.html

For Deconstruction and Disposal of Recreational Structures

Vermont Agency of Natural Resources Department of Environmental Conservation Construction & Demolition Waste Recycling guidelines: <https://dec.vermont.gov/waste-management/solid/materials-mgmt/construction-waste>

Strategic Planning & Community Engagement

Vermont Council on Rural Development Community Leadership Guide: <https://www.vtrural.org/sites/default/files/TheGuide.pdf>

Vermont Urban and Community Forestry Step-by-Step planning process: <https://vtcommunityforestry.org/places/town-forests/recreation-planning-initiative/recreation-planning-toolkit/step-step-planning>

Better Places Grant Program Placemaking Resources: <https://accd.vermont.gov/community-development/funding-incentives/better-places-resources>

International Association of Public Participation (IAP2) Spectrum of Public Participation: <https://www.iap2.org/page/pillars>

Equity in Placemaking

Sustainable CT Equity Toolkit:

https://sustainablect.org/fileadmin/Random_PDF_Files/Files_and_Resources/SustainableCT_EquityToolkit_January2019.pdf

National Recreation and Park Association Equity Language guide: <https://www.nrpa.org/our-work/Three-Pillars/equity/equity-language-guide/>

A Planning Guide for Making Temporary Events Accessible to People with Disabilities:

<https://adata.org/guide/planning-guide-making-temporary-events-accessible-people-disabilities>