LAMOILLE VALLEY RAIL TRAIL Trailside Facility Design Guidelines

May 2023







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Initial inquiries and requests can be made to Rail Property Management through the forms available on the website at:

https://vtrans.vermont.gov/rail/property-management-forms

Full-size details, signage content standards, and graphic support files can be obtained by contacting the Rail Trail Program Manager.

PREPARED FOR:



PREPARED BY:







Introduction

The purpose of the Lamoille Valley Rail Trail (LVRT) Trailside Facility Design Guidelines is to convey best practices for design, engineering, and performance specifications of trailside facilities. The Trailside Facility Design Guidelines build on the trailhead typicals, amenity themes, and graphics guide that are outlined in the Lamoille Valley Rail Trail Management Plan. The purpose of the LVRT Management Plan was to articulate a cohesive, community defined vision for the completed rail trail system and identify strategies to support the management, maintenance, operations, community connections, and economic development opportunities along the trail. The Management Plan was adopted in September 2022 by the Vermont Agency of Transportation (VTrans).

The *Trailside Facility Design Guidelines* provide local municipalities with guidance to implement amenities and trailheads to better serve their individual communities and the entire 93-mile corridor. Providing trailside amenities and trail connections will be imperative to leveraging the recreation tourism opportunities sought by the trailside communities along the LVRT.

The intended use of the Guidelines is for communities to design, build, and install new amenities that meet VTrans maintenance, safety, and accessibility requirements while aligning with the consistent aesthetic of the trail. In addition to the LVRT, this document will be used to guide improvements on all VTrans owned/managed rail trails. The three main sections of the *Design Guidelines* are:

- Trail Identity and Graphics Guide
- Amenities and Features
- Trail Environment and Trailheads

Trail Identity and Graphics Guide

One important function of providing a recognizable trail identity is to support a cohesive look and feel of materials and messaging for the trail while respecting the existing brand of the LVRT. Prior to VTrans taking over the management of the trail, the Vermont Association of Snow Travelers (VAST) created a "brand" for the trail. Since then, VTrans has developed a Graphics Guide to provide a consistent and clear identity for trail materials, including guidance for primary logos, alternative logo lockups, colors, and typefaces. The Graphics Guide is included in the *Design Guidelines* to guide application of the trail identity in the trailside environment and on trailside amenities.

Amenities and Features

Trailside amenities are critical to the experience of the LVRT. The same way the graphic identity of the trail will become familiar to trail users, providing trail kiosk maps, benches, picnic tables, water filling stations, and other trailside amenities with a consistent aesthetic will contribute to the cohesive look and feel of the LVRT. In addition to familiarity, these amenities will provide users with ease, comfort, and convenience, contributing to positive user experience. The Amenities and Features section provides guidance on design, engineering, performance specifications, and materiality for amenities along the trail.

Trail Environment and Trailheads

Trailheads are anticipated to provide users with trailside amenities at regular, strategic frequencies. Trailheads connect communities and visitors to the trail and connect trail users to local communities. When considering the appropriate mix of trailside amenities at trailhead locations, the aim should be to balance support of the user experience and health and safety objectives trailside with opportunities for offtrail exploration to garner services and support community economic vitality objectives. A strategic set of trailhead locations with varying levels of amenities will establish a minimum set of services along the trail. The Trail Environment and Trailheads section provides guidance on key considerations for the trailside environment, including a range of typical trailheads detailing an appropriate mix of amenities, conceptual layouts, and strategic adjacencies.



SECTION 1: TRAIL IDENTITY AND GRAPHICS GUIDE

Establishing a consistent user experience and cohesive aesthetic along the corridor requires a recognizable trail identity that appears ubiquitously on signs and materials related to the LVRT. As communities work to establish trailheads or round out available trailside amenities at existing trailheads, the adoption of the graphic identity outlined in the Graphics Guide below will be imperative.

The trail identity, including the primary logo, builds on the trail "brand" that has been established through the efforts of VAST to promote the trail and support its construction. In the development of the Graphics Guide, the primary logo developed by VAST stood out as evoking the elements of the trail and surrounding landscape. The color palette of the logo also matched with the existing Vermont state and VTrans brands, making it a logical choice for the cohesive aesthetic for the trail.

Building on the primary logo, the Graphics Guide prescribes other trail identity considerations like color palette, typefaces, primary logo applications, alternative lock ups, and example use cases. The updated Vermont Rail Trail System logo is presented on light and dark background and with and without color, creating acceptable formats for many applications. The primary typefaces on page 9 are exclusively used within the primary logo. In addition to the primary logo, the fundamental and recognizable elements of the logo were developed into alternative lock ups that reference the LVRT. These alternative lock ups may be used where the standard logo might not be legible or appropriate. The alternative lock ups utilize the secondary fonts.

Two use cases show the primary logo and an alternative lock up in trailside amenity applications. The typefaces and color palette that should be utilized in the development of graphics and materials are similarly prescribed. The secondary typefaces are applicable to the alternative lock ups.

The Swiss 721 typeface series is the basis for signage throughout the trail network. Map kiosk panels, interpretive signage, and trailhead entrance signs utilize several versions of the Swiss 721 typeface depending on their usage within the sign (black, condensed, bold, etc.).



Primary Logotype





Seal—Outlined

Seal—White





Alternative Lockups

Side By Side (Suggested Use: Letterheads, Web banners)



Horizon—Vertical (Suggested Use: Signage)

Horizon—Horizontal (Suggested Use: Signage)





RAIL TRAIL

Horizon—*LVRT* (Suggested Use: Stickers/ Window Decals)





LVRT Simple Seal (Suggested Use: Stickers/Window Decals)





Typography

PRIMARY

Helvetica Neue LT Std, ABCDEFGHIJKLMN Extended Bold

Aa

OPQRSTUVWXYZ abcdefghijklmn opqrstuvwxyz

0123456789

Extended Medium

Aa

Helvetica Neue LT Std, ABCDEFGHIJKLMN **OPQRSTUVWXYZ**

abcdefghijklmn opqrstuvwxyz 0123456789

SECONDARY

Aa

Swiss 721, Extended

ABCDEFGHIJKLMN OPQRSTUVWXYZ

abcdefghijklmn opqrstuvwxyz 0123456789

DIN, Condensed

Aa

ABCDEFGHIJKLMN **OPQRSTUVWXYZ** abcdefghijklmn opqrstuvwxyz 0123456789



Color Palette

Primary					
	PMS Pantone 2767 C CMYK 100 87 42 41 RGB 18 40 76 HEX #12284C				
Secondary	PMS Pantone 7482 C CMYK 96 8 99 1 RGB 0 157 79 HEX #009D4F	PMS Pantone 7482 C CMYK 96 8 99 1 RGB 0 157 79 HEX #009D4F		PMS Pantone 7462 C CMYK 100 71 22 5 RGB 0 83 139 HEX #00538B	
	PMS Pantone 7482 C @ 20% CMYK 18 0 18 0 RGB 207 237 217 HEX #CFEDD9		PMS Pantone 663 C CMYK 9 9 5 0 RGB 229 225 230 HEX #E5E1E6		
Tertiary	PMS Pantone 7621 C CMYK 21 100 95 13 RGB 177 32 40 HEX #B12028	PMS Pantone 1795 C CMYK 10 98 93 1 RGB 215 40 47 HEX #P7282F	PMS Pantone 1235 C CMYK 0 32 95 0 RGB 255 183 27 HEX #F671B	PMS Pantone 109 C CMYK 1 16 100 0 RGB 255 209 0 HEX #FFD100	



Logo Usage Examples







Example LVRT Branding on Bike Racks Credit: Dero



Example LVRT Branding on Rustic Wood Bench Credit: Streetlife Furniture



SECTION 2: AMENITIES AND FEATURES

The purpose of this section is to convey best practices for design, engineering, and performance specifications of trailside facilities. The intended use of the Guidelines is for communities to design, build, and install new amenities that meet VTrans maintenance, safety, and accessibility requirements while aligning with the consistent aesthetic of the LVRT.

The LVRT is a railbanked line approved for interim trail use by the Surface Transportation Board. The inactive rail line is owned, managed, maintained, and operated by VTrans. Establishing any access, crossing, lease, or work within the state-owned rail right-of-way (ROW) must be done in coordination and agreement with VTrans Rail Property Management. Initial inquiries and requests can be made to Rail Property Management through the forms available on the website at <u>https://vtrans.vermont.gov/rail/</u> <u>property-management-forms</u>.

The VTrans Rail Trail Program and LVRT Council should be notified on the siting and development of trailheads and/or pause places, placement of trailside amenities, agreements to establish these facilities within and/or adjacent to the stateowned ROW, and agreements to keep amenities maintained in a state of good repair. When planning for and installing facilities, the project should aim to avoid placement of amenities within state highway ROW and, where feasible, avoid placement within rail ROW for signs, kiosks, and other amenities (restrooms/pavilions may not be able to avoid installment within rail ROW). Where avoiding rail ROW is not feasible, entities may seek to enter a right-of-way use, license, or lease agreement to utilize a portion of the rail ROW for the public good. The <u>Master License Agreement</u> dictates the rental schedule for use of lands within the state ROW along railbanked lines. Provided the facilities developed along the LVRT meet the criteria set forth in these Guidelines and serve the public good, a lesser or waived rental schedule should be justified for leasing or licensing of lands.

If Federal funds will be used for construction. materials and fixtures selected must be in accordance with current laws and regulations. For example, the Infrastructure Investment and Jobs Act (IIJA) stipulates that all materials that are permanently incorporated into federalaid projects shall meet Build America, Buy America requirements. The application of the Build America, Buy America preference requires that all iron and steel in the project are entirely manufactured within the United States, all manufactured products in the project are manufactured within the United States with a minimum of 55 percent of domestic content (by cost or other lawfully established standard), and that all construction materials are entirely manufactured within the United States. The Office of Management and Budget issued memorandum M-22-11 that provides further guidance on the law.

Bike Racks and Repair Stations

While bike racks are not highlighted as a specific amenity within this document, they are an essential part of trailhead planning and should not be overlooked. General guidance for their inclusion at trailheads and other gathering spaces is contained within discussions of other amenities. For guidance on bike rack spacing and layout, VTrans refers to the <u>Essentials of Bike</u> Parking guide developed by the Association of Pedestrian and Bicycle Professionals. For their ease of use and durability, VTrans and other industry professionals recommend "Inverted-U" or "Hoop" racks.

Similarly, bike repair stations should be included at trailheads for the convenience of trail users. Consider selecting a model that includes an air pump in addition to the basic toolset. Manufactures and models include Dero Fixit Plus, Saris Public Work Stand, and Madrax RepairSTAN, among others. Generally, a singleside repair station should have a minimum of 42" of clear space on either side of the station and 36" clear space infront. Refer to manufacturer's specifications for additional information.

Both the bike racks and repair station should be black powdercoated metal or galvanized steel.





LVRT Three Rivers Pavilion, St. Johnsbury VT Credit: Duncan Wisniewski Architects







Typical Bike Repair Station Credit: Dero



Historic Bridge Crossing Along the LVRT



Kiosk Maps

Kiosk maps serve an important role with the trail network by providing trail users with multiple sets of information about the trail. These maps show the context of the trail, convey distance, and where trail users can expect to find certain amenities such as bike repair stations or restrooms. Beyond the trail, kiosk maps can serve as an important link back to communities and downtown centers by highlighting local business or attractions and advertising upcoming events. These maps are as important to trail users that have just arrived at a trailhead and are planning their trip as they are to users already on the trail, looking to see where they are.

Design Features + Placement

- Set kiosk maps far enough off the edge of the trail to allow people standing with their bikes to view the map without impeding the trail (Minimum of 12' from the edge of the trail, if the map viewing area is parallel to the travel direction) (See Level 1 Trailhead for illustration)
- Provide a minimum of 10-12' clearance in front of the viewing area of the kiosk to allow free movement around the space.
- Provide a minimum of 8' clearance between the side of the kiosk map and nearby features.

Locate kiosk maps so that both sides of the kiosk can be visible from an accessible area. Reference ADA Standards for Accessible Design of walkway approaches and turning requirements for access to kiosk maps. Kiosk maps should be placed in an area that serves multiple user groups (i.e., trail users arriving to the site by car and users already on the trail that are looking to reference their current location). Avoid placing kiosk maps in areas where it will go unnoticed from the trail.



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- Locate kiosk maps so that users coming to the kiosk from the trail will not have to cross parking areas or vehicular traffic to view the map to help minimize pedestrian conflicts with vehicles.
- Kiosk maps must be installed on a smooth, stable surface that is accessible by all users (concrete or other hardscape paving, etc.). Kiosk maps may be set within crushed stone, where appropriate (if kiosk map is not adjacent to a paved hardscape surface). Consult ADA Standards for Accessible Design of pathways, approaches, and turning requirements for guidance on ADA access.
- Signs should not visually impede the trail since the trail is a historic asset. Placement of kiosk map should be carefully considered so they don't block views of the trail, cultural/historic resources, or scenic viewsheds.
- Kiosk structures should be double sided to convey additional information to trail visitors. In addition to the wayfinding map panel, the reverse side may be used for additional wayfinding signage, interpretive signage, or for the trail ethic or courtesy signs. If double sided, both sides of the kiosk must be prominently displayed from an accessible route. Alternatively, a bulletin board can be created to link trail users to local businesses/events. This bulletin board would be managed by either the municipality or the LVRT Council.

Content Standards

Kiosk maps should include the following pieces of information for the benefit of trail users. See mock-ups for additional information regarding layout, size, etc.

- Full map of the trail section in the vicinity of the kiosk map/trailhead
- Insert of a map of the full LVRT (highlight the trail section shown in the full map)
- Road intersections
- Trail etiquette/ethics
- Allowed users of the trail
- Basic directions to amenities such as food, lodging, parking, restrooms, etc. Based on current Vermont Statutes, references to specific businesses are prohibited.
- LVRT logo
- Local photos
- Acknowledgment of VAST's role on the LVRT: "VTrans wants to acknowledge the advocacy and stewardship efforts continued by the Vermont Association of Snow Travelers (VAST)."

Specifications + Details

- Custom build. Refer to detail.
- Digital print graphic on Sintra substrate (or equivalent PVC-faced material) per fabricator recommendation.

- Surface-mounted to kiosk per fabricator recommendation with no visible hardware.
- All dimensions to be field verified by vendor prior to fabrication.
- Exact material selection, mounting details and methods to be determined and verified with survey of site by fabricator and approved by VTrans project coordinator.
- Utilize a weather-resistant wood material (i.e. hemlock, cedar, or pressure-treated pine). Waterproof stain and seal, natural color, unpainted.
- Anchor kiosk map to 2' diameter concrete piers, 5' min. depth, 3000 psi.
- Kiosk map may be placed within crushed stone. Provide a minimum of 18" of compacted, dense, graded crushed stone with compacted subgrade below. Utilize a weed barrier between the crushed stone and compacted subgrade. Provide a 6-8' minimum of crushed stone in front of viewing areas.
- Standing seam metal roof, dark green or dark gray.
- Utilize post bases/anchors to prevent wood rot and anchor the kiosk to the base. Do not bury or set posts in gravel or concrete.



Kiosk Map Content Standards





Kiosk Map Graphic Example Exhibit









Cultural/Historic Interpretive Signs

Interpretive signage along the LVRT adds richness to the trail experience by highlighting cultural, historic, and natural features that may otherwise have gone unnoticed. Detail provided within the sign panel can recall a site's history and former usage or educate trail users about a site's ecological importance. As a collection, the interpretive signs tell a story that is unique to the region and provide insight into the past and present land use, agricultural/industrial heritage, and culture of Northern Vermont, Two alternative designs for interpretive signs are proposed based on context of the trail. Where appropriate, salvaged historic LVRT features (historic mile markers, railway components, etc.) can be collocated with interpretive signage to add richness to the experience. Placement of these features should follow the guidance for Off-Trail Interpretive Signage and should not block views of the trail or other historic assets.

Off-Trail Interpretive Signage

Design Features + Placement

- 24" x 36" Panel
- Located at LVRT trailheads, generally outside rail right-of-way.
- Provide a minimum of 10' clear space in front of the viewing area to provide enough room for people standing with their bikes to read the sign without impeding movement around the space.
- Signs should be 15' minimum from the centerline of the trail.
- Consider incorporating the interpretive sign panel into walls of structures like pavilions or restroom enclosures.

Content Standards

Content to include the following. See mock-ups for additional information regarding layout, size, etc.

- Panel Title
- Narrative Text 300 words max.
- Photos/Graphics
- Logos/Acknowledgments
- Possible Linear trail map footer

On-Trail Interpretive Signage

Design Features + Placement

- 12" x 12" Panel
- Located along the trail between trailheads, within rail right-of-way.
- Interpretive signs should be set 4' min. to 8' max. off the edge of the trail (6' preferred), depending on site conditions.
- An accessible route must be provided from the trail to the interpretive sign.
 Where feasible, the trail can be widened to surround the interpretive sign with a trail "bulb-out."

Content Standards

Content to include the following. See mock-ups for additional information regarding layout, size, etc.

- Panel Title,
- Narrative Text 250 words max.
- Photos/Graphics, and
- Logos/Acknowledgments.



"Master Sign" and Identification Markers

In some locations, it may be desirable to provide a larger, more detailed sign (24"x36") at trailheads and town-owned facilities that compliments smaller markers (6"x6") along the trail that point to key historic and cultural elements. This larger "master sign" can contain detailed information for interpretive resources to an extent that may not be possible on smaller, on-trail signage. Smaller "identification markers" at the cultural/historic site can call attention to the feature where it is found on-trail and reference back to the master sign. Identification markers differ from the on-trail interpretive signs in that they do not contain narrative text or images. Instead, the identification markers will refer to the master sign and potentially direct viewers online using QR codes for more information.

The master signs themselves will be similar in nature to the off-trail interpretive signs but may cover a broader range of topics when "summarizing" interpretive elements found in the area. These master signs can either cover a specific topic (i.e. covered bridges along the trail) or a specific area (industrial rail heritage within town). In areas where many interpretive elements exist within a short distance, this can help reduce the amount of signage along the trail. Instead of relying solely on 12"x12" on-trail signage, master signs provide an opportunity to go more in depth on a topic or feature while still highlighting the trailside feature with an identification marker. The use of master signs and identification markers can also be used when planning guided historical trail walks.

Additional Considerations

- Interpretive signs must be installed on a smooth, stable surface that is accessible by all users (concrete or other hardscape paving, etc.). Interpretive signs may be set within crushed stone, where appropriate (if sign is not adjacent to a paved hardscape surface). Consult ADA Standards for Accessible Design of pathways, approaches, and turning requirements for guidance on ADA access.
- Signs should not visually impede the trail since the trail is a historic asset. Placement of interpretive signs should be carefully considered so they don't block cultural/ historic resources.
- While the LVRT is rich in cultural/historic resources, it may not be feasible to call attention to every asset along the trail. As a general guideline, the following list of assets should be prioritized when determining content for interpretive signage:
 - □ Native American sites/features
 - □ Historic/former settlements
 - Historic/former railroad features or prominent sites (i.e. sites of historic switching yards, etc.)
 - □ Remnant rail features
 - □ Unique natural features (i.e. Dog's Head Falls in Johnson, etc.)

- Unique or rare natural habitats/ ecosystems
- Generally, interpretive signs should be no closer than two miles apart to avoid overcrowding the trail with signage.
- Consider how QR codes can be incorporated into signage to direct viewers to the internet for more detailed information on a particular topic or feature.

Specifications + Details

- Off-Trail Interpretive Signage, 24"x36" Panel (outside rail right-of-way)
 - □ Refer to detail.
- On-Trail Interpretive Signage, 12"x12" Panel (within rail right-of-way)
 - 12"x12" Panel shall be mounted at the same angle utilizing the same adhering methods to a single 2"x4"x1/8" tubular aluminum post.
 - Refer to 24"x36" Off-Trail Frame Detail for more information.
- Digital print graphic on Dibond substrate (or equivalent metal-faced material) per fabricator recommendation with wood-look returns on visible edges.
- Mounted to frame/post/surface per fabricator recommendation with no visible hardware, match design intent.



- All dimensions to be field verified by vendor prior to fabrication.
- Exact material selection, mounting details and methods to be determined and verified with survey of site by fabricator and approved by VTrans project coordinator.
- Interpretive signs may be placed within crushed stone. Provide a minimum of 18" of compacted, dense, graded crushed stone with compacted subgrade below. Utilize a weed barrier between the crushed stone and compacted subgrade. Provide a minimum of 4-8' of crushed stone in front of the sign and 2' of crushed stone around the back and sides of the interpretive sign.



Off-Trail Interpretive Sign (24"x36") Content Standards

(See Images on Right)





Off-Trail Interpretive Sign (24"x36") Content Standards





Off-Trail Interpretive Sign (24"x36") Example Exhibit

Fisher Covered Bridge

Fisher Bridge was constructed in 1908 and is named for When the railroad rebuilt several bridges to accommodate Christopher Fisher, whose farm bordered the crossing at the time. It is also known as the Chubb Bridge, a name derived from the Chubb family who historically lived nearby. The Pratt Construction Company, the builder. adapted the Town lattice truss for the railroad and named it the Town-Pratt truss. Both sides of the truss have an extra set of diagonal lattice members, which increases the strength of the bridge.

heavier train loads. Fisher Bridge was threatened with demolition. In 1968, with local support, the State of Vermont arranged for preservation of the bridge. The timber deck was removed and replaced by steel beams to carry the track independent of the timber trusses. Fisher Bridge was the last operational commercial railroad covered bridge in the United States until the Lamoille Valley Railroad (LVRR) closure in 1994.

As of 2021, Fisher Bridge is one of only eight remaining railroad covered bridges in the **United States.**





I The Bridge Road

The 93-mile Lamoille Valley Rail Trail (LVRT) occupies the former railroad corridor of the Vermont Division of the Portland and Ogdensburg Railroad between St. Johnsbury and Swanton. Its nickname was "The Bridge Road," named for the six covered bridges on its scenic route. Construction began in 1869 and lasted until 1877. The line was operated by many companies and took many names, including the St. Johnsbury and Lake Champlain Railroad (St. J. and L.C.).

Covered bridges were selected for water crossings due to the lower cost of timber construction compared to iron. However, by the mid-20th century, the covered bridges and light gauge rails could not support the heavier, more modern engines. Additionally, the rise of the interstate highway system led to more freight transport by trucks thereby decreasing railroad business. In 1967-68, the Lamoille County Railroad (LCRR) attempted to attract more clients and turn a profit by replacing most of its covered bridges with stronger steel spans.

Footer (possible simple linear trail map, funding info, logos, etc)



On-Trail Interpretive Sign (12"x12") Content Standards



Heading 1, 18 pt.

Body Text—14 pt.—225-250 words... Ut quam sant, omnis doluptatetur re estrum nima consed maiorem et poritii scipsamus. Vidist ipsam, ut il modis dolupti busaperro qui none pelit, sape ne quiaerferrum non pa doluptatiae sumquatus, con resecum quam rehenis ciissequibus mod quam anihict uritassi tet, offici bero tet et, qui blauditat experfe rsperum voloreptium volecum sequamusdae velestiur. Qui a nonsequist eum nos nis sam isi dolupta tempore ime pore cus qui omnis eici nonsequibus et quates explita quam dolum lam et volut occabor ehenime volupta proreruptat et plitem duciduciae nos voles ipsapero idit, consequi atent vel is et volum esciatio. Erataturit inum voloritat. Sequia pla nis iunt et minciae cus, et es aspietur. Quiatem vendem hilloribus arum que non nos autaepra doluptate maios adi cum facernam exeriandam, cus, auditaturit que del ium rernam, sequunt a que ventusae volupture

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0.5" MINIMUM EDGE BORDER / CLEAR SPACE



On-Trail Interpretive Sign (12"x12") Example Exhibit



The Bridge Road

The 93-mile Lamoille Valley Rail Trail (LVRT) occupies the former railroad corridor of the Vermont Division of the Portland and Ogdensburg Railroad between St. Johnsbury and Swanton. Its nickname was "The Bridge Road," named for the six covered bridges on its scenic route. Construction began in 1869 and lasted until 1877. The line was operated by many companies and took many names, including the St. Johnsbury and Lake Champlain Railroad (St. J. and L.C.).

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Off-Trail Interpretive Sign (24"x36") & Frame Details

1/4" = 1'-0", Sheet 1/2, See Sheet 2/2 for More Information





Off-Trail Interpretive Sign (24"x36") & Frame Details

Not to Scale, Sheet 2/2, See Sheet 1/2 for More Information



Trailhead Entrance Sign

Thorough wayfinding signage is an important aspect of trail user-friendliness. At the start of their journey, clear wayfinding is needed to ensure trail users can find their way to desired parking areas. Trailhead entrance signs can be used to highlight the entrance to the parking area and access point for the trail. On the approach to the trailhead, additional directional signage and distance markers may be needed to guide visitors to their destination. Additional information and material can be found within the State Rail Trail Community Wayfinding Guidance Document.

Design Features + Placement

Sign placement must take into account not impeding intersection sight distance for vehicles pulling out of parking entrances as well as vehicles approaching the entrance from the connecting roadway. Minimum recommended sight distance from the AASHTO Green Book, categorized by the posted speed limit of the intersecting roadway, can be found in Table 1. Signs shall be placed 100 feet from existing signs on roadways with speeds equal to or less than 35 miles per hour and 200 feet from existing signs on roadways with speeds greater than 35 miles per hour per Vermont Sign Law. See Table 1 for a summary of the above requirements.

Table 1: Sign Spacing Requirements

Distance From Other Signs	Trailhead Sign Placement Based on Sight Distance
100' Minimum	165' Minimum
200' Minimum	195' Minimum
200' Minimum	220' Minimum
200' Minimum	245' Minimum
	Distance From Other Signs 100' Minimum 200' Minimum 200' Minimum 200' Minimum

Table 2: Horizontal and Vertical Offset Requirements

Route Type	Vertical Offset from Edge of Travel Way to Bottom of Edge of Sign	Horizontal Offset from Edge of Travel Way to Near Side Edge of Sign
Roadway	6' Minimum	6' Minimum
Roadway with Sidewalk	7' Minimum	6' Minimum
Sidewalk, Sidepath, or Trail Offset from Roadway	4' Minimum / 5' Maximum	2' Minimum

- Trailhead signs are considered onpremises signs per Vermont Sign Law and must be within 1500 feet from centerline of entrance road and less than 25 feet above elevation of entrance, if placed on a hill.
- Table 2 should also be considered for placement of the Trailhead sign in relation to the entrance, parking facility, and adjacent roadways. Horizontal and vertical offsets of signs from edge of pavement shall follow VAOT Construction Standard E-121 Standard Sign Placement for

Conventional Roads or A-78 Shared Use Path Typical.

- Conflicts with existing features preventing the requirements found within Table 1 and Table 2 may result in modifications or relocation of existing features to meet proper Trailhead Sign placement.
- Trailhead entrance signs should be placed in a prominent location so they can be viewed from primary approach directions. Consider how existing or proposed vegetation and structures may impact visibility of signage.



Specifications + Details

- Refer to detail.
- Double-sided sign.
- All dimensions to be field verified by vendor prior to fabrication.
- Utilize post bases/anchors to prevent wood rot and anchor the kiosk to the base. Do not bury or set posts in gravel or concrete.
- Exact material selection, mounting details and methods to be determined and verified with survey of site by fabricator and approved by VTrans project coordinator.



NOTES:

- 1. THE TRAILHEAD SIGN FOUNDATION DETAILING WAS DESIGNED TO THE SPECIFICATIONS NOTED WITHIN THE DETAIL AND THESE NOTES. NO ADDITIONAL SIGNS OR FIXTURES MAY BE ADDED OR MOUNTED TO THE TRAILHEAD SIGN STRUCTURE.
- 2. SIGNS SHALL BE 0.080" THICK FLAT SHEET ALUMINUM IN ACCORDANCE WITH SUBSECTION 750.03
- 3. "LVRT TRAILHEAD" SIGN TO BE COLORED AS FOLLOWS:
- 3.1. BACKGROUND FEDERAL COLOR CHIP 35050
- 3.2. "TOWN NAME, VERMONT" FEDERAL COLOR CHIP 34090
- 3.3. "LAMOILLE VALLEY RAIL TRAIL" WHITE, NON-RETROREFLECTIVE
- 4. ADDITIONAL SIGN SPECIFICATIONS AS FOLLOWS:
- 4.1. LOGOMARK DIMENSIONS: 8" X 8"
- 4.2. TOWN FONT: SWISS 721 CONDENSED BLACK (IN ALL CAPS)
- 4.3. TRAIL FONT: SWISS 721 CONDENSED BLACK
- 5. 4X4 WOOD POST TO CONCRETE CONNECTOR SHALL BE SPECIFICALLY DESIGNED TO PROVIDE MOMENT RESISTANCE FOR POSTS, HAVE A STANDOFF TAB OF 1" TO RESIST DECAY OF THE POST, WEEP HOLES LOCATED ABOVE THE CONCRETE AND BELOW THE STANDOFF TABS TO REMOVE WATER, AND HAVE THE MAXIMUM GALVANIZED PROTECTIVE COATING PROVIDED BY THE MANUFACTURER. THE CONNECTORS SHALL BE CAPABLE OF RESISTING A 900 FT.-LBS. MOMENT AND A 1200 LB. LATERAL LOAD AND 3000 LB. OF UPLIFT. THE CONNECTOR SHALL BE PARTIALLY EMBEDDED INTO THE CONCRETE AND NOT REQUIRE ANCHOR BOLTS.

LVRT Trailside Facility Design Guidelines

Donor Recognition, Memorial Plaques, and Branding

Benches, Picnic Tables, and Map Kiosk

VERMONT

Donor Recognition and Memorial plaques

Plaques, either memorializing a loved one or recognizing a donor, can be incorporated into either bench type by utilizing a bronze metal plaque centered on the bench or top of the picnic table. Similarly, memorial/donor plaques can be attached to the posts of the kiosk structure. Memorial/donor benches and features should be collocated at trailheads, instead of disbursed throughout the trail, for ease of maintenance.

- The plaque size may vary from 3-4" tall to 4-6" wide and must fit within the bench or table slats (not to extend into the gap between slats).
- Attach plaques to wood using stainless steel screws. Plaques can be attached to stone benches by using masonry screws with non-shrink epoxy grout. Tamper proof hardware can be used to deter vandalism.

- Mounting Locations:
 - Picnic Table: Centered on Top of Table
 - Standard Backed Bench: Centered on Back of Bench
 - Standard Backless Bench: Centered on Top of Bench
 - Rustic Wood Bench: Centered on Face of Bench
 - Stone Slab Bench: Centered on Face of Bench
- Kiosk Map: Outside Face of Post

Branding

Branding can be incorporated into either the rustic wood bench ("wood-burning") or the stone slab bench (engraving). For its legibility, use of the LVRT logo for this purpose should be limited to "Horizon-LVRT" or "LVRT Simple Seal" and be limited to 9" overall height/width.

Bike racks are also an opportunity for branding along the LVRT. Standard "hoop racks" can be customized to include the LVRT brand within them.

Pavilions

Donor Recognition

Donor recognition can be incorporated into pavilions by adding a small entry sign (2'x3' max.) that lists donors. Different tiers of donors based on their contribution amount can be recognized if desired. A separate listing can highlight donations made in the honor of loved ones. This sign can either be freestanding or incorporated into potential screening walls of the pavilion. Freestanding signs should match the detailing and style of the pavilion and nearby amenities like kiosk maps.

Branding

LVRT pavilions can be given a name/identity to further define the site as a destination and "place" along the LVRT. Signage can be attached to the upper portion of the pavilion. Text should be limited to 12" high and utilize the LVRT primary typefaces. Color should be limited to the primary and secondary LVRT color palette. Names for pavilions can reference prominent natural/ geographic features (Three Rivers Trailhead and Pavilion in St. Johnsbury), location (Cambridge Junction), or a major donor.





Example Memorial Dedication on Kiosk Credit: Dee Signs

Example Signage for Donor Recognition Credit: C. Dunn/San Antonio River Fdn.



Example Memorial Plaque on Bench Credit: Skokie Park District



Example LVRT Branding on Bike Racks Credit: Dero



Example LVRT Branding on Rustic Wood Bench Credit: Streetlife Furniture



Benches

Seating along the LVRT provides trail users the opportunity to rest or gather along the trail. When placed at trailheads, benches help support the social aspects of the trail and allow trail users to congregate. Alternatively, benches placed at prominent views along the trail corridor allow for quiet reflection and contemplation.

Several bench types have been selected to allow flexibility in the planning/design process, while still maintaining the identity of the LVRT. These different bench types allow municipalities and designers to match the context of the space and desired aesthetics.

Design Features + Placement

- Locate benches a minimum of 6' from the edge of the trail, if located at trailheads. Benches located at pause places between trailheads should be located 6-8' minimum (8' preferred) off the edge of the trail to minimize conflicts with trail users, especially snowmobiles in winter months.
- Provide 30" minimum of clear space in front of benches when located along walkways or in gathering spaces.
- Benches facing each other across an aisleway should be no less than 8' to allow easy egress.

- Space for wheelchair access at seating areas should be provided by creating a 2.5'x4' minimum open space in paving beside a bench. This allows trail users in wheelchairs or mobility devices to sit next to others on benches.
- Locate benches a minimum of 12' from bathrooms and trash/recycling receptacles, if present.
- Provide bicycle parking near benches at trailheads to keep walkways open and to limit people leaning bicycles against open benches or laying bicycles down in front of them.
- All benches must be installed on a smooth, stable surface that is accessible by all users (concrete or other hardscape paving, etc.). Stone slab bench may be placed on crushed stone, where appropriate (if bench is not adjacent to a paved hardscape surface). Consult ADA Standards for Accessible Design of seating, walkway approaches, and turning requirements for guidance on access to seating areas.







Additional Considerations

- Bench placement should take available shade, interesting views, interpretation of nearby educational resources, and undesirable features (such as nearby utilities) into account when determining desirable seating locations.
- Location of benches should be easily accessible by maintenance workers.
- Consider using stone slab benches where vandalism may be of concern.
- Consider using a backless bench in places where trail users may want to view multiple directions (within large gathering spaces at trailheads, pause places with benches that face the trail and distant views, etc.)

Specifications + Details

A Standard Bench

- Victor Stanley FB-324 (Backed Bench), FM-214 (Backless Bench), or approved equal.
- \Box 6' length minimum.
- Wood bench and back surface. Natural wood color, unpainted.
- □ Black powder-coated frame.
- □ Alternative manufacturers: DuMor, SiteScapes, or Thomas Steele.

Stone Slab Bench

(B)

- □ 6' Length Min., 18" High, 2' Wide.
- □ Utilize local stone/quarry.
- Thermal finish on top, sawn finish on bottom, thermal or rock face on exposed vertical faces.
- Rustic Wood Bench
 - Refer to detail.
 - □ 6' Length Min., 18" High, 18-21" Wide.
 - Hardwood top, sanded smooth with rounded edges. Waterproof stain and seal, natural color, unpainted. Reclaimed lumber may be used if desired.
 - Untreated weathering steel (Corten) or galvanized steel bench legs/frame
- Surface mount standard bench and rustic wood bench to concrete pad using 3/8" stainless steel anchor bolts. Refer to manufacturer's recommendations.
- Concrete pad to measure a minimum of 6" thick and extend beyond the bench a minimum of 6" from the back and sides of bench.
- Stone slab bench may be placed on crushed stone. Provide a minimum of 18" of compacted, dense, graded crushed stone with compacted subgrade below. Utilize a weed barrier between the crushed stone and compacted subgrade.



A) Victor Stanley FB-324 Bench





Picnic Tables

Like benches, picnic tables placed at trailheads help support the social aspects of the trail. They allow people to come together while enjoying a snack during their trip, gather their belongings at the beginning of their journey, or just relax in the company of others. Picnic tables invite users to stay a bit longer and create a park-like environment for the major LVRT touchpoints within a community.

Several picnic table types have been selected to allow flexibility in the planning/design process, while still maintaining the identity of the LVRT. These different bench types allow municipalities and designers to match the context of the space and desired aesthetics.

Design Features + Placement

- At trailheads, locate picnic tables a minimum of 8' from the edge of the trail to allow people to congregate around tables and to minimize conflicts with trail users, especially snowmobiles in winter months.
- Provide a minimum of 4' clear space between picnic table benches.
- If locating picnic tables end-to-end in a row, provide a minimum spacing of 3' between tables to allow wheelchair access and movement around tables.

- At least one picnic table per trailhead/ gathering space must be designed specifically for ADA use. Consult ADA for Accessible Design of seating for guidance on required table dimensions and clearances.
- Locate benches a minimum of 12' from bathrooms and trash/recycling receptacles, if present (i.e. odors, etc.).
- Provide bicycle parking near picnic tables at trailheads to keep walkways open and to

limit people leaning bicycles against open tables or laying bicycles down in front of them.

All picnic tables must be installed on a smooth, stable surface that is accessible by all users (concrete or other hardscape paving, etc.). Consult ADA Standards for Accessible Design of seating, walkway approaches and turning requirements for guidance on access to seating areas.





Additional Considerations

- Picnic table placement should create a welcoming environment that invites trail users to enjoy the space. Placement should take available shade, interesting views, and undesirable features (such as nearby utilities) into account when determining desirable seating locations.
- Location of picnic tables should be easily accessible by maintenance workers.

Specifications + Details

- A Standard Picnic Table
 - □ Streetlife Solid Industry Picnic Table Set, or approved equal.
 - \Box 6' length minimum
 - Wood bench and table top. Natural wood color, unpainted.
 - Galvanized steel legs/frame or black powdercoated.
 - □ Alternative manufacturers: DuMor, Victor Stanley, or SiteScapes.
- Rustic Wood Picnic Table Set
 - $\hfill\square$ Refer to detail.
- Surface mount picnic table set to concrete pad using 3/8" stainless steel anchor bolts. Refer to manufacturer's recommendations.
- Concrete pad to measure a minimum of 6" thick. Provide a minimum of 3' around picnic table benches.

 Based on current ADA regulations, minimum height and depth clearances necessary to accommodate a wheelchair at a table are 27" high and 19" deep. A minimum of 32" in width is recommended to accommodate a wheelchair at a table.





NOTES:

- 1. ALL HARDWARE TO BE STAINLESS STEEL.
- 2. RECLAIMED LUMBER MAY BE USED IF DESIRED.



Rustic Wood Bench Detail

Not To Scale





Rustic Wood Picnic Table Detail

Note: Utilize Rustic Wood Benches with Table

Not To Scale



Access to Restrooms

Restrooms are important in supporting user comfort and may be one of the most desired trailside amenities. However desirable by the public, it is important to consider a number of factors when determining if and where it is feasible to provide restrooms at a trailhead.

Context within Trail

- The proposed spacing between restrooms along the trail is approximately 8 to 10 miles, which is roughly equivalent to a 35 to 45-minute bike ride and should be fulfilled through a mix of trailside facilities and nearby (off-trail) services. Consider existing and planned facilities within the trail system as well as in adjacent trailside communities. Avoid planning restrooms too close to one another. Resources, whether funding or volunteer time, may be better utilized on supporting nearby restrooms or amenities.
- Prioritize locations of restrooms at level 2 and 3 trailheads (presented later), within existing parks or other community facilities. Restrooms require considerable investment and resources to install and maintain. By siting restrooms at trailheads with multiple attractions, the investment can have a broader impact in the community and serve more than trail users alone.

- Locate restrooms in a location that serves multiple user groups. This may be an accessible area between a playground, recreation fields, the LVRT, etc.
- Consider the anticipated frequency of use when deciding if a restroom is feasible. A remote and seldom used trailhead may not be worth the investment. Alternatively, upkeep and maintenance at very popular sites may be overwhelming if enough volunteer support is not available.
- Be sure to understand the site limitations of the area being design and planned for. Do not plan restrooms in flood hazard areas or sensitive habitat areas.

Maintenance

- In all instances, a maintenance agreement will be required for portable restrooms, whether located within the Rail ROW or on adjacent municipal property.
- During busy months (July October) clean once a week, otherwise clean semi-weekly (cleaning would include trash removal).

Infrastructure/Permitting/Code Requirements

 Access agreements may be required for amenities located outside of the Rail ROW. A Water/Wastewater (WW) Permit will be required for the establishment of permanent restrooms. Capacity within the municipal water supply and wastewater system will need to be confirmed prior to the permit process. WW permitting and design requirements will be based on anticipated visitation and usage of the individual restroom. Consult an engineer to assist with the WW permitting process.

ADA Access

- Restrooms and approaches should be accessible for all users. Utilize smooth, stable surfaces such as concrete, or other hardscape paving, or crushed stone. An ADA accessible route may need to be constructed to facilitate usage. Standards for Accessible Design of walkway approaches and turning requirements should be consulted for access to restrooms.
- If establishing a permanent restroom within an existing building, the building and approach must be ADA accessible.

Additional Considerations

 Locations of restrooms and their current status (open/closed) should be noted on the trail website. Communities should report restroom closures to the VTrans Rail Trail Program Manager.





VERMONT LVRT Trailside Facility Design Guidelines

Enclosures for Portable Restrooms

Portable restrooms provide an option for communities without the ability or desire to construct and maintain a permanent restroom. Though easier to install than permanent restrooms, portable restrooms still require routine maintenance. Access to local volunteer resources should be strongly considered when planning for these amenities.

Enclosures should be used around the portable restroom to provide an aesthetically appealing, consistent look and feel across the LVRT. These structures can either be freestanding, integrated into pavilion structures, or attached to existing structures as is the case with the existing restroom enclosure at the Cambridge Junction trailhead.

Design Features + Placement

- Restroom enclosures will need to be easily accessed by a forklift or handtruck to periodically remove and replace the portable restroom. The design and placement of the enclosure on the site will need to accommodate this access requirement.
- Be mindful of placing restrooms in the vicinity of gathering spaces. Unless incorporated into a pavilion structure, restrooms should be 12' minimum from benches, picnic tables, trailhead kiosks, or

other places where people may naturally gather (i.e. odors, etc.).

- Set restrooms back from walkways to accommodate the restroom door swing (36" min. for ADA portable restrooms, 30" minimum for standard portable restrooms).
- As restrooms are often used at the beginning or end of a ride, consider placing restrooms close to parking at trailheads.
- Provide bicycle parking near the restroom to keep walkways open and to limit people leaning bicycles against the structure or laying bicycles down next to it.
- At least one portable restroom per trailhead must be ADA accessible.





Additional Considerations and Maintenance

- If planning for more than one portable restroom, enclosures can be attached to form a longer row of portable restrooms.
- Portable restrooms may be left out yearround or be closed in the winter.
- Consider how construction can support the local economy and the Vermont forest products industry. Utilize locally-sourced, sustainably-harvested wood products where feasible.
- See the "Access to Restrooms" section for additional maintenance requirements and considerations.

Specifications + Details

- Custom build utilizing post and beam construction with wood siding. Refer to detail.
- Utilize a weather-resistant wood material (i.e. hemlock, cedar, or pressure-treated pine). Waterproof stain and seal, natural color, unpainted.
- Standing seam metal roof, Shed-style pitched roof, dark green or dark gray.
- ADA accessible portable restrooms are generally 67" wide, 87" deep, and 92" tall. Inside dimensions of the enclosure should be at least 78" wide, 96" deep, and 108" tall.

- Standard portable restrooms vary in size from 43-48" wide/deep and 88-92" tall. Inside dimensions of the enclosure should be at least 60" wide/deep and 108" tall.
- Provide enough vertical clearance to tip the restroom back with a handtruck during installation and removal. Contractor to confirm the restroom can be easily installed and maintained by the company servicing the restroom.
- Portable restroom enclosure to be constructed/mounted on a concrete slab.
- Utilize post bases/anchors to prevent wood rot and anchor the kiosk to the base. Do not bury or set posts in gravel or concrete.
- Consult an engineer for structural requirements of the framing, post footings, and concrete pad.



Example Portable Restroom Enclosure Credit: St. Xavier's School, Jaipur



Example Portable Restroom Enclosure Credit: Boulder County, CO/Harney Lastoka





Enclosure for Portable ADA Restroom Details

1/4" = 1'-0", Sheet 1/2, See Sheet 2/2 for More Information

- 1. CONTRACTOR/BUILDER TO REVIEW STRUCTURAL REQUIREMENTS PRIOR TO CONSTRUCTION.
- 2. POST BASE ANCHOR TO FULLY SUPPORT POST ON ALL SIDES AND ADEQUATELY SUPPORT WIND LOADS.
- CONTRACTOR/BUILDER TO CONFIRM METHOD OF ATTACHMENT AND JOINT TYPE PRIOR TO CONSTRUCTION. UTILIZE STRUCTURAL FASTENERS AND TIES/HANGERS, WHERE APPROPRIATE.
- 4. ALL HARDWARE TO BE STAINLESS STEEL UNLESS OTHERWISE NOTED.

SIDE

- 5. UTILIZE PRESSURE TREATED LUMBER WHERE WOOD IS IN CONTACT WITH GROUND/CONCRETE BASE.
- RAFTERS TO BE USED AS METHOD OF ROOF ATTACHMENT. DO NOT NAIL THROUGH ROOF DECKING.
- 6. ROOF TO BE STANDING SEAM METAL ROOF, NOT CORRUGATED METAL. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
- 7. CONTRACTOR TO CONFIRM ADA PORTABLE RESTROOM DIMENSIONS PRIOR TO CONSTRUCTION.
- PROVIDE ENOUGH VERTICAL CLEARANCE TO TIP RESTROOM BACK WITH A HAND-TRUCK DURING
- INSTALL/REMOVAL CONTRACTOR TO CONFIRM THE RESTROOM CAN BE EASILY INSTALLED AND MAINTAINED B THE COMPANY SERVICING THE RESTROOM.





Enclosure for Portable ADA Restroom Details

1/4" = 1'-0", Sheet 2/2, See Sheet 1/2 for More Information

NOTES:

- 1. CONTRACTOR/BUILDER TO REVIEW STRUCTURAL REQUIREMENTS PRIOR TO CONSTRUCTION.
- 2. POST BASE ANCHOR TO FULLY SUPPORT POST ON ALL SIDES AND ADEQUATELY SUPPORT WIND LOADS.
- 3. CONTRACTOR/BUILDER TO CONFIRM METHOD OF ATTACHMENT AND JOINT TYPE PRIOR TO CONSTRUCTION. UTILIZE STRUCTURAL FASTENERS AND TIES/HANGERS, WHERE APPROPRIATE.
- 4. ALL HARDWARE TO BE STAINLESS STEEL UNLESS OTHERWISE NOTED.
- 5. UTILIZE PRESSURE TREATED LUMBER WHERE WOOD IS IN CONTACT WITH GROUND/CONCRETE BASE.
- 5. RAFTERS TO BE USED AS METHOD OF ROOF ATTACHMENT. DO NOT NAIL THROUGH ROOF DECKING.
- 6. ROOF TO BE STANDING SEAM METAL ROOF, NOT CORRUGATED METAL. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
- 7. CONTRACTOR TO CONFIRM ADA PORTABLE RESTROOM DIMENSIONS PRIOR TO CONSTRUCTION.
- PROVIDE ENOUGH VERTICAL CLEARANCE TO TIP RESTROOM BACK WITH A HAND-TRUCK DURING INSTALL/REMOVAL. CONTRACTOR TO CONFIRM THE RESTROOM CAN BE EASILY INSTALLED AND MAINTAINED BY THE COMPANY SERVICING THE RESTROOM.





Permanent Restrooms (Free-Standing or Built into Existing Structure)

Instead of portable restrooms, some communities may pursue the establishment of permanent restrooms with plumbed fixtures. Likely, most towns will build permanent restrooms as part of an existing structure (i.e. old railroad stations or depot buildings), but they may also be free-standing buildings or incorporated into pavilion structures. The establishment of a permanent restroom will require coordination with the local municipality to understand capacity within the municipal water/wastewater system. Composting toilets may be considered in locations where tying into the municipal system is not feasible, however, these systems would likely be constructed outside of the ROW.

Design Features + Placement

- Be mindful of placing restrooms in the vicinity of gathering spaces. Unless incorporated into a pavilion structure, restrooms should be 12' minimum from benches, picnic tables, trailhead kiosks, or other places where people may naturally gather.
- Set restrooms back from walkways to accommodate the restroom door swing (36" minimum for standard door opening).

- As restrooms are often used at the beginning or end of a ride, consider placing restrooms close to parking at trailheads.
- Provide bicycle parking near the restroom to minimize disruption to trail access and limit people leaning bicycles against the structure or laying them down next to it.
- Permanent restrooms, approaches, and access into existing buildings (if applicable) must be ADA accessible.

Additional Considerations, Maintenance, and Permitting

- A Water/Wastewater (WW) Permit will be required for the establishment of permanent restrooms. Capacity within the municipal water supply and wastewater system will need to be confirmed prior to the permit process. WW permitting and design requirements will be based on anticipated visitation and usage of the individual restroom. Consult a local engineer to assist with the WW permitting process.
- Free-standing restrooms (those not built into an existing, heated building) will need to be winterized during the winter

months. Be sure to periodically check on the restroom during the winter months to ensure nothing unexpected has gone wrong.

- Permanent restrooms located within municipal or state-owned buildings are provided for the public good. Though agreements will need to be in place for the establishment of the restroom, a lease fee will not be required to operate within the building. Alternatively, a private business located within a municipal or state-owned business will require a lease agreement and need to consider fair market value of the space to determine the lease payment amount.
- See the "Access to Restrooms" section for additional maintenance requirements and considerations.



Specifications + Details

- Free-standing Permanent Restroom
 - Custom build utilizing post and beam construction or traditional framing with wood siding.
 - Utilize a weather-resistant wood material (i.e. hemlock, cedar, or pressure-treated pine). Waterproof stain and seal, natural color, unpainted.
 - Standing seam metal roof, gable or shed roof, dark green or dark gray.
 - □ Free-standing restroom to be constructed on a concrete slab.
 - Consult an architect/engineer for structural requirements of the framing, post footings, and concrete pad.
- Permanent Restroom Built into an Existing Structure
 - Consult an architect/ MEP (mechanical, electrical, plumbing) engineer to explore options for the existing structure and potential renovation.





Pavilions

Pavilions and their supporting amenities create a park-like environment that help support the social aspects of the trail by creating a destination or "place" at trailheads. Pavilions enhance the usability of picnic tables and other amenities by creating gathering spaces that protect users from the elements on a rainy day and provide shade for those looking to stay cool. When planning for a pavilion, consider the site's existing context (remote location, designated village, or adjacent to existing sports fields/amenities), its intended function (major destination, quiet rest area, etc.), and the needs of trail users visiting the site.

Design Features + Placement

- Provide a minimum of 10' clear space between the edge of the trail and pavilions, where feasible.
- Pavilions should not impede on walkways leading to the trail or other amenities. Access around the pavilion should be provided by a 6' minimum walkway.
- Pavilions must be installed on a smooth, stable surface that is accessible by all users (concrete or other hardscape paving, etc.). Consult ADA Standards for Accessible Design of walkway approaches and turning requirements for guidance.
- The orientation of pavilions should provide protection from the elements.

- Where feasible, do not "fill" open, available space with the pavilion structure. Instead, leave a flexible, open lawn area adjacent to the pavilion that can be used for gathering space, programmed space (yoga, concerts, etc.) or to preserve a future opportunity for another amenity.
 - To minimize pedestrian conflicts with vehicles, locate pavilions so that users will not have to cross parking areas or vehicular traffic to access the pavilion from the trail or vice versa.
- Walls can be used to screen undesirable views, block prevailing winds, or create shade. Walls should be made of wooden slats or perforated metal. Walls should be a minimum of 40% open to deter graffiti

and maintain visibility. Walls should not extend to the ground. Provide at least 18" clearance from the ground surface. Walls should not block views of the trail corridor.

- Consider the anticipated usage level of the pavilion and the number of trail users the site is looking to accommodate. For early planning purposes, see below for a list of varying pavilion sizes and the maximum number of standard 6' picnic tables that can be accommodated within them. (Actual size of the pavilion and intended occupancy to be confirmed during design).
 - \square 12' x 18' Pavilion = Two 6' Tables
- \square 20' x 28' Pavilion = Six 6' Tables
- \square 30' x 40' Pavilion = Twelve 6' Tables



VERMONT LVRT Trailside Facility Design Guidelines

Additional Considerations

- Consider how other amenities can be incorporated into the pavilion. Consider how use of these additional features may impact use of the seating area. See other sections within this document for more information on the specific elements.
 - Wayfinding maps and drinking fountains can be incorporated into potential pavilion walls.
 - Enclosures for portable restrooms can be incorporated into the pavilion structure. Restrooms should open to the outside of the pavilion, not facing into seating areas.
- Consider collocating pavilions with other town amenities such as parks and welcome centers. Park pavilion must remain adjacent to the LVRT with a safe, accessible route between the pavilion and trail.
- Consider viewsheds to and from the proposed site. Pavilions should not block views of historic, natural, or cultural elements.
- Consider how art can be incorporated into the structure (potential screening walls, reuse of materials, etc.)
- Donor recognition/memorial plaques and branding can be incorporated into the pavilion. See the "Donor Recognition, Memorial Plaques, and Branding" section for more information.

- Consider movable furniture rather than surface-mounted furniture to maximize flexibility of the space. It may be desirable to change the seating arrangement to accommodate different programming uses (small community concert, etc.).
- Consider how construction can support the local economy and the Vermont forest products industry. Utilize locally-sourced, sustainably-harvested wood products where feasible.
- LVRT pavilions will require a maintenance agreement even if constructed outside of the railway right-of-way.

Specifications + Details

- Custom build utilizing timber frame, post and beam construction, to be detailed by architect/builder.
- Potential builders:
 - □ <u>Vermont Timberworks</u>
 - Timberhomes Vermont
 - Vermont Frames
 - <u>New England Outdoor Structures</u>
- Utilize a weather-resistant wood material (i.e. hemlock, cedar, or pressure-treated pine). Waterproof stain and seal, natural color, unpainted.
- Standing seam metal roof, gable or shed roof, dark green or dark gray.
- Pavilion to be constructed on a concrete slab.

- Utilize post bases/anchors to prevent wood rot and anchor the kiosk to the base. Do not bury or set posts in gravel or concrete.
- Consult an architect/contractor/engineer for structural requirements of the framing, post footings, and concrete pad.





Grand Teton Timber Frame Pavilion New England Outdoor Structures



Water-Filling Stations

Access to potable water is an important component to the comfort and safety of trail users. Communities with trailheads within the municipal water service area may provide potable water via water-filling stations connected to the municipal supply.

While providing access to potable water at more remote and rural trailheads may not be feasible, kiosk maps will contain directions and distances to villages that may contain potable water through public parks, welcome centers, trail-friendly business, or convenience stores.

Design Features + Placement

- Water-filling stations should only be placed at trailheads for ease of access/ maintenance, and to deter vandalism.
- Locate water-filling stations 20' minimum from the edge of the trail in a location protected from vehicles, snowmobiles, etc.
- Standard, ADA accessible, and dog height bowls should be provided to accommodate all trail users.
- Water-filling stations must be installed on a smooth, stable, well-draining surface that is accessible by all users (concrete or other hardscape paving). Consult ADA Standards for Accessible Design of walkway approaches and turning

requirements for guidance on ADA access.

 Ensure the use of "auto off" features to prevent waste, bowl overflow, and open lines.

Maintenance and Permitting

- A Water/Wastewater (WW) Permit will be required for the installation of water-filling stations. Capacity within the municipal water supply and wastewater system will need to be confirmed prior to the permit process. WW permitting and design requirements will be based on anticipated visitation and usage of the individual waterfilling station. Consult a local engineer to assist with the WW permitting process.
- Though a site may have access to municipal water/sewer infrastructure nearby, the cost of running lines from the trailhead to the municipal system may be substantial. Confirm costs of water/ wastewater service attachments early in the planning process.
- While a pressurized well may be feasible for locations not served by the municipal water system, a considerable amount of infrastructure will be required including, but not limited to, a well system, pump, storage tank, electricity, etc. While the wastewater may be considered "clean

water" and allowed to be discharged directly into the ground, a small leach field may also be required.

 Water-filling stations will need to be winterized during the winter months. Be sure to periodically check on the waterfilling station during the winter months to ensure nothing unexpected has gone wrong.



Elkay Outdoor ezH2O Upper Bottle Filling Station, Bi-Level Pedestal with Pet Station



Specifications + Details

- Elkay Outdoor ezH2O Upper Bottle Filling Station, Bi-Level Pedestal with Pet Station, Freeze Resistant, Model LK4420BF1UDBFRK, or approved equal. Black, gray, or dark green powder coat, or stainless steel finish.
- Water-filling station to be mounted on a concrete slab.
- Provide clean-out
- Slope pavement 2% away from water-filling station and away from walking surface.
- Install per manufacturer's recommendations.
- Alternative manufacturers: Filtrine or Halsey Taylor.





Tree Planting

Tree plantings at trailheads can enhance the visitor experience by providing much needed shade on hot summer days, as well as help define different areas within trailheads, provide visual screens from undesired views, and provide a number of ecological benefits. For example, they can be used to provide a sense of separation from parking areas and gathering spaces at trailheads.

Despite the numerous benefits, proper tree placement and selection should be considered to minimize conflicts with the trail and its users. Generally, tree trunks should be placed no closer than 15' from the trail centerline to prevent limbs from overhanging the trail. Medium to large canopy trees are preferred to keep sight lines open for safety and to make spaces feel more connected. Smaller, ornamental trees can be used to provide interest or to reduce conflict with power lines, but they should be limbed up and carefully placed to preserve open slight lines across trailheads. Species selection and placement should avoid "messy" trees that drop oversized seeds, branches, or bark on the trail or paved surfaces. Additionally, invasive plants shall not be planted under any circumstance to preserve native ecosystems. Reference <u>Vermont Invasives</u> for more information regarding prohibited species. In general, native plants should be used as much as possible.

The following list of tree species has been highlighted for their ability to withstand urban conditions and for their disease resistance. They show moderate to high tolerance for roadway salt, which will be critical if planted near paved areas that will be salted in the winter. Additionally, they are able to tolerate a variety of soil conditions, from dry to wet. The canopy trees are large shade trees that can be easily limbed up to provide open sight lines and provide overhead clearance near gathering spaces. Confirm <u>USDA</u> <u>Plant Hardiness Zone</u>, local planting conditions, and tree requirements prior to tree planting. Other suitable tree species for the LVRT may be available. Additional information regarding tree species selection can be found within the <u>Vermont Tree Selection Guide</u>.

CANOPY TREES

Acer freemanii 'Celebration' — Celebration Maple (Zone 4a, Non-native)

Acer x freemanii 'Sienna' — Sienna Glen Maple (Zone 4a, Non-native)

Betula nigra 'Cully' — Heritage River Birch (Zone 4a, Native)

Ginkgo biloba 'Autumn Gold' — **Autumn Gold Ginkgo** (Zone 4, Non-native)

Ginkgo biloba 'Princeton Sentry' — **Princeton Sentry Ginkgo** (Zone 4, Non-native)

Quercus bicolor — Swamp White Oak (Zone 4a, Native)

Quercus palustris — **Pin Oak** (Zone 4a, Native)

Quercus rubra — Red Oak (Zone 3b, Native)

Tilia americana 'Redmond' — **Redmond American Linden** (Zone 4, Native)

Tilia cordata 'Greenspire' — **Greenspire Littleleaf Linden** (Zone 3, Non-native)

Ulmus americana 'Princeton' — Princeton American Elm (Zone 3b, Native)

Ulmus x 'Morton' Accolade — Accolade Elm (Zone 4, Non-native)

ORNAMENTAL TREES

Amelanchier x grandiflora 'Autumn Brilliance' — 'Autumn Brilliance' Serviceberry (Zone 4a, Native)

Betula nigra 'Little King' — Fox Valley River Birch (Zone 4a, Native)

Crataegus crus-galli var inermis 'Cruzam' — Thornless Cockspur Hawthorn (4a, Native)

*Malus spp.** 'Hargozam' — Harvest Gold Crabapple (Zone 4, Non-native)

*There are many suitable crabapple cultivars. Carefully check cultivar information to make sure the tree will match your site conditions.



SECTION 3: TRAIL ENVIRONMENT AND TRAILHEADS

Trailheads act as the entrance to the trail and provide critical connections to the trailside communities. Creating a network of trailheads to provide trail access and trailside amenities at regular frequencies is necessary to support user experience and health and safety objectives. There were three trailhead levels identified in the *LVRT Management Plan* to provide a balance of amenities and features along the trail and are further detailed in this section. In addition to guidance regarding trailheads, key considerations for establishing and maintaining consistent trailside environments, trail adjacencies, and pause places along the entirety of the trail are detailed in this section. It is important to note that typicals depicted in this section are intended to provide general guidance on trailhead development, including amenity provision and placement, and may require further planning and design consultation to meet site constraints and other suitability considerations.

Trail Clear Zones and Adjacencies

Clear Zones

To create a consistent user experience across the 93-mile corridor, minimum setbacks are necessary to align with trail management approach of creating a clear zone. A clear zone aids in access to and maintenance of assets and features along the trail system, allowing for visual inspection where hazards may be encroaching on the trail. A clear zone also prevents encroachment from objects such as fences, storage, and other materials in areas that should be void to create appropriate setbacks for safe navigation by trail users with space for users to pause, pass, and yield to others. Refer to the *LVRT Management Plan* for additional standards (illustrated on next page).

Relationship to Adjacent Buildings

Given the once working railroad that occupied the rail trail corridor, there are many building facades that abut the trail. Some are former depot buildings or rail stations, but others are part of the agricultural and industrial landscape that the rail once supported. While many of these buildings contribute positively to the experience and heritage of the trail, some communities may decide to "soften" the appearance of larger industrial buildings with tree plantings, as was done in Morristown along Depot Street. This approach should only be used to address non-historic buildings or views that do not contribute to the experience of the trail.

Similarly, reclamation of these buildings or building facades as functional space could be pursued to support programming opportunities, as depicted in the following illustration. These facades could support interpretive panels highlighting historical, cultural, or environmental resource significance. They could also become a showcase for art installations. Communities should consult the policies published in VTrans *Art Installations on State Transportation Facilities*, should they take advantage of the opportunities that these building facades present.

Refer to the *LVRT Management Plan* for more information regarding strategies for encouraging local and regional trail-based educational and recreational programming and events in coordination with schools, libraries, and other organizations or resources.



Typical Trail Sections





Relationship to Adjacent Building Illustration







Pause Places

Pause places along the LVRT are opportunities to provide meaningful connection with the scenic, natural, and agricultural landscape or promote rural heritage, history, and educational programming. Strategic placement of pause places between other trail system landmarks, like trailheads, crossings, and trail junctions, creates mid-segment opportunities to rest, connect with the trail's surrounding context, and highlight features of the trail system.

There are areas already identified as potential pause places, whereas other strategic areas suitable for pause places may still be identified. Each potential pause place should be evaluated for site suitability with consideration for available width, resource constraints (e.g. wetland buffers, embankments, rare, threatened, or endangered species), and opportunities to showcase surrounding context or trail features through vistas, historical resources, natural features, or other points of interest. VTrans should be consulted on the feasibility of a location to be developed as a potential pause place.

To provide consistency along the trail system, a template for a typical pause place was developed detailing the typical amenities and layout for this type of trail feature. It is important to note that these locations may additionally provide an opportunity for an interpretive panel detailing a historic, cultural, or natural resource along the trail.





Trailheads

Trailheads serve as the gateway to the trail as well as the gateway to trailside communities. The trailhead serves as the critical connection between the trail resource and the opportunities the trail presents to the neighboring areas. Establishing a network of trailheads that serve the trail and trail communities in this capacity will be key to leveraging the opportunity this recreational resource presents to the LVRT communities.

Based on best practices from other trail systems and existing conditions along the LVRT corridor, the *Management Plan* established a typical distance between trailheads of eight to ten miles. The rural context of some segments of the LVRT may lead to longer stretches of more sparsely spaced trailheads and amenities whereas other segments connecting Village Centers and Downtown Districts, with more frequent trail crossings and trail adjacent attractors, may dictate closer trailhead spacing. When considering trailhead locations and amenity selection, it is important to consider existing trailhead and amenities in the vicinity of the proposed facility.

Trailheads are anticipated to provision users with trailside amenities at regular, strategic frequencies. Support for the user experience and health and safety objectives trailside should be balanced with encouraging off-trail exploration to access services and support community economic vitality objectives. A strategic set of trailhead locations will serve this balance with varying levels of amenities to establish a minimum set of services along the trail. The table on the right outlines three different trailhead types and the varying levels of amenities anticipated within each category. The icons indicate those amenities that should be located, may be located, and are not typically located at each type of trailhead.

	TRAILHEAD TYPE			
AMENITY	Level 1 Small Trailhead	Level 2 Medium Trailhead	Level 3 Large Trailhead	
Wayfinding Trail Map (Direction / Distance, etc.)				
Benches and Trash/Recycling Receptacles				
Bike Racks and Bike Repair Station				
Vehicular Parking				
Historical / Interpretive Element		2		
Information / Map Kiosk (Nearby Attractions, Events, Direction / Distance, etc.)		2		
Entry / Arrival Signage	×			
Water Fountain / Bottle Filling Station	×	2		
Picnic Area / Tables	×	2		
Restroom Facility	×			
Pavilion	×			
Landscaping	×			
Lighting	×			
Public Art	×	2		
Pull-Through Trailer Parking (Boat, Canoes, Sport Facility Support, etc.)	×	×		
Amenities that should be included for a trailhead of this listed level	Amenities that may b included for a trailhea	e ad of	Amenities not typically found at a trailhead of	

Across all trailhead types, considerations of ADA accessibility are contemplated. As these concepts are developed into site specific designs and constructed, elements including ADA accessible parking, appropriate ramps, level landings, firm and stable surfaces, and other design features will establish accessibility. Moreover, inclusive access to these spaces and the trail system will require engaging community representation throughout the planning and design process to identify disparities, address needs, and foster stewardship of these spaces.



Planned Trailheads and Amenities







Level 1 Trailhead

For a Level 1 Trailhead, the typical amenities that should be present include a trail map kiosk, benches, trash/recycling receptacles, and bike racks with bike repair stations. This basic set of amenities will create a consistent, affirming aesthetic to the trail while providing users a basic set of amenities trailside. Other features, such as an information kiosk with nearby community attractions or services can help orient users to off-trail opportunities or an interpretive panel might draw attention to some feature or resource along the trail or in the trail's vicinity.

The Level 1 Trailhead typical drawing demonstrates the placement of these elements in space, providing guidance on setbacks from the trail and buffer from nearby roadway crossings. A typical application of a Level 1 Trailhead would be as a gateway into a Village Center or community area, where opportunity for users to connect to off-trail services or businesses may be in close proximity. Creating space around a two-sided trailhead kiosk with trail-oriented elements like the trail map on one side and information about local services, attractions, and events on the other. The typical drawing demonstrates placement that is conducive to users interacting with both sides of the kiosk. Providing bike racks encourages users to lock up and check out the community offerings within walking distance to the trailhead. Creating a buffer around bike racks and the bike repair station allows for users to navigate comfortably around these elements. Finally, benches and intentional plantings that might offer shade create an inviting location for rest at these trailhead facilities. Creating some separation between seating areas and trash and recycling receptacles is shown to encourage a buffer between these two uses of the trailhead space.

Level 2 Trailhead

At a Level 2 Trailhead, parking and entry signage are added to the basic list of amenities that should be present, creating the arrival experience for those that are coming to the trail system by car. The opportunity exists for communities to add many amenities that may be present and round out the user experience at these locations. These additional amenities might include public art, landscaping, or a shade pavilion.

As shown in the Level 2 Trailhead typical drawing, the placement of these elements should be done intentionally to create the desired user experience regardless of whether users are arriving to the trailhead space from the roadway network or from the trail. Centrally locating the information kiosk with trail information as well as local services, attractions, and/or events provides the opportunity for users to interact with both sides of the kiosk and creates that gateway at the interface between the trail system and off-trail network (i.e. parking area and broader transportation network). Like the Level 1 trailhead, providing space around other elements like bike racks, the bike repair station, trash receptacles, and benches allows for users to interact with those elements comfortably. Intentional landscaping and tree planting can further define the trailhead space by screening parking from the roadway, providing shade to resting locations, and defining more open flexible spaces or picnic areas.

It is recognized that there are opportunities for synergy with the paddling and angling communities along the reaches of the Lamoille River, Missisquoi River, and Black Creek. The Level 2 trailhead typical drawing depicts one of these riverine connections, where the opportunity to formalize the relationship between the trail and a paddling launch area may be present. In these areas, legitimizing this connection through signage and trail development provides an affirming experience that this activity is welcome. Creating the space trailside for users to enjoy a river vista from a bench or stage their boat for a launch minimizes possible disruption of trail activities. There are active recreational and stewardship groups developing opportunities such as this along the LVRT that may provide partnership in pursuit of these types of trail connections.



Illustrative Level 1 Trailhead





Illustrative Level 2 Trailhead





Level 3 Trailhead

At a Level 3 Trailhead, adding in potable water access, restrooms, and picnic tables provides trail users with a wide range of essential services. Having strategic placement along the trailside for these types of facilities provides a minimum level of services consistent with the user expectations of a rural trail system. The restrooms at a Level 3 Trailhead may be portable or permanent, depending on the services at the site. For portable restrooms, the recommendation to develop an enclosure that serves to surround the temporary restroom facility on at least three sides gives a portable toilet more of a permanent feel, inconspicuous look, and helps to deter vandalism. This is consistent with how restroom facilities to date have been treated at trailhead sites like Cambridge Junction or Johnson.

The Level 3 trailhead typical depicts the recommended amenities and appropriate spacing and relationships between elements. It was noted that for some potential locations or existing trailheads along the LVRT, collocation with other recreational opportunities provides for synergies with these resources. Creating intentional connectivity to these adjacent uses helps to affirm the link to other community resources and welcome users in these spaces. Localized wayfinding and signage can support this connection. Much like the Level 2 trailhead, creating a central gateway linking the parking area and greater roadway network to the trail system welcomes trail users. In the Level 3 trailhead, this landing area has restrooms and leverages the building to host the trailhead kiosk elements like trail maps and wayfinding information regarding locally available services, attractions, or events. Bike racks and a bike repair station flank this area to provide plenty of bike parking opportunities.

The typical drawing depicts intentional plantings to define spaces and create connections between different use areas. This is particularly important for creating those intuitive connections between the trailhead features and the trail itself or other adjacent uses. A Level 3 trailhead might consider elements like simple play structures or other opportunities for collocated community amenities. Making sure that those elements are visible from multiple vantages so different users can engage in elements they are drawn to while still being within line of sight (e.g. kids on a play structure within sight of a parent checking out the local attractions on the information kiosk). Plantings can also help define open or flexible spaces that give way to other uses like picnicking or play.

One key element to the Level 2 and Level 3 trailheads is the provision of parking. In the Level 3 trailhead, an option for pull through parking for trailers is depicted. This may prove to be essential for trailheads with more snowmobile activity or synergies with the paddling opportunities. Counting users through all seasons and gathering feedback from users may help to inform where a need for trailer parking is emerging.

A formalized connection to a local hiking trail network is depicted within the typical of the Level 3 trailhead. This trail-to-trail junction is affirmed with signage and creates a pause place or vista opportunity with bench seating.



Illustrative Level 3 Trailhead

