



Lamoille Valley Rail Trail – 401 Water Quality Certification Application

Appendix IA.A_LVRT 401_Delineated Wetlands Summary

June 2, 2021

Lamoille Valley Rail Trail - Rehabilitation Project - STP LVRT(11) (12) (13)

Summary of Delineated Wetlands

Vermont Agency of Transportation

Prepared by VHB June 1, 2021

VHB Delineated Wetlands				
Wetland ID ¹	Town	Delineated Square Feet ¹	Cowardin Classification ²	Vermont Wetland Rules Classification ³
<u>LVRT 11</u>				
2008-421	Cambridge	3,485	PEM1Y	II
2008-422	Cambridge	871	PEM1Y	II
2008-423	Cambridge	871	PEM1Y	II
2008-424	Cambridge	58,370	PEM1Yb	II
2008-425	Cambridge	69,696	PEM1Y/PUBb	II
2008-426	Cambridge	39,204	PEM/Ubb	II
2008-427	Cambridge	1,742	PFO1Y	II
2008-430	Cambridge	5,227	PEM1Y	II
2008-431	Cambridge	3,485	PEM1Yb	II
2008-432	Cambridge	7,405	PEM/POW	II
2008-434	Cambridge	170,320	PEM/UBb/POW	II
2008-435	Cambridge	12,197	PEM/Ubb	II
2008-438	Cambridge	94,525	PEM/PUBb	II
2008-439	Cambridge/Fletcher	814,572	PEM/PUBb	II
2008-440	Cambridge/Fletcher	578,477	PEM/PUBb	II
2008-441	Fletcher	38,768	PEM/PSSb	II
2008-442	Fletcher	5,663	PEM/SS1Y	II
2008-443	Fletcher	37,026	PEM/SS1Y	II
2008-444	Fletcher	91,912	PEM1Y	II
2008-445	Fletcher	97,139	PEM1Y	II
2008-446	Fletcher	34,412	PEM1Y/ PSS1Y	II
2008-447	Fletcher	94,961	PEM/SS1Y	II
2008-448	Fletcher	6,534	PEM1Y/ PSS1Y	II
2008-449	Fletcher	95,396	PEM1Y	II
2008-450	Fletcher	227,819	PEM/SS1Y	II
2008-451	Fletcher	205,603	PEM/SS1Y	II
2008-452	Fletcher	64,904	PEM/SS1Y	II
2008-453	Fletcher	42,689	PEM/SS1Y	II
2008-454	Bakersfield	1,742	PSS1Y	II

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Wetland ID ¹	Town	Delineated Square Feet ¹	Cowardin Classification ²	Vermont Wetland Rules Classification ³
2008-455	Bakersfield	141,134	PEM1Y	II
2008-456	Bakersfield	144,619	PEM1Y	II
2008-457	Bakersfield	8,712	PSS1Y	II
2008-458	Bakersfield	13,504	PEM/PUB	II
2008-459	Bakersfield	101,059	PSS1Y	II
2008-460	Bakersfield	63,162	PSS1Y	II
2008-461	Bakersfield	58,370	PSS1Y	II
2008-462	Bakersfield	13,939	PEM1/ PSS1C	II
2008-464	Bakersfield	1,742	PSS1Y	II
2008-465	Bakersfield	3,485	PEM/SS1Y	II
2008-466	Bakersfield	6,098	PEM1Y	II
2008-467	Bakersfield	6,098	PSS1Y	II
2008-468	Bakersfield	32,234	PSS1Y	II
2008-469	Bakersfield	27,007	PUBb	II
2008-474	Bakersfield	2,178	PSS1Y	II
2008-476	Bakersfield	6,534	PSS/PFO1Y	II
2008-477	Fairfield	2,178	PEM1Y	II
2008-479	Fairfield	221,720	PSS/UB	II
2008-480	Fairfield	4,792	PSS1Yb	II
2008-481	Fairfield	5,663	PSS1Yb	II
2008-483	Fairfield	1,307	PEM1/SS1Y	II
2008-484	Fairfield	9,583	PEM1Y	II
2008-485	Fairfield	2,178	PEM1Y	II
2008-486	Fairfield	871	PEM1Y	II
2008-487	Fairfield	436	PEM1Y	II
2008-488	Fairfield	871	PEM1Y	II
2008-489	Fairfield	436	PEM1Y	II
2008-490	Fairfield	42,689	PEM1Y	II
2008-491	Fairfield	16,117	PEM1Y	II
2008-492	Fairfield	18,731	PEM1Y	II

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2008-493	Fairfield	9,583	PEM1Y	II
2008-494	Fairfield	60,113	PFO1Y	II
2008-497	Fairfield	3,049	PEM1Y	II
2008-498	Fairfield	76,666	PEM1Y	II
2008-500	Fairfield	2,614	PEM1Y	II
2008-501	Fairfield	13,068	PEM1Y	II
2008-502	Fairfield	1,742	PEM1Y	II
2008-503	Fairfield	113,692	PFO1Y	II
2008-504	Fairfield	58,806	PEM1Y/FO1Y	II
2008-505	Fairfield	20,473	PEM1Y/SS1Yb	II
2008-506	Fairfield	43,996	PEM/SS1Y/UB	II
2008-507	Fairfield	14,375	PEM1Y/PFO1Y	II
2008-508	Fairfield	6,970	PFO1Y	II
2008-509	Fairfield	4,627	PSS1Y	II
2008-510	Fairfield	13,939	PEM1Y	II
2008-511	Fairfield	26,136	PSS1Y	II
2008-512	Fairfield	23,087	PEM1Y	II
2008-513	Fairfield	107,593	PEM1Y	II
2008-514	Fairfield	436	PFO1Y	II
2008-515	Fairfield	76,666	PFO1Y/SS	II
2008-516	Fairfield	8,276	PSS1Y	II
2008-517	Fairfield	4,356	PFO1Y	II
2008-518	Fairfield	3,049	PFO1Y	II
2008-519	Fairfield	1,742	PEM1Y	II
2008-520	Fairfield	3,049	PEM	II
2008-521	Fairfield	1,307	PSS1Y	II
2008-522	Fairfield	871	PEM1Y	II
2008-523	Fairfield	60,113	PSS1Y/EM	II
2008-524	Fairfield	8,712	PEM1Y/SS1Y	II
2008-526	Sheldon	3,920	PEM/SS1Y	II

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Wetland ID ¹	Town	Delineated Square Feet ¹	Cowardin Classification ²	Vermont Wetland Rules Classification ³
2008-527	Sheldon	6,970	PEM1Y	II
2008-528	Sheldon	52,272	PSS1Y/EM1Y	II
2020/2008-495	Fairfield	3,920	PEM1Y	II
2020/2008-408	Cambridge	22,651	PEM/SS1Y	II
2020-1	Hardwick	11,761	PEM	II
2020-10	Fairfield	131	PEM	II
2020-11	Fairfield	436	PEM	II
2020-12	Fairfield	3,049	PEM	II
2020-13	Sheldon	4,356	PSS	II
2020-14	Fairfield	6,970	PSS/PFO	II
2020-3	Bakersfield	1,307	PEM	II
2020-4	Fairfield	58,806	PEM	II
2020-5	Fairfield	24,829	PEM	II
2020-6	Fairfield	7,405	PEM	II
LVRT 12				
2008-218	Hardwick	61,420	PFO14B/SS1A/EME	II
2008-219	Hardwick	7,405	PFO1Y	II
2008-220	Hardwick	436	PEM/PFO	II
2008-221	Hardwick	6,534	PFO14E	II
2008-223	Hardwick	20,909	PFO/EM1E	II
2008-226	Hardwick	3,485	PEM/SS1Y	II
2008-227	Hardwick	0	PEM/SS1Y	II
2008-228	Hardwick	19,602	PEM1Y	II
2008-229	Hardwick	18,295	PSS1B	II
2008-230	Hardwick	13,504	PSS1B	II
2008-232	Hardwick	3,920	PSS1Y/FO1B	II
2008-233	Hardwick	10,890	PSS1Y	II
2008-234	Hardwick	20,909	PSS1Bb	II
2008-235	Hardwick	10,890	PSS1B	II
2008-236	Hardwick	49,223	PEM/SS/PFO	II

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Wetland ID ¹	Town	Delineated Square Feet ¹	Cowardin Classification ²	Vermont Wetland Rules Classification ³
2008-237	Hardwick	20,473	PEM1Y/PSS	II
2008-238	Hardwick	10,019	PEM1Y	II
2008-239	Hardwick	29,185	PSS1Y/FO1B	II
2008-240	Hardwick	3,920	PEM1Y	II
2008-241	Hardwick	436	PEM1Y	II
2008-242	Hardwick	3,049	PEM1B	II
2008-244	Hardwick	56,628	PSS1Y	II
2008-246	Hardwick	3,485	PEM1Y	II
2008-247	Hardwick	3,485	PEM1Y	II
2008-248	Hardwick/ Wolcott	49,658	PEM1Y/SS1Y	II
2008-249	Hardwick	7,405	PSS1B/EM1B	II
2008-249a	Wolcott	19,602	PSS1B	II
2008-251	Wolcott	13,939	PEM1Y	II
2008-252	Wolcott	16,553	PSS14B	II
2008-254	Wolcott	871	PEM1Y/PVP	II
2008-255	Wolcott	871	PEM1Y	II
2008-256	Wolcott	1,742	PEM1Y	II
2008-257	Wolcott	4,356	PUB/PVP	II
2008-258	Wolcott	24,829	PUB/PEM/PVP	II
2008-259	Wolcott	13,504	PEM1Y	II
2008-261	Wolcott	9,148	PSS1B	II
2008-262	Wolcott	27,007	PEM1Y/PSS1Y	II
2008-263	Wolcott	5,663	PEM1Y/PSS1Y	II
2008-264	Wolcott	42,253	PSS1Y/FO1Y	II
2008-265	Wolcott	3,049	PEM/SS1Y/PVP	II
2008-266	Wolcott	7,841	PEM/PSS1Y	II
2008-267	Wolcott	12,632	PFO1Y	II
2008-268	Wolcott	871	PFO1Y	II
2008-273	Wolcott	50,965	PEM1Y	II
2008-274	Wolcott	20,473	PEM/SS1Y	II

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Wetland ID ¹	Town	Delineated Square Feet ¹	Cowardin Classification ²	Vermont Wetland Rules Classification ³
2008-275	Wolcott	871	PEM1Y	III
2008-280	Wolcott	28,750	PEM1Y/SS1Y	II
2008-281	Wolcott	871	PEM	II
2008-282	Wolcott	10,890	PEM1Y	II
2008-284	Wolcott	54,450	PFO1Y	II
2008-285	Wolcott	24,394	PEM1Y/ PVP	II
2008-289	Wolcott	4,792	PEM1Y/SS1Y	II
2008-290	Wolcott	436	PEM1Y	III
2008-291	Wolcott	1,742	PEM/PSS1Y	II
2008-293	Wolcott	2,614	PFO1Y/PVP	II
2008-294	Wolcott	90,169	PFO1Y	II
2008-295	Wolcott	49,223	PUB/PEM1Fb	II
2008-296	Wolcott	15,682	PFO1Y	II
2008-297	Wolcott	15,246	PFO1Y	II
2008-299	Wolcott/Morristown	40,511	PFO1Y	II
2008-300	Wolcott/Morristown	42,253	PFO1Y	II
2008-302	Morristown	16,117	PSS1Y	II
2008-303	Morristown	81,022	PEM1Y/FO1Y	II
2008-304	Morristown	10,454	PFO1Y	II
2008-305	Morristown	2,614	PFO1Y	II
2008-306	Morristown	4,356	PFO1Y	II
2008-308	Morristown	2,178	PEM1Y	II
2008-309	Morristown	111,514	PEM1Y	II
2008-310	Morristown	2,614	PEM1Y	II
2008-311	Morristown	436	PEM1Y	III
2019/2008-217	Hardwick	13,504	PEM1B/SS1B	II
2020/2008-212	Hardwick	13,068	PEM1Y	II
2020/2008-295	Wolcott	88,427	PFO	II
2020-15	Hardwick	1,307	PEM	III
2020-16	Hardwick	2,614	PEM	II

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<u>LVRT 13</u>				
2008-110	West Danville	277,477	PEM1F/ PSS1F	II
2008-111	West Danville	46,609	PEM1F/ PSS1F	II
2008-111a	West Danville	12,197	PEM1F/ PSS1F	II
2008-116	Cabot	2,614	PFO1B	II
2008-117	Cabot	1,742	PSS1Y	II
2008-127	Walden	24,829	PFO, PEM1Y	II
2008-128	Walden	17,424	PFO1B/SS1B	II
2008-129	Walden	32,234	PFO,PEM1Fb	II
2008-131	Walden	18,295	PSS1B	II
2008-133	Walden	75,794	PEM/FO1Y	II
2008-141	Walden	11,761	PEM1B/FO1B	II
2008-142	Walden	6,970	PEM	II
2008-143	Walden	1,742	PEM1B	II
2008-146	Walden	871	PEM1Y	II
2008-147	Walden	436	PEM1Y	II
2008-148	Walden	30,056	PEM1B	II
2008-151	Walden	2,178	PFO1/PEM	II
2008-152	Walden	1,307	PFO1Y/PEM	II
2008-155	Walden	871	PEM1B	II
2008-156	Walden	436	PEM1Y	II
2008-161	Hardwick	17,860	PEM1B/SS1B	II
2008-162	Hardwick	22,651	PEM1Y/SS1Y	II
2008-163	Hardwick	5,663	PEM1Y/SS1Y	II
2008-170	Hardwick	16,117	PFO14B	II
2008-172	Hardwick	3,049	PFO14B	II
2008-178	Hardwick	871	PEM1Y	II
2008-181	Greensboro	29,621	PEM1Y/PSS	II
2008-182	Greensboro	38,768	PEM1B/SS1B	II
2008-185	Hardwick	24,394	PEM/FO14B	II

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VHB Delineated Wetlands				
Wetland ID ¹	Town	Delineated Square Feet ¹	Cowardin Classification ²	Vermont Wetland Rules Classification ³
2008-186	Hardwick	436	PEM/FO14B	II
2008-187	Hardwick	3,049	PSS1B	II
2008-188	Hardwick	3,049	PEM1B	II
2008-192	Hardwick	6,098	PEM1/POWb	II
2008-196	Hardwick	3,049	PEM1Y	II
2008-197	Hardwick	2,178	PSS1Y/EM	II
2008-198	Hardwick	1,742	PEM1A	II
2008-199	Hardwick	4,356	PEM1Y	II
2008-201	Hardwick	14,375	PEM1Y/PSS	II
2008-208	Hardwick	90,169	PEM/SS1Y	II
2008-209	Hardwick	21,780	PSS1B	II
2008-211	Hardwick	3,485	PEM1Y	II
2008/2020-212	Hardwick	27,007	PEM1Y	II
2008-213	Hardwick	8,712	PEM1Y	II
2008-214	Hardwick	436	PUB1x	III
2008-215	Hardwick	24,829	PFO1/4AB	II
2008-216	Hardwick	5,227	PFO1/4AB	II
2020-100	Walden	1,307	PEM	II
2020-101	Walden	436	PEM	III
2020-400	Hardwick	4,792	PEM/PFO	II
2020-404	Hardwick	2,178	PEM	III
2020-405	Hardwick	436	PSS/PFO	II

¹All wetlands field delineated per the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northeast and North Central Region*. U.S. Army Corps of Engineers. 2011; Delineated Wetlands that extend outside the Study Area are denoted with **bold** text.

²Classification follows Cowardin, L.M., Carter, V., Golet, F.C. and E.T. LaRoe. 1979. *Classification of Wetlands and Deepwater Habitat of the United States*. U.S. Fish and Wildlife Service. FWS/OBD-79/31.

³VHB-Proposed VWR Classification is based on review and application of the VWR, particularly VHB's interpretation of Section 4.6 Presumptions, and an analysis of Section 5 functions.



Lamoille Valley Rail Trail – 401 Water Quality Certification Application

Appendix ID. Project Narrative

March 31, 2021;

Revised June 2, 2021

The Vermont Agency of Transportation (“VTrans”), in collaboration with the Vermont Association for Snow Travelers (“VAST”) is currently working to convert the former Lamoille Valley Railroad (“LVRR”) railbed to the Lamoille Valley Rail Trail (“LVRT”), which is a year-round alternative transportation / recreation trail (“Project”). The Project was originally proposed to be implemented in three phases over time (Phases I, II, and III) as funding and opportunity have allowed, with the ultimate goal of a completed trail along the overall 93-mile corridor, beginning in northeastern Vermont in St. Johnsbury and ending along the shores of Lake Champlain in Swanton. To date the following Phases have been completed and/or permitted:

- Phase IA: a 15.35-mile section between St. Johnsbury and Danville (completed in 2014);
- Phase IB: a 17.42-mile segment between Morristown and Cambridge (completed in 2014, except for Bridge 68, which was completed in 2017);
- Phase IC: a 11.63-mile corridor between Sheldon to Swanton that was begun in 2018 and 2019, with the remainder scheduled to be completed in 2020/2021; and
- Priority Bridges LVRT(10): Repairs to six bridges - Bridge 35 and 48 over the Lamoille River, Bridge 77, 80, and 83 over Black Creek, and Bridge 34 over Stannard Brook (authorized in 2021).

The remaining portions of the LVRT that require authorization are located in the towns of Cambridge to Sheldon (LVRT 11), Hardwick to Morrisville (LVRT 12), and Danville to Hardwick (LVRT 13). Roughly half of the rail corridor is already functioning as a shared-used recreational trail. Establishing an unbroken trail along the entire length of the proposed LVRT would require that maintenance issues, such as trail resurfacing, ditching, installation/repairs of culverts, signing, and miscellaneous structure repairs and bridge modifications including decking and railing replacements, be addressed along the remaining portions of the trail in the towns listed above. This is necessary to provide a safe environment for the public and to enhance the viewshed from the trail surface, both of the surrounding landscape and of the original LVRR structures.

Trail infrastructure that require specific individual actions to bring the LVRT to a durable and functional state range from simple vegetation removal and debris clearing (*i.e.*, routine maintenance) to the installation/replacement of culverts or bridges. Proposed work activities are as follows:

Culverts

Minimal permanent impacts to resources are associated with the placement of Type II stone fill to stabilize the trail corridor embankments and/or culvert abutments and grading. Identified culvert locations where improvements are needed are due to drainage problems or structure failure. These will be repaired if possible or otherwise replaced.



Bridges

In some cases, existing culverts or bridges will be replaced with new bridges. Bridges are proposed for replacement due to the poor condition of the existing structures, because the existing culverts are undersized hydraulically, to address erosion in the stream channels associated with undersized hydraulic openings, or a combination of these factors.

Ditching

The vast majority of proposed ditching is to be carried out where the trail is in a "cut" condition. Without ditching, these areas are most susceptible to stormwater and groundwater inundation that will lead to flooding of the trail and/or saturation of the subbase. These conditions will result in the failure of the trail structure, rendering the trail unusable. It is important to note that this work is proposed only for unmaintained, existing ditches and work will strive to reestablish the original ditch cross section.

Cattlepasses

In most instances the former cattlepasses are no longer used as such and have been abandoned. If the existing cattlepasses are structurally sound, they are to remain and will be repaired to the extent needed. For the existing cattlepasses that are in poor condition, they will either be repaired or completely abandoned and removed or backfilled as appropriate.

Washouts

Several former culvert locations have been destroyed by flooding and there now exists washouts of the former rail embankment. In these locations, a new, appropriately-sized culvert will be installed and the embankment will be restored to its original extent.

Pause Places

In select locations, the trail will be over-widened to provide places that trail users can take a break off of the side of the trail without blocking it. These "pause places" will be constructed using excess material excavated from ditches and located in areas away from wetlands, waterbodies and other known resources.

Access and Staging

VTrans proposes to use existing public, private, and farm road crossings as the main routes for Project access. These crossings allow access to the entire trail and permit construction to the proposed trail right-of-way ("ROW") without impacting adjacent lands or resources. Areas of construction ingress and egress are limited as Project construction is confined to the VTrans ROW or public roads. Staging areas will be located in areas that are not environmentally or historically sensitive and located within the LVRT ROW (typically sites used by VTrans during the VTrans Rail and Tie Removal Project).



VTrans intends to begin construction during summer 2021 but is intending to put plans out to bid in early 2021. Per VTrans guidelines, all necessary permits and approvals are to be in place before the bid process can be initiated.

Wetlands

Wetland impacts for Class II and III wetlands result from installation/repairs of culverts, miscellaneous structure repairs, and bridge modifications and replacements. The impact analyses for both the Section 404 and the VWP Applications used the same Project limit of disturbance to calculate proposed impacts for each of the resource types included in the application. The differences in impact totals, specifically Class II and III wetland impacts, are the result of the differences in each programs' regulated activities requiring permit authorization which are included below:

The 404 application includes only those WOTUS that would potentially be impacted by conditional uses associated with construction described above, which include:

- culvert replacement where existing culverts have been damaged, failed, or have been determined to be undersized;
- culvert inlet/outlet headwall repair/reconstruction;
- culvert inlet/outlet grade restoration to include the placement of riprap;
- bridge modifications that expand existing footprint or require temporary work in WOTUS; and
- cattlepasses where collapse and fill exceeds footprint.

The VWP application includes only those Class II wetlands or their buffers which would potentially be impacted by conditional uses associated with construction of the Project, which include:

- culvert replacement where existing culverts have been damaged, failed, or have been determined to be undersized.
- culvert inlet/outlet headwall repair/reconstruction;
- culvert inlet/outlet grade restoration;
- removal of woody vegetation in existing ditched areas within Class II resources;
- bridge modifications that expand existing footprint or require temporary work in Class II areas.



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Summary of Delineated Streams

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VHB Delineated Streams				
Stream ID	Flow Regime (Ephemeral, Intermittent, or Perennial) ¹	Average Ordinary High Water Width (Feet) ²	HUC 8 Watershed	Town
LVRT 11				
2008-SC263	intermittent	3.0	Lamoille River Basin	Cambridge
2008-SC265	ephemeral	1.0	Missisquoi River Basin	Cambridge
2008-SC266	perennial	3.0	Missisquoi River Basin	Cambridge
2008-SC267	intermittent	1.5	Missisquoi River Basin	Cambridge
2020-jd-2	ditch	-	Missisquoi River Basin	Cambridge
2020-tob-1	perennial	15	Missisquoi River Basin	Cambridge
2020-SC-3	intermittent	3	Missisquoi River Basin	Cambridge
2008-TB269	perennial	18	Missisquoi River Basin	Fletcher
2008-TB270	perennial	22	Missisquoi River Basin	Fletcher
2008-TB271	perennial	27	Missisquoi River Basin	Fletcher
2008-TB272	perennial	15.0	Missisquoi River Basin	Bakersfield
2008-TB273	perennial	22.0	Missisquoi River Basin	Bakersfield
2008-SC274	ephemeral	2	Missisquoi River Basin	Bakersfield
2008-TB275	intermittent	3	Missisquoi River Basin	Bakersfield
2008-TB277	perennial	27	Missisquoi River Basin	Bakersfield
2008-SC278	perennial	4	Missisquoi River Basin	Fairfield
2008-TB278	perennial	5	Missisquoi River Basin	Fairfield
2008-TB279	perennial	12	Missisquoi River Basin	Fairfield
2008-SC280	intermittent	2	Missisquoi River Basin	Fairfield
2008-SC281	intermittent	1.0	Missisquoi River Basin	Fairfield
2008-SC282	intermittent	1.0	Missisquoi River Basin	Fairfield

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2008-SC283	perennial	36.0	Missisquoi River Basin	Fairfield
2008-SC284	perennial	25.0	Missisquoi River Basin	Fairfield
2008-TB285	perennial	6.0	Missisquoi River Basin	Fairfield
2008-SC286	perennial	4.0	Missisquoi River Basin	Cambridge
2008-SC288	perennial	4.0	Missisquoi River Basin	Fairfield
2020-OHW-286	perennial	36.0	Missisquoi River Basin	Fairfield
2008-TB289	perennial	13.0	Missisquoi River Basin	Fairfield
2008-SC290	intermittent	1.0	Missisquoi River Basin	Fairfield
2008-TB294	perennial	40.0	Missisquoi River Basin	Fairfield
2008-SC294	perennial	10.0	Missisquoi River Basin	Fairfield
2008-TB295	perennial	28.0	Missisquoi River Basin	Fairfield
2008-TB297	perennial	30.0	Missisquoi River Basin	Fairfield
2008-SC298	intermittent	1.0	Missisquoi River Basin	Fairfield
2008-SC299	intermittent	1.5	Missisquoi River Basin	Fairfield
2008-SC300	perennial	1.0	Missisquoi River Basin	Fairfield
2008-SC301	intermittent	1.0	Missisquoi River Basin	Fairfield
2008-SC302	intermittent	2.0	Missisquoi River Basin	Fairfield
2008-TB303	perennial	13.0	Missisquoi River Basin	Fairfield
2020-TB/OHW-277	perennial	40.0	Missisquoi River Basin	Bakersfield
2020-OHW-286	perennial	37.0	Missisquoi River Basin	Fairfield
2008-SC304	ephemeral	2.0	Missisquoi River Basin	Fairfield

Lamoille Valley Rail Trail - Rehabilitation Project - STP LVRT(11) (12) (13)

Summary of Delineated Streams

Vermont Agency of Transportation

Prepared by VHB June 1, 2021

VHB Delineated Streams				
Stream ID	Flow Regime (Ephemeral, Intermittent, or Perennial) ¹	Average Ordinary High Water Width (Feet) ²	HUC 8 Watershed	Town
<u>LVRT 12</u>				
2020-SC-104	intermittent	3	Lamoille River Basin	Wolcott
2008-SC137	ephemeral	2.0	Lamoille River Basin	Hardwick
2008-TB138	perennial	4	Lamoille River Basin	Hardwick
2008-SC139	ephemeral	2.0	Lamoille River Basin	Hardwick
2019-SC140	intermittent	3.0	Lamoille River Basin	Hardwick
2008/2019-SC141	intermittent	1.0	Lamoille River Basin	Hardwick
2008/2019-TB140	perennial	NA	Lamoille River Basin	Hardwick
2008/2019-TB141	perennial	NA	Lamoille River Basin	Hardwick
2008-TB140	perennial	8	Lamoille River Basin	Hardwick
2008-TB141	Intermittent	3.5	Lamoille River Basin	Hardwick
2019-SC-1	intermittent	3	Lamoille River Basin	Hardwick
2019-SC-2	intermittent	2	Lamoille River Basin	Hardwick
2008-SC142	intermittent	2.0	Lamoille River Basin	Hardwick
2008-SC143	perennial	1.5	Lamoille River Basin	Hardwick
2008-SC144	intermittent	1.0	Lamoille River Basin	Hardwick
2008-TB145	intermittent	3.0	Lamoille River Basin	Hardwick
2008-TB146	intermittent	3.0	Lamoille River Basin	Hardwick
2008-SC147	intermittent	2.0	Lamoille River Basin	Hardwick
2008-TB147	perennial	7	Lamoille River Basin	Hardwick
2008-TB148	perennial	7	Lamoille River Basin	Hardwick
2008-TB149	perennial	9	Lamoille River Basin	Hardwick
2008-SC150	ephemeral	2.0	Lamoille River Basin	Hardwick
2008-TB151	perennial	5.0	Lamoille River Basin	Hardwick

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2008-TB153	perennial	14.0	Lamoille River Basin	Hardwick
2008-SC155	intermittent	2.0	Lamoille River Basin	Wolcott
2008-SC156	intermittent	3.5	Lamoille River Basin	Wolcott
2008-TB156	intermittent	4.0	Lamoille River Basin	Wolcott
2008-TB157	perennial	23.0	Lamoille River Basin	Wolcott
2008-SC159	perennial	4.0	Lamoille River Basin	Wolcott
2008-SC161	ephemeral	1.0	Lamoille River Basin	Wolcott
2008-SC163	intermittent	2.0	Lamoille River Basin	Wolcott
2008-SC164	intermittent	2.0	Lamoille River Basin	Wolcott
2008-SC165	ephemeral	2.0	Lamoille River Basin	Wolcott
2008-SC166	ephemeral	1.0	Lamoille River Basin	Wolcott
2020-OHW-101	perennial	80	Lamoille River Basin	Wolcott
2008-SC167	perennial	2	Lamoille River Basin	Wolcott
2008-TB168	perennial	4.0	Lamoille River Basin	Wolcott
2008-TB169	perennial	58.0	Lamoille River Basin	Wolcott
2008-SC170	perennial	3.0	Lamoille River Basin	Wolcott
2008-SC171	intermittent	3.0	Lamoille River Basin	Wolcott
2008-SC172	intermittent	3.0	Lamoille River Basin	Wolcott
2020-SC-103	ephemeral	2	Lamoille River Basin	Wolcott
2008-SC174	ephemeral	1	Lamoille River Basin	Wolcott
2020-jd-1	ditch	-	Lamoille River Basin	Wolcott
2008-SC175	intermittent	3	Lamoille River Basin	Wolcott
2008-TB176	perennial	28	Lamoille River Basin	Wolcott
2008-TB179	perennial	6.0	Lamoille River Basin	Morristown
2008-SC180	perennial	4.0	Lamoille River Basin	Morristown

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Summary of Delineated Streams

Vermont Agency of Transportation

Prepared by VHB June 1, 2021

VHB Delineated Streams				
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2008-SC181	intermittent	1.0	Lamoille River Basin	Morristown
2008-SC182	perennial	2.0	Lamoille River Basin	Morristown
2008-SC183	perennial	3.0	Lamoille River Basin	Morristown
2008-TB184	perennial	3.5	Lamoille River Basin	Morristown
2008-SC184	perennial	4.0	Lamoille River Basin	Morristown
2008-SC185	ephemeral	1.0	Lamoille River Basin	Morristown
2008-SC186	intermittent	3.0	Lamoille River Basin	Morristown
2008-TB187	intermittent	10	Lamoille River Basin	Morristown
2008-SC188	ephemeral	2.0	Lamoille River Basin	Morristown
2008-SC190	ephemeral	2.0	Lamoille River Basin	Morristown
2008-SC191	intermittent	2.5	Lamoille River Basin	Morristown
2008-TB192	perennial	7.0	Lamoille River Basin	Morristown
2008-TBLM	perennial	87.5	Lamoille River Basin	Morristown, Hyde Park, Wolcott, Hardwick
LVRT 13				
2008-TB068	perennial	50	Passumpsic River Basin	Cabot
2008-SC071	intermittent	2	Passumpsic River Basin	Walden
2008-SC072	intermittent	2	Passumpsic River Basin	Walden
2008-SC073	intermittent	3.0	Passumpsic River Basin	Walden
2008-TB076	perennial	4.0	Lamoille River Basin	Walden
2008-SC081	intermittent	3.0	Lamoille River Basin	Walden
2008-TOB082	perennial	7.0	Lamoille River Basin	Walden
2008-TOB083	perennial	23.0	Lamoille River Basin	Walden
2008-SC084	intermittent	3.0	Lamoille River Basin	Walden
2008-SC085	intermittent	3.0	Lamoille River Basin	Walden
2008-SC087	perennial	3.0	Lamoille River Basin	Walden

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Summary of Delineated Streams

Vermont Agency of Transportation

Prepared by VHB June 1, 2021

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2008-SC089	intermittent	2.0	Lamoille River Basin	Walden
2008-SC092	intermittent	4.0	Lamoille River Basin	Walden
2008-TB092	intermittent	5.0	Lamoille River Basin	Walden
2008-SC094	ephemeral	2.0	Lamoille River Basin	Walden
2008-Ditch96	ditch	-	Lamoille River Basin	Hardwick
2008-Ditch97	ditch	-	Lamoille River Basin	Hardwick
2008-SC098	ephemeral	1.5	Lamoille River Basin	Hardwick
2008-SC100	perennial	3.0	Lamoille River Basin	Hardwick
2008-TB100	perennial	6.0	Lamoille River Basin	Hardwick
2008-Ditch101	ditch	-	Lamoille River Basin	Hardwick
2008-TB101	intermittent	3	Lamoille River Basin	Hardwick
2008-Ditch101a	ditch	-	Lamoille River Basin	Hardwick
2008-TB102	perennial	15.0	Lamoille River Basin	Hardwick
2008-TB104	perennial	5.5	Lamoille River Basin	Hardwick
2008-SC105	perennial	2	Lamoille River Basin	Hardwick
2008-SC106	ephemeral	2.0	Lamoille River Basin	Hardwick
2008-TB110	perennial	16.0	Lamoille River Basin	Hardwick
2008-TB111	perennial	28.0	Lamoille River Basin	Hardwick/Walden
2008-TB112	perennial	40	Lamoille River Basin	Greensboro
2008-TBLM	perennial	90.0	Lamoille River Basin	Hardwick
2008-TB116	perennial	20.0	Lamoille River Basin	Hardwick
2008-TB117	perennial	50.0	Lamoille River Basin	Hardwick
2008-SC119	intermittent	3.0	Lamoille River Basin	Hardwick
2008/2020-SC120	intermittent	4.0	Lamoille River Basin	Hardwick

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VHB Delineated Streams				
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2008-SC122	intermittent	3.0	Lamoille River Basin	Hardwick
2008-TB123	perennial	5.0	Lamoille River Basin	Hardwick
2008-TB124	perennial	13.0	Lamoille River Basin	Hardwick
2008-SC129	intermittent	2.0	Lamoille River Basin	Hardwick
2008-SC130	ephemeral	2.0	Lamoille River Basin	Hardwick
2008-SC131	intermittent	2.0	Lamoille River Basin	Hardwick
2008-SC132	intermittent	2.0	Lamoille River Basin	Hardwick
2008-SC133	ephemeral	2.0	Lamoille River Basin	Hardwick
2008-SC134	intermittent	2.0	Lamoille River Basin	Hardwick
2008-SC135	intermittent	3.5	Lamoille River Basin	Hardwick
2008-SC136	intermittent	2.0	Lamoille River Basin	Hardwick
2008/ 2020-OHW-111	perennial	28.0	Lamoille River Basin	Hardwick/Walden
2008/ 2020-OHW-112	perennial	40.0	Lamoille River Basin	Greensboro

Note: Streams/waters reviewed and delineated during VHB field investigations in 2008, 2019, and 2020

¹ Stream flow regimes determined based on qualitative observations of in stream hydrology indicators and geomorphic characteristic and are si

² U.S. Army Corps of Engineers. 2005. Regulatory Guidance Letter. Subject: Ordinary High Water Mark Identification. No. 05-05.