

MEMORANDUM

November 30, 2022

To: Bryan Davis

Organization: Chittenden County Regional Planning Commission

From: Theja Putta, Jake Berman, and Michael Blau

Project: Chittenden County Regional Planning Commission Active Transportation Plan Update

Re: Task 5 – Project Prioritization Methodology and Results – FINAL DRAFT

INTRODUCTION

A project prioritization process establishes an order for funding and implementing projects based on a common set of criteria that stakeholders agree upon. Agencies and communities have limited funding and resources, so it is important to prioritize projects that advance shared goals to the greatest degree. The process assigns a score to each of the proposed projects based on specific criteria. The objective of this analysis is to identify projects that rank higher within the prioritization framework so that investments may be focused and implemented accordingly.

Proposed Projects

The primary input is the network recommendations dataset generated in Task 4. This dataset uses a ‘project ID’ field that groups segments into projects. Final prioritization scores will be tied to the project ID attribute. The result is a ranked list of projects based on the factors and criteria listed in the next section.

Prioritization Factors

The prioritization process uses GIS analysis to identify the spatial relationship between the proposed projects and a given set of criteria. Table 1 shows criteria datasets and related information. The final prioritization is calculated based on the individual scores and their factors. Where necessary, individual scores are rescaled to a same range of values to make them suitable for combining into a final score.

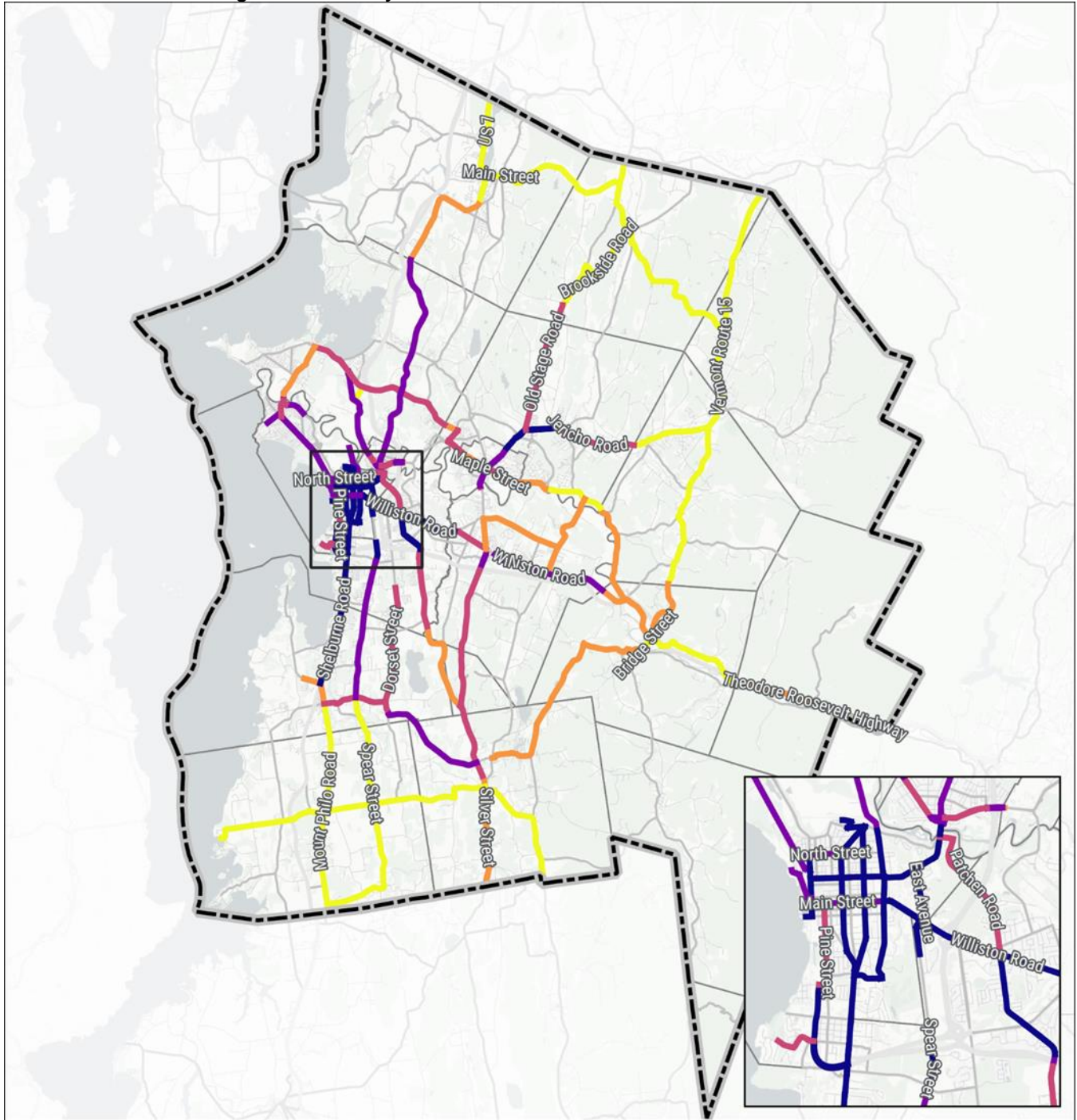
Table 1: Prioritization Factors

INPUT	PROCESS DESCRIPTION	SCORE DIRECTION	SOURCES	WEIGHT
Equity	Census tracts are identified based on whether they are above median for percentage of minority population, households without vehicle access, and households below poverty. Equity score is the sum of the following: <ol style="list-style-type: none">1. Number of distinct equity criteria near a project (possible values - 0, 1, 2, 3)2. Percentile value of number of equity need tracts near a project (possible value between 0 and 1)	High scores = Projects serving different types of equity needs and larger number of equity needs areas	Census Tracts (previously used in Equity analysis)	30
Network Extension	Calculate the mileage of existing bikeways a project connects to.	High scores = Projects connecting to longer existing bikeways	Bike facility layer	20

Safety – Speed	Identify the highest speed on roadways along a project alignment	High scores = Projects along roadways with higher speeds	LTS Layer / Speed Limit Layer	10
Safety – AADT	Identify the highest AADT on roadways along a project alignment	High scores = Project along roadways with high traffic	LTS Layer / VT AADT layer	10
Demand	Identify the highest bike trip potential along a project alignment	High scores = Projects near areas with high bike trip potential	Trip Potential outputs	20
Stakeholder Input	Locations in public input map marked as barriers/proposed routes along the project alignment. Assign a value of 1 for those projects, and 0 for the rest.	High scores = Projects identified by the public	Public input map layers and other stake holder inputs	10

The factors are rescaled to a values between 0 and 100 based on their percentiles and the final prioritization score is calculated by applying the weights given in Table 1. Figure 1 shows prioritization scores; Figure 2 shows prioritization scores overlaid with the Environmental Justice Bicycle Network Analysis scenario; Figure 3 shows prioritization scores overlaid with the existing bicycle network. Appendix A shows project segments with prioritization scores.

Figure 1: Draft Bicycle Network Recommendation Prioritization Scores



Project Prioritization Scores

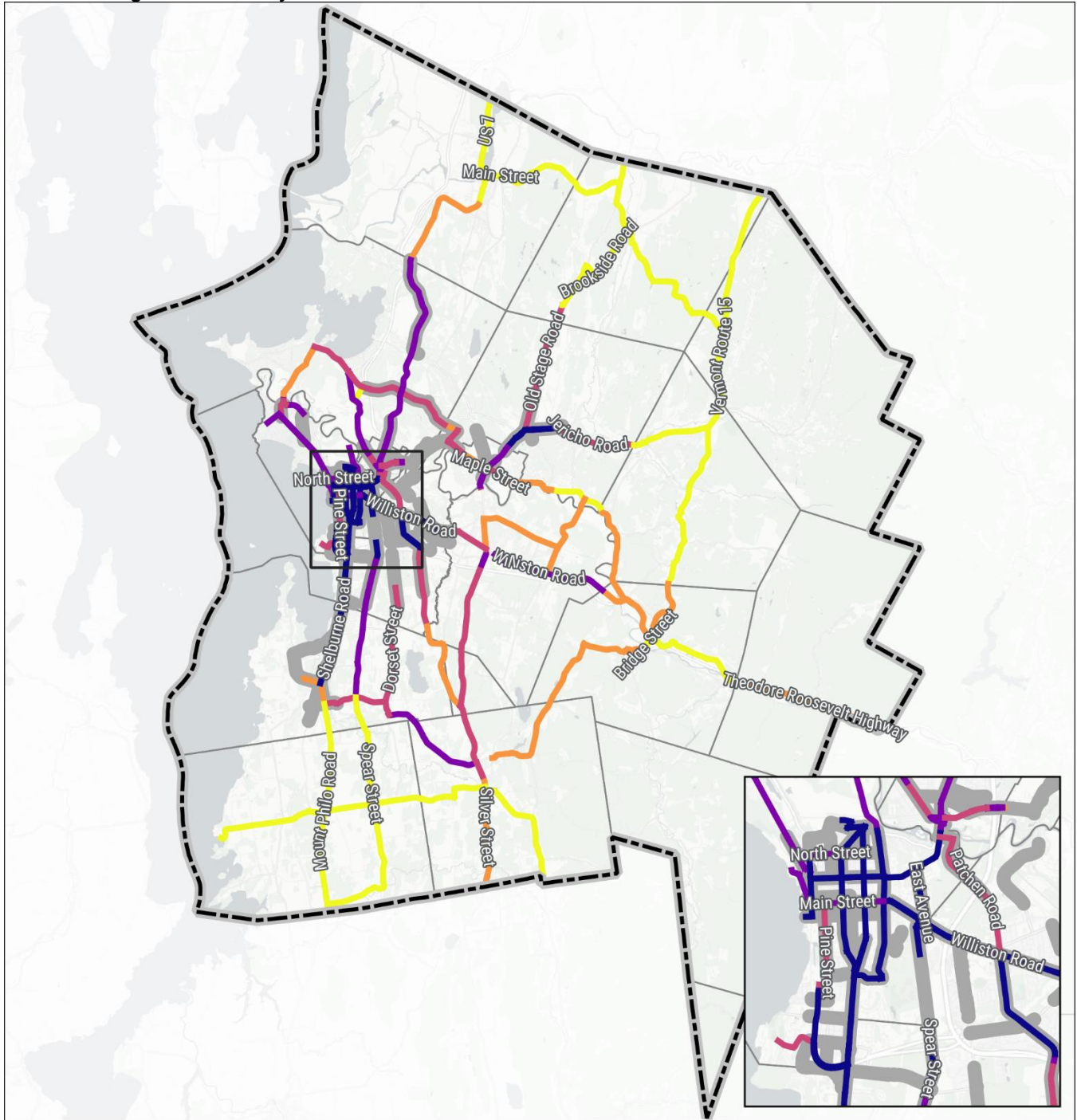
- 1 - 22 (Lowest Priority)
- 22 - 39
- 39 - 57
- 57 - 70
- 70 - 83 (Highest Priority)

0 5 10 mi



TOOLE
DESIGN

Figure 2: Draft Bicycle Network Recommendation Prioritization Scores and EJ BNA Scenarios



Project Prioritization Scores

1 - 22 (Lowest Priority)

22 - 39

39 - 57

57 - 70

70 - 83 (Highest Priority)

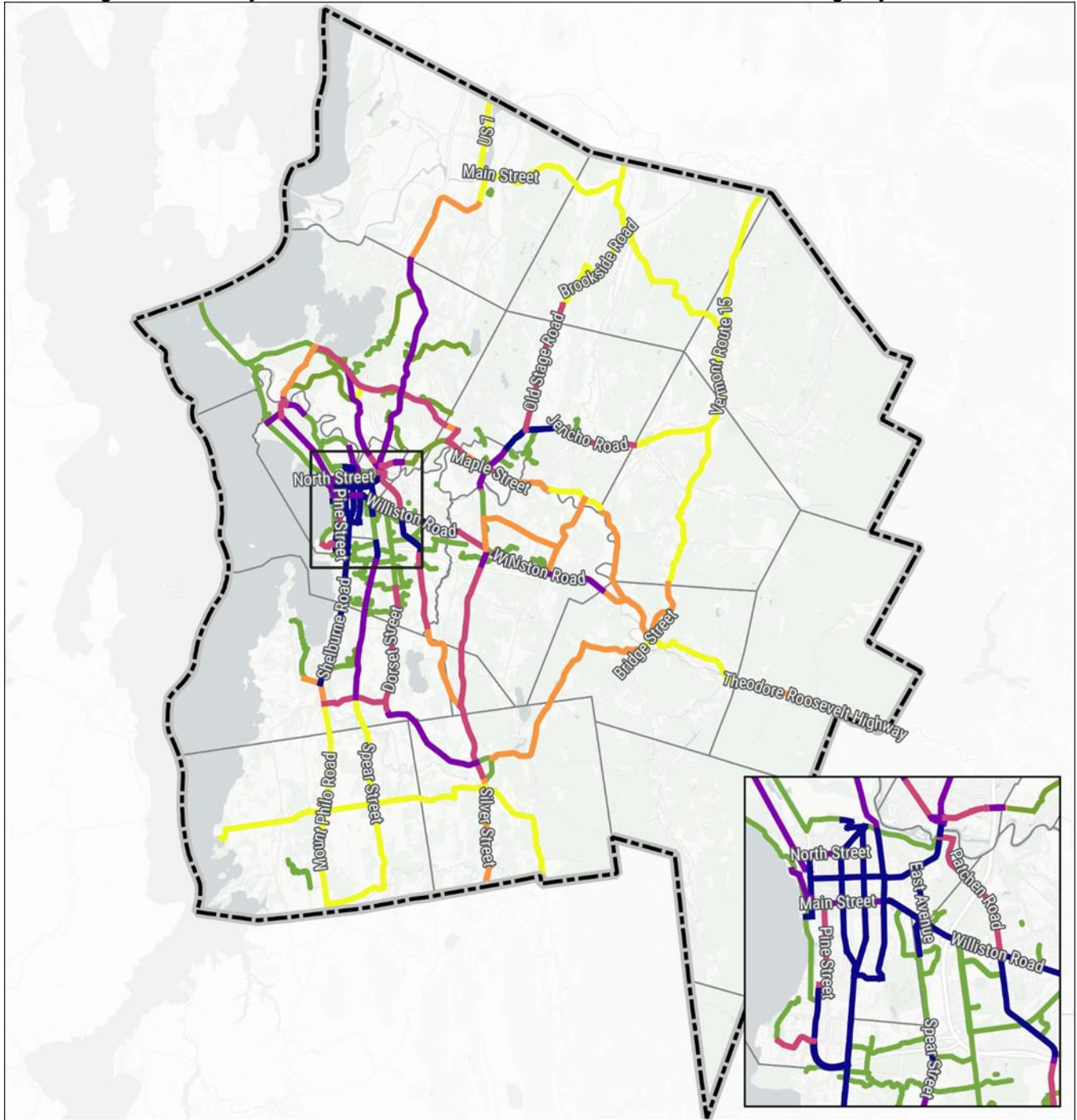
— EJ BNA Scenario Segments

0 5 10 mi



TOOLE
DESIGN

Figure 3: Draft Bicycle Network Recommendation Prioritization Scores and Existing Bicycle Network



Project Prioritization Scores

- 1 - 22 (Lowest Priority)
- 22 - 39
- 39 - 57
- 57 - 70
- 70 - 83 (Highest Priority)

— Existing Trail / Shared Use Path

TOOLE
DESIGN

Next Steps

The project team received feedback on the prioritization methodology and preliminary results at the Advisory Committee meeting on October 26, 2022. Below are a list of next steps and follow-up tasks:

- Feasibility was not included in the prioritization or project selection. The project team will address feasibility concerns for a selection of high-priority segments. Likewise, the presence or lack of an existing bicycle facility was not included, which may also impact feasibility.
- It was noted that projects may provide value to disadvantaged communities even if they do not fall within geographic EJ boundaries (for example, a project that connects an EJ community to a nearby job center). To address this comment, the project team visually inspected prioritization results overlaid with equity indicators, and concluded that the prioritization accurately captured segments that connect populations to important destinations outside equity census tracts. Some minor segments could be adjusted, but would not substantially change the overall prioritization outcomes.
- Data used in the prioritization process will be made available to municipalities to develop local active transportation networks that connect to the regional network.

Appendix A: Project Segments

Project ID	Street Name(s)	Route #	Functional Class(es)	Speed Limit	AADT	Prioritization Score	Municipality(ies)	Length (Miles)
1	US 7	US 7	primary	50	8351	18.79	Milton	2.8
2	Main Street		tertiary	30	4937	10.24	Milton	0.6
3	Westford Road		tertiary	30	2559	7.27	Milton	3.0
4	River Street	US 7	primary	35	10847	16.10	Milton	1.1
5	U.S. Route 7 South	US 7	primary	50	16506	31.21	Milton	3.9
6	Browns River Road, Vermont Route 128	VT 128	secondary	50	4000	10.67	Westford	3.2
7	Westford-Milton Road		tertiary	40	2175	7.02	Westford	1.8
8	Brookside Road		tertiary	30	5000	6.14	Westford	2.1
9	Maple Tree Lane, Woods Hollow Road		tertiary	35	5000	6.54	Westford	2.1
10	Machia Hill Road, Osgood Hill Road, Repa Road		residential	25	500	0.57	Underhill, Westford	5.3
11	Vermont Route 15	VT 15	primary	50	5771	12.68	Underhill, Westford	7.0
12	Vermont Route 15	VT 15	primary	35	7911	10.18	Underhill	0.8
13	Roosevelt Highway, U.S. Route 7	US 2, US 7, US 7	primary	50	14772	68.63	Colchester	6.1
14	Blakely Road, Severance Road, West Lakeshore Drive	VT 127	secondary	30	13785	50.09	Colchester	5.7
15	Heineburg Drive, Prim Road	VT 127	secondary	30	11973	34.47	Colchester	2.0
16	Malletts Bay Avenue		tertiary	30	3902	63.28	Colchester, Winooski	3.1
17	Lavigne Road		tertiary	25	5000	10.40	Colchester	0.6
18	Roosevelt Highway	US 2, US 7	primary	40	30524	67.29	Colchester	0.9
19	College Parkway	VT 15	primary	35	23633	39.27		0.0
20	Old Stage Road		tertiary	40	3061	43.88	Essex, Westford	4.6
21	Jericho Road	VT 15	primary	50	13256	51.10	Essex	2.8
22	Center Road, Main Street, Upper Main Street	VT 15	primary	40	27393	78.43	Essex	2.3
23	Maple Street, River Road	VT 117	primary	40	6706	31.43	Essex, Essex Junction	1.1
24	River Road	VT 117	primary	40	8195	26.96	Essex	1.0
25	River Road	VT 117	primary	50	9271	19.94	Essex	2.0
26	Kellogg Road		secondary	40	10505	34.21	Essex	0.6

Project ID	Street Name(s)	Route #	Functional Class(es)	Speed Limit	AADT	Prioritization Score	Municipality(ies)	Length (Miles)
27	Susie Wilson Road		primary	35	21189	56.69	Essex	0.5
29	Vermont Route 15	VT 15	primary	35	7911	10.75	Jericho	0.5
30	Vermont Route 15	VT 15	primary	50	11092	19.38	Jericho	3.2
31	Browns Trace, Jericho Center Circle		secondary, tertiary	35	4103	7.58	Jericho	6.0
32	River Road, Vermont Route 117	VT 117	primary	50	4912	31.91	Jericho, Richmond	3.6
33	Burlington Beltline, Heineburg Drive	VT 127	primary	40	15000	58.23	Burlington, Colchester	1.1
34	Plattsburg Avenue		secondary	30	8851	55.03	Burlington	0.8
35	Starr Farm Road		residential	25	500	58.86	Burlington	0.5
36	North Avenue, Sherman Street		secondary, tertiary	30	16338	67.34	Burlington	3.2
37	Intervale Road		unclassified	25	500	67.43	Burlington	0.9
38	Intervale Avenue, Manhattan Drive, Riverside Avenue	US 7 Alternate	residential, secondary, tertiary	25	9911	75.58	Burlington	0.4
39	Colchester Avenue, Main Street	US 2, US 7	primary	25	25096	74.75	Burlington, Winooski	0.1
41	Colchester Avenue		secondary	25	12444	72.73	Burlington	0.6
42	Barrett Street, Chase Street, Grove Street		tertiary	25	6227	52.89	Burlington	0.7
43	North Winooski Avenue, Saint Paul Street, Shelburne Road, Shelburne Street, South Winooski Avenue	US 7, US 7 Alternate	primary, secondary, tertiary	30	17427	71.16	Burlington	2.0
44	North Willard Street, Shelburne Road, South Willard Street	US 2, US 7, US 7	primary	30	6969	80.45	Burlington	1.9
45	North Prospect Street		tertiary	25	3975	72.11	Burlington	0.6
46	North Street		tertiary	25	5602	62.12	Burlington	0.8
47	Battery Street, Maple Street, Park Street	VT 127	primary, tertiary	25	15892	81.41	Burlington	0.8
48	Colchester Avenue		secondary	25	13976	70.55	Burlington	0.4
49	East Avenue		primary, secondary	35	14139	77.25	Burlington	0.9
50	Colchester Avenue, Pearl Street		primary, secondary, tertiary	25	11192	77.20	Burlington	0.9
51	College Street, Lake Street, Penny Lane		residential, tertiary	25	4405	67.26	Burlington	0.5
52	Ledge Road, South Prospect Street		tertiary	25	11193	73.68	Burlington	1.7

Project ID	Street Name(s)	Route #	Functional Class(es)	Speed Limit	AADT	Prioritization Score	Municipality(ies)	Length (Miles)
53	Main Street	US 2	primary	25	30363	67.80	Burlington	0.9
54	Main Street, Williston Road	US 2	primary	25	44556	83.43	Burlington	1.1
55	Pine Street		secondary	25	10216	56.62	Burlington	1.1
56	Shelburne Road, Shelburne Street	US 7	primary, trunk	30	32502	79.17	Burlington	1.2
57	Champlain Parkway					76.90	Burlington	2.0
58	Austin Drive, Home Avenue		residential, tertiary	25	500	53.71	Burlington	0.5
59	Patchen Road		tertiary	25	6784	56.42	South Burlington	1.1
60	Spear Street		primary, secondary	25	4840	74.88	South Burlington	0.6
61	Williston Road	US 2	primary	35	44556	77.47	South Burlington	0.6
62	Williston Road	US 2	primary	35	30032	60.03	South Burlington	0.4
63	Williston Road	US 2	primary	35	15538	77.06	South Burlington, Williston	2.0
64	Hinesburg Road	VT 116	primary	35	9679	74.85	South Burlington	1.5
66	Spear Street		secondary	35	6290	72.17	South Burlington	0.7
68	Hinesburg Road	VT 116	primary	40	5869	69.23	South Burlington	0.2
69	Hinesburg Road	VT 116	primary	50	5869	43.54	South Burlington	2.6
70	Shelburne Road	US 7	trunk	40	38277	78.91	Shelburne, South Burlington	7.6
71	Spear Street		secondary	35	6290	70.07	South Burlington	1.9
72	Dorset Street		tertiary	40	5816	43.42	South Burlington	0.6
73	Main Street	US 2, US 7	primary	25	17126	59.51	Winooski	0.7
74	Malletts Bay Avenue		tertiary	25	3902	52.68	Winooski	0.5
75	East Allen Street	VT 15	primary	35	23633	57.93	Winooski	0.4
76	East Allen Street	VT 15	primary	25	18789	54.75	Winooski	0.6
77	East Allen Street, Main Street, West Allen Street, West Center Street	US 2, US 7, VT 15	primary, tertiary	25	15160	62.17	Winooski	0.7
78	Pearl Street	VT 15	primary	25	19683	53.32	Essex, Essex Junction	1.1
79	Main Street, Park Street	VT 15, VT 2A	primary	35	16960	70.50	Essex Junction	1.7
80	Pearl Street	VT 15	primary	35	13975	36.68	Essex Junction	1.1
81	Maple Street	VT 117	primary	25	7466	49.76	Essex Junction	0.9
82	Essex Road	VT 2A	primary	25	16960	53.22		0.1
83	North Williston Road		tertiary	40	6399	30.76	Essex, Williston	3.1
84	Essex Road	VT 2A	primary	40	16380	39.09	Williston	0.9
85	Mountain View Road		tertiary	40	5378	30.09	Williston	2.9

Project ID	Street Name(s)	Route #	Functional Class(es)	Speed Limit	AADT	Prioritization Score	Municipality(ies)	Length (Miles)
86	Williston Road	US 2	primary	40	13768	56.32	Williston	1.3
87	Williston Road	US 2	primary	40	10929	58.31	Williston	4.1
88	Saint George Road	VT 2A	primary	35	19721	59.26	Williston	0.8
89	Saint George Road, Vermont Route 2A	VT 2A	primary	50	10671	42.52	Saint George, Williston	5.0
90	Theodore Roosevelt Highway	US 2	primary	50	5579	31.35	Bolton	5.6
91	Dorset Street		secondary, tertiary	40	5816	42.66	Shelburne, South Burlington	3.9
92	Spear Street		secondary	35	6290	62.26	Shelburne	3.0
93	Vermont Route 116	VT 116	primary	50	10671	28.42	Saint George, Shelburne, Williston	3.5
94	Falls Road, Harbor Road		tertiary	35	5253	35.40	Shelburne	1.3
95	Falls Road, Irish Hill Road		secondary	35	5829	41.31	Shelburne	2.2
96	Jericho Road		tertiary	45	3546	31.61	Jericho, Richmond	2.3
97	West Main Street	US 2	primary	50	12022	36.71	Richmond	1.2
98	West Main Street	US 2	primary	40	8330	34.11	Richmond	1.5
99	East Main Street	US 2	primary	50	4120	12.67	Richmond	3.7
100	Bridge Street		tertiary	25	6736	7.18	Richmond	0.6
101	Hinesburg Road, Huntington Road		tertiary	45	4048	31.80	Richmond	4.5
102	Vermont Route 116	VT 116	primary	50	10671	53.94	Hinesburg, Saint George	2.6
103	Shelburne Falls Road, Shelburne Hinesburg Road		secondary	45	5329	57.53	Hinesburg, Shelburne	3.9
104	Richmond Road		tertiary	35	2805	24.14	Hinesburg, Richmond	3.6
105	Vermont Route 116	VT 116	primary	30	12326	30.47	Hinesburg	0.8
106	Charlotte Road, Church Hill Road, Ferry Road, Hinesburg Road	VT F-5	secondary, tertiary	50	3073	12.95	Charlotte, Hinesburg	10.1
107	Silver Street		tertiary	40	4620	31.51	Hinesburg	3.4
108	Vermont Route 116	VT 116	primary	50	3794	12.76	Hinesburg	4.1
109	Mount Philo Road		tertiary	45	1822	22.08	Charlotte, Shelburne	7.4
110	Spear Street		tertiary	45	1712	20.46	Charlotte, Shelburne	9.1