

# Orwell Crosswalk Study

## Town of Orwell Orwell, VT

Final Report  
September 2025

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Town of Orwell

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## **1 Introduction**

### **1.1 Background**

The Town of Orwell in conjunction with the Addison County Regional Planning Commission (ACRPC) have retained Fuss & O'Neill to conduct a study to assess crosswalk locations and associated sidewalk improvements to help pedestrians connect between the Orwell Village School and the Orwell Free Library by identifying a range of alternatives and providing recommendations of improvements to pedestrian infrastructure.

The study process includes assessing existing conditions, establishing the project purpose and need, developing and evaluating alternatives for improvements, and selection of a preferred alternative.

The project team for this project includes:

- Andrea Treadway – Town of Orwell Select Board Chair
- Michael Christian – Town of Orwell Select Board
- Alan Alger – Town of Orwell Road Foreman
- Mike Winslow – ACRPC, Municipal Project Manager
- Nicole Fox, PE – Fuss & O'Neill, Project Manager
- Jacob Fowler, EIT – Fuss & O'Neill, Project Engineer

This report is the result of these efforts.

## **2 Project Purpose & Need**

### **2.1 Purpose**

The purpose of this project is to develop, design and implement proposed infrastructure improvements that will improve the safety and mobility of pedestrians crossing Main Street (VT Route 73) between the Orwell Village School and the Orwell Free Library.

### **2.2 Need**

The project area includes residential, educational, and civic land uses that need improved connectivity via an ADA-compliant crosswalk and associated sidewalk infrastructure to help residents cross Main Street. Currently, there is a crosswalk that connects from the driveway for the Town Hall to a residential driveway without a curb ramp or detectable warning surface on either end. The project will need to provide cost-effective solutions to improve pedestrian safety while crossing Main Street.

### 3 Project Area & Existing Conditions

#### 3.1 Project Area



This project is located in the Village of Orwell, on VT Route 73. The project area includes the civic district off of VT 73 that includes the Orwell Town Hall, Orwell Village School, First Congregational Church, and Orwell Town Green. These facilities are located on a U-shaped access drive connecting to VT 73. The Orwell Free Library is located on the opposite side of VT 73, near the center of the town green.

The posted speed limit through the project area is 35 mph on VT 73. VT 73 has an AADT (annual average daily traffic) of approximately 1,300 vehicles per day.

#### 3.2 Existing Conditions

##### 3.2.1 Roadway and Sidewalk

Within the project area, VT 73 is a two-lane state highway with approximately 11-ft lanes and approximately 2-ft paved shoulders, with additional gravel shoulders width that varies, but includes informal on-street parking in front of the library on the south side of VT 73.

There is an existing slate sidewalk on the south side of VT 73, separated from the roadway with a wide grass buffer and located on private property. The slate sidewalk is in good condition; however, this material creates accessibility concerns discussed in the next section. There is an existing crosswalk from the eastern leg of the access drive across VT 73. This crosswalk does not have curb ramps on either side and both sides terminate at the edge of a driveway. Yellow school crossing signs with supplementary Yield to Pedestrians signs are located on both sides of the road. There is a painted pedestrian pathway striped on the access drive to the school and town hall.

Drainage within the project area consists of an open-channel swale on the north side of VT 73, with the water generally flowing from west to east. It crosses under the eastern leg of the access drive in a small culvert and continues in an open channel to the east until it connects to a closed drainage system east of the project limits. Drainage on the south side of VT 73 sheet flows off the road into a shallow swale between the road and the slate sidewalk. Further to the east, the stormwater flows along the curblin before connecting into the closed drainage system. The drainage system is in need of upgrades and repairs, the timing and impacts of which should be considered before any infrastructure improvements associated with the updated crosswalk.

Crash data was reviewed for the years 2014-2024. No crashes were reported in the time period on VT 73 between the intersection with VT 22A and North Orwell Road, the nearest intersections to the west and east, respectively.

### **3.2.2 Crosswalks**

There is one crosswalk that crosses VT 73 perpendicularly from the end of the eastern town hall driveway leg to the driveway of a residence. The existing crosswalk is painted in a diagonal style and there is no receiving curb ramps on either end. There is appropriate sight distance for pedestrians and vehicles to this crosswalk location. There are two crosswalks along the driveway, one near VT 73 and another approximately 170 ft from VT 73 that are painted with two parallel lines.

### **3.2.3 Accessibility**

The project area has sidewalk located on the south side of VT 73 but accessibility is limited due to the slate material. Slate is slippery when wet or frozen, prone to heaving, and has gaps between slabs causing inconsistencies in the walking surface. The condition of the existing sidewalks is good, but there are tripping hazards present due to grass growing through the gaps in stones. The sidewalk is located on private property outside of the right-of-way.

There is one crosswalk across VT 73 at the eastern entrance to the town hall. Accessible curb ramps and detectable warning panels are not present at either end. There are paint markings along each side of the driveway to the Town Hall that delineate areas of pedestrian travel along with crosswalk marking across the driveway.

### **3.2.4 Right-of-Way**

Right-of-Way information was requested from the VTrans Right of Way Section. Their records indicated that VT 73 has the statutory allowance of a 3-rod right-of-way in the project location, which is 49.5 feet, centered on the roadway.

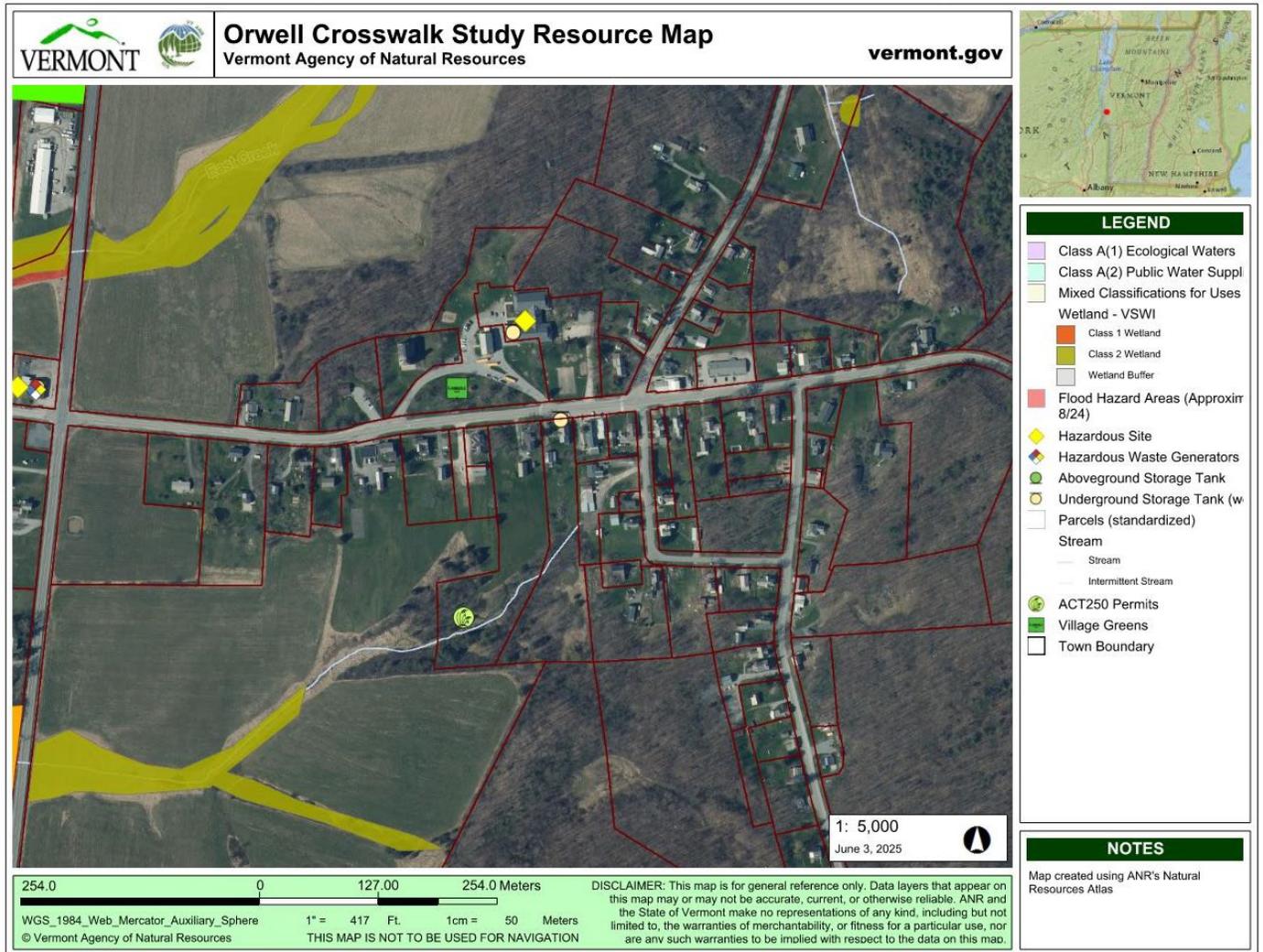
### **3.2.5 Utilities & Lighting**

VT 73 has overhead utility lines along the north side of the road with service lines that cross the road. The utility poles, owned by Green Mountain Power and shared with Maple Broadband, are located in the grass outside of the shoulder. The pole directly to the east of the eastern Town Hall driveway has a drop on the outside of the pole indicating there is either underground electric or communication lines in the vicinity.

There is existing street lighting mounted on utility poles on the north side of the road throughout the project area on VT 73. These streetlights are owned and maintained by Green Mountain Power and leased to the Town of Orwell. Streetlights are also present on the driveway to the Town Hall.

There are no other apparent existing utilities within the project area.

### 3.2.6 Natural Resources



The project area contains no wetlands determined by VSWI but the surrounding areas have class 2 wetlands that are not expected to be impacted by this project. There are no Act 250 permits inside the project limits but there is one to the south that is not expected to be impacted. There are no identified invasive species, or rare threatened and endangered species within the project area.

There is one hazardous site in the project limits at the Orwell Village School but it is not expected to be impacted. The school also has an underground storage tank that is not expected to be impacted.

A review of the resources on the Vermont Agency of Natural Resources (ANR) Atlas does not show any significant resources that are likely to be impacted by the project.

## 4 Alternatives

Improvement alternatives were developed with the Purpose & Need Statement in mind. Factors influencing the alternatives development included safety, connectivity, project impacts, and costs. Three alternatives, one no-build and two build alternatives were developed to address the needs of pedestrians in the community. As with all feasibility projects, a No Build Alternative is included for comparison to the two build alternatives. The two build alternatives include new crosswalks in two different locations and associated pedestrian improvements.

### 4.1 Alternative 1: No Build

The No Build Alternative maintains the existing location of the crosswalk with no connection ramps or modifications. This alternative does not address the project Purpose & Need, nor does it provide any improvements to pedestrian accessibility or safety, however it does not have any impacts to cultural or natural resources, right-of-way, or utilities. There are no additional costs beyond standard maintenance.

### 4.2 Alternative 2: East Driveway Crosswalk



*Alternative 2 crosswalk location near the existing crosswalk*

Alternative 2 proposes shifting the crosswalk on the eastern driveway of the Orwell Town Hall and Village School just far enough to the west to allow for installation of curb ramps. The existing crosswalk does not have any ramps or a direct connection to the sidewalk on the south side of VT 73. ADA compliant sidewalk ramps would be constructed on both sides of the road, the south side ramp would connect to the existing slate walk, and the north side would connect to a new sidewalk that follows the southern side of the eastern driveway for ten feet then outlet to the striped pedestrian accessway in the driveway.

Construction of the sidewalk on the north side of VT 73 would require extending the existing culvert under the driveway. This alternative would allow pedestrians from the Orwell Free Library to travel east on the existing walkway to the crosswalk, and then safely cross VT 73 and continue up the driveway to access the Orwell Town Hall and Orwell Village School. Parking on the south side of VT 73 should be restricted to allow a minimum of 20 feet between the crosswalk and parking for visibility. This alternative also shifts the crosswalk across the eastern leg of the driveway near VT 73 slightly further up the driveway and changes the style to diagonal which is more visible to drivers and matches the crosswalks across VT 73. In the future it is recommended, and would benefit pedestrian safety, to install additional sidewalk and curb along the north side of the driveway to provide separation of vehicular traffic and pedestrians. The plan for Alternative 2 is included as Appendix A.

**4.3 Alternative 3: Library Crosswalk**



*Alternative 3 crosswalk location near the Orwell Free Library*

Alternative 3 proposes relocating the crosswalk further to the west, directly across from the library. This location would be centered on the town green, providing a more direct connection from the library to the Orwell Town Hall and Orwell Village School and matching the location that many students already use to cross Main Street. The crosswalk would be located to allow a straight line of travel out of the library to cross VT 73. A new sidewalk would extend from the eastern driveway of the Orwell Town Hall and Village School to the new crosswalk location on the

north side of VT 73. This would require extending the existing culvert under the driveway and regrading the drainage swale between the village green and VT 73. In addition, a new section of sidewalk would be constructed to connect the crosswalk to the existing slate sidewalk on the south side of VT 73 in front of the library. Parking on the south side of VT 73 should be restricted to allow a minimum of 20 feet between the crosswalk and parking for visibility. As in Alternative 2, this alternative also shifts the existing crosswalk along the eastern leg of the driveway to the Town Hall slightly further up the driveway and changes the style to diagonal to be more visible to drivers. ADA-compliant curb ramps would be installed at both ends of the crosswalk across VT 73 and at the sidewalk side of the driveway crosswalk. In the future it is recommended, and would benefit pedestrian safety, to install additional sidewalk and curb along the north side of the driveway to provide separation of vehicular traffic and pedestrians. The plan for Alternative 3 is included as Appendix B.

**4.4 Evaluation of Alternatives and Recommendations**

The Alternatives Evaluation Matrix in the table below provides a comparison of the No Build and two (2) build alternatives for the proposed pedestrian improvements on VT 73. The evaluation matrix includes categories for conceptual construction costs, how well the alternative meets the Purpose & Need for the project, impacts, operations, and anticipated permits needed for each alternative. Conceptual costs for each alternative are included in Appendix C.

Both build alternatives meet the purpose and need for the project and have little to no anticipated impacts to resources. Both require minimal amounts of right-of-way or permanent sidewalk easements to construct a connection from VT 73 to the existing slate sidewalk located on private property. Alternative 3; however, will have significantly higher construction costs and potentially require relocating two utility poles. In addition, the needed offsets to parking to allow for safe pedestrian crossing would effectively eliminate two spaces directly in front of the library and the grading needed to construct the sidewalk would slightly reduce the usable space in the town green. While either build alternative will accomplish the Town's goals to improve the safety and accessibility of the crosswalk, Alternative 2 would do so with less cost and impact. The Town of Orwell's preference is to move forward with Alternative 2.

Evaluation Matrix - Orwell Scoping Study			
Alternatives Evaluation Matrix			
	Alternative 1	Alternative 2	Alternative 3
	No Build	East Driveway Crosswalk	Library Crosswalk
Estimated Costs	\$0	\$53,000	\$251,000
Meets Purpose & Need	No	Yes	Yes
<b>Impacts</b>			
Drainage	None	Limited	Moderate
ROW	None	Minimal	Minimal
Utilities	None	None	Potential - Pole Reloc
Bridge	None	None	None
Historic	None	Unlikely	Unlikely
Archeological	None	Unlikely	Unlikely
Wetlands	None	None	None
Hazardous Materials	None	None	None
Floodplain	None	None	None
Threat. & End. Species	None	None	None
<b>Operation</b>			
Pedestrian Safety/Accessibility	No Change	Improvement	Improvement
Sight Distance	Exceeds requirement	Exceeds requirement	Exceeds requirement
<b>Permits &amp; NEPA</b>			
Act 250	No	No	No
NEPA	No	CE	CE
401 Water Quality	No	No	No
404 COE Permit	No	No	No
Stream Alteration	No	No	No
Stormwater Discharge	No	No	No
Archaeology Phase IB	No	Not Likely	Not Likely
Section 106/Historic	No	Not Likely	Not Likely
Section 4(f)	No	Not Likely	Not Likely
NPDES Construction Stormwater	No	No	No
VT Operational Stormwater	No	No	No
11.11 Permit	No	Yes	Yes

**Appendix A**

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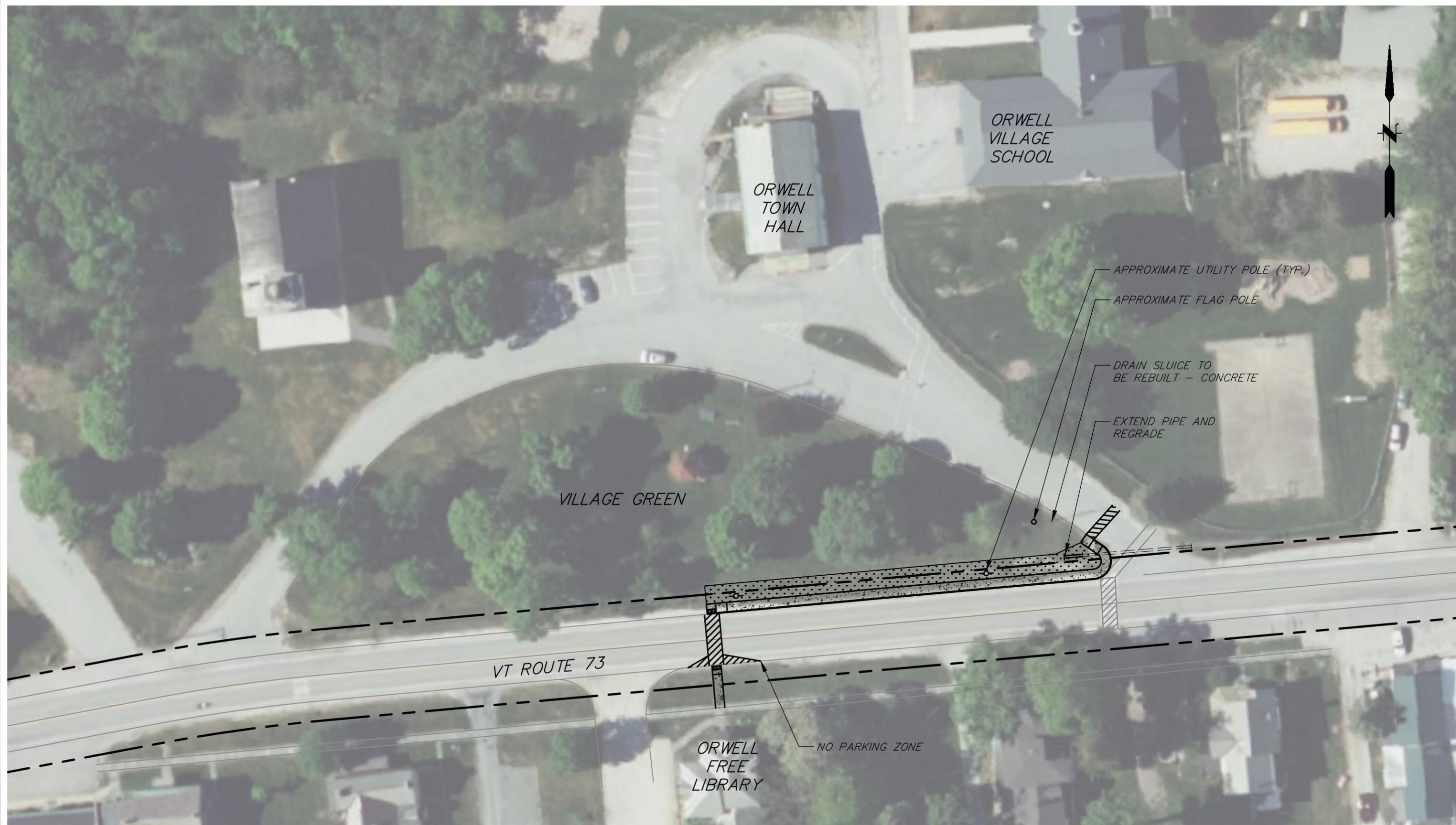
Alternative 2 Plan - East Driveway Crosswalk



**Appendix B**

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Alternative 3 Plan – Library Crosswalk



File: J:\DWG\2022\0528\A11\AutoCad\20220528.A11\_STP-AIG.dwg Layout: ALT-3 Plotted: 2025-08-28 10:32 AM Saved: 2025-08-26 2:14 PM User: Jake Fowler  
 PC3: AUTOCAD PDF (GENERAL DOCUMENTATION) PC3 STB/CTB: FO STB  
 LAYER STATE:

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER

SCALE:  
 HORZ.: 1" = 50'  
 VERT.: -  
 DATUM:  
 HORZ.: -  
 VERT.: -  
 0 25' 50'  
 GRAPHIC SCALE

**FUSS & O'NEILL**  
 50 COMMERCIAL STREET  
 MANCHESTER, NH 03101  
 603.668.8223  
 www.fando.com

TOWN OF ORWELL  
 LIBRARY CROSSWALK  
 ALTERNATIVE 3  
 ORWELL VERMONT

PROJ. No.: 20220528.A11  
 DATE: 06/10/2025  
**ALT-3**

**Appendix C**

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Conceptual Cost Estimates

**Orwell Village Scoping Report Alternative 2**

Project No.:  
 F&O No.: 20220528.A11  
 Calculated By: JKF  
 Checked By: NLL  
 Date: 08/07/25  
 Date: 08/26/25

**Alternative 2 - Existing Crosswalk Location**

**ESTIMATE DATA**

Unit Price List Date: From "Report on Shared-Use Path and Sidewalk Costs" dated January 2020 (based on 2019 unit prices)  
 Unit Price List Date: VTrans 2 Year Averaged Price List July 2023 - July 2025

**ROADWAY DATA**

<b>Concrete Sidewalk</b>	<b>Quantity</b>	<b>Unit Price</b>	<b>Cost</b>
15 Inch CPEP(SL)	15 lf	\$109.000 /lf	\$1,650
5' Sidewalk w/ Granite Curb	35 lf	\$470.000 /lf	\$16,450
5' Sidewalk w/out Curb	25 lf	\$280.000 /lf	\$7,000
Detectable Warning Surface	20 sf	\$67.000 /sf	\$1,350
	Mobilization/Demobilization (10%)		\$2,700
	Contingency Items (15%)		\$4,000
	Erosion Control and Traffic Control (15%)		\$4,000
	<b>Estimate 2027 Construction Cost Subtotal</b>		<b>\$37,150</b>
	Design, Admin & MPM (25%)		\$9,300
	CE (15%)		\$5,600
	<b>Approximate 2027 Project Costs</b>		<b>\$53,000</b>

*This is an order of magnitude cost estimate that is expected to be within -30 to +50 percent of the actual project cost. Fuss & O'Neill has no control over the cost of labor, materials, equipment or services furnished by others, or over the Contractor(s)' methods of determining prices, or over competitive bidding or market conditions. Fuss & O'Neill's opinion of probable Total Project Costs and Construction Cost are made on the basis of Fuss & O'Neill's experience and qualifications and represent Fuss & O'Neill's best judgment as an experienced and qualified professional engineer, familiar with the construction industry; but Fuss & O'Neill cannot and does not guarantee that proposals, bids or actual Total Project or Construction Costs will not vary from opinions of probable cost prepared by Fuss & O'Neill. If prior to the bidding or negotiating Phase the Owner wishes greater assurance as to Total Project or Construction Costs, the Owner shall employ an independent cost estimator.*

**Notes:**

- 1. Unit Prices for sidewalk are all-inclusive. It is the combined cost of sidewalk construction with other costs that are incidental to the construction.*
- 2. Prices from "Report on Shared-Use Path and Sidewalk Costs" have been increased based on 5% inflation over 10 years.*

**Orwell Village Scoping Report Alternative 3**

Project No.:  
 F&O No.: 20220528.A11  
 Calculated By: JKF  
 Checked By: NLL  
 Date: 08/07/25  
 Date: 08/26/25

**Alternative 3 - Library Crosswalk Location**

**ESTIMATE DATA**

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5' Sidewalk w/ Granite Curb	250 lf	\$470.000 /lf	\$117,500
5' Sidewalk w/out Curb	25 lf	\$280.000 /lf	\$7,000
Detectable Warning Surface	20 sf	\$67.000 /sf	\$1,350
	Mobilization/Demobilization (10%)		\$12,800
	Contingency Items (15%)		\$19,150
	Erosion Control and Traffic Control (15%)		\$19,150
	<b>Estimate 2027 Construction Cost Subtotal</b>		<b>\$178,600</b>
	Design, Admin & MPM (25%)		\$44,650
	CE (15%)		\$26,800
	<b>Approximate 2027 Project Costs</b>		<b>\$251,000</b>

*This is an order of magnitude cost estimate that is expected to be within -30 to +50 percent of the actual project cost. Fuss & O'Neill has no control over the cost of labor, materials, equipment or services furnished by others, or over the Contractor(s)' methods of determining prices, or over competitive bidding or market conditions. Fuss & O'Neill's opinion of probable Total Project Costs and Construction Cost are made on the basis of Fuss & O'Neill's experience and qualifications and represent Fuss & O'Neill's best judgment as an experienced and qualified professional engineer, familiar with the construction industry; but Fuss & O'Neill cannot and does not guarantee that proposals, bids or actual Total Project or Construction Costs will not vary from opinions of probable cost prepared by Fuss & O'Neill. If prior to the bidding or negotiating Phase the Owner wishes greater assurance as to Total Project or Construction Costs, the Owner shall employ an independent cost estimator.*

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