

Trail Design Plans for the Woodstock Riverwalk

Prepared for the: Town of Woodstock

and the

Two -Rivers Ottauquechee Regional Planning Commission

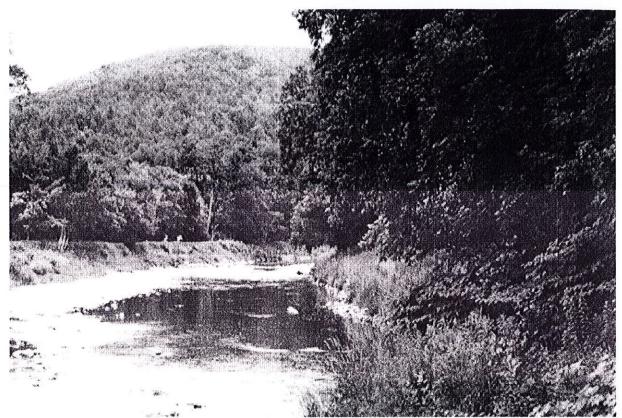
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April 2000



View of Riverwalk location below the confluence of the Kedron Brook and the Ottauquechee River.

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1. Introduction

A Vision for a Riverwalk for Woodstock:

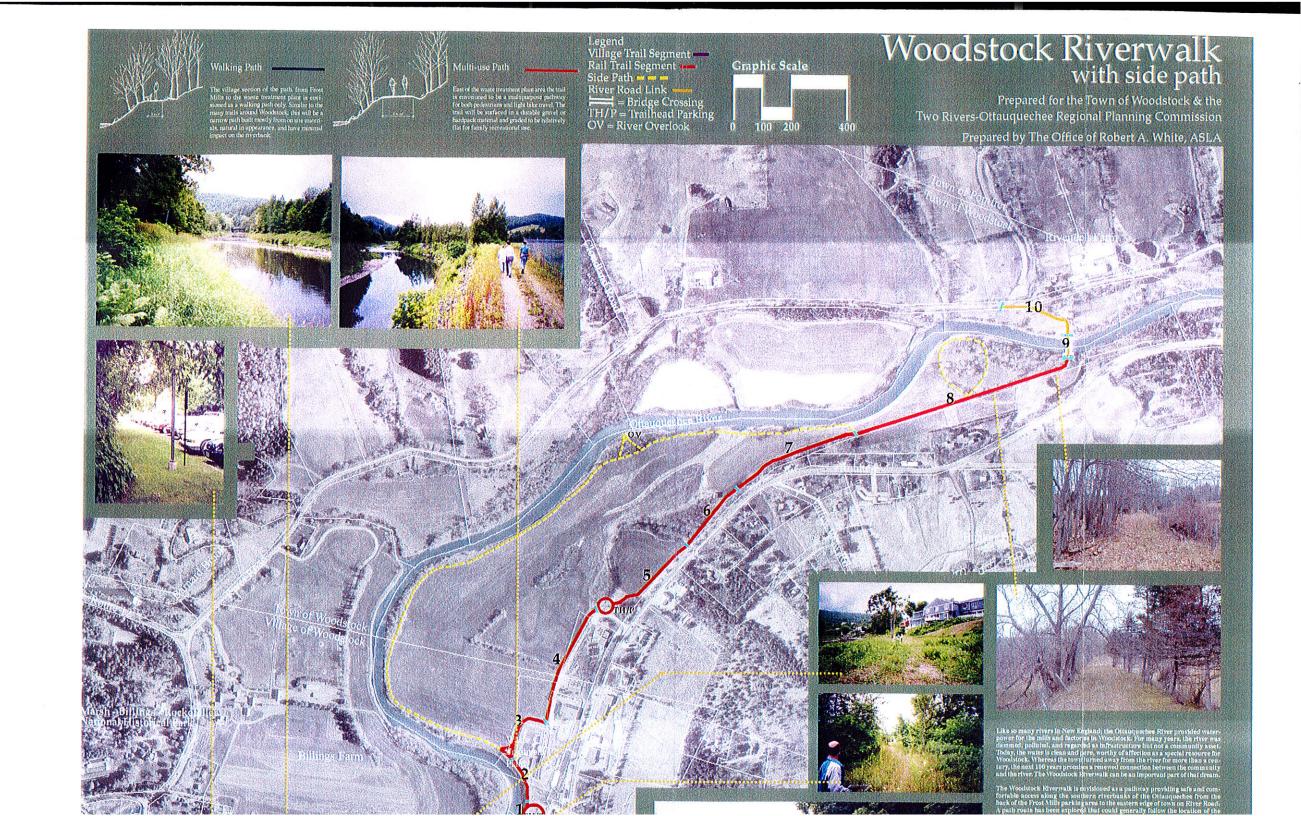
Like so many rivers in New England towns and cities, the Ottauquechee River provided waterpower for the mills and factories in Woodstock. For many years, the river was regarded as a source of power and utility and was dammed to run factories, drain away wastes, and serve other utilitarian needs. Until well through the 20th century, the river was not appreciated as a community asset. Today, the water is clean and pure, worthy of affection as a special resource in Woodstock and the other communities upstream and downstream. As the community's appreciation of the river has grown, so has the desire for a trail along the river. While there are a few locations where private trails have been developed, public access to the river is only minimal. Whereas the town turned away from the river for more than a century, the next 100 years promises a renewed connection between the community and the river. This can be made possible with the development of the Woodstock Riverwalk.

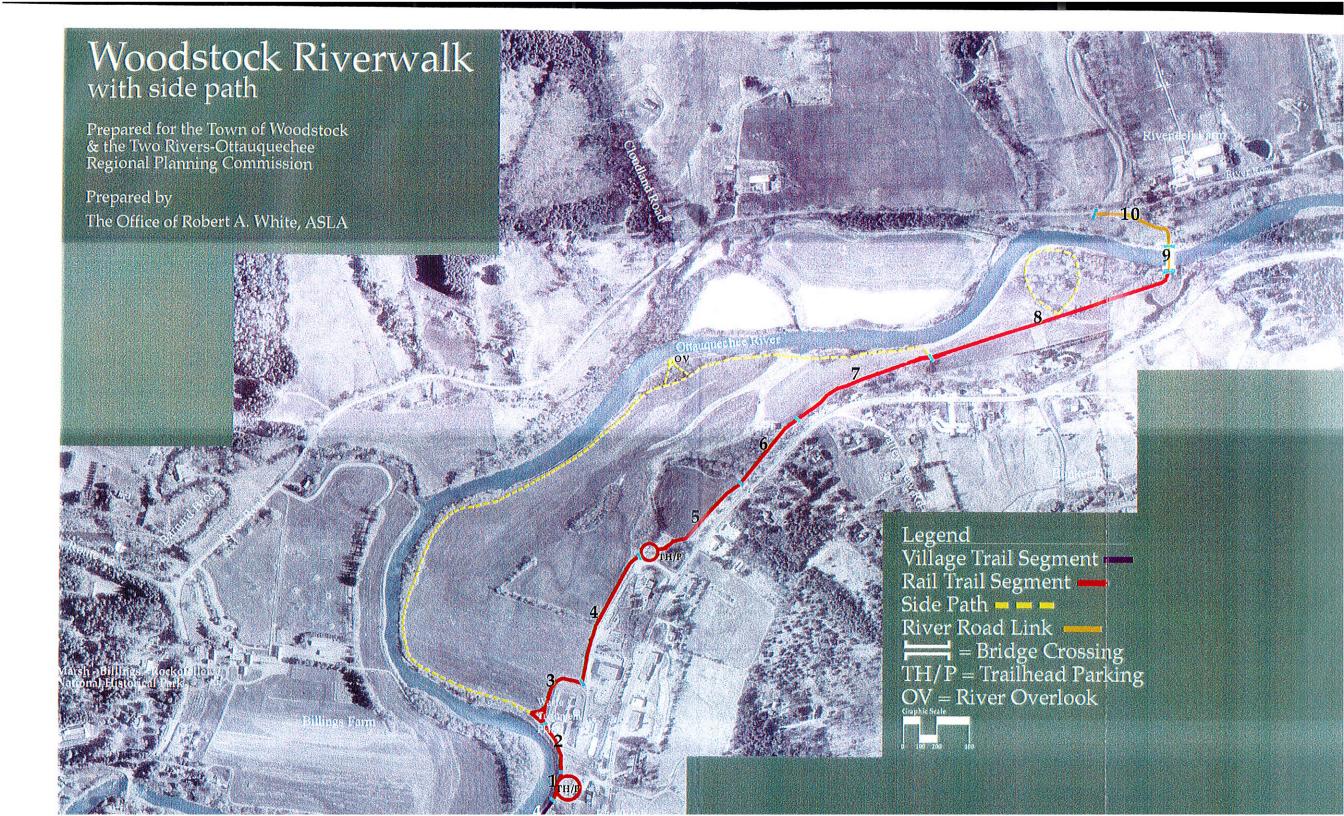
The Woodstock Riverwalk is envisioned as a trail connection between the village and points east. The Riverwalk will be developed into discrete sections. Some sections are for walking only, as in the village areas, designed to provide safe and comfortable access along the Ottauquechee riverbanks, while not becoming an imposition on the natural surroundings. Other sections of the pathway can accommodate multiple uses: bicycles, pedestrians, and joggers. Three bridges are anticipated: two small bridges over the Kedron Brook and Hartland Hill brook, and a large bridge, probably a suspension or prefabricated bridge over the Ottauquechee River at the eastern path terminus near River Road.

Much of the proposed village section route follows an existing sewer line easement, and parts of the trail east of the village follow the old White River Junction-Woodstock RR bed, abandoned since 1932. The flat surface existing in each of those locations will enable the trail to be built with minimal negative environmental impacts. These features also allow the trail to be ADA accessible and minimize construction expenses. Most of the trail can be built using on-site materials, cuts and fills, and rearranging existing stone rip-rap and other features. To achieve compliance with the ADA, a hardpack surface is proposed that will be durable, but not impose an unnatural material into the river corridor. Permission to have the trail on private land is also a key element.

The project is dependent upon the participation and good will of the community of Woodstock, the support of town and village officials, and funding from local, state and federal sources. This concept plan has been funded by a matching grant received from the State of Vermont and the Village of Woodstock. Management of the project was completed by the Two Rivers-Ottauquechee Regional Planning Commission, the planning and fieldwork were overseen by members of the Woodstock Conservation Commission, and the project consultants were Robert A, White, ASLA, Landscape Architect with assistance from Peter Jensen of OpenSpace Management.

The following report provides a description of the trail locations by phases, the necessary construction approach, defines probable costs, and permitting/implementation requirements.







3. Description of the Riverwalk Project by Phases

Description of the path location and design features:

The route of the proposed Riverwalk as presented in this concept plan follows the southern riverbank of the Ottauquechee from the back of the Frost Mills parking area to the eastern edge of town on River Road. The path can generally follow the route of a municipal sewer easement. When the sewer line was built, in many locations a flat graded terrace was created above the high water level, that can, in most areas easily accommodate a path.

The following pages describe the progressive segments of the Woodstock Riverwalk. The trail segments are presented in sections (see map) for more detailed discussion. The Riverwalk is presented in four segments distinguished by trail use:

- A Rail Trail Segment: from the sewer treatment plant site to the east end of Maxham Meadows along the old Woodstock White River Junction RR bed.
- A Village Segment: from the sewer treatment plant west to Frost Mills Parking Lot.
- A **River Road Link**: from the end of the Rail Trail segment across the Ottauquechee River to Terminate at river Road.
- possible Riverwalk Side Trails: that skirt the edge of the Billings Farm fields along the banks of the Ottauquechee river.

The report format is organized into segments, and it is very likely that implementation of the Riverwalk will follow the same approach, given the overall extent of the project. It is also possible that even smaller incremental establishment of the trail could occur. As an example, for the Rail Trail segment, the project costs (see Cost sheets) define a task for "initial trail establishment" where the route of the trail is cleared and opened up for foot - traffic use, but the cost intensive trail development work including drainage and surfacing with hardpack comes at a later time. Most of the initial trail establishment can be done with volunteer labor, donated materials and equipment.

Phase 1: Rail Trail Segment:

The Rail Trail section of the Woodstock Riverwalk is designed as a multi-purpose trail for pedestrians, bikes, horses, and ADA accessibility. The trail width is 8' and has a hardpack surface for stability, natural appearance and durability, without the cost or intrusion of asphalt pavement. An additional advantage of the gravel surface is that rollerblades and faster road bike traffic would not be accommodated, allowing uses more compatible with the local character. Also, given the nature of River Road, a gravel surface, a full loop system for roller blades and road bikes is not feasible. The typical trail sections are described below:



Rail Trail Segment along the abandoned Woodstock – White River Junction Railroad bed. Existing conditions

Rail trail	Length	Work description
Section	in ft.	•
1	350	Trailhead behind Sunset Farm
		Trail follows riverbank berm and service road

Description:

Sunset Farm is a potential location for a trailhead to access both the village trail and the rail trail routes. Use of the parking area is subject to approval by the landowners and the village, which owns the adjacent sewer plant. Alternative trailhead locations have also been identified, should this location not prove feasible. Both the Mill Building parking area for weekend use, or a new parking

area located at the corner of Maxham Meadow Way below RT. 4 are possible locations for trailhead parking .

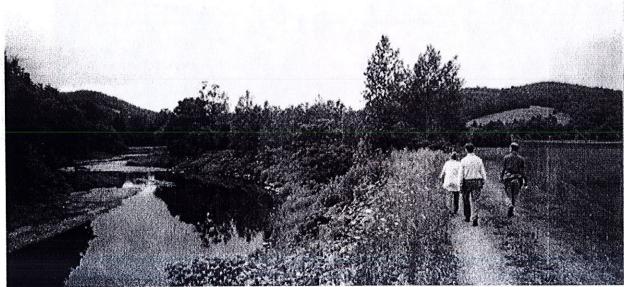
The trail passes along the northern edge of the Sunset Farm parking area along the sewer line route, and at the top of the riverbanks of the Ottauquechee River, meeting a service road for the sewer plant.

Rail trail	Length	Work description
Section	in ft.	
2	450	Junction with walking trail loop along Ottauquechee
		Trail follows wastewater treatment service road

Description:

The trail continues along the riverbank of the Ottauquechee to a location northeast of the wastewater treatment facility, where a farm road departs along the river and the service road passes behind the wastewater treatment facility, and turns to meet Maxham Meadow Way across from the Mill Building. Note: this location will require fencing to separate trail users from the fields that are spread with plant discharge. Alternative routes are possible but require several crossings for Maxham Meadow Way and interface with traffic for the mill, wastewater treatment facility, and the Agway oil dealer. The route described is the preferred route for a trail.

The trail map and later section of this report defines a possible side trail that could follow the Ottauquechee River in this location. This envisioned as a future phase of the Riverwalk and not part of the initial trail establishment for the Rail Trail. (See Side Trails descriptions.)



Rail trail Section 2 around the wastewater treatment facility.

Rail trail	Length	Work description
Section	in ft.	
3	510	Parallel trail to sewer plant road, separated from farm fields with fencing

Description:

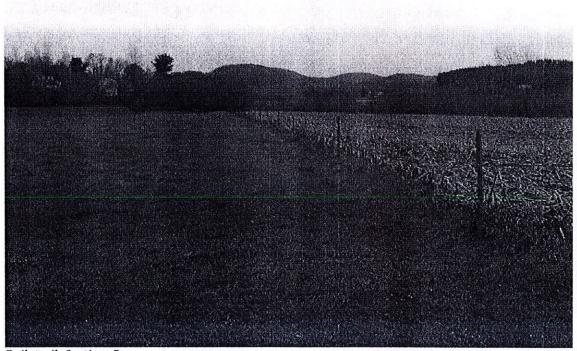
Once meeting Maxham Meadow Way, the trail turns to follow the roadside – with a widened shoulder or separated lane for trail use. The route passes the Mill Building, CVPS substation, and the recycling center.

Rail trail	Length	Work description
Section	in ft.	
4	NA	Trailhead and parking at corner of Maxham Meadows

Junction with walking trail loop along Ottauquechee

Description:

At the corner of Maxham Meadow Way, the trail route leaves the roadside and turns across the fields of Maxham Meadow to join the route of the old White River – Woodstock Railroad. The old RR bed, obvious in some places, obscured in others by 50 years of abandonment, farm use, and vegetation growth, provides a relatively level and wide base for the trail. Built of a stable rock and soil base, it is ideal for adaptive reuse for a rail trail. A trailhead could readily be sited at this location, requiring only the relocation of the gate and some fencing to prevent vehicular access to the fields and trail.



Rail trail Section 5.

Rail trail	Length	Work description
Section	in ft.	
5	650	Trail follows old RR bed across open fields

Description:

The trail location skirts the edge of the field and parallels RT. 4 along the old RR bed.



Rail trail Section 6.

Rail trail Length Work description
Section in ft.
6 700 Through wooded (scrub) section of old RR bed

Description:

Leaving the open fields, the trail follows the RR bed into an overgrown wooded area. Clearing and trimming will be required for the trail to be reopened, but the bed allows an adequate base for the trail surfacing and drainage.



View of section 7, Rt. 4 is on the other side of the house on the upper left corner. The path location is at the edge of the fields below the steep slope.

Rail trail	Length	Work description
Section	in ft.	
7	850	Along base of RT. 4 along old RR bed

Description:

Leaving the wooded area, the trail again parallels RT. 4 at the base of the highway fill slope, following the RR bed. This area has considerable run-off from the highway, so drainage and geotextiles are required to provide a stable and well - drained trail surface. Several drainage channels from highway culvert outlets will need to be extended across the trail. New swales and diversion ditches will also be required.

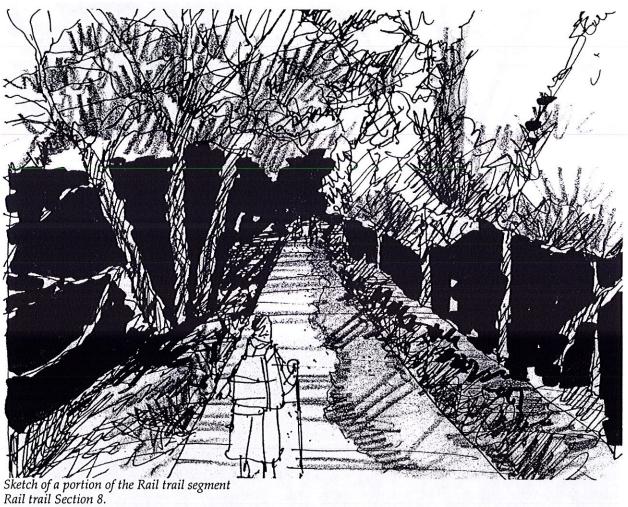


Rail trail Section 8. Existing conditions

Rail trail	Length	Work description
Section	in ft.	
8	1050	Across open fields along old RR bed

Description:

The trail crosses a long extent of fields following the RR bed and then enters the wooded area near the banks of the Ottauquechee River. As the route travels east, the RR bed becomes more prominently elevated above the surrounding grade.



Rail trail Section 9

Length in ft.

Work description

1100

Side loop to the bank of the Ottauquechee River

Description:

A side trail loop, is also defined to offer access to the riverbanks. The side trail leaves the rail trail and heads into a wooded bank of the Ottauquechee River before returning to the Rail Trail at the same point from which it left. The extension of the Rail Trail proceeds to the edge of the river, and a future phase of the Riverwalk to accommodate a large bridge for the river crossing and connection to River Road is described in Segments 10 and 11.

Total length of the Rail Trail section

5,660LF

Phase II: Village Trail Segment:
The trail in the Village section is designed as a walking trail and ADA accessible trail only – with a 5' width and surface able to sustain wheelchair and heavy foot traffic. The typical trail section is shown



Village Trail Segment along the Ottauquechee River.



Example of a historic truss bridge that could be used at the Kedron Brook crossing in section 1 of the village path.

Village	Length	Work description:
Section	in ft.	
1	260	Path at Frosts Mills parking area
	80	Connector path from end of parking to riverbank
	100	Abutments and bridge crossing of Kedron Brook
	450	On -grade section for trail between Kedron Brook and area behind
		Ottauqueechee Health Center (OHC). Side trail connector beside OHC to parking area

Description:

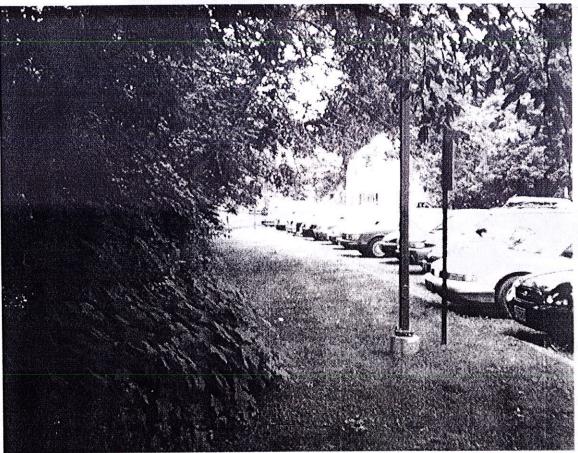
The trail originates at the Frost Mills parking area owned by the Woodstock Resort Corp. The first path section is in the form of a pathway along the parking area from the foot of the driveway from Pleasant Street heading towards the river. Installation of the path will require gravel and pavement. The existing wood curbs may need to be relocated to make room for the new sidewalk. This will not result in the loss of parking spaces, but rather a shift of about 5'.

From the eastern edge of the parking area, the trail proper leads across the open area to the banks of the river at the confluence of the Ottauquechee River and Kedron Brook. A bridge crossing and overlook will be built in this location, requiring a 55' span across the Kedron. Bridge abutments will need to minimize filling in the 100 yr. flood plain as well as infringement on the floodway of the rivers. Bridge choices in this location include adaptive reuse of a historic steel truss bridge, a new prefabricated steel bridge or a site - built steel frame /wood deck/rail bridge. Concrete foundations and stone approach retaining walls will be required.

From the southern landing point of the bridge, the path follows the sewer line route on a generally level terrace except for a 55' section where the slope will require cutting to reduce the trail grade.

The terminus of this section is at the intersection of the Riverwalk and the side trail from the Riverwalk to the Central street grade of the Ottauquechee Health Center (OHC).

The side trail to the OHC will require set of stone stairs and handrails to ascend the steep grade.



Frost Mill trailhead parking area and beginning of Village Trail Segment.



Village Section	Length in ft.	Work description:
2	800	On-grade section from Ottauquechee Health Center to LD Sutherland property

Description:

This section of the trail follows a level terrace along the riverbanks. The trail route lies in from the edge of bank so that trees and other riverbank vegetation can be preserved. Most of the trail construction for this segment is for defining a path surface and associated minor drainage accommodations. This segment would also benefit from additional riverbank revegetation for bank stabilization and river corridor wildlife habitat enhancement.

The trail passes below the Mellishwood complex, the Shire Motel, and follows the level grade of the sewer line until it terminates at a private driveway near the LD Sutherland property near the "jungle".

Village Section	Length in ft.	Work description:
3	475	On-grade section between LD Sutherland property, village yard, and end of snow-storage yard.

Description:

This section of the trail must recognize the transitional character of the "jungle". Presently used as a snow dumping area for the village, the integration of a trail with this section will interface with either a long term plan for development of the area, or be co-located with the other uses of the location. The plan assumes the location of the trail, along the riverbank, to be out of the way of service uses of the site and that the trail can be included with a riverbank improvement plan for revegetation.

Village	Length	Work description:
Section	in ft.	
4	250	Sidehill trail and bridge over Brook
	500	On-grade section along sewer easement to terminus at the Sunset Farm
		parking area.

Description:

At the edge of the "jungle" parking area, the trail moves onto a steep slope and traverses over to the crossing of Hartland Hill Brook. This will require stone retaining for the sidehill and imported backfill. The approach to the bridge is relatively level terrain, but will require extensive clearing from windfallen trees. The bridge crossing requires 35' span and the bridge will be a steel structure with wood deck and railings, similar to the bridge at Kedron Brook. The remaining trail section follows the sewer line to a location behind the Sunset Farm barn where the village trail section terminates at a trailhead/parking area.

Total length of village section:

2,965 LF

Phase III: River Road Link Segment:

The trail from the Rail Trail segment continues east and then crosses the Ottauquechee River to connect with River Road, allowing for bicyclists and pedestrians to make a loop back to the Frost Mills parking area on the opposite side of the river. The typical trail section is shown below:

River Rd Link	Length	Work description
Section	in ft.	
9	350	Transition into woods section of old RR bed

Description:

Leaving the open area, the RR bed enters a wooded area above the Ottauquechee River. The RR bed moves closely to the steep embankment of the river, and continues eastward. Future connections of the trail may afford a continuous trail from Woodstock to Taftsville and beyond, as only a few sections of the old line are buried by RT. 4 fill - slopes, but these are beyond the scope of this current plan.

The rail trail turns northward to the edge of the river embankment, where it meets the southern approach to the Ottauquechee River bridge crossing.

River Rd Link	Length	Work description
Section	in ft.	,
10	175	Bridge crossing of Ottauquechee River

Description:

Crossing the Ottauquechee River is a major undertaking, requiring a bridge estimated at 175 ft. in length. The southern approach is on relatively level ground at an elevated position some 30' above the river level. This should provide adequate freeboard above flood and ice levels in the river, a significant concern for the Ottauquechee. The raised location presents some challenges on the northern bridge landing for the bridge to be relatively level from end to end. An elevated ramp – designed similar to a barn ramp – made from dry laid stone and filled to a 5% slope will allow the bridge grade to transition to the surrounding terrain.

For the purposes of estimating the project, a pre-engineered bridge has been included in this plan. However, alternative bridge types may also be considered. Both cable-stay and suspension bridges could be used in this location and would adequately accommodate the span requirements. Pros and cons for each bridge type should be weighed in the future as implementation of this section is planned for. One of the benefits of the suspension and cable-stay bridges is the reduced mass of the structures and possible visual impacts of the bridge on the valley scene.

River Rd Link	Length	Work description
Section	in ft.	
11	300	Trail terminus to River Road

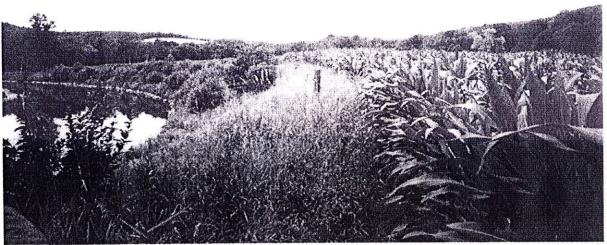
Description:

From the northern terminus of the bridge and ramp, the trail turns gradually northwest, and traverses a long slope bearing towards River Road where the trail terminates, joining the River Road bike loop. This route either returns to Woodstock, or continues to Taftsville and Quechee, as the alternative bike route to RT 4. A trailhead is not provided in this location due to traffic concerns and the availability of parking at trailheads near to the village.

Total length of the River Road Link 8,25LF

Phase IV: Side Trail

This trail is envisioned as secondary trail to the rail trail described earlier and is subject to a cooperative agreement and management plan between the village and the Billings Farm. The side trail is a walking path offering closer views of the river and the prominent role of agriculture in the Ottauquechee River Valleys. Whereas the other trails are envisioned to be more formally defined, theis side trail is seen more as simple rustic path made from native ground, even just mowed grass. One of the benefits of this path is that a dedicated riparian buffer along the riverbank could be established to preserve riverbank stability.



Side trail along river and cornfields.

Side Trail	Length	Work description
Section	in ft.	
1	6300	Side trails along the banks of the Ottauquechee River

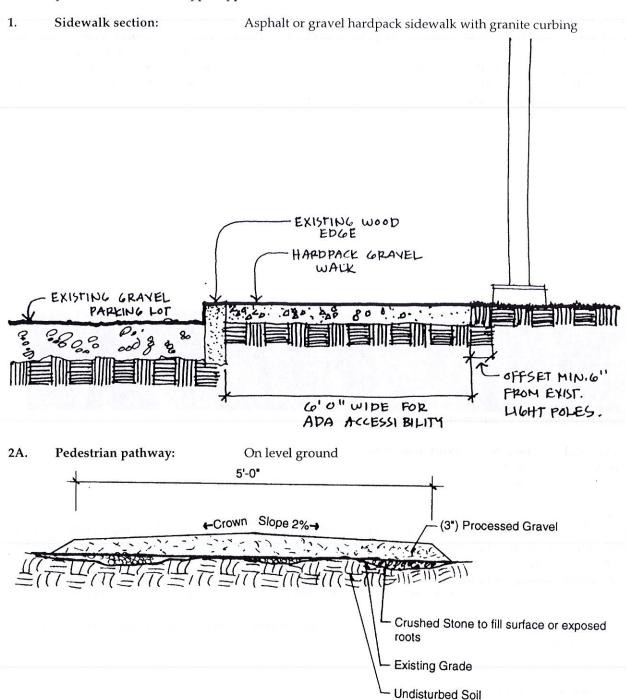
Description:

The side trail leaves the rail trail just west of the sewer plant, and continues along the riverbank of the Ottauquechee along a farm road and then between the river and the farm fields. Note: this location will require fencing to separate trail users from the fields that are spread with plant discharge. Additional management measures may need to be implemented to close the path with a gate, or to otherwise restrict path use when chemical farm fertilizers are in use and sludge spreading takes place. The side trail includes a connection to the trailhead parking before meeting back up with the rail trail before the bridge, creating a loop experience. A river overlook is also included in a wooded section of the riverbank.

Total length of the side trail

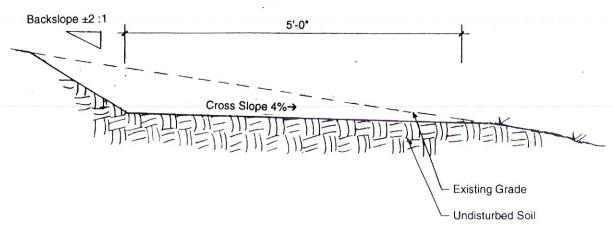
6,500 LF

Directory of trail construction types/typicals:



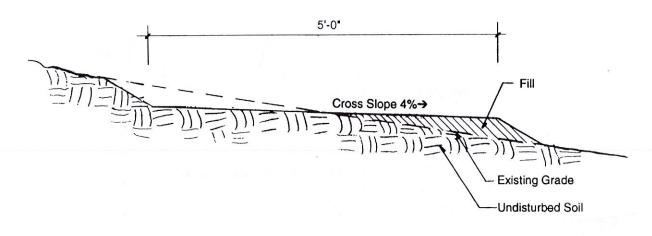
2B. Pedestrian pathway:

On cross -slope with full bench slope cut



2C. Pedestrian pathway:

On cross -slope with balanced cut/fill

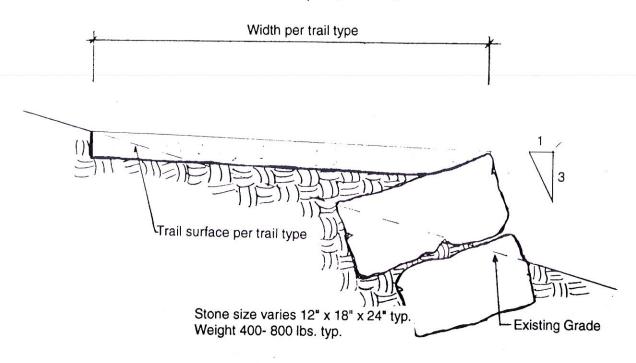


3. Multi-purpose pathway:

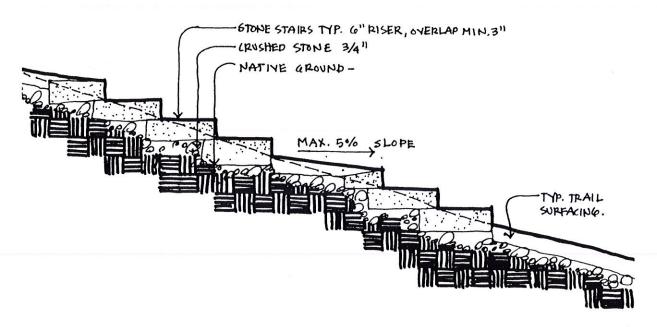
Typical section on level ground

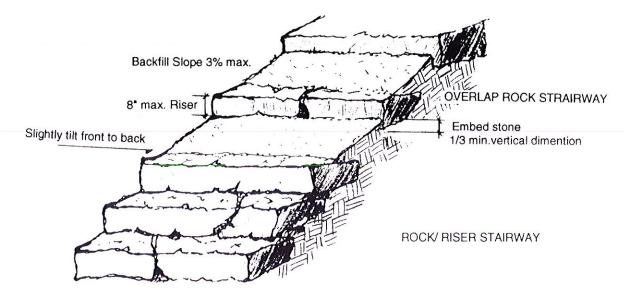
- 4. Pedestrian path bridge: See separate plans.
- 5. Sidehill construction:

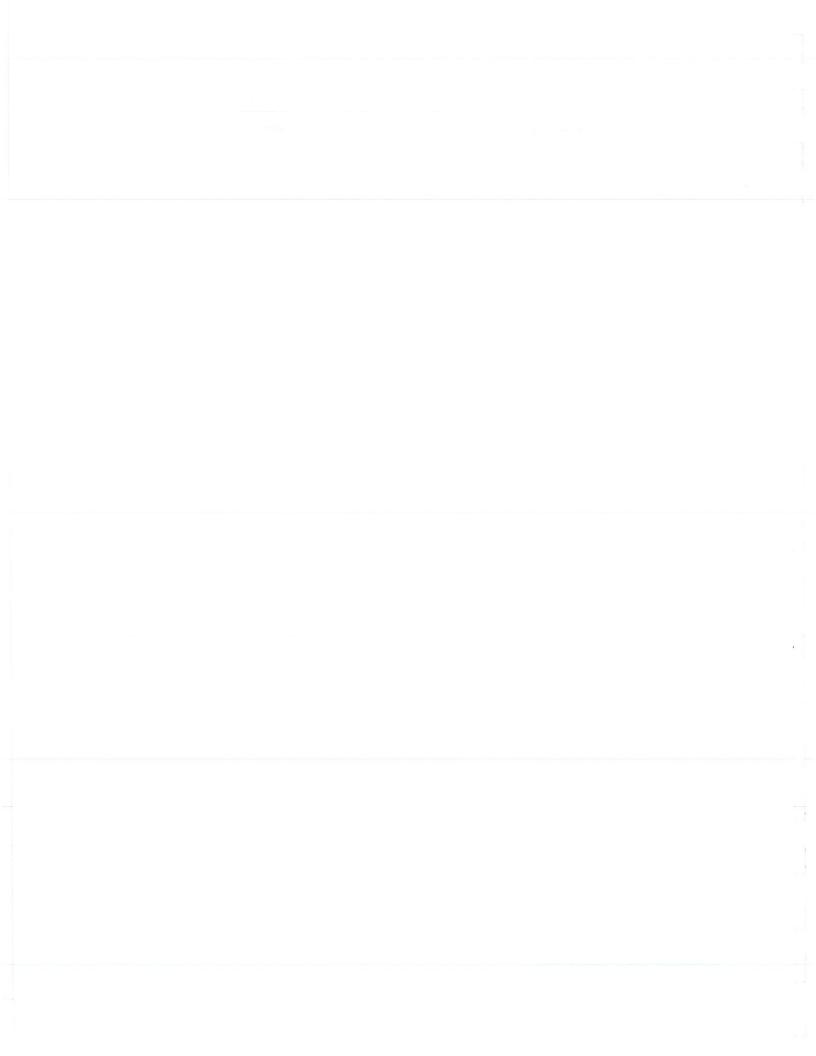
Stone retaining /cribbing

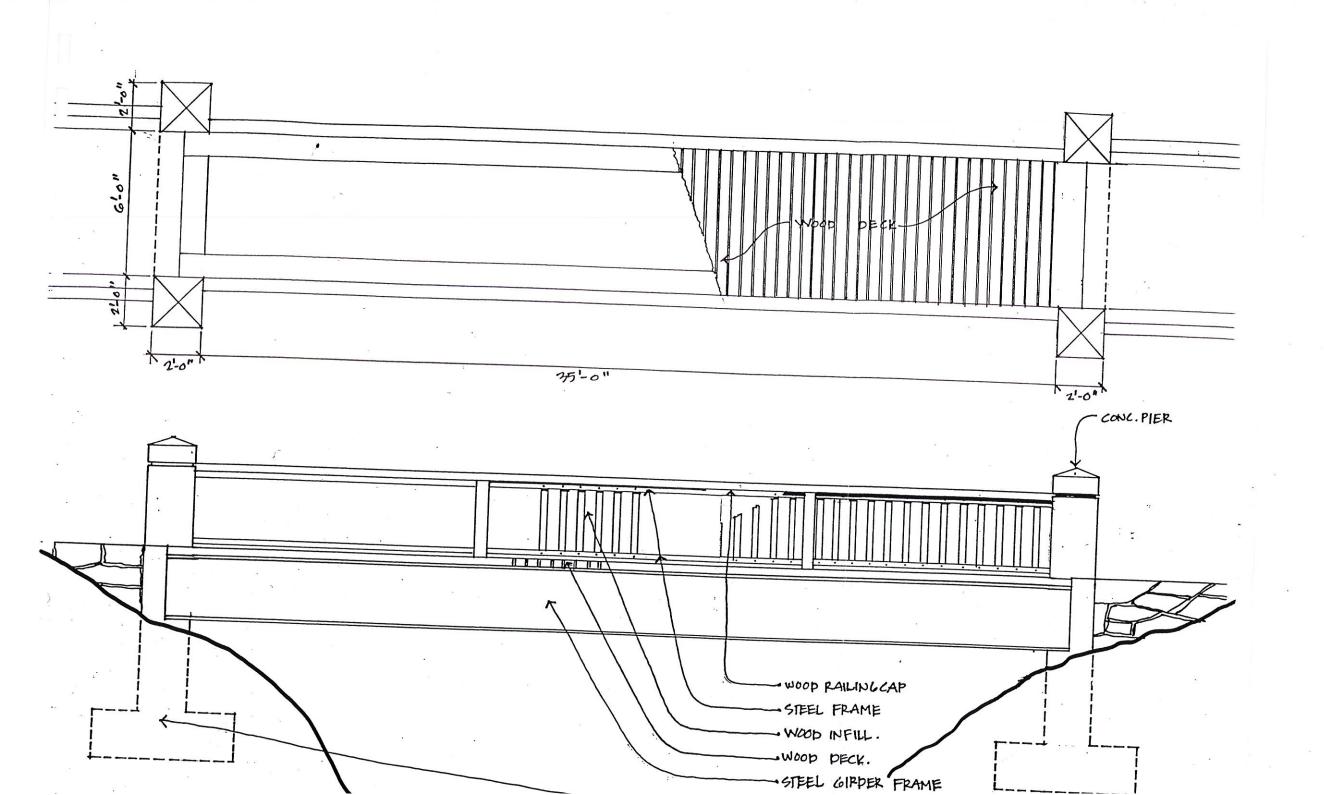


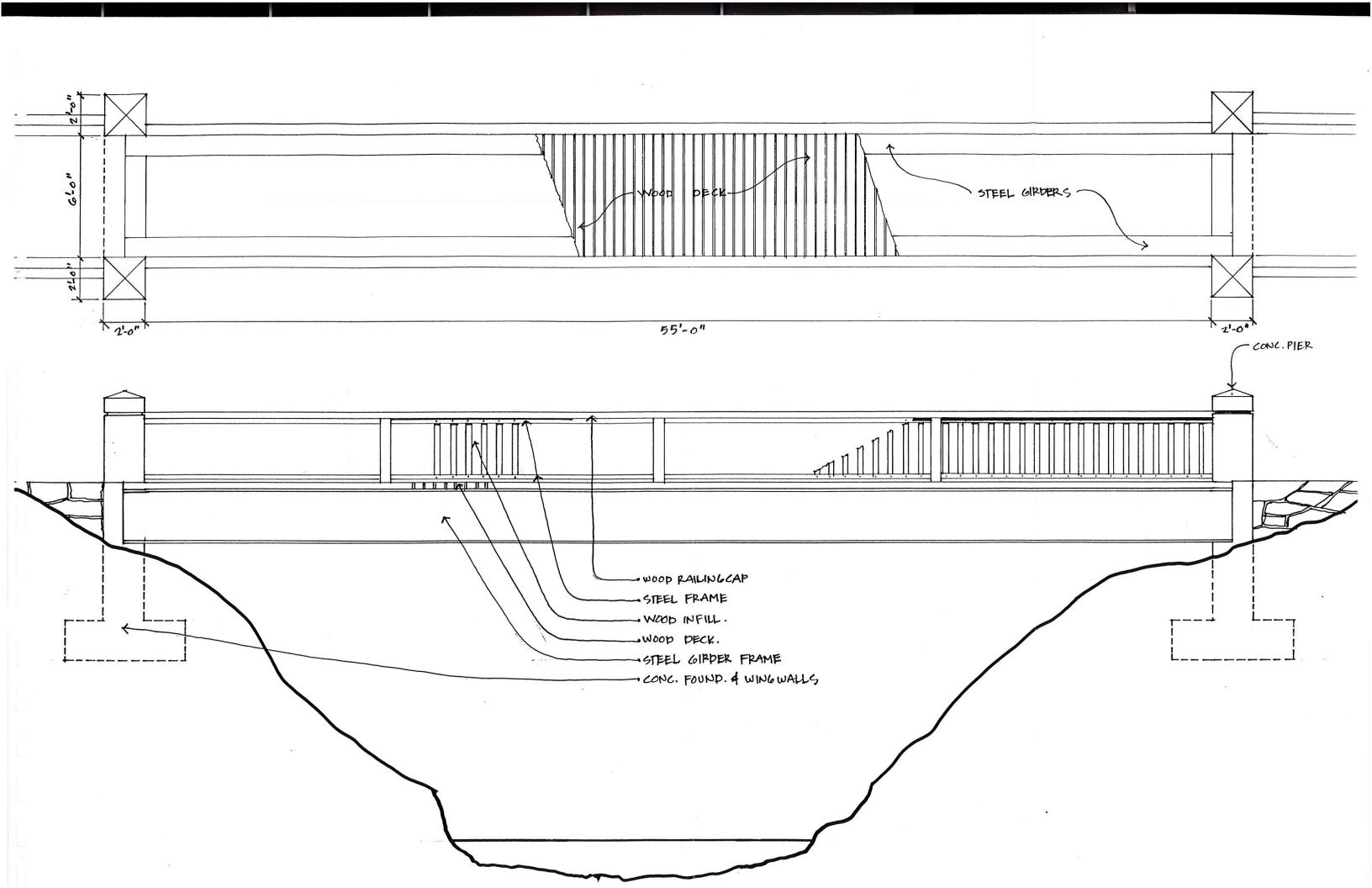
6. Stone stairs











5. Project cost estimate by sections

The following pages define costs estimated by section of the path project for implementation by phases.

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Page	\$1,500,000 1 1253 515 \$1,500 1253 515 \$6,500 475 83 \$2,000 2000 \$1 \$0,130 420 \$1 \$1,500 450,00 \$1 \$6,500 750 \$44	rail kiosk iverbank buffer and waterquality plantings sub - total:
sub- total: SY \$1.50 1253 sub- total: sub- total: coverall length path surface: 6' hardpack gravel LF \$6.50 475 geotextile; assume 6' wide sheet trimmed as needed LF \$5.63 250 250 retal and shoulder dariange SF \$0.13 420 sed disturbed areas LF \$5.01 1000 sub- total: SP \$1.50 450.00 sub- total: LF \$5.00 750 clearing and thinning (no grubbing) LF \$5.00 750 overall length path surface: 6' hardpack gravel LF \$6.50 750 clearing and thinning (no grubbing) LF \$5.00 750 overall length path surface: 6' hardpack gravel LF \$5.00 750 clearing and thinning (no grubbing) LF \$5.00 750 overall length path surface: 6' hardpack gravel B. \$6.50 750 protein surface of wide sheet trimmed as needed CY \$5.00 70 gravel fill for depressions 100 100 <td>\$1.50 1253 \$1150 \$1150 \$1150 \$1150 \$1150 \$1150 \$1500 \$1150 \$1500 \$1150 \$1500 \$1150 \$1500 </td> <td>iverbank buffer and waterquality plantings sub - total:</td>	\$1.50 1253 \$1150 \$1150 \$1150 \$1150 \$1150 \$1150 \$1500 \$1150 \$1500 \$1150 \$1500 \$1150 \$1500	iverbank buffer and waterquality plantings sub - total:
Second	\$6.50 475 \$3 \$5.50 475 \$3 \$2.00 200 \$0.13 420 \$1.50 1000 \$1 \$1.50 450.00 \$4 \$6.50 750 \$44	sub - total:
overall length path surface: 6' hardpack gravel LF \$6.50 475 geotextile, sassume 6' wide sheet trimmed as needed LF \$5.63 250 trail and shoulder drainage BF \$5.013 420 seed disturbed areas FS \$5.013 420 riverbank buffer and waterquality plantings SY \$1.50 450.00 sub - total: Clearing and thinning (no grubbing) LF \$5.00 750 geotextile sasume 5' wide sheet trimmed as needed LF \$6.00 20 geotextile sasume 2' wide sheet trimmed as needed LF \$6.00 20 geotextile sasume 2' wide sheet trimmed as needed LF \$6.00 20 trail and shoulder drainage: assume 2' length LF \$6.00 100 gravel fill for depressions CY \$25.00 25 gravel fill for depressions CY \$50.00 12 sub- total: CY \$50.00 12 bridge foundations CY \$50.00 12 sub- total: 120% of const cost 120% of const	\$6.50 475 \$3 \$5.63 250 \$1 \$0.13 420 \$1 \$0.13 420 \$1 \$1.50 450.00 \$1 \$6.50 750 \$44	
overall length path surface: 6' hardpack gravel LF \$6.50 475 geotextile; assume 6' wide sheet trimmed as needed LF \$5.63 250 trail and shoulder drainage LF \$5.00 200 seed disturbed areas LF \$6.13 420 riverbank buffer and waterquality plantings SY \$11.50 420 sub - total: LF \$6.50 20 clearing and thinnulg (no grubbing) LF \$6.50 20 overall length path surface: 6' hardpack gravel LF \$6.50 20 geotextile; assume 6' wide sheet trimmed as needed LF \$6.00 20 stone sidehill: assume 2' length @24' ave. height LF \$5.63 20 growerlie; assume 2' length @24' ave. height CF \$5.50 20 trail and shoulder daras to native ground: seeded SF \$0.12 250 bridge: 3+E19' wide, steel beam structure, wood deck/rails SF \$45.00 22 bridge: 5+E19' wide, steel beam structure, wood deck/rails CY \$30.10 230 bridge: 5+E19' wide, ste	\$6.50 475 \$36.50 \$1000 \$	
Second	\$5.63	The second secon
Secretaring sassume of wide street trimmed as needed LF S2.00 200 Seed disturbed areas LF S2.00 200 Seed disturbed areas LF S2.00 200 Sub - total: Sub -	\$5.63 2.00 \$1.00 \$	overall lengul paul surface o Harupack gravel
trial and shoulder drainage seed disturbed areas riverbank buffer and waterquality plantings sub - total: clearing and thinning (no grubbing) store sidehill: assume 6 wide sheet trimmed as needed store sidehill: assume 20 length @24* ave. height trail and shoulder drainage: assume 2 swathe gravef fill for depressions 6 wide sheet trimmed seeded bridge: 3+E19 wide, steel beam structure, wood deck/rails bridge: 5+E19 wide, steel beam structure, wood deck/rails Final design and engineering	\$2.00 200 \$1 \$6.13 1000 \$1 \$1.00 450.00 \$4 \$6.50 750 \$4 \$6.50 750 \$4	geotextile, assume 6 wide sheet trimmed as needed
Seed disturbed areas SF SO 3 420	\$0.13 420 \$1 \$1.50 1000 \$5 \$1.00 450.00 \$4 \$6.50 750 \$4	rail and shoulder drainage
sub- total: SY \$1.50 1000 sub- total: sub- total: 1000 450.00 clearing and thinning (no grubbing) LF \$6.50 750 geotextile; assume of wide sheet trimmed as needed LF \$6.50 20 geotextile; assume 20 length @24* ave. height LF \$6.00 20 stone sidehili assume 20 length @24* ave. height CY \$5.00 20 gravel fill for depressions CY \$5.00 25 return disturbed areas to native ground: seeded SF \$5.00 25 bridge: 5+E19 wide, steel beam structure, wood deck/rails SF \$45.00 330 bridge foundations SF \$45.00 330 sub- total: Final design and engineering Fee allowance at 20% Admin. 75% of const cost Admin. 75% of const cost	\$1.50 1000 \$ \$1.00 450.00 \$ \$6.50 750 \$	eed disturbed areas
Clearing and thinnuing (no grubbing)	\$1.00 450.00 \$6.50 750 \$6.50	iverbank buffer and waterquality plantings
clearing and thinning (no grubbing) LF \$1.00 450.00 geolextile assume of vaide sheet trimmed as needed stone sidehill: assume 20' length @24" ave. height trial and shoulder drainage: assume 2'swathe trail and shoulder drainage: assume 2'swathe trial and assume 2'swathe trial assume 2'swathe assume 2'swathe trial assume 2'swathe trial assume 2'swathe 2'swathe assume 2'swathe 2'swathe 2'swathe assume 2'swathe 2'swathe 2'swathe 2'swathe	\$1.00 450.00 \$6.50 750 \$5.63	iub - total:
Clearing and thinning (no grubbing) LF \$1.00	\$1.00 450.00 \$6.50 750 55.63 100	
overall length path surface: 6" hardpack gravel LF \$6.50 750 geotextile; assume 6" wide sheet trimmed as needed LF \$5.63 100 stone sidehili assume 20" length @24" ave. height LF \$60.00 20 gravel fall bit depressions CY \$25.00 25 return disturbed areas to native ground: seeded SF \$0.12 2250 bridge: 5-E19" wide, steel beam structure, wood deck/rails SF \$45.00 330 bridge foundations SF \$50.12 2250 gub - total: Final design and engineering Fee allowance at 20" Final design and engineering 10% of const cost Admin. 10% of const cost Admin. 10% of const cost Admin. 10% of const cost	\$6.50 750 \$-	learing and thinning (no grubbing)
geotextile; assume 6' wide sheet trimmed as needed LF \$5.63 100 stone sidehill: assume 20' length @24" ave. height LF \$60.00 20 trail and shoulder drainage assume 2'swathe LF \$5.00 100 grave fill for depressions CY \$25.00 25 grave fill for depressions CY \$50.12 2250 bridge: 5+E19' wide, steel beam structure, wood deck/rails SF \$45.00 330 bridge foundations SF \$300.00 12 sub- total: Final design and engineering Fee allowance at 20" Final design and engineering Fee allowance at 20" Admin. 75% of constrost Admin. 75% of constrost Admin. 75% of constrost	\$5.63 100	werall length bath surface: 6" hardback gravel
stone sidehili assume 20' length @24" ave. height LF \$60.00 20 trail and shoulder drainage: assume 2'swathe LF \$2.00 100 gavel fill for depression or return disturbed areas to native ground: seeded SF \$5.012 255 bridge: 5+E19 wide, steel beam structure, wood deck/rails SF \$45.00 330 bridge foundations CY \$300.00 12 sub - total: Final design and engineering fee allowance at 20% Admin. 10% of const cost Admin. 75% of const cost Admin. 75% of const cost Admin. 75% of const cost		reotextile: assume 6' wide sheet trimmed as needed
trail and shoulder drainage assume 2 swathe gravel fill for depressions return disturbed areas to native ground: seeded SF 52.00 25 are turn disturbed areas to native ground: seeded SF 50.12 2250 bridge 5-E19 wide, steel beam structure, wood deck/rails SF 545.00 330 bridge foundations CY 5300.00 12 sub - total: Final design and engineering	260 00	tone sidehill: assume 20' lenoth @24" ave height
Figure 100 and construct of the construction	0000	roll and choulder designed account of the contract of the
Save and or expression of the state of the	100	tan and shower trainings assume 2 sware
return ussurped areas to native ground: seeded bridge: 3-F \$40.12 2230 bridge: 3-E19' wide, steel beam structure, wood deck/rails SF \$45.00 330 bridge: 0-total: CY \$300.00 12 sub - total: Final design and engineering fee allowance at 20% Admin. 15% of const cost contineers 15% of cost cost cost contineers 15% of cost cost cost cost cost cost cost cost	\$25.00 23	gravel till for depressions
bridge foundations SF \$45.00 330 bridge foundations CY \$500.00 12 sub - total: Final design and engineering fee allowance at 20% Admin. 10% of const cost Admin. 75% of const cost	\$0.12	eturn disturbed areas to hanve ground; seeded
bridge foundations sub - total: Sub - total: Final design and engineering fee allowance at 20% Admin. Admin. Sub - total: Final design and engineering fee allowance at 20% formations.	\$45.00	oridge: 5+E19 wide, steel beam structure, wood deck/rails
Sub - total: Final design and engineering	\$300.00	ridge foundations
Final design and engineering fee allowance at 20% Final design and engineering fee allowance at 20% Final design and engineering fee allowance at 20% Figure of the fee all	\$26,636.38	ub - total:
Final design and engineering fee allowance at 20% Admin. 10% of const cost contineers of 55% of const cost.		
Final design and engineering fee allowance at 20%. Admin. 10% of const cost continuous continuous cost continuous cost continuous cost continuous cost continuous cost cost continuous cost cost cost cost cost cost cost cos	\$90,814.88	
Admin. 10% of const cost contineency	_	inal design and engineering
1500 January Cost		Admin.
		contingency
TOTAL	20 C 25 C V F C 3	POTAI
	01,407,0530	The state of the s

Old Railbed pathway Section from to length i 1 0+00 3+50 350 2 3+50 8+00 450 3 8+00 13+10 510 4 13+10 13+10 NA 4 13+10 13+60 650 6 13+60 35+0 70 6 13+60 35+0 850 6 76+60 35+10 850 7 76+60 35+10 850									
from to 0+00 3+50 0+00 3+50 8+00 13+10 13+			-	•					
3+50 3+50 3+50 8+00 8+00 13+10 13+10 13+10 13+10 19+60 19+60 26+60 26+60 35+10	length in ft. Work description					+			
3+50 8+00 8+00 13+10 13+10 13+10 13+10 19+60 13+60 26+60 26+60 35+10	0 trailhead behind Spooner Barn								
3+50 8+00 8+00 13+10 13+10 13+10 13+10 19+60 13+60 26+60 26+60 35+10									
8+00 13+10 13+10 13+10 13+10 13+10 13+60 13+60 26+60 35+10	0 junction with walking trail loop along Ottauchechee			9		+			
8+00 13+10 13+10 13+10 13+10 19+60 19+60 26+60 26+60 35+10	trail follows sewer plant service road		-			1	İ		
13+10 13+10 13+10 19+60 19+60 26+60 26+60 35+10			i		-	-	1	+	
13+10 13+10 13+10 19+60 19+60 26+60 26+60 35+10						+			
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19+60 26+60 26+60 35+10						-			
26+60 35+10								-	
01+07									-
07.07	to atomic case of the along old RR had		-				-		
32+10 42+60									
total 3510.0	0.0				1018010				
		Section I was the		THE RESERVE AND ADDRESS OF THE PARTY NAMED IN		in - kind do	donated	contracted	match "o
Rail trail					carbines!				
section #		development	7	quantity			ľ		ı
	s riverbank berm and service road	\$3,500.00 SF	\$1.00				-		l
350 LF	Junction with walking trail loop along Ottauchechee							0000	7000
	overall path surface: 8' wide. 6" hardpack	当	\$14.00	350	\$4,900.00			\$4,900.00	0.0%
The second secon	trail and shoulder drainage	7	\$2.00	150	\$300.00	-		\$300.00	0.0%
	graval fill for denrescions	رح ا	\$25.00	10	\$250.00		\$125.00	\$125.00	20.0%
	graves in tot expressions	5	\$15.00	100	\$1,500.00			\$1,500.00	0.0%
	State Stope	35	\$0.12	2600	\$680.40	\$680.40			100.0%
	areas to flauve ground, see	69	\$1,500.00	-	\$1,500.00			\$1,500.00	0.0%
	traintead signage	3 4	\$12.00	350	\$4 200 00			\$4,200.00	0.0%
	tencing along river	1 101	1	2000	\$2,000,00			\$2,000.00	0.0%
	signage and gate to walking trail	AIIOM		0007	615 330 40	07 0073	0136.00	514 525 00	2 30%
	sub - total:				Dr.DCCCCTC	20000	1	00.0000	
		\$4 500 00 CE		-					
2	trail follows seiver plant service road	00.000 or	614.00	027	00 002 73			66 300 00	%00
450 LF	overall path surface: 8' wide, 6" hardpack	3 :	\$14.00	420	\$6,000,00	+	+	\$00000	7600
	trail and shoulder drainage	100	\$2.00	450	\$25,000,00		1	212 500 00	50.0%
		25	\$25.00	1000	\$25,000.00	00 0000	\$14,300.00	\$12,200.00	100.00
	return disturbed areas to native ground: seeded	SF	\$0.12	6250	\$759.38	\$7.59.38		00 007	0.00.0
	fencing along service road/fields	3	\$12.00	450	\$5,400.00	-	-	\$5,400.00	0.0%
	sub - total:				\$38,359.38	\$759.38	\$12,500.00	\$25,100.00	34.6%
		1			-				
3	seperated from farm fields with fencing	\$5,100.00 SF	\$1.00		00000	0000			700 001
SIOLF	clearing and thirning	3	\$1.00	200.00	\$200.00	\$200.00			100.0%
	overall path surface: 8' wide, 6" hardpack	T)	\$14.00	510	\$7,140.00			\$7,140.00	0.0%
	trail and shoulder drainage	다	\$2.00	100	\$200.00			\$200.00	0.0%
	gravel fill for depressions	วี	\$25.00	25	\$625.00		\$312.50	\$312.50	20.0%
	return disturbed areas to native ground: seeded	SF	\$0.12	2000	\$850.50	\$850.50		-	100.0%
	fencing along fields	5	\$12.00	300	\$3,600.00			\$3,600.00	0.0%
	sub - total:				\$12,615.50	\$1,050.50	\$312.50	\$11,252.50	10.8%
T	Junction with walking trail loop along Ottauchechee								
Ϋ́Υ	overall path surface: 8' wide, 6" hardpack	H:	\$14.00	750	\$10,500.00		-	\$10,500.00	0.0%
	trail and shoulder drainage	5 6	25.00	100	\$200.00	-	¢125.00	\$200.00	50.097
	gravel till for depressions	5 8	\$425.00	0300	\$230.00	\$172.38	\$150.00	9177.00	700.00
	turbed areas to hative ground; seed	30	20.12	0077	611 222 20	6272 30	6135.00	00 300 013	2 50/
	sub - total:				\$11,423.30	37/3:30	1	910,043,00	0.0
	fell and of Marks in Mardon may allowed fields	35 00 00 05 35	\$1.00			-	-		
31.000	ige of Maximali Meadow foad afol	FI	\$0.10	00.059	\$65.00	\$65.00			100.0%
650 LF	mowill make custons 9' mide 6" hardwark	1 1 1	\$14.00	750	\$10,500.00			\$10.500.00	%00
	contextile assume 10 wide sheet	1 2	\$12.50	100	\$1,250.00	-	\$625.00	\$625.00	50.0%
	trail and choulder drainage	1	\$2.00	100	\$200.00			\$200.00	0.0%
	gravel fill for depressions	5	\$25.00	10	\$250.00	1 .	\$125.00	\$125.00	50.0%
	return disturbed areas to native ground; seeded	SF	\$0.12	2250	\$273.38	\$273.38			700.001
	sub - total:				\$12,538.38	\$338.38	\$750.00	\$11,450.00	8.7%
							L		l

10 1 1 1 1 1 1 1 1 1	Woodstock Riverwalk	valk	Estimate of Probable Project Cost	sts	y vary depend	ling on project pre	asing, interng regu	irements, eng	THE STREET	Salle Office re	ctors.
1 2 2 2 2 2 2 2 2	9		through wooded (scrub) section of old RR bed		-	1					
Cutile satural for finite for fi	700 LF		clearing and thinning and grubbing	ij	-	200.00	\$1,750.00	\$1,750.00		1	100.0%
In the depreciation of the state of the st			overall path surface: 8' wide, 6" hardpack	T	_	750	\$10,500.00			\$10,500.00	0.0%
State of the sta			geotextile: assume 10' wide sheet	L		100	\$1,250.00		\$625.00	\$625.00	20.0%
Section Sect			trail and shoulder drainage	17		100	\$200.00	235		\$200.00	0.0%
December Part Par			gravel fill for depressions	YO.		20	\$1,250.00		\$625.00	\$625.00	50.0%
1 2 2 2 2 2 2 2 2 2			return disturbed areas to native ground: seeded	SF	+-	2250	\$273.38	\$273.38			100.0%
Page of Rt 4 Journal Rt Red Septime Sept			sub - total:		-		\$15,223.38	\$2,023.38	\$1,250.00	\$11,950.00	21.5%
This part of the company of the co			had BB I specification of the body		+.	1	1				
In this status of winde of hardpack In this status of winde of hardpack In this status of winde of hardpack In this status of winde for hardpack In this status of winde of hardpack In this status of winde statu			along base of Mr along old MN Dea	1	1	00000	00000	00 904			100 007
This but	850 LF		mowing			750	\$10,500,00	JU.CO6	23	\$10,500.00	0.0%
State Stat			1	j .	į.	007	67 500 00	-	63 750 00	\$3.750.00	50.0%
The state of the presence of			geotextue; assume 10 wide sneet trimmed as needed	5 5	+	100	\$200.00	-	00.00 1.00	\$200.00	0.0%
In this of personner SE SE SE SE SE SE SE S			trail and shoulder grainage	+	+	10	\$250.00	-	\$125.00	\$125.00	50.0%
Page			gravel fill for depressions	S. S.	+	2250	\$273.38	\$273,38	2	>	100.0%
10 10 10 10 10 10 10 10			sub - total:		-	 	\$18,808.38	\$358.38	\$3,875.00	\$14,575.00	22.5%
Stock of the control of the contro					-		4.44				
LP \$10,000 105,000	S		across open fields along old RR bed		4	1					
Particle	1050 LF		mowing	LF	-	1050.00	\$105.00	\$105.00			100.0%
State Stat			overall path surface: 8' wide, 6" hardpack	Ħ	-	750	\$10,500.00			\$10,500.00	%0.0
and shoulder derinage			geotextile; assume 10' wide sheet	Ŧ	-	100	\$1,250.00		\$625.00	\$625.00	20.0%
Signature Sign			trail and shoulder drainage	i.		100	\$200.00			\$200.00	0.0%
SSE			gravel fill for depressions	<u>ک</u>		45	\$1,125.00		\$562.50	\$1,125.00	20.0%
State Stat			return disturbed areas to native ground: seeded	SF	-	16800	\$2,041.20	\$2,041.20			100.0%
Page			culverts	allov	, 1	1500	\$1,500.00			\$1,500.00	%0.0
Page			sub - total:				\$16,721.20	\$2,146.20	\$1,187.50	\$13,950.00	19.9%
Inc.	subtotal old railbed sections	: Construction	Costs	\$45,600.00			\$140,819.98				
Admin. Admin. 10% of const. Cost 514,082.00 100	other costs:		Final design and engineering	fee all	owance at 20"		\$28,164.00				
TOTAL TOTA			Admin.	10%0	f const cost		\$14,082.00				
TOTAL TOTAL S211,229.96 S211,239.40			contingency	20% o	f const. Cost		\$28,164.00	-			
TOTAL					-		and the second second				
Transition into woods section of old RR bed Example			TOTAL			1	\$211,229.96	+			
1752 Particular transition into woods section of old RR bed 250 transition into woods section of old RR bed 250 transition into woods section of old RR bed 250 transition into woods section of old RR bed 250	River Road Connection/Brid	dge			-						
43+60 49+1 350 transition into woods section of old RR bed 49+1 550 bridge crossing of Ottauquechee River 649+1 50+85 173 bridge crossing of Ottauquechee River 649+1 50+85 173 bridge crossing of Ottauquechee River 650-85 3300 trail terminus to River Road 60-85 173 825.00 83	Section from to	length in ft.	Work description								
49+1 50+65 175 bridge crossing of Ottauquechee River River Road Figure Figure <td>45+60</td> <td></td> <td>transition into woods section of old RR bed</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	45+60		transition into woods section of old RR bed								
50-85 3300 trail terminus to River Road month	49+1		bridge crossing of Ottauquechee River		-						
Page 25.0 Elearing and thinning Elearing and thinning Clearing	50+85		trail terminus to River Road								
Internsition into woods section of old RR bed Internsition internsition of old RR bed Internsition internsition of old RR bed Internsition of old RR bed Internsition of old RR bed Internsition old RR bed Internsition of old RR bed Internsity old RR b	total	825.0									
Itanisition into woods section of old RR bed Italiand					-	1					
Clear and thinking coverall path surface: 8' wide, 6" hardpack LF \$1.00 \$50.00 \$5350.00 \$	section #		transition into woods section of old RR bed	THE STATE OF THE S				Ď.		contracted m	match ""
overall parts united: Wide, 6" hardpack LF \$14.00 750 \$10.500.00 geotextile, assume 10" wide sheet LF \$12.50 100 \$1250.00 trail and shoulder drainage LF \$2.00 100 \$200.00 gravel fill for depressions CY \$50.00 \$1,250.00 return disturbed areas to native ground: seeded \$680.40 \$680.40 sub-total: \$1,030.40 \$1,030.40	3501F		Aleaning and thinning	4.1	ŀ	350.00		00.00			
LF \$12.50 100 \$1,250.00 LF \$2.00 100 \$200.00 CY \$50.00 25 \$1,250.00 \$50.00 25 \$1,250.00 \$680.40 \$680.40 \$1,230.40 \$1,030.40			overall path surface: 8' wide, 6" hardpack	5	-	750	\$10,500.00		-	\$10,500.00	
LF \$2.00 100 \$200.00 CY \$50.00 25 \$1,250.00 SF \$0.12 5600 \$680.40 \$1,230.40 \$1,230.40 \$1,030.40			geotextile; assume 10' wide sheet	H.	-	100	\$1,250.00		\$625.00	\$625.00	
CY \$50.00 25 \$1,250.00 SF \$0.12 \$60 \$680.40 \$680.40 \$61,230 \$60 \$60 \$60 \$60 \$60			trail and shoulder drainage	H	-	100	\$200.00			\$200.00	
SF \$0.12 5600 \$580.40 \$680.40 \$680.40 \$1,030.40			gravel fill for depressions	CY	-	. 25	\$1,250.00		\$625.00	\$625.00	
\$14,230,40 \$1,030,40			return disturbed areas to native ground: seeded	SF		2600	\$680.40	\$680.40			
			sub - total:				\$14,230.40	\$1,030.40	\$1,250.00	\$11,950.00	16.0%

Woodstock Riverwalk	Estimate of Probable Project Cost	Note: project costs may vary depending on project phasing, finding requirements, engineering costs and other factors.	ı project phasing, fi	nding requiren	nents, eng	ineering costs	and other fac	tors.
10 100	bridge crossing of Ottanauechee River							
		\$1.00	00:001	\$100.00	\$100.00	-		
175 LF	Clearing and trumming	\$12.50	75	\$937.50		\$468.75	\$468.75	
	geotextile; assume 10 wide sneer	00 093	009	\$36,000,00			\$36,000.00	
	stone retained bridge approach	\$50.00	350	\$17,500.00			\$17,500.00	
	structural gravel fill for abuttments	\$25.00	50	\$1,250.00	•	\$625.00	\$625.00	
	gravel full for depressions	\$0.12	200		\$182.25			
	return disturbed areas to native ground: seeded	00 06\$		\$175,000.00	-	\$87,500.00	\$87,500.00	
	bridge: assume pre engineerred steel structure	•		\$6,600.00	-	\$3,300.00	\$3,300.00	
	bridge foundations	\$16.00	175	\$2,800.00	-		\$2,800.00	
	approach raumgs and renemy	-		\$240,369.75	\$282.25	\$91,893.75	\$148,193.75	38.3%
	Sub - total:							
11	Irail ferminus to River Road							
	aleasing this single	LF \$1.00 15	20.00	\$150.00	\$150.00			
350	Creating and undumig	\$15.00	350	\$5,250.00			\$5,250.00	
	Overall paul surface, o wide, o fraingers		150	\$1,875.00		\$937.50	\$937.50	
	geotextue, assume 10 wine succe	\$4.00	300	\$1,200.00			\$1,200.00	
	trail and shoulder drainage	\$25.00	20	\$1,250.00		\$625.00	\$625.00	
	graver mit for depressions	\$0.12	4800	\$583.20	\$583.20			
	sub - total:			\$10,308.20	\$733.20	\$1,562.50	\$8,012.50	22.3%
				_ i	1			
project total for construction				\$264,908.35 \$	\$2,045.85	\$94,706.25	\$168,156.25	36.5%
		7000		12 470 47	1			
other costs:	Final design and engineering	ree allowance at 50.70		10.2/4/2/6	+			
	Admin.	10% of const cost		\$26,490.84	+	-	-	
	contingency	20% of const. Cost		\$66,227.09	1			T
	TOTAL			\$437,098.78	\$2,045.85	\$94,706.25 \$168,156.25	\$168,156.25	

Woodstock Riverwalk	Estimate of Probable Project Cost	Note: project costs may vary depending on project phasing, f	vary dependin	g on project p	hasing, finding re	quirements, e	ngineering co	ents, engineering costs and other factors.	rs.
River walk Side Trails		unit	unit cost	mit cost quantity	subtotal	in - kind	donated	in-kind donated contracted match %	ch %
section #						value	mats/labor value	value	
1	side trail along the banks of the Ottauchechee River								
6300 LF	trail establishment for 5' wide path	SE	\$5.00	6300	\$31,500.00		\$31,500.00		,
2	side trail loop to the wooded bank of the Ottauquechee River								
1100 LF	trail establishment for 5' wide path	\$	\$5.00	1100	\$5,500.00		\$5,500.00		

Woodstock Riverwalk		Estimate of Probable Project Cost	Note: project costs may vary depending on project phasing, finding requirements, engineering costs and other factors.	phasing, finding requirements, c	engineering costs and othe	er factors.
River walk Side Trails	Project cost summary sheet					
Section #	cost					
	\$45,610.00					
7	\$12,121.00					
3	\$6,447.50					
4	\$26,636.38		THE PARTY OF THE P			
subtotal construction cost	\$90,814.88					
Admin/A/E costs	\$27,244.46					
cont. cost	\$22,703.72		A CONTROL OF THE PARTY OF THE P			
total project cost	\$140,763.06					
KK bea	615 220 40					
	04.000,000					
2	\$38,339.38	THE RESIDENCE AND THE PARTY OF				
3	\$12,615.50	The second secon				
4	\$11,223.38					
2	\$12,538.38		THE RESIDENCE AND ADDRESS OF THE PARTY OF TH			
9	\$15,223.38					
7	\$18,808.38					0 0 0 0
8	\$16,721.20					
6	\$14,230.40					
10	\$240,369.75					100
11	\$10,308.20					
subtotal construction cost	\$264,908.35					
Admin/A/E costs	\$105,963.34					
cont. cost	\$66,227.09					
total project cost	\$437,098.78					
	1					
side trails						
1	\$31,500.00					
7	\$5,500.00					
subtotal construction cost						
Admin/A/E costs						
total project cost	\$37,000.00					

6. Implementation issues, permitting and other considerations

Project permitting:

The Ottauquechee River is under the jurisdiction of a number of state and federal agencies that will need to be included in future planning and permitting of the Riverwalk. Compliance with these respective agency policies is partly dependent upon the use of state and federal funds, which link agency permits to funding sources. Additional agency jurisdiction is also triggered by construction activities in areas of the trail corridor. It appears that the following permits or reviews are likely to be required for this project:

- 1. Stream Alteration Permit
- 2. Conditional Use Determination (Wetlands)
- 3. Water Quality Certification
- 4. Section 106 Review
- 5. 4(f) Review
- 6. Categorical Exclusion
- 7. Act 250 Land Use Permit

It is not likely that the following permits or reviews will be required:

- 1. Stormwater Discharge Permit
- 2. 6(f) Review

Additional permits from the Town of Woodstock may also be required.

Permitting and resources:

The following resources typically must be addressed either in the Categorical Exclusion process or in Project scoping, depending on funding sources received for project implementation.

ARCHEOLOGICAL RESOURCES:

The VT Division of Historic Preservation has jurisdiction over below ground historic resources, and compliance with federal regulations will need to be satisfied either through the Categorical Exclusion process, a finding of no significant impact by the State Archaeologist, or some other form of agreement between the town and the VT Division of Historic Preservation.

It is generally expected that construction of the path will result in some subsurface impacts to areas where the path will be located. If there are areas of the route that have not been disturbed by past development or farming, then there may be Archaeological remains that might be disturbed. These conditions may be present both along the RR line as well as some areas adjacent to housing, industrial sites, and the riverbanks. Future development of these plans should include appropriate archaeological assessments for the land in question so that compliance with Section 106 of the National Historic Preservation Act can be assured. Use of any federal funds will trigger this permit requirement. Additionally, use of state funds will require the same sign – off process.

The scope of this study does not allow the research of potential arch sites in the corridor at this time. However, it is not uncommon that the physiographic characteristics of portions of the area, specifically those areas in the vicinity of Ottauquechee River, suggest a high sensitivity for archeological deposits associated with Native American occupation or use. There may also be 19th century farming era remains and RR activity. Due to the urbanized nature of the village section and the construction of the sewer line along the river that the path follows, it is likely in most areas that archeological remains are either destroyed or are well below existing grade.

Archeological testing is often recommended wherever grading, cutting or excavation is necessary for construction of a path, especially where new bridges will be constructed. Depending on the nature of proposed alterations for this project, protective and/or documentation measures may be required as a

part of the implementation of this plan. In cases where sensitive resources may be present the town may also have the option of building the trail over the top of undisturbed ground, separated by geotextiles.

HISTORIC RESOURCES:

Review of Historic Resources data from the VTDHP indicate a number of structures which appear eligible for listing, or are already listed on the National Register are in the project vicinity. However, the construction of the project will not have an adverse impact upon them. Therefore, compliance with state and federal regulations for the Section 106 Review process should not be a difficult task.

Natural Resources

FLOODPLAINS:

Much of downtown Woodstock and the surrounding agricultural lands along the bottom of the valley are in the 100-year flood plain. The town of Woodstock allows filling in the 100-year floodplain, so that first flood elevations can be elevated above that height for flood insurance purposes. The town does not allow construction within the floodway as delineated by FEMA.

The report appendix includes relevant sections of the FEMA and FIRM mapping for the project area. Much of the project lies within the 100-yr. flood hazard areas as identified on the Flood Insurance Rate Maps.

While the proposed alignment passes through flood hazard areas, this is not anticipated as a problem. It appears possible to design and construct these sections in a manner that should not result in any increase to the base flood elevation.

Copies of the Flood Insurance Rate Map panels are attached in the Appendix.

WETLANDS:

Based on a review of National Wetlands Inventory (NWI) mapping, there are no jurisdictional (Class II) wetlands within the project area. It is also highly likely that additional wetlands exist beyond those mapped by NWI. For sections of the path along the old railbed, construction will not result in any excavation or placement of fill within any wetland areas. Based upon these conditions, it is concluded that U.S. Army Corps of Engineers jurisdiction in this area can likely be avoided. However, construction may possibly occur within some state-mandated 50-foot buffers of Class III jurisdictional wetlands that may be present along riverbank areas. This may trigger the need for a Conditional Use Determination Permit from the Water Quality Division of the Agency of Natural Resources. Based upon review of the project area, the locations of those concerns will included bridge sites on the Kedron and Hartland Hill brooks, and the bridge over the Ottauquechee River across the north branch for a future bikepath and street connection to Main/Barre Street.

It is recommended that wetlands delineation be completed in these areas to complete the Conditional Use determination (if required). Additionally, treatment of these areas should be coordinated with other areas of the project where riverbank vegetation buffers have been recommended. This coordination should include the state wetlands office, Vermont Rivers Program and Stream Alteration Engineer. Further design will be necessary to determine the extent of possible impacts in those areas.

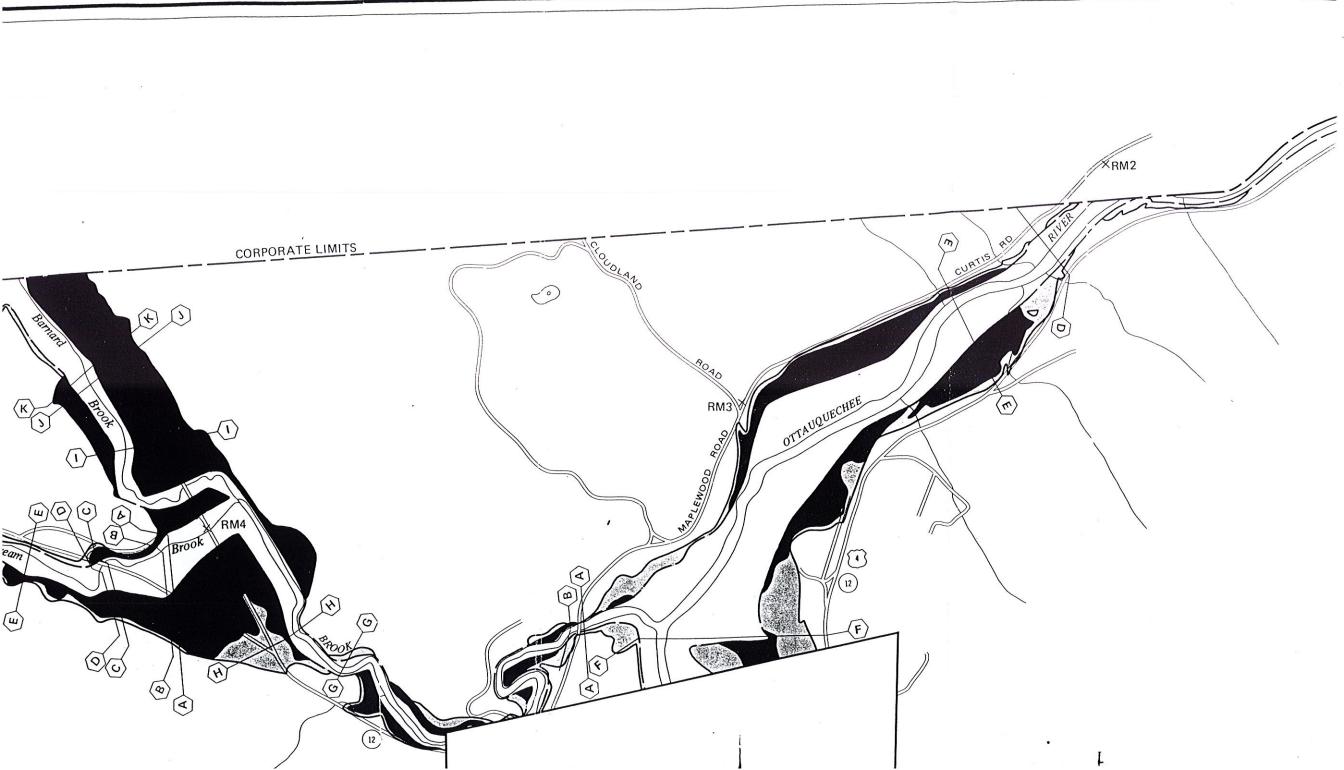
A copy of the NWI mapping is also attached in the Appendix.

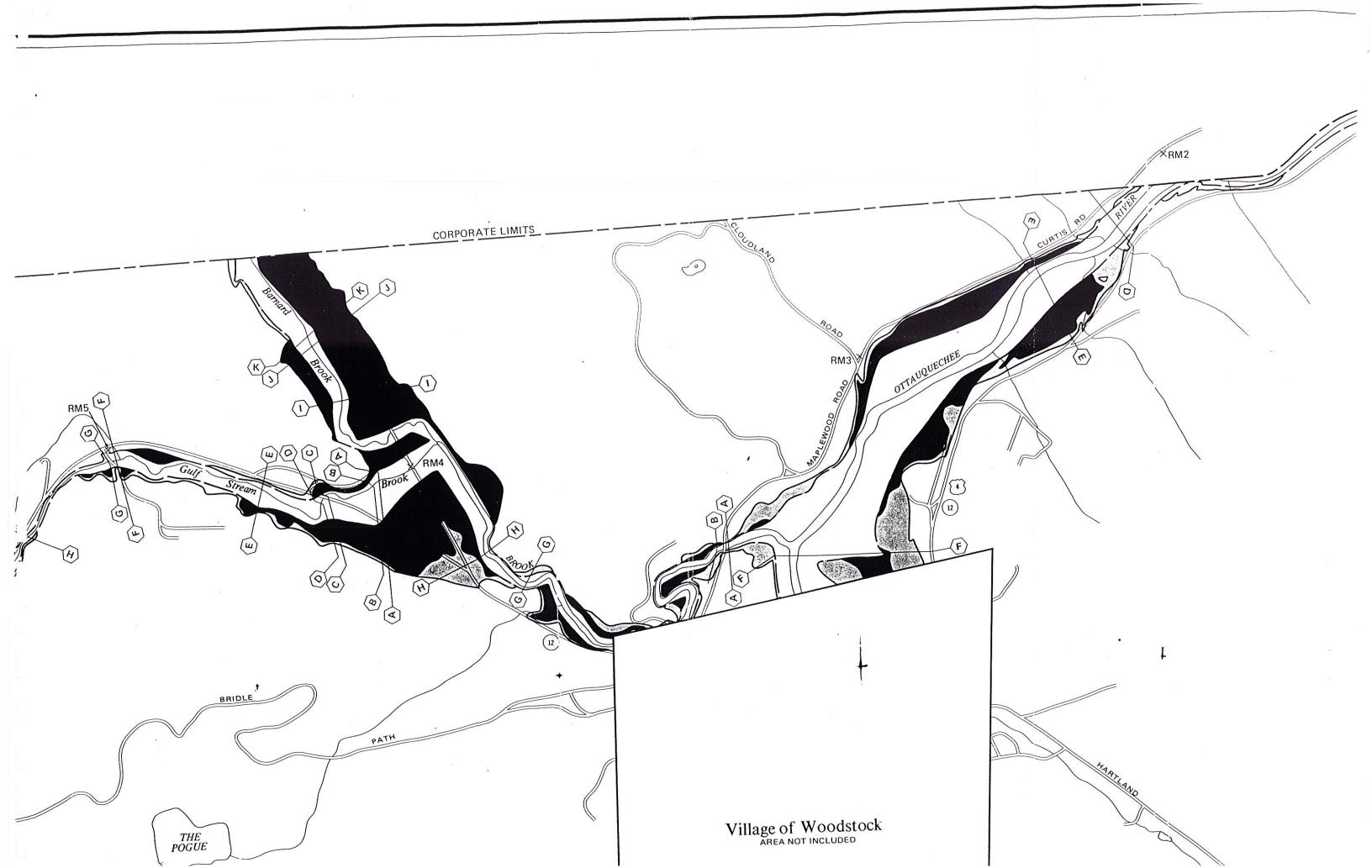
STREAM ALTERATION:

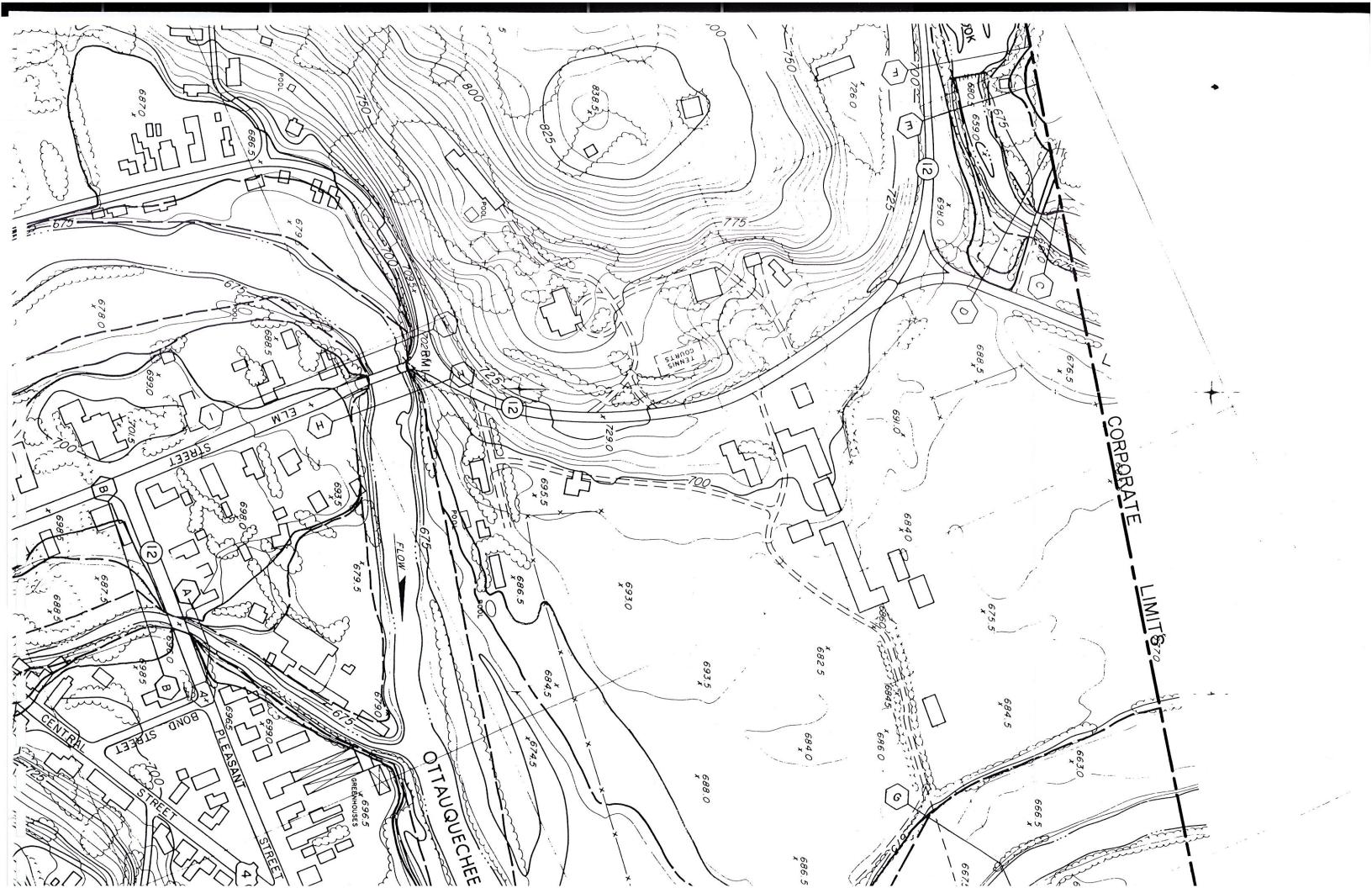
The project will involve the construction of new bridges. Although these locations have not been reviewed by the Vermont Rivers Program and VTANR Stream Alteration Engineer, typical protocol is the work adjacent to a stream requires a state review and permit process. The primary issues for this bridge location will be bank stability, depth of flood levels, stabilizing vegetation, and resultant impacts that might threaten river water quality and public safety. In all bridge locations, adjacent riverbanks will need to be stabilized during and after construction. This may be in the form of rip rap stone or vegetated plantings to retain slopes and soils.

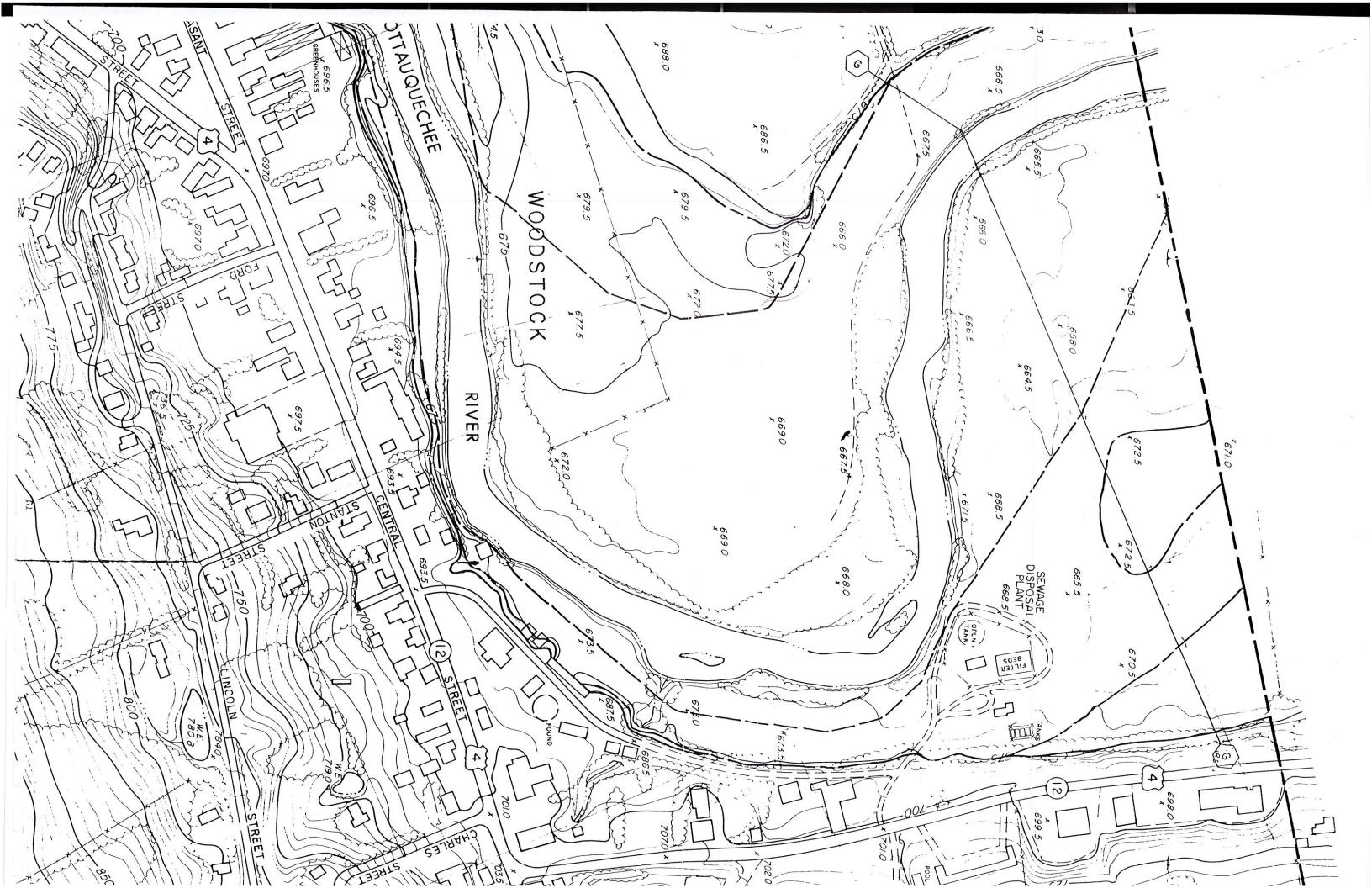
The Office of Robert A. White, ASLA OpenSpace Management 4/14/2000

B. Flood Insurance Rate Maps

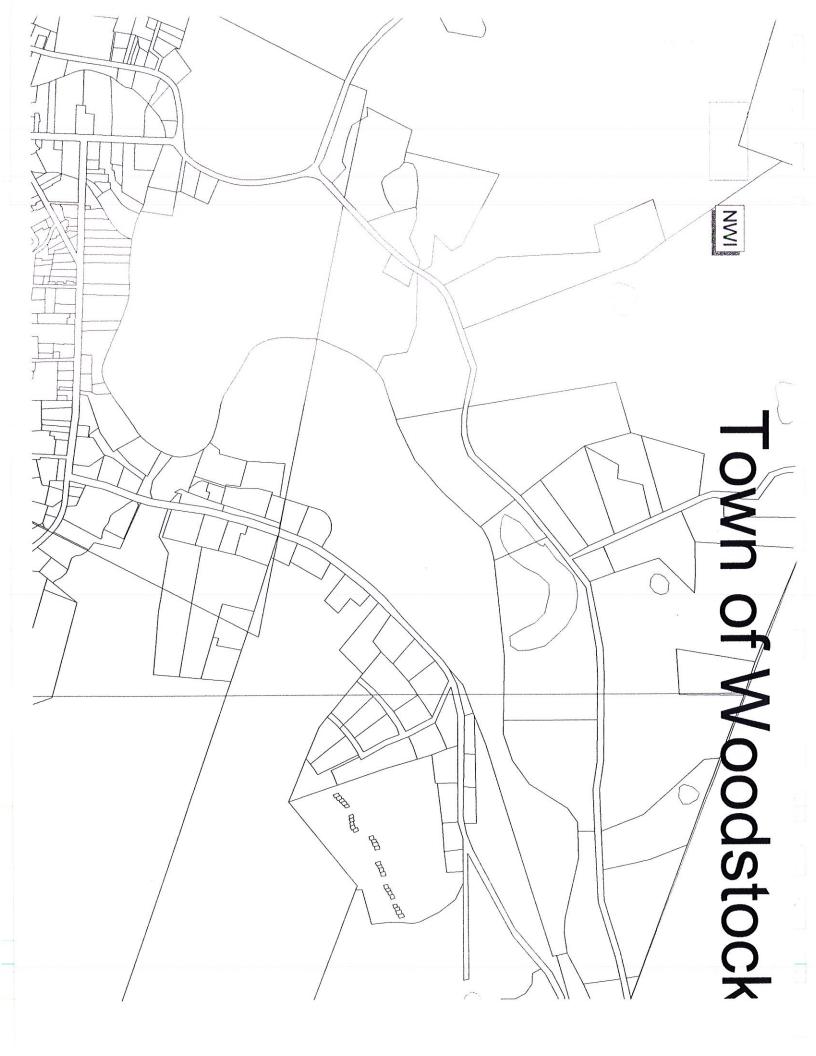








C. National Wetlands Inventory Map



D. Property Tax Maps

List of Affected Property Owners from West to East

Eagle Property
Dunleavy
Eagle Property
Lees
Peech
Ottauquechee Health Center
Masonic Temple
Nichols
Dicarlo

Sutherland Village of Woodstock Eagle Property Jaynes Berge Wright Spooner Barn Condos Town of Woodstock

Eagle Property

