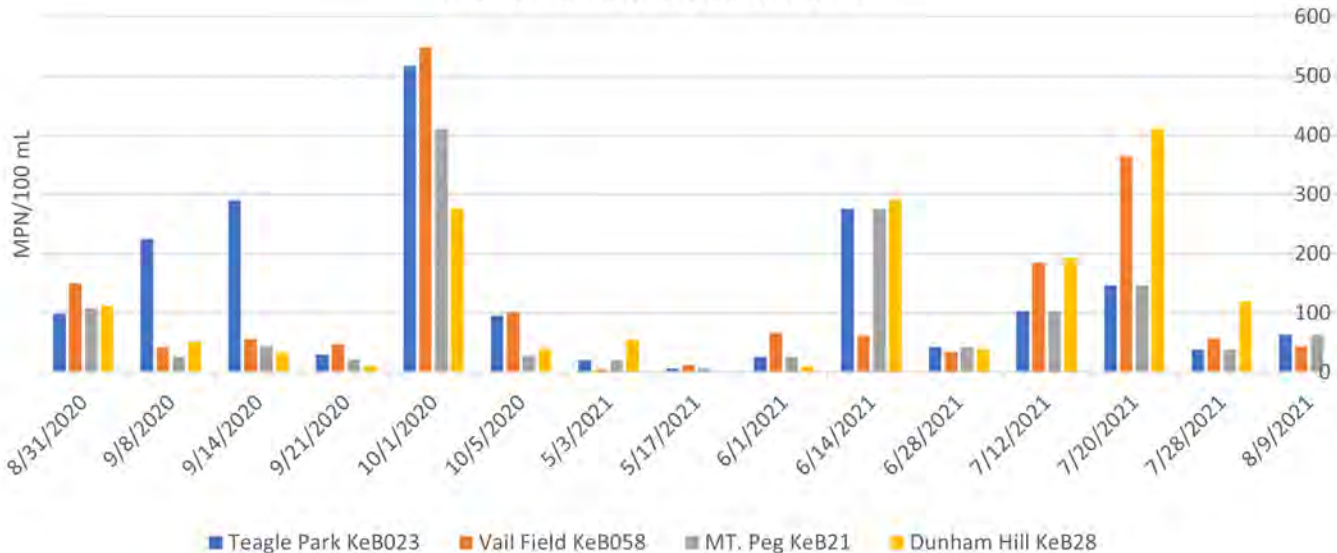


# Kedron Brook, Woodstock, Vermont

Kedron Brook in Woodstock, Vermont has been found to be stressed by stormwater runoff as measured by the chemistry of the stream. There are at least 37 significant discharges to the stream from the developed lands of Woodstock. The largest urbanized discharge to the stream is drainage area #84 which drains about 10 acres of the Green Mountain Horse Association property in S Woodstock. The recommended course of action for stormwater impacted streams is to install a treatment structure that controls both the water quality volume and the channel protection volume from these discharges near the outfall. A map showing the location of the discharges and a possible retrofit location is provided. A cost estimate (excluding land costs) is provided for structural stormwater practices.

Addressing the large discharges of stormwater to the brook will reduce contamination and stream channel erosion and will help prevent the stream from becoming declared impaired on the state of Vermont's 303d list of impaired waters. It will also reduce nitrogen currently being discharged to the Ottaquechee River which is also stressed, the Connecticut River and Long Island Sound.

# Kedron Brook E. Coli Results





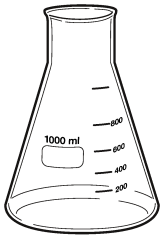
## Monitoring Site Summary - River/Stream

# Kedron Brook

Immediately above WWTF (behind FD up stream of septic tank)  
Woodstock, VT (43.55850, -72.53180)

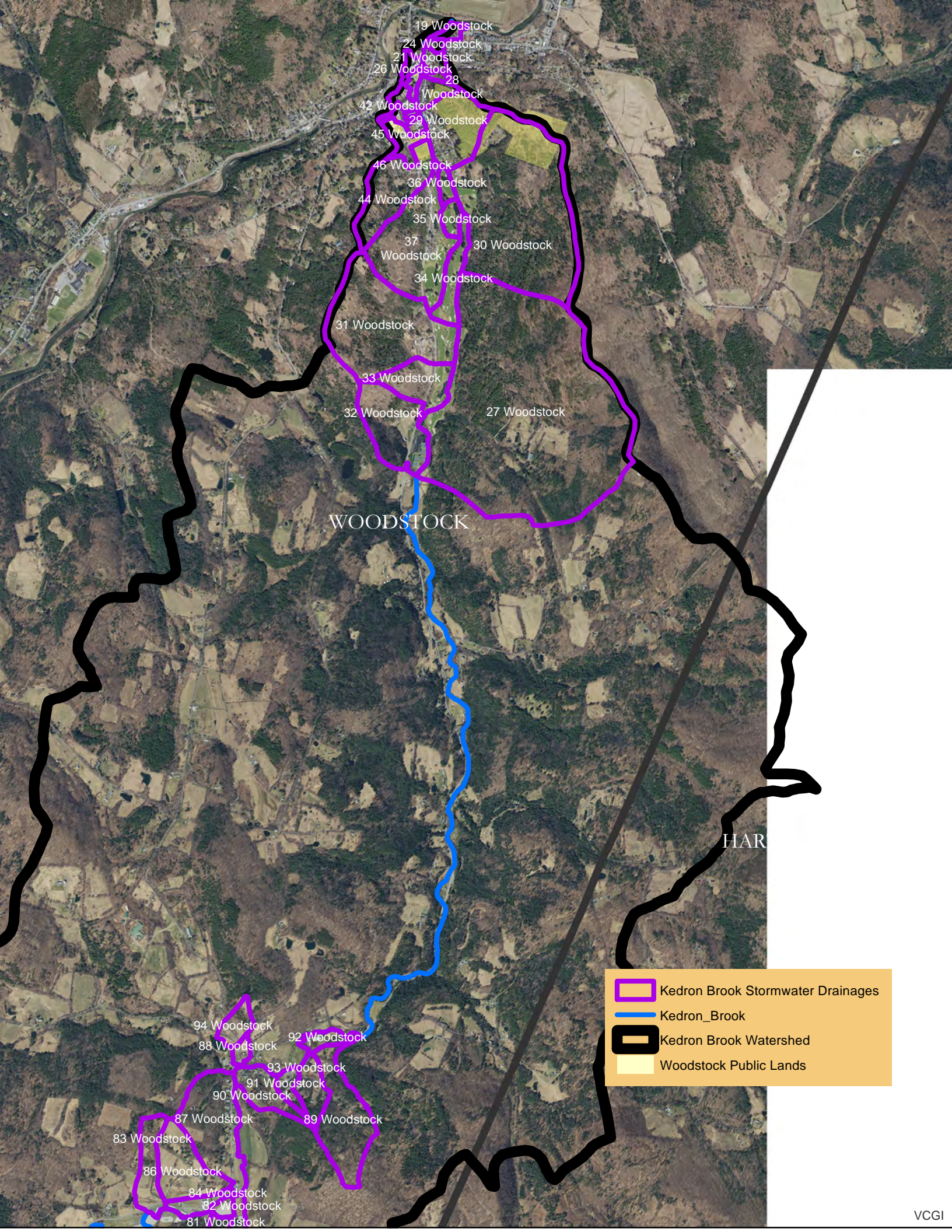
## Water Quality Measurements

Chemical and physical parameters provide a “snapshot” of current conditions and are used to detect changes in water quality and to make determinations about a waterbody and its watershed. (For More Details)






Characteristic	Description	Trend	Max	Mean	Min
<b>Chloride (mg/L)</b>	At elevated values mostly from deicing		76.0	20.7	10.0
<b>E. Coli Bacteria (#/100ml)</b>	Indicator of pathogens		866.4	304.3	19.9
<b>Nitrogen (mg/L)</b>	Nutrient that may fuel algae blooms		0.4	0.3	0.2
<b>Phosphorus (ug/L)</b>	Nutrient that may fuel algae blooms		19.6	9.6	7.0
<b>Turbidity (NTU)</b>	Measure of suspended sediment		1.4	0.7	0.3





WOODSTOCK

HAR

-  Kedron Brook Stormwater Drainages
-  Kedron\_Brook
-  Kedron Brook Watershed
-  Woodstock Public Lands

94 Woodstock  
88 Woodstock  
92 Woodstock  
93 Woodstock  
91 Woodstock  
90 Woodstock  
87 Woodstock  
89 Woodstock  
83 Woodstock  
86 Woodstock  
84 Woodstock  
82 Woodstock  
81 Woodstock

19 Woodstock  
24 Woodstock  
21 Woodstock  
26 Woodstock  
28  
Woodstock  
42 Woodstock  
29 Woodstock  
45 Woodstock  
46 Woodstock  
36 Woodstock  
44 Woodstock  
35 Woodstock  
37 Woodstock  
30 Woodstock  
34 Woodstock  
31 Woodstock  
33 Woodstock  
32 Woodstock  
27 Woodstock



Watershed Number	Action List #	Proposed Action	Proposed or Existing Stormwater Treatment Practice	Permit Number	Watershed Area (Acres)	Percent Mapped Impervious Area (MIA)	Sediment Load with Current Reductions (lbs.)	Priority Action Sediment Reduction Credit	Sediment Load with Priority Action (lbs.)	Projected Nitrogen Load (lbs.)	Current BMP Nitrogen Reduction Credit	Nitrogen Load with Current Reductions (lbs.)	Priority Action Nitrogen Reduction Credit	Nitrogen Load with Priority Action (lbs.)	Estimated Basin Construction Cost	Estimated Other BMP Construction Cost	Cost of Sediment Removal Per Pound (based on annual sediment load)	Cost of Nitrogen Removal Per Pound (based on annual nitrogen load)	Assistance Program	# LID-Roof Raingardens to Treat Water Quality Volume
19 Woodstock			OF		3.79	23.31	760	0%	760	6.34	0%	6.34	0%	6.34					CWIP,SRF,LISF	22
21 Woodstock			CB		5.32	39.18	2424	0%	2424	20.20	0%	20.20	0%	20.20					CWIP,SRF,LISF	69
22 Woodstock			CB/OF		2.24	24.93	656	0%	656	5.47	0%	5.47	0%	5.47					CWIP,SRF,LISF	19
23 Woodstock			CB		0.46	72.11	405	0%	405	3.38	0%	3.38	0%	3.38					CWIP,SRF,LISF	11
24 Woodstock			CB/DW		2.35	46.55	1045	0%	1045	8.71	0%	8.71	0%	8.71					CWIP,SRF,LISF	30
26 Woodstock			CB		4.00	78.57	4013	0%	4013	33.44	0%	33.44	0%	33.44					CWIP,SRF,LISF	114
27 Woodstock			GS/OF/CB		401.07	0.60	26807	0%	26807	223.39	0%	223.39	0%	223.39					CWIP,SRF,LISF	758
28 Woodstock			CB		8.76	15.88	1242	0%	1242	10.35	0%	10.35	0%	10.35					CWIP,SRF,LISF	35
29 Woodstock			CB/GS/WP		39.82	10.86	4339	0%	4339	36.16	0%	36.16	0%	36.16					CWIP,SRF,LISF	123
30 Woodstock			CB/GS/WP		189.71	0.60	12678	0%	12678	105.65	0%	105.65	0%	105.65					CWIP,SRF,LISF	359
31 Woodstock			CB/GS/OF		107.48	2.69	7691	0%	7691	64.09	0%	64.09	0%	64.09					CWIP,SRF,LISF	218
32 Woodstock			CB/GS/OF	3045-9010	48.00	11.19	4571	0%	4571	38.09	0%	38.09	0%	38.09					CWIP,SRF,LISF	129
33 Woodstock			CB/GS/WP		28.03	2.69	1737	0%	1737	16.08	5%	15.28	0%	15.28					CWIP,SRF,LISF	55
34 Woodstock			OF/CB		18.10	0.06	1200	0%	1200	10.00	0%	10.00	0%	10.00					CWIP,SRF,LISF	34
35 Woodstock			CB/WP		6.75	0.02	268	0%	268	3.73	20%	2.98	0%	2.98					CWIP,SRF,LISF	13
36 Woodstock			CB/WP		5.06	0.02	201	0%	201	2.79	20%	2.24	0%	2.24					CWIP,SRF,LISF	9
37 Woodstock	2	Add Wet Pond in Golf Course fairway near outfall	WP/CB/GS/WP		75.03	6.99	6625	80%	1325	55.21	0%	55.21	0%	33.13	\$114,300		\$22	\$5,176	CWIP,SRF,LISF	187
40 Woodstock			CB		3.27	65.55	2578	0%	2578	21.49	0%	21.49	0%	21.49					CWIP,SRF,LISF	73
41 Woodstock			CB	3448-9010	4.96	66.60	3545	0%	3545	29.54	0%	29.54	0%	29.54					CWIP,SRF,LISF	100
42 Woodstock			CB		3.49	65.42	2953	0%	2953	24.61	0%	24.61	0%	24.61					CWIP,SRF,LISF	84
43 Woodstock			CB	3448-9010	1.02	53.46	642	0%	642	5.35	0%	5.35	0%	5.35					CWIP,SRF,LISF	18
44 Woodstock	1	Gravel Wetland or wetland swale on south side of Vail Field	GW/CB/GS	3565-9010	42.42	9.68	4334	80%	867	36.12	60%	36.12	60%	7.22	\$161,299		\$47	\$5,582	CWIP,SRF,LISF	123
45 Woodstock			CB/VS	3448-9010	2.73	41.45	366	0%	366	7.62	30%	5.34	0%	5.34					CWIP,SRF,LISF	26
46 Woodstock	1	Gravel Wetland in Park near Tennis Courts	GW/CB		10.78	40.98	5143	80%	5143	42.86	0%	42.86	60%	42.86	\$95,951		\$65	\$7,763	CWIP,SRF,LISF	145
81 Woodstock			DW/CB/OF		6.49	5.19	481	0%	481	4.01	0%	4.01	0%	4.01					CWIP,SRF,LISF	14
82 Woodstock			GS		18.58	11.74	2123	0%	2123	17.69	0%	17.69	0%	17.69					CWIP,SRF,LISF	60
83 Woodstock	1	Improve manure management with composting offsite	OF		22.48	4.39	1737	0%	1737	14.47	0%	14.47	50%	7.24					CWIP,SRF,LISF	49
84 Woodstock	1	Improve manure management with composting offsite	CB/GS		9.47	68.23	6999	0%	6999	58.33	0%	58.33	50%	29.16					CWIP,SRF,LISF	198
85 Woodstock			GS		3.92	55.77	2210	0%	2210	18.41	0%	18.41	0%	18.41					CWIP,SRF,LISF	63
86 Woodstock			GS/OF		37.69	6.22	3195	0%	3195	26.62	0%	26.62	0%	26.62					CWIP,SRF,LISF	90
87 Woodstock			CB/GS		56.78	11.48	6398	0%	6398	53.32	0%	53.32	0%	53.32					CWIP,SRF,LISF	181
88 Woodstock			CB/GS		4.24	19.18	982	0%	982	8.19	0%	8.19	0%	8.19					CWIP,SRF,LISF	28
89 Woodstock			OF		52.13	3.95	3944	0%	3944	32.67	0%	32.67	0%	32.67					CWIP,SRF,LISF	112
90 Woodstock			GS/OF		19.94	15.93	2834	0%	2834	23.62	0%	23.62	0%	23.62					CWIP,SRF,LISF	80
91 Woodstock			CB/GS/WP		7.66	35.79	1677	0%	1677	13.98	0%	13.98	0%	13.98					CWIP,SRF,LISF	47
92 Woodstock			OF		7.79	16.96	1165	0%	1165	9.71	0%	9.71	0%	9.71					CWIP,SRF,LISF	33
93 Woodstock			GS		16.38	24.60	3470	0%	3470	28.92	0%	28.92	0%	28.92					CWIP,SRF,LISF	98
94 Woodstock			GS/WP		10.85	6.31	154	0%	154	6.42	40%	3.85	0%	3.85					CWIP,SRF,LISF	22

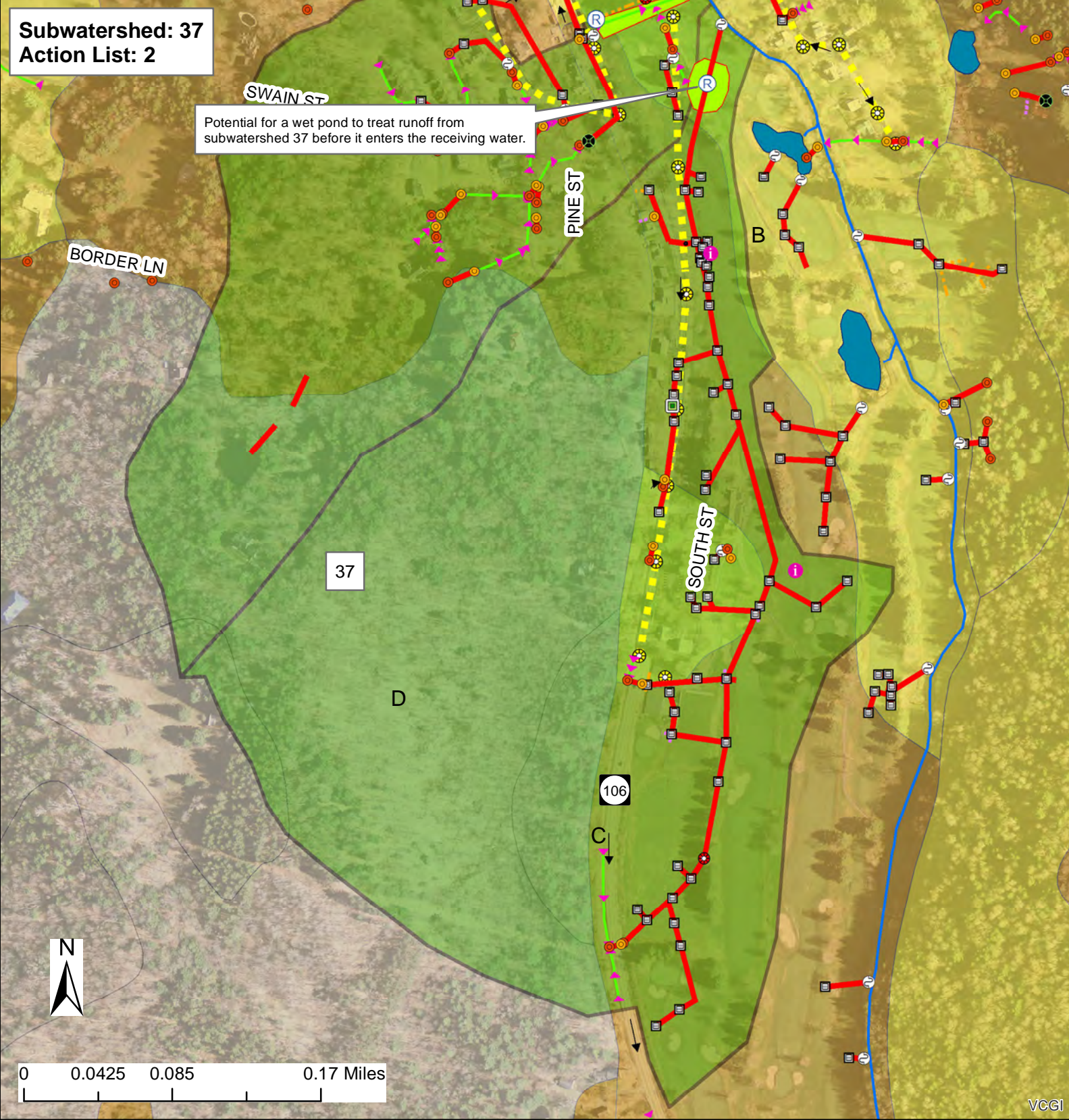
# *Target Maps*

*Showing Priority Action List  
Drainage Areas*

*And Potential Retrofit Locations*

**Subwatershed: 37**  
**Action List: 2**

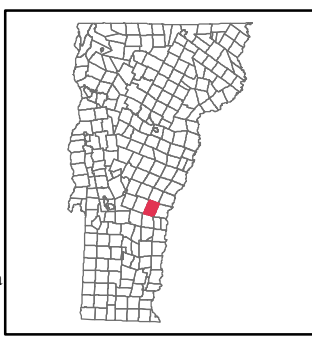
Potential for a wet pond to treat runoff from subwatershed 37 before it enters the receiving water.



0 0.0425 0.085 0.17 Miles

**Woodstock, VT**

DEC Stormwater Infrastructure Mapping Project



This map shows high priority subwatersheds which are ranked by connectedness, percent of impervious cover, field observations, and potential retrofit measures and locations.

The data shown on this map is only as accurate as the available sources and field observations allowed and should be used as a basic planning level tool only.

**Stormwater points**

- Pipe Cross (not connected)
- Catchbasin
- Dry Well
- Drop Inlet
- Grate/Curb Inlet
- Yard drain
- CB tied to sanitary sewer
- Junction Box
- Stormwater Manhole
- Outfall
- Culvert inlet
- Culvert outlet
- Pond outlet structure
- Treatment feature (see notes)
- Retrofit
- Unknown Point
- Information Point

**Stormwater line**

- Storm line
- Storm line (old Sanitary line)
- Tunnel (storm)
- Combined sewer
- Sanitary line
- Swale
- Footing drain
- Under drain
- Roof drain
- Infiltration pipe
- French drain
- Trench drain
- Emergency spillway
- Stream
- Overland flow

**NRCS - Soils**

- A
- B
- C
- D

**SubwatershedID**

- Priority Subwatershed
- Stormwater Treatment Area
- Potential Stormwater Treatment Area

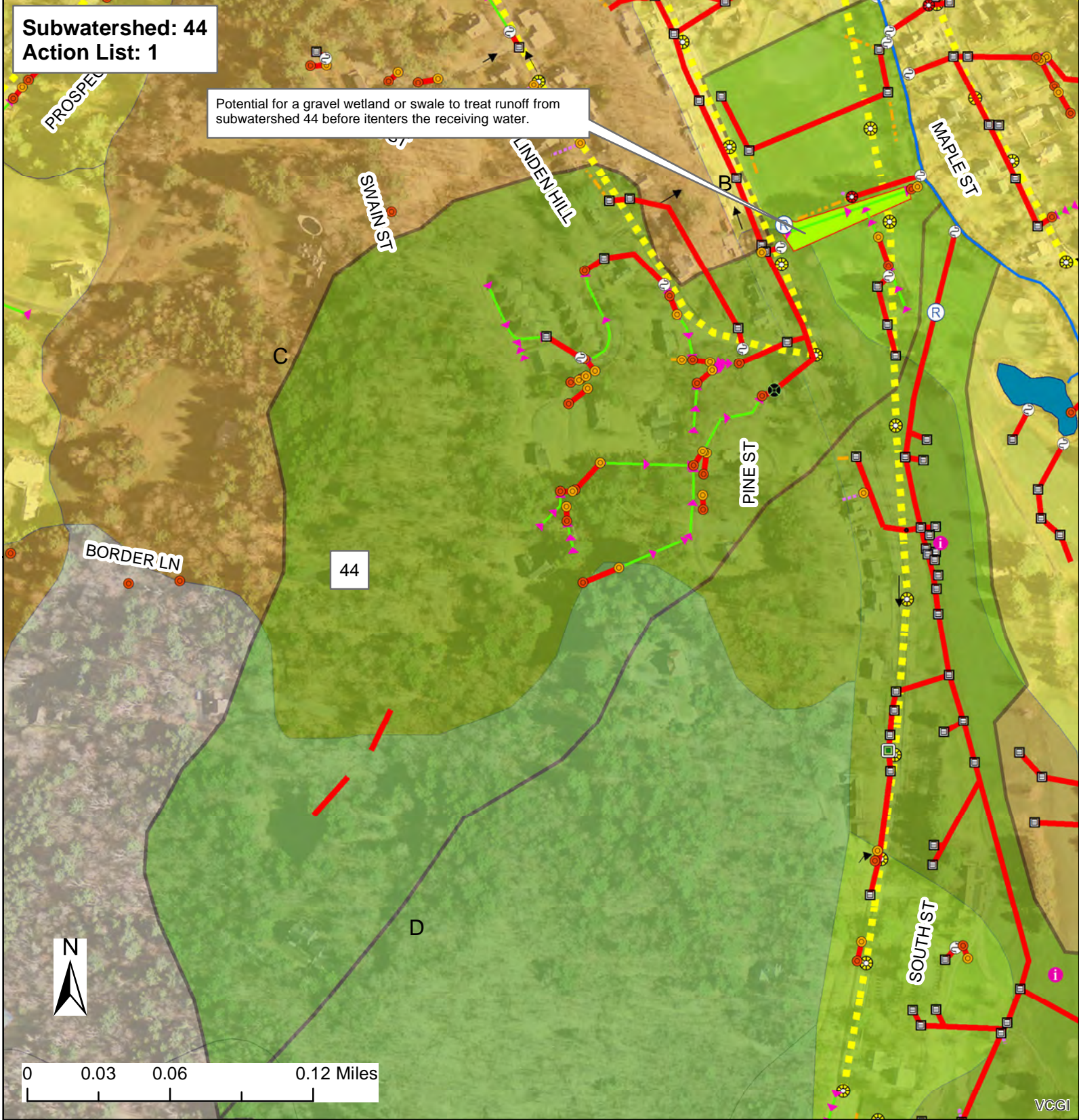
Creator: Jim Pease, David Ainley  
DEC - WSMD - Ecosystem Restoration Program  
Plotted Date: 3/9/2016  
Data Sources: VTRANS Roads data, VT Hydrography data set, DEC Stormwater database, NRCS soils survey  
Imagery Source: VCGI 2012, .5m





**Subwatershed: 44**  
**Action List: 1**

Potential for a gravel wetland or swale to treat runoff from subwatershed 44 before it enters the receiving water.

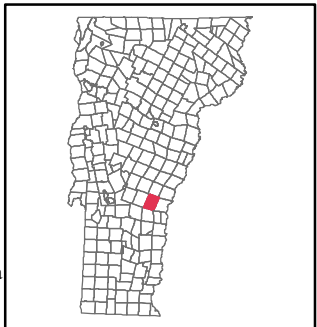


### Woodstock, VT

DEC Stormwater Infrastructure Mapping Project

This map shows high priority subwatersheds which are ranked by connectedness, percent of impervious cover, field observations, and potential retrofit measures and locations.

The data shown on this map is only as accurate as the available sources and field observations allowed and should be used as a basic planning level tool only.



#### Stormwater points

- Pipe Cross (not connected)
- Catchbasin
- Dry Well
- Drop Inlet
- Grate/Curb Inlet
- Yard drain
- CB tied to sanitary sewer
- Junction Box
- Stormwater Manhole
- Outfall
- Culvert inlet
- Culvert outlet
- Pond outlet structure
- Treatment feature (see notes)
- Retrofit
- Unknown Point
- Information Point

#### Stormwater line

- Storm line
- Storm line (old Sanitary line)
- Tunnel (storm)
- Combined sewer
- Sanitary line
- Swale
- Footing drain
- Under drain
- Roof drain
- Infiltration pipe
- French drain
- Trench drain
- Emergency spillway
- Stream
- Overland flow

#### NRCS - Soils

- A
- B
- C
- D

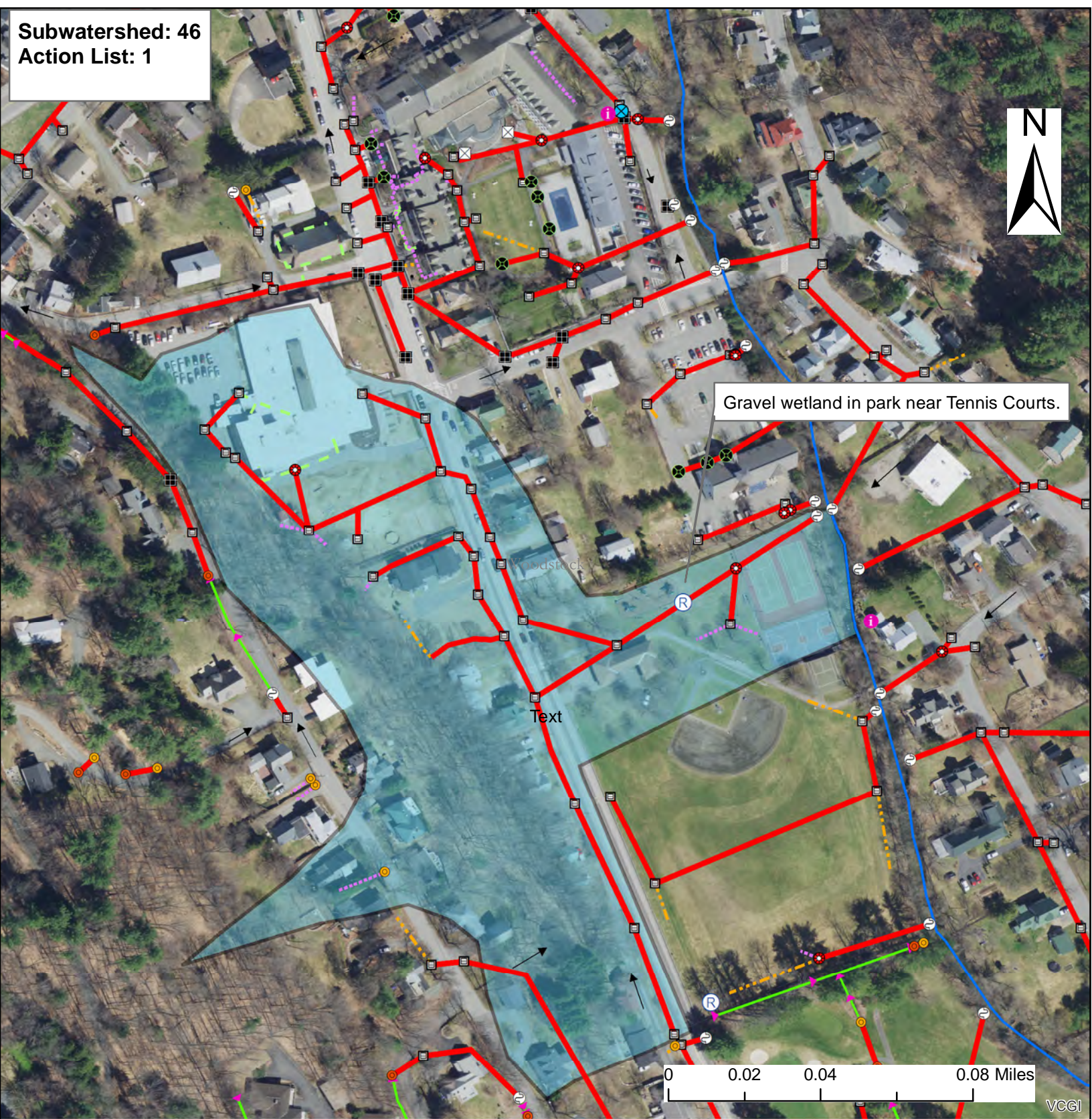
#### SubwatershedID

- Priority Subwatershed
- Stormwater Treatment Area
- Potential Stormwater Treatment Area

Creator: Jim Pease, David Ainley  
DEC - WSMD - Ecosystem Restoration Program  
Plotted Date: 3/9/2016  
Data Sources: VTRANS Roads data, VT Hydrography data set, DEC Stormwater database, NRCS soils survey  
Imagery Source: VCGI 2012, .5m



Subwatershed: 46  
Action List: 1



## Kedron Brook Woodstock, VT

DEC Stormwater Infrastructure Mapping Project  
This map shows high priority subwatersheds which are ranked by connectedness, percent of impervious cover, field observations, and potential retrofit measures and locations.

The data shown on this map is only as accurate as the available sources and field observations allowed and should be used as a basic planning level tool only.

<p><b>Stormwater points</b></p> <ul style="list-style-type: none"> <li> Pipe Cross (not connected)</li> <li> Catchbasin</li> <li> Dry Well</li> <li> Drop Inlet</li> <li> Grate/Curb Inlet</li> <li> Yard drain</li> <li> CB tied to sanitary sewer</li> <li> Junction Box</li> <li> Stormwater Manhole</li> <li> Outfall</li> <li> Culvert inlet</li> <li> Culvert outlet</li> <li> Control Structure</li> <li> Treatment feature (see notes)</li> <li> Retrofit</li> <li> Unknown Point</li> <li> Information Point</li> </ul>	<p><b>Stormwater line</b></p> <ul style="list-style-type: none"> <li> Storm line</li> <li> Storm line (old Sanitary line)</li> <li> Tunnel (storm)</li> <li> Combined sewer</li> <li> Sanitary line</li> <li> Swale</li> <li> Footing drain</li> <li> Under drain</li> <li> Roof drain</li> <li> Infiltration pipe</li> <li> French drain</li> <li> Trench drain</li> <li> Emergency spillway</li> <li> Stream</li> <li> Overland flow</li> </ul>	<p><b>SubwatershedID</b></p> <ul style="list-style-type: none"> <li> Priority Subwatershed</li> <li> Stormwater Treatment Area</li> <li> Potential Stormwater Treatment Area</li> </ul> <p><b>NRCS Soils</b></p>
--	---	--

Creator: Jim Pease, David Ainley  
DEC - WID - Clean Water Initiative Program  
Plotted Date: 10/15/2021  
Data Sources: VTRANS Roads data, VT Hydrography data set, DEC Stormwater database, NRCS soils survey  
Imagery Source: VCGI Best Available Imagery

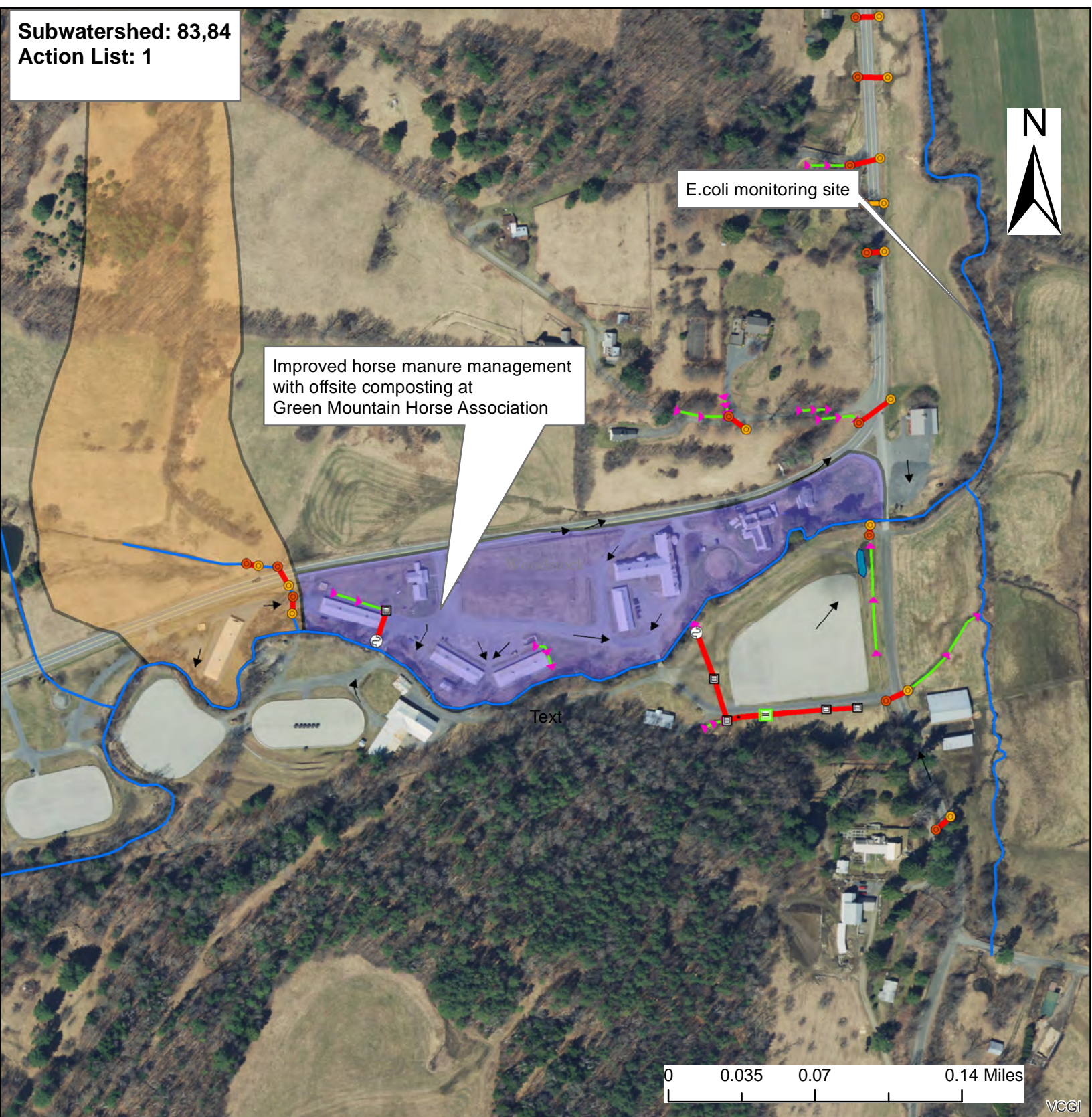


Subwatershed: 83,84  
Action List: 1



E.coli monitoring site

Improved horse manure management with offsite composting at Green Mountain Horse Association



## Kedron Brook Woodstock, VT

DEC Stormwater Infrastructure Mapping Project  
This map shows high priority subwatersheds which are ranked by connectedness, percent of impervious cover, field observations, and potential retrofit measures and locations.

The data shown on this map is only as accurate as the available sources and field observations allowed and should be used as a basic planning level tool only.

- Stormwater points**
- Pipe Cross (not connected)
  - Catchbasin
  - Dry Well
  - Drop Inlet
  - Grate/Curb Inlet
  - Yard drain
  - CB tied to sanitary sewer
  - Junction Box
  - Stormwater Manhole
  - Outfall
  - Culvert inlet
  - Culvert outlet
  - Control Structure
  - Treatment feature (see notes)
  - Retrofit
  - Unknown Point
  - Information Point

- Stormwater line**
- Storm line
  - Storm line (old Sanitary line)
  - Tunnel (storm)
  - Combined sewer
  - Sanitary line
  - Swale
  - Footing drain
  - Under drain
  - Roof drain
  - Infiltration pipe
  - French drain
  - Trench drain
  - Emergency spillway
  - Stream
  - Overland flow

- SubwatershedID**
- Priority Subwatershed
  - Stormwater Treatment Area
  - Potential Stormwater Treatment Area

**NRCS Soils**

Creator: Jim Pease, David Ainley  
DEC - WID - Clean Water Initiative Program  
Plotted Date: 10/15/2021  
Data Sources: VTRANS Roads data, VT Hydrography data set, DEC Stormwater database, NRCS soils survey  
Imagery Source: VCGI Best Available Imagery