Stevens Brook Tributary 7, St Albans Town and Swanton Vermont

Stevens Brook Tributary #7 in St Albans Town and Swanton Town Vermont is impaired by stormwater water quality as measured by the biological community of the stream. There are at least 33 significant discharges to the stream from the developed lands of the two towns. The largest discharge to the stream is the discharge of drainage area #19 which drains the Highgate Commons Shopping Ctr. The recommended course of action is to install a stormwater treatment structure that controls both the water quality volume and the channel protection volume from these discharges. A map showing the location of the discharges and a possible retrofit location on private land is provided. Parcels listed as a Action List #4 must comply with General Permit 3-9050 which requires treatment of 50% of the water quality volume. Several of the retrofits were preliminarily designed in the 2015 St Albans Town stormwater master plan.

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 stormwater impaired on the state of Vermont's 303d list of impaired waters. It will also reduce phosphorus currently being discharged to the Stevens Brook and St Albans Bay in Lake Champlain.

Monitoring Site Summary - River/Stream

Stevens Brook Trib 7

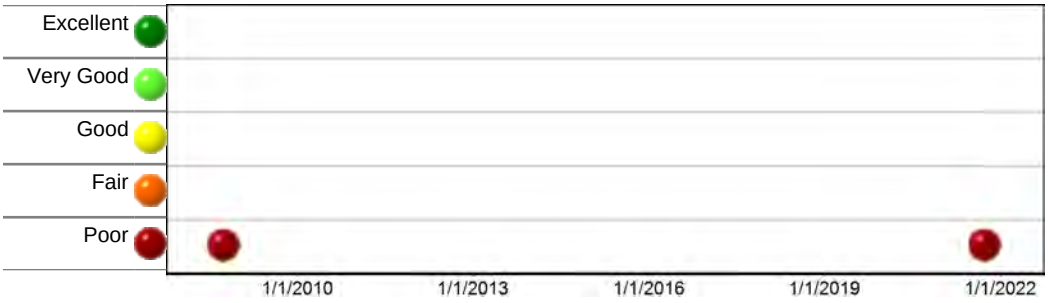
River Mile: 0.2
Located 100m below Jewett Ave.
St. Albans Town, VT (44.84631, -73.09085)

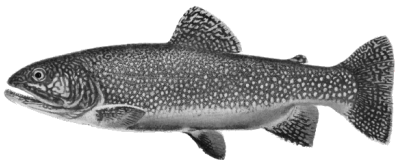
Macroinvertebrate Assessment

Macroinvertebrate population Assessments are a measure of the biological integrity of the macroinvertebrate community and an indicator of the health of the aquatic biota. (For More Details)

Fish Assessment

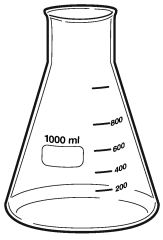
Fish populations provide a measurement of the general health of the aquatic biota. Since fish occupy the top of the food web their population integrates the conditions of lower community types. (For More Details)





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
Chloride (mg/L)	At elevated values mostly from deicing		344.0	344.0	344.0
Conductivity (umho/cm)			1467.0	1231.7	908.0
Nitrogen (mg/L)	Nutrient that may fuel algae blooms		0.4	0.4	0.4
pH	Acidity		8.1	8.1	8.1
Phosphorus (ug/L)	Nutrient that may fuel algae blooms		30.0	27.1	24.3
Turbidity (NTU)	Measure of suspended sediment		1.4	1.2	1.0

SWANTON

ST. ALBANS TOWN

ST. ALBANS CITY

Stevens Brook Trib #7 Watershed

Stevens Brook Tributary #7

Stevens Brook Trib 7 Drainages

Town Boundary

Stormwater points

Type

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

Stormwater line

Type

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

Proposed Storm point

Type

- Proposed Catchbasin
- Proposed Dry well
- Proposed Drop inlet
- Proposed Yard drain
- Proposed Stormwater manhole
- Proposed Pond outlet structure
- Proposed Outfall
- Proposed Culvert inlet
- Proposed Culvert outlet

Proposed Storm line

Type

- Proposed Trench drain
- Proposed Storm line
- Proposed Swale
- Proposed Footing drain
- Proposed Roof drain
- Proposed Under drain
- Proposed Infiltration pipe
- Proposed French drain
- Proposed Emergency spillway
- Proposed Storm area

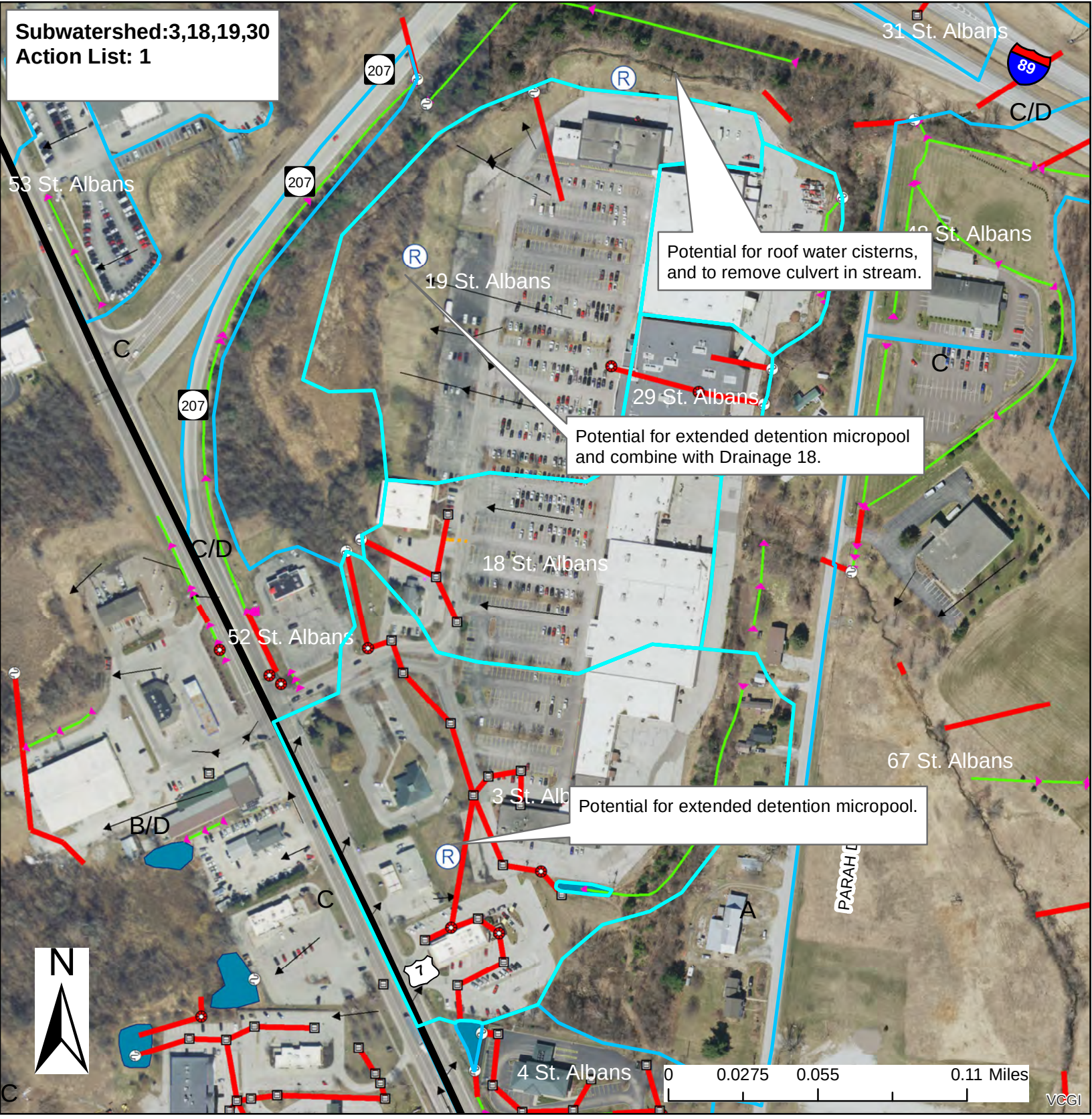
VCGI

Watershed Number	Action List #	Proposed Action	Proposed or Existing Stormwater Treatment Practice	Permit Number	Watershed Area (Acres)	Current BMP Sediment Reduction Credit	Sediment Load with Current Reductions (lbs)	Priority Action Sediment Reduction Credit	Sediment Load with Priority Action (lbs)	Projected Phosphorus Load (lbs)	Current BMP Phosphorus Reduction Credit	Phosphorus Load with Current Reductions (lbs)	Priority Action Phosphorus Reduction Credit	Phosphorus Load with Priority Action (lbs)	Water Quality Volume (ft^3)	Channel Protection Volume (ft^3)	Assistance Program
14A St Albans	**1,4**	Combine with Drainage Area 11	OF/CB/IB		7.6	0%	3,791	90%	379	10.5	0%	10.5	90%	1.1	9369	17729	CWIP, SRF, LCBP
18 St Albans	**1,4**	Ext Det. Micro Pool combine with 19	EDPMP/CB		5.1	0%	6,107	80%	1,221	17.0	0%	17.0	50%	8.5	15092	22170	CWIP, SRF, LCBP
3 St Albans	**1,4**	Upgrade Permitted Basin to Ext Det. Micro Pool or add in open space	EDPMP/CB/SB	3419-9010	11.7	40%	5,650	80%	1,130	26.2	25%	19.6	50%	9.8	23273	35844	CWIP, SRF, LCBP
19 St Albans	**1,4**	Ext Det. Micro Pool	EDPMP/OF		9.7	0%	7,606	80%	1,521	21.1	0%	21.1	50%	10.6	18797	29012	CWIP, SRF, LCBP
57 St Albans	**1,4**	Combine with Drainage Area 11,14A	IB/OF		2.7	0%	1,426	90%	143	4.0	0%	4.0	90%	0.4	3523	6549	CWIP, SRF, LCBP
61 St Albans	**1**	Stream Buffer in Corn Field	FS/OF		16.1	0%	1,395	40%	837	3.9	0%	3.9	25%	2.9	3447	4915	CWIP, SRF, LCBP
62 St Albans	**1**	Stream Buffer in Corn Field	FS/OF		21.8	0%	2,655	40%	1,593	7.4	0%	7.4	25%	5.5	6562	12964	CWIP, SRF, LCBP
71 St Albans				3154-9010.1	50.5	40%	2,023	0%	2,023	9.4		9.4		9.4	8333	5317	CWIP, SRF, LCBP
67 St Albans	**1,4**	Break Old Ag Tile Drains In Field/Remove Old Ag Road Culvert/Plant Stream Buffer-No Mow Zone	FS/OF/GS/CB/EDP	3178-9010	51.5	40%	6,359	40%	3,815	29.4	25%	22.1	25%	16.6	26192	66631	CWIP, SRF, LCBP
15 St Albans	**2,4**	Existing Ext Det. Basin, Upgrade to 2002	CB/EDP	4219-9010	7.5	40%	1,431	40%	858	6.6	25%	5.0	25%	3.7	5893	15765	CWIP, SRF, LCBP
31 St Albans	**2**	Wetland or wet swale	GS/CB		12.1	0%	3,569	75%	892	9.9	0%	9.9	15%	8.4	8821	18445	CWIP, SRF, LCBP
30 St Albans	**1,4**	Roof Cisterns, Remove Culvert In Stream on N-side	ST/OF		2.7	0%	2,872	10%	2,585	8.0	0%	8.0	5%	7.6	7097	10614	CWIP, SRF, LCBP
59 St Albans	**1**	Small Ext Det Micro Pool & Stream Buffer In Corn Field	EDPMP/GS/OF		6.8	0%	3,416	80%	683	9.5	0%	9.5	50%	4.7	8442	15941	CWIP, SRF, LCBP
29 St Albans	**3,4**	Roof Cisterns	ST/OF/CB		1.7	0%	2,031	10%	1,828	5.6	0%	5.6	5%	5.4	5021	7375	CWIP, SRF, LCBP
40 St Albans	**3**	Bioretention	BRA/CB/GS		3.9	0%	3,707	80%	741	10.3	0%	10.3	60%	4.1	9162	14675	CWIP, SRF, LCBP
5 St Albans			EDP		3.1	0%	309	80%	62	0.9	0%	0.9	50%	0.4	764	1720	CWIP, SRF, LCBP
48 St Albans			CB/GS		9.3	0%	2,586	80%	517	7.2	0%	7.2	50%	3.6	6390	13461	CWIP, SRF, LCBP
1 St Albans	**4**		CB/GS/WP	3106-9010	4.1	60%	1,455	0%	1,455	10.1	40%	6.1	0%	6.1	8993	15550	CWIP, SRF, LCBP
2 St Albans			GS		2.0	0%	332	0%	332	0.9	0%	0.9	0%	0.9	820	1754	CWIP, SRF, LCBP
4 St Albans			CB/GS/WP	3178-9010	2.5	60%	554	0%	554	3.8	40%	2.3	0%	2.3	3423	7290	CWIP, SRF, LCBP
34 St Albans			CB/EDP	3604-9015	12.1	80%	468	0%	468	6.5	50%	3.3	0%	3.3	5784	18090	CWIP, SRF, LCBP
41 St Albans	**4**	Potential for bioretention at outfall	BRA/GS	5950-9010	11.3	30%	921	80%	184	3.7	15%	3.1	40%	1.9	3252	8028	CWIP, SRF, LCBP
45 St Albans	**4**	Potential for bioretention at outfall	BRA/GS	5950-9010	3.2	30%	1,473	80%	295	5.8	15%	5.0	40%	3.0	5200	9653	CWIP, SRF, LCBP
46 St Albans			WP/IB	4145-9015	3.4	95%	201	0%	201	11.2	80%	2.2	0%	2.2	9923	15148	CWIP, SRF, LCBP
49 St Albans			GS		6.6	0%	1,720	0%	1,720	4.8	0%	4.8	0%	4.8	4250	9029	CWIP, SRF, LCBP
51 St Albans			EDP/GS	Rear lot covered by 4099-9015	2.6	80%	458	0%	458	6.4	40%	3.8	0%	3.8	5664	9444	CWIP, SRF, LCBP
52 St Albans			GS	3474-9010	3.1	30%	1,269	0%	1,269	5.0	15%	4.3	0%	4.3	4482	8158	CWIP, SRF, LCBP
53 St Albans			GS/SB/CR	7752-9015.1	2.0	80%	372	0%	372	5.2	40%	3.1	0%	3.1	4592	7347	CWIP, SRF, LCBP
54 St Albans			GS/SB/CR	7752-9015.1	1.3	80%	230	0%	230	3.2	40%	1.9	0%	1.9	2838	4668	CWIP, SRF, LCBP
68 St Albans			EDP/GS	3830-9015	6.2	80%	336	0%	336	4.7	40%	2.8	0%	2.8	4154	11789	CWIP, SRF, LCBP
69 St Albans	**4**		EDP/CB/GS	3599-9015	29.1	80%	406	0%	406	5.6	40%	3.4	0%	3.4	5023	7488	CWIP, SRF, LCBP
70 St Albans	**4**		EDPMP/GS	3178-9015.1	12.5	80%	166	0%	166	2.3	40%	1.4	0%	1.4	2048	1057	CWIP, SRF, LCBP
72 St Albans			EDP/CB	3655-9015	43.1	80%	571	0%	571	7.9	40%	4.8	0%	4.8	7052	1307	CWIP, SRF, LCBP

Target Maps

Showing Priority Action List Drainage Areas

And Potential Retrofit Locations



St Albans Town, VT

DEC Stormwater Infrastructure Mapping Project

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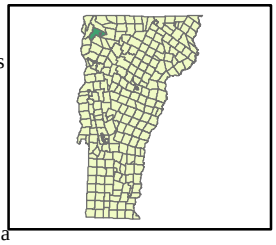

VERMONT

Stormwater points

- Pipe Cross (not connected)
- Catchbasin
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- Trench drain
- Emergency spillway
- Stream
- Overland flow

NRCS Soils

- Stevens_Brook_Trib_#7
- Stevens_Brook_Trib_7_subsheds
- A
- B/D
- C

Stormwater Treatment

- Stormwater Treatment Area
- Potential Stormwater Treatment Area

Creator: Jim Pease, David Ainley
DEC - WID - Clean Water Initiative Program
Plotted Date:7/7/2022
Data Sources: VTRANS Roads data, VT Hydrography data set, DEC Stormwater database, NRCS soils survery
Imagery Source: VCGI Best Available Imagery

N

0 25 50 100
Feet

St Albans Drainage Area 3

SW Treatment Opportunity
River or Stream
Drainage Area (2.9 Acres)
Highly Erodible Soils

Treatment Opportunity: Reshape newly created green space to maximize stormwater detention and/or infiltration

Sources: Problem Areas: Stone; Highly Erodible Soils, Hydrography, Roads: VCGI; Imagery: esri.

STONE ENVIRONMENTAL INC

Highgate Commons Plaza

SB-15A

St. Albans Stormwater Management Planning

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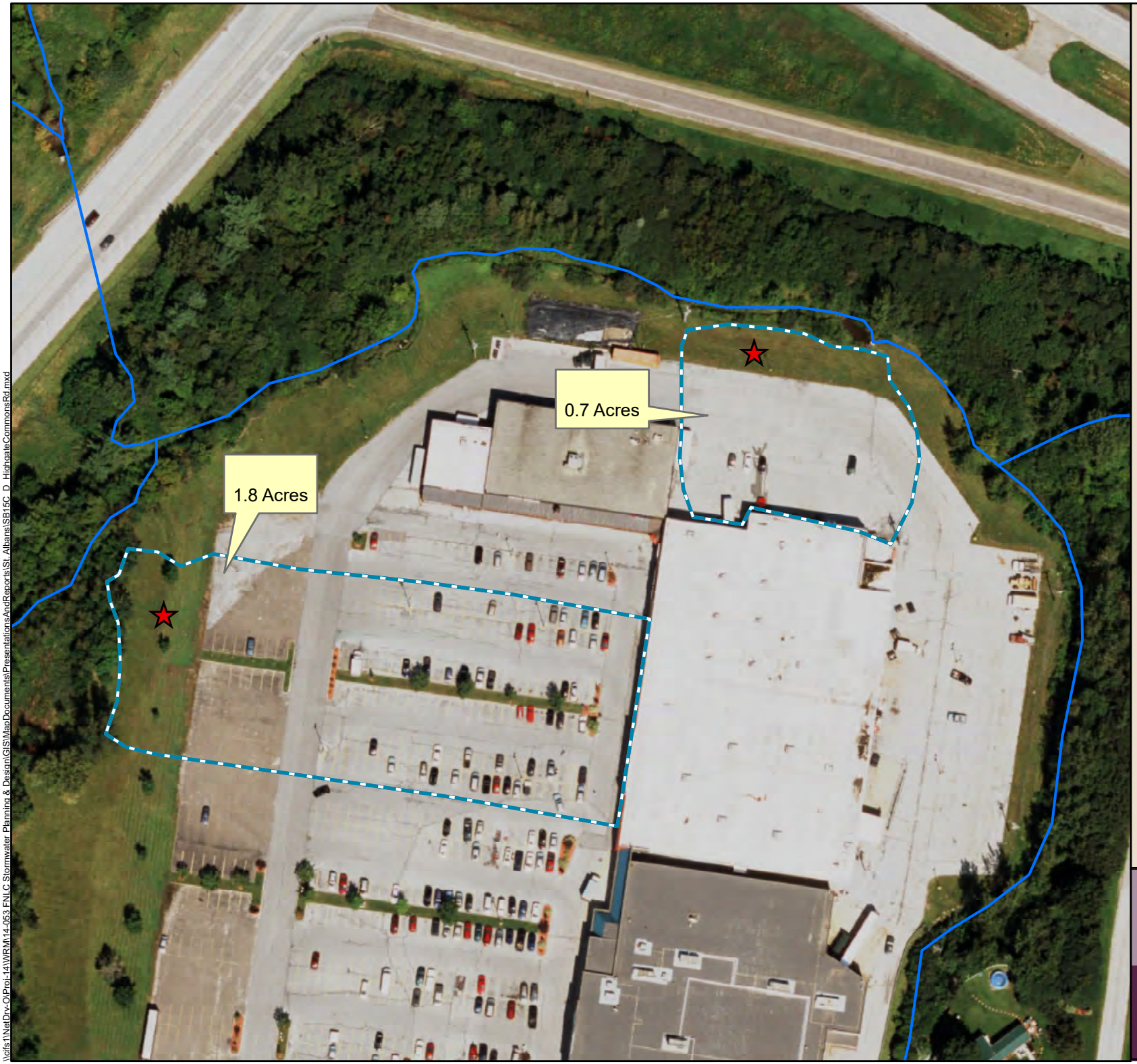

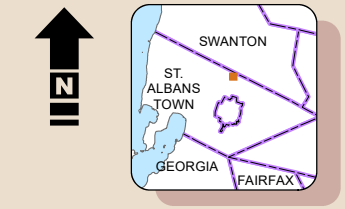

0 37.5 75 150 Feet

St Albans Drainage Area 19

- SW Treatment Opportunity
- River or Stream
- Highly Erodible Soils
- Drainage Area

Treatment Opportunity: Construct stormwater retrofit in green space and establish more robust riparian buffer

Sources: Problem Areas: Stone; Highly Erodible Soils, Hydrography, Roads: VCGI; Imagery: esri.

STONE ENVIRONMENTAL INC

Highgates Commons Plaza

SB-15C/D

St. Albans Stormwater Management Planning

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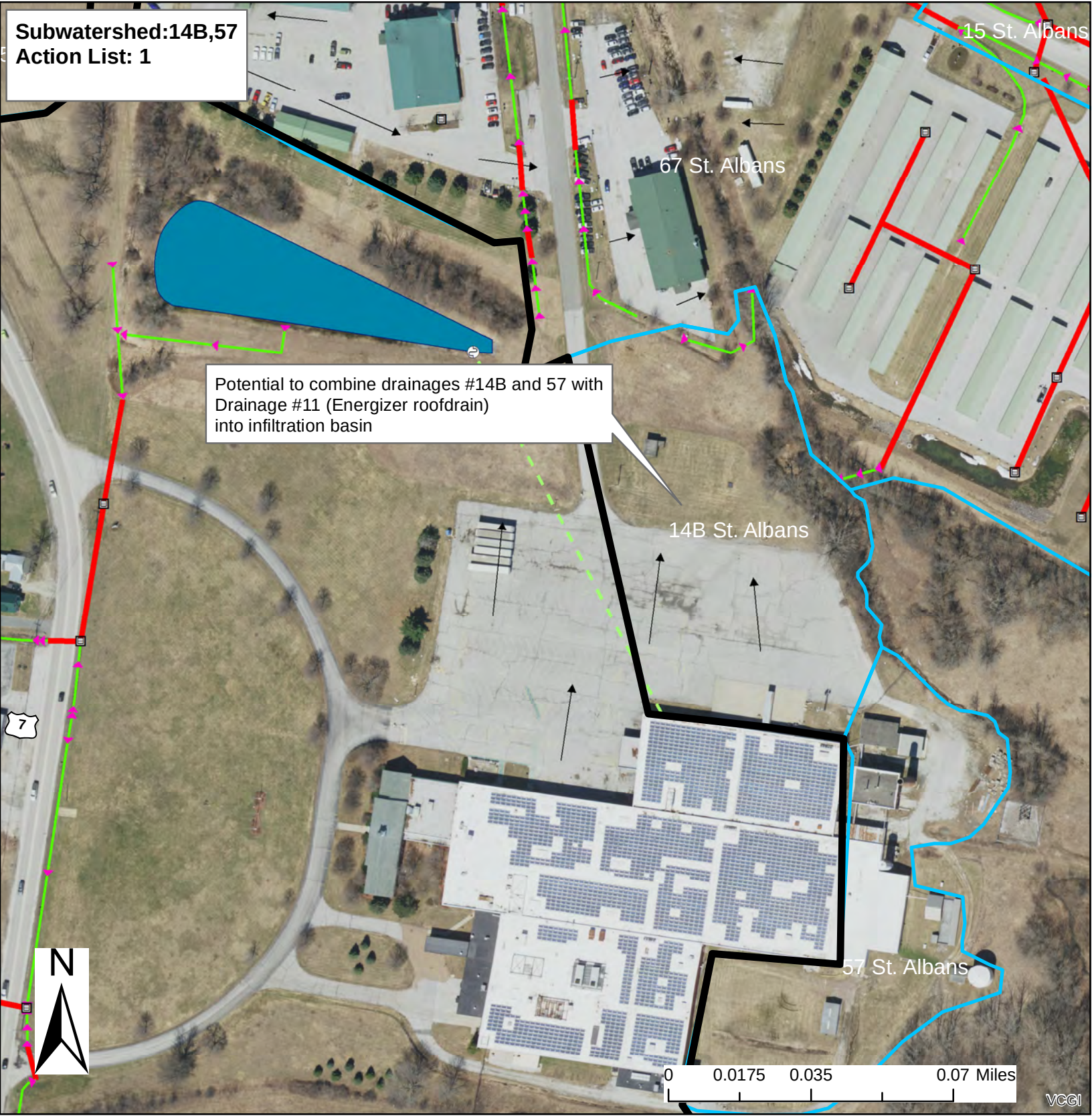

St Albans Town, VT

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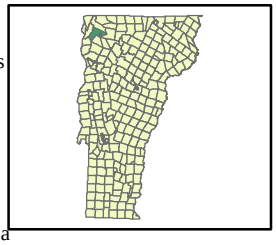

VERMONT

Stormwater points

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- Overland flow

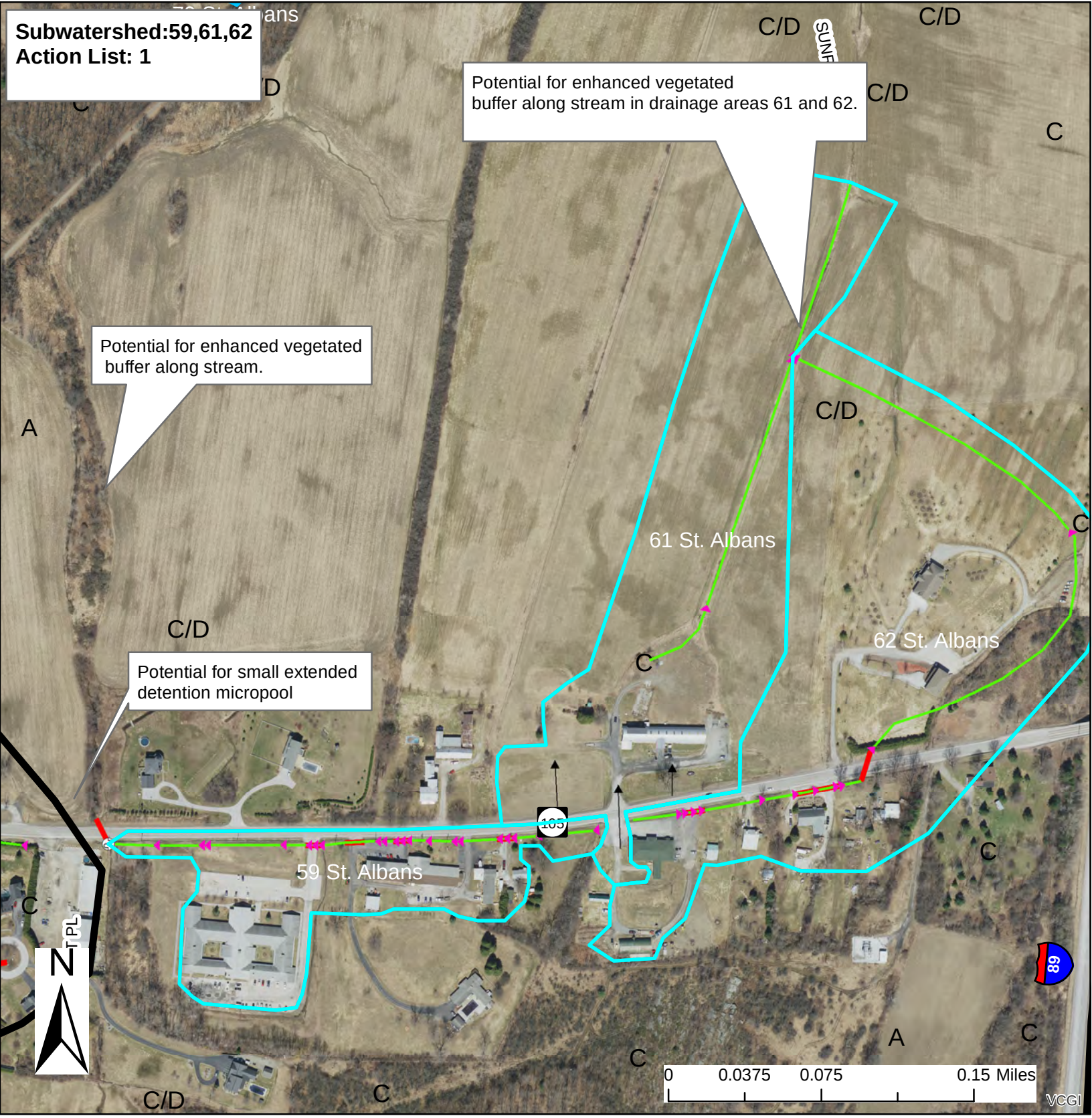
NRCS Soils

- Stevens_Brook_Trib_#7
- Stevens_Brook_Trib_7_subsheds

SubwatershedID

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

Creator: Jim Pease, David Ainley
DEC - WID - Clean Water Initiative Program
Plotted Date:7/7/2022
Data Sources: VTRANS Roads data, VT Hydrography data set, DEC Stormwater database, NRCS soils survery
Imagery Source: VCGI Best Available Imagery



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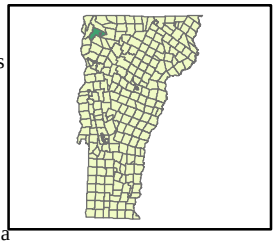

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- Stevens_Brook_Trib_7_subsheds
- A
- C
- D

Stormwater Treatment
- Stormwater Treatment Area
- Potential Stormwater Treatment Area

Creator: Jim Pease, David Ainley
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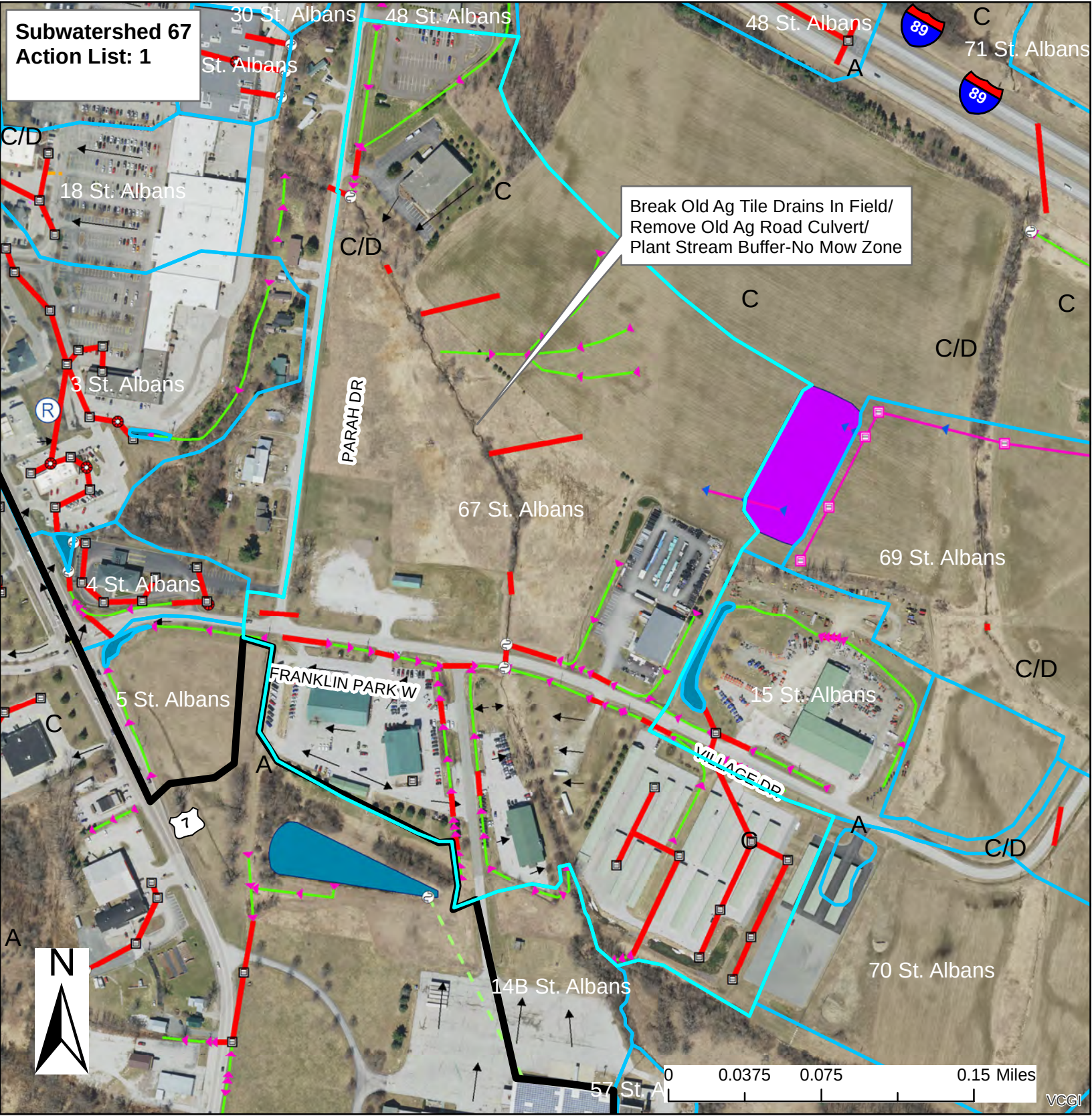

St Albans Town, VT

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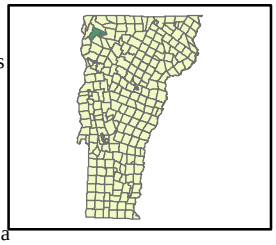

VERMONT

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Stormwater Treatment

- Stormwater Treatment Area
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Creator: Jim Pease, David Ainley
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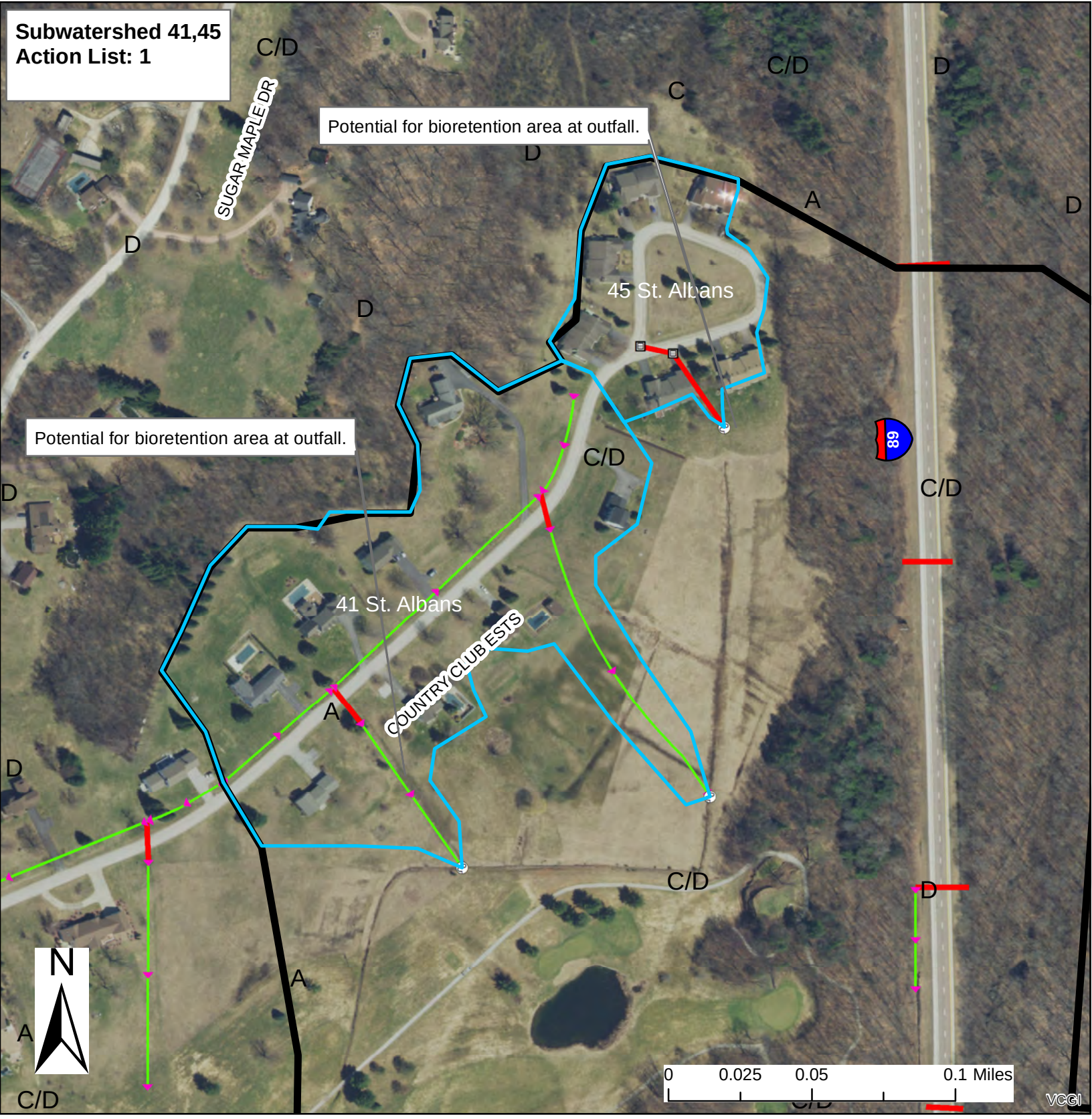

SwantonTown, VT

DEC Stormwater Infrastructure Mapping Project

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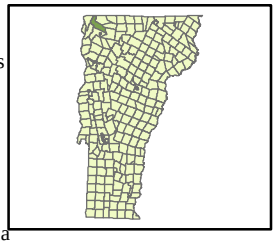

VERMONT

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- Stevens_Brook_Trib_7_subsheds
- Stevens_Brook_Trib_#7
- A
- C
- C/D
- D

Stormwater Treatment

- Stormwater Treatment Area
- Potential Stormwater Treatment Area

Creator: Jim Pease, David Ainley
DEC - WID - Clean Water Initiative Program
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Data Sources: VTRANS Roads data, VT Hydrography data set, DEC Stormwater database, NRCS soils survery
Imagery Source: VCGI Best Available Imagery