

TRORC Culvert Inventory Project 2015



Prepared by Rita Seto, AICP, Senior Planner

Acknowledgements

This incredible endeavor could not have been accomplished on time and on budget without the following TRORC staff, Selectboards and dedicated Town road foreman and road crew members spending countless hours driving miles of town roads and inspecting every single culvert.

TRORC Staff

Peter Gregory, Executive Director
Pete Fellows, GIS Manager
Brian Hamlin, Planner
Sam Holcomb, Planner
Ellie Ray, Planner
Tory Levite, Planner

Michael Storace, Planner
Parker Sorenson, Intern 2014
Beau Harris, Intern 2014
Britta McOmber, Intern 2014-2015
Marc de Konkoly Thege, Intern 2015

Town Staff

Town of Barnard

Barnard Selectboard
Jeff Tracy, Road Foreman

Town of Bethel

Bethel Selectboard
Keith Arlund, Town Manager
Robert Hyde, Road Foreman

Town of Braintree

Braintree Selectboard
Jeff Masterson, Road Foreman
Holly Jarvis, Administrative Assistant

Town of Granville

Granville Selectboard
Kevin Bagley, Road Foreman

Town of Hartford

Rich Menge, Public Works Director
Allyn Ricker, Highway Superintendent
Jean Tessier, Road Crew
Brandon Joslyn, Road Crew

Wesley Shipley, Road Crew

Town of Hartland

Bob Stacey, Town Manager
Bill Barrows, Road Foreman
Dan Morancy, Road Crew

Town of Pittsfield

Pittsfield Selectboard
George Deblon, Road Foreman

Town of Rochester

Rochester Selectboard
Larry Straus, Road Commissioner
Dan Gendron, Road Foreman

Town of Sharon

Sharon Selectboard
Tim Higgins, Road Foreman
Frank Rogers, Road Crew
Allen Wight, Road Crew

Town of Stockbridge

Stockbridge Selectboard
Dave Brown, Road Foreman

Town of Tunbridge

Tunbridge Selectboard
Rodney Hoyt, Road Foreman
Larry Wight, Road Crew
Jim Ware, Road Crew
Thomas Hoyt, Road Crew

Town of Woodstock

Phil Swanson, Town Manager
Ken Vandenburg, Highway Superintendent
Alex Audsley, Road Crew

Introduction

In 2011, Tropical Storm Irene damaged a significant portion of town infrastructure across the Two Rivers-Ottawaquechee region. During the storm, countless undersized culverts were severely damaged or destroyed leading to many roads being washed out. Many towns require culvert inventories to be current in order to be eligible for state grants as well as playing an important role in highway budgeting. At the time, many TRORC's town culvert inventories were considered out of date according to the statewide Vermont Online Bridge and Culvert Inventory database (www.VTCulverts.org) in Figure 1.

TRORC identified this unmet need of addressing out of date town culvert inventories that have not been updated since Tropical Storm Irene. TRORC sought funds and was awarded a Community Development Block Grant (CDBG) Disaster Recovery Planning Grant to assist twelve towns impacted by Tropical Storm Irene with updating of culvert inventories over a two year period. These towns are clustered along the White River and Ottawaquechee River watersheds. The twelve towns included (Figure 2):

- Town of Barnard
- Town of Bethel
- Town of Braintree
- Town of Granville
- Town of Hartford
- Town of Hartland
- Town of Pittsfield
- Town of Rochester
- Town of Sharon
- Town of Stockbridge
- Town of Tunbridge
- Town of Woodstock

The scope of work included updating GPS locations of culverts, updating culvert attributes (size, condition and material based on Vermont Agency of Transportation standards), and creating new maps. Culverts were assessed and prioritized based on condition and vulnerability to failure. These inventories will play an important role for towns applying to future grants in transportation, hazard mitigation, water quality and eligibility for FEMA reimbursements. TRORC is working with communities to update their Hazard Mitigation Plans, working with town highway departments to be compliant with 2013 Town Road and Bridge Standards (which includes the desired culvert inventory to flag poorly performing culverts and integrate into a capital improvement plan), and identify high risk road erosion areas for future projects. This grant opportunity will cover a

significant portion of our Region's member towns 12/30 (40%) and improve overall regional flood resiliency.

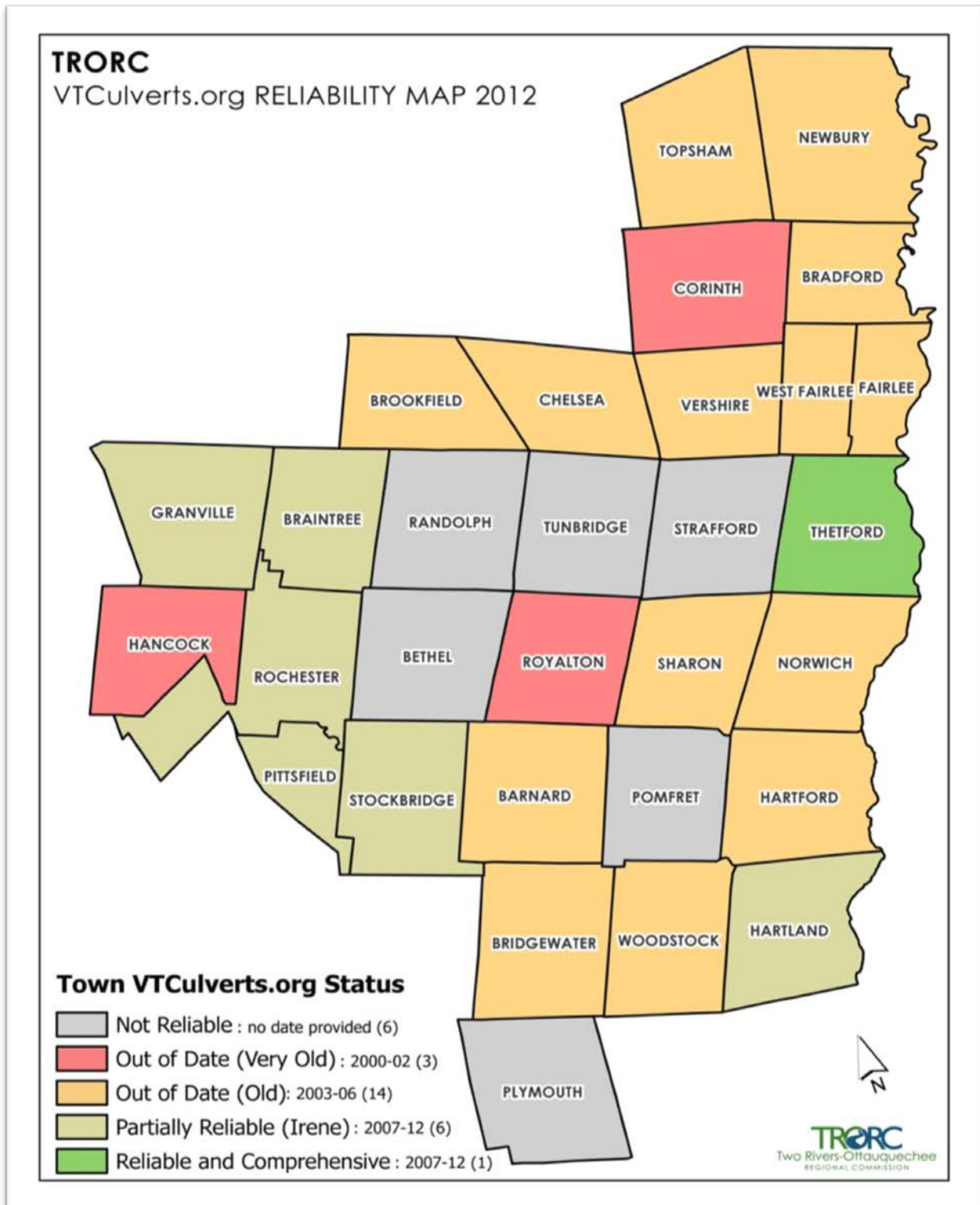


Figure 1: TRORC Culvert Status in 2012

TRORC

CDBG DR-1

Project Overview

- Towns received BBR Grant (5)
- Participating Towns (12)
- Town Defined as Low to Moderate Income (LMI) (1)

*Date represents last major update to the culvert database



Figure 2: Participating Towns

Overall Project Summary

The twelve towns were split into 2 inventory years 2014 (Bethel, Braintree, Stockbridge, Tunbridge and Woodstock) and 2015 (Barnard, Granville, Hartford, Hartland, Pittsfield, Rochester and Sharon). In 2014, the towns of Bethel, Braintree, Stockbridge, Tunbridge and Woodstock also received Better Back Road Category A planning grants which supplemented funds towards this inventory project.

Total Road Miles Driven: **2500 miles**

Total Town Staff Inventory Hours: **600 hours**

Total Culvert Attributes Updated: **7876 culverts**

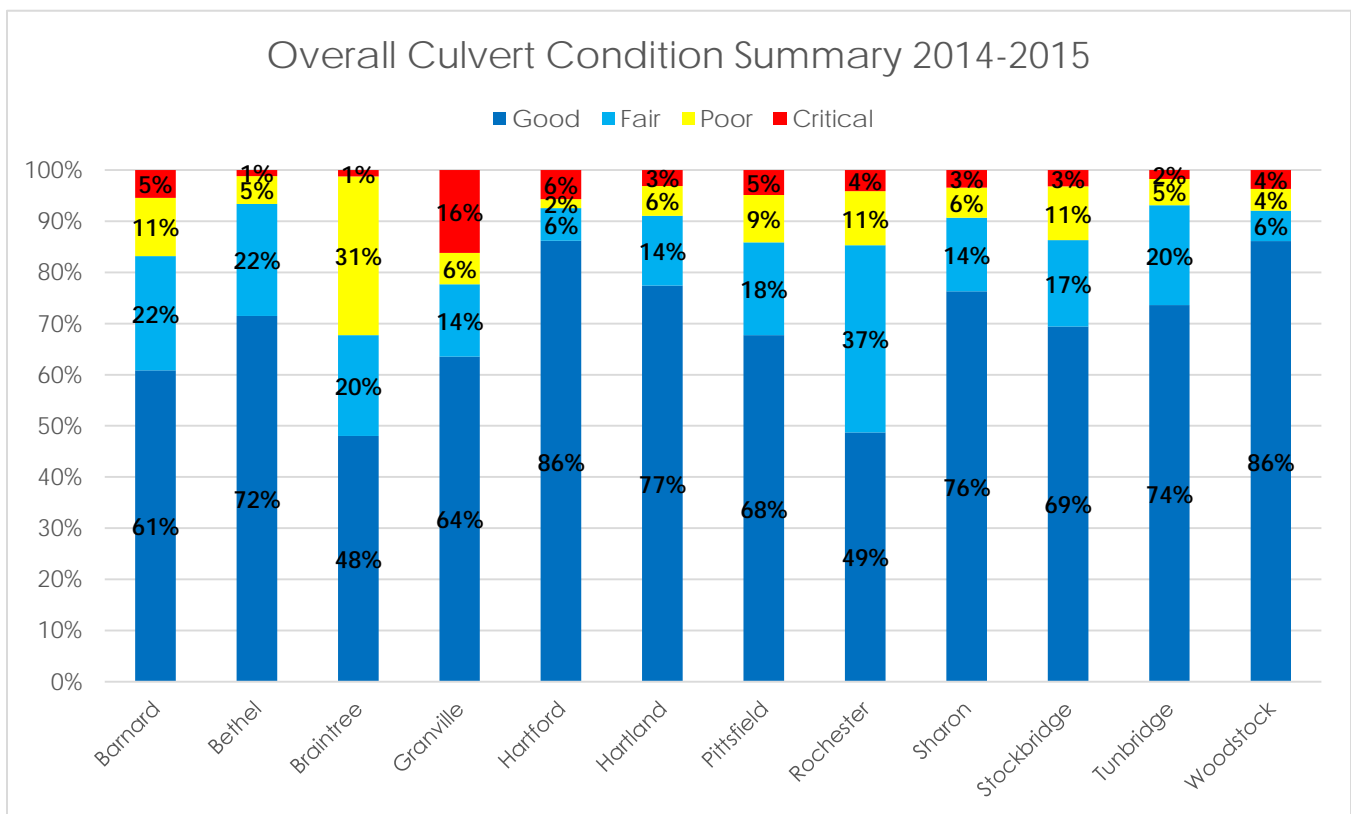


Figure 3: Overall Culvert Condition Summary

In general many of the town culverts are 80% in Good or Fair condition. Towns are actively replacing culverts to at least the 18" diameter minimum as per the 2013 Town Road and Bridge Standards.

TRORC

VT Culverts.org RELIABILITY MAP 2015

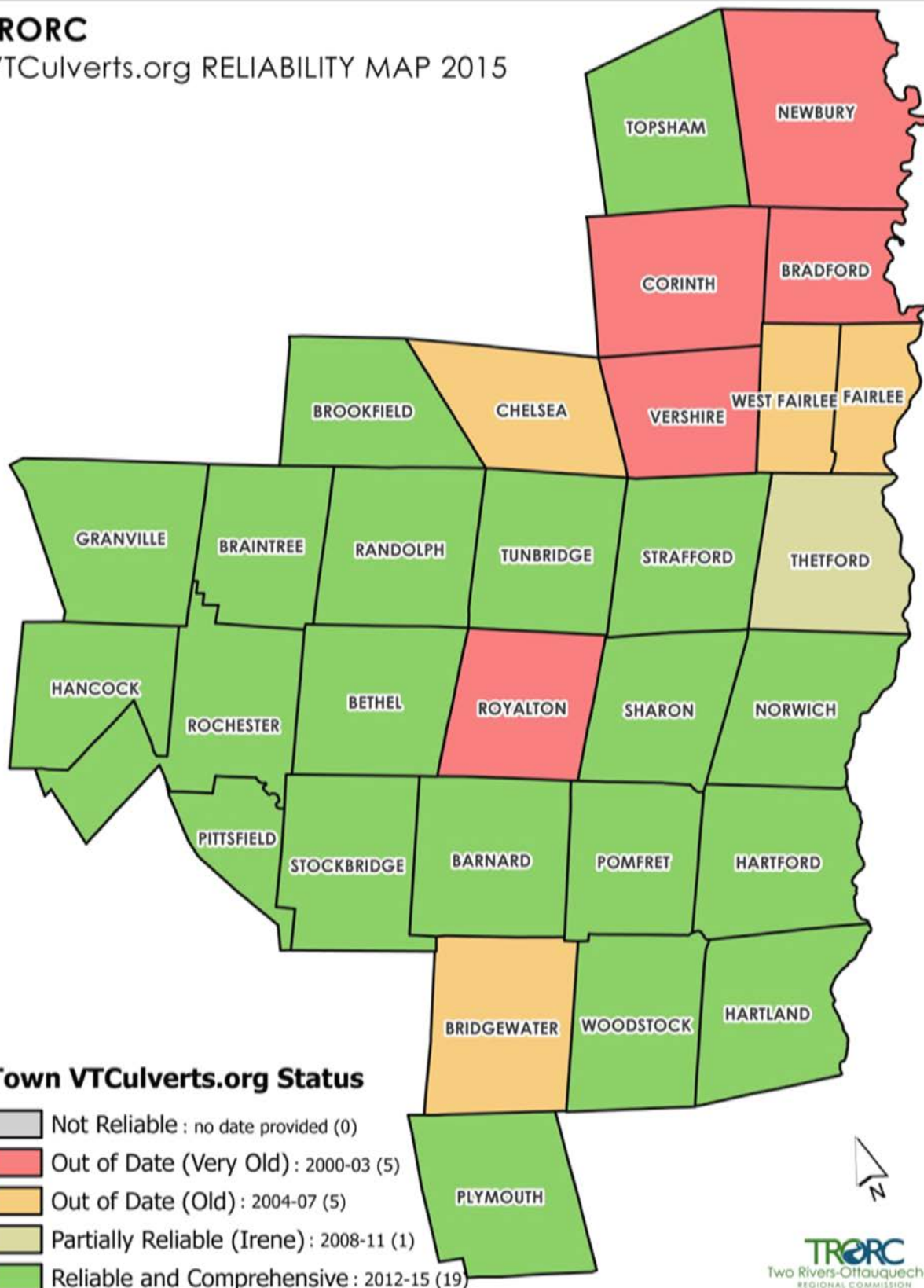


Figure 4: TRORC Culvert Status in 2015

In addition to collecting GPS data and updating culvert attributes, TRORC staff sorted culvert conditions and with the Road Foreman of each town, identified the top priority project sites for detailed recommended treatments and cost estimates. The finished product was a project proposal that was ready for future Better Back Road implementation grants, VTrans Structures grants or Hazard Mitigation grants.

Of the twelve towns, TRORC and Road Foreman identified 70 priority projects of specific roads for structure replacements totaling \$2.3 million. Figure 5 summarizes these projects by town.

Town of Barnard	Site	Location	Description	Cost
	1	Rhoades Hill Road	Replace 3 culverts	\$10,538
	2	Fort Defiance Road	Replace 4 culverts	\$10,690
	3	Royalton Turnpike	Replace 3 culverts	\$9,102
	4	Broad Brook Road	Replace 2 culverts	\$5,076
	5	Sayer Road	Replace 2 culverts	\$6,345
	Total Project Costs			\$41,750
Town of Bethel	Site	Location	Description	Cost
	1	Sanders Rd	Replace 4 undersized culverts	\$11,369
	2	Gilead Brook Rd	Replace 6 undersized culverts	\$20,940
	3	Trout Brook Rd	Replace 2 undersized culverts	\$9,570
	4	Macintosh Hill Rd	Replace 7 undersized culverts	\$21,838
	5	Peavine Blvd	Replace 4 undersized culverts	\$11,369
	6	Whittier Rd	Replace 3 undersized culverts	\$10,256
	7	North Main Street	Replace 2 undersized culverts	\$9,570
	8	Findley Bridge Rd	Replace undersized culvert	\$8,671
	Total Project Costs			\$103,583
Town of Braintree	Site	Location	Description	Cost
	1	Connecticut Corners Road	Improving ditching	\$29,627
	2	Duclos Road	Upgrade undersized culvert	\$198,000
	3	Riford Brook Road	Upgrade 4 undersized culverts	\$600,000
	4	Thayer Brook Road	Upgrade 2 undersized culverts	\$300,000
	5	Farnsworth Road	Upgrade undersized culvert	\$150,000
	6	Battles Brook Road	Upgrade 2 undersized culverts	\$13,530
	7	Bent Hill Road	Upgrade 2 undersized culverts	\$15,680
	Total Project Costs			\$1,306,837
Town of Granville	Site	Location	Description	Cost
	1	West Hill Road	Upgrade undersized culvert	\$3,261
	2	Maston Hill Road	Upgrade 4 undersized culverts	\$16,167
	3	North Hollow Road	Upgrade undersized culvert	\$7,192

	Total Project Costs			\$26,620
Town of Hartford	Site	Location	Description	Cost
	1	Baker Turn	Replace 1 culvert	\$420
	2	Christian Street	Replace 1 culvert	\$3,841
	3	Dothan Road	Replace 5 culverts	\$5,960
	4	Hillside Road	Replace 1 culvert	\$958
	5	Jericho Road	Replace 1 culvert	\$3,727
	6	Neal Road	Replace 2 culverts	\$586
	7	Old River Road	Replace 1 culvert	\$2,829
	8	Quechee Main Street	Replace 1 culvert	\$6,284
	9	Wells Road	Replace 1 culvert	\$193
	10	Wildlife Road	Replace 1 culvert	\$193
	11	Wrights Reservoir Road	Replace 1 culvert	\$2,173
	Total Project Costs			\$27,163
Town of Hartland	Site	Location	Description	Cost
	1	Brothers Road	Replace 3 culverts	\$3,114
	2	Ellison Road	Replace 2 culverts	\$3,114
	3	Jenneville Road	Replace 3 culverts	\$59,114
	4	Shute Road	Replace 3 culverts	\$4,956
	Total Project Costs			\$70,299
Town of Pittsfield	Site	Location	Description	Cost
	1	Hawk Lane	Replace 2 culverts	\$3,108
	2	Hawk Trail	Replace 1 culvert	\$1,586
	3	High Glen Path	Replace 1 culvert	\$2,760
	5	Liberty Hill	Replace 1 culvert	\$1,822
	6	Lookout Road	Replace 2 culverts	\$5,842
	7	Upper Michigan Road	Replace 3 culverts	\$5,842
	Total Project Costs			\$20,959
Town of Rochester	Site	Location	Description	Cost
	1	River Brook Drive	Replace 1 culvert	\$110,000
	2	Maple Hill Road	Replace 2 culverts	\$103,000
	3	Mt. Cushman Road	Replace 1 culvert	\$110,000
	4	Middle Hollow Road	Replace 1 culvert	\$110,000
	Total Project Costs			\$433,000
Town of Sharon	Site	Location	Description	Cost
	1	Cross Road	Replace 3 culverts	\$5,074
	2	Beaver Meadow Road	Replace 9 culverts	\$11,664
	3	Carpenter Road	Replace 3 culverts	\$4,014

	4	White Brook Road	Replace 4 culverts	\$6,210
	5	Downer Road	Replace 4 culverts	\$5,383
	Total Project Costs			\$32,345
Town of Stockbridge	Site	Location	Description	Cost
	1	Blackmer Blvd	Replace undersized culvert	\$57,388
	2	Fletcher Brook Rd	Replace undersized culverts	\$46,352
	3	Labadie Rd	Replace undersized culvert	\$18,758
	4	Music Mountain Rd	Replace undersized culvert	\$16,338
	5	River Rd	Replace undersized culvert	\$11,420
	6	Stony Brook Rd	Replace undersized culverts	\$39,534
	7	Taggart Hill Rd	Replace undersized culvert	\$11,829
	Total Project Costs			\$201,617
Town of Tunbridge	Site	Location	Description	Cost
	1	Button Hill Rd	Replace undersized culvert	\$1,754
	2	Whitney Hill Rd	Replace undersized culvert	\$2,020
	3	Potash Hill Rd	Replace undersized culvert	\$1,248
	4	Ward Hill Rd	Replace undersized culvert	\$1,248
	5	Falls Hill Rd	Replace undersized culvert	\$1,248
	6	Ordway Rd	Replace undersized culvert	\$1,248
	7	Hoyt Hill Rd	Replace undersized culvert	\$1,248
	8	Strafford Rd	Replace 3 undersized culverts	\$4,791
	Total Project Costs			\$14,801
Town of Woodstock	Site	Location	Description	Cost
	1	Churchill Road	Replace undersized culvert	\$4,688
	2	Cox District Road	Replace undersized culvert	\$20,996
	3	Darling Road	Replace undersized culvert	\$4,149
	4	Happy Valley Road	Replace 6 undersized culverts	\$36,895
	Total Project Costs			\$66,729
TOTAL TRORC REGION PROJECT COSTS				\$2,345,703

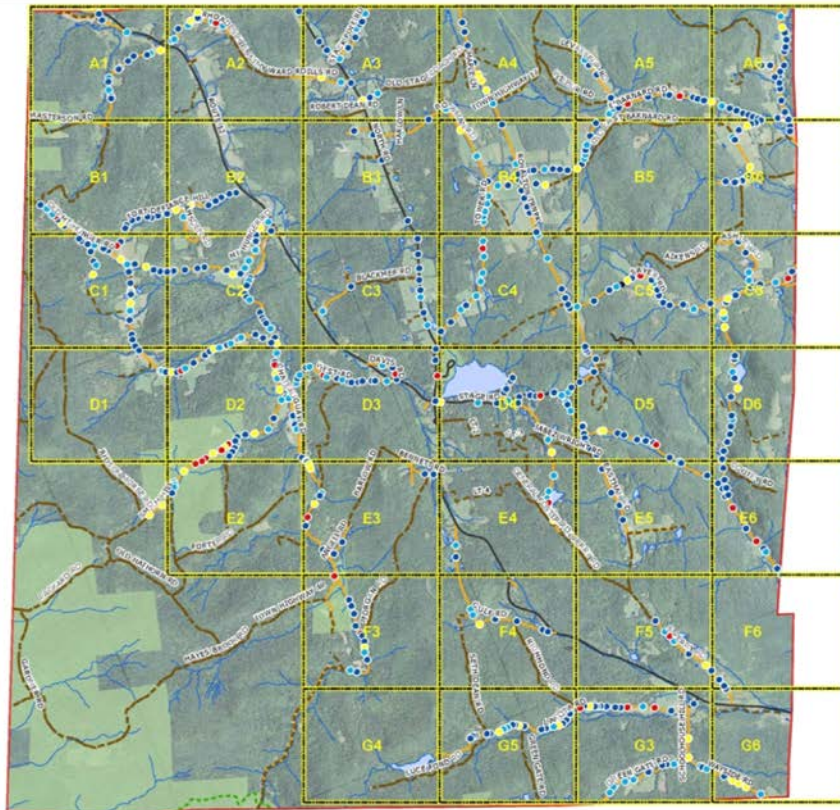
Figure 5: TRORC Regional Priority Projects

Each Town received the following in the final package:

- ❖ A 24" x 36" town-wide map of all culverts showing condition
- ❖ A 24" x 36" town-wide map showing only Poor and Bad condition culverts
- ❖ A binder with 2 sets of the following:
 - A town-wide map of all culverts showing condition
 - A town-wide map of all culverts showing only Poor and Bad condition culverts
 - An atlas of individual roads and culverts
 - A printed spreadsheet of all culvert attributes
 - A set of identified priority projects with details on recommended replacements and cost estimates
 - A USB flash drive of these digital files
- ❖ Culvert data uploaded into www.VTCulverts.org and training on the website

The following pages summarize the inventory by Town.

Town of Barnard



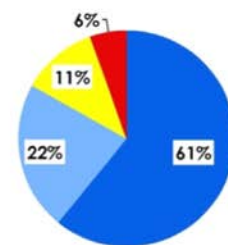
Culvert Inventory
Barnard, Vermont
November 2015

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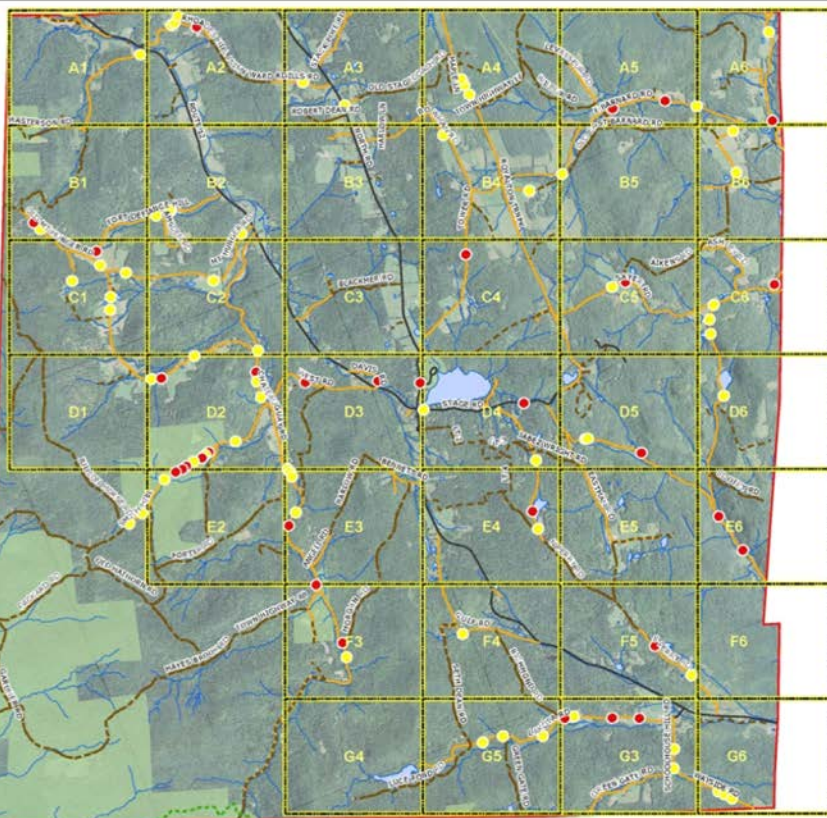
1 inch = 3,629.03 feet

0 2,600 5,200 10,400 Feet

Culvert Data collected using GPS by TRORC Fall 2013



TRORC
Two Rivers-Ottawaquechee
REGIONAL COMMISSION
Bila Sells, TRORC – October 2014



Culvert Inventory
Barnard, Vermont
November 2015

1:43,143

1 inch = 3,595 feet

5,000 2,500 0 5,000 Feet

Culvert Data collected using GPS by TRORC Fall 2013

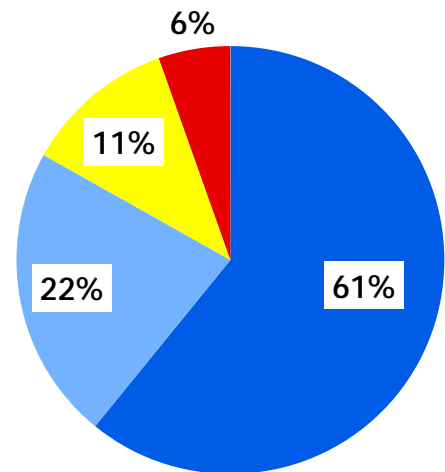


TRORC
Two Rivers-Ottawaquechee
REGIONAL COMMISSION
Bila Sells, TRORC – October 2014



A concrete box culvert on East Barnard Road.
Photo by Pete Fellows, TRORC

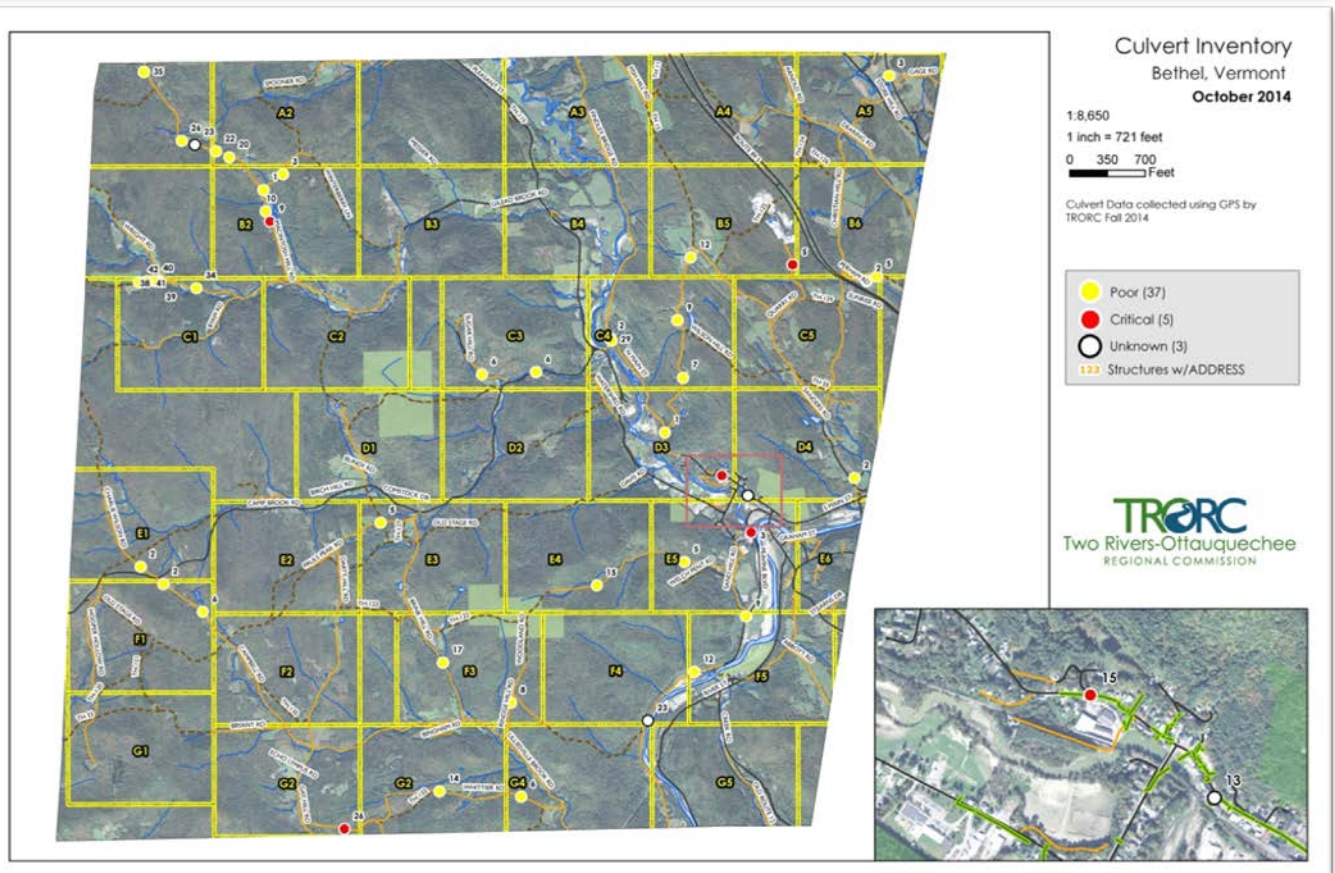
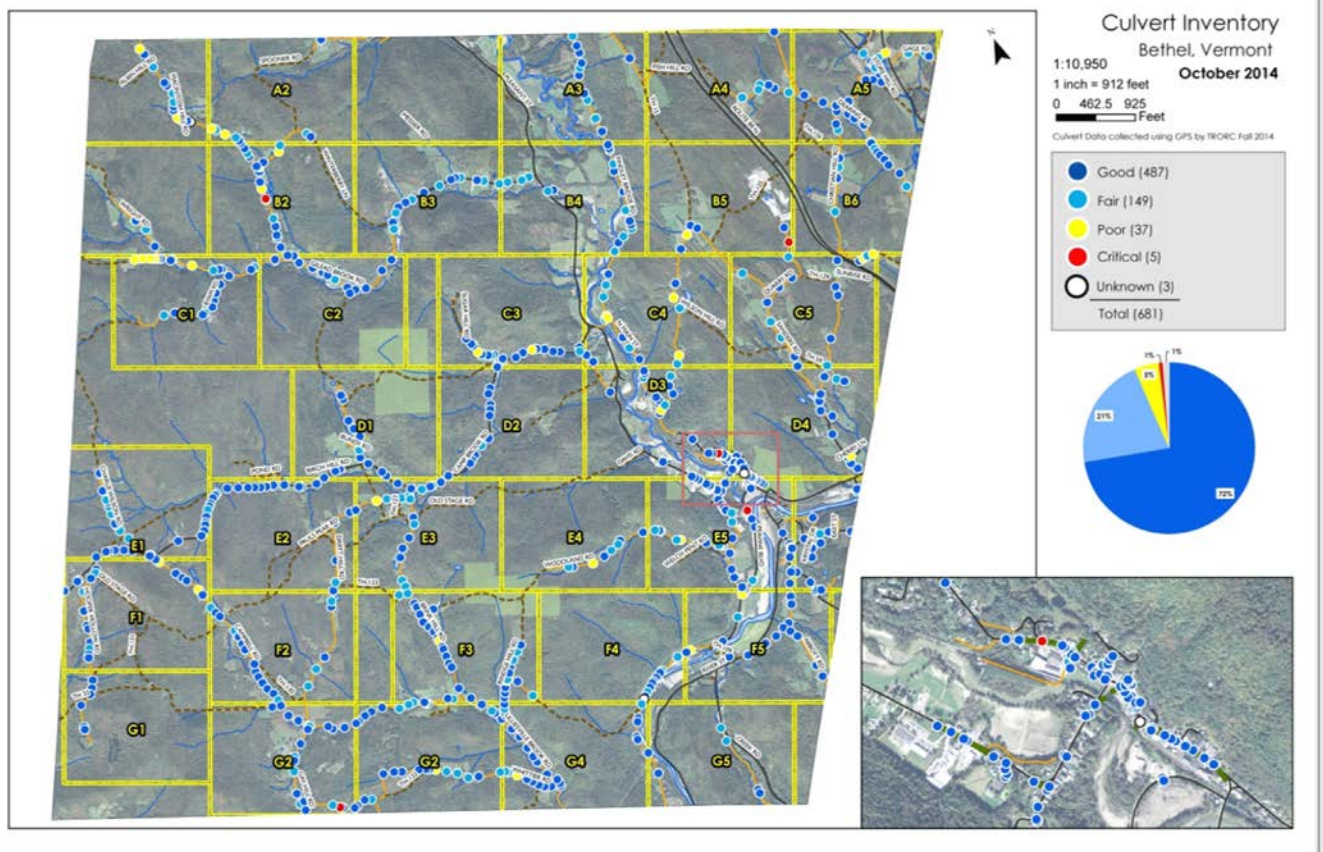
Overall culvert condition in Barnard



Barnard Priority Projects

Site	Location	Description	Cost
1	Rhoades Hill Road	Replace 3 culverts	\$10,538
2	Fort Defiance Road	Replace 4 culverts	\$10,690
3	Royalton Turnpike	Replace 3 culverts	\$9,102
4	Broad Brook Road	Replace 2 culverts	\$5,076
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Total Project Costs			\$41,750

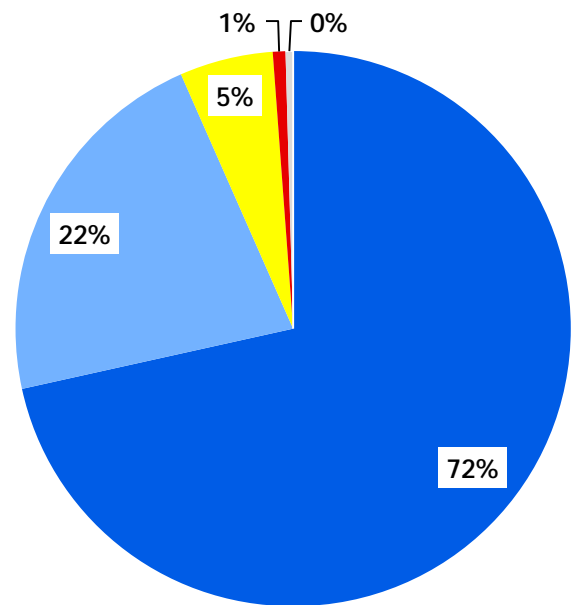
Town of Bethel





Bethel Road Foreman Robert Hyde measuring a squash culvert. *Photo by Rita Seto, TRORC*

Overall culvert condition in Bethel



Bethel Priority Projects

Site	Location	Description	Cost
1	Sanders Rd	Replace 4 undersized culverts	\$11,369
2	Gilead Brook Rd	Replace 6 undersized culverts	\$20,940
3	Trout Brook Rd	Replace 2 undersized culverts	\$9,570
4	Macintosh Hill Rd	Replace 7 undersized culverts	\$21,838
5	Peavine Blvd	Replace 4 undersized culverts	\$11,369
6	Whittier Rd	Replace 3 undersized culverts	\$10,256
7	North Main Street	Replace 2 undersized culverts	\$9,570
8	Findley Bridge Rd	Replace undersized culvert	\$8,671
Total Project Costs			\$103,583

Town of Braintree

TOWN OF BRAINTREE 2014 Culvert Inventory

Road Type

-  Paved
-  Gravel
-  Trails
-  Class 4

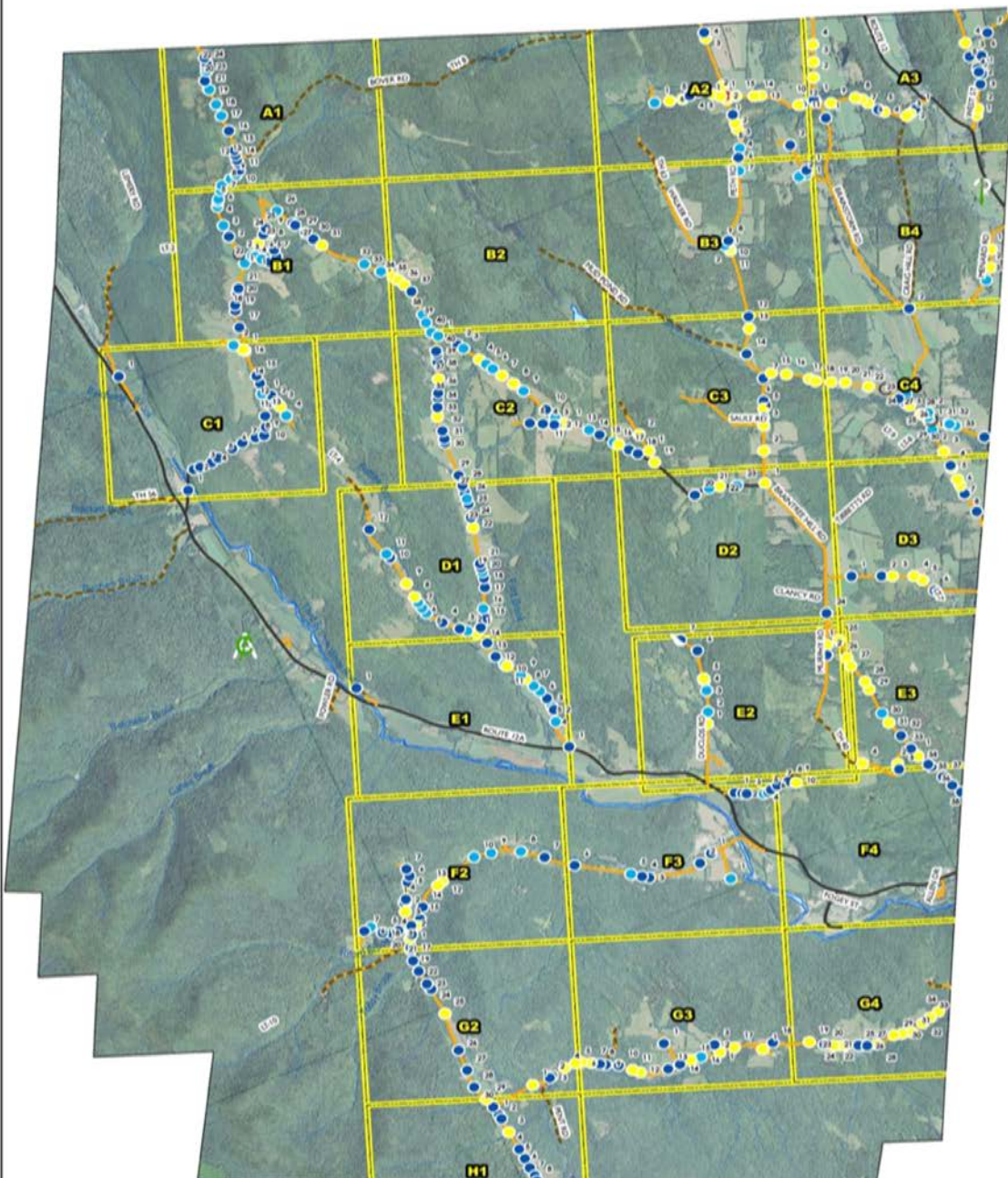
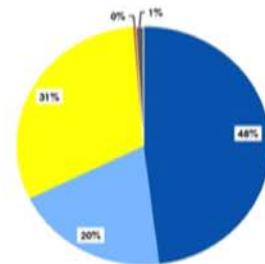
 Atlas grid

 Conserved land

Culvert Conditions

-  Good (195)
-  Fair (80)
-  Poor (126)
-  Critical (1)
-  Unknown (4)

Total Culverts (406)



TOWN OF BRAINTREE 2014 Culvert Inventory

Road Type

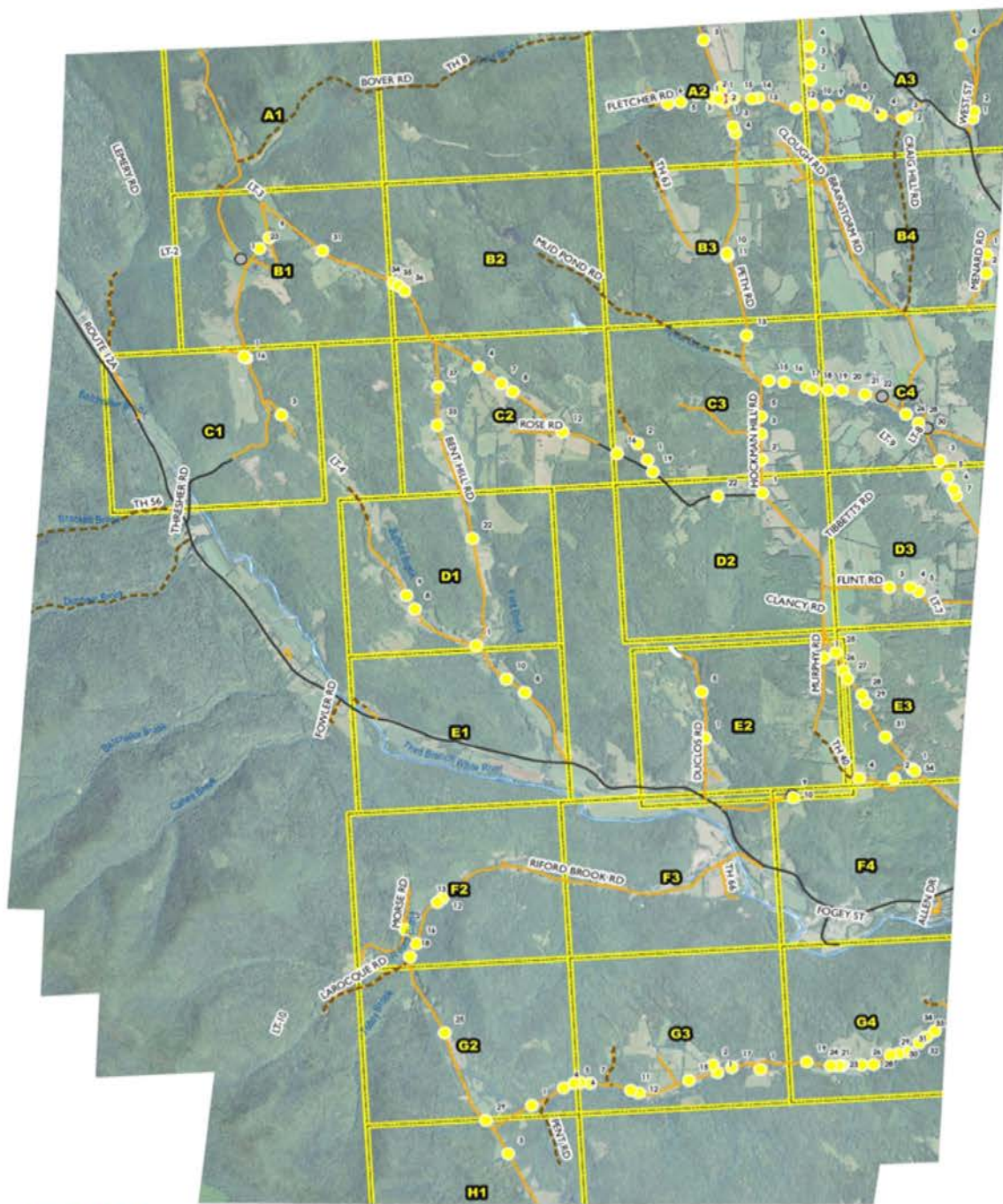
- Paved
- Gravel
- Trails
- Class 4

Atlas grid

Conserved land

Poor Culvert Conditions

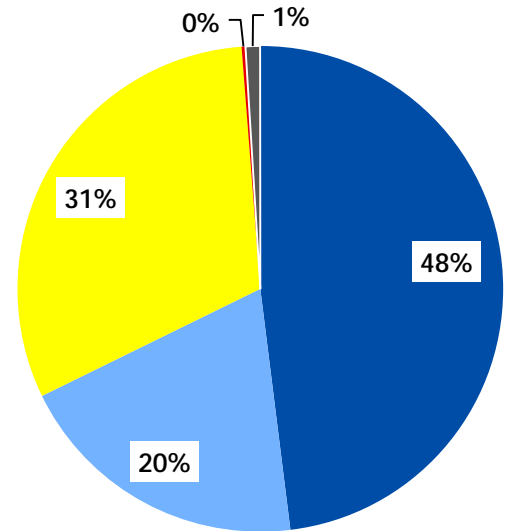
- Poor (126)
 - Critical (1)
 - Unknown (4)
- Total Culverts (131)





Riford Brook culvert. Photo by Rita Seto, TRORC

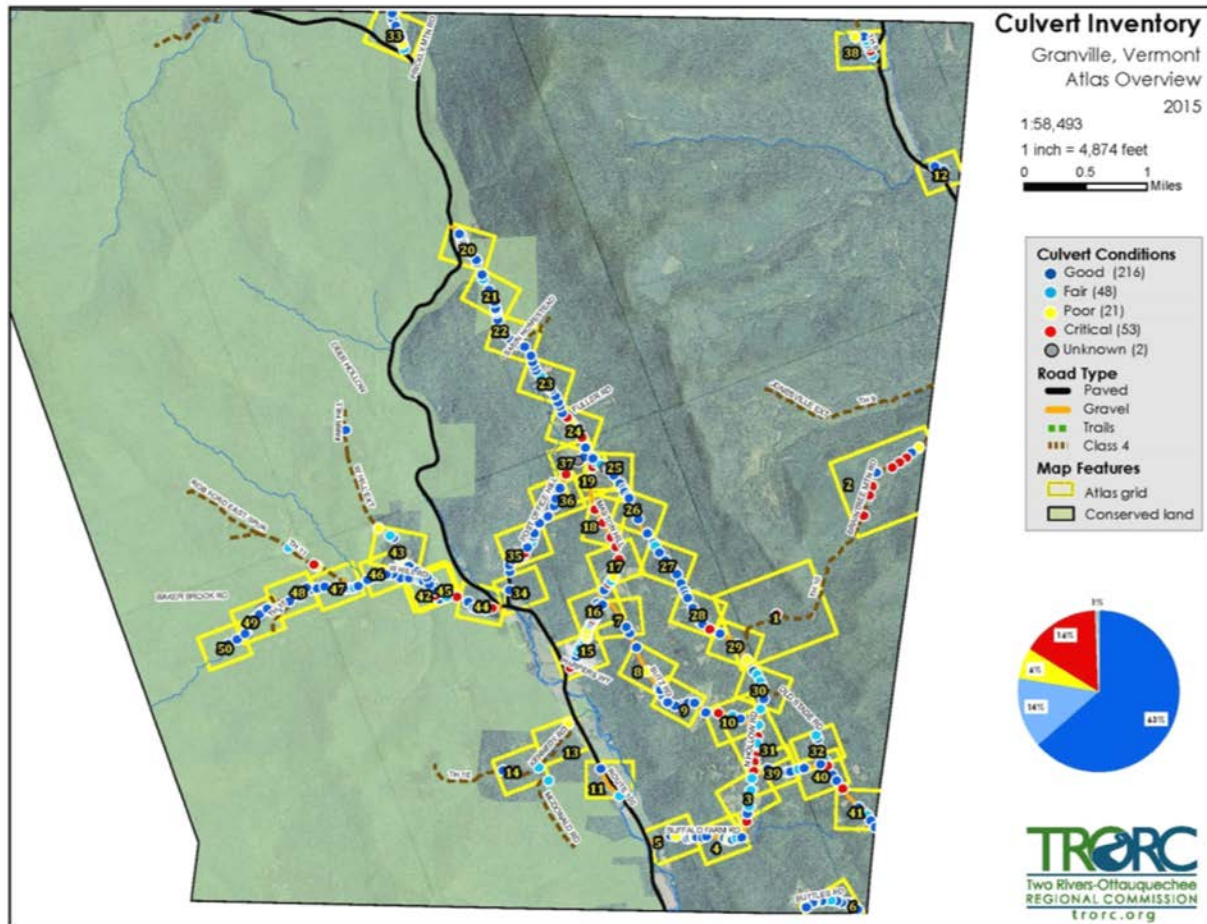
Overall culvert condition in Braintree

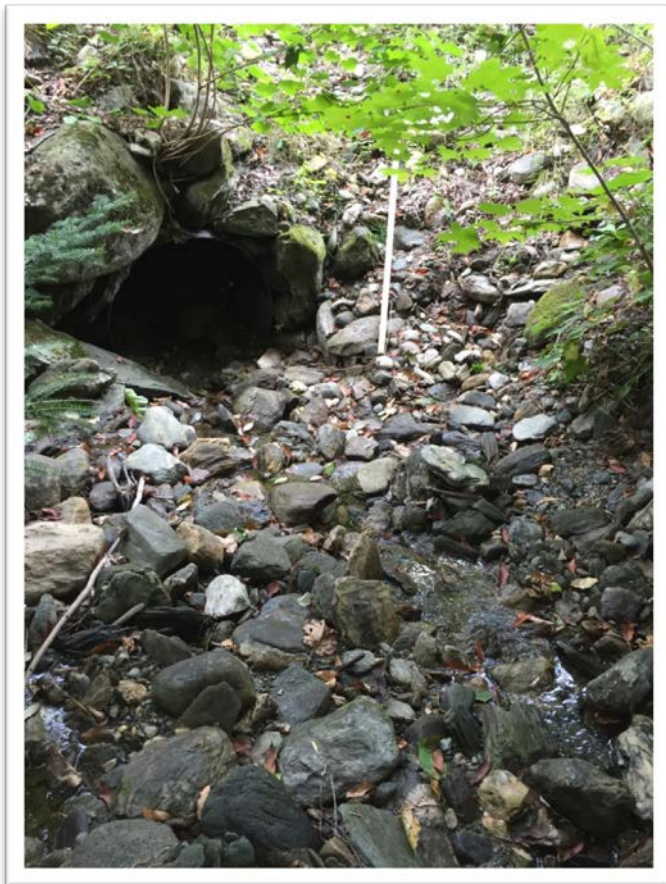


Braintree Priority Projects

Site	Location	Description	Cost
1	Connecticut Corners Road	Improving ditching	\$29,627
2	Duclos Road	Upgrade undersized culvert	\$198,000
3	Riford Brook Road	Upgrade 4 undersized culverts	\$600,000
4	Thayer Brook Road	Upgrade 2 undersized culverts	\$300,000
5	Farnsworth Road	Upgrade undersized culvert	\$150,000
6	Battles Brook Road	Upgrade 2 undersized culverts	\$13,530
7	Bent Hill Road	Upgrade 2 undersized culverts	\$15,680
Total Project Costs			\$1,306,837

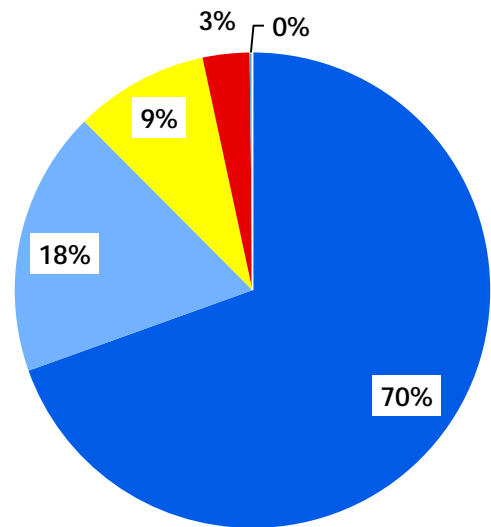
Town of Granville





Maston Hill culvert. Photo by Pete Fellows, TRORC

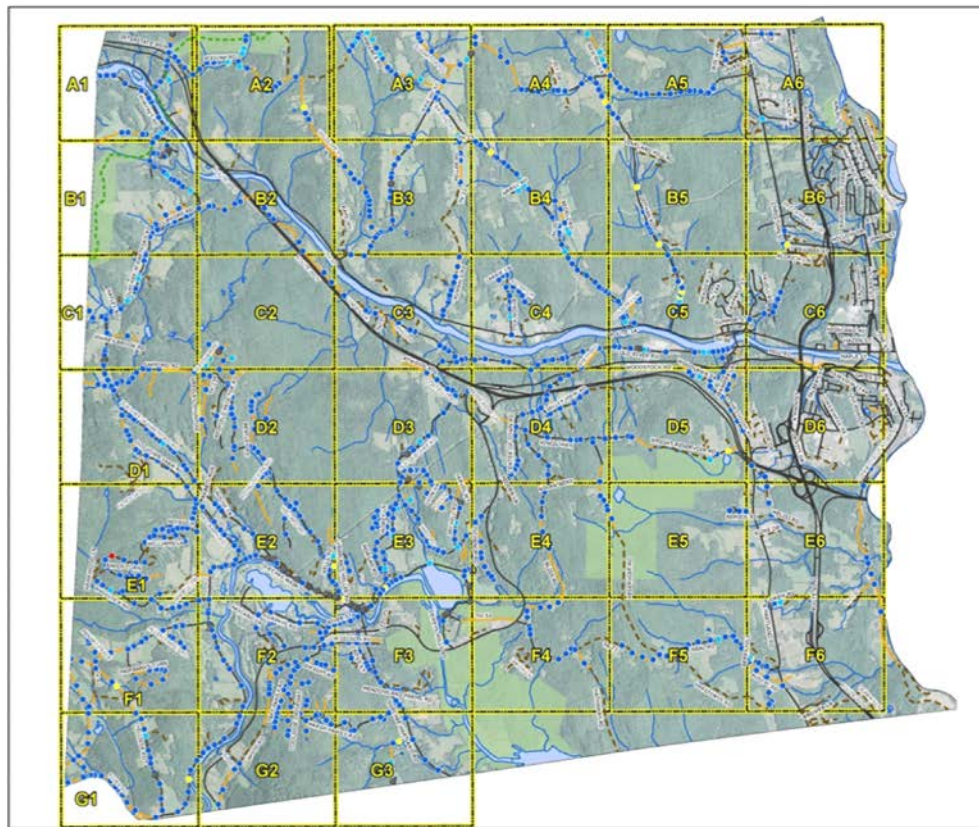
Overall culvert condition in Granville



Granville Priority Projects

Site	Location	Description	Cost
1	West Hill Road	Upgrade undersized culvert	\$3,261
2	Maston Hill Road	Upgrade 4 undersized culverts	\$16,167
3	North Hollow Road	Upgrade undersized culvert	\$7,192
Total Project Costs			\$26,620

Town of Hartford



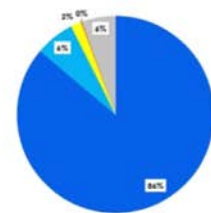
Culvert Inventory
Hartford, Vermont
Fall 2015

1:43,110

1 inch = 3,592 feet

0 2,550 5,100 Feet

Culvert Data collected using GPS by TRORC Fall 2015



TRORC
Two Rivers-Ortauquechee
REGIONAL COMMISSION

WHA Self, TRORC - Fall 2015



Culvert Inventory
Hartford, Vermont
Fall 2015

1:43,493

1 inch = 3,624 feet

0 2,550 5,100 Feet

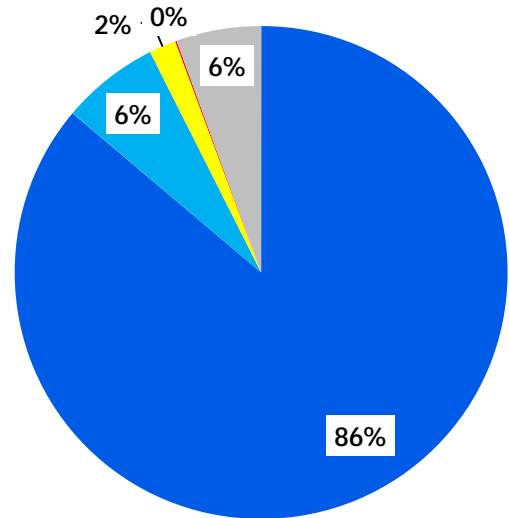
Culvert Data collected using GPS by TRORC Fall 2015



TRORC
Two Rivers-Ortauquechee
REGIONAL COMMISSION

WHA Self, TRORC - November 2015

Overall culvert condition in Hartford

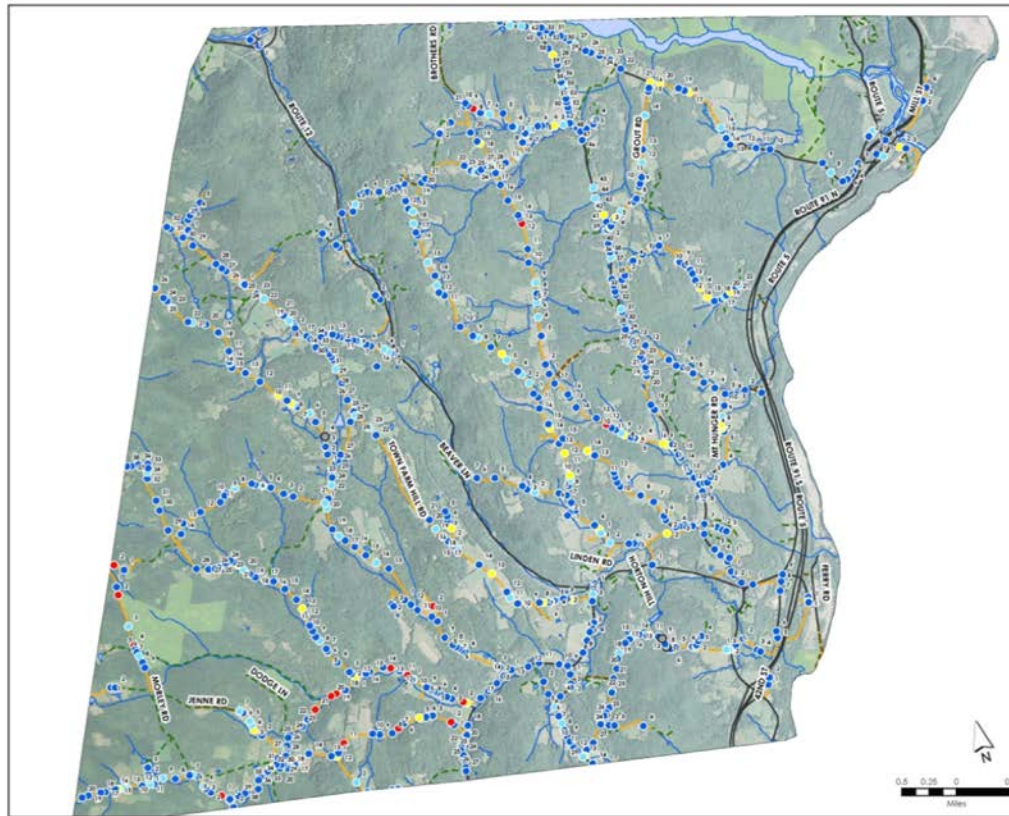


Draining culvert. Photo by Rita Seto, TRORC

Hartford Priority Projects

Site	Location	Description	Cost
1	Baker Turn	Replace 1 culvert	\$420
2	Christian Street	Replace 1 culvert	\$3,841
3	Dothan Road	Replace 5 culverts	\$5,960
4	Hillside Road	Replace 1 culvert	\$958
5	Jericho Road	Replace 1 culvert	\$3,727
6	Neal Road	Replace 2 culverts	\$586
7	Old River Road	Replace 1 culvert	\$2,829
8	Quechee Main Street	Replace 1 culvert	\$6,284
9	Wells Road	Replace 1 culvert	\$193
10	Wildlife Road	Replace 1 culvert	\$193
11	Wrights Reservoir Road	Replace 1 culvert	\$2,173
Total Project Costs			\$27,163

Town of Hartland



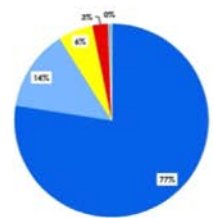
Culvert Inventory
Hartland, Vermont
April 2015

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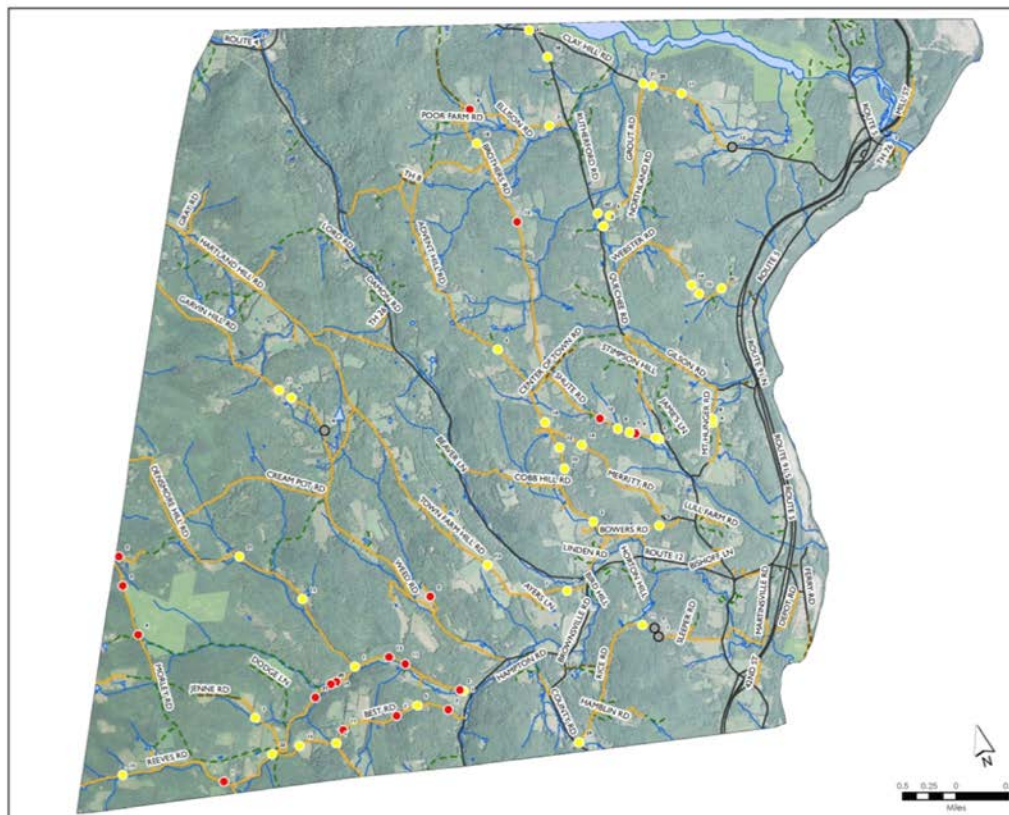
1 inch = 3,767 feet

0 0.75 1.5
Miles

Culvert Data collected using GPS by TRORC Spring 2015



TRORC
Two Rivers-Ottawa-Quebec
REGIONAL COMMISSION



Culvert Inventory
Hartland, Vermont
July 2015

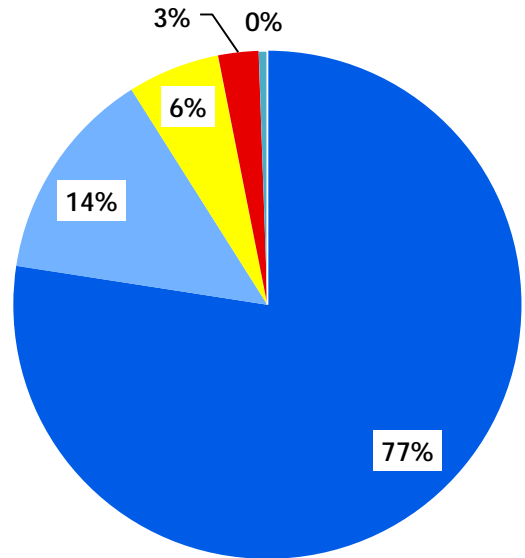


TRORC
Two Rivers-Ottawa-Quebec
REGIONAL COMMISSION



Old stone culvert on Brothers Road.
Photo by Britta McOmber, TRORC

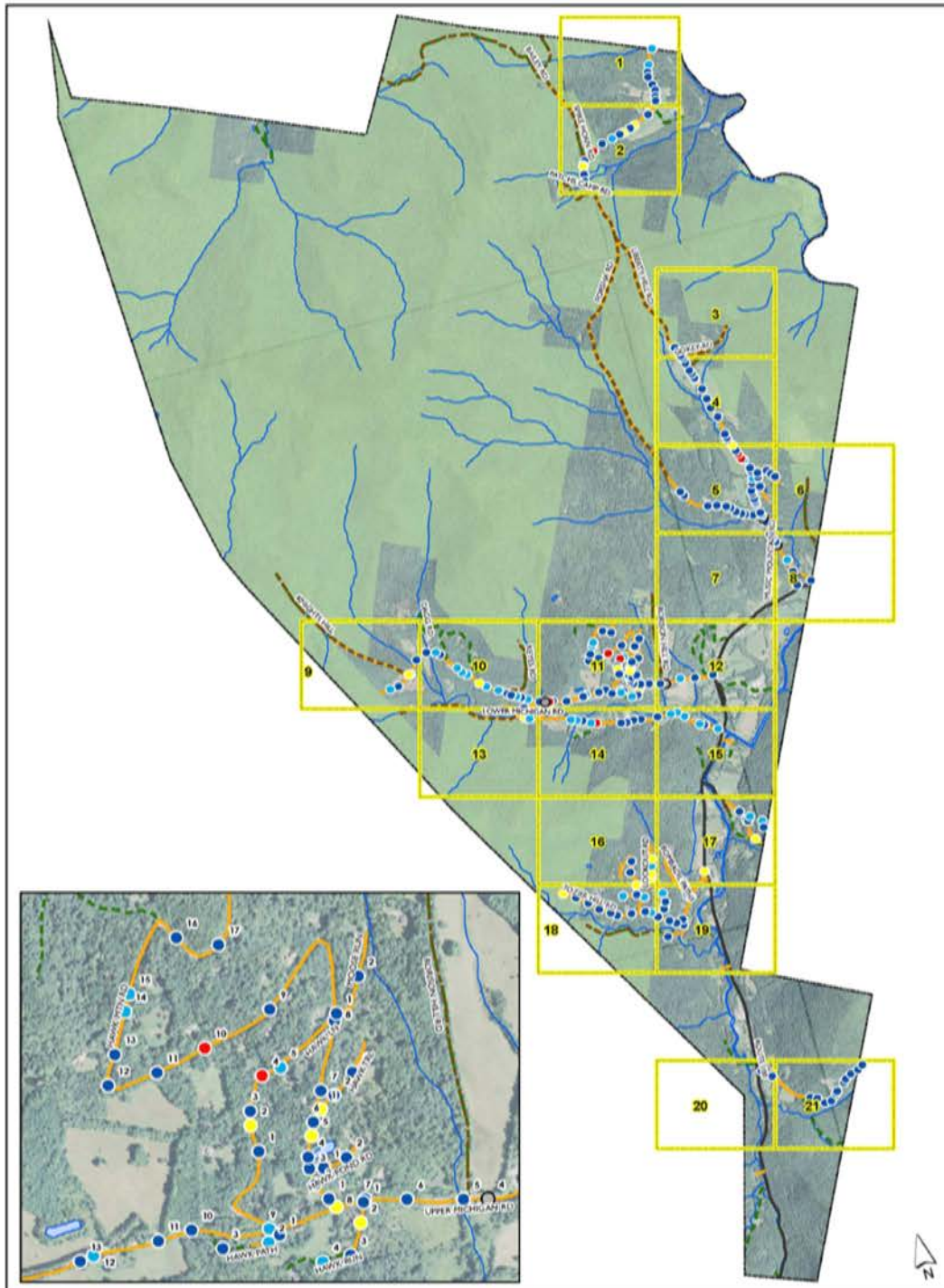
Overall culvert condition in Hartland



Hartland Priority Projects

Site	Location	Description	Cost
1	Brothers Road	Replace 3 culverts	\$3,114
2	Ellison Road	Replace 2 culverts	\$3,114
3	Jenneville Road	Replace 3 culverts	\$59,114
4	Shute Road	Replace 3 culverts	\$4,956
Total Project Costs			\$70,299

Town of Pittsfield



Pittsfield, VT

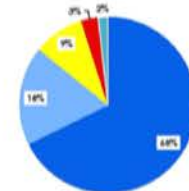
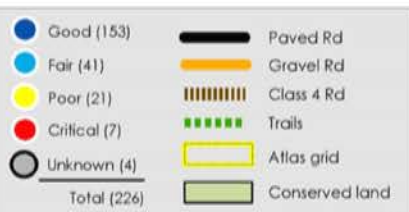
Culvert Inventory, July 2015

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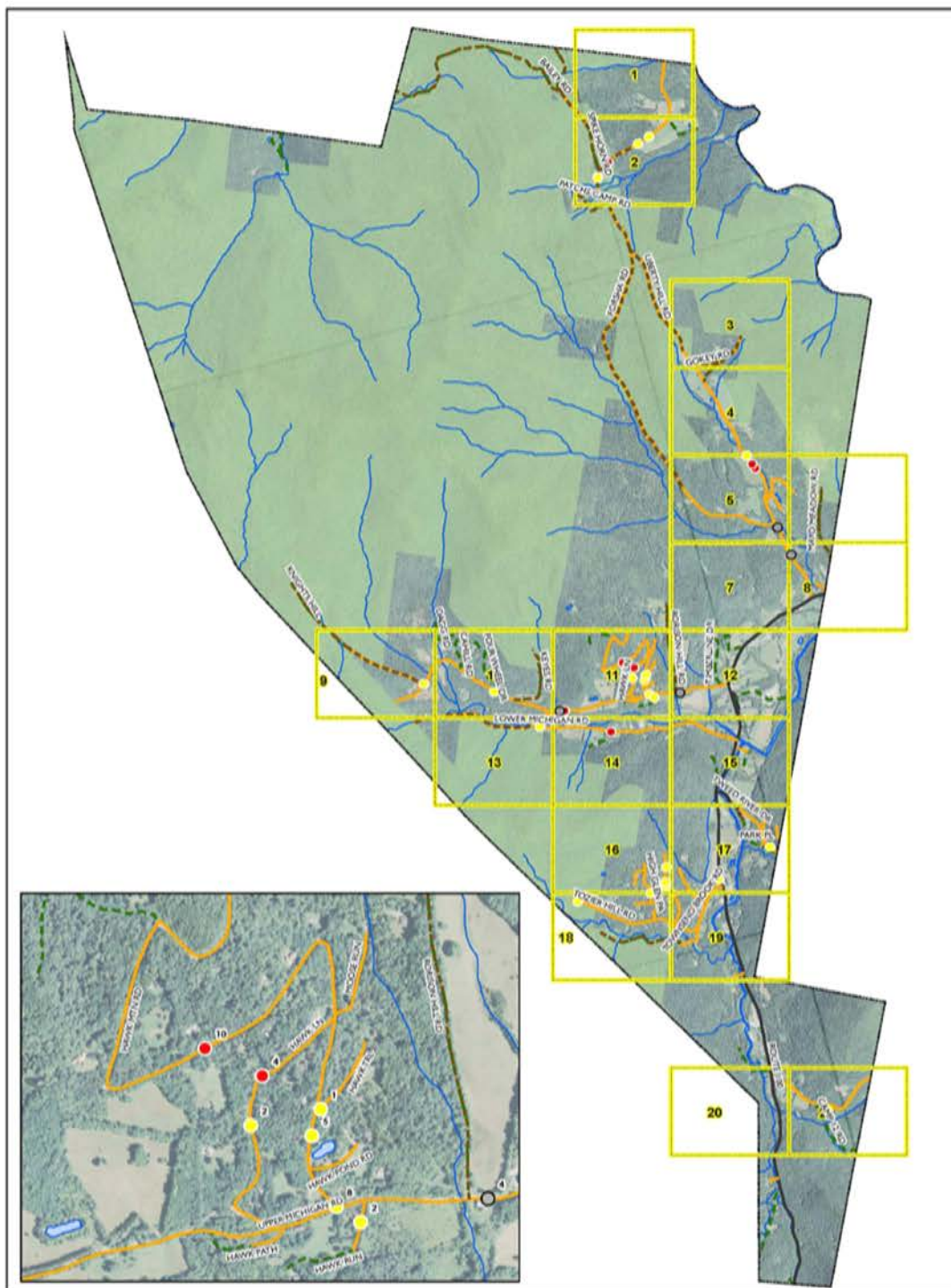
1 inch = 3,181 feet

1:38,170

TRORC
Two Rivers-Ortiguechee
REGIONAL COMMISSION



Culvert Data collected using GPS by TRORC (spring 2015)



Pittsfield, VT
Poor Culvert Overview
July 2015

TRORC
Two Rivers-Ortauquechee
REGIONAL COMMISSION



1:38,105

1 inch = 3,175 feet

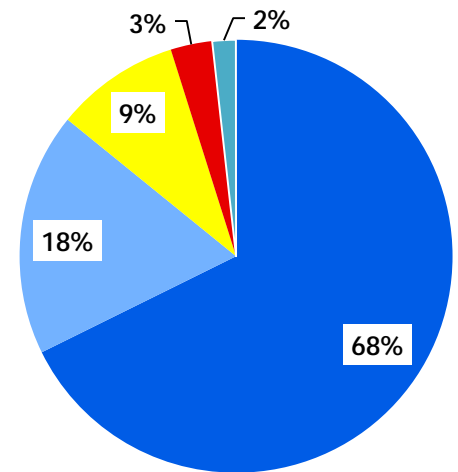
0 0.5 1 Miles

Culvert Data collected using GPS by TRORC Spring 2015



Rusted culvert on Lookout Road.
 Photo by Britta McOmber, TRORC

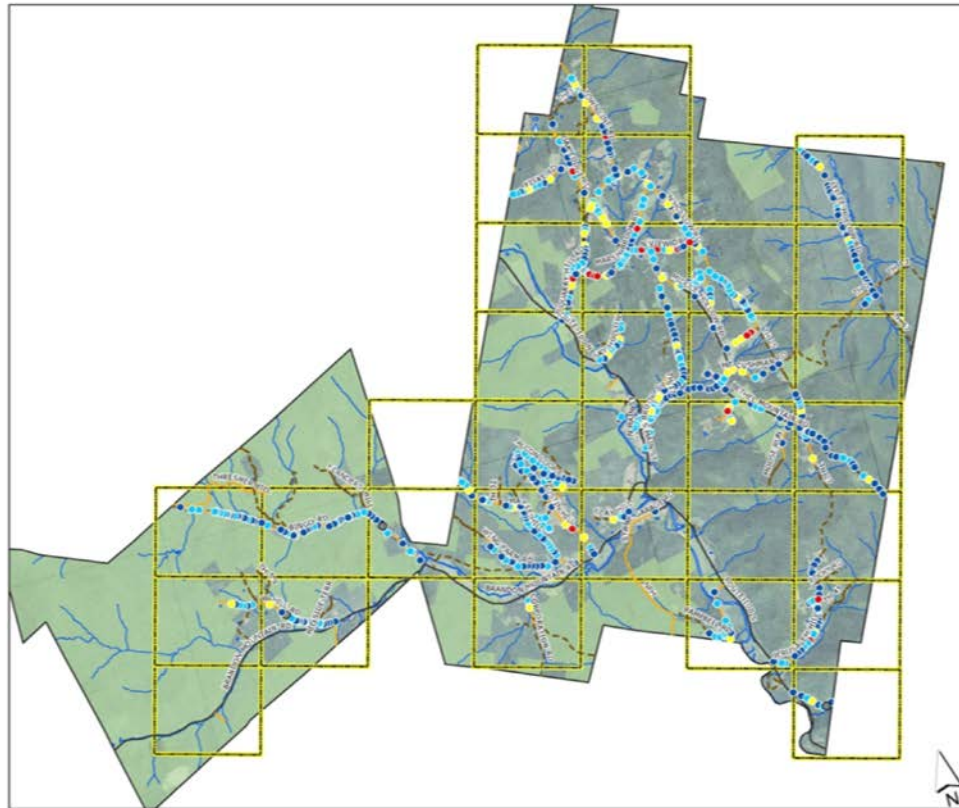
Overall culvert condition in Pittsfield



Pittsfield Priority Projects

Site	Location	Description	Cost
1	Hawk Lane	Replace 2 culverts	\$3,108
2	Hawk Trail	Replace 1 culvert	\$1,586
3	High Glen Path	Replace 1 culvert	\$2,760
5	Liberty Hill	Replace 1 culvert	\$1,822
6	Lookout Road	Replace 2 culverts	\$5,842
7	Upper Michigan Road	Replace 3 culverts	\$5,842
Total Project Costs			\$20,959

Town of Rochester



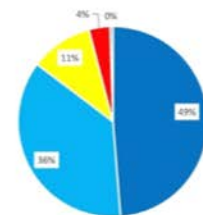
Culvert Inventory
Rochester, Vermont
October 2015

1:63,360

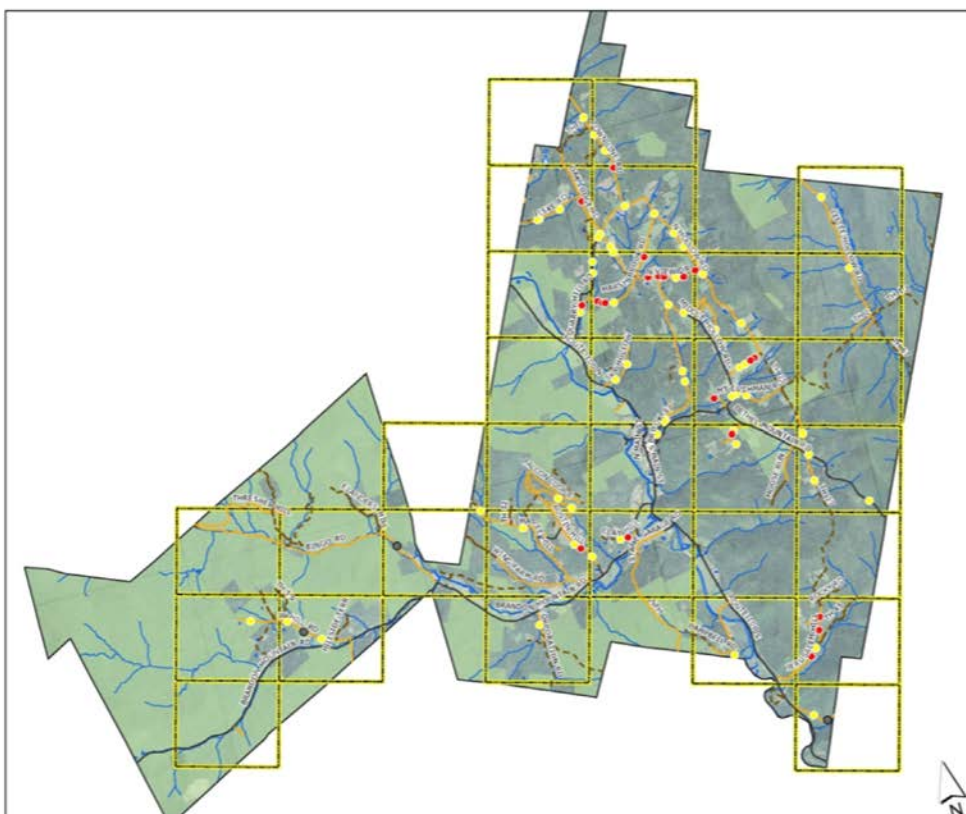
1 inch = 5,280 feet

0 3,750 7,500 Feet

Culvert Data collected using GPS by TRORC Fall 2015



TRORC
Two Rivers-Ottawaquechee
REGIONAL COMMISSION
Rita Sells, TRORC - October 2014



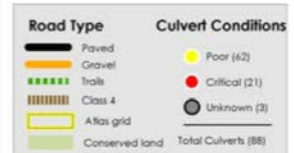
Culvert Inventory
Rochester, Vermont
October 2015

1:65,745

1 inch = 5,479 feet

0 3,875 7,750 Feet

Culvert Data collected using GPS by TRORC Fall 2015

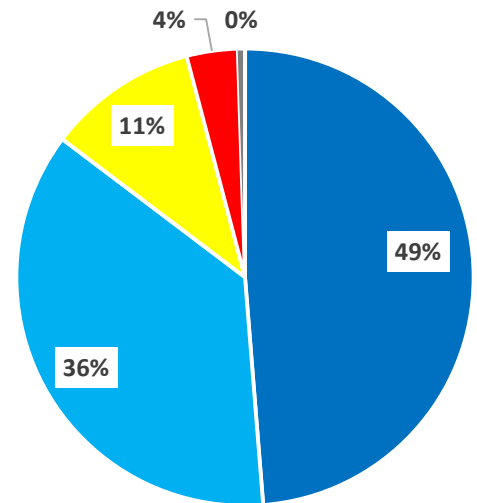


TRORC
Two Rivers-Ottawaquechee
REGIONAL COMMISSION
Rita Sells, TRORC - October 2015



Perched culvert outlet on River Brook Drive
 Photo by Rita Seto, TRORC

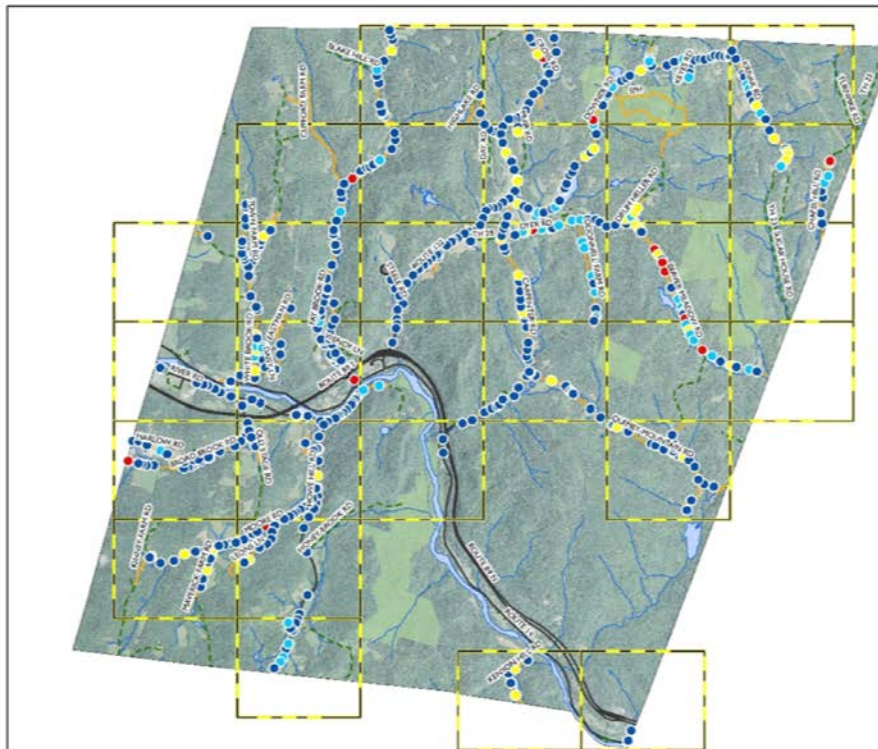
Overall culvert condition in Rochester



Rochester Priority Projects

Site	Location	Description	Cost
1	River Brook Drive	Replace 1 culvert	\$110,000
2	Maple Hill Road	Replace 2 culverts	\$103,000
3	Mt. Cushman Road	Replace 1 culvert	\$110,000
4	Middle Hollow Road	Replace 1 culvert	\$110,000
Total Project Costs			\$433,000

Town of Sharon

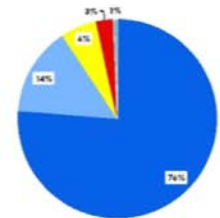
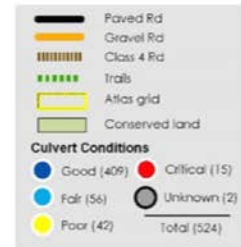


Culvert Inventory Sharon, Vermont

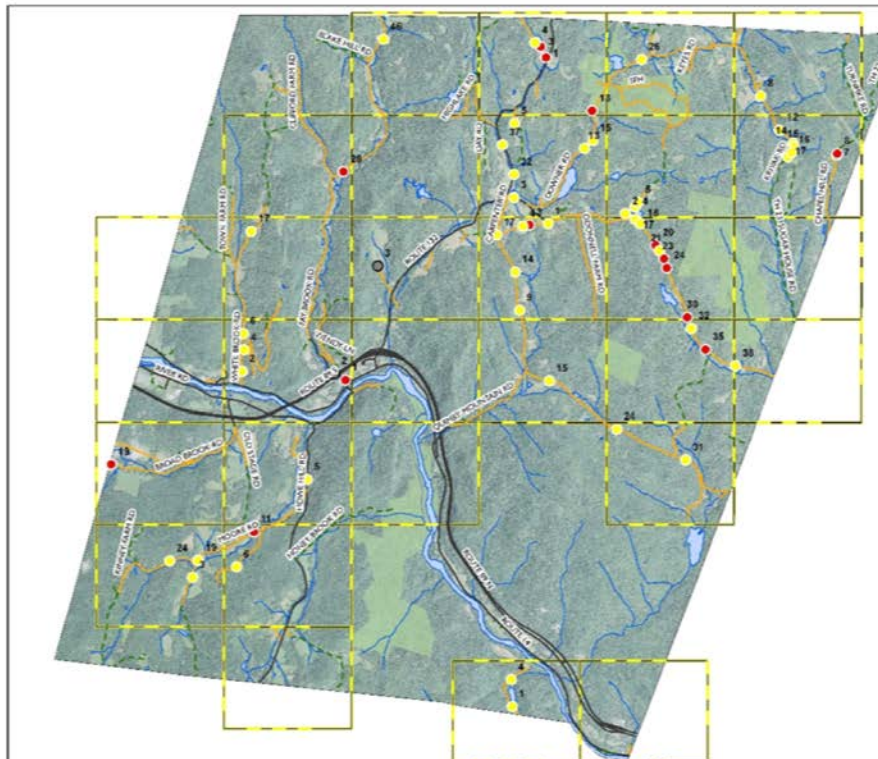
1:46,765 July 2015

1 inch = 3,897 feet

0 0.75 1.5 Miles



TRORC
Two Rivers-Ottawaquechee
REGIONAL COMMISSION

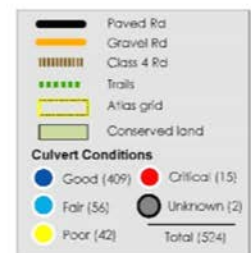


Culvert Inventory Sharon, Vermont

1:46,035

1 inch = 3,836 feet

0 0.5 1 Miles

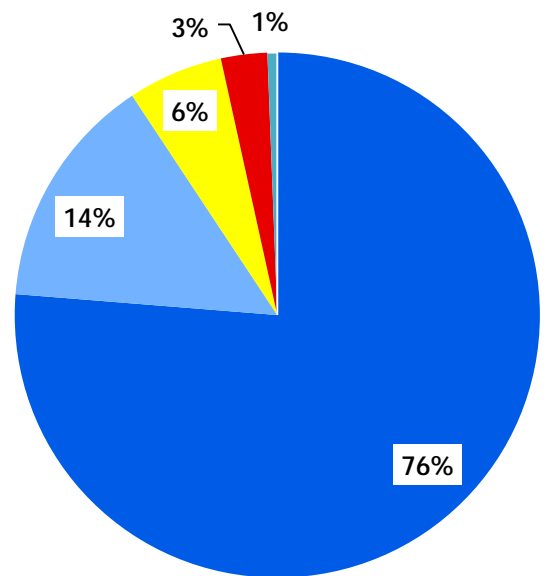


TRORC
Two Rivers-Ottawaquechee
REGIONAL COMMISSION



An eroded outlet on Carpenter Road
 Photo by Rita Seto, TRORC

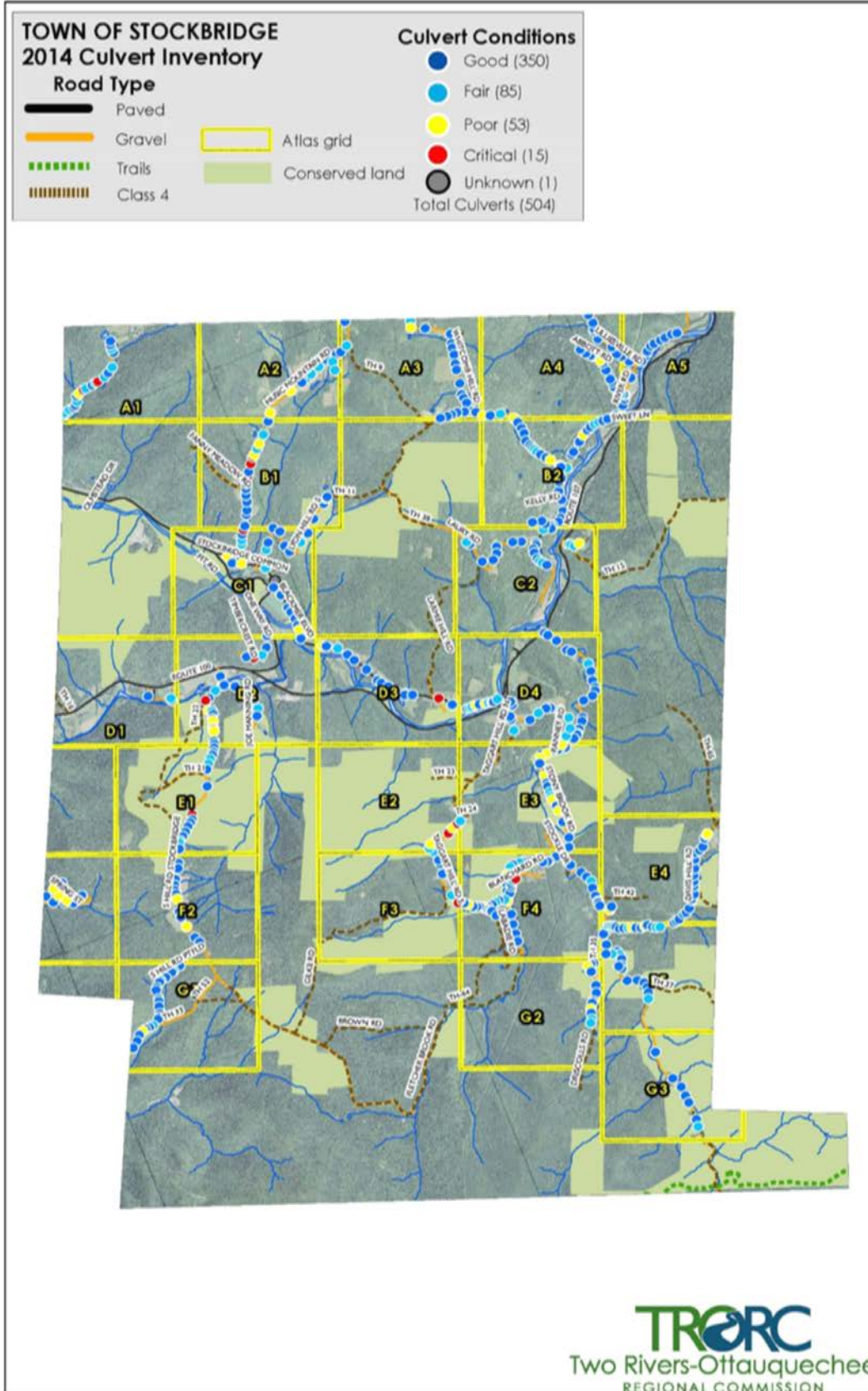
Overall Culvert Condition in Sharon



Sharon Priority Projects

Site	Location	Description	Cost
1	Cross Road	Replace 3 culverts	\$5,074
2	Beaver Meadow Road	Replace 9 culverts	\$11,664
3	Carpenter Road	Replace 3 culverts	\$4,014
4	White Brook Road	Replace 4 culverts	\$6,210
5	Downer Road	Replace 4 culverts	\$5,383
Total Project Costs			\$32,345

Town of Stockbridge

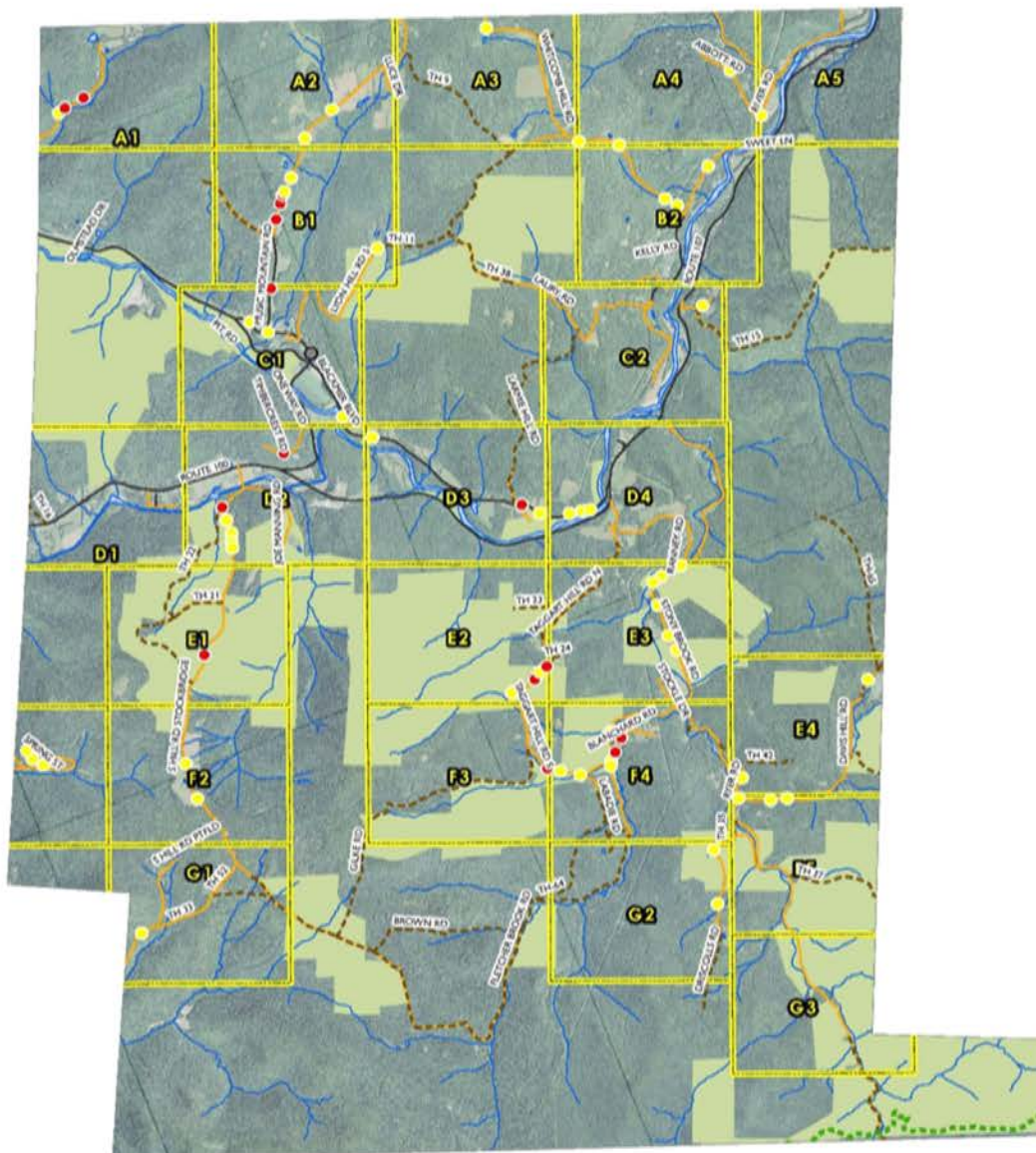


TOWN OF STOCKBRIDGE **2014 Culvert Inventory**

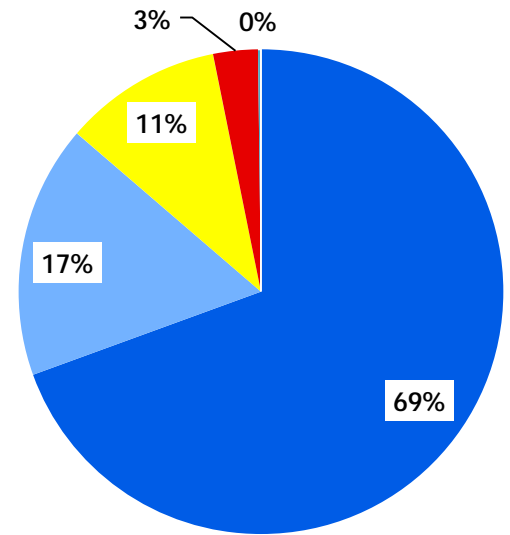
Poor Overview **Road Type**



Culvert Conditions



Overall Culvert Condition in Stockbridge

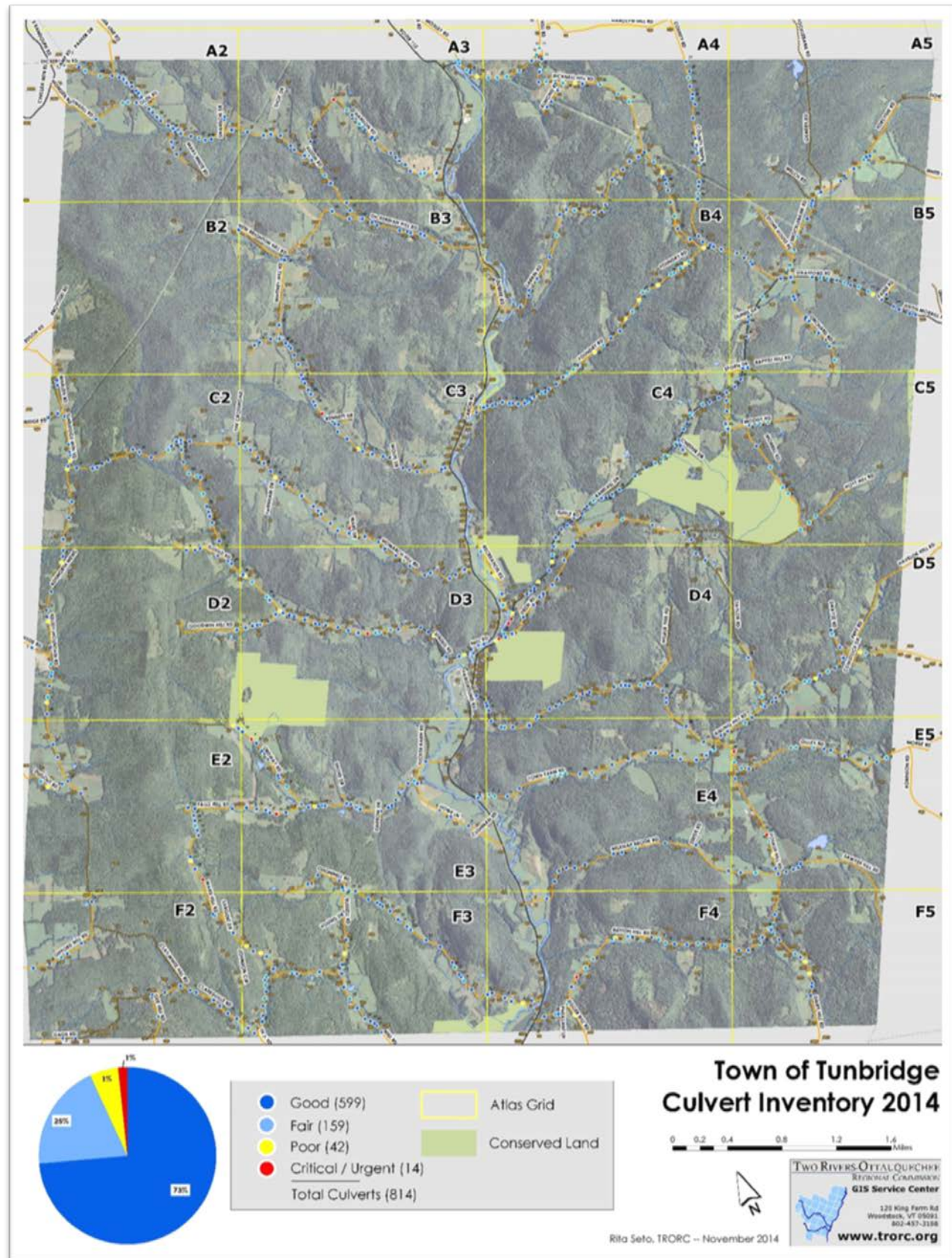


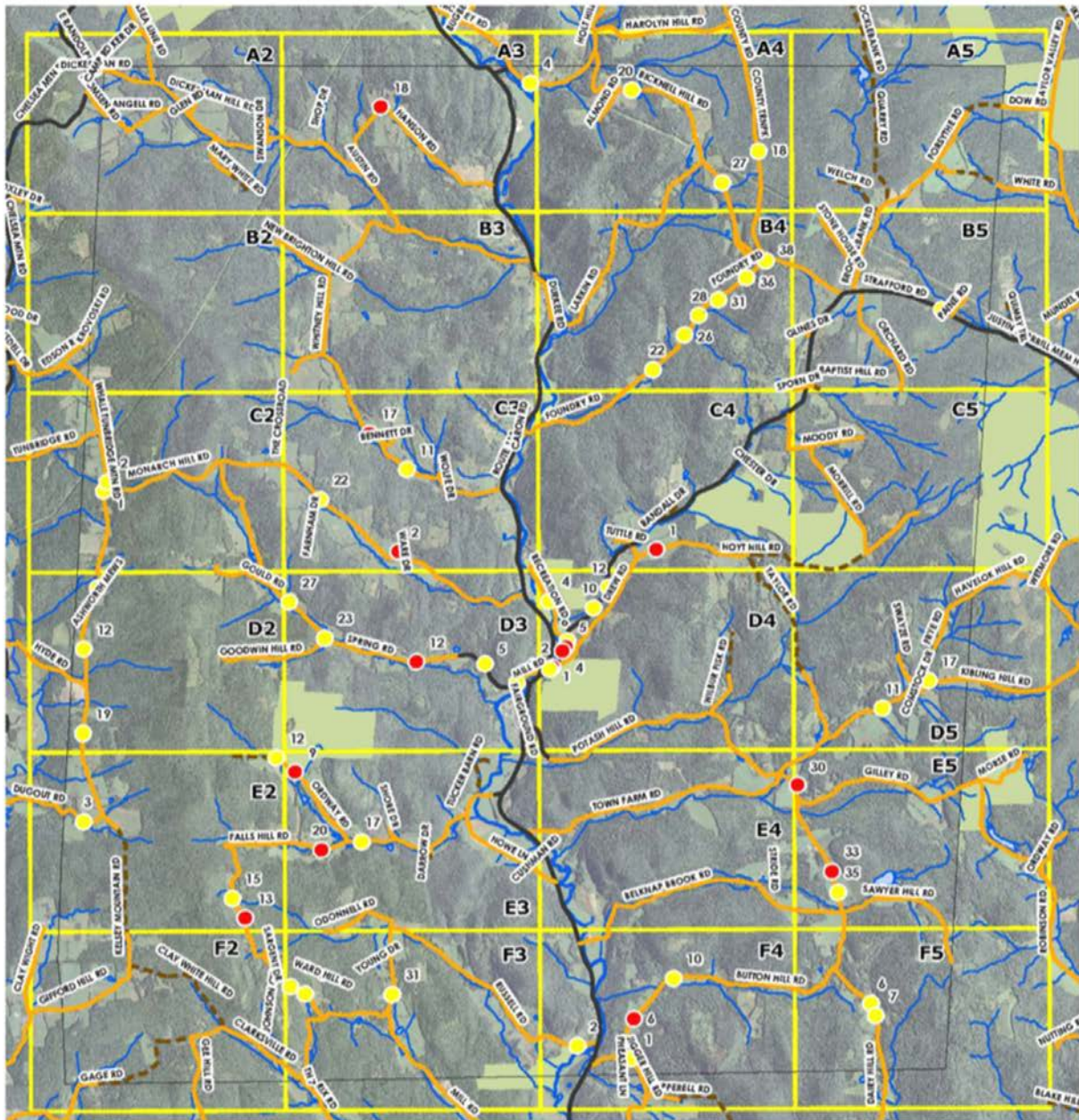
Spring thaw going through a culvert on Stony Brook Road. Photo by Pete Fellows, TRORC

Stockbridge Priority Projects

Site	Location	Description	Cost
1	Blackmer Blvd	Replace undersized culvert	\$57,388
2	Fletcher Brook Rd	Replace undersized culverts	\$46,352
3	Labadie Rd	Replace undersized culvert	\$18,758
4	Music Mountain Rd	Replace undersized culvert	\$16,338
5	River Rd	Replace undersized culvert	\$11,420
6	Stony Brook Rd	Replace undersized culverts	\$39,534
7	Taggart Hill Rd	Replace undersized culvert	\$11,829
Total Project Costs			\$201,617

Town of Tunbridge





Poor Culvert Conditions 2014

- Poor (42)
- Critical / Urgent (14)
- Total Culverts (56)

Road Type

- Gravel
- Paved
- - - Class 4

0.0 0.225 0.45 0.9 1.35 1.8
Miles

Rita Seto, TRORC -- November 2014



Town of Tunbridge Poor Culvert Conditions 2014

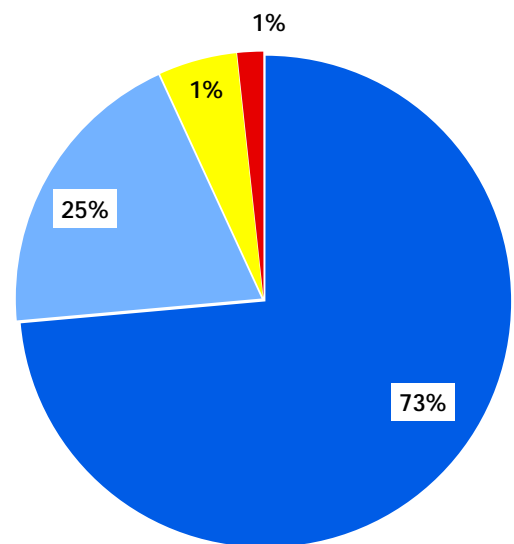
TWO RIVERS-OTTAUQUECHEE
REGIONAL COMMISSION
GIS Service Center

128 King Farm Rd
Woodstock, VT 05091
802-457-3188
www.trorc.org



Rusted and perched culvert on Strafford Road. Photo by Rita Seto, TRORC

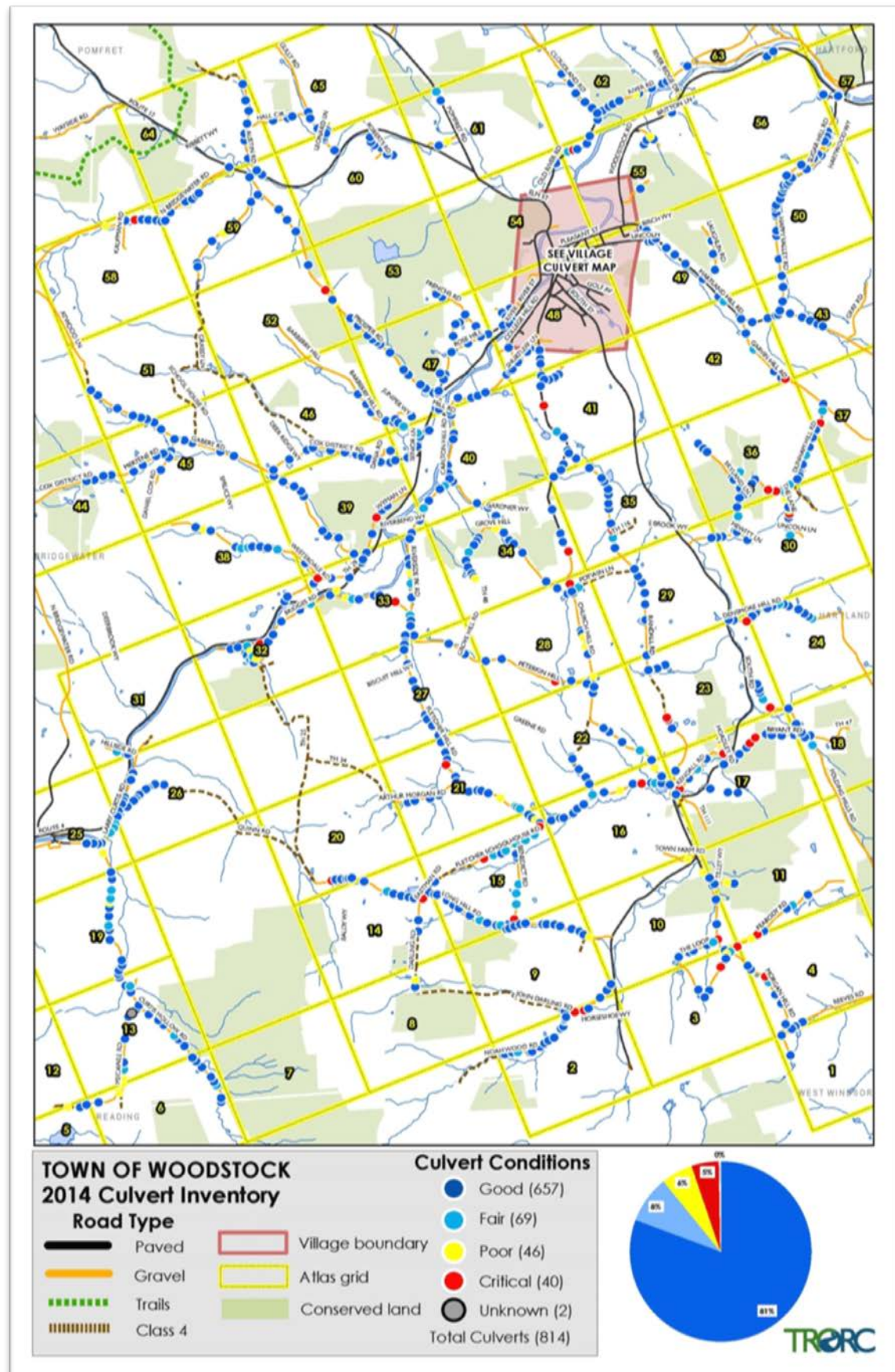
Overall Culvert Condition in Tunbridge

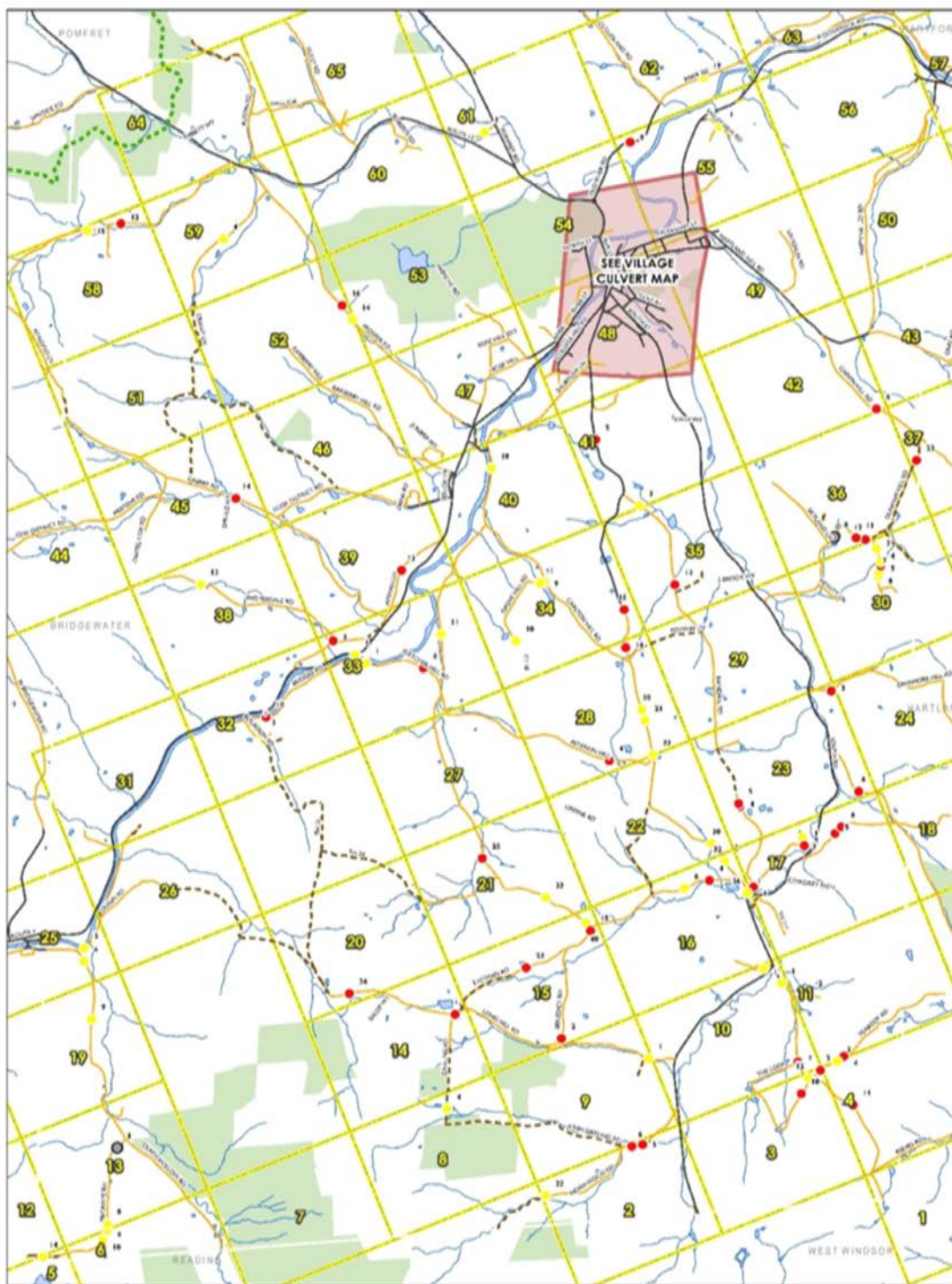


Tunbridge Priority Projects

Site	Location	Description	Cost
1	Button Hill Rd	Replace undersized culvert	\$1,754
2	Whitney Hill Rd	Replace undersized culvert	\$2,020
3	Potash Hill Rd	Replace undersized culvert	\$1,248
4	Ward Hill Rd	Replace undersized culvert	\$1,248
5	Falls Hill Rd	Replace undersized culvert	\$1,248
6	Ordway Rd	Replace undersized culvert	\$1,248
7	Hoyt Hill Rd	Replace undersized culvert	\$1,248
8	Strafford Rd	Replace 3 undersized culverts	\$4,791
Total Project Costs			\$14,801

Town of Woodstock





TOWN OF WOODSTOCK 2014 Culvert Inventory

Road Type

	Paved		Village boundary
	Gravel		Atlas grid
	Trails		Conserved land
	Class 4		

Poor Culverts

	Poor (46)
	Critical (40)
	Unknown (2)
	Total Culverts (88)

TRORC
Two Rivers-Ottawaquechee
REGIONAL COMMISSION

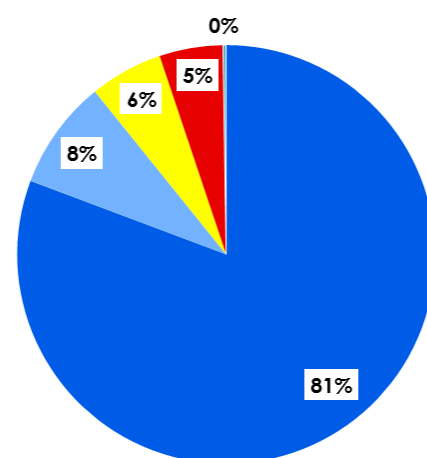
128 King Farm Rd.
Woodstock, VT 05091 802.457.3188

trorc.org
November 2014



A rusted and crushed culvert on Happy Valley Road
Photo by Rita Seto, TRORC

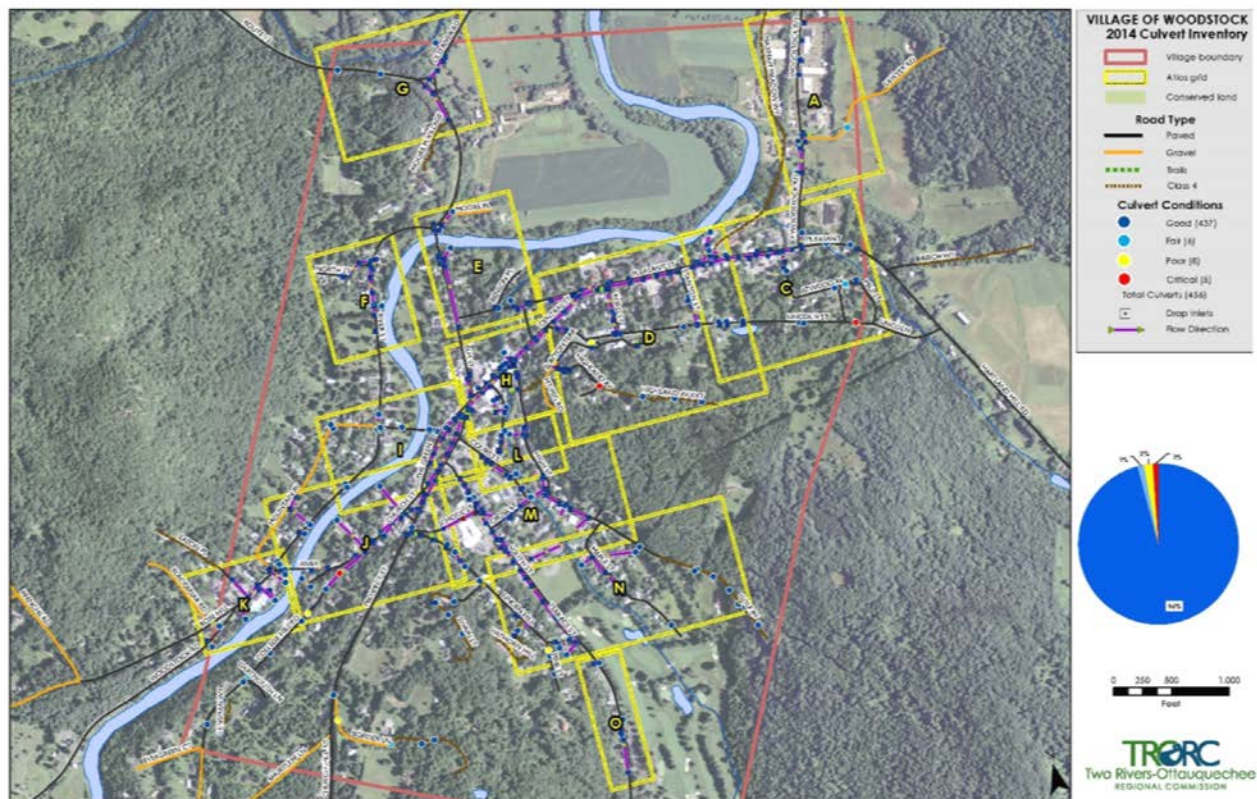
Overall Culvert Condition in
the Town of Woodstock

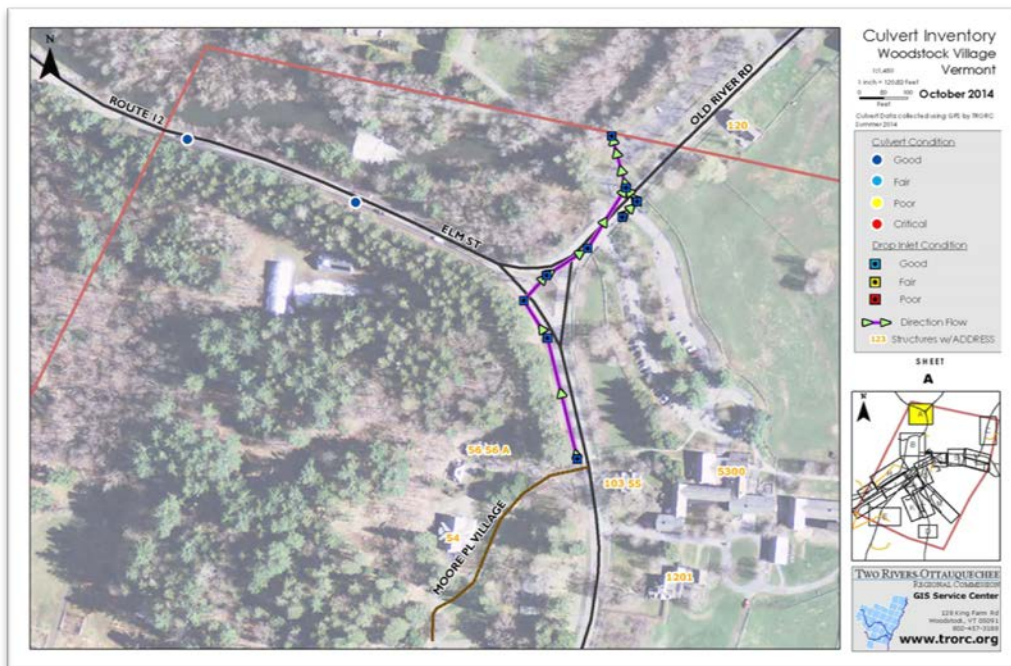


Town of Woodstock Priority Projects

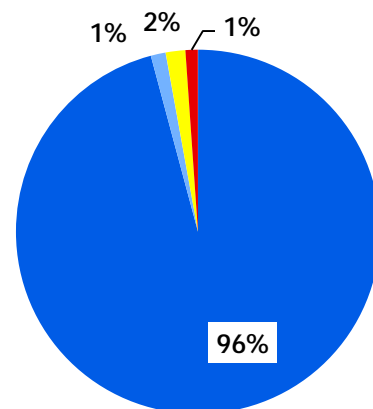
Site	Location	Description	Cost
1	Churchill Road	Replace undersized culvert	\$4,688
2	Cox District Road	Replace undersized culvert	\$20,996
3	Darling Road	Replace undersized culvert	\$4,149
4	Happy Valley Road	Replace 6 undersized culverts	\$36,895
Total Project Costs			\$66,729

Village of Woodstock





Overall Culvert Condition in the Village of Woodstock



Showing the DI network in the Village of Woodstock

Village of Woodstock Priority Projects

Culvert No.	ROAD NAME	TYPE	MATERIAL	CONDITION
5	Charles Street	DI	STEEL	Poor
1	College Hill Road	CULVERT	PLASTIC	Critical
3	College Hill Road	CULVERT	PVC PIPE	Poor
1	Highland Ave Ext	CULVERT	STEEL	Critical
3	Lincoln Street	CULVERT	PVC PIPE	Critical
3	Slayton Terrace	CULVERT	STEEL	Poor
1	School Street	DI	PVC PIPE	Critical
2	School Street	DI	STEEL	Critical
2	Swain Street	DI	STEEL	Poor
2	Border Lane	CULVERT	PLASTIC	Poor
15	Golf Avenue	DI	STEEL	Poor
1	Pine Street	CULVERT	STEEL	Poor
1	Slayton Terrace	CULVERT	STEEL	Poor