

In August 2013, the Town of Pomfret, Vermont was awarded a 2013 Better Backroads Category A Grant award for a new town-wide inventory of the town highway's and development of a Road Surface Management System (RSMS) using Maine LTAP's RSMS11 software and an update to the existing culvert inventory database. This project's scope of work included the following major steps:

- inventory of road surfaces,
- survey of road surface and drainage conditions,
- an update to the existing culvert inventory, and
- a final report recommending a major maintenance program with the associated costs for the next 5 years.

The purpose of this project is to identify specific road segments and culvert/drainage problems in the Town of Pomfret. The goal is to determine effective repair solutions to each problem according the Vermont Better Backroads Manual and the road standards of the Town of Pomfret. The Town adopted the 2013 Town Road and Bridge Standards from VTrans and the State of Vermont on March 20 2013. Additionally, the roads and culverts throughout the Town of Pomfret, and based on the findings of this project, are generally in fair to good condition.

All work within this project followed the guidelines and processes found in the RSMS11 user's manual and the Vermont Online Bridge and Culvert Inventory Tool.

ROAD SURFACE MANAGEMENT SYSTEM

Annual Budgeting within RSMS11 based on information from Town of Pomfret:

- approximately \$10,000 per year in major maintenance programming for roadway drainage work
- approximately \$30,000 per year in major maintenance programming on Class 3 gravel roads
- approximately \$20,000 per year in major maintenance programming on Class 2 paved roads
- averaged \$200,000/yr over the past 7 years for paving on Class 2 roads

CULVERTS INVENTORY MANAGEMENT

Annual Budgeting for culvert replacements based on information from Town of Pomfret:

- approximately \$10,000 per year this is about 10 culverts per year

RECOMMENDATIONS

- Maintain the current quality of the Town's roads. As stated earlier in this report, the roads and culverts throughout the Town of Pomfret are generally in fair to good condition. This is very good based on my experience and compared with other small towns throughout New England.
- Replace 10 to 15 culverts per year to maintain culvert inventory - The Town of Pomfret has a culvert inventory of approximately 700 units with most in fair to good condition. Each culvert type has a state and federally approved life span. High Density Poly Ethylene (HDPE) drain culvert pipes have state and federal highway approved life expectancy of 50 to 75 years. The life expectancy of galvanized corrugated steel pipe has a life expectancy of 10 years to about 25 years. Other types of culverts, like dry set stone culverts, have no specific state or federal lifespan since their lifespan is based more on water flow rates than other environmental factors. Thus, the Town should replace 10 to 15 culverts per year to maintain its culvert inventory within the specified life span.

Budgeting Recommendations:

- maintain the current budgeting levels and increase by a minimum of 5% per year to account for increased material, fuel, equipment, and labor costs
- appropriate \$10,000 to \$15,000 per year for culvert replacement
- appropriate \$5,000 per year in deposits to a capital reserve account for future bridge and large culvert replacement that may be combined with VTrans highway improvement program funds
- appropriate \$20,000 per year in deposits to a capital reserve account for future Class 2 paved road improvements for road surface and or drainage work and that may be combined with VTrans highway improvement program funds
- Regularly apply for town highway program funds through VTrans. VTrans has several competitive aid programs, such as the Town Highway Bridge Program, Town Highway Structures Program, and the Town Highway Class 2 Roadway Program. These programs allow the Town to leverage its funds with state and federal money.

Road segment redevelopment for greater road network connectivity across and around town:

- Old Kings Highway, the Class 4 section between Dana Road and Bunker Hill Road. Use materials recovered from drainage ditching work as fill to increase roadway width and lessen steep slopes immediately adjacent to the northern side of this road. Later and in the future after significant rehabilitation and reconstruction, reclassify this road segment as a Class 3 town highway and fully maintain.
- Hewitt Hill Road, the Class 4 section between the current end of the Class 3 section westerly to Hidden Ridge Road and Windy Lane. Use materials recovered from drainage ditching work as fill to increase roadway width. Later and in the future after significant rehabilitation and reconstruction, reclassify this road segment as a Class 3 town highway and fully maintain.

Appendix A

***2014 through 2018
Major Maintenance Programming
based on RSMS11***

Major Maintenance Programming

2014 to 2018

2014

<u>Road/Section Name</u>	<u>#</u>	<u>From</u>	<u>To</u>	<u>Length</u>	<u>Recommended Repair</u>	<u>Other</u>	<u>Budget</u>	<u>Actual</u>
Gravel								
BARBER HILL ROAD	02	EOP	MAXHAM	0.80	RECON - 2" ADDED MATERIAL		8,448	0
BARBER HILL ROAD	03	MAXHAM	CLOUDLAND	0.52	RECON - 2" ADDED MATERIAL		4,393	0
HIGH PASTURES ROAD	01	WOODSTOC	HARTFORD TL	0.64	RECON - 2" ADDED MATERIAL	coordinate with repairs	6,758	0
HIGH PASTURES ROAD	01	WOODSTOC	HARTFORD TL	0.64	DITCHING WITH EXCESS		12,435	0
Total							32,034	0
Paved								
LIBRARY STREET	01	STAGE	POMFRET	0.06	LEVELING SHIM WITH 1" HOT		11,016	0
POMFRET ROAD	14	RUDGE	BARTLETT	0.56	STOP GAP REPAIR - see explanation	repair localized high	10,000	0
Total							21,016	0
Total 2014							53,050	0

2015

<u>Road/Section Name</u>	<u>#</u>	<u>From</u>	<u>To</u>	<u>Length</u>	<u>Recommended Repair</u>	<u>Other</u>	<u>Budget</u>	<u>Actual</u>
Gravel								
ALLEN HILL ROAD	04	LEONARD	CULVERT #48	0.97	RECON - 2" ADDED MATERIAL		8,195	0
ALLEN HILL ROAD	05	CULVERT	BARNARD TL	0.50	RECON - 2" ADDED MATERIAL		4,752	0
BARTLETT BROOK RD	01	POMFRET	DINSMOOR	0.98	RECON - 2" ADDED MATERIAL		9,314	0
CLOUDLAND ROAD	04	CULVERT	SESSIONS	0.95	RECON - 2" ADDED MATERIAL		9,029	0
CLOUDLAND ROAD	05	SESSIONS	CULVERT #07	0.81	RECON - 2" ADDED MATERIAL		6,843	0
CLOUDLAND ROAD	06	CULVERT	GALAXY HILL	0.64	RECON - 2" ADDED MATERIAL		5,407	0
GALAXY HILL ROAD	02	CLOUDLAND	OLD KINGS	0.17	DITCHING WITH EXCESS		3,303	0
GALAXY HILL ROAD	02	CLOUDLAND	OLD KINGS	0.17	RECON - 2" ADDED MATERIAL		1,795	0
SPAULDING LANE	01	HIGH	HARTFORD TL	0.21	DITCHING WITH EXCESS		4,080	0
SPAULDING LANE	01	HIGH	HARTFORD TL	0.21	RECON - 4" ADDED MATERIAL	additional material	3,992	0
Total							56,710	0
Total 2015							56,710	0

2016

<u>Road/Section Name</u>	<u>#</u>	<u>From</u>	<u>To</u>	<u>Length</u>	<u>Recommended Repair</u>	<u>Other</u>	<u>Budget</u>	<u>Actual</u>
Gravel								
BUNKER HILL ROAD	03	JOE	END - CLASS 4	0.26	DITCHING WITH EXCESS		5,052	0
DANA ROAD	01	OLD KINGS	POMFRET	0.98	RECON - 2" ADDED MATERIAL		8,279	0
FREEMAN ROAD	02	END - CLASS	END -	0.24	DITCHING WITH EXCESS		4,663	0
HIGH PASTURES ROAD	03	SPAULDING	SESSIONS	0.15	RECON - 2" ADDED MATERIAL		1,742	0
JOE RANGER ROAD	01	HARTFORD	CULVERT #10	1.04	RECON - 2" ADDED MATERIAL		7,688	0
JOE RANGER ROAD	02	CULVERT	BUNKER HILL	0.70	RECON - 2" ADDED MATERIAL		5,914	0
SKYLINE DRIVE	02	TWIN POND	ALLEN HILL	1.09	RECON - 2" ADDED MATERIAL		9,208	0
Total							42,546	0
Paved								
HOWE HILL ROAD	01	SHARON TL	TPOLE #56	0.51	CRACK SEAL		4,080	0
HOWE HILL ROAD	03	CULVERT	POMFRET	0.66	CRACK SEAL		5,280	0
POMFRET ROAD	17	STAGE	CULVERT #97	0.26	CRACK SEAL		2,080	0
Total							11,440	0
Total 2016							53,986	0

2017

<u>Road/Section Name</u>	<u>#</u>	<u>From</u>	<u>To</u>	<u>Length</u>	<u>Recommended Repair</u>	<u>Other</u>	<u>Budget</u>	<u>Actual</u>
Gravel								
BERNARD ROAD	01	WEBSTER	END - CLASS 4	0.14	RECON WITH USED MATERIAL -	low priority road -	630	0
BUNKER HILL ROAD	03	JOE	END - CLASS 4	0.26	RECON - 2" ADDED MATERIAL		1,647	0
HEWITT HILL ROAD	02	JOHNSON	END - CLASS 4	0.46	UNPAVED - STOP GAP REPAIR -	low priority road -	2,500	0
JOHNSON ROAD	01	HEWITT HILL	END - CLASS 4	0.27	UNPAVED - STOP GAP REPAIR -	minimal work - low	2,500	0
OLD KINGS HIGHWAY	01	GALAXY HILL	END - CLASS 4	0.89	RECON - 2" ADDED MATERIAL		7,519	0
OLD KINGS HIGHWAY	03	END - CLASS	BUNKER HILL	0.21	RECON - 2" ADDED MATERIAL		1,996	0
SESSIONS MEADOW RD	01	HIGH	GRANITE	0.73	RECON - 2" ADDED MATERIAL		6,167	0
WEBSTER HILL ROAD	02	LABOUNTY	HIDDEN RIDGE	0.72	RECON - 4" ADDED MATERIAL		12,165	0
WEBSTER HILL ROAD	03	HIDDEN	SKYLINE	0.72	RECON - 4" ADDED MATERIAL		13,686	0
Total							48,810	0
Paved								
POMFRET ROAD	07	CAPER	FIRE STATION	0.54	CRACK SEAL		4,320	0
Total							4,320	0
Total 2017							53,130	0

2018

<u>Road/Section Name</u>	<u>#</u>	<u>From</u>	<u>To</u>	<u>Length</u>	<u>Recommended Repair</u>	<u>Other</u>	<u>Budget</u>	<u>Actual</u>
Gravel								
CHERRY HILL ROAD	01	CAPER	END	0.56	UNPAVED - STOP GAP REPAIR -	low priority road -	2,000	0
FREEMAN ROAD	01	POMFRET	END - CLASS 4	0.44	RECON - 2" ADDED MATERIAL		3,717	0
FREEMAN ROAD	02	END - CLASS	END -	0.24	RECON - 2" ADDED MATERIAL		1,521	0
WILD APPLE ROAD	02	CULVERT	CULVERT #06	0.88	RECON - 2" ADDED MATERIAL		7,434	0
Total							14,672	0
Paved								
POMFRET ROAD	01	HARTFORD	BRIDGE #B1	0.58	CRACK SEAL		4,640	0
POMFRET ROAD	02	BRIDGE #B1	KENYON HILL	0.52	CRACK SEAL		4,160	0
POMFRET ROAD	03	KENYON	SUGAR	0.51	CRACK SEAL		4,080	0
POMFRET ROAD	09	HOWE HILL	GALAXY HILL	0.89	CRACK SEAL		7,120	0
POMFRET ROAD	10	GALAXY HILL	TOWN HALL	0.64	CRACK SEAL		5,120	0
POMFRET ROAD	11	TOWN HALL	LABOUNTY	0.71	CRACK SEAL		5,680	0
POMFRET ROAD	12	LABOUNTY	CULVERT #71	0.53	CRACK SEAL		4,240	0
POMFRET ROAD	13	CULVERT	RUDGE ROAD	0.39	CRACK SEAL		3,120	0
Total							38,160	0
Total 2018							52,832	0
							269,708	0

Appendix B

High Priority Culvert Replacements

High Priority Culvert Replacements

listed in no specific order

<p>Culvert #1 – High Pastures Road located near Woodstock town line and intersection with River Road Problem: erosion around inlet and outlet headwalls, aging, in poor condition, and likely to require engineering study to determine safe replacement requirements</p>
<p>Culvert #4 – High Pastures Road located near Hartford town line and Otis Hill Road Problem: limits roadway width and needs upgrade to 18" HPDE culvert</p>
<p>Culvert #19 – Cloudland Road located about 6,000 feet north of Barber Hill Road Problem: aging, in poor conditions, and upgrade to 18" HPDE culvert</p>
<p>Culvert #20 – Cloudland Road located about 4,800 feet north of Barber Hill Road Problem: aging, in poor conditions, and upgrade to 18" HPDE culvert</p>
<p>Culvert #23 – Cloudland Road located about 2,200 feet north of Barber Hill Road Problem: limits roadway width and needs upgrade to 18" HPDE culvert</p>
<p>Culvert #101 – Pomfret Road located at the Woodstock town line Problem: limits roadway width with some erosion around the inlet and outlet areas</p>
<p>Culvert #47 – Pomfret Road located at intersection with Dana Road Problem: erosion around the inlet area that is likely to cause road surface and other damage</p>
<p>Culvert #2 – Labounty Road located near intersection with Pomfret Road Problem: limits roadway width along high priority road and in high priority location near town garage</p>
<p>Culvert #2 – Galaxy Hill Road located approximately 1,800 feet east of Pomfret Road Problem: limits roadway width and is in poor condition</p>
<p>Culvert #10 – Galaxy Hill Road located about midway between Pomfret Road and Old Kings Highway Problem: limits roadway width and is in poor condition</p>
<p>Culvert #17 – Allen Hill Road located about midway between Blackmer Road and Skyline Road Problem: limits roadway width and erosion at the outlet area</p>
<p>Culvert #21 – Allen Hill Road located a little over midway between Blackmer Road and Skyline Road Problem: limits roadway width and erosion at the outlet area</p>
<p>Culvert #7 – River Road located near Hartford town line Problem: both ends have damage from snowplowing operations and very little road surface cover over the top of the culvert</p>