

Town of

C H A R L E M O N T
M A S S A C H U S E T T S

01339



Office of the Select Board
PO Box 677
Charlemont, MA 01339
July 12, 2016

Dear Pam,

Thank you to the Commonwealth for partnering with the Town of Charlemont for the purpose of creating a capital improvement plan that captures all assets and infrastructure. We approached this through best practice: Financial Management – Capital Planning. Spearheaded by what will be the Town's first capital improvement planning committee, this appointed committee will be charged with prioritizing and ranking Town needs based on objective criteria, documenting a multi-year capital plan that reflects a community's needs, is reviewed annually and fits within a financing plan that reflects the community's ability to pay.

The question from the Town was how could we budget for assets and infrastructure, i.e. roads and bridges, when we don't know the cost of maintenance programs for them. Thanks to the Community Compact Cabinet funding the Town was able to hire Engineering consultants to provide 1) a roads assessment and 2) bridge evaluations.


The Roads Assessment: The roads assessment, though initially used to gain a snap-shot of the total expense for a roads maintenance program, provides an accompanying Access database for the Town to use going forward. With a Highway Superintendent slated to retire in the coming years, the ability to systematize information ensures less knowledge lost from personnel change-over.

The Bridge Evaluations: The Town of Charlemont has within its limits a disproportionately high number of bridges per capita, 46 of which the Town is aware, in a town with a population of <1,100. The bridge evaluations allowed the Town the opportunity to prioritize its (8) eight highest ranked bridges to gauge the extent of bridge expenses facing the Town, to then build into the capital improvement plan what it can afford to manage on its own, never before proactively addressed by Select Boards past. Drafted by hired Engineers, these evaluations are a reliable tool to more accurately draft the scope of work for bidding purposes, a cumbersome task for a small town.

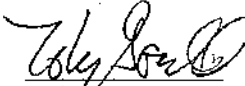
We look forward to continuing to address our community's concerns in a meaningful and immediately impactful way, thanks to the opportunities afforded the Town of Charlemont through the Community Compact Cabinet funding.

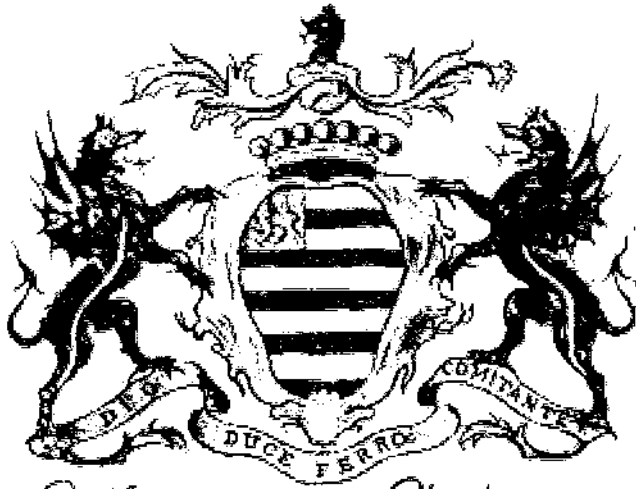
Sincerely,

The Town of Charlemon Select Board


Beth Bandy, Chair


Sarah Reynolds


Toby Gould



Caulfield, Viscount Charlemont.

Roadway Management Program

Final Report

Town of Charlemont, Massachusetts

Date: June, 2016

Date of Inspections: March, 2016



www.BETA-inc.com

Town of Charlemont, Massachusetts



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Road Surface Ratings and Repair Categories Map – Paved Roads (24x36)

General Roadway Conditions Map – Gravel Roads (24x36)

Town of Charlemont, Massachusetts

Roadway Management Program

Roadway Status Summary

	Roadway Type	Length (Miles)
Status: Accepted		
	Asphalt	29.62
	Gravel	11.98
	Total:	41.60
Status: Unaccepted		
	Asphalt	0.07
	Gravel	1.72
	Total:	1.79
Status: State		
	Asphalt	12.02
	Unknown	0.32
	Total:	12.34
Status: Private		
	Asphalt	0.32
	Unknown	0.23
	Total:	0.55
	Total:	56.27

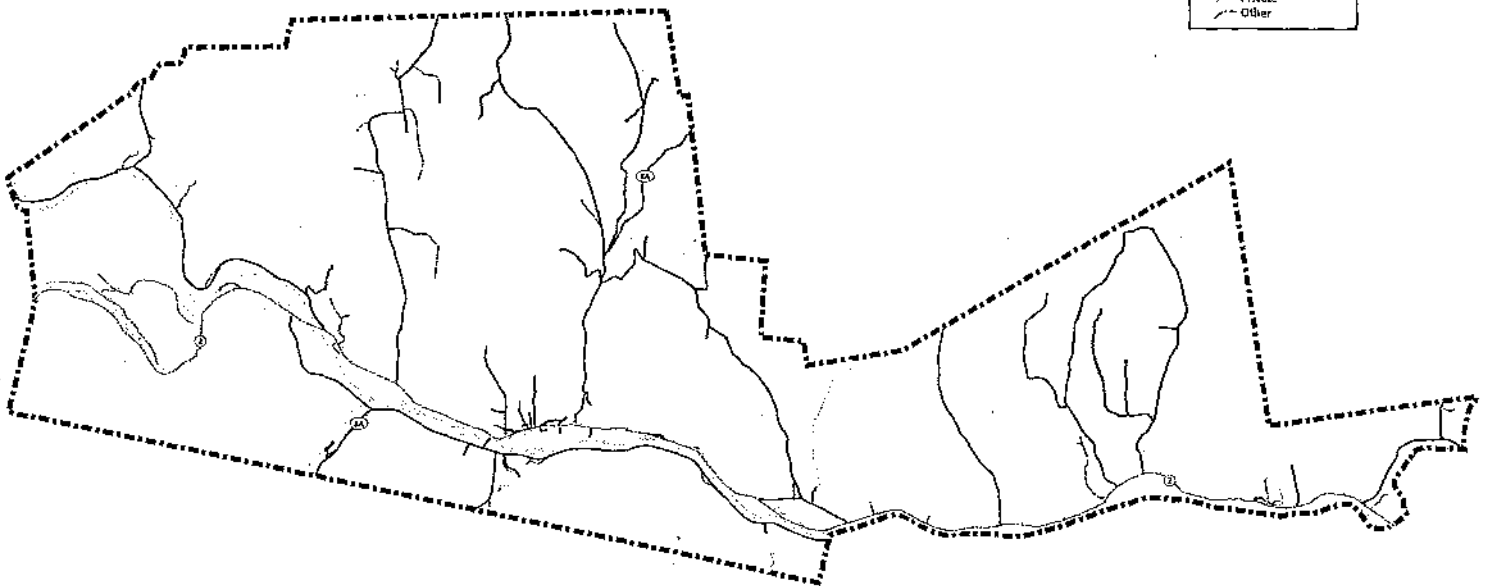
FY 2016 Chapter 90 Accepted Road Miles - 42

Town of Charlemont, Massachusetts
Roadway Management Program
Roadway Ownership and Status

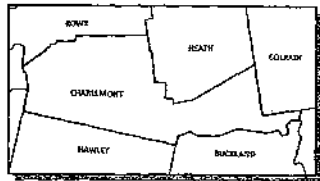


Roadway Status

- Town Accepted
- Town Unaccepted
- State
- Private
- Other



Date of Inspections: March 2015
Issue Date: June 9, 2016
This Map is Intended for Planning Purposes Only



Town of Charlemont, Massachusetts

Roadway Management Program

Roadway Repair Categories and Banding

Repair Method	Banding Low Range	Banding High Range	Unit Cost Sq.Yrd.
Reconstruction			
Reconstruction			\$45.00
Reclamation			
Modified Reclamation	0	50	\$24.00
Rehabilitation			
Rehabilitation			\$14.00
Cold-In-Place Recycling - 3" Top			\$18.00
Shim and Overlay	50	65	\$12.00
Mill and Overlay - 1.5"			\$10.50
Hot-In-Place Recycling - 1" Top			\$11.00
Level and Overlay - 1"- 1.5"			\$12.50
Preventative Maintenance			
Preventative Maintenance			\$6.00
Nova Chip			\$6.50
Double Microsurface - Fiber			\$4.50
Double Chip Seal - 20% Rubber			\$6.00
Cape Seal			\$5.50
Rubber Asphalt Chip			\$4.70
Micro Seal - Double			\$4.00
Micro Seal - Single			\$3.60
Chip Seal - 20% Rubber	65	80	\$5.00
Routine Maintenance			
Routine Maintenance			\$0.50
Crack Seal	80	92	\$0.50
Defer Maintenance			
Defer Maintenance	92	101	\$0.00
Gravel Roads			
Gravel Road Maintenance			\$0.00
Poor	0	50	\$25.00
Fair	50	75	\$25.00
Good	75	101	\$25.00
Annual Maintenance			\$0.16

Town of Charlemont, Massachusetts

Roadway Repair Backlog Summary - Accepted

Repair Method	Length (Miles)	Square Yards	Percent Repair	Estimated Cost
Modified Reclamation	6.73	88,256.93	22.74%	\$2,118,166.21
Shim and Overlay	3.91	46,902.97	13.21%	\$562,835.65
Chip Seal - 20% Rubber	3.75	47,556.36	12.68%	\$237,781.79
Crack Seal	10.67	139,836.40	36.04%	\$69,918.20
Defer Maintenance	4.54	64,963.20	15.34%	\$0.00
Total:	29.62	387,515.86	100.00%	\$2,988,701.85

Average RSR By Segment:	76.22
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*Chip Seal Includes Crack Seal and Shim

**Modified Reclamation includes Strip, Grade, Binder and Top

Town of Charlemont, Massachusetts

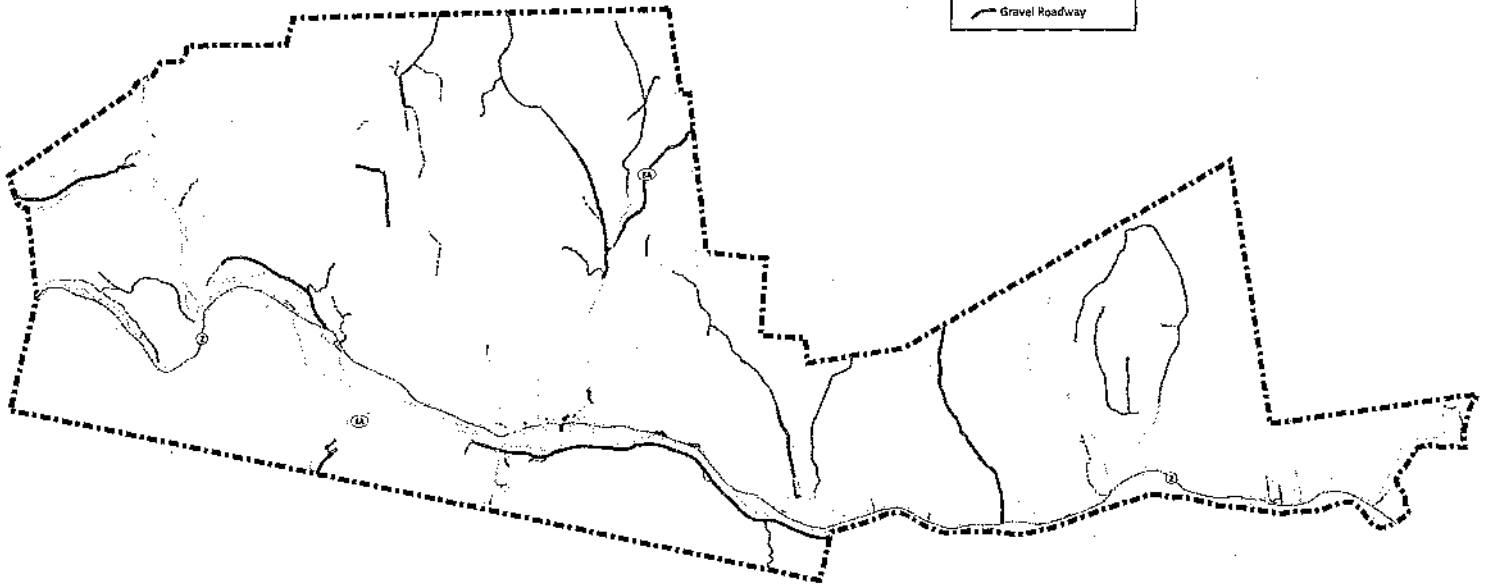
Roadway Management Program

Roadway Repair Backlog Summary - Functional Classification

Repair Method	Length (Miles)	Square Yards	Estimated Cost		
Major Collector					
Modified Reclamation	3.91	56,470.01	\$1,355,280.22		
Shim and Overlay	0.74	10,451.02	\$125,412.20		
Crack Seal	4.91	77,451.02	\$38,725.51		
Defer Maintenance	3.54	52,717.66	\$0.00		
Totals for Class:	13.11	197,089.71	\$1,519,417.93	Avg. RSR By Segment:	82.88
Minor Collector					
Modified Reclamation	0.99	11,648.00	\$279,552.05		
Shim and Overlay	0.24	2,773.23	\$33,278.72		
Chip Seal - 20% Rubber	0.27	3,112.87	\$15,564.34		
Totals for Class:	1.49	17,534.10	\$328,395.11	Avg. RSR By Segment:	53.28
Local					
Modified Reclamation	1.52	18,093.34	\$434,240.13		
Shim and Overlay	2.94	33,678.73	\$404,144.73		
Chip Seal - 20% Rubber	1.63	20,630.02	\$103,150.09		
Crack Seal	4.73	51,206.84	\$25,603.42		
Defer Maintenance	0.77	9,311.75	\$0.00		
Totals for Class:	11.58	132,920.67	\$967,138.37	Avg. RSR By Segment:	72.92
Local Cul De Sac/Dead End					
Modified Reclamation	0.31	2,045.58	\$49,093.81		
Chip Seal - 20% Rubber	1.86	23,813.47	\$119,067.36		
Crack Seal	1.04	11,178.54	\$5,589.27		
Defer Maintenance	0.23	2,933.79	\$0.00		
Totals for Class:	3.44	39,971.38	\$173,750.44	Avg. RSR By Segment:	77.99
Class Totals:	29.62	387,515.86	\$2,988,701.85	Avg. RSR By Segment:	76.22

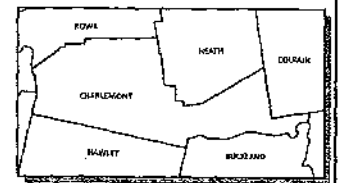
Town of Charlemont, Massachusetts
Roadway Management Program - Paved Roads
Road Surface Ratings & Repair Categories

- Repair Category**
- Deter Maintenance
 - Crack Seal
 - Chip Seal - 20% Rubber
 - Skim and Overlay
 - Modified Reclamation
 - Gravel Roadway

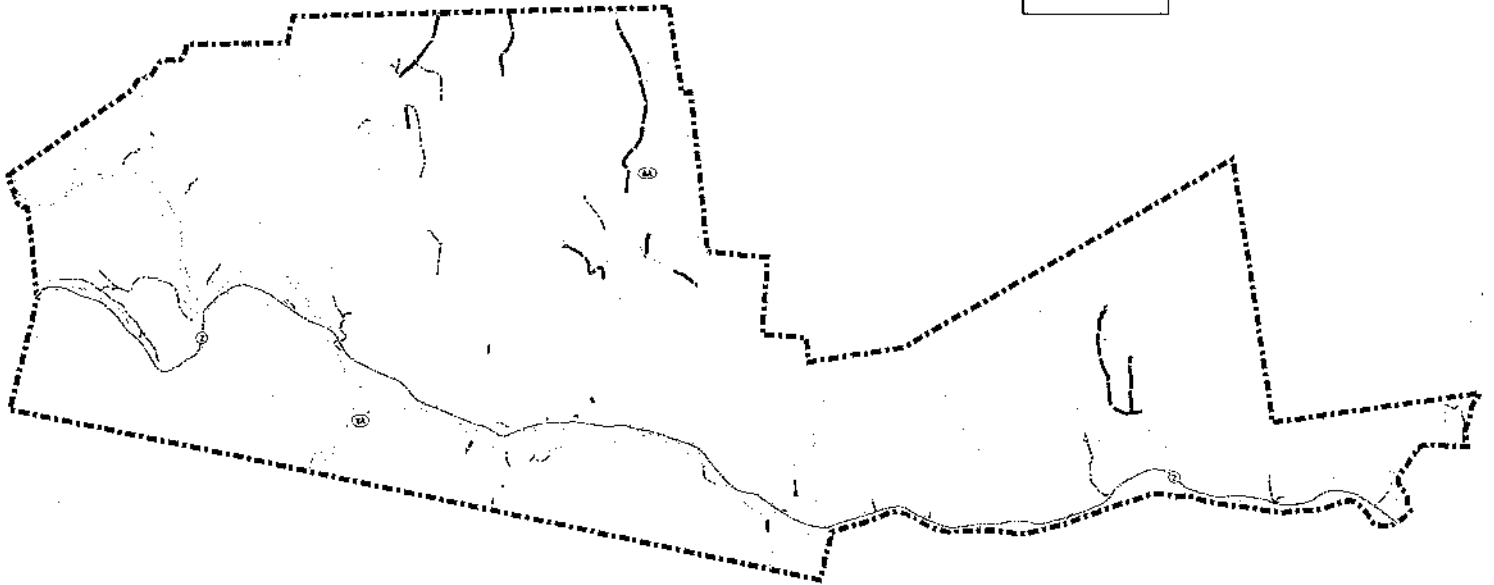
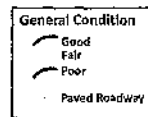


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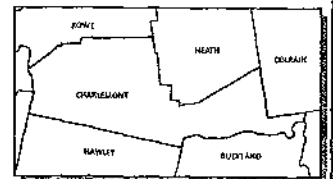
BETA 0 0.5 1 Miles



Town of Charlemont, Massachusetts
Roadway Management Program - Gravel Roads
General Roadway Condition



Date of Inspections: March 2016
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Town of Charlemont, Massachusetts

Roadway Management Program

Roadway Repairs Segment Description - Accepted

Name	From	To	Width	Length (Feet)	Square Yards	Avg. Reveal	RSR	Repair	Repair Cost
AVERY BROOK ROAD 1.64 Miles									
AVERY BROOK RD	ROUTE 2	HEATH TL	24	8,667.18	23,112.48	0	92.61	Defer Maintenance	\$0.00
			24 Avg.	8,667.18	23,112.4	0	92.61	Defer Maintenance	\$0.00
BURNT HILL ROAD 1.15 Miles									
BURNT HILL RD	WEST OX BOW RD	DEAD END	22	6,092.41	14,892.96	0	68.61	Chip Seal - 20% Rubber	\$74,462.81
			22 Avg.	6,092.41	14,892.5	0	68.61	Chip Seal - 20% Rubber	\$74,462.81
BURRINGTON ROAD 0.74 Miles									
BURRINGTON RD-01	ROUTE 2	CENTER HEATH RD	26	1,653.00	4,775.34	0	54.61	Shim and Overlay	\$57,304.07
BURRINGTON RD-02	CENTER HEATH RD	MOUNTAIN RD	26	474.97	1,372.15	0	68.61	Chip Seal - 20% Rubber	\$6,860.74
BURRINGTON RD-03	MOUNTAIN RD	MOUNTAIN RD	26	335.35	968.79	0	94.61	Defer Maintenance	\$0.00
BURRINGTON RD-04	MOUNTAIN RD	ROUTE 2	26	1,466.76	4,237.30	0	67.61	Chip Seal - 20% Rubber	\$21,186.49
			26 Avg.	3,930.09	11,353.5	0	64.57	Shim and Overlay	\$136,242.95
CENTER HEATH ROAD 0.07 Miles									
CENTER HEATH RD-01	BURRINGTON RD	PAVEMENT CHANGE	12	364.90	486.54	0	77.96	Chip Seal - 20% Rubber	\$2,432.70
			12 Avg.	364.90	486.54	0	77.96	Chip Seal - 20% Rubber	\$2,432.70
COLONIAL HILL ROAD 0.11 Miles									
COLONIAL HILL RD	WARFIELD RD	DEAD END	14	586.59	912.48	0	73.62	Chip Seal - 20% Rubber	\$4,562.40
			14 Avg.	586.59	912.48	0	73.62	Chip Seal - 20% Rubber	\$4,562.40
COLRAIN ROAD 0.30 Miles									
COLRAIN RD	NORTH RIVER RD	COLRAIN TL	16	1,587.11	2,821.53	0	81.61	Crack Seal	\$1,410.77
			16 Avg.	1,587.11	2,821.53	0	81.61	Crack Seal	\$1,410.77
EAST HARMONY ROAD 0.24 Miles									
EAST HARMONY RD-01	MAIN ST	HARMONY HEIGHTS EXT	14	254.48	395.85	0	80.62	Crack Seal	\$197.93
EAST HARMONY RD-02	HARMONY HEIGHTS EXT	DEAD END	14	994.75	1,547.39	0	80.62	Crack Seal	\$773.69
			14 Avg.	1,249.23	1,943.24	0	80.62	Crack Seal	\$971.62
EAST HAWLEY ROAD 0.50 Miles									
EAST HAWLEY RD-01	SOUTH RIVER RD	THUNDER LN	20	1,400.79	3,112.87	0	75.62	Chip Seal - 20% Rubber	\$15,564.34
EAST HAWLEY RD-02	THUNDER LN	HAWLEY TL	20	1,247.95	2,773.23	0	64.62	Shim and Overlay	\$33,278.72
			20 Avg.	2,648.74	5,886.10	0	70.43	Chip Seal - 20% Rubber	\$29,430.48

BETA Group, Inc.

Name	From	To	Width	Length (Feet)	Square Yards	Avg. Reveal	RSR	Repair	Repair Cost
EAST OXBOW ROAD 0.60 Miles									
EAST OXBOW RD-01	ROUTE 2	HAWK HILL RD	18	2,501.73	5,003.45	0	65.61	Chip Seal - 20% Rubber	\$25,017.26
EAST OXBOW RD-02	HAWK HILL RD	DRIVEWAY #111	18	690.76	1,381.52	0	65.62	Chip Seal - 20% Rubber	\$6,907.61
			18 Avg.	3,192.49	6,384.97	0	65.61	Chip Seal - 20% Rubber	\$31,924.87
ELM STREET 0.06 Miles									
ELM ST	HIGH ST	DEAD END	16	306.14	544.25	0	92.62	Defer Maintenance	\$0.00
			16 Avg.	306.14	544.25	0	92.62	Defer Maintenance	\$0.00
FACTORY ROAD 0.06 Miles									
FACTORY RD	MAIN ST	DEAD END	24	307.09	818.90	0	94.62	Defer Maintenance	\$0.00
			24 Avg.	307.09	818.90	0	94.62	Defer Maintenance	\$0.00
HARMONY HEIGHTS EXTENSION 0.03 Miles									
HARMONY HEIGHTS EXT	EAST HARMONY RD	DEAD END	14	180.50	280.78	0	94.62	Defer Maintenance	\$0.00
			14 Avg.	180.50	280.78	0	94.62	Defer Maintenance	\$0.00
HAWK HILL ROAD 0.14 Miles									
HAWK HILL RD-01	EAST OX BOW RD	DRIVEWAY #32	22	758.73	1,854.68	0	72.62	Chip Seal - 20% Rubber	\$9,273.39
			22 Avg.	758.73	1,854.68	0	72.62	Chip Seal - 20% Rubber	\$9,273.39
HEATH STAGE TERRACE 0.32 Miles									
HEATH STAGE TERR	ROUTE 2	DEAD END	22	1,684.70	4,118.17	0	77.61	Chip Seal - 20% Rubber	\$20,590.83
			22 Avg.	1,684.70	4,118.17	0	77.61	Chip Seal - 20% Rubber	\$20,590.83
HIGH STREET 0.22 Miles									
HIGH ST-01	MAIN ST	ELM ST	16	204.92	364.30	0	83.62	Crack Seal	\$182.15
HIGH ST-02	ELM ST	MAIN ST	16	949.25	1,687.56	0	81.62	Crack Seal	\$843.78
			16 Avg.	1,154.17	2,051.86	0	81.97	Crack Seal	\$1,025.93
HILLANDALE ROAD 0.09 Miles									
HILLANDALE RD	MOHAWK TRL	DEAD END	14	494.13	768.65	0	43.61	Modified Reclamation	\$18,447.69
			14 Avg.	494.13	768.65	0	43.61	Modified Reclamation	\$18,447.69
LAUREL LANE 0.22 Miles									
LAUREL LN	LEGATE HILL RD	DEAD END	10	1,149.23	1,276.92	0	26.62	Modified Reclamation	\$30,646.12
			10 Avg.	1,149.23	1,276.92	0	26.62	Modified Reclamation	\$30,646.12
LEGATE HILL ROAD 2.58 Miles									
LEGATE HILL RD-01	ROUTE 2	POTTERS RD	20	6,386.37	14,191.93	0	80.62	Crack Seal	\$7,095.97
LEGATE HILL RD-02	POTTERS RD	LAUREL LN	20	2,267.18	5,038.17	0	94.62	Defer Maintenance	\$0.00
LEGATE HILL RD-03	LAUREL LN	PHIPPS RD	20	3,738.67	8,308.16	0	88.62	Crack Seal	\$4,154.08

BETA Group, Inc.

Name	From	To	Width	Length (Feet)	Square Yards	Avg. Reveal	RSR	Repair	Repair Cost
LEGATE HILL RD-04	PHIPPS RD	DRIVEWAY #537	20	1,221.85	2,715.23	0	99.62	Defer Maintenance	\$0.00
			20 Avg.	13,614.07	30,253.4	0	86.85	Crack Seal	\$15,126.74
MAPLE TERRACE 0.11 Miles									
MAPLE TERR	MAIN ST	MAIN ST	14	575.34	894.98	0	2.61	Modified Reclamation	\$21,479.48
			14 Avg.	575.34	894.98	0	2.61	Modified Reclamation	\$21,479.48
MAXWELL ROAD 0.85 Miles									
MAXWELL RD-01	NORTH HEATH RD	PAVEMENT CHANGE	20	4,489.31	9,976.24	0	35.61	Modified Reclamation	\$239,429.85
			20 Avg.	4,489.31	9,976.24	0	35.61	Modified Reclamation	\$239,429.85
MOUNTAIN ROAD 1.54 Miles									
MOUNTAIN RD-01	BURRINGTON RD	TINNEY RD	22	805.99	1,970.21	0	64.62	Shim and Overlay	\$23,642.48
MOUNTAIN RD-02	TINNEY RD	PAVEMENT CHANGE	22	2,954.50	7,222.12	0	46.62	Modified Reclamation	\$173,330.81
MOUNTAIN RD-04	PAVEMENT CHANGE - GR	PAVEMENT CHANGE - GR	22	241.19	589.56	0	99.62	Defer Maintenance	\$0.00
MOUNTAIN RD-08	PAVEMENT CHANGE	BIRCH LN	22	1,306.83	3,194.47	0	80.62	Crack Seal	\$1,597.23
MOUNTAIN RD-09	BIRCH LN	VINCENT RD	22	2,820.19	6,893.81	0	80.62	Crack Seal	\$3,446.90
			22 Avg.	8,128.70	19,870.1	0	67.24	Chip Seal - 20% Rubber	\$99,350.81
NORTH HEATH ROAD 2.61 Miles									
NORTH HEATH RD-01	MAIN ST	PARK ST	26	1,373.95	3,969.18	6	81.61	Crack Seal	\$1,984.59
NORTH HEATH RD-02	PARK ST	VINCENT RD	26	4,709.83	13,606.18	0	83.61	Crack Seal	\$6,803.09
NORTH HEATH RD-03	VINCENT RD	MAXWELL RD	26	1,116.87	3,226.53	0	94.61	Defer Maintenance	\$0.00
NORTH HEATH RD-04	MAXWELL RD	WARNER HILL RD	26	313.17	904.70	0	94.61	Defer Maintenance	\$0.00
NORTH HEATH RD-05	WARNER HILL RD	HEATH TL	26	6,241.91	18,032.18	0	47.61	Modified Reclamation	\$432,772.24
			26 Avg.	13,755.73	39,738.7	1	68.22	Chip Seal - 20% Rubber	\$198,693.81
NORTH RIVER ROAD 1.04 Miles									
NORTH RIVER RD-01	ROUTE 2	COLRAIN RD	30	4,607.76	15,359.21	0	83.61	Crack Seal	\$7,679.61
NORTH RIVER RD-02	COLRAIN RD	SHELBURNE TL	30	893.14	2,977.14	0	83.61	Crack Seal	\$1,488.57
			30 Avg.	5,500.90	18,336.3	0	83.61	Crack Seal	\$9,168.17
NORTH STREET 0.15 Miles									
NORTH ST	MAIN ST	CUL DE SAC	14	775.51	1,206.34	0	87.62	Crack Seal	\$603.17
			14 Avg.	775.51	1,206.34	0	87.62	Crack Seal	\$603.17
PARK STREET 0.08 Miles									
PARK ST-01	NORTH HEATH RD	FAIRGROUND ENT.	26	446.49	1,289.86	0	94.61	Defer Maintenance	\$0.00
			26 Avg.	446.49	1,289.86	0	94.61	Defer Maintenance	\$0.00
POTTERS ROAD 0.31 Miles									
POTTERS RD	LEGATE HILL RD	POTTERS RD EXT	16	1,642.97	2,920.83	0	85.62	Crack Seal	\$1,460.42

BETA Group, Inc.

Name	From	To	Width	Length (Feet)	Square Yards	Avg. Reveal	RSR	Repair	Repair Cost
			16 Avg.	1,642.97	2,920.83	0	85.62	Crack Seal	\$1,460.42
RICE FORT ROAD	0.12 Miles								
RICE FORT RD	MAIN ST	WARFIELD RD	14	653.73	1,016.92	0	88.62	Crack Seal	\$508.46
			14 Avg.	653.73	1,016.92	0	88.62	Crack Seal	\$508.46
RIDDELL ROAD	0.40 Miles								
RIDDELL RD	ROUTE 2	DEAD END	16	2,115.95	3,761.69	3	86.62	Crack Seal	\$1,880.85
			16 Avg.	2,115.95	3,761.69	3	86.62	Crack Seal	\$1,880.85
RIVER VIEW ROAD	0.17 Miles								
RIVER VIEW RD	ROUTE 2	ROUTE 2	14	903.10	1,404.82	6	62.61	Shim and Overlay	\$16,857.83
			14 Avg.	903.10	1,404.82	6	62.61	Shim and Overlay	\$16,857.83
ROWE ROAD	0.74 Miles								
ROWE RD	ZOAR RD	ROWE TL	24	3,919.13	10,451.02	0	57.62	Shim and Overlay	\$125,412.20
			24 Avg.	3,919.13	10,451.0	0	57.62	Shim and Overlay	\$125,412.20
SCHOOL STREET	0.08 Miles								
SCHOOL ST	MAIN ST	DEAD END	20	411.19	913.75	0	77.62	Chip Seal - 20% Rubber	\$4,568.73
			20 Avg.	411.19	913.75	0	77.62	Chip Seal - 20% Rubber	\$4,568.73
SOUTH HEATH ROAD	0.35 Miles								
SOUTH HEATH RD	MOUNTAIN RD	HEATH TL	15	1,852.96	3,088.26	0	81.62	Crack Seal	\$1,544.13
			15 Avg.	1,852.96	3,088.26	0	81.62	Crack Seal	\$1,544.13
SOUTH RIVER ROAD	2.89 Miles								
SOUTH RIVER RD-01	WEST HAWLEY RD	EAST HAWLEY RD	24	496.68	1,324.48	0	94.62	Defer Maintenance	\$0.00
SOUTH RIVER RD-02	EAST HAWLEY RD	THUNDER MOUNTAIN RD	24	368.37	982.32	0	95.62	Defer Maintenance	\$0.00
SOUTH RIVER RD-03	THUNDER MOUNTAIN RD	DODGE CORNER RD	24	11,706.16	31,216.44	0	39.62	Modified Reclamation	\$749,194.50
SOUTH RIVER RD-04	DODGE CORNER RD	BUCKLAND TL	24	2,708.02	7,221.39	0	39.62	Modified Reclamation	\$173,313.48
			24 Avg.	15,279.24	40,744.6	0	42.75	Modified Reclamation	\$977,871.10
SOUTH STREET	0.07 Miles								
SOUTH ST	DODGE CORNER RD	DEAD END	16	388.23	690.18	0	81.61	Crack Seal	\$345.09
			16 Avg.	388.23	690.18	0	81.61	Crack Seal	\$345.09
TEA STREET EXTENSION	0.20 Miles								
TEA ST EXT	TEA ST	DEAD END	26	1,030.33	2,976.52	5	75.62	Chip Seal - 20% Rubber	\$14,882.59
			26 Avg.	1,030.33	2,976.52	5	75.62	Chip Seal - 20% Rubber	\$14,882.59
THUNDER MOUNTAIN ROAD	0.23 Miles								
THUNDER MOUNTAIN RD	SOUTH RIVER RD	DEAD END	30	1,191.88	3,972.93	0	91.62	Crack Seal	\$1,986.46

BETA Group, Inc.

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Name	From	To	Width	Length (Feet)	Square Yards	Avg. Reveal	RSR	Repair	Repair Cost
			30 Avg.	1,191.88	3,972.93	0	91.62	Crack Seal	\$1,986.46
TOWER ROAD	1.07 Miles								
TOWER RD	WEST HAWLEY RD	TEA ST	20	5,657.48	12,572.17	0	56.62	Shim and Overlay	\$150,866.06
			20 Avg.	5,657.48	12,572.1	0	56.62	Shim and Overlay	\$150,866.06
WARFIELD ROAD	0.67 Miles								
WARFIELD RD-01	MAIN ST	RICE FORT RD	16	396.67	705.19	0	84.62	Crack Seal	\$352.59
WARFIELD RD-02	RICE FORT RD	COLONIAL HILL RD	16	737.98	1,311.96	4	80.62	Crack Seal	\$655.98
WARFIELD RD-03	COLONIAL HILL RD	WARFIELD RD-04	16	2,422.16	4,306.07	0	80.62	Crack Seal	\$2,153.03
			16 Avg.	3,556.81	6,323.21	1	81.06	Crack Seal	\$3,161.61
WARNER HILL ROAD NUMBER ONE	0.45 Miles								
WARNER HILL RD 1-01	NORTH HEATH RD	PAVEMENT CHANGE	24	2,360.39	6,294.38	0	66.61	Chip Seal - 20% Rubber	\$31,471.91
			24 Avg.	2,360.39	6,294.38	0	66.61	Chip Seal - 20% Rubber	\$31,471.91
WEST HAWLEY ROAD	1.70 Miles								
WEST HAWLEY RD-01	MAIN ST	SOUTH RIVER RD	24	599.33	1,598.20	0	89.62	Crack Seal	\$799.10
WEST HAWLEY RD-02	SOUTH RIVER RD	HAWKS RD	24	571.03	1,522.74	0	94.62	Defer Maintenance	\$0.00
WEST HAWLEY RD-03	HAWKS RD	TOWER RD	24	4,182.04	11,152.10	0	89.62	Crack Seal	\$5,576.05
WEST HAWLEY RD-04	TOWER RD	CHICKLEY RD	24	2,261.79	6,031.43	0	89.62	Crack Seal	\$3,015.72
WEST HAWLEY RD-05	CHICKLEY RD	HAWLEY TL	24	1,336.16	3,563.10	0	94.62	Defer Maintenance	\$0.00
			24 Avg.	8,950.34	23,867.5	0	90.68	Crack Seal	\$11,933.79
WEST OXBOW ROAD	1.23 Miles								
WEST OXBOW RD-01	ROUTE 2	BURNT HILL	18	3,887.07	7,774.14	0	61.61	Shim and Overlay	\$93,289.66
WEST OXBOW RD-02	BURNT HILL	PAVEMENT CHANGE	18	2,591.03	5,182.05	0	61.62	Shim and Overlay	\$62,184.63
			18 Avg.	6,478.10	12,956.1	0	61.61	Shim and Overlay	\$155,474.29
ZOAR ROAD	3.48 Miles								
ZOAR RD-01	TEA ST	LEDGE LN	28	1,740.85	5,415.99	3	94.62	Defer Maintenance	\$0.00
ZOAR RD-02	LEDGE LN	WOODLAND TRAIL PARK	28	4,071.00	12,665.33	0	94.62	Defer Maintenance	\$0.00
ZOAR RD-03	WOODLAND TRAIL PARK	WOODLAND TRAIL PARK	28	1,023.33	3,183.68	6	89.62	Crack Seal	\$1,591.84
ZOAR RD-04	WOODLAND TRAIL PARK	TODD MOUNTAIN RD	28	3,883.48	12,081.94	6	90.62	Crack Seal	\$6,040.97
ZOAR RD-05	TODD MOUNTAIN RD	ROWE RD	28	2,408.13	7,491.95	6	89.62	Crack Seal	\$3,745.98
ZOAR RD-06	ROWE RD	FLORIDA TL	20	5,241.60	11,648.00	0	19.62	Modified Reclamation	\$279,552.05
			27 Avg.	18,368.39	52,486.8	4	71.43	Chip Seal - 20% Rubber	\$272,124.25

BETA Group, Inc.

Town of Charlemont, Massachusetts

Roadway Management Program

Roadways Sorted - Alphabetically

Name	Length (Miles)	Length (Feet)	Avg. Width	Square Yards	RSR	Overall Repair	Estimated Cost	Functional Class
Roadway Status: Accepted								
AVERY BROOK ROAD	1.64	8,667.18	24	23,112.48	92.61	Defer Maintenance	\$0.00	CO
BURNT HILL ROAD	1.15	6,092.41	22	14,892.56	68.61	Chip Seal - 20% Rubber	\$74,462.81	LO/CS/DE
BURRINGTON ROAD	0.74	3,930.09	26	11,353.58	64.57	Shim and Overlay	\$136,242.95	LO
CENTER HEATH ROAD	0.07	364.90	12	486.54	77.96	Chip Seal - 20% Rubber	\$2,432.70	LO
COLONIAL HILL ROAD	0.11	586.59	14	912.48	73.62	Chip Seal - 20% Rubber	\$4,562.40	LO/CS/DE
COLRAIN ROAD	0.30	1,587.11	16	2,821.53	81.61	Crack Seal	\$1,410.77	LO
EAST HARMONY ROAD	0.24	1,249.23	14	1,943.24	80.62	Crack Seal	\$971.62	LO
EAST HAWLEY ROAD	0.50	2,648.74	20	5,886.10	70.43	Chip Seal - 20% Rubber	\$29,430.48	CO
EAST OXBOW ROAD	0.60	3,192.49	18	6,384.97	65.61	Chip Seal - 20% Rubber	\$31,924.87	LO
ELM STREET	0.06	306.14	16	544.25	92.62	Defer Maintenance	\$0.00	LO/CS/DE
FACTORY ROAD	0.06	307.09	24	818.90	94.62	Defer Maintenance	\$0.00	LO/CS/DE
HARMONY HEIGHTS EXTENSION	0.03	180.50	14	280.78	94.62	Defer Maintenance	\$0.00	LO/CS/DE
HAWK HILL ROAD	0.14	758.73	22	1,854.68	72.62	Chip Seal - 20% Rubber	\$9,273.39	LO
HEATH STAGE TERRACE	0.32	1,684.70	22	4,118.17	77.61	Chip Seal - 20% Rubber	\$20,590.83	LO/CS/DE
HIGH STREET	0.22	1,154.17	16	2,051.86	81.97	Crack Seal	\$1,025.93	LO
HILLDALE ROAD	0.09	494.13	14	768.65	43.61	Modified Reclamation	\$18,447.69	LO/CS/DE
LAUREL LANE	0.22	1,149.23	10	1,276.92	26.62	Modified Reclamation	\$30,646.12	LO/CS/DE
LEGATE HILL ROAD	2.58	13,614.07	20	30,253.49	86.85	Crack Seal	\$15,126.74	LO
MAPLE TERRACE	0.11	575.34	14	894.98	2.61	Modified Reclamation	\$21,479.48	LO
MAXWELL ROAD	0.85	4,489.31	20	9,976.24	35.61	Modified Reclamation	\$239,429.85	LO
MOUNTAIN ROAD	1.54	8,128.70	22	19,870.16	67.24	Chip Seal - 20% Rubber	\$99,350.81	LO
NORTH HEATH ROAD	2.61	13,755.73	26	39,738.76	68.22	Chip Seal - 20% Rubber	\$198,693.81	CO
NORTH RIVER ROAD	1.04	5,500.90	30	18,336.35	83.61	Crack Seal	\$9,168.17	CO
NORTH STREET	0.15	775.51	14	1,206.34	87.62	Crack Seal	\$603.17	LO/CS/DE
PARK STREET	0.08	446.49	26	1,289.86	94.61	Defer Maintenance	\$0.00	LO/CS/DE
POTTERS ROAD	0.31	1,642.97	16	2,920.83	85.62	Crack Seal	\$1,460.42	LO
RICE FORT ROAD	0.12	653.73	14	1,016.92	88.62	Crack Seal	\$508.46	LO
RIDDELL ROAD	0.40	2,115.95	16	3,761.69	86.62	Crack Seal	\$1,880.85	LO/CS/DE
RIVER VIEW ROAD	0.17	903.10	14	1,404.82	62.61	Shim and Overlay	\$16,857.83	LO
ROWE ROAD	0.74	3,919.13	24	10,451.02	57.62	Shim and Overlay	\$125,412.20	CO
SCHOOL STREET	0.08	411.19	20	913.75	77.62	Chip Seal - 20% Rubber	\$4,568.73	LO/CS/DE
SOUTH HEATH ROAD	0.35	1,852.96	15	3,088.26	81.62	Crack Seal	\$1,544.13	LO
SOUTH RIVER ROAD	2.89	15,279.24	24	40,744.63	42.75	Modified Reclamation	\$977,871.10	CO

BETA Group, Inc.

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Name	Length (Miles)	Length (Feet)	Avg. Width	Square Yards	RSR	Overall Repair	Estimated Cost	Functional Class
SOUTH STREET	0.07	388.23	16	690.18	81.61	Crack Seal	\$345.09	LO/CS/DE
TEA STREET EXTENSION	0.20	1,030.33	26	2,976.52	75.62	Chip Seal - 20% Rubber	\$14,882.59	LO/CS/DE
THUNDER MOUNTAIN ROAD	0.23	1,191.88	30	3,972.93	91.62	Crack Seal	\$1,986.46	LO/CS/DE
TOWER ROAD	1.07	5,657.48	20	12,572.17	56.62	Shim and Overlay	\$150,866.06	LO
WARFIELD ROAD	0.67	3,556.81	16	6,323.21	81.06	Crack Seal	\$3,161.61	LO
WARNER HILL ROAD NUMBER	0.45	2,360.39	24	6,294.38	66.61	Chip Seal - 20% Rubber	\$31,471.91	LO
WEST HAWLEY ROAD	1.70	8,950.34	24	23,867.58	90.68	Crack Seal	\$11,933.79	CO
WEST OXBOW ROAD	1.23	6,478.10	18	12,956.19	61.61	Shim and Overlay	\$155,474.29	LO
ZOAR ROAD	3.48	18,368.39	27	52,486.89	71.43	Chip Seal - 20% Rubber	\$272,124.25	CO

BETA Group, Inc.

Town of Charlemont, Massachusetts

Roadway Management Program

Roadways Sorted - Road Surface Rating (RSR)

Name	Length (Miles)	Length (Feet)	Avg. Width	Square Yards	RSR	Overall Repair	Estimated Cost	Functional Class
Roadway Status: Accepted								
MAPLE TERRACE	0.11	575.34	14	894.98	2.61	Modified Reclamation	\$21,479.48	LO
LAUREL LANE	0.22	1,149.23	10	1,276.92	26.62	Modified Reclamation	\$30,646.12	LO/CS/DE
MAXWELL ROAD	0.85	4,489.31	20	9,976.24	35.61	Modified Reclamation	\$239,429.85	LO
SOUTH RIVER ROAD	2.89	15,279.24	24	40,744.63	42.75	Modified Reclamation	\$977,871.10	CO
HILLDALE ROAD	0.09	494.13	14	768.65	43.61	Modified Reclamation	\$18,447.69	LO/CS/DE
TOWER ROAD	1.07	5,657.48	20	12,572.17	56.62	Shim and Overlay	\$150,866.06	LO
ROWE ROAD	0.74	3,919.13	24	10,451.02	57.62	Shim and Overlay	\$125,412.20	CO
WEST OXBOW ROAD	1.23	6,478.10	18	12,956.19	61.61	Shim and Overlay	\$155,474.29	LO
RIVER VIEW ROAD	0.17	903.10	14	1,404.82	62.61	Shim and Overlay	\$16,857.83	LO
BURRINGTON ROAD	0.74	3,930.09	26	11,353.58	64.57	Shim and Overlay	\$136,242.95	LO
EAST OXBOW ROAD	0.60	3,192.49	18	6,384.97	65.61	Chip Seal - 20% Rubber	\$31,924.87	LO
WARNER HILL ROAD NUMBER ONE	0.45	2,360.39	24	6,294.38	66.61	Chip Seal - 20% Rubber	\$31,471.91	LO
MOUNTAIN ROAD	1.54	8,128.70	22	19,870.16	67.24	Chip Seal - 20% Rubber	\$99,350.81	LO
NORTH HEATH ROAD	2.61	13,755.73	26	39,738.76	68.22	Chip Seal - 20% Rubber	\$198,693.81	CO
BURNT HILL ROAD	1.15	6,092.41	22	14,892.56	68.61	Chip Seal - 20% Rubber	\$74,462.81	LO/CS/DE
EAST HAWLEY ROAD	0.50	2,648.74	20	5,886.10	70.43	Chip Seal - 20% Rubber	\$29,430.48	CO
ZOAR ROAD	3.48	18,368.39	27	52,486.89	71.43	Chip Seal - 20% Rubber	\$272,124.25	CO
HAWK HILL ROAD	0.14	758.73	22	1,854.68	72.62	Chip Seal - 20% Rubber	\$9,273.39	LO
COLONIAL HILL ROAD	0.11	586.59	14	912.48	73.62	Chip Seal - 20% Rubber	\$4,562.40	LO/CS/DE
TEA STREET EXTENSION	0.20	1,030.33	26	2,976.52	75.62	Chip Seal - 20% Rubber	\$14,882.59	LO/CS/DE
HEATH STAGE TERRACE	0.32	1,684.70	22	4,118.17	77.61	Chip Seal - 20% Rubber	\$20,590.83	LO/CS/DE
SCHOOL STREET	0.08	411.19	20	913.75	77.62	Chip Seal - 20% Rubber	\$4,568.73	LO/CS/DE
CENTER HEATH ROAD	0.07	364.90	12	486.54	77.96	Chip Seal - 20% Rubber	\$2,432.70	LO
EAST HARMONY ROAD	0.24	1,249.23	14	1,943.24	80.62	Crack Seal	\$971.62	LO
WARFIELD ROAD	0.67	3,556.81	16	6,323.21	81.06	Crack Seal	\$3,161.61	LO
COLRAIN ROAD	0.30	1,587.11	16	2,821.53	81.61	Crack Seal	\$1,410.77	LO
SOUTH STREET	0.07	388.23	16	690.18	81.61	Crack Seal	\$345.09	LO/CS/DE
SOUTH HEATH ROAD	0.35	1,852.96	15	3,088.26	81.62	Crack Seal	\$1,544.13	LO
HIGH STREET	0.22	1,154.17	16	2,051.86	81.97	Crack Seal	\$1,025.93	LO
NORTH RIVER ROAD	1.04	5,500.90	30	18,336.35	83.61	Crack Seal	\$9,168.17	CO
POTTERS ROAD	0.31	1,642.97	16	2,920.83	85.62	Crack Seal	\$1,460.42	LO
RIDDELL ROAD	0.40	2,115.95	16	3,761.69	86.62	Crack Seal	\$1,880.85	LO/CS/DE
LEGATE HILL ROAD	2.58	13,614.07	20	30,253.49	86.85	Crack Seal	\$15,126.74	LO

BETA Group, Inc.

Name	Length (Miles)	Length (Feet)	Avg. Width	Square Yards	RSR	Overall Repair	Estimated Cost	Functional Class
NORTH STREET	0.15	775.51	14	1,205.34	87.62	Crack Seal	\$603.17	LO/CS/DE
RICE FORT ROAD	0.12	653.73	14	1,016.92	88.62	Crack Seal	\$508.46	LO
WEST HAWLEY ROAD	1.70	8,950.34	24	23,867.58	90.68	Crack Seal	\$11,933.79	CO
THUNDER MOUNTAIN ROAD	0.23	1,191.88	30	3,972.93	91.62	Crack Seal	\$1,986.46	LO/CS/DE
AVERY BROOK ROAD	1.64	8,667.18	24	23,112.48	92.61	Defer Maintenance	\$0.00	CO
ELM STREET	0.06	306.14	16	544.25	92.62	Defer Maintenance	\$0.00	LO/CS/DE
PARK STREET	0.08	446.49	26	1,289.86	94.61	Defer Maintenance	\$0.00	LO/CS/DE
FACTORY ROAD	0.06	307.09	24	818.90	94.62	Defer Maintenance	\$0.00	LO/CS/DE
HARMONY HEIGHTS EXTENSION	0.03	180.50	14	280.78	94.62	Defer Maintenance	\$0.00	LO/CS/DE

BETA Group, Inc.

Town of Charlemont, Massachusetts

Roadway Management Program

Roadways Sorted - Functional Classification

Name	Length (Miles)	Length (Feet)	Avg. Width	Square Yards	RSR	Overall Repair	Estimated Cost	Functional Class
Roadway Status: Accepted								
SOUTH RIVER ROAD	2.89	15,279.24	24	40,744.63	42.75	Modified Reclamation	\$977,871.10	CO
ROWE ROAD	0.74	3,919.13	24	10,451.02	57.62	Shim and Overlay	\$125,412.20	CO
NORTH HEATH ROAD	2.61	13,755.73	26	39,738.76	68.22	Chip Seal - 20% Rubber	\$198,693.81	CO
EAST HAWLEY ROAD	0.50	2,648.74	20	5,886.10	70.43	Chip Seal - 20% Rubber	\$29,430.48	CO
ZOAR ROAD	3.48	18,368.39	27	52,486.89	71.43	Chip Seal - 20% Rubber	\$272,124.25	CO
NORTH RIVER ROAD	1.04	5,500.90	30	18,336.35	83.61	Crack Seal	\$9,168.17	CO
WEST HAWLEY ROAD	1.70	8,950.34	24	23,867.58	90.68	Crack Seal	\$11,933.79	CO
AVERY BROOK ROAD	1.64	8,667.18	24	23,112.48	92.61	Defer Maintenance	\$0.00	CO
MAPLE TERRACE	0.11	575.34	14	894.98	2.61	Modified Reclamation	\$21,479.48	LO
MAXWELL ROAD	0.85	4,489.31	20	9,976.24	35.61	Modified Reclamation	\$239,429.85	LO
TOWER ROAD	1.07	5,657.48	20	12,572.17	56.62	Shim and Overlay	\$150,866.06	LO
WEST OXBOW ROAD	1.23	6,478.10	18	12,956.19	61.61	Shim and Overlay	\$155,474.29	LO
RIVER VIEW ROAD	0.17	903.10	14	1,404.82	62.61	Shim and Overlay	\$16,857.83	LO
BURRINGTON ROAD	0.74	3,930.09	26	11,353.58	64.57	Shim and Overlay	\$136,242.95	LO
EAST OXBOW ROAD	0.60	3,192.49	18	6,384.97	65.61	Chip Seal - 20% Rubber	\$31,924.87	LO
WARNER HILL ROAD NUMBER ONE	0.45	2,360.39	24	6,294.38	66.61	Chip Seal - 20% Rubber	\$31,471.91	LO
MOUNTAIN ROAD	1.54	8,128.70	22	19,870.16	67.24	Chip Seal - 20% Rubber	\$99,350.81	LO
HAWK HILL ROAD	0.14	758.73	22	1,854.68	72.62	Chip Seal - 20% Rubber	\$9,273.39	LO
CENTER HEATH ROAD	0.07	364.90	12	486.54	77.96	Chip Seal - 20% Rubber	\$2,432.70	LO
EAST HARMONY ROAD	0.05	254.48	14	395.85	80.62	Crack Seal	\$971.62	LO
WARFIELD ROAD	0.67	3,556.81	16	6,323.21	81.06	Crack Seal	\$3,161.61	LO
COLRAIN ROAD	0.30	1,587.11	16	2,821.53	81.61	Crack Seal	\$1,410.77	LO
SOUTH HEATH ROAD	0.35	1,852.96	15	3,088.26	81.62	Crack Seal	\$1,544.13	LO
HIGH STREET	0.22	1,154.17	16	2,051.86	81.97	Crack Seal	\$1,025.93	LO
POTTERS ROAD	0.31	1,642.97	16	2,920.83	85.62	Crack Seal	\$1,460.42	LO
LEGATE HILL ROAD	2.58	13,614.07	20	30,253.49	86.85	Crack Seal	\$15,126.74	LO
RICE FORT ROAD	0.12	653.73	14	1,016.92	88.62	Crack Seal	\$508.46	LO
LAUREL LANE	0.22	1,149.23	10	1,276.92	26.62	Modified Reclamation	\$30,646.12	LO/CS/DE
HILLDALE ROAD	0.09	494.13	14	768.65	43.61	Modified Reclamation	\$18,447.69	LO/CS/DE
BURNT HILL ROAD	1.15	6,092.41	22	14,892.56	68.61	Chip Seal - 20% Rubber	\$74,462.81	LO/CS/DE
COLONIAL HILL ROAD	0.11	586.59	14	912.48	73.62	Chip Seal - 20% Rubber	\$4,562.40	LO/CS/DE
TEA STREET EXTENSION	0.20	1,030.33	26	2,976.52	75.62	Chip Seal - 20% Rubber	\$14,882.59	LO/CS/DE
HEATH STAGE TERRACE	0.32	1,684.70	22	4,118.17	77.61	Chip Seal - 20% Rubber	\$20,590.83	LO/CS/DE

BETA Group, Inc.

Name	Length (Miles)	Length (Feet)	Avg. Width	Square Yards	RSR	Overall Repair	Estimated Cost	Functional Class
SCHOOL STREET	0.08	411.19	20	913.75	77.62	Chip Seal - 20% Rubber	\$4,568.73	LO/CS/DE
EAST HARMONY ROAD	0.19	994.75	14	1,547.39	80.62	Crack Seal	\$971.62	LO/CS/DE
SOUTH STREET	0.07	388.23	16	690.18	81.61	Crack Seal	\$345.09	LO/CS/DE
RIDDELL ROAD	0.40	2,115.95	16	3,761.69	86.62	Crack Seal	\$1,880.85	LO/CS/DE
NORTH STREET	0.15	775.51	14	1,206.34	87.62	Crack Seal	\$603.17	LO/CS/DE
THUNDER MOUNTAIN ROAD	0.23	1,191.88	30	3,972.93	91.62	Crack Seal	\$1,986.46	LO/CS/DE
ELM STREET	0.06	306.14	16	544.25	92.62	Defer Maintenance	\$0.00	LO/CS/DE
PARK STREET	0.08	446.49	26	1,289.86	94.61	Defer Maintenance	\$0.00	LO/CS/DE
FACTORY ROAD	0.06	307.09	24	818.90	94.62	Defer Maintenance	\$0.00	LO/CS/DE
HARMONY HEIGHTS EXTENSION	0.03	180.50	14	280.78	94.62	Defer Maintenance	\$0.00	LO/CS/DE

Town of Charlemont, Massachusetts

Roadway Management Program

Roadway Repairs Segment Description - Gravel Accepted

*Annual Maintenance Cost = \$20,000

Name	From	To	Width	Length (Feet)	Square Yards	General Condition	Annual Maint. Cost	Reconstruction Cost
BIRCH LANE	0.18	Miles						
BIRCH LN	MOUNTAIN RD	CUL DE SAC	12	974.82	1,299.76	Poor	\$212.90	\$32,493.91
				974.82	1,299.76		\$212.90	\$32,493.91
CENTER HEATH ROAD	0.07	Miles						
CENTER HEATH RD-02	PAVEMENT CHANGE	CENTER HEATH RD-03 (UNACC)	12	361.38	481.84	Fair	\$78.93	\$12,046.01
				361.38	481.84		\$78.93	\$12,046.01
CHICKLEY ROAD	0.20	Miles						
CHICKLEY RD-01	WEST HAWLEY RD	SOUTH CHICKLEY RD	14	378.58	588.91	Fair	\$96.46	\$14,722.66
CHICKLEY RD-02	SOUTH CHICKLEY RD	CHICKLEY RD BRANCH	14	170.85	265.77	Fair	\$43.53	\$6,644.26
CHICKLEY RD-03	CHICKLEY RD BRANCH	CUL DE SAC	14	530.91	825.85	Fair	\$135.28	\$20,646.37
				1,080.34	1,680.53		\$275.27	\$42,013.29
CHICKLEY ROAD BRANCH	0.06	Miles						
CHICKLEY RD BRANCH	CHICKLEY RD	DEAD END	12	296.90	395.87	Fair	\$64.84	\$9,896.80
				296.90	395.87		\$64.84	\$9,896.80
DEER RUN LANE	0.46	Miles						
DEER RUN LN	HAWK HILL RD	CUL DE SAC	22	2,446.06	5,979.26	Poor	\$979.40	\$149,481.59
				2,446.06	5,979.26		\$979.40	\$149,481.59
DODGE CORNER ROAD	0.09	Miles						
DODGE CORNER RD-01	SOUTH RIVER RD	PAVEMENT CHANGE	12	450.36	600.49	Poor	\$98.36	\$15,012.16
				450.36	600.49		\$98.36	\$15,012.16
EAST OXBOW ROAD	1.53	Miles						
EAST OXBOW RD-03	DRIVEWAY #111	WINDY HILL RD	18	3,200.29	6,400.59	Fair	\$1,048.42	\$160,014.72
EAST OXBOW RD-04	WINDY HILL RD	WEST OXBOW RD	18	4,892.96	9,785.92	Fair	\$1,602.93	\$244,647.98
				8,093.25	16,186.5		\$2,651.35	\$404,662.69
HAWK HILL ROAD	1.05	Miles						
HAWK HILL RD-02	DRIVEWAY #32	DEER RUN LN	22	307.32	751.24	Good	\$123.05	\$18,780.89
HAWK HILL RD-03	DEER RUN LN	CUL DE SAC	22	5,241.58	12,812.74	Poor	\$2,098.73	\$320,318.59
				5,548.90	13,563.9		\$2,221.78	\$339,099.48

BETA Group, Inc.

6/9/2016

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Name	From	To	Width	Length (Feet)	Square Yards	General Condition	Annual Maint. Cost	Reconstruction Cost
HAWKS ROAD	0.11	Miles						
HAWKS RD	WEST HAWLEY RD	DEAD END	12	558.73	744.98	Good	\$122.03	\$18,624.38
				558.73	744.98		\$122.03	\$18,624.38
HICKS ROAD	0.38	Miles						
HICKS RD	MAXWELL RD	DEAD END	12	2,011.66	2,682.21	Fair	\$439.35	\$67,055.29
				2,011.66	2,682.21		\$439.35	\$67,055.29
LEDGE LANE	0.44	Miles						
LEDGE LN	ZOAR RD	DEAD END	16	2,311.98	4,110.19	Fair	\$673.25	\$102,754.81
				2,311.98	4,110.19		\$673.25	\$102,754.81
LEGATE HILL ROAD	0.59	Miles						
LEGATE HILL RD-05	DRIVEWAY #537	CHERRIE PIERSON RD	20	804.59	1,787.97	Poor	\$292.87	\$44,699.22
LEGATE HILL RD-06	CHERRIE PIERSON RD	ROWE TL	20	2,324.86	5,166.36	Poor	\$846.25	\$129,158.93
				3,129.45	6,954.33		\$1,139.12	\$173,858.15
MAXWELL ROAD	1.34	Miles						
MAXWELL RD-02	PAVEMENT CHANGE	BRIDGE BARRIER	20	2,133.30	4,740.67	Fair	\$776.52	\$118,516.68
MAXWELL RD-03	BRIDGE BARRIER	HICKS RD	20	2,126.34	4,725.19	Fair	\$773.99	\$118,129.73
MAXWELL RD-04	HICKS RD	ROWE TL	20	2,817.40	6,260.90	Good	\$1,025.54	\$156,522.47
				7,077.04	15,726.7		\$2,576.04	\$393,168.88
MOUNTAIN BRANCH ROAD	0.10	Miles						
MOUNTAIN BRANCH RD	MOUNTAIN RD	DEAD END	12	515.85	687.81	Fair	\$112.66	\$17,195.16
				515.85	687.81		\$112.66	\$17,195.16
MOUNTAIN ROAD	1.33	Miles						
MOUNTAIN RD-03	PAVEMENT CHANGE	PAVEMENT CHANGE-BC	22	2,247.78	5,494.58	Fair	\$900.01	\$137,364.53
MOUNTAIN RD-05	PAVEMENT CHANGE-BC	MOUNT BRANCH RD	22	1,970.68	4,817.22	Fair	\$789.06	\$120,430.46
MOUNTAIN RD-06	MOUNT BRANCH RD	SOUTH HEATH RD	22	1,647.30	4,026.75	Fair	\$659.58	\$100,668.63
MOUNTAIN RD-07	SOUTH HEATH RD	BIRCH LN	22	1,151.32	2,814.33	Poor	\$460.99	\$70,358.25
				7,017.09	17,152.8		\$2,809.64	\$428,821.87
PARK STREET	0.04	Miles						
PARK ST-02	FAIRGROUND ENT.	DEAD END	26	195.65	565.22	Good	\$92.58	\$14,130.62
				195.65	565.22		\$92.58	\$14,130.62
PHIPPS ROAD	0.17	Miles						
PHIPPS RD	LEGATE HILL RD	DEAD END	12	898.47	1,197.96	Poor	\$196.23	\$29,949.11
				898.47	1,197.96		\$196.23	\$29,949.11

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Name	From	To	Width	Length (Feet)	Square Yards	General Condition	Annual Maint. Cost	Reconstruction Cost
SOUTH CHICKLEY ROAD	0.04	Miles						
SOUTH CHICKLEY RD	WEST HAWLEY RD	DEAD END	12	208.57	278.10	Fair	\$45.55	\$6,952.45
				208.57	278.10		\$45.55	\$6,952.45
TINNEY ROAD	0.04	Miles						
TINNEY RD-01	BURRINGTON RD	PAVEMENT CHANGE	12	210.56	280.74	Poor	\$45.99	\$7,018.52
				210.56	280.74		\$45.99	\$7,018.52
TODD MOUNTAIN ROAD	0.10	Miles						
TODD MOUNTAIN RD-01	ZOAR RD	TODD MOUNTAIN RD-02	16	546.46	971.49	Fair	\$159.13	\$24,287.21
				546.46	971.49		\$159.13	\$24,287.21
VINCENT ROAD	0.52	Miles						
VINCENT RD	NORTH HEATH RD	DEAD END	12	2,733.77	3,645.03	Good	\$597.06	\$91,125.73
				2,733.77	3,645.03		\$597.06	\$91,125.73
WARNER HILL ROAD NUMBER ONE	1.43	Miles						
WARNER HILL RD 1-02	PAVEMENT CHANGE	WARNER HILL RD 2	24	4,000.71	10,668.55	Poor	\$1,747.51	\$266,713.68
WARNER HILL RD 1-03	WARNER HILL RD 2	DEAD END	24	3,535.47	9,427.91	Poor	\$1,544.29	\$235,697.71
				7,536.17	20,096.4		\$3,291.80	\$502,411.39
WARNER HILL ROAD NUMBER TWO	0.45	Miles						
WARNER HILL RD 2-01	WARNER HILL RD 1	DEAD END	16	1,368.01	2,432.01	Fair	\$398.36	\$60,800.23
WARNER HILL RD 2-02	WARNER HILL RD 1	DEAD END	16	994.87	1,768.65	Fair	\$289.71	\$44,216.37
				2,362.87	4,200.66		\$688.07	\$105,016.59
WEST OXBOW ROAD	1.12	Miles						
WEST OXBOW RD-03	PAVEMENT CHANGE	EAST OXBOW RD	28	5,910.27	18,387.51	Fair	\$3,011.87	\$459,687.79
				5,910.27	18,387.5		\$3,011.87	\$459,687.79
WINDY HILL ROAD	0.14	Miles						
WINDY HILL RD	EAST OX BOW RD	DEAD END	12	753.55	1,004.73	Fair	\$164.58	\$25,118.34
				753.55	1,004.73		\$164.58	\$25,118.34
Total:							\$22,748	\$3,471,882

BETA Group, Inc.

Town of Charlemont, Massachusetts

Roadway Management Program

Cost Benefit Value Analysis - Roadways Sorted By CBV With Cumulative Total

Name	Length (Miles)	Square Yards	RSR	Class	CBV	Repair	% Repair	Repair Cost	Cumulative Total
Roadway Status: Accepted									
NORTH HEATH ROAD	2.61	39,738.76	68.22	CO	199.28	Chip Seal - 20% Rubber	0%	\$198,693.81	\$198,693.81
ZOAR ROAD	3.48	52,486.89	71.43	CO	162.84	Chip Seal - 20% Rubber	0%	\$272,124.25	\$470,818.07
MAPLE TERRACE	0.11	894.98	2.61	LO	159.58	Modified Reclamation	100%	\$21,479.48	\$492,297.55
SOUTH RIVER ROAD	2.89	40,744.63	42.75	CO	99.22	Modified Reclamation	94%	\$977,871.10	\$1,470,168.64
ROWE ROAD	0.74	10,451.02	57.62	CO	86.78	Shim and Overlay	100%	\$125,412.20	\$1,595,580.84
EAST HAWLEY ROAD	0.50	5,886.10	70.43	CO	35.71	Chip Seal - 20% Rubber	53%	\$29,430.48	\$1,625,011.32
MOUNTAIN ROAD	1.54	19,870.16	67.24	LO	22.91	Chip Seal - 20% Rubber	0%	\$99,350.81	\$1,724,362.13
MAXWELL ROAD	0.85	9,976.24	35.61	LO	11.70	Modified Reclamation	100%	\$239,429.85	\$1,963,791.97
TOWER ROAD	1.07	12,572.17	56.62	LO	8.83	Shim and Overlay	100%	\$150,866.06	\$2,114,658.03
WEST OXBOW ROAD	1.23	12,956.19	61.61	LO	8.12	Shim and Overlay	100%	\$155,474.29	\$2,270,132.33
RIVER VIEW ROAD	0.17	1,404.82	62.61	LO	7.99	Shim and Overlay	100%	\$16,857.83	\$2,286,990.16
LAUREL LANE	0.22	1,276.92	26.62	LO/CS/DE	7.83	Modified Reclamation	100%	\$30,646.12	\$2,317,636.28
EAST OXBOW ROAD	0.60	6,384.97	65.61	LO	7.62	Chip Seal - 20% Rubber	100%	\$31,924.87	\$2,349,561.15
WARNER HILL ROAD NUMBER	0.45	6,294.38	66.61	LO	7.51	Chip Seal - 20% Rubber	100%	\$31,471.91	\$2,381,033.05
BURRINGTON ROAD	0.74	11,353.58	64.57	LO	7.49	Shim and Overlay	42%	\$136,242.95	\$2,517,276.01
HAWK HILL ROAD	0.14	1,854.68	72.62	LO	6.89	Chip Seal - 20% Rubber	100%	\$9,273.39	\$2,526,549.39
CENTER HEATH ROAD	0.07	486.54	77.96	LO	6.41	Chip Seal - 20% Rubber	100%	\$2,432.70	\$2,528,982.09
HILLDALE ROAD	0.09	768.65	43.61	LO/CS/DE	4.78	Modified Reclamation	100%	\$18,447.69	\$2,547,429.78
BURNT HILL ROAD	1.15	14,892.56	68.61	LO/CS/DE	3.64	Chip Seal - 20% Rubber	100%	\$74,462.81	\$2,621,892.58
COLONIAL HILL ROAD	0.11	912.48	73.62	LO/CS/DE	3.40	Chip Seal - 20% Rubber	100%	\$4,562.40	\$2,626,454.98
TEA STREET EXTENSION	0.20	2,976.52	75.62	LO/CS/DE	3.31	Chip Seal - 20% Rubber	100%	\$14,882.59	\$2,641,337.57
HEATH STAGE TERRACE	0.32	4,118.17	77.61	LO/CS/DE	3.22	Chip Seal - 20% Rubber	100%	\$20,590.83	\$2,661,928.40
SCHOOL STREET	0.08	913.75	77.62	LO/CS/DE	3.22	Chip Seal - 20% Rubber	100%	\$4,568.73	\$2,666,497.13

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Town of Charlemont, Massachusetts

Roadway Management Program

Cost Benefit Value Analysis - Roadways Sorted By CBV With Segment Description

Name	From	To	Length (Feet)	RSR	CBV	Repair	Repair Cost	Cumulative Total
Roadway Status: Accepted								
NORTH HEATH ROAD 2.61 Miles								
NORTH HEATH RD-01	MAIN ST	PARK ST	1,373.95	81.61	367.60	Crack Seal	\$1,984.59	\$1,984.59
NORTH HEATH RD-02	PARK ST	VINCENT RD	4,709.83	83.61	358.80	Crack Seal	\$6,803.09	\$6,803.09
NORTH HEATH RD-05	WARNER HILL RD	HEATH TL	6,241.91	47.61	87.51	Modified Reclamation	\$432,772.24	\$432,772.24
NORTH HEATH RD-03	VINCENT RD	MAXWELL RD	1,116.87	94.61		Defer Maintenance	\$0.00	\$0.00
NORTH HEATH RD-04	MAXWELL RD	WARNER HILL RD	313.17	94.61		Defer Maintenance	\$0.00	\$0.00
			13,755.7 Feet	68.22 Avg.	199.28 Avg	Chip Seal - 20% Rubber	\$198,693.81	\$198,693.81
ZOAR ROAD 3.48 Miles								
ZOAR RD-03	WOODLAND TRAIL PARK	WOODLAND TRAIL PARK	1,023.33	89.62	394.76	Crack Seal	\$1,591.84	\$1,591.84
ZOAR RD-05	TODD MOUNTAIN RD	ROWE RD	2,408.13	89.62	334.76	Crack Seal	\$3,745.98	\$3,745.98
ZOAR RD-04	WOODLAND TRAIL PARK	TODD MOUNTAIN RD	3,883.48	90.62	331.07	Crack Seal	\$6,040.97	\$6,040.97
ZOAR RD-06	ROWE RD	FLORIDA TL	5,241.60	19.62	106.20	Modified Reclamation	\$279,552.05	\$279,552.05
ZOAR RD-01	TEA ST	LEDGE LN	1,740.85	94.62		Defer Maintenance	\$0.00	\$0.00
ZOAR RD-02	LEDGE LN	WOODLAND TRAIL PARK	4,071.00	94.62		Defer Maintenance	\$0.00	\$0.00
			18,368.3 Feet	71.43 Avg.	162.84 Avg	Chip Seal - 20% Rubber	\$272,124.25	\$470,818.07
MAPLE TERRACE 0.11 Miles								
MAPLE TERR	MAIN ST	MAIN ST	575.34	2.61	159.58	Modified Reclamation	\$21,479.48	\$21,479.48
			575.34 Feet	2.61 Avg.	159.58 Avg	Modified Reclamation	\$21,479.48	\$492,297.55
SOUTH RIVER ROAD 2.89 Miles								
SOUTH RIVER RD-03	THUNDER MOUNTAIN RD	DODGE CORNER RD	11,706.16	39.62	105.18	Modified Reclamation	\$749,194.50	\$749,194.50
SOUTH RIVER RD-04	DODGE CORNER RD	BUCKLAND TL	2,708.02	39.62	105.18	Modified Reclamation	\$173,313.48	\$173,313.48
SOUTH RIVER RD-01	WEST HAWLEY RD	EAST HAWLEY RD	496.68	94.62		Defer Maintenance	\$0.00	\$0.00
SOUTH RIVER RD-02	EAST HAWLEY RD	THUNDER MOUNTAIN RD	368.37	95.62		Defer Maintenance	\$0.00	\$0.00
			15,279.2 Feet	42.75 Avg.	99.22 Avg	Modified Reclamation	\$977,871.10	\$1,470,168.64
ROWE ROAD 0.74 Miles								
ROWE RD	ZOAR RD	ROWE TL	3,919.13	57.62	86.78	Shim and Overlay	\$125,412.20	\$125,412.20
			3,919.13 Feet	57.62 Avg.	86.78 Avg	Shim and Overlay	\$125,412.20	\$1,595,580.84
EAST HAWLEY ROAD 0.50 Miles								
EAST HAWLEY RD-02	THUNDER LN	HAWLEY TL	1,247.95	64.62	38.69	Shim and Overlay	\$33,278.72	\$33,278.72
EAST HAWLEY RD-01	SOUTH RIVER RD	THUNDER LN	1,400.79	75.62	33.06	Chip Seal - 20% Rubber	\$15,564.34	\$15,564.34
			2,648.74 Feet	70.43 Avg.	35.71 Avg	Chip Seal - 20% Rubber	\$29,430.48	\$1,625,011.32
MOUNTAIN ROAD 1.54 Miles								

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Name	From	To	Length (Feet)	RSR	CBV	Repair	Repair Cost	Cumulative Total
MOUNTAIN RD-08	PAVEMENT CHANGE	BIRCH LN	1,306.83	80.62	37.21	Crack Seal	\$1,597.23	\$1,597.23
MOUNTAIN RD-09	BIRCH LN	VINCENT RD	2,820.19	80.62	37.21	Crack Seal	\$3,446.90	\$3,446.90
MOUNTAIN RD-02	TINNEY RD	PAVEMENT CHANGE	2,954.50	46.62	8.94	Modified Reclamation	\$173,330.81	\$173,330.81
MOUNTAIN RD-01	BURRINGTON RD	TINNEY RD	805.99	64.62	7.74	Shim and Overlay	\$23,642.48	\$23,642.48
MOUNTAIN RD-04	PAVEMENT CHANGE - GR	PAVEMENT CHANGE - GR	241.19	99.62		Defer Maintenance	\$0.00	\$0.00
			8,128.70 Feet	67.24 Avg.	22.91 Avg	Chip Seal - 20% Rubber	\$99,350.81	\$1,724,362.13
MAXWELL ROAD			0.85 Miles					
MAXWELL RD-01	NORTH HEATH RD	PAVEMENT CHANGE	4,489.31	35.61	11.70	Modified Reclamation	\$239,429.85	\$239,429.85
			4,489.31 Feet	35.61 Avg.	11.70 Avg	Modified Reclamation	\$239,429.85	\$1,963,791.97
TOWER ROAD			1.07 Miles					
TOWER RD	WEST HAWLEY RD	TEA ST	5,657.48	56.62	8.83	Shim and Overlay	\$150,866.06	\$150,866.06
			5,657.48 Feet	56.62 Avg.	8.83 Avg	Shim and Overlay	\$150,866.06	\$2,114,658.03
WEST OXBOW ROAD			1.23 Miles					
WEST OXBOW RD-01	ROUTE 2	BURNT HILL	3,887.07	61.61	8.12	Shim and Overlay	\$93,289.66	\$93,289.66
WEST OXBOW RD-02	BURNT HILL	PAVEMENT CHANGE	2,591.03	61.62	8.11	Shim and Overlay	\$62,184.63	\$62,184.63
			6,478.10 Feet	61.61 Avg.	8.12 Avg	Shim and Overlay	\$155,474.29	\$2,270,132.33
RIVER VIEW ROAD			0.17 Miles					
RIVER VIEW RD	ROUTE 2	ROUTE 2	903.10	62.61	7.99	Shim and Overlay	\$16,857.83	\$16,857.83
			903.10 Feet	62.61 Avg.	7.99 Avg	Shim and Overlay	\$16,857.83	\$2,286,990.16
LAUREL LANE			0.22 Miles					
LAUREL LN	LEGATE HILL RD	DEAD END	1,149.23	26.62	7.83	Modified Reclamation	\$30,646.12	\$30,646.12
			1,149.23 Feet	26.62 Avg.	7.83 Avg	Modified Reclamation	\$30,646.12	\$2,317,636.28
EAST OXBOW ROAD			0.60 Miles					
EAST OXBOW RD-01	ROUTE 2	HAWK HILL RD	2,501.73	65.61	7.62	Chip Seal - 20% Rubber	\$25,017.26	\$25,017.26
EAST OXBOW RD-02	HAWK HILL RD	DRIVEWAY #111	690.76	65.62	7.62	Chip Seal - 20% Rubber	\$6,907.61	\$6,907.61
			3,192.49 Feet	65.61 Avg.	7.62 Avg	Chip Seal - 20% Rubber	\$31,924.87	\$2,349,561.15
WARNER HILL ROAD NUMBER ONE			0.45 Miles					
WARNER HILL RD 1-01	NORTH HEATH RD	PAVEMENT CHANGE	2,360.39	66.61	7.51	Chip Seal - 20% Rubber	\$31,471.91	\$31,471.91
			2,360.39 Feet	66.61 Avg.	7.51 Avg	Chip Seal - 20% Rubber	\$31,471.91	\$2,381,033.05
BURRINGTON ROAD			0.74 Miles					
BURRINGTON RD-01	ROUTE 2	CENTER HEATH RD	1,653.00	54.61	9.16	Shim and Overlay	\$57,304.07	\$57,304.07
BURRINGTON RD-04	MOUNTAIN RD	ROUTE 2	1,466.76	67.61	7.40	Chip Seal - 20% Rubber	\$21,186.49	\$21,186.49
BURRINGTON RD-02	CENTER HEATH RD	MOUNTAIN RD	474.97	68.61	7.29	Chip Seal - 20% Rubber	\$6,860.74	\$6,860.74
BURRINGTON RD-03	MOUNTAIN RD	MOUNTAIN RD	335.35	94.61		Defer Maintenance	\$0.00	\$0.00
			3,930.09 Feet	64.57 Avg.	7.49 Avg	Shim and Overlay	\$136,242.95	\$2,517,276.01
HAWK HILL ROAD			0.14 Miles					
HAWK HILL RD-01	EAST OX BOW RD	DRIVEWAY #32	758.73	72.62	6.89	Chip Seal - 20% Rubber	\$9,273.39	\$9,273.39
			758.73 Feet	72.62 Avg.	6.89 Avg	Chip Seal - 20% Rubber	\$9,273.39	\$2,526,549.39

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Name	From	To	Length (Feet)	RSR	CBV	Repair	Repair Cost	Cumulative Total
CENTER HEATH ROAD	0.07	Miles						
CENTER HEATH RD-01	BURRINGTON RD	PAVEMENT CHANGE	364.90	77.96	6.41	Chip Seal - 20% Rubber	\$2,432.70	\$2,432.70
			364.90 Feet	77.96 Avg.	6.41 Avg	Chip Seal - 20% Rubber	\$2,432.70	\$2,528,982.09
HILLANDALE ROAD	0.09	Miles						
HILLANDALE RD	MOHAWK TRL	DEAD END	494.13	43.61	4.78	Modified Reclamation	\$18,447.69	\$18,447.69
			494.13 Feet	43.61 Avg.	4.78 Avg	Modified Reclamation	\$18,447.69	\$2,547,429.78
BURNT HILL ROAD	1.15	Miles						
BURNT HILL RD	WEST OX BOW RD	DEAD END	6,092.41	68.61	3.64	Chip Seal - 20% Rubber	\$74,462.81	\$74,462.81
			6,092.41 Feet	68.61 Avg.	3.64 Avg	Chip Seal - 20% Rubber	\$74,462.81	\$2,621,892.58
COLONIAL HILL ROAD	0.11	Miles						
COLONIAL HILL RD	WARFIELD RD	DEAD END	586.59	73.62	3.40	Chip Seal - 20% Rubber	\$4,562.40	\$4,562.40
			586.59 Feet	73.62 Avg.	3.40 Avg	Chip Seal - 20% Rubber	\$4,562.40	\$2,626,454.98
TEA STREET EXTENSION	0.20	Miles						
TEA ST EXT	TEA ST	DEAD END	1,030.33	75.62	3.31	Chip Seal - 20% Rubber	\$14,882.59	\$14,882.59
			1,030.33 Feet	75.62 Avg.	3.31 Avg	Chip Seal - 20% Rubber	\$14,882.59	\$2,641,337.57
HEATH STAGE TERRACE	0.32	Miles						
HEATH STAGE TERR	ROUTE 2	DEAD END	1,684.70	77.61	3.22	Chip Seal - 20% Rubber	\$20,590.83	\$20,590.83
			1,684.70 Feet	77.61 Avg.	3.22 Avg	Chip Seal - 20% Rubber	\$20,590.83	\$2,661,928.40
SCHOOL STREET	0.08	Miles						
SCHOOL ST	MAIN ST	DEAD END	411.19	77.62	3.22	Chip Seal - 20% Rubber	\$4,568.73	\$4,568.73
			411.19 Feet	77.62 Avg.	3.22 Avg	Chip Seal - 20% Rubber	\$4,568.73	\$2,666,497.13

BETA Group, Inc.

Town of Charlemont, Massachusetts

Roadway Management Program

Cost Benefit Value Analysis - Roadways Sorted By CBV - Modified Reclamation

Name	Length (Miles)	Square Yards	RSR	Class	CBV	Repair	% Repair	Repair Cost	Cumulative Total
Roadway Status: Accepted									
MAPLE TERRACE	0.11	894.98	2.61	LO	159.58	Modified Reclamation	100%	\$21,479.48	\$21,479.48
SOUTH RIVER ROAD	2.89	40,744.63	42.75	CO	99.22	Modified Reclamation	94%	\$977,871.10	\$999,350.57
MAXWELL ROAD	0.85	9,976.24	35.61	LO	11.70	Modified Reclamation	100%	\$239,429.85	\$1,238,780.42
LAUREL LANE	0.22	1,276.92	26.62	LO/CS/DE	7.83	Modified Reclamation	100%	\$30,646.12	\$1,269,426.55
HILLANDALE ROAD	0.09	768.65	43.61	LO/CS/DE	4.78	Modified Reclamation	100%	\$18,447.69	\$1,287,874.23

Town of Charlemont, Massachusetts

Roadway Management Program

Cost Benefit Value Analysis - Roadways Sorted By CBV - Shim and Overlay

Name	Length (Miles)	Square Yards	RSR	Class	CBV	Repair	% Repair	Repair Cost	Cumulative Total
Roadway Status: Accepted									
ROWE ROAD	0.74	10,451.02	57.62	CO	86.78	Shim and Overlay	100%	\$125,412.20	\$125,412.20
TOWER ROAD	1.07	12,572.17	56.62	LO	8.83	Shim and Overlay	100%	\$150,866.06	\$276,278.26
WEST OXBOW ROAD	1.23	12,956.19	61.61	LO	8.12	Shim and Overlay	100%	\$155,474.29	\$431,752.55
RIVER VIEW ROAD	0.17	1,404.82	62.61	LO	7.99	Shim and Overlay	100%	\$16,857.83	\$448,610.38
BURRINGTON ROAD	0.74	11,353.58	64.57	LO	7.49	Shim and Overlay	42%	\$136,242.95	\$584,853.33

Town of Charlemont, Massachusetts

Roadway Management Program

Cost Benefit Value Analysis - Roadways Sorted By CBV - Chip Seal - 20% Rubber

Name	Length (Miles)	Square Yards	RSR	Class	CBV	Repair	% Repair	Repair Cost	Cumulative Total
Roadway Status: Accepted									
EAST HAWLEY ROAD	0.50	5,886.10	70.43	CO	35.71	Chip Seal - 20% Rubber	53%	\$29,430.48	\$29,430.48
EAST OXBOW ROAD	0.60	6,384.97	65.61	LO	7.62	Chip Seal - 20% Rubber	100%	\$31,924.87	\$61,355.34
WARNER HILL ROAD NUMBER	0.45	6,294.38	66.61	LO	7.51	Chip Seal - 20% Rubber	100%	\$31,471.91	\$92,827.25
HAWK HILL ROAD	0.14	1,854.68	72.62	LO	6.89	Chip Seal - 20% Rubber	100%	\$9,273.39	\$102,100.64
CENTER HEATH ROAD	0.07	486.54	77.96	LO	6.41	Chip Seal - 20% Rubber	100%	\$2,432.70	\$104,533.33
BURNT HILL ROAD	1.15	14,892.56	68.61	LO/CS/DE	3.64	Chip Seal - 20% Rubber	100%	\$74,462.81	\$178,996.14
COLONIAL HILL ROAD	0.11	912.48	73.62	LO/CS/DE	3.40	Chip Seal - 20% Rubber	100%	\$4,562.40	\$183,558.54
TEA STREET EXTENSION	0.20	2,976.52	75.62	LO/CS/DE	3.31	Chip Seal - 20% Rubber	100%	\$14,882.59	\$198,441.13
HEATH STAGE TERRACE	0.32	4,118.17	77.61	LO/CS/DE	3.22	Chip Seal - 20% Rubber	100%	\$20,590.83	\$219,031.96
SCHOOL STREET	0.08	913.75	77.62	LO/CS/DE	3.22	Chip Seal - 20% Rubber	100%	\$4,568.73	\$223,600.69

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6/9/2016

This Report Is Intended For General Planning and Informational Purposes Only

Page 1 of 1

Town of Charlemont, Massachusetts

Roadway Management Program

Cost Benefit Value Analysis - Roadways Sorted By CBV - Crack Seal

Name	Length (Miles)	Square Yards	RSR	Class	CBV	Repair	% Repair	Repair Cost	Cumulative Total
Roadway Status: Accepted									
NORTH RIVER ROAD	1.04	18,336.35	83.61	CO	358.80	Crack Seal	100%	\$9,168.17	\$9,168.17
WEST HAWLEY ROAD	1.70	23,867.58	90.68	CO	263.43	Crack Seal	79%	\$11,933.79	\$21,101.96
WARFIELD ROAD	0.67	6,323.21	81.06	LO	37.02	Crack Seal	100%	\$3,161.61	\$24,263.57
COLRAIN ROAD	0.30	2,821.53	81.61	LO	36.76	Crack Seal	100%	\$1,410.77	\$25,674.34
SOUTH HEATH ROAD	0.35	3,088.26	81.62	LO	36.76	Crack Seal	100%	\$1,544.13	\$27,218.47
HIGH STREET	0.22	2,051.86	81.97	LO	36.60	Crack Seal	100%	\$1,025.93	\$28,244.40
POTTERS ROAD	0.31	2,920.83	85.62	LO	35.04	Crack Seal	100%	\$1,460.42	\$29,704.81
RICE FORT ROAD	0.12	1,016.92	88.62	LO	33.85	Crack Seal	100%	\$508.46	\$30,213.27
LEGATE HILL ROAD	2.58	30,253.49	86.85	LO	26.75	Crack Seal	74%	\$15,126.74	\$45,340.02
EAST HARMONY ROAD	0.24	1,943.24	80.62	LO	22.40	Crack Seal	100%	\$971.62	\$46,311.64
SOUTH STREET	0.07	690.18	81.61	LO/CS/DE	18.38	Crack Seal	100%	\$345.09	\$46,656.73
RIDDELL ROAD	0.40	3,761.69	86.62	LO/CS/DE	17.32	Crack Seal	100%	\$1,880.85	\$48,537.57
NORTH STREET	0.15	1,206.34	87.62	LO/CS/DE	17.12	Crack Seal	100%	\$603.17	\$49,140.75
THUNDER MOUNTAIN ROAD	0.23	3,972.93	91.62	LO/CS/DE	16.37	Crack Seal	100%	\$1,986.46	\$51,127.21

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Town of Charlemont, Massachusetts

Roadway Management Program

Sidewalk Location - Summary

Sidewalk Location (House Number Side)	Length (Centerline Miles)
Even	0.40
Odd/Even	0.26
Total:	0.66

Town of Charlemont, Massachusetts

Roadway Management Program

Roadways With Sidewalks - Segment Description

Name	From Street	To Street	Sidewalk Location	Odd Side	Odd Material	Even Side	Even Material
NORTH HEATH ROAD							
NORTH HEATH RD-01	MAIN ST	PARK ST	Odd/Even	Yes	Concrete	Yes	Concrete
RIDDELL ROAD							
RIDDELL RD	ROUTE 2	DEAD END	Even	No	None	Yes	Concrete

Town of Charlemont, Massachusetts

Roadway Management Program

Roadway Striping - Summary

Name	Centerline Striping Length (Feet)	Edgeline Striping Length (Feet)
BURRINGTON ROAD	3,930.09	7,860.17
MOUNTAIN ROAD	2,820.19	5,640.39
PARK STREET	642.15	1,284.29
SOUTH RIVER ROAD	368.37	736.74
Total:	7,760.79	15,521.58

Town of Charlemont, Massachusetts

Roadway Management Program

Roadways With Striping - Segment Description

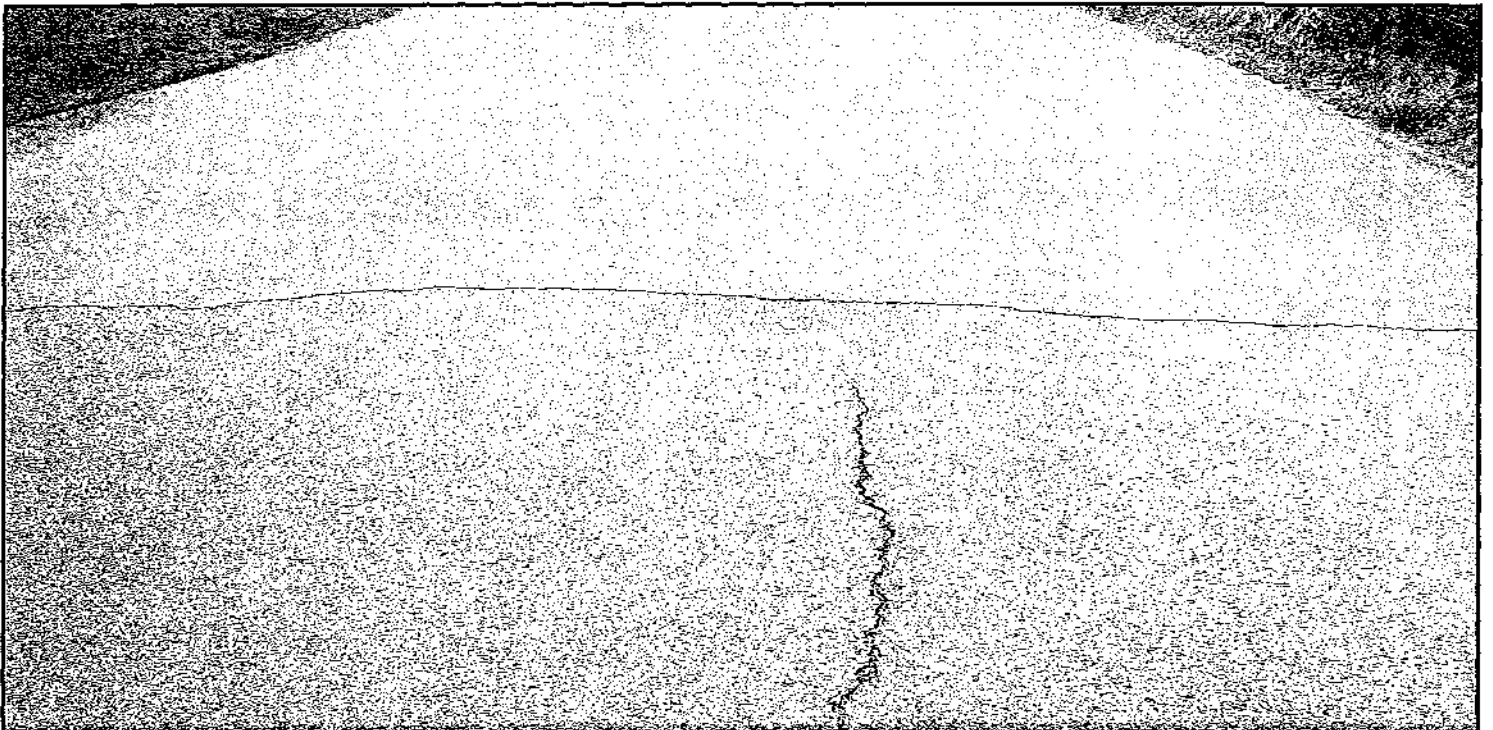
Name	From	To	Centerline Striping	Centerline Length	Edgeline Odd	Edgeline Even	Edge Line Length
BURRINGTON ROAD	0.74	Miles					
BURRINGTON RD-01	ROUTE 2	CENTER HEATH RD	Yes	1,653.00	No	No	3,306.00
BURRINGTON RD-02	CENTER HEATH RD	MOUNTAIN RD	Yes	474.97	No	No	949.95
BURRINGTON RD-03	MOUNTAIN RD	MOUNTAIN RD	Yes	335.35	No	No	670.70
BURRINGTON RD-04	MOUNTAIN RD	ROUTE 2	Yes	1,466.76	No	No	2,933.51
				3,930.09			7,860.17
				Feet			Feet
MOUNTAIN ROAD	0.53	Miles					
MOUNTAIN RD-09	BIRCH LN	VINCENT RD	Yes	2,820.19	Yes	Yes	5,640.39
				2,820.19			5,640.39
				Feet			Feet
PARK STREET	0.12	Miles					
PARK ST-01	NORTH HEATH RD	FAIRGROUND ENT.	Yes	446.49	Yes	Yes	892.98
PARK ST-02	FAIRGROUND ENT.	DEAD END	Yes	195.65	Yes	Yes	391.31
				642.15			1,284.29
				Feet			Feet
SOUTH RIVER ROAD	0.07	Miles					
SOUTH RIVER RD-02	EAST HAWLEY RD	THUNDER MOUNTAIN RD	Yes	368.37	No	No	736.74
				368.37			736.74
				Feet			Feet

BETA Group, Inc.

Town of Charlemont, MA
Roadway Management Program
Pavement Photo Log



Street Name: Avery Brook Road | Segment ID: - | RSR: 93



Street Name: North River Road | Segment ID: 02 | RSR: 84

Town of Charlemont, MA
Roadway Management Program
Pavement Photo Log

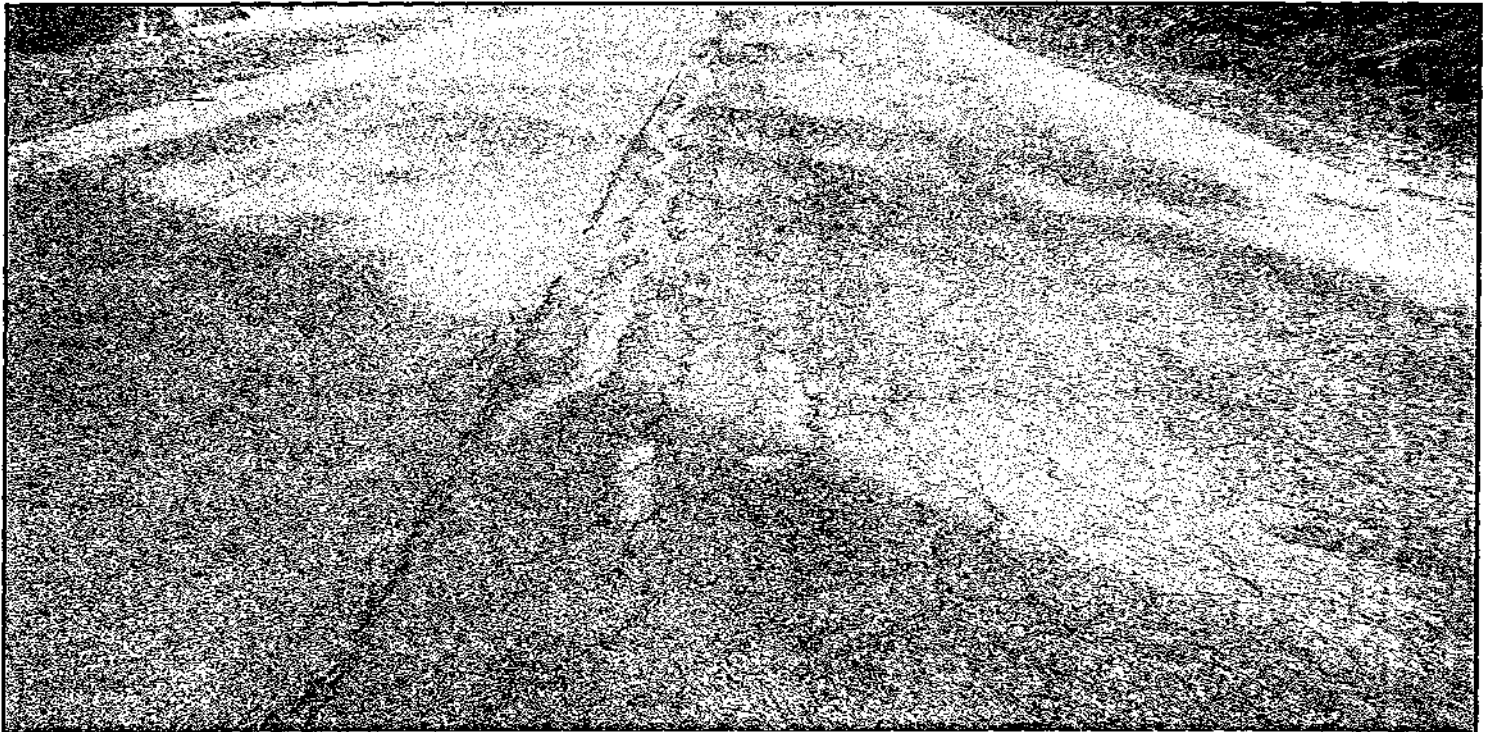


Street Name: Warfield Road | Segment ID: 03 | RSR: 81



Street Name: Colonial Hill Road | Segment ID: - | RSR: 74

Town of Charlemont, MA
Roadway Management Program
Pavement Photo Log



Street Name: East Oxbow Road | Segment ID: 01 | RSR: 66



Street Name: Rowe Road | Segment ID: - | RSR: 58

Town of Charlemont, MA
Roadway Management Program
Pavement Photo Log



Street Name: Laurel Lane | Segment ID: - | RSR: 27



Street Name: Maple Terrace | Segment ID: - | RSR: 3

Town of Charlemont, MA
Roadway Management Program
Gravel Photo Log – Before and After Grading

Chickley Rd

Before



After



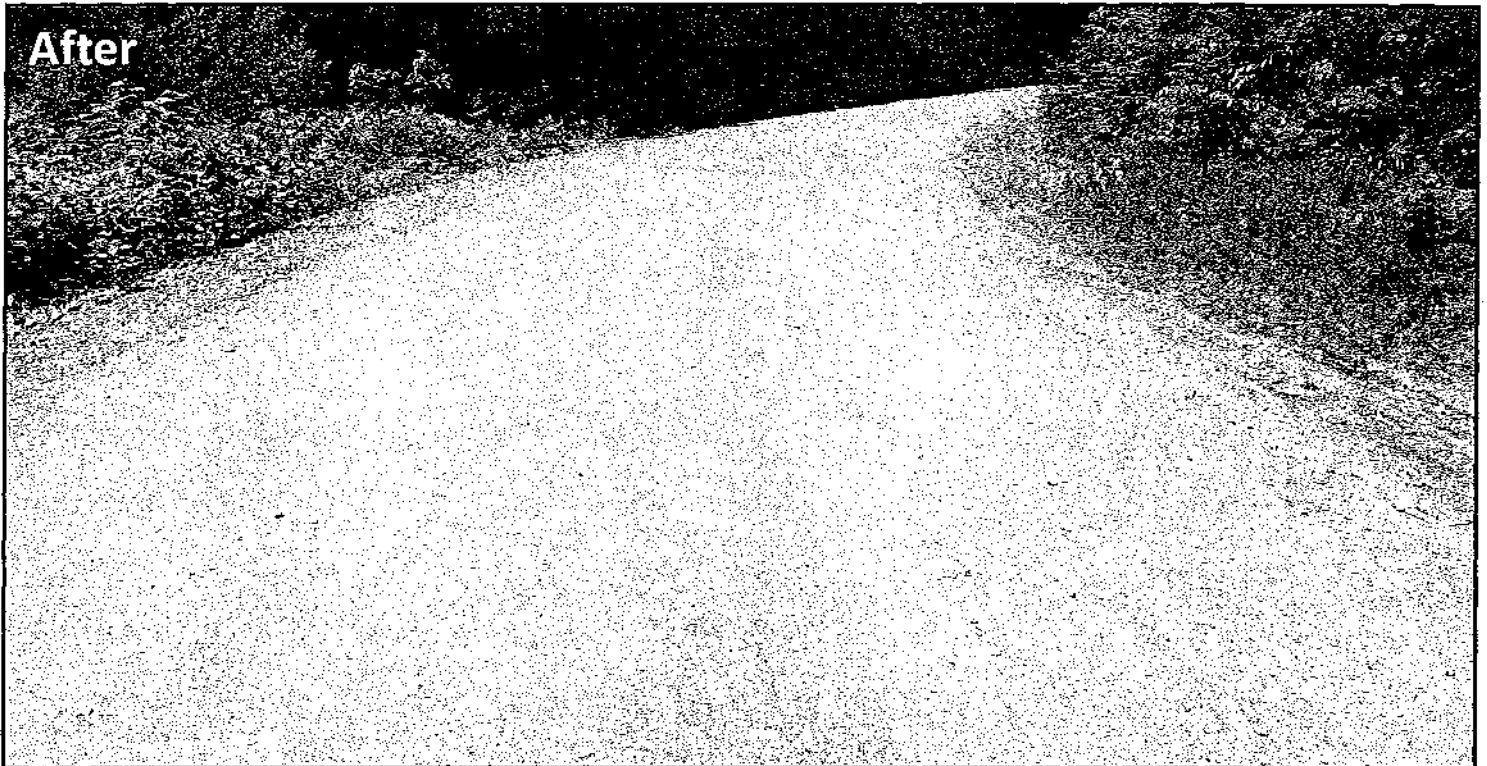
Town of Charlemont, MA
Roadway Management Program
Gravel Photo Log – Before and After Grading

Deer Run Ln

Before



After



Town of Charlemont, MA
Roadway Management Program
Gravel Photo Log – Before and After Grading

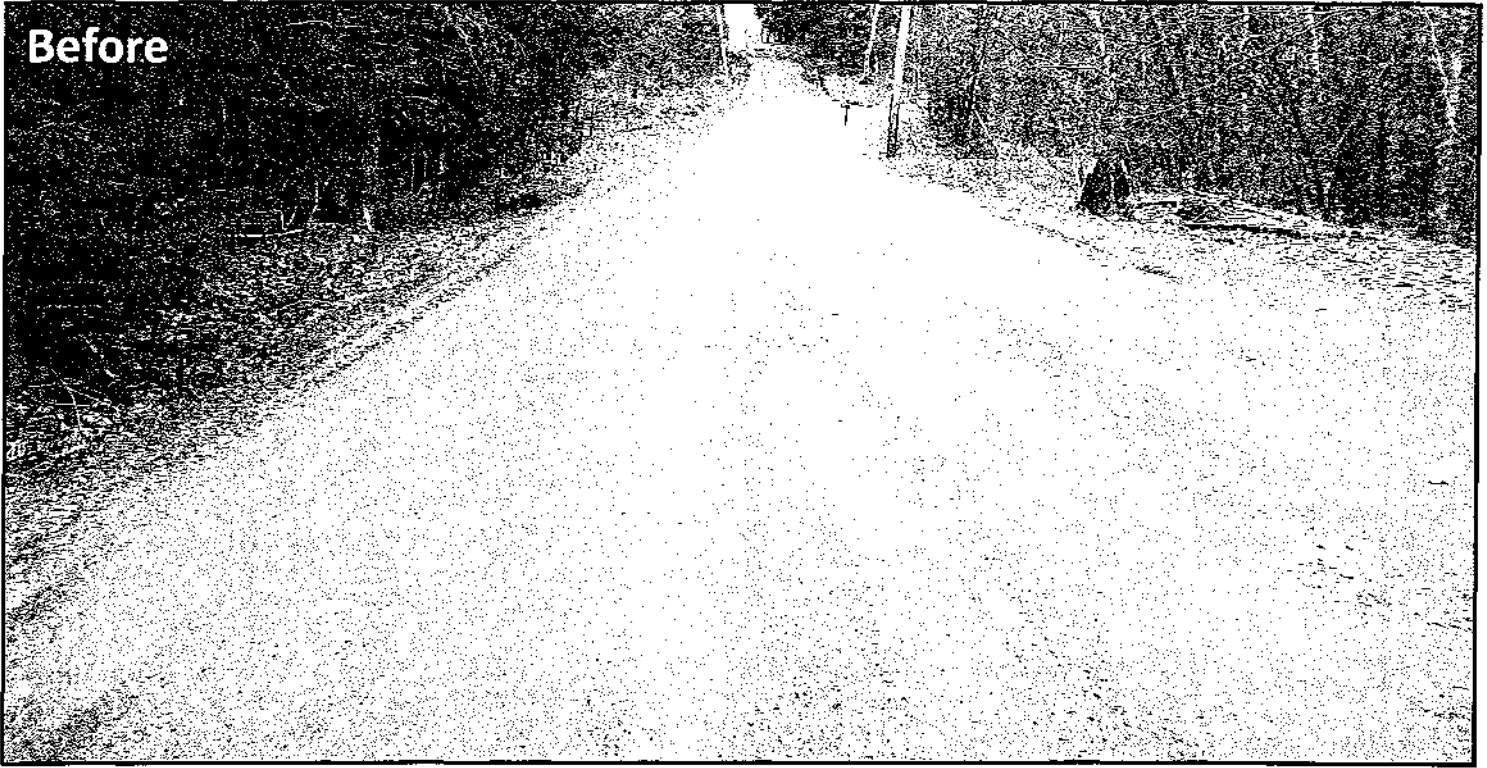
East Oxbow Rd



Town of Charlemont, MA
Roadway Management Program
Gravel Photo Log – Before and After Grading

Legate Hill Rd

Before



After



Town of Charlemont, MA
Roadway Management Program
Gravel Photo Log – Before and After Grading

Mountain Rd



Town of Charlemont, MA
Roadway Management Program
Gravel Photo Log – Before and After Grading

Vincent Rd

Before



After



Town of Charlemont, MA
Roadway Management Program
Gravel Photo Log – Before and After Grading

Warner Hill Rd 1

Before



After



Town of Charlemont, MA
Roadway Management Program
Gravel Photo Log – Before and After Grading

Warner Hill Rd 2



Town of Charlemont, MA
Roadway Management Program
Gravel Photo Log – Before and After Grading

West Oxbow Rd



Town of Charlemont, MA
Roadway Management Program
Gravel Photo Log – Before and After Grading

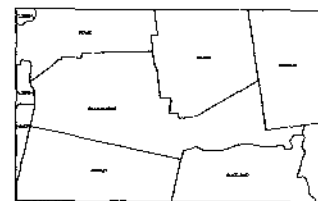
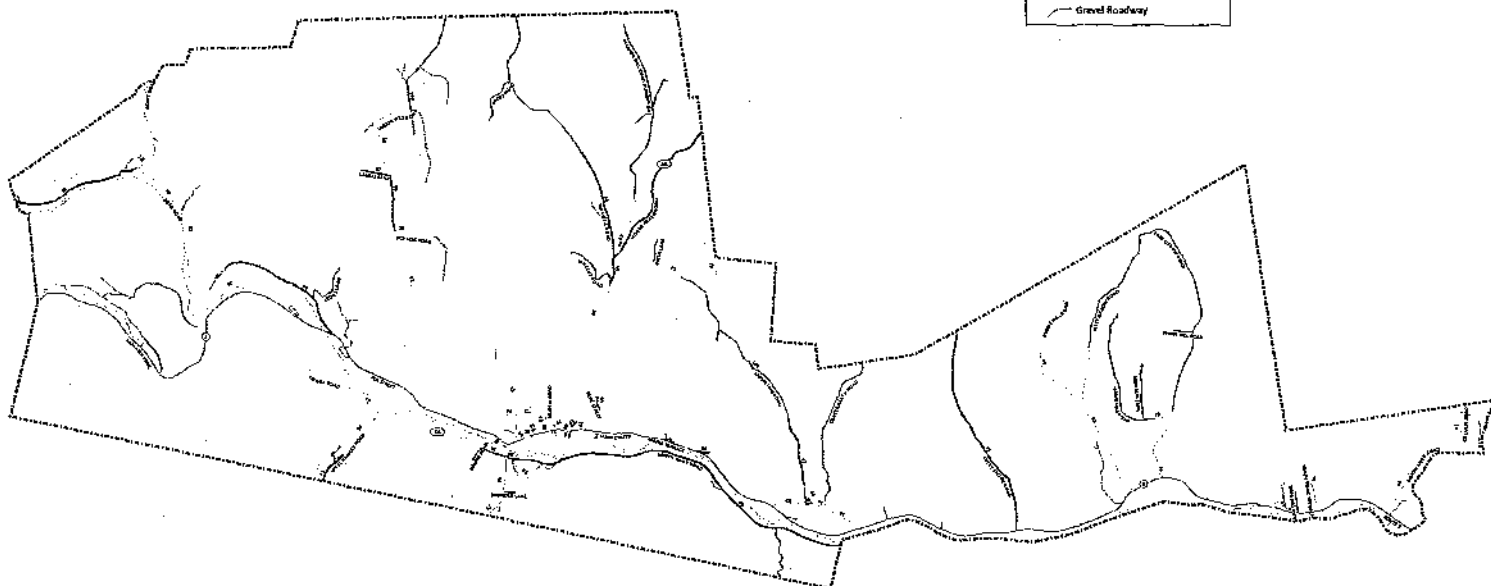
Windy Hill Rd



Town of Charlemont, Massachusetts
Roadway Management Program - Paved Roads
Road Surface Ratings & Repair Categories



- Repair Category**
- Defer Maintenance
 - Crack Seal
 - Chip Seal - 20% Rubber
 - Slurp and Overlay
 - Modified Reclamation
 - Gravel Roadway



Date of Inspection: March 2016
Issue Date: June 9, 2016
This Map is Intended for Planning Purposes Only

BETA 0 0.5 1 Mile

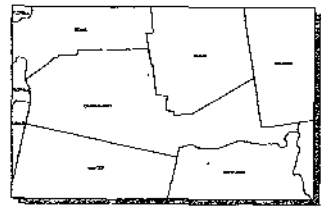
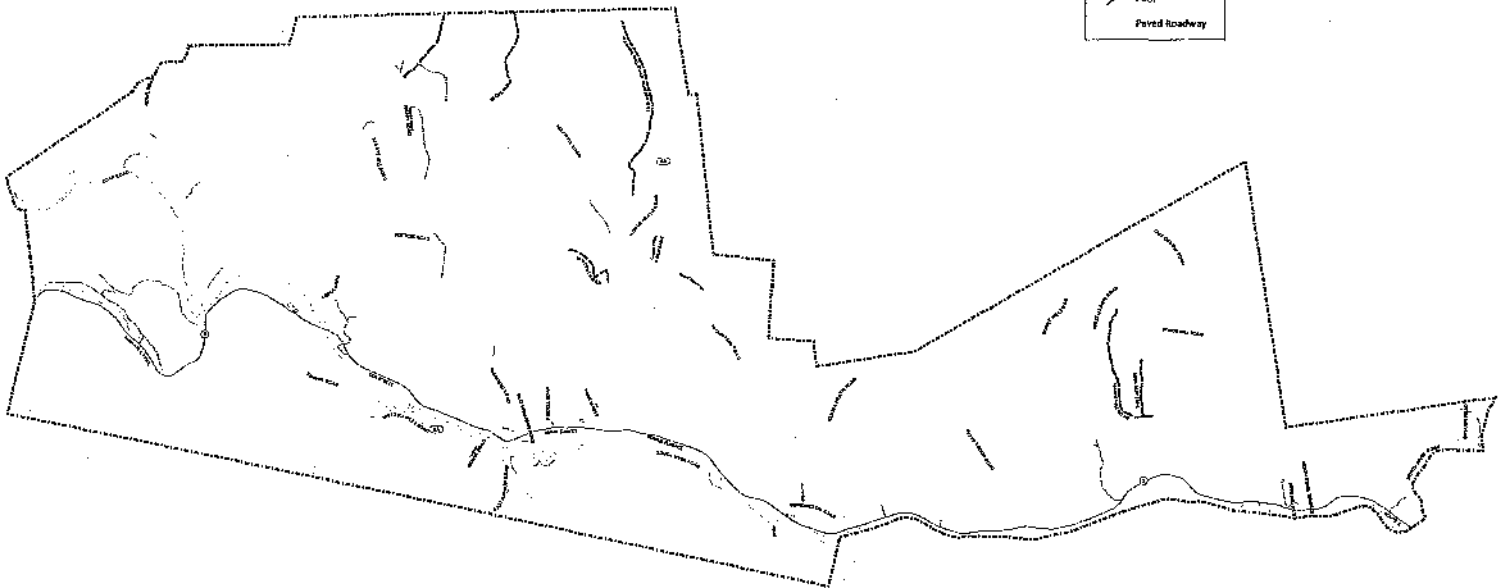
Town of Charlemont, Massachusetts

Roadway Management Program - Gravel Roads

General Roadway Conditions



General Condition	
	Good
	Fair
	Poor
	Paved roadway



Date of Inspection: March 2014

Map Date: June 9, 2014

This Map is Intended for Planning Purposes Only

BETA 0 0.5 1 Miles



Gill Engineering Associates, Inc.
63 Kendrick Street
Needham, MA 02494
www.gill-eng.com
781-355-7100

April 1, 2016

Ms. Peg Dean, Town Administrator
Town of Charlemont
157 Main Street, P.O. Box 677
Charlemont, MA 01339

Re: Bridge Deficiency Evaluation and Repair Recommendations
Bridge C-05-028, Maxwell Road over Maxwell Brook
Bridge C-05-030, Maxwell Road over Maxwell Brook
Bridge C-05-047, Route 8A/North Heath Road over Mill Brook
Bridge C-05-034, Route 8A/North Heath Road over Maxwell Brook
Bridge C-05-002, Zoar Road over Pelham Brook
Bridge C-05-027, South River Road over Albee Brook
Bridge C-05-010, Route 8A/West Hawley Road over Deerfield River
Bridge C-05-054, Legate Hill Road over Legate Hill Brook

Dear Ms. Dean,

Gill Engineering is pleased to submit the attached report containing our review of the deficiencies reported in the MassDOT inspection reports and the bridge carrying capacities reported in the MassDOT Bridge Live Load Capacity Reports. We have developed preliminary deficiency repairs, prioritized the deficiency repairs in order of urgency, provided preliminary cost estimates for each recommended repair, provided estimates of engineering and permitting expenses for each repair, and provided a listing of environmental permits and which may be required.

We are prepared to discuss the content of this report and address any questions that you may have. We appreciate the opportunity to be of service to you, and we look forward to working with the Town of Charlemont on this important project. Please feel free to contact me at 781-355-7100 should any questions arise.

Sincerely,
Gill Engineering Associates, Inc.

A handwritten signature in black ink, appearing to read "Daniel S. Crovo".

Daniel S. Crovo, PE
Principal Engineer

A handwritten signature in black ink, appearing to read "Paul D. Moyer".

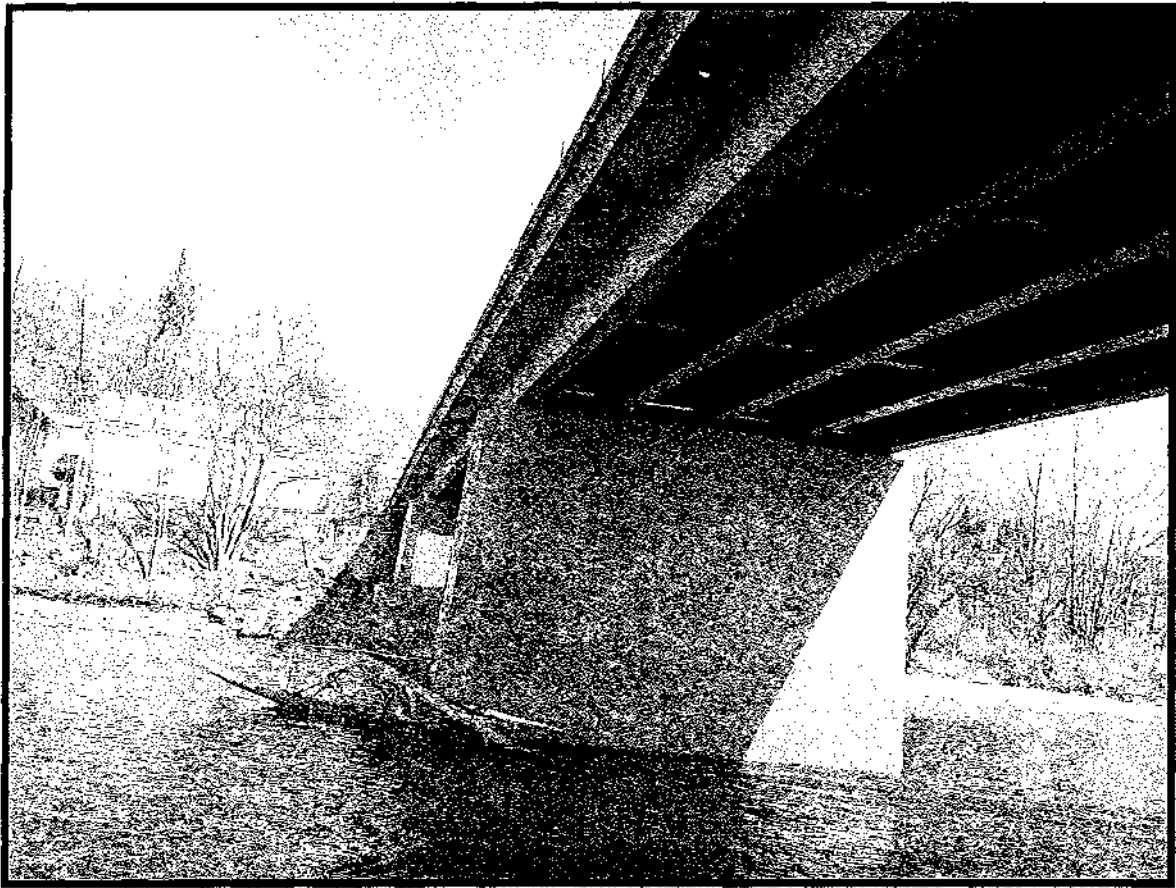
Paul D. Moyer, PE
Principal, Vice President

DSC/

Bridge Deficiency Evaluation and Repair Recommendations

Bridge Assessments
Charlemont, MA
March 31, 2016

Town of Charlemont



Gill Engineering Associates, Inc.
63 Kendrick Street
Needham, MA 02494

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1. BRIDGE CONDITIONS AND DEFICIENCY REVIEW

Bridge C-05-028, Maxwell Road over Maxwell Brook

Bridge Description: The bridge superstructure consists of a single 20'-8" long span between bearings of 6 steel beams that support a reinforced concrete deck. The roadway width is approximately 14 feet. The bridge substructure consists of concrete abutments and wingwalls that are supported on shallow foundation footings. The bridge was constructed circa 1939, and no original construction drawings are available.

Status: Bridge Closed.

Bridge Load Rating: The bridge was last load rated in 1985 when the bridge was in fair to satisfactory condition and did not require a posted weight limit. The bridge was closed to traffic due to severe deterioration in December of 2015.

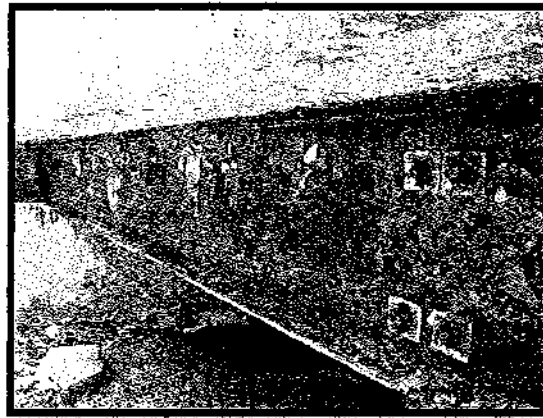
Bridge Design Load: The bridge was designed for a H15 (15 ton 2 axle) truck.

Deck Condition: **Poor** per 12/28/2015 MassDOT Routine Inspection.

Superstructure Condition: **Serious** per 12/28/2015 MassDOT Routine Inspection.

Substructure Condition: **Satisfactory** per 12/28/2015 MassDOT Routine Inspection.

Severe Deficiencies include the deck, the steel beams, the paint system, and the traffic safety features. The bridge is closed due to severe deterioration of the steel beams. The bridge deck exhibits severe spalling (broken concrete) at numerous locations with a full depth hole at one location. The deck's reinforcing steel has heavy corrosion with section losses of up to 50%. The steel beams have severe corrosion with extensive holes through the bottom flanges and webs at numerous beam ends. The bottom flanges of the exterior beams have severe section losses running full length. The interior beams also have severe bottom flange corrosion extended up to 7' feet from the beam ends. The paint corrosion protection system has failed leaving most of the steel exposed and corroding. The bridge approach railing, transitions and terminations are in poor condition and do not comply with current standards.



Bridge C-05-028: Severe Corrosion of Steel

Minor Deficiencies include the bridge deck curbs, bridge railings, bearing devices, and steel beam alignment. The concrete curbs on the bridge have scaling (shallow broken concrete) that is about 1" deep. The east bridge railing is detached from the first post at the north end. The steel bearing plates are heavily corroded and many of the anchor bolts have severe corrosion. Pack rust has formed above the top flanges of the beams creating a gap between the flange and deck at the interior beams.

Bridge C-05-030, Maxwell Road over Maxwell Brook

Bridge Description: The bridge superstructure consists of a single 18'-3" long span between bearings of 6 steel beams that support a reinforced concrete deck and asphalt wearing surface. The bridge substructure consists of concrete abutments and wingwalls that are supported on shallow foundation footings. The bridge was constructed circa 1939 per the original construction drawings.

Status: Bridge Open – No Restrictions.

Bridge Load Rating: The bridge was last load rated in 1982 when the bridge was in fair to good condition and did not require a posted weight limit.

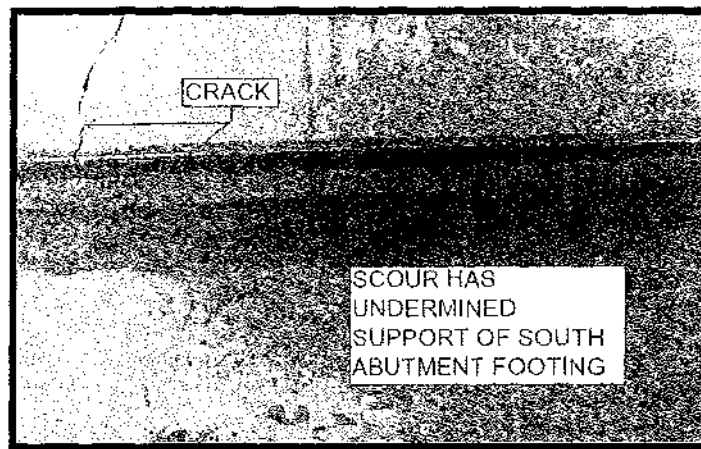
Bridge Design Load: The bridge was designed for a H15 (15 ton 2 axle) truck.

Deck Condition: Satisfactory per 12/28/2015 MassDOT Routine & Special Member Inspection

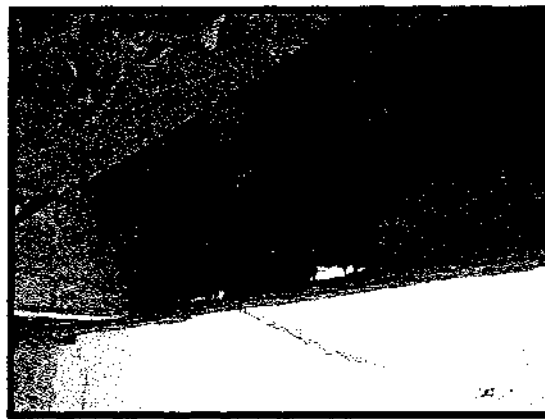
Superstructure Condition: **Serious** per 12/28/2015 MassDOT Routine & Special Member Inspection.

Substructure Condition: **Poor** per 12/28/2015 MassDOT Routine & Special Member Inspection.

Severe Deficiencies include severe corrosion of the steel beams, scour of the waterway channel and south abutment footing, cracking of the south abutment breastwall and through the footing due to undermining, severe corrosion of the steel bearing plates, the paint system is failing, and the bridge and approach railing system is missing the timber rails and some of concrete posts are either broken or tipped.



Bridge C-05-030: South Abutment Footing Scour



Bridge C-05-030: Severe Corrosion of Steel

Minor Deficiencies include cracking and patching of the asphalt wearing surface and aggradation (gravel buildup) in the northern half of the waterway channel.

Bridge No. C-05-047, Route 8A (North Heath Road) over Mill Brook

Bridge Description: The bridge superstructure consists of a single 54'-5" long span between bearings of 6 steel beams that support a reinforced concrete deck and asphalt wearing surface. The bridge substructure consists of concrete abutments and wingwalls that are supported on shallow foundation footings. The bridge was constructed circa 1939 per the original construction drawings.

Status: Bridge Open – Posted Weight & Width Restrictions.

Bridge Load Rating: The bridge was last load rated in 2014, which is the basis for the current posted weight limit of 13 tons, 16 tons, and 23 tons for the 2, 3, and 5 axle trucks, respectively. Concrete barriers have been placed near the curb lines in order to isolate the exterior beams from traffic, otherwise the posted weight limit would be much lower.

Bridge Design Load: The bridge was designed for a H15 (15 ton 2 axle) truck.

Deck Condition: Satisfactory per 4/6/2015 MassDOT Routine Inspection

Superstructure Condition: Satisfactory per 4/6/2015 MassDOT Routine Inspection.

Substructure Condition: Fair per 4/6/2015 MassDOT Routine Inspection.

Severe Deficiencies include the paint system failure below the deck drains and the remainder of the paint system is in the process of failing. The exterior beams have extensive corrosion in the vicinity of the deck drains. The posted weight limit is governed by the capacity of the interior steel beams 2 and 5.



Bridge C-05-047: Severe Corrosion Beam 6

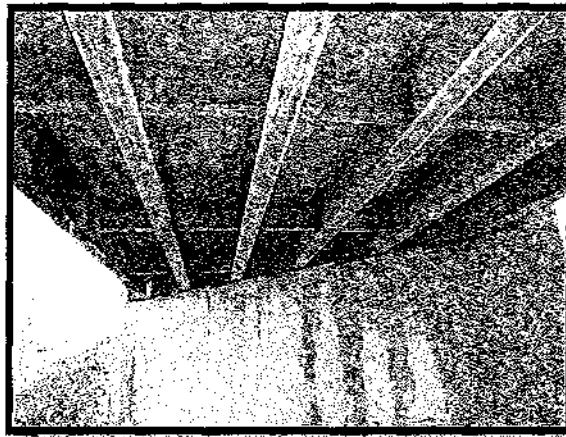
Minor Deficiencies include the railing system, the bearing plates, and the abutments and wingwalls. Several of the railing system anchor bolt nuts are corroding or broken off and the east and west railings have sections of bent rails and posts. The north abutment bridge seat has heavy deterioration at Beam 1 with undermining of the bearing and 1 anchor bolt is missing. Other bearings have bent or broken off anchor bolts. Moderate to heavy concrete deterioration is also noted at all four of the wingwalls.

Bridge No. C-05-034, Route 8A (North Heath Road) over Maxwell Brook

Bridge Description: The bridge superstructure consists of a single 48' long span between bearings of 7 steel beams that support a reinforced concrete deck and asphalt wearing surface. The bridge substructure consists of concrete abutments and wingwalls that are supported on shallow foundation footings. The bridge was constructed circa 1939 per the original construction drawings.

Status: Bridge Open – No Weight Restrictions, but with Width Restrictions.

Bridge Load Rating: The bridge was last load rated in 2014 and there is currently no posted weight limit. Concrete barriers have been placed near the curb lines in order to isolate the exterior beams from traffic, otherwise a posted weight limit would have been implemented.



Bridge C-05-034: Corrosion of Beam 1

Bridge Design Load: The bridge was designed for a H20 (20 ton 2 axle) truck.

Deck Condition: Satisfactory per 4/6/2015 MassDOT Routine Inspection

Superstructure Condition: Fair per 4/6/2015 MassDOT Routine Inspection.

Substructure Condition: Satisfactory per 4/6/2015 MassDOT Routine Inspection.

Severe Deficiencies were not reported in the MassDOT inspection report.

Minor Deficiencies include the deck drainage system, the steel beams, the paint system, and the wingwalls. The deck drains allow direct discharge of water onto the exterior steel beams. The exterior steel beams have extensive corrosion due to water exposure. The paint system has failed below the deck drains. Heavy abutment seat and breast wall deterioration has occurred at the junction with the southwest wingwall, resulting in undermining of the bearing at Beam 6. Moderate to heavy concrete deterioration is also noted at all four of the wingwalls.

Bridge No. C-05-002, Zoar Road over Pelham Brook

Bridge Description: The bridge superstructure consists of a single 47'-1" long span between bearings of 6 steel beams that support a reinforced concrete deck and asphalt wearing surface. The bridge substructure consists of concrete abutments and wingwalls that are supported on shallow foundation footings. The bridge was constructed circa 1939 per the original construction drawings.

Status: Bridge Open – No Restrictions.

Bridge Load Rating: The bridge was last load rated in 1980, which is the basis for the bridge not having a posted weight limit.

Bridge Design Load: The bridge was designed for a H20 (20 ton 2 axle) truck.

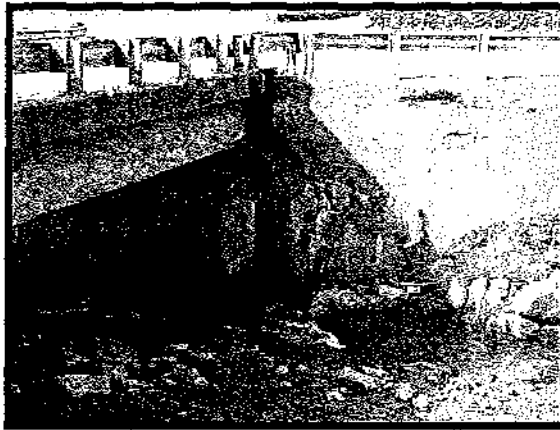
Deck Condition: Satisfactory per 10/17/2014 MassDOT Routine Inspection

Superstructure Condition: Satisfactory per 10/17/2014 MassDOT Routine Inspection.

Substructure Condition: Satisfactory per 10/17/2014 MassDOT Routine Inspection.

Severe Deficiencies were not reported in the MassDOT inspection report.

Minor Deficiencies include the paint system, and the wingwalls. The paint system is failing along the bottom flange edges and where previous leakage of water through the now repaired deck in bays 2 through 4 caused steel corrosion. The abutment seats, breastwalls, and adjacent wingwalls have heavy deterioration at all four corners. Roadway water drains onto the bridge seats at each corner of the bridge leading to this deterioration. Moderate to heavy concrete deterioration is also noted at all four of the wingwalls.



Bridge C-05-002: Wingwall Deterioration

Bridge No. C-05-027, South River Road over Albee Brook

Bridge Description: The bridge superstructure consists of a single span 8 steel beams that support a reinforced concrete deck and asphalt wearing surface. The original portion of the bridge had 6 steel beams with a span length of 21' between bearings. The bridge was later widened on the south side by adding 2 additional beams with span lengths of 22'-4" and 28'-2" between bearings. The bridge substructure consists of concrete abutments and wingwalls that are supported on shallow foundation footings. The bridge was constructed circa 1939 and widened circa 1962 per the original construction drawings.

Status: Bridge Open – No Restrictions.

Bridge Load Rating: The bridge was last load rated in 1982 and the bridge does not have a posted weight limit.

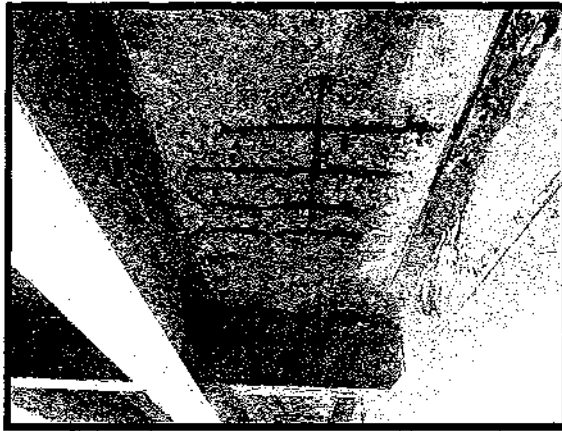
Bridge Design Load: The bridge was designed for a H15 (15 ton 2 axle) truck.

Deck Condition: **Poor** per 11/25/2014 MassDOT Routine & Special Member Inspection

Superstructure Condition: Satisfactory per 11/25/2014 MassDOT Routine & Special Member Inspection.

Substructure Condition: Satisfactory per 11/25/2014 MassDOT Routine & Special Member Inspection.

Severe Deficiencies include the bridge deck and railing system. The deck has extensive spalling (cracked concrete) with exposed severely corroded reinforcing steel. The deck has been patched and the patches are delaminating from the surrounding concrete. The bridge railing is missing many sections of timber rails and the remaining timber rails are rotted and split.



Bridge C-05-027: Deck and Paint System Deterioration

Minor Deficiencies include the paint system, and the steel bearings. The paint system is peeling at numerous locations. The steel bearing plates are corroding and at least 1 anchor bolt has corroded away.

Bridge No. C-05-010, Route 8A (West Hawley Road) over Deerfield River

Bridge Description: The bridge superstructure consists of 4 continuous 75' long spans of 5 steel beams that support an exposed reinforced concrete deck. The bridge substructure consists of concrete abutments and wingwalls that are supported on shallow foundation footings. The bridge was constructed circa 1939 and widened circa 1962 per the original construction drawings.

Status: Bridge Open – No Restrictions.

Bridge Load Rating: The bridge was last load rated in 1984, which is the basis for the bridge not having a posted weight limit.

Bridge Design Load: The bridge was designed for a H15 (15 ton 2 axle) truck.

Deck Condition: Fair per 6/12/2015 MassDOT Routine Inspection.

Superstructure Condition: Satisfactory per 6/12/2015 MassDOT Routine Inspection.

Substructure Condition: Satisfactory per 6/12/2015 MassDOT Routine Inspection.

Severe Deficiencies include the bridge deck wearing surface and the bridge deck joints. At some point in the past, the bridge deck was given a thin epoxy wearing surface overlay that had fine aggregate embedded in it. The vast majority of this wearing surface has worn away leaving a bare deck. The bridge deck has areas of exposed reinforcing steel where potholes up to 3' in diameter and 2" deep have formed. Some potholes have been patched and cracking of the patches was observed. The underside of the deck where it overhangs the exterior beams has extensive spalling (cracked concrete) with exposed corroded reinforcing steel primarily where drainage scuppers are located. The deck joints are located at each abutment. The deck joint seals have torn and have pulled free from their supports, particularly at the south abutment. This has allowed a significant amount of sand and debris to accumulate on the bridge seat and steel beam ends.



Bridge C-05-010: Deck Deterioration and Failed Joint Seal

Minor Deficiencies include the bridge deck, steel beam bearings, approach roadway pavement, and debris (trees) that have lodged against Piers 1 and 2. The bridge deck has full width transverse cracking, delaminated patches, and spalling (broken concrete) up to 2" deep. The paint system is peeling at numerous locations. The steel bearing plates are corroding with numerous missing or bent anchor bolts at the abutments.

Bridge C-05-054, Legate Hill Road over Legate Hill Brook

Bridge Description: The bridge superstructure consists of a single 12'-10" long span between bearings of 9 steel beams that support an asphalt filled corrugated metal deck. The railing system consists of steel W beam guardrail that spans over the bridge without posts attached to the deck. The deck width is approximately 19 feet. The bridge substructure consists of concrete abutments and flared wingwalls that appear to be supported on shallow foundation footings. The bridge construction date is not documented as no original construction drawings are available. It appears that the steel beams may have been salvaged from another structure as the bridge seats are longer than required and have unused anchor bolts likely from a previous superstructure.

Status: Bridge Open – No Restrictions.

Bridge Load Rating: The bridge has not been load rated by MassDOT as the bridge was not listed within MassDOT's non-NBIS inventory until recently. MassDOT District 1 staff indicate that a load rating will be requested.

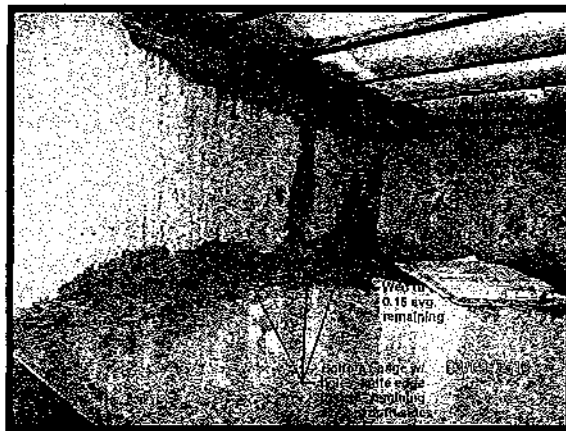
Bridge Design Load: The bridge design load is unknown.

Deck Condition: The MassDOT March 2016 Initial/Routine Inspection is not yet available.

Superstructure Condition: The MassDOT March 2016 Initial/Routine Inspection is not yet available.

Substructure Condition: The MassDOT March 2016 Initial/Routine Inspection is not yet available.

Severe Deficiencies include severe corrosion of the corrugated metal deck above both ends of Beam 5 and the severe corrosion of the ends of Beam 5 directly beneath. The top flange of Beam 5 is mostly corroded away and the web has advanced section loss with holes up to 10" long and 1" high. The bottom flange also has little remaining area for a length of about 4'. The corrosion protection system has failed leaving large areas of the steel with little or no remaining paint.



Bridge C-05-054: Beam 5 End Corrosion and Corrugated Deck Deterioration

Minor Deficiencies include the bridge railing as it is not attached to the bridge and does not comply with current standards. There is no curbing on the bridge that would prevent water from running onto the exterior beams. The steel bearing plates are heavily corroded. The corrugated metal decking is prone to corrosion as water becomes trapped at the troughs.

2. RECOMMENDED REPAIRS

Bridge C-05-028, Maxwell Road over Maxwell Brook

Superstructure Replacement: The bridge's superstructure (steel beams and deck) is in serious condition as a result of severe corrosion of the steel beams and deterioration of the concrete deck. The extent of these deficiencies has rendered the existing superstructure unsuitable for rehabilitation. The existing substructure is in satisfactory condition and is considered suitable for reuse based upon its condition. Recommendation: Replace the existing superstructure with 4 steel beams and an arched concrete deck. The proposed railing system is metal thrie beam guardrail which will be carried through the approaches at all four corners and terminated. Analysis of the existing substructure will be required to verify its stability for the proposed superstructure replacement.

Estimated Construction Cost: \$160,000.

Estimated Design Engineering Cost: \$24,000.

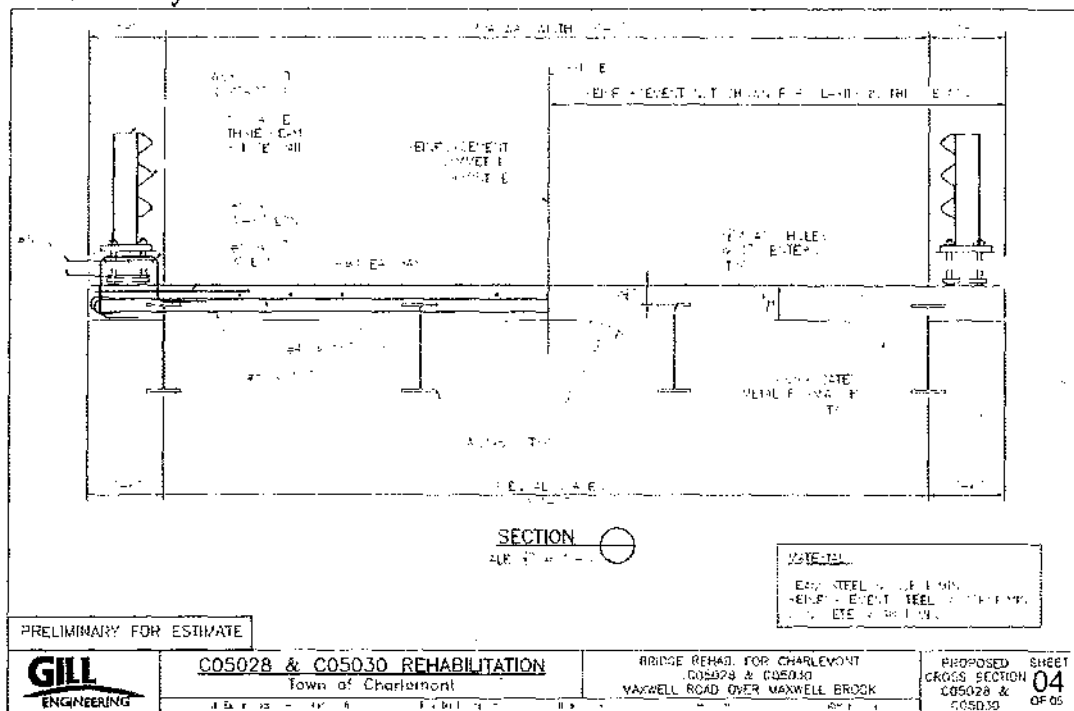
Estimated Permitting Cost: \$5,000.

Estimated Construction Engineering & Inspection Cost: \$15,000.

Estimated Total Cost: \$204,000.

Anticipated Permitting Requirements:

- File a Request for Determination of Applicability (RDA) with the Charlemont Conservation Commission. It is assumed that the Conservation Commission will make a negative determination stating the work is not subject to regulation under the Wetlands Protection Act. The proposed superstructure replacement will not require extensive work in the waterway.



Bridge C-05-028 & C-05-030 Proposed Superstructure Replacement Cross Section

Bridge C-05-030, Maxwell Road over Maxwell Brook

Superstructure Replacement and Replacement of South Abutment: The bridge's superstructure (steel beams and deck) is in serious condition as a result of severe corrosion of the steel beams and deterioration of the concrete deck. Extensive scour of the south abutment footing has occurred resulting in undermining of the footing and cracking of the abutment breastwall and footing above the undermining. The main flow of the channel is directed along the south abutment. The extent of these deficiencies has rendered the existing superstructure and south abutment unsuitable for rehabilitation. The existing north abutment is in satisfactory condition and is considered suitable for reuse based upon its condition. Recommendation: Replace the existing superstructure with 4 steel beams and an arched concrete deck. The proposed railing system is metal three beam guardrail which will be carried through the approaches at all four corners and terminated. Replace the south abutment roughly 10' south of the existing abutment and place riprap scour protection. Analysis of the existing north abutment will be required to verify its stability for the proposed loads from the new superstructure.

Estimated Construction Cost: \$226,000.

Estimated Design Engineering Cost: \$34,000.

Estimated Permitting Cost: \$5,000.

Estimated Construction Engineering & Inspection Cost: \$21,000.

Estimated Total Cost: \$286,000.

Anticipated Permitting Requirements:

- File a Request for Determination of Applicability (RDA) with the Charlemont Conservation Commission. It is assumed that the Conservation Commission will make a negative determination stating the work is not subject to regulation under the Wetlands Protection Act. The proposed superstructure replacement will not require extensive work in the waterway.

Bridge C-05-047, Route 8A/North Heath Road over Mill Brook

Steel Repairs: The bridge's exterior steel beams have extensive corrosion and loss of steel section due to deck leakage and drainage from the scuppers directly discharging roadway water onto the steel. Recommendation: Strengthen the existing bottom flanges of the exterior beams. Implementation of this recommendation would allow for the removal of the existing temporary concrete barrier that is currently in place to limit loading of the exterior beams. The bridge would still require a posted weight limit of approximately 15, 17, and 25 tons for the 2 axle, 3 axle, and 5 axle trucks respectively. It would also be necessary to strengthen the interior beams (Beams 2 through 5) in order to be able to remove the posted weight limit as the bridge was designed to support 15 ton 2 axle truck loads. It is noted that strengthening the bottom flanges by adding bottom flange cover plates would be difficult as the extent of the corrosion would make effective attachment of the new cover plates difficult. For this reason, strengthening the beams using a system of anchored tension rods is preferred. The following preliminary cost estimate assumes that only the exterior beams will be repaired.

Estimated Construction Cost: \$75,000.

Estimated Design Engineering Cost: \$12,000.

Estimated Permitting Cost: \$5,000.

Estimated Construction Engineering & Inspection Cost: \$8,000.

Estimated Total Cost: \$100,000.

Anticipated Permitting Requirements:

- File a Request for Determination of Applicability (RDA) with the Charlemont Conservation Commission. It is assumed that the Conservation Commission will make a negative determination stating the work is not subject to regulation under the Wetlands Protection Act. The proposed steel repairs will not require extensive work in the waterway.

Cleaning and Painting of the Structural Steel: Recommended as a preservation activity to extend the service life of the bridge and minimize the need for potential future steel repairs.

Estimated Construction Cost: \$155,000.

Estimated Design Engineering Cost: \$23,000.

Estimated Permitting Cost: \$0 if filed concurrent with steel repair RDA, otherwise \$3000.

Estimated Construction Engineering & Inspection Cost: \$14,000.

Estimated Total Cost: \$192,000.

Anticipated Permitting Requirements:

- File a Request for Determination of Applicability (RDA) with the Charlemont Conservation Commission. It is assumed that the Conservation Commission will make a negative determination stating the work is not subject to regulation under the Wetlands Protection Act. The cleaning and painting of the steel will not require extensive work in the waterway.

Repair Deteriorated Substructure Concrete: Moderate to heavy localized abutment and wingwall deterioration has occurred. Recommendation: Remove and replace deteriorated substructure concrete. Provide temporary shoring of Beam 1 at the north abutment in order to perform concrete repairs at the bridge seat where the bearing is partially undermined.

Estimated Construction Cost: \$95,000.

Estimated Engineering Cost: \$14,000.

Estimated Permitting Cost: \$0 if filed concurrent with steel repair RDA, otherwise \$3000.

Estimated Construction Engineering & Inspection Cost: \$9,000.

Estimated Total Cost: \$121,000.

Anticipated Permitting Requirements:

- File a Request for Determination of Applicability (RDA) with the Charlemont Conservation Commission. It is assumed that the Conservation Commission will make a negative determination stating the work is not subject to regulation under the Wetlands Protection Act.

Repair Deteriorated Deck Concrete & Eliminate Deck Drains: Although not urgent, moderate deterioration of the deck concrete has occurred in the vicinity of the deck drains. Elimination of the deck drains will prevent future roadway drainage from spilling onto the steel beams and causing corrosion. Recommendation: Remove and replace the deck concrete in order to eliminate the deck drains.

Estimated Construction Cost: \$35,000.

Estimated Engineering Cost: \$5,000.

Estimated Permitting Cost: \$0 if filed concurrent with steel repair RDA, otherwise \$3000.

Estimated Construction Engineering & Inspection Cost: \$3,000.

Estimated Total Cost: \$46,000.

Anticipated Permitting Requirements:

- File a Request for Determination of Applicability (RDA) with the Charlemont Conservation Commission. It is assumed that the Conservation Commission will make a negative determination stating the work is not subject to regulation under the Wetlands Protection Act.

Bridge C-05-034, Route 8A/North Heath Road over Maxwell Brook

Steel Repairs: The bridge's exterior steel beams have extensive corrosion and loss of steel section due to deck leakage and drainage from the scuppers directly discharging roadway water onto the steel. Recommendation: Strengthen the existing bottom flanges of the exterior beams. Implementation of this recommendation would allow for the removal of the existing temporary concrete barrier that is currently in place to limit loading of the exterior beams. If implemented, these repairs would allow the bridge to not require a posted weight limit as the bridge was designed to support 20 ton 2 axle truck loads. It is noted that strengthening the bottom flanges by adding bottom flange cover plates would be difficult as the extent of the corrosion would make effective attachment of the new cover plates difficult. For this reason, strengthening the beams using a system of anchored tension rods is preferred.

Estimated Construction Cost: \$75,000.

Estimated Design Engineering Cost: \$12,000.

Estimated Permitting Cost: \$5,000.

Estimated Construction Engineering & Inspection Cost: \$8,000.

Estimated Total Cost: \$100,000.

Anticipated Permitting Requirements:

- File a Request for Determination of Applicability (RDA) with the Charlemont Conservation Commission. It is assumed that the Conservation Commission will make a negative determination stating the work is not subject to regulation under the Wetlands Protection Act. The proposed steel repairs will not require extensive work in the waterway.

Cleaning and Painting of the Structural Steel: Recommended as a preservation activity to extend the service life of the bridge and minimize the need for potential future steel repairs.

Estimated Construction Cost: \$149,000.

Estimated Design Engineering Cost: \$22,000.

Estimated Permitting Cost: \$0 if filed concurrent with steel repair RDA, otherwise \$3000.

Estimated Construction Engineering & Inspection Cost: \$14,000.

Estimated Total Cost: \$188,000.

Anticipated Permitting Requirements:

- File a Request for Determination of Applicability (RDA) with the Charlemont Conservation Commission. It is assumed that the Conservation Commission will make a negative determination stating the work is not subject to regulation under the Wetlands Protection Act. The cleaning and painting of the steel will not require extensive work in the waterway.

Repair Deteriorated Substructure Concrete: Moderate to heavy abutment and wingwall deterioration has occurred, particularly at the south end of the west abutment and the adjoining

southwest wingwall. Recommendation: Remove and replace deteriorated substructure concrete. Provide temporary shoring of Beam 6 at the west abutment in order to perform concrete repairs at the bridge seat where the bearing is partially undermined.

Estimated Construction Cost: \$53,000.

Estimated Engineering Cost: \$8,000.

Estimated Permitting Cost: \$0 if filed concurrent with steel repair RDA, otherwise \$3000.

Estimated Construction Engineering & Inspection Cost: \$5,000.

Estimated Total Cost: \$69,000.

Anticipated Permitting Requirements:

- File a Request for Determination of Applicability (RDA) with the Charlemont Conservation Commission. It is assumed that the Conservation Commission will make a negative determination stating the work is not subject to regulation under the Wetlands Protection Act.

Repair Deteriorated Deck Concrete & Eliminate Deck Drains: Moderate deterioration of the deck concrete has occurred in the vicinity of the deck drains. Elimination of the deck drains will prevent future roadway drainage from spilling onto the steel beams and causing corrosion. Recommendation: Remove and replace the deck concrete in order to eliminate the deck drains.

Estimated Construction Cost: \$35,000.

Estimated Engineering Cost: \$5,000.

Estimated Permitting Cost: \$0 if filed concurrent with steel repair RDA, otherwise \$3000.

Estimated Construction Engineering & Inspection Cost: \$3,000.

Estimated Total Cost: \$46,000.

Anticipated Permitting Requirements:

- File a Request for Determination of Applicability (RDA) with the Charlemont Conservation Commission. It is assumed that the Conservation Commission will make a negative determination stating the work is not subject to regulation under the Wetlands Protection Act.

Bridge C-05-002, Zoar Road over Pelham Brook

Cleaning and Painting of the Structural Steel: Recommended as a preservation activity to extend the service life of the bridge and minimize the need for potential future steel repairs.

Estimated Construction Cost: \$201,000.

Estimated Design Engineering Cost: \$30,000.

Estimated Permitting Cost: \$3000.

Estimated Construction Engineering & Inspection Cost: \$18,000.

Estimated Total Cost: \$252,000.

Anticipated Permitting Requirements:

- File a Request for Determination of Applicability (RDA) with the Charlemont Conservation Commission. It is assumed that the Conservation Commission will make a negative

determination stating the work is not subject to regulation under the Wetlands Protection Act. The cleaning and painting of the steel will not require extensive work in the waterway.

Repair Deteriorated Substructure Concrete: Moderate to heavy abutment and wingwall deterioration has occurred, particularly where the exterior beams are supported at each abutment where they meet the wingwalls. Recommendation: Remove and replace deteriorated substructure concrete. Provide temporary shoring of each exterior beam end at each abutment in order to perform concrete repairs at the bridge seat where the bearings may become partially undermined.

Estimated Construction Cost: \$125,000.

Estimated Engineering Cost: \$19,000.

Estimated Permitting Cost: \$0 if filed concurrent with steel painting RDA, otherwise \$3000.

Estimated Construction Engineering & Inspection Cost: \$11,000.

Estimated Total Cost: \$158,000.

Anticipated Permitting Requirements:

- File a Request for Determination of Applicability (RDA) with the Charlemont Conservation Commission. It is assumed that the Conservation Commission will make a negative determination stating the work is not subject to regulation under the Wetlands Protection Act.

Bridge C-05-027, South River Road over Pelham Brook

Replace Bridge Deck: The existing bridge deck is in poor condition, with heavy spalling (cracked concrete), exposed reinforcing steel that is severely corroded at various locations, and concrete repair patches that have de-bonded from the surrounding concrete. The bridge railing is also severely deficient. Recommendation: Replace the existing reinforced concrete bridge deck and railing system. The proposed deck will conform to MassDOT standards and the proposed railing system is metal three beam guardrail which will be carried through the approaches at all four corners and terminated.

Estimated Construction Cost: \$175,000.

Estimated Design Engineering Cost: \$30,000.

Estimated Permitting Cost: \$3000.

Estimated Construction Engineering & Inspection Cost: \$20,000.

Estimated Total Cost: \$228,000.

Anticipated Permitting Requirements:

- File a Request for Determination of Applicability (RDA) with the Charlemont Conservation Commission. It is assumed that the Conservation Commission will make a negative determination stating the work is not subject to regulation under the Wetlands Protection Act. The replacement of the existing bridge deck will not require extensive work in the waterway.

Cleaning and Painting of the Structural Steel: Recommended as a preservation activity to extend the service life of the bridge and minimize the need for potential future steel repairs.

Estimated Construction Cost: \$62,000.

Estimated Design Engineering Cost: \$9,000.

Estimated Permitting Cost: \$0 if filed concurrent with deck replacement RDA, otherwise \$3000.
Estimated Construction Engineering & Inspection Cost: \$6,000.
Estimated Total Cost: \$80,000.

Anticipated Permitting Requirements:

- File a Request for Determination of Applicability (RDA) with the Charlemont Conservation Commission. It is assumed that the Conservation Commission will make a negative determination stating the work is not subject to regulation under the Wetlands Protection Act.

Bridge No. C-05-010, Route 8A (West Hawley Road) over Deerfield River

Perform Bridge Deck Rehabilitation: The bridge deck has areas of exposed reinforcing steel where potholes up to 3' in diameter and 2" deep have formed. Some potholes have been patched and cracking of the patches was observed. The underside of the deck where it overhangs the exterior beams has extensive spalling (cracked concrete) with exposed corroded reinforcing steel primarily where drainage scuppers are located. Recommendation: Replace the reinforced concrete deck overhang and first interior deck bay on each side of the bridge. Perform hydro-excavation of the remainder of the deck to remove deteriorated concrete, followed by placement of rapid setting durable deck repair concrete that will also function as the riding surface. The proposed bridge cross section would consist of two 12' wide travel lanes and 18" wide safety curbs and three beam bridge railing on each side. Replace deck joints at each end of the bridge. It is proposed that this work be performed in 2 stages while maintaining a single reversible lane during construction using temporary traffic signals.

Estimated Construction Cost: \$950,000.
Estimated Design Engineering Cost: \$145,000.
Estimated Permitting Cost: \$3000.
Estimated Construction Engineering & Inspection Cost: \$90,000.
Estimated Total Cost: \$1,188,000.

Anticipated Permitting Requirements:

- File a Request for Determination of Applicability (RDA) with the Charlemont Conservation Commission. It is assumed that the Conservation Commission will make a negative determination stating the work is not subject to regulation under the Wetlands Protection Act. The repair and partial replacement of the existing bridge deck will not require extensive work in the waterway.

Cleaning and Painting of the Structural Steel: Recommended as a preservation activity to extend the service life of the bridge and minimize the need for potential future steel repairs.

Estimated Construction Cost: \$710,000.
Estimated Design Engineering Cost: \$35,000.
Estimated Permitting Cost: \$0 if filed concurrent with deck replacement RDA, otherwise \$3000.
Estimated Construction Engineering & Inspection Cost: \$65,000.
Estimated Total Cost: \$813,000.

Anticipated Permitting Requirements:

- File a Request for Determination of Applicability (RDA) with the Charlemont Conservation Commission. It is assumed that the Conservation Commission will make a negative determination stating the work is not subject to regulation under the Wetlands Protection Act.

Add Shared Use Path: The existing bridge lacks a sidewalk to accommodate non-vehicular traffic. Gill Engineering staff were asked to consider ways in which a shared use path could be added to the bridge in order to accommodate pedestrian and bicycle traffic. The existing piers are not long enough to provide space where additional steel beams could be readily supported. Alternate support methods were considered, including the addition of steel columns attached to the existing pier walls or footings, or supported on extensions of the existing pier footings. Although feasible, these options are considered too vulnerable to damage from woody debris being transported by the river during high flows. In addition, the steel would be vulnerable to corrosion damage. A more appropriate solution would be to construct a reinforced concrete extension to each pier. These extensions would need to be about 13' in length in order to support a superstructure appropriate for a 10' wide shared use path. An additional alternate considered would be to build a cantilevered support beam at the top of each pier. This cantilevered beam would be attached to the existing bridge superstructure along the centerline of bearings atop each pier and could be constructed of reinforced concrete or structural steel. No detailed structural design of either support option has been performed at this point. The following order of magnitude costs have been estimated:

10' Wide Shared Use Path Bridge Supported on Pier Extensions: \$1.5 Million

10' Wide Shared Use Path Bridge Supported on Cantilevered Beams at Each Pier: \$1 Million

Each alternate would require modifications to the flared wingwalls located at each abutment. It was assumed that the shared use path bridge superstructure would consist of a reinforced concrete deck supported by two steel beams.

Bridge C-05-054, Legate Hill Road over Legate Hill Brook

Superstructure Replacement: The bridge's superstructure has areas of severe corrosion of the steel beams and corrugated metal deck. The corrugated metal decking is prone to corrosion that would require it to be replaced at regular intervals. The existing substructure is in satisfactory condition and is considered suitable for reuse based upon its condition. Recommendation: Replace the existing superstructure with 5 steel beams and an arched concrete deck. The proposed railing system is metal thrie beam guardrail which will be carried through the approaches at all four corners and terminated. Analysis of the existing substructure will be required to verify its stability for the proposed superstructure replacement.

Estimated Construction Cost: \$124,000.

Estimated Design Engineering Cost: \$19,000.

Estimated Permitting Cost: \$5,000.

Estimated Construction Engineering & Inspection Cost: \$12,000.

Estimated Total Cost: \$160,000.

Anticipated Permitting Requirements:

- File a Request for Determination of Applicability (RDA) with the Charlemont Conservation Commission. It is assumed that the Conservation Commission will make a negative

determination stating the work is not subject to regulation under the Wetlands Protection Act. The proposed superstructure replacement will not require extensive work in the waterway.

It is possible that the Legate Hill Brook bridge could be closed as a result of the first inspection performed by MassDOT in March 2016, or as a result of load rating the bridge. In the interim, it is recommended that heavy timber blocking be installed on top of the bridge seats on each side of Beam 5. These temporary repairs should be designed to provide an alternate load path in case the ends of Beam 5 were to buckle or the corrugated metal decking were to fail where it bears upon the top flange of Beam 5 near the abutments.

3. REPAIR PRIORITIES AND COST ESTIMATES

Table 1 presents our prioritized listing of recommended deficiency repairs ranked from most to least urgent, the estimated total project cost of each repair, and the priority classification of each repair. The repairs classified as High Priority would upgrade the poor or serious condition rating for the bridge element in question and eliminate the Structurally Deficient designation for each bridge. The Median Priority repairs would increase the carrying capacity of the bridge to near legal capacity and substantially increase or potentially eliminate the current posted weight limit. The Low Priority repairs would preserve the bridge and prevent the bridge from becoming Structurally Deficient for many years.

Table 1 – Prioritized Recommended Repairs

Repair Description	Estimated Project Cost	Priority
Maxwell Road Bridge C-05-028: Perform Superstructure Replacement	\$204,000	High
Maxwell Road Bridge C-05-030: Perform Superstructure and South Abutment Replacement	\$286,000	High
Legate Hill Road Bridge C-05-054: Perform Superstructure Replacement	\$160,000	High
South River Road Bridge C-05-027: Perform Deck Replacement and Clean and Paint Structural Steel	\$308,000	High
North Heath Road Bridge C-05-047: Perform Steel, Substructure, and Deck Repairs, Clean and Paint Structural Steel	\$459,000	Medium
North Heath Road Bridge C-05-034: Perform Steel, Substructure, and Deck Repairs, Clean and Paint Structural Steel	\$403,000	Medium
West Hawley Road Bridge C-05-010: Perform Deck Rehabilitation and Clean and Paint Structural Steel	\$2,000,001	Low
Zoar Road Bridge C-05-002: Perform Substructure Repairs and Clean and Paint Structural Steel	\$410,000	Low

Town of Charlemont, Massachusetts

Roadway Management Program

Proposed FY2017 to FY2019 Capital Improvement Plan - Summary

**Costs Serve For Estimating Purposes Only. Not to be used for Bidding/Construction*

DRAFT - 6/3/2016	Length (Miles)	Square Yards	Repair	Police	Contingency	Supplemental	Total
FY2017							
Chapter 90 + Local							
Crack Seal	3.70	52,599.96	\$26,299.98	\$0.00	\$0.00	\$0.00	\$26,299.98
Chip Seal - 20% Rubber	3.90	45,848.69	\$229,243.44	\$0.00	\$0.00	\$0.00	\$229,243.44
Shim and Overlay	0.56	8,117.69	\$97,412.31	\$0.00	\$0.00	\$0.00	\$97,412.31
Modified Reclamation	0.11	894.98	\$21,479.48	\$0.00	\$0.00	\$0.00	\$21,479.48
Year Total:	8.26	107,461.32	\$374,435.21	\$0.00	\$0.00	\$0.00	\$374,435.21
FY2018							
Chapter 90 + Local							
Crack Seal	4.20	43,462.98	\$21,731.49	\$0.00	\$0.00	\$0.00	\$21,731.49
Chip Seal - 20% Rubber	1.06	13,092.96	\$65,464.78	\$0.00	\$0.00	\$0.00	\$65,464.78
Shim and Overlay	1.18	18,032.18	\$216,386.12	\$0.00	\$0.00	\$0.00	\$216,386.12
Year Total:	6.44	74,588.11	\$303,582.39	\$0.00	\$0.00	\$0.00	\$303,582.39
FY2019							
Chapter 90 + Local							
Crack Seal	4.57	70,986.20	\$35,493.10	\$0.00	\$0.00	\$0.00	\$35,493.10
Chip Seal - 20% Rubber	0.20	2,976.52	\$14,882.59	\$0.00	\$0.00	\$0.00	\$14,882.59
Shim and Overlay	0.74	10,451.02	\$125,412.20	\$0.00	\$0.00	\$0.00	\$125,412.20
Year Total:	5.51	84,413.73	\$175,787.88	\$0.00	\$0.00	\$0.00	\$175,787.88
3-Year Total:	20.21	266,463.16	\$853,805.48	\$0.00	\$0.00	\$0.00	\$853,805.48

BETA Group, Inc.

Town of Charlemont, Massachusetts

Roadway Management Program

Proposed FY2017 to FY2019 Capital Improvement Plan

*Costs Serve For Estimating Purposes Only. Not to be used for Bidding/Construction

DRAFT - 6/3/2016			Repair Type	Width	Square Yards	Repair	Police	Contingency	Supplemental	Total
FY2017										
Chapter 90 + Local										
BURNT HILL ROAD		1.15 Miles								
BURNT HILL RD	WEST OXBOW RD	DEAD END	Chip Seal - 20% Rubber	22	14,892.56	\$74,462.81	\$0.00	\$0.00	\$0.00	\$74,462.81
Project Totals:					14,892.56	\$74,462.81	\$0.00	\$0.00	\$0.00	\$74,462.81
BURRINGTON ROAD		0.28 Miles								
BURRINGTON RD-04	MOUNTAIN RD	ROUTE 2	Chip Seal - 20% Rubber	26	4,237.30	\$21,186.49	\$0.00	\$0.00	\$0.00	\$21,186.49
Project Totals:					4,237.30	\$21,186.49	\$0.00	\$0.00	\$0.00	\$21,186.49
EAST OXBOW ROAD		0.60 Miles								
EAST OXBOW RD-01	ROUTE 2	HAWK HILL RD	Chip Seal - 20% Rubber	18	5,003.45	\$25,017.26	\$0.00	\$0.00	\$0.00	\$25,017.26
EAST OXBOW RD-02	HAWK HILL RD	DRIVEWAY #111	Chip Seal - 20% Rubber	18	1,381.52	\$6,907.61	\$0.00	\$0.00	\$0.00	\$6,907.61
Project Totals:					6,384.97	\$31,924.87	\$0.00	\$0.00	\$0.00	\$31,924.87
HAWK HILL ROAD		0.14 Miles								
HAWK HILL RD-01	EAST OXBOW RD	DRIVEWAY #32	Chip Seal - 20% Rubber	22	1,854.68	\$9,273.39	\$0.00	\$0.00	\$0.00	\$9,273.39
Project Totals:					1,854.68	\$9,273.39	\$0.00	\$0.00	\$0.00	\$9,273.39
HEATH STAGE TERRACE		0.32 Miles								
HEATH STAGE TERR	ROUTE 2	DEAD END	Chip Seal - 20% Rubber	22	4,118.17	\$20,590.83	\$0.00	\$0.00	\$0.00	\$20,590.83
Project Totals:					4,118.17	\$20,590.83	\$0.00	\$0.00	\$0.00	\$20,590.83
RIVER VIEW ROAD		0.17 Miles								
RIVER VIEW RD	ROUTE 2	ROUTE 2	Chip Seal - 20% Rubber	14	1,404.82	\$7,024.10	\$0.00	\$0.00	\$0.00	\$7,024.10
Project Totals:					1,404.82	\$7,024.10	\$0.00	\$0.00	\$0.00	\$7,024.10
WEST OXBOW ROAD		1.23 Miles								
WEST OXBOW RD-01	ROUTE 2	BURNT HILL	Chip Seal - 20% Rubber	18	7,774.14	\$38,870.69	\$0.00	\$0.00	\$0.00	\$38,870.69
WEST OXBOW RD-02	BURNT HILL	PAVEMENT CHANGE	Chip Seal - 20% Rubber	18	5,182.05	\$25,910.26	\$0.00	\$0.00	\$0.00	\$25,910.26
Project Totals:					12,956.19	\$64,780.95	\$0.00	\$0.00	\$0.00	\$64,780.95
COLRAIN ROAD		0.30 Miles								
COLRAIN RD	NORTH RIVER RD	COLRAIN TL	Crack Seal	16	2,821.53	\$1,410.77	\$0.00	\$0.00	\$0.00	\$1,410.77
Project Totals:					2,821.53	\$1,410.77	\$0.00	\$0.00	\$0.00	\$1,410.77

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Repair Type Width Square Yards Repair Police Contingency Supplemental Total

MOUNTAIN ROAD		0.78 Miles								
MOUNTAIN RD-08	PAVEMENT CHANGE	BIRCH LN	Crack Seal	22	3,194.47	\$1,597.23	\$0.00	\$0.00	\$0.00	\$1,597.23
MOUNTAIN RD-09	BIRCH LN	VINCENT RD	Crack Seal	22	6,893.81	\$3,446.90	\$0.00	\$0.00	\$0.00	\$3,446.90
Project Totals:					10,088.27	\$5,044.14	\$0.00	\$0.00	\$0.00	\$5,044.14
NORTH HEATH ROAD		1.15 Miles								
NORTH HEATH RD-01	MAIN ST	PARK ST	Crack Seal	26	3,969.18	\$1,984.59	\$0.00	\$0.00	\$0.00	\$1,984.59
NORTH HEATH RD-02	PARK ST	VINCENT RD	Crack Seal	26	13,606.18	\$6,803.09	\$0.00	\$0.00	\$0.00	\$6,803.09
Project Totals:					17,575.36	\$8,787.68	\$0.00	\$0.00	\$0.00	\$8,787.68
NORTH RIVER ROAD		1.04 Miles								
NORTH RIVER RD-01	ROUTE 2	COLRAIN RD	Crack Seal	30	15,359.21	\$7,679.61	\$0.00	\$0.00	\$0.00	\$7,679.61
NORTH RIVER RD-02	COLRAIN RD	SHELBURNE TL	Crack Seal	30	2,977.14	\$1,488.57	\$0.00	\$0.00	\$0.00	\$1,488.57
Project Totals:					18,336.35	\$9,168.17	\$0.00	\$0.00	\$0.00	\$9,168.17
SOUTH HEATH ROAD		0.35 Miles								
SOUTH HEATH RD	MOUNTAIN RD	HEATH TL	Crack Seal	15	3,088.26	\$1,544.13	\$0.00	\$0.00	\$0.00	\$1,544.13
Project Totals:					3,088.26	\$1,544.13	\$0.00	\$0.00	\$0.00	\$1,544.13
SOUTH STREET		0.07 Miles								
SOUTH ST	DODGE CORNER RD	DEAD END	Crack Seal	16	690.18	\$345.09	\$0.00	\$0.00	\$0.00	\$345.09
Project Totals:					690.18	\$345.09	\$0.00	\$0.00	\$0.00	\$345.09
MAPLE TERRACE		0.11 Miles								
MAPLE TERR	MAIN ST	MAIN ST	Modified Reclamation	14	894.98	\$21,479.48	\$0.00	\$0.00	\$0.00	\$21,479.48
Project Totals:					894.98	\$21,479.48	\$0.00	\$0.00	\$0.00	\$21,479.48
BURRINGTON ROAD		0.40 Miles								
BURRINGTON RD-01	ROUTE 2	CENTER HEATH RD	Shim and Overlay	26	4,775.34	\$57,304.07	\$0.00	\$0.00	\$0.00	\$57,304.07
BURRINGTON RD-02	CENTER HEATH RD	MOUNTAIN RD	Shim and Overlay	26	1,372.15	\$16,465.76	\$0.00	\$0.00	\$0.00	\$16,465.76
Project Totals:					6,147.49	\$73,769.83	\$0.00	\$0.00	\$0.00	\$73,769.83
MOUNTAIN ROAD		0.15 Miles								
MOUNTAIN RD-01	BURRINGTON RD	TINNEY RD	Shim and Overlay	22	1,970.21	\$23,642.48	\$0.00	\$0.00	\$0.00	\$23,642.48
Project Totals:					1,970.21	\$23,642.48	\$0.00	\$0.00	\$0.00	\$23,642.48
Year Total:					107,461	\$374,435.21	\$0.00	\$0.00	\$0.00	\$374,435.21

FY2018

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COLONIAL HILL ROAD 0.11 Miles

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			Repair Type	Width	Square Yards	Repair	Police	Contingency	Supplemental	Total
COLONIAL HILL RD	WARFIELD RD	DEAD END	Chip Seal - 20% Rubber	14	912.48	\$4,562.40	\$0.00	\$0.00	\$0.00	\$4,562.40
Project Totals:					912.48	\$4,562.40	\$0.00	\$0.00	\$0.00	\$4,562.40
EAST HAWLEY ROAD			0.50 Miles							
EAST HAWLEY RD-01	SOUTH RIVER RD	THUNDER LN	Chip Seal - 20% Rubber	20	3,112.87	\$15,564.34	\$0.00	\$0.00	\$0.00	\$15,564.34
EAST HAWLEY RD-02	THUNDER LN	HAWLEY TL	Chip Seal - 20% Rubber	20	2,773.23	\$13,866.14	\$0.00	\$0.00	\$0.00	\$13,866.14
Project Totals:					5,886.10	\$29,430.48	\$0.00	\$0.00	\$0.00	\$29,430.48
WARNER HILL ROAD NUMBER ONE			0.45 Miles							
WARNER HILL RD 1-01	NORTH HEATH RD	PAVEMENT CHANGE	Chip Seal - 20% Rubber	24	6,294.38	\$31,471.91	\$0.00	\$0.00	\$0.00	\$31,471.91
Project Totals:					6,294.38	\$31,471.91	\$0.00	\$0.00	\$0.00	\$31,471.91
EAST HARMONY ROAD			0.24 Miles							
EAST HARMONY RD-01	MAIN ST	HARMONY HEIGHTS EXT	Crack Seal	14	395.85	\$197.93	\$0.00	\$0.00	\$0.00	\$197.93
EAST HARMONY RD-02	HARMONY HEIGHTS EXT	DEAD END	Crack Seal	14	1,547.39	\$773.69	\$0.00	\$0.00	\$0.00	\$773.69
Project Totals:					1,943.24	\$971.62	\$0.00	\$0.00	\$0.00	\$971.62
ELM STREET			0.06 Miles							
ELM ST	HIGH ST	DEAD END	Crack Seal	16	544.25	\$272.13	\$0.00	\$0.00	\$0.00	\$272.13
Project Totals:					544.25	\$272.13	\$0.00	\$0.00	\$0.00	\$272.13
HARMONY HEIGHTS EXTENSION			0.03 Miles							
HARMONY HEIGHTS EXT	EAST HARMONY RD	DEAD END	Crack Seal	14	280.78	\$140.39	\$0.00	\$0.00	\$0.00	\$140.39
Project Totals:					280.78	\$140.39	\$0.00	\$0.00	\$0.00	\$140.39
HIGH STREET			0.22 Miles							
HIGH ST-01	MAIN ST	ELM ST	Crack Seal	16	364.30	\$182.15	\$0.00	\$0.00	\$0.00	\$182.15
HIGH ST-02	ELM ST	MAIN ST	Crack Seal	16	1,687.56	\$843.78	\$0.00	\$0.00	\$0.00	\$843.78
Project Totals:					2,051.86	\$1,025.93	\$0.00	\$0.00	\$0.00	\$1,025.93
LEGATE HILL ROAD			1.92 Miles							
LEGATE HILL RD-01	ROUTE 2	POTTERS RD	Crack Seal	20	14,191.93	\$7,095.97	\$0.00	\$0.00	\$0.00	\$7,095.97
LEGATE HILL RD-03	LAUREL LN	PHIPPS RD	Crack Seal	20	8,308.16	\$4,154.08	\$0.00	\$0.00	\$0.00	\$4,154.08
Project Totals:					22,500.09	\$11,250.05	\$0.00	\$0.00	\$0.00	\$11,250.05
NORTH STREET			0.15 Miles							
NORTH ST	MAIN ST	CUL DE SAC	Crack Seal	14	1,206.34	\$603.17	\$0.00	\$0.00	\$0.00	\$603.17
Project Totals:					1,206.34	\$603.17	\$0.00	\$0.00	\$0.00	\$603.17
POTTERS ROAD			0.31 Miles							
POTTERS RD	LEGATE HILL RD	POTTERS RD EXT	Crack Seal	16	2,920.83	\$1,460.42	\$0.00	\$0.00	\$0.00	\$1,460.42
Project Totals:					2,920.83	\$1,460.42	\$0.00	\$0.00	\$0.00	\$1,460.42
RICE FORT ROAD			0.12 Miles							

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			Repair Type	Width	Square Yards	Repair	Police	Contingency	Supplemental	Total
RICE FORT RD	MAIN ST	WARFIELD RD	Crack Seal	14	1,016.92	\$508.46	\$0.00	\$0.00	\$0.00	\$508.46
Project Totals:					1,016.92	\$508.46	\$0.00	\$0.00	\$0.00	\$508.46
RIDDELL ROAD 0.40 Miles										
RIDDELL RD	ROUTE 2	DEAD END	Crack Seal	16	3,761.69	\$1,880.85	\$0.00	\$0.00	\$0.00	\$1,880.85
Project Totals:					3,761.69	\$1,880.85	\$0.00	\$0.00	\$0.00	\$1,880.85
SCHOOL STREET 0.08 Miles										
SCHOOL ST	MAIN ST	DEAD END	Crack Seal	20	913.75	\$456.87	\$0.00	\$0.00	\$0.00	\$456.87
Project Totals:					913.75	\$456.87	\$0.00	\$0.00	\$0.00	\$456.87
WARFIELD ROAD 0.67 Miles										
WARFIELD RD-01	MAIN ST	RICE FORT RD	Crack Seal	16	705.19	\$352.59	\$0.00	\$0.00	\$0.00	\$352.59
WARFIELD RD-02	RICE FORT RD	COLONIAL HILL RD	Crack Seal	16	1,311.96	\$655.98	\$0.00	\$0.00	\$0.00	\$655.98
WARFIELD RD-03	COLONIAL HILL RD	WARFIELD RD-04	Crack Seal	16	4,306.07	\$2,153.03	\$0.00	\$0.00	\$0.00	\$2,153.03
Project Totals:					6,323.21	\$3,161.61	\$0.00	\$0.00	\$0.00	\$3,161.61
NORTH HEATH ROAD 1.18 Miles										
NORTH HEATH RD-05	WARNER HILL RD	HEATH TL	Shim and Overlay	26	18,032.18	\$216,386.12	\$0.00	\$0.00	\$0.00	\$216,386.12
Project Totals:					18,032.18	\$216,386.12	\$0.00	\$0.00	\$0.00	\$216,386.12
Year Total:					74,588	\$303,582.39	\$0.00	\$0.00	\$0.00	\$303,582.39

FY2019

Chapter 90 + Local

TEA STREET EXTENSION 0.20 Miles										
TEA ST EXT	TEA ST	DEAD END	Chip Seal - 20% Rubber	26	2,976.52	\$14,882.59	\$0.00	\$0.00	\$0.00	\$14,882.59
Project Totals:					2,976.52	\$14,882.59	\$0.00	\$0.00	\$0.00	\$14,882.59
SOUTH RIVER ROAD 0.16 Miles										
SOUTH RIVER RD-01	WEST HAWLEY RD	EAST HAWLEY RD	Crack Seal	24	1,324.48	\$662.24	\$0.00	\$0.00	\$0.00	\$662.24
SOUTH RIVER RD-02	EAST HAWLEY RD	THUNDER MOUNTAIN RD	Crack Seal	24	982.32	\$491.16	\$0.00	\$0.00	\$0.00	\$491.16
Project Totals:					2,306.80	\$1,153.40	\$0.00	\$0.00	\$0.00	\$1,153.40
THUNDER MOUNTAIN ROAD 0.23 Miles										
THUNDER MOUNTAIN RD	SOUTH RIVER RD	DEAD END	Crack Seal	30	3,972.93	\$1,986.46	\$0.00	\$0.00	\$0.00	\$1,986.46
Project Totals:					3,972.93	\$1,986.46	\$0.00	\$0.00	\$0.00	\$1,986.46
WEST HAWLEY ROAD 1.70 Miles										
WEST HAWLEY RD-01	MAIN ST	SOUTH RIVER RD	Crack Seal	24	1,598.20	\$799.10	\$0.00	\$0.00	\$0.00	\$799.10
WEST HAWLEY RD-02	SOUTH RIVER RD	HAWKS RD	Crack Seal	24	1,522.74	\$761.37	\$0.00	\$0.00	\$0.00	\$761.37
WEST HAWLEY RD-03	HAWKS RD	TOWER RD	Crack Seal	24	11,152.10	\$5,576.05	\$0.00	\$0.00	\$0.00	\$5,576.05

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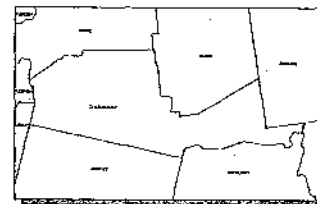
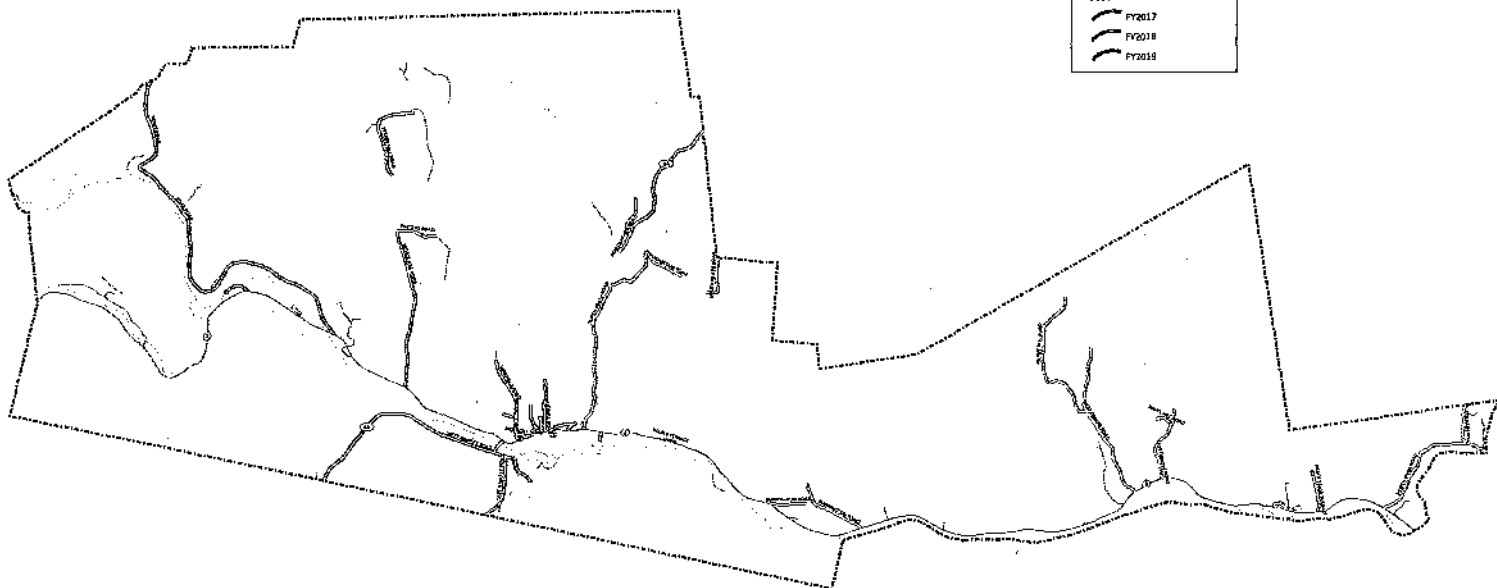
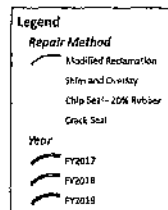
			Repair Type	Width	Square Yards	Repair	Police	Contingency	Supplemental	Total
WEST HAWLEY RD-04	TOWER RD	CHICKLEY RD	Crack Seal	24	6,031.43	\$3,015.72	\$0.00	\$0.00	\$0.00	\$3,015.72
WEST HAWLEY RD-05	CHICKLEY RD	HAWLEY TL	Crack Seal	24	3,563.10	\$1,781.55	\$0.00	\$0.00	\$0.00	\$1,781.55
Project Totals:					23,867.58	\$11,933.79	\$0.00	\$0.00	\$0.00	\$11,933.79
ZOAR ROAD		2.49 Miles								
ZOAR RD-01	TEA ST	LEDGE LN	Crack Seal	28	5,415.99	\$2,707.99	\$0.00	\$0.00	\$0.00	\$2,707.99
ZOAR RD-02	LEDGE LN	WOODLAND TRAIL PARK	Crack Seal	28	12,665.33	\$6,332.66	\$0.00	\$0.00	\$0.00	\$6,332.66
ZOAR RD-03	WOODLAND TRAIL PARK	WOODLAND TRAIL PARK	Crack Seal	28	3,183.68	\$1,591.84	\$0.00	\$0.00	\$0.00	\$1,591.84
ZOAR RD-04	WOODLAND TRAIL PARK	TODD MOUNTAIN RD	Crack Seal	28	12,081.94	\$6,040.97	\$0.00	\$0.00	\$0.00	\$6,040.97
ZOAR RD-05	TODD MOUNTAIN RD	ROWE RD	Crack Seal	28	7,491.95	\$3,745.98	\$0.00	\$0.00	\$0.00	\$3,745.98
Project Totals:					40,838.89	\$20,419.45	\$0.00	\$0.00	\$0.00	\$20,419.45
ROWE ROAD		0.74 Miles								
ROWE RD	ZOAR RD	ROWE TL	Shlm and Overlay	24	10,451.02	\$125,412.20	\$0.00	\$0.00	\$0.00	\$125,412.20
Project Totals:					10,451.02	\$125,412.20	\$0.00	\$0.00	\$0.00	\$125,412.20
Year Total:					84,414	\$175,787.88	\$0.00	\$0.00	\$0.00	\$175,787.88
Total:					266,463	\$853,805.48	\$0.00	\$0.00	\$0.00	\$853,805.48

BETA Group, Inc.

Town of Charlemont, Massachusetts

Roadway Management Program

Proposed FY2017-FY2019 Capital Improvement Plan



DRAFT

Date of Inspection: March 2016

Issue Date: June 5, 2016

This Map is Intended for Planning Purposes Only

BETA 0 0.5 1.0 Miles

