

# LOW VOLUME ROAD PROJECT REVIEW

Highway Name and Location	SH139A, Milepost 1.4 to 15.1
Treatment Used	1" Leveling w/ 2" Overlay



2013



2014



2015



2016



2017



2018

# LOW VOLUME ROAD PROJECT REVIEW

Condition before treatment	See Below:																																																																								
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>BMP</th> <th>Emp</th> <th>Year</th> <th>Iri</th> <th>Rut</th> <th>Fatg</th> <th>Tran</th> <th>Long</th> <th>Crbk</th> <th>DL</th> <th>DL_Idx</th> <th>Cond</th> </tr> </thead> <tbody> <tr> <td>1.3</td> <td>6.3</td> <td>1984</td> <td>78</td> <td>79</td> <td>84</td> <td>64</td> <td>85</td> <td>0</td> <td>0</td> <td>FATG</td> <td style="background-color: red; color: white;">POOR-0</td> </tr> <tr> <td>6.3</td> <td>11</td> <td>1982</td> <td>82</td> <td>87</td> <td>45</td> <td>82</td> <td>84</td> <td>0</td> <td>0</td> <td>FATG</td> <td style="background-color: red; color: white;">POOR-0</td> </tr> <tr> <td>11</td> <td>12</td> <td>1984</td> <td>90</td> <td>97</td> <td>82</td> <td>77</td> <td>85</td> <td>0</td> <td>0</td> <td>FATG</td> <td style="background-color: red; color: white;">POOR-0</td> </tr> <tr> <td>12</td> <td>14</td> <td>1982</td> <td>90</td> <td>100</td> <td>97</td> <td>83</td> <td>98</td> <td>0</td> <td>0</td> <td>FATG</td> <td style="background-color: red; color: white;">POOR-0</td> </tr> <tr> <td>14</td> <td>19</td> <td>1989</td> <td>86</td> <td>95</td> <td>81</td> <td>80</td> <td>93</td> <td>0</td> <td>0</td> <td>FATG</td> <td style="background-color: red; color: white;">POOR-0</td> </tr> </tbody> </table>	BMP	Emp	Year	Iri	Rut	Fatg	Tran	Long	Crbk	DL	DL_Idx	Cond	1.3	6.3	1984	78	79	84	64	85	0	0	FATG	POOR-0	6.3	11	1982	82	87	45	82	84	0	0	FATG	POOR-0	11	12	1984	90	97	82	77	85	0	0	FATG	POOR-0	12	14	1982	90	100	97	83	98	0	0	FATG	POOR-0	14	19	1989	86	95	81	80	93	0	0	FATG	POOR-0	
BMP	Emp	Year	Iri	Rut	Fatg	Tran	Long	Crbk	DL	DL_Idx	Cond																																																														
1.3	6.3	1984	78	79	84	64	85	0	0	FATG	POOR-0																																																														
6.3	11	1982	82	87	45	82	84	0	0	FATG	POOR-0																																																														
11	12	1984	90	97	82	77	85	0	0	FATG	POOR-0																																																														
12	14	1982	90	100	97	83	98	0	0	FATG	POOR-0																																																														
14	19	1989	86	95	81	80	93	0	0	FATG	POOR-0																																																														

Condition after treatment Yr 1	See Below:																																																
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>BMP</th> <th>Emp</th> <th>Year</th> <th>Iri</th> <th>Rut</th> <th>Fatg</th> <th>Tran</th> <th>Long</th> <th>Crbk</th> <th>DL</th> <th>DL_Idx</th> <th>Cond</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>5</td> <td>2013</td> <td>100</td> <td>100</td> <td>100</td> <td>100</td> <td>100</td> <td>0</td> <td>15</td> <td>FATG</td> <td style="background-color: green; color: white;">HIGH</td> </tr> <tr> <td>5</td> <td>10</td> <td>2013</td> <td>100</td> <td>100</td> <td>100</td> <td>100</td> <td>100</td> <td>0</td> <td>15</td> <td>FATG</td> <td style="background-color: green; color: white;">HIGH</td> </tr> <tr> <td>10</td> <td>15</td> <td>2013</td> <td>100</td> <td>100</td> <td>100</td> <td>100</td> <td>100</td> <td>0</td> <td>15</td> <td>FATG</td> <td style="background-color: green; color: white;">HIGH</td> </tr> </tbody> </table>	BMP	Emp	Year	Iri	Rut	Fatg	Tran	Long	Crbk	DL	DL_Idx	Cond	0	5	2013	100	100	100	100	100	0	15	FATG	HIGH	5	10	2013	100	100	100	100	100	0	15	FATG	HIGH	10	15	2013	100	100	100	100	100	0	15	FATG	HIGH	
BMP	Emp	Year	Iri	Rut	Fatg	Tran	Long	Crbk	DL	DL_Idx	Cond																																						
0	5	2013	100	100	100	100	100	0	15	FATG	HIGH																																						
5	10	2013	100	100	100	100	100	0	15	FATG	HIGH																																						
10	15	2013	100	100	100	100	100	0	15	FATG	HIGH																																						

Condition after treatment Yr 2	See Below:																																																
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>BMP</th> <th>Emp</th> <th>Year</th> <th>Iri</th> <th>Rut</th> <th>Fatg</th> <th>Tran</th> <th>Long</th> <th>Crbk</th> <th>DL</th> <th>DL_Idx</th> <th>Cond</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>5</td> <td>2013</td> <td>85</td> <td>100</td> <td>99</td> <td>97</td> <td>100</td> <td>0</td> <td>6</td> <td>IRI</td> <td style="background-color: yellow; color: black;">MODERATE</td> </tr> <tr> <td>5</td> <td>10</td> <td>2013</td> <td>86</td> <td>100</td> <td>100</td> <td>100</td> <td>100</td> <td>0</td> <td>6</td> <td>IRI</td> <td style="background-color: yellow; color: black;">MODERATE</td> </tr> <tr> <td>10</td> <td>15</td> <td>2013</td> <td>87</td> <td>100</td> <td>100</td> <td>100</td> <td>100</td> <td>0</td> <td>6</td> <td>IRI</td> <td style="background-color: yellow; color: black;">MODERATE</td> </tr> </tbody> </table>	BMP	Emp	Year	Iri	Rut	Fatg	Tran	Long	Crbk	DL	DL_Idx	Cond	0	5	2013	85	100	99	97	100	0	6	IRI	MODERATE	5	10	2013	86	100	100	100	100	0	6	IRI	MODERATE	10	15	2013	87	100	100	100	100	0	6	IRI	MODERATE	
BMP	Emp	Year	Iri	Rut	Fatg	Tran	Long	Crbk	DL	DL_Idx	Cond																																						
0	5	2013	85	100	99	97	100	0	6	IRI	MODERATE																																						
5	10	2013	86	100	100	100	100	0	6	IRI	MODERATE																																						
10	15	2013	87	100	100	100	100	0	6	IRI	MODERATE																																						

Condition after treatment Yr 3	See Below:																																																
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>BMP</th> <th>Emp</th> <th>Year</th> <th>Iri</th> <th>Rut</th> <th>Fatg</th> <th>Tran</th> <th>Long</th> <th>Crbk</th> <th>DL</th> <th>DL_Idx</th> <th>Cond</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>5</td> <td>2013</td> <td>93</td> <td>100</td> <td>100</td> <td>97</td> <td>99</td> <td>0</td> <td>8</td> <td>IRI</td> <td style="background-color: yellow; color: black;">MODERATE</td> </tr> <tr> <td>5</td> <td>10</td> <td>2013</td> <td>94</td> <td>100</td> <td>100</td> <td>100</td> <td>99</td> <td>0</td> <td>8</td> <td>IRI</td> <td style="background-color: yellow; color: black;">MODERATE</td> </tr> <tr> <td>10</td> <td>15</td> <td>2013</td> <td>95</td> <td>100</td> <td>100</td> <td>100</td> <td>100</td> <td>0</td> <td>8</td> <td>IRI</td> <td style="background-color: yellow; color: black;">MODERATE</td> </tr> </tbody> </table>	BMP	Emp	Year	Iri	Rut	Fatg	Tran	Long	Crbk	DL	DL_Idx	Cond	0	5	2013	93	100	100	97	99	0	8	IRI	MODERATE	5	10	2013	94	100	100	100	99	0	8	IRI	MODERATE	10	15	2013	95	100	100	100	100	0	8	IRI	MODERATE	
BMP	Emp	Year	Iri	Rut	Fatg	Tran	Long	Crbk	DL	DL_Idx	Cond																																						
0	5	2013	93	100	100	97	99	0	8	IRI	MODERATE																																						
5	10	2013	94	100	100	100	99	0	8	IRI	MODERATE																																						
10	15	2013	95	100	100	100	100	0	8	IRI	MODERATE																																						

Condition after treatment Yr 4	See Below:																																																
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>BMP</th> <th>Emp</th> <th>Year</th> <th>Iri</th> <th>Rut</th> <th>Fatg</th> <th>Tran</th> <th>Long</th> <th>Crbk</th> <th>DL</th> <th>DL_Idx</th> <th>Cond</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>5</td> <td>2013</td> <td>94</td> <td>100</td> <td>100</td> <td>99</td> <td>99</td> <td>-1</td> <td>9</td> <td>IRI</td> <td style="background-color: yellow; color: black;">MODERATE</td> </tr> <tr> <td>5</td> <td>10</td> <td>2013</td> <td>94</td> <td>100</td> <td>100</td> <td>99</td> <td>100</td> <td>-1</td> <td>9</td> <td>IRI</td> <td style="background-color: yellow; color: black;">MODERATE</td> </tr> <tr> <td>10</td> <td>15</td> <td>2013</td> <td>95</td> <td>100</td> <td>99</td> <td>98</td> <td>99</td> <td>-1</td> <td>10</td> <td>TRAN</td> <td style="background-color: yellow; color: black;">MODERATE</td> </tr> </tbody> </table>	BMP	Emp	Year	Iri	Rut	Fatg	Tran	Long	Crbk	DL	DL_Idx	Cond	0	5	2013	94	100	100	99	99	-1	9	IRI	MODERATE	5	10	2013	94	100	100	99	100	-1	9	IRI	MODERATE	10	15	2013	95	100	99	98	99	-1	10	TRAN	MODERATE	
BMP	Emp	Year	Iri	Rut	Fatg	Tran	Long	Crbk	DL	DL_Idx	Cond																																						
0	5	2013	94	100	100	99	99	-1	9	IRI	MODERATE																																						
5	10	2013	94	100	100	99	100	-1	9	IRI	MODERATE																																						
10	15	2013	95	100	99	98	99	-1	10	TRAN	MODERATE																																						

Condition after treatment Yr 5	See Below:																																																
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>BMP</th> <th>Emp</th> <th>Year</th> <th>Iri</th> <th>Rut</th> <th>Fatg</th> <th>Tran</th> <th>Long</th> <th>Crbk</th> <th>DL</th> <th>DL_Idx</th> <th>Cond</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>5</td> <td>2013</td> <td>93</td> <td>100</td> <td>100</td> <td>97</td> <td>99</td> <td>-1</td> <td>8</td> <td>IRI</td> <td style="background-color: yellow; color: black;">MODERATE</td> </tr> <tr> <td>5</td> <td>10</td> <td>2013</td> <td>93</td> <td>100</td> <td>100</td> <td>97</td> <td>100</td> <td>-1</td> <td>8</td> <td>IRI</td> <td style="background-color: yellow; color: black;">MODERATE</td> </tr> <tr> <td>10</td> <td>15</td> <td>2013</td> <td>95</td> <td>100</td> <td>100</td> <td>97</td> <td>100</td> <td>-1</td> <td>8</td> <td>IRI</td> <td style="background-color: yellow; color: black;">MODERATE</td> </tr> </tbody> </table>	BMP	Emp	Year	Iri	Rut	Fatg	Tran	Long	Crbk	DL	DL_Idx	Cond	0	5	2013	93	100	100	97	99	-1	8	IRI	MODERATE	5	10	2013	93	100	100	97	100	-1	8	IRI	MODERATE	10	15	2013	95	100	100	97	100	-1	8	IRI	MODERATE	
BMP	Emp	Year	Iri	Rut	Fatg	Tran	Long	Crbk	DL	DL_Idx	Cond																																						
0	5	2013	93	100	100	97	99	-1	8	IRI	MODERATE																																						
5	10	2013	93	100	100	97	100	-1	8	IRI	MODERATE																																						
10	15	2013	95	100	100	97	100	-1	8	IRI	MODERATE																																						

Condition after treatment Yr 6	See Below:																																																
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>BMP</th> <th>Emp</th> <th>Year</th> <th>Iri</th> <th>Rut</th> <th>Fatg</th> <th>Tran</th> <th>Long</th> <th>Crbk</th> <th>DL</th> <th>DL_Idx</th> <th>Cond</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>5</td> <td>2013</td> <td>93</td> <td>100</td> <td>100</td> <td>96</td> <td>99</td> <td>-1</td> <td>8</td> <td>IRI</td> <td style="background-color: yellow; color: black;">MODERATE</td> </tr> <tr> <td>5</td> <td>10</td> <td>2013</td> <td>93</td> <td>100</td> <td>100</td> <td>94</td> <td>99</td> <td>-1</td> <td>8</td> <td>TRAN</td> <td style="background-color: yellow; color: black;">MODERATE</td> </tr> <tr> <td>10</td> <td>15</td> <td>2013</td> <td>94</td> <td>100</td> <td>100</td> <td>94</td> <td>100</td> <td>-1</td> <td>8</td> <td>TRAN</td> <td style="background-color: yellow; color: black;">MODERATE</td> </tr> </tbody> </table>	BMP	Emp	Year	Iri	Rut	Fatg	Tran	Long	Crbk	DL	DL_Idx	Cond	0	5	2013	93	100	100	96	99	-1	8	IRI	MODERATE	5	10	2013	93	100	100	94	99	-1	8	TRAN	MODERATE	10	15	2013	94	100	100	94	100	-1	8	TRAN	MODERATE	
BMP	Emp	Year	Iri	Rut	Fatg	Tran	Long	Crbk	DL	DL_Idx	Cond																																						
0	5	2013	93	100	100	96	99	-1	8	IRI	MODERATE																																						
5	10	2013	93	100	100	94	99	-1	8	TRAN	MODERATE																																						
10	15	2013	94	100	100	94	100	-1	8	TRAN	MODERATE																																						

Change in DL condition documented:	Average DL increase of 15.
------------------------------------	----------------------------

Treatment	Quantity	Unit	Treatment Area (SY)	Unit Cost	Cost	Calculated Cost (SY)
Rem of Asphalt Mat (Planing)	136,497	SY	136,497	\$1.00	\$136,497.00	\$1.00
HMA (Gr SX) (100)	50,386	Ton	305,370	\$29.00	\$1,461,194.00	\$4.78
(PG 64-22)	2,995	Ton	305,370	\$412.00	\$1,233,940.00	\$4.04
Emulsified Asphalt (Slow Setting)	28,081	Gal	305,370	\$2.25	\$63,182.25	\$0.21

## LOW VOLUME ROAD PROJECT REVIEW

Takeaways	<p>Region 3 is experiencing difficulty achieving compaction in wheel ruts for thin overalys. This project is an example. Leveling was placed throughout the majority of the project in an attempt to fill ruts prior to paving.</p> <p>Region 3 is now including leveling and/or milling on these projects, which drives up the cost.</p>
-----------	---