

Richfield Township
3 YEAR IMPROVEMENT PLAN
For the Local Road System
2013- 2015

Developed in cooperation between
Richfield Township
and
the Genesee County Road Commission

January 10, 2013

Richfield Township 3 Year IMPROVEMENT PLAN For the Local Road System 2013 - 2015

Introduction

The following is the proposed Road Improvement Plan for Richfield Township. Although the Plan focuses on the local road system, including limestone roads and the ditches that are an integral part of the system, it also encompasses Primary Roads. It does so because, while improvements on the Primary system are prioritized by the Genesee County Road Commission, are subject to inclusion in the County-wide Transportation Improvement Plan (TIP) and are largely beyond the Township's control, the Primary system is a significant part of the Township's transportation system.

Richfield Township is adopting this 3 Year Local road plan to assist in the prioritization of its Local road maintenance and construction program. The overarching goal of the plan is to slow the deterioration of the road network. This plan can be revised each fiscal year. During the process of developing the plan several issues are considered. Priorities for chip sealing roads within the townships road network are reassessed each year.

Roads are reviewed and the plan updated annually since some roads may deteriorate quicker than expected, while others may be able to be deferred. The township has also established a priority system for limestone and gravel roads. Priorities for these roads are set based on traffic volumes, crash history and the year material was last added. This plan will help the township ensure that adequate maintenance is undertaken on its Local road network each year.

This plan is divided into three sections and an appendix. **Section 1 provides an overview of the Township, its road systems and what the Township hopes to accomplish with its Road Improvement Plan.** It describes the trend of the surface condition of the Local roads over the past several years. It briefly describes the criteria officials used to select projects.

Section 2 contains a list of all the Paved Local and Primary Roads in the township, sorted by PASER Rating, which is also briefly described here. These lists are useful in helping determine which Local roads and Primary roads the township and the Road Commission respectively will work on in each year of the plan. Because the lists contain all roads, they help illustrate the "big picture" of road conditions in the Township.

Section 3 is the list of proposed projects sorted by year and the type of improvement to be done. For the Primary roads system, which is completely maintained by the Road Commission, the list contains only those projects which have been selected and prioritized by the Road Commission and chosen for inclusion in the County wide TIP. Some might consider this section to be the actual "plan".

The Plan also includes an Appendix, which contains a listing of the various "fixes" that were considered for the roads in the Paved Local Road system. It is included to show the great variety of maintenance techniques that are available, and how the PASER rating of each segment is used to select appropriate fixes. This list also shows the wide range in the cost of these fixes, and makes the value of the comparatively low cost "preservation" techniques quite clear. This is an asset management approach to road maintenance which considers "the right fix at the right place at the right time."

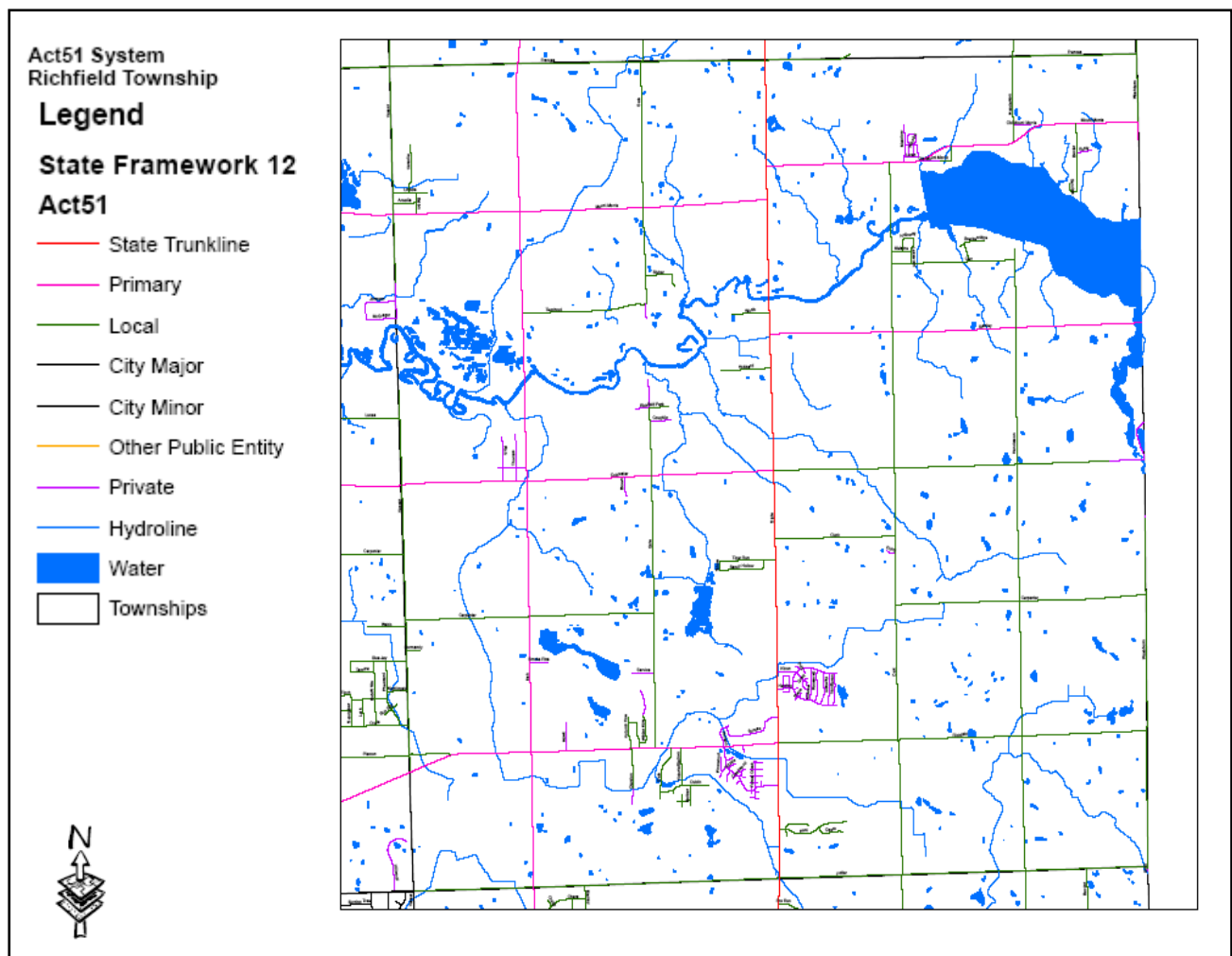
SECTION 1 BACKGROUND

Roads in Richfield Township can be looked at several different ways. One way is by Act 51 Designation, that is, whether the road is a State Trunkline, a County Primary road or a County Local road

Act 51 Designation

In Richfield township, as in most of the townships in Genesee County, there are many more County Local road miles than County Primary miles. **This is significant because County Primary roads are eligible for Federal Aid funding while County Local roads are not.** Furthermore, state law requires that that some entity other than the Road Commission pay at least 50% of the cost of major reconstruction projects on local roads. In this report, which focuses on the local road network, local roads are defined as all public County roads that are outside incorporated cities and villages and are not eligible for federal aid funding.

In Richfield Township there are 6.05 miles of State Trunkline, 21.21 miles of County Primary, and 49.55 miles of County Local.



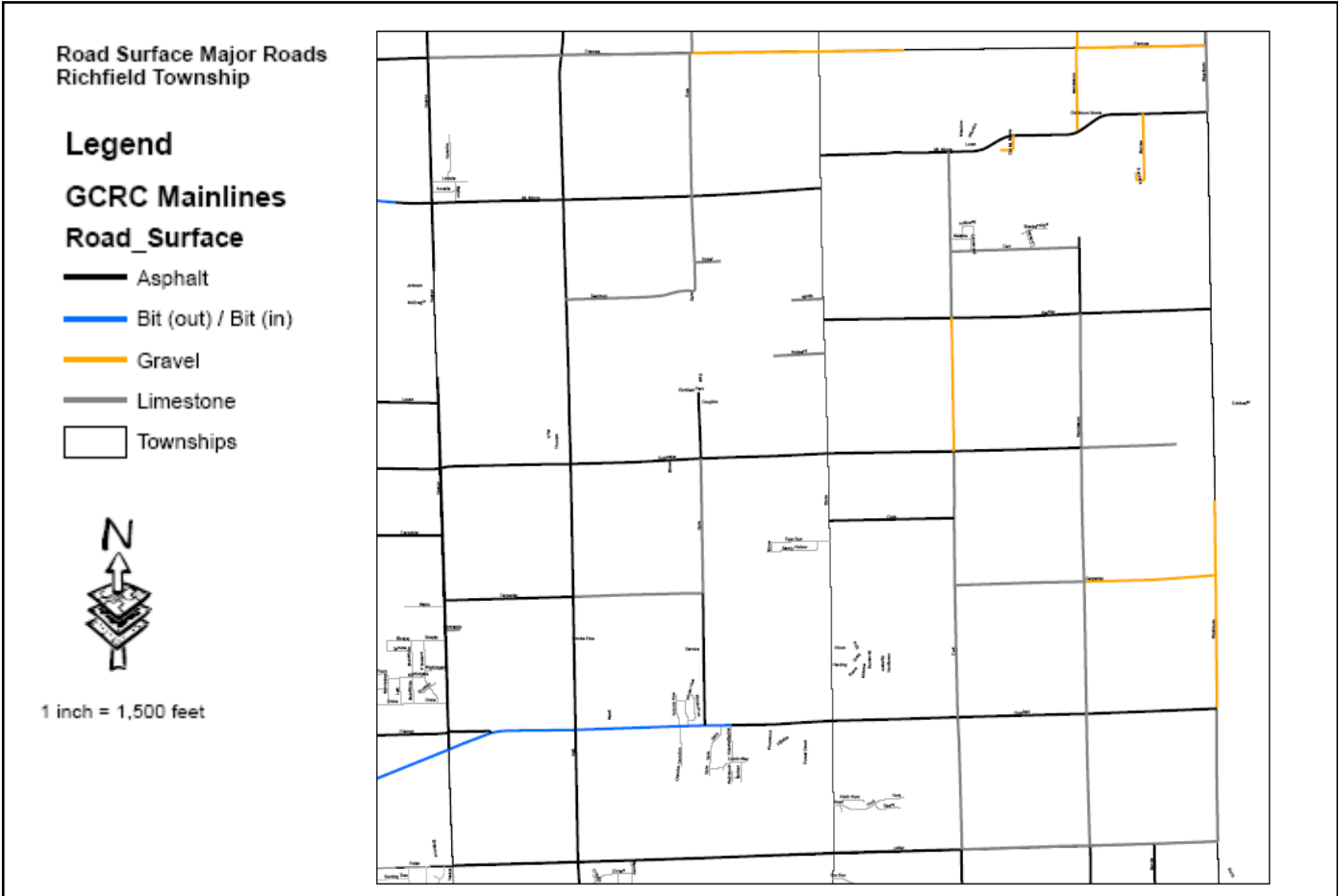
Subdivision Streets

Another useful way to look at local roads in Genesee County is to consider whether they are subdivision (neighborhood, residential) streets, or the more “mainline” local roads (the mile-type roads). The subdivision streets typically provide more of an access to property function while the mainline local roads function more as through streets. It is important to make this distinction because subdivision streets are built to different standards, have their own usage and wear patterns, and are funded differently than the mainline local roads.

Although the townships share responsibility with the Road Commission for both mainline local roads and subdivision streets, the Road Commission spends Act 51 maintenance funds to maintain the mainline locals, while maintenance of the subdivision streets is largely the responsibility of the townships and the residents. The Road Commission pays only for engineering and inspection on subdivision streets. Nearly all maintenance on these roads is paid for by special assessment of the adjacent property owners. In Richfield Township, approximately 14% of the Local Road mileage is Subdivision Streets and therefore outside the scope of this plan.

Surface Type

The road network can also be divided by surface type. Roads may be “paved”, meaning they are hard surfaced with asphalt or concrete (or brick in a few cases, or composite), or they may be “unpaved”, surfaced with gravel, limestone, dirt or earth. This is important when considering PASER ratings, because while paved roads generally follow a fairly well established deterioration process over time, unpaved roads do not. Unpaved roads can change significantly in a very short time under certain conditions of weather and use. For such unstable surfaces, comparison of PASER ratings over time is meaningless, and prediction of future surface condition on these roads is impossible.



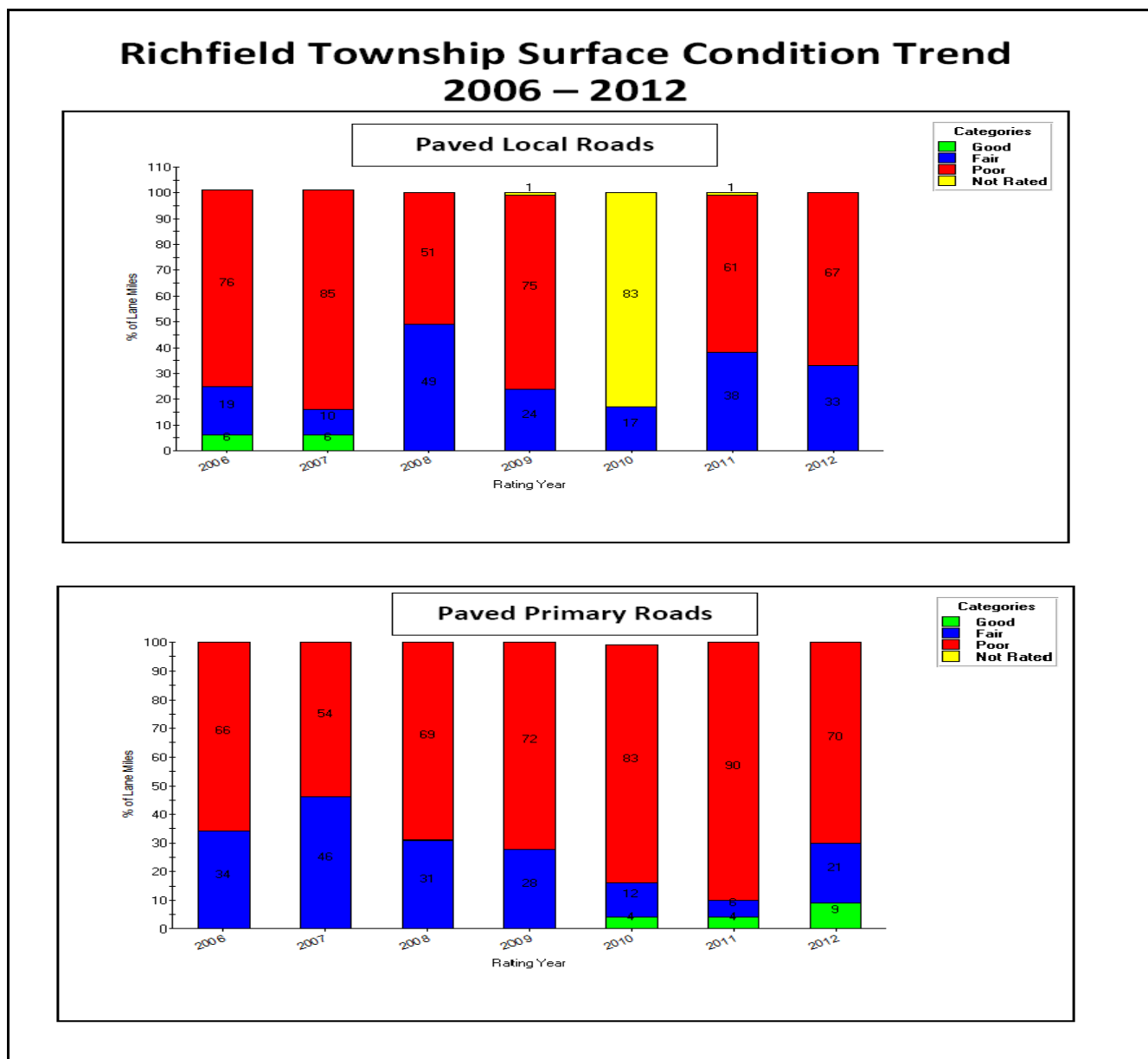
For this reason the Asset Management Council decided not to collect PASER data on unpaved roads. The Genesee County Road Commission agrees with this position, and beginning in 2006 rates only its paved road system. This is worth noting, particularly when you consider that such a large percentage of the roads in some townships are unpaved. In Richfield Township approximately 48% of the Local road system is paved.

SECTION 2 PAVED LOCAL ROADS by PASER RATING

Trend

Local roads in Richfield Township, like many roads in Michigan, have seen some deterioration over the past decade as lack of adequate funding resulted in delayed or deferred maintenance. Roads maintenance done as a result of careful stewardship of limited funding did keep many paved local roads in a condition where further preservation techniques are still possible.

The following graphs show the condition of the Township's Local and Primary road systems from 2006 through 2011 as reflected in the percent of the system rated Good (PASER 8-10, green), Fair (PASER 5-7, blue), and Poor (PASER 1-4, red). The Local road system was not rated in 2010, as indicated by the yellow bar for that year in the top graph.



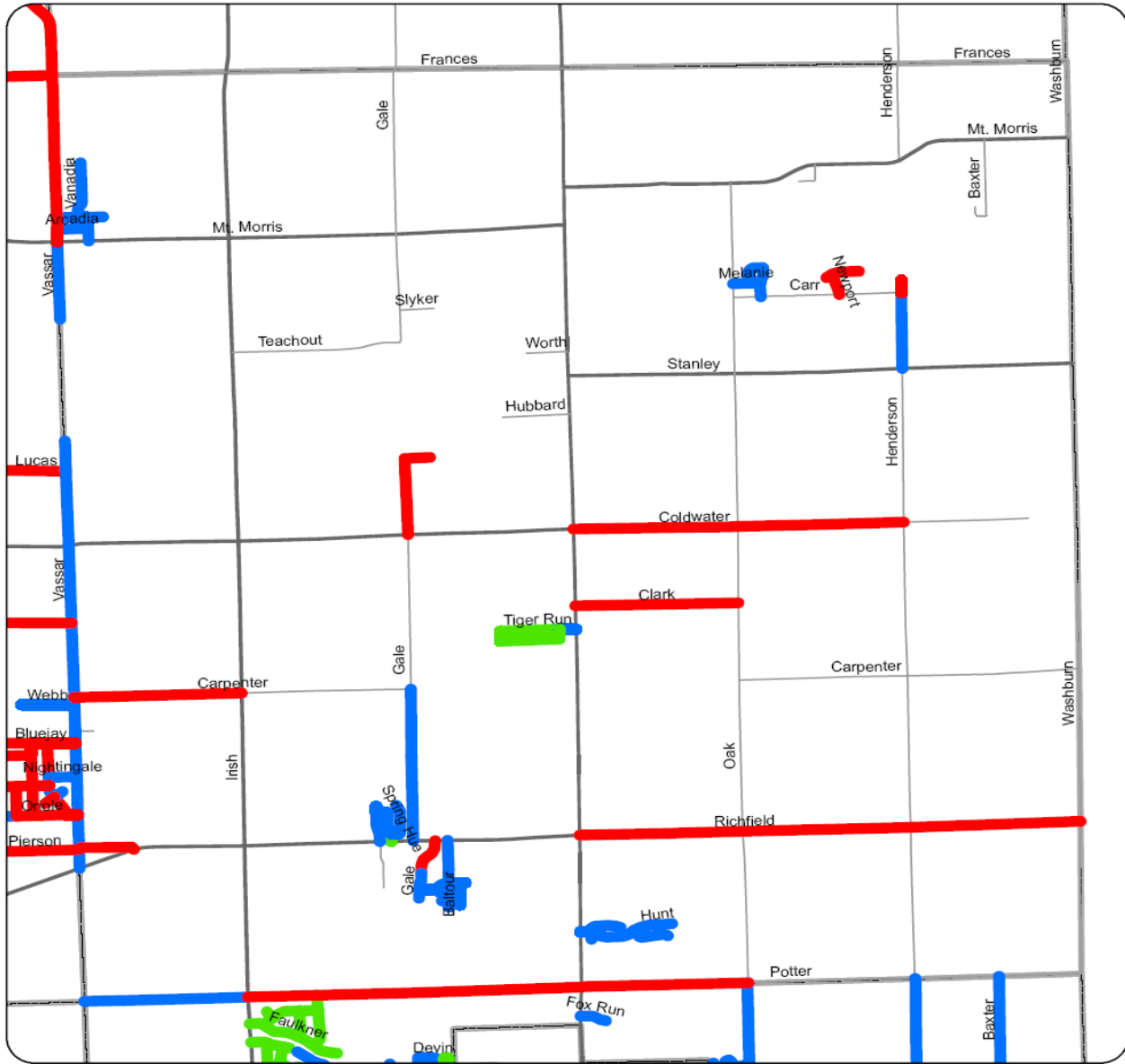
The following is a list of all the Paved Local Roads in the township, sorted by 2012 PASER Rating. Unpaved (limestone/gravel) roads are not included on the list because they are not rated. The Michigan Transportation Asset Management Council (TAMC) which promotes and oversees the use of the PASER rating system determined several years ago that because the condition of some unpaved roads can change literally overnight. Nevertheless, unpaved roads are a significant part of the Township's Local road system and therefore of this Plan.

Local Road Rating Richfield Township 2012				
SegmentName	FromDesc	ToDesc	Rating	Length
E Pierson Rd	Vassar	Richfield	2	0.34
			2 Total	0.34
E Potter Rd	Irish	Blarney Dr	3	0.41
N Vassar Rd	Webb Dr	E Carpenter Rd	3	0.05
E Carpenter Rd	Vassar	Irish	3	0.24
Clark Rd	State	Oak	3	0.97
E Potter Rd	State	Oak	3	1.00
E Potter Rd	Blarney Dr	State	3	1.58
E Carpenter Rd			3	0.76
N Henderson Rd	Carr Rd		3	0.08
			3 Total	5.08
N Vassar Rd	Mount Morris	Arcadia Dr	4	0.08
N Gale Rd	Coldwater	Coughlin Dr	4	0.40
N Vassar Rd	Lindale	Frances	4	0.94
E Coldwater Rd	N Oak Rd	Henderson	4	0.99
N Vassar Rd	Arcadia Dr	Lindale	4	0.08
E Richfield Rd	Henderson	N Henderson Rd	4	1.00
E Coldwater Rd	State	N Oak Rd	4	0.98
E Richfield Rd	State	Oak	4	0.97
N Gale Rd	Coughlin Dr	Richfield Park	4	0.10
E Richfield Rd	N Henderson Rd	Washburn	4	1.01
			4 Total	6.55
N Gale Rd	Richfield	Carpenter	5	1.00
E Potter Rd	Vassar	Irish	5	0.97
N Vassar Rd	Coldwater	Lucas Rd	5	0.49
N Vassar Rd	Lucas Rd	Vassar	5	0.20
Vassar Rd			5	0.51
			5 Total	3.17
N Vassar Rd	Nightingale Dr	Blue Jay Dr	7	0.22
N Vassar Rd	E Carpenter Rd	Carpenter	7	0.49
N Henderson Rd	Stanley	Carr Rd	7	0.50
N Vassar Rd	Carpenter	Coldwater	7	0.51
N Vassar Rd	Richfield	E Pierson Rd	7	0.13
N Vassar Rd	E Pierson Rd	Nightingale Dr	7	0.48
N Vassar Rd	Blue Jay Dr	Normandy Ct	7	0.08
N Vassar Rd	Normandy Ct	Webb Dr	7	0.17
			7 Total	2.57
			Grand Total	17.72

The following page is a map of the 2011 PASER Ratings of the Local road system, grouped into the Good, Fair and Poor categories described above.

2012 Paser Ratings
Paved Local Roads

Richfield Township



1 inch = 4,500 feet

Legend

PASER
SURFCOND

- █ Structural Improvement
- █ Capital Preventative Maintenance
- █ Routine Maintenance

County Mainlines

- Primary, Paved
- Local, Paved
- Local, Unpaved

Sub_Streets

- Paved
- Unpaved
- Other

01/11/2013

The following is a list of all the primary roads in the Township, sorted by the Road Commission’s project Priority Scoring system. In addition to PASER rating, this system takes into account the traffic volume on the segment (which isn’t usually available for Local roads) and the year of last improvement. The Road Commission selects candidate projects from this list and presents them to the County Metropolitan Planning Commission (MPO) where they compete for federal aid funding and inclusion on the County-wide Transportation Improvement Program (TIP) with projects presented by the various cities and villages and the Michigan Department of Transportation. Given this lack of Township control of funding for these roads, they cannot be included in the annual listing of Local road system projects in this plan.

**Richfield Township Primary Roads
By GCRC Rating System**

2012

ROAD	FROMDESC	TODESC	Length_MP	PASERPNTS	LanePnts	ADT_PNTS	HISTPNTS	TotalPnts
Mt. Morris	Irish	Gale	0.997	40	10	0	20	70
Mt. Morris	Gale	State	1.005	30	10	0	20	60
Coldwater	Irish	Gale	1.012	40	10	0	0	50
Coldwater	Gale	State	0.988	40	10	0	0	50
Irish	Potter	Richfield	0.997	30	0	20	0	50
Coldwater	Vassar	Irish	1.012	40	10	0	0	50
Richfield	Victoria Station	State	0.788	30	0	15	5	50
Mt. Morris	Oak	Henderson	1.029	30	0	10	0	40
Stanley	Henderson	County Line	1.016	30	10	0	0	40
Irish	Mt. Morris	Frances	1.093	40	0	0	0	40
Irish	Carpenter	Coldwater	1.002	30	0	5	0	35
Irish	Coldwater	Teachout	1.241	30	0	5	0	35
Irish	Teachout	Mt. Morris	0.753	30	0	5	0	35
Mt. Morris	Vassar	Irish	1.022	10	0	0	20	30
Mt. Morris	Henderson	Baxter	0.545	30	0	0	0	30
Mt. Morris	State	Oak	0.997	30	0	0	0	30
Mt. Morris	Baxter	Washburn	0.502	30	0	0	0	30
Stanley	State		0.500	30	0	0	0	30
Stanley		Oak	0.493	30	0	0	0	30
Stanley	Oak	Henderson	1.001	30	0	0	0	30
Irish	Richfield	Carpenter	1.003	0	0	10	0	10

SECTION 3 List of Projects by year

The Preservation scenario, adjusted for local preferences, inclusion of other road needs, opportunities and constraints is listed below. This 3 year Road Improvement Plan is recommended for approval by the Richfield Township Board. The first 3 years of this plan will be approved by Genesee County Board of Road Commissioners in fulfillment of the requirements for receipt of funding.

Richfield Township Road Improvement Plan								
Local Roads								
2013 - 2015								
Year	Treatment	Road	From	To	Rating	Length	Cost	Comment
2013	Chip Seal	Potter Road	Irish	M-15	3	2.0	\$ 80,000.00	
2013	2" Mill & Fill	Potter Road	M-15	Oak	4	1	\$ 125,000.00	\$60k CDBG & 50/50 split with Davison Twp.
2013	Crack Seal	Arcadia sub			6	1.2	\$ -	
2013	Gravel Roads	Only grading and dust control					\$ 55,000.00	
2013	Ditching	Only use the 10 days given					\$ -	
2013 Total							\$ 260,000.00	
2014	Chip Seal	Clark Rd.	M-15	Oak	3	1	\$ 40,000.00	
2014	Chip Seal	Gale & Richfield Park Road	Coldwater Rd.	Park Entrance	4	0.4	\$ 15,000.00	
2014	Chip Seal	Carpenter	Vassar	Irish	3	1	\$ 40,000.00	
2014	Gravel Roads	Only grading and dust control					\$ 55,000.00	
2014	Ditching	Only use the 10 days given					\$ -	
2014 Total							\$ 150,000.00	
2015	Chip Seal	Coldwater	M-15	Oak	4	1	\$ 40,000.00	
2015	Chip Seal	Vassar	Mt. Morris	Frances	4	1	\$ 40,000.00	
2015	Chip Seal	Richfield	Henderson	Washburn	4	1	\$ 40,000.00	
2015	Gravel Roads	Only grading and dust control					\$ 55,000.00	
2015	Ditching	Only use the 10 days given					\$ -	
2015 Total							\$ 175,000.00	

These projects are shown on the map on the following page.

**Richfield Township
3 Year Road Improvement Plan
2013-2015**

Proposed Improvements

- Year, Type**
- 2013, Chip Seal
 - 2013, Paving & Milling
 - 2014, Chip Seal
 - 2015, Chip Seal
 - 2013, Crack Seal

**Road System
County Mainlines
System, Surface**

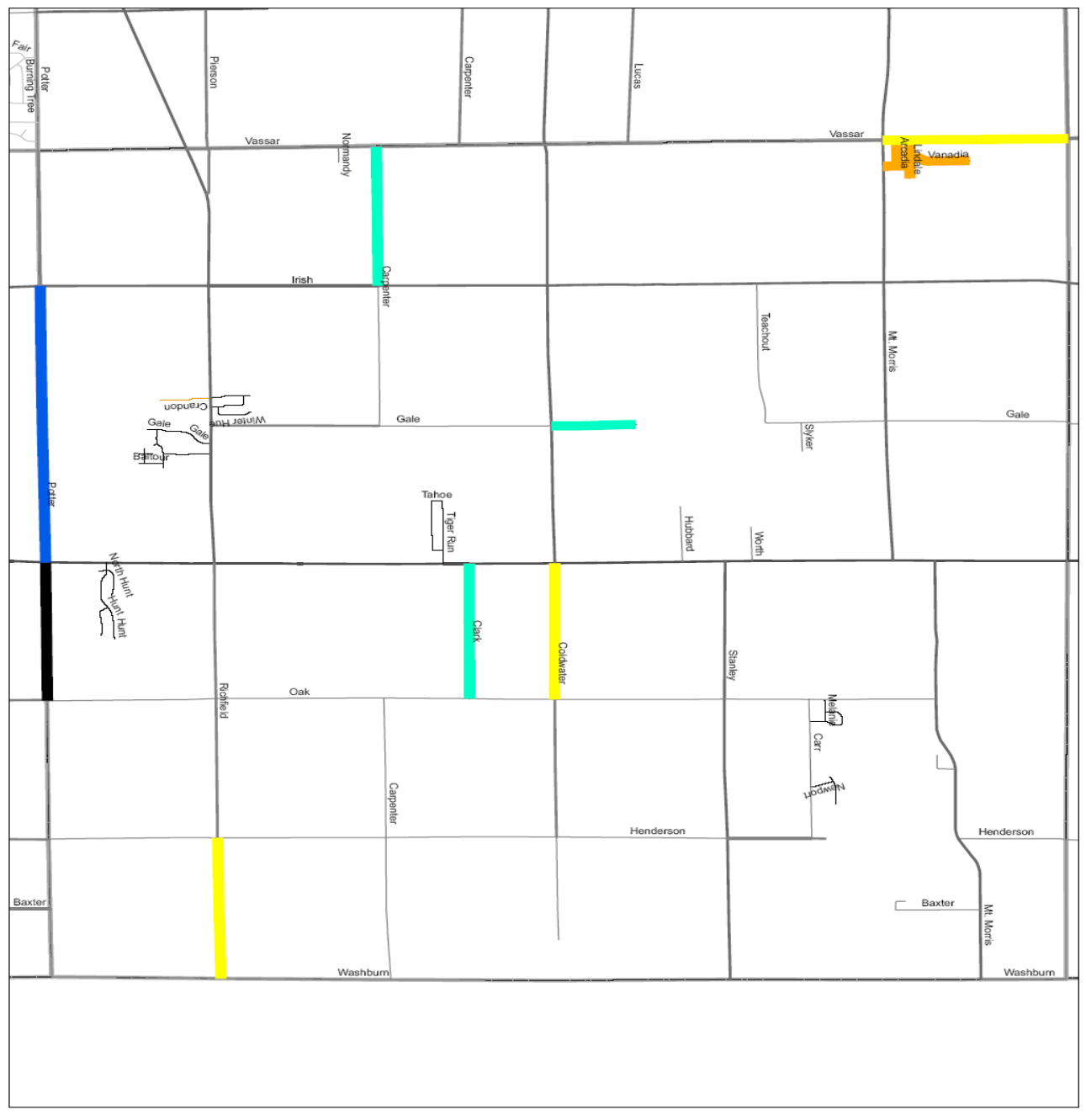
- Primary, Paved
- Local, Paved
- Local, Unpaved

**County Subs
ROAD_TYPE**

- Paved
- Unpaved
- Other

**Roads_Other
LEGALSYSTEM**

- City Minor
- City Major
- Trunklines



Summary

The intent of this plan is to guide Richfield Township officials in a strategy of preservation of the Local road system, including limestone roads. It is a strategy of preserving paved roads that are still in Fair condition while the Township builds up funds to do more heavy reconstruction of roads that have PASER ratings of 4 or lower.

Appendix PASER ROAD RATING SYSTEM

This section describes the PASER Road Rating system including a brief description of the various fixes indicated by the rating numbers, and the per mile cost of each treatment.

PASER is a surface condition rating system developed by the University of Wisconsin and used in Michigan since 2004. Roads are rated on a 1-10 scale based on the surface distresses visible to trained rater, where 10 is a newly constructed or reconstructed road and a 1 is a road that has completely deteriorated.

Roads with PASER ratings of 1-4: These roads require Structural Improvements. This category includes work identified as rehabilitation and reconstruction, which address the structural integrity of the road. These are typically large, expensive projects necessary when the road has reached or is near the end of its service life.

Roads with PASER ratings of 5-7: These roads require Capital Preventive Maintenance. Capital preventive maintenance is defined as a planned set of cost effective treatments to an existing roadway system and its appurtenances that preserves, retards future deterioration and maintains or improves the functional condition of the system without significantly increasing structural capacity. The purpose of capital preventive maintenance is to protect the pavement structure, slow the rate of pavement deterioration and/or correct pavement surface deficiencies. Surface treatments are targeted at pavement surface defects primarily caused by the environment and by pavement material deficiencies

Roads with PASER ratings of 8-10: These roads require only Routine Maintenance. Routine maintenance is the day-to-day scheduled maintenance activities, such as street sweeping, drainage clearing, shoulder gravel grading, and crack sealing.

Cost per Mile

The cost per mile of the various types of fixes indicated by each of the PASER Ratings (1-10) is presented in the table below. Note that as the road deteriorates, as indicated by lower PASER ratings, the cost of the fixes goes up substantially. much more extensive – and expensive – repairs are available for each of the PASER ratings.

Estimated Cost per 2 Lane Road Mile by PASER Rating		
Asphalt Standard or Asphalt/Soil Cement		
2012		
PASER	Fix Indicated by Rating	Cost/Mile (2 lane road)
10	No maintenance necessary. New road.	\$0
9	No maintenance necessary. Smooth surface.	\$0
8	Crack filling or shoulder patching.	?
7	General crack sealing and/or minor patching.	?
6	Chip Seal	\$19,000
6	Microsurface	\$50,000
6	Ultrathin HMA	\$65,000
6	2" HMA Resurfacing	\$160,000
6	Mill and HMA 2" Resurfacing	\$250,000
5	Chip Seal	\$19,000
5	Pavement Repair and Chip Seal	\$28,000
5	Microsurface	\$50,000
5	Ultrathin HMA	\$65,000
5	3" HMA Resurfacing	\$220,000
5	Mill and 3" HMA Rersufacing	\$300,000
4	Pavement Repair and Chip Seal	\$30,000
4	3" HMA Resurfacing	\$220,000
4	Mill and 3" HMA Rersufacing	\$300,000
4	2' trench widening w/ 3" HMA Resurfacing	\$330,000
4	Base Crush and Shape w/ 5" HMA Resurfacing	\$460,000
3	Pavement Repair and Chip Seal	\$30,000
3	3" HMA Resurfacing	\$220,000
3	Mill and 3" HMA Rersufacing	\$300,000
3	2' trench widening w/ 3" HMA Resurfacing	\$330,000
3	Base Crush and Shape w/ 5" HMA Resurfacing	\$460,000
3	Reconstruction.	\$500,000 +
2	Base Crush and Shape w/ 5" HMA	\$460,000
2	Reconstruction. Very poor condition.	\$500,000 +
1	Base Crush and Shape w/ 5" HMA Resurfacing	\$460,000
1	Reconstruction. Failed Road Surface.	\$500,000 +

Signatory Page

Richfield Township

3 Year IMPROVEMENT PLAN

For the Local Road System

2013 - 2015

The following individuals, official representatives of Richfield Township and the Genesee County Road Commission, do, by their signatures below, approve this plan for and on behalf of their respective agencies in fulfillment of requirements for the receipt of 50/50 Program Funds for Local road improvements.

Representing Richfield Township

Representing Genesee County Road Commission

Title

Title

Date

Date