

CITY OF ADRIAN

ASSET MANAGEMENT PLAN

November 2011

Table of Contents

<u>Topic</u>	<u>Page No.</u>
Introduction	3
History of Asset Management in Michigan	3
City of Adrian Street System	4
Asset Management and Asphalt 101	4
The Plan	5
Current Condition Assessment	5
Costs and Funding	7
Treatment Costs and Budgets	8
Multi-Year Program Priorities	10
Future Conditions, Performance Measures and Optimization	11
Conclusion	12
Appendix A – Partial reprint of PASER Manual, published by the Transportation Information Center at the University of Wisconsin-Madison.	14
Appendix B – 2010 City of Adrian Road Ratings and Street Designations	26
Appendix C – Current 6 Year Street Construction Plan	38
Appendix D – Current 6 Year Street Maintenance Plan	42

INTRODUCTION:

The City of Adrian is happy to present this Asset Management Plan as a representation of our knowledge and willingness to incorporate and utilize the Asset Management process for the assessment, funding, tracking, planning and prioritization of our Major and Local street system. This document will be a dynamic plan requiring changes as new data is received. As knowledge and experience grows so shall this plan to best suit the needs of the City of Adrian's street network. In addition to the increased knowledge base this plan will garner, it is also our understanding that by incorporating this philosophy will allow for adjustments of the MTF funding between the Major and Local street funds to better allow the City to meet the goals set forth here.

HISTORY OF ASSET MANAGEMENT IN MICHIGAN:

The State of Michigan has been a national leader in applying the techniques of asset management to the road network. Michigan Public Acts 499 of 2002, 338 of 2006 and 199 of 2007 were integral in establishing the Transportation Asset Management Council (TAMC) "in order to provide a coordinated, unified effort by various roadway agencies within the state". These acts specify that all local road agencies shall implement an asset management approach to maintaining their street systems. This approach includes various items that when completed encompass a well rounded plan for analysis and maintenance of the road network. Items in this plan include assessments of current conditions, identification of possible fixes, performance measures to determine if the fixes are economical and appropriately applied, and development of Multi-Year construction and maintenance programs.

Led by the Asset Management Council, the State of Michigan has provided training to local road agencies in an effort to standardize road ratings and develop plans utilizing the experience of MDOT and peers throughout the state. Through annual reporting TAMC tracks the road network and expenditure of dollars for construction and maintenance of the system. Recently, TAMC has requested data beyond the "Federal Aid Eligible" roads to include as many local streets as the road agency has data on. This effort is a result of discussions on modifications to state and federal road funding and to generate extended data on the overall condition of the State's complete road network. Currently road funding, for all maintenance and construction efforts, comes from "Act 51" or gas tax funds. This "gas tax" has been declining and is expected to remain on the decline as fuel efficient vehicles increase.

CITY OF ADRIAN STREET SYSTEM:

The City of Adrian was founded in 1825 and currently consists of 7 square miles of land area with a population of 21,333 (2010 Census). The City's street network includes 28.77 miles of major streets and 44.76 miles of local streets.

These 73.53 centerline miles of roads are solely maintained and funded through the Michigan Transportation Fund (MTF), Act 51 funds and a local street millage. The city, through contract with MDOT, performs routine maintenance on approximately 7 miles of State Trunkline (M-52, M-34, and BR US-223).

The majority of the City's street system is asphalt with a limited amount of concrete or composite roads. The City became very active in reconstruction of the local street system in 1996 when the first local street millage passed. Most City local streets constructed prior to 1996 were built over original natural material or minimal base. A multi-year plan prioritizing road reconstruction was developed at that time and continues to be updated and followed today. During this heavy reconstruction time preventative maintenance has been minimal. Over the past 10 years the City has worked to incorporate maintenance and preventative measures into the street plan without much planning. The Asset Management philosophies have helped to develop a consistent approach to applying the proper fix at the appropriate time to maximize funding and extend the life of pavements allowing funding to be spread to a greater number of City streets.

ASSET MANAGEMENT AND ASPHALT 101:

Asset management is "an ongoing process of maintaining, upgrading and operating physical assets cost effectively, based on continuous physical inventory and condition assessment". Similar to preventative maintenance on a car, spend a little on oil changes, belts and tires rather than ignoring the vehicle until there is a need to purchase a new engine or a new vehicle. If maintained a little at a time, the life of the vehicle extends and small amounts of money instead of a large amount is spent at one time.

The TAMC has published the Asset Management Guide for Local Agencies in Michigan. This document provides the guidance for development of this plan and future strategies. It is also widely understood that these Asset Management plans are guidelines for management and unknowns will always cause for constant evaluation and evolution of the multi-year plans and treatments and how they are applied in our City.

Asphalt is a by-product of crude oil refining. Asphalt pavements are a mixture of bituminous cement (asphalt) and mineral aggregate (sand/stone), which when heated and mixed can be laid in layers and compacted to make a road surface. Asphalt pavements are not particularly rigid, however a typical street cross section with proper base elements provide the support and give the "system" rigidity and strength. When properly constructed a street will last 15 to 20 years without any preventative maintenance (PM). With PM measures, a street life can be extended.

Asphalt pavements deteriorate over time and **ALL** pavements will eventually require maintenance. Stresses on pavements include traffic loads, temperature changes, moisture conditions and/or combinations of all these factors. Pavement deterioration is slow in the early years and once significant deterioration begins the pavement will decline rapidly. Figure 1 graphically represents the decline of pavement over time. This decline begins with cracks. Left untreated these cracks allow the infiltration of water that will soften a road base and allow for additional cracking and water infiltration. This degradation then accelerates the deterioration and thus the rapid decline in road quality begins. This cycle makes evaluating our pavements critical to planning the proper maintenance at the right time to get the most benefit from our road dollars. Applying preventative maintenance techniques at the proper time will help the City to maintain the streets within the middle range of ratings for a longer period extending the useful life of the pavement.



FIGURE 1

THE PLAN:

This plan contains several sections: 1) Current Condition Assessment, 2) Costs and Funding, 3) Treatment Costs and Budgets, 4) Multi-year Program Priorities, 5) Future Conditions, Performance Measures and Optimization,

- 1) **Current Condition Assessment:** The City utilizes the PASER rating method for evaluating street networks. PASER; Pavement Surface Evaluation and Rating, is a methodology developed through the University of Wisconsin that uses visual inspection to rate failures in an existing road system. This system standardizes different types of pavement distresses and uses these distresses to determine whether failures are structural or non-structural.

This system employs a 1 to 10 rating scale with 1 indicating a completely failed road and 10 being a newly constructed road. Figure 2 shows the different ratings and what they mean. Since the majority of the road agency's in Michigan utilize the PASER system you can be confident that a street rated a 5 in Adrian is close in condition to most of the 5's in Michigan. This standardization is helpful in evaluating the state's entire road network across all jurisdictional agencies. Currently we have been evaluating every mile of City street every 2 years. At a minimum we plan to continue this schedule.

Asphalt Streets:

PASER Rating	Condition	Treatment
9 & 10	Excellent	No maintenance required
8	Very Good	Little or no maintenance
7	Good	Crack sealing and minor patching
5 & 6	Fair – Good	Preservative treatments (non-structural)
3 & 4	Poor – Fair	Structural improvement (overlay)
1 & 2	Failed	Reconstruction

FIGURE 2

In 2008 and 2010 every block of the city streets were rated using the PASER system. Figure 3 represents a graph of the ratings for the entire city mileage for the two years. It is encouraging that in 2010 over 55% of the City's streets are rated 5 or over, this means these streets would benefit from a non-structural surface overlay or another form of maintenance. Once streets are rated 3 or 4 the structural integrity of the asphalt is in question and a full mill and resurfacing project is required. While these projects are more costly than light maintenance they are still one-third the cost of a reconstruction project. 82% of the streets within the City of Adrian fall in the rating levels of 3 or above. We should be proud that our system of roads is largely in good shape and can stay this way for a long time with the proper application of maintenance techniques.

Appendix A contains a reprint of a portion of the "PASER Manual", published by the Transportation Information Center at the University of Wisconsin-Madison. These pages are a great reference for what roads look like within the different rating levels.

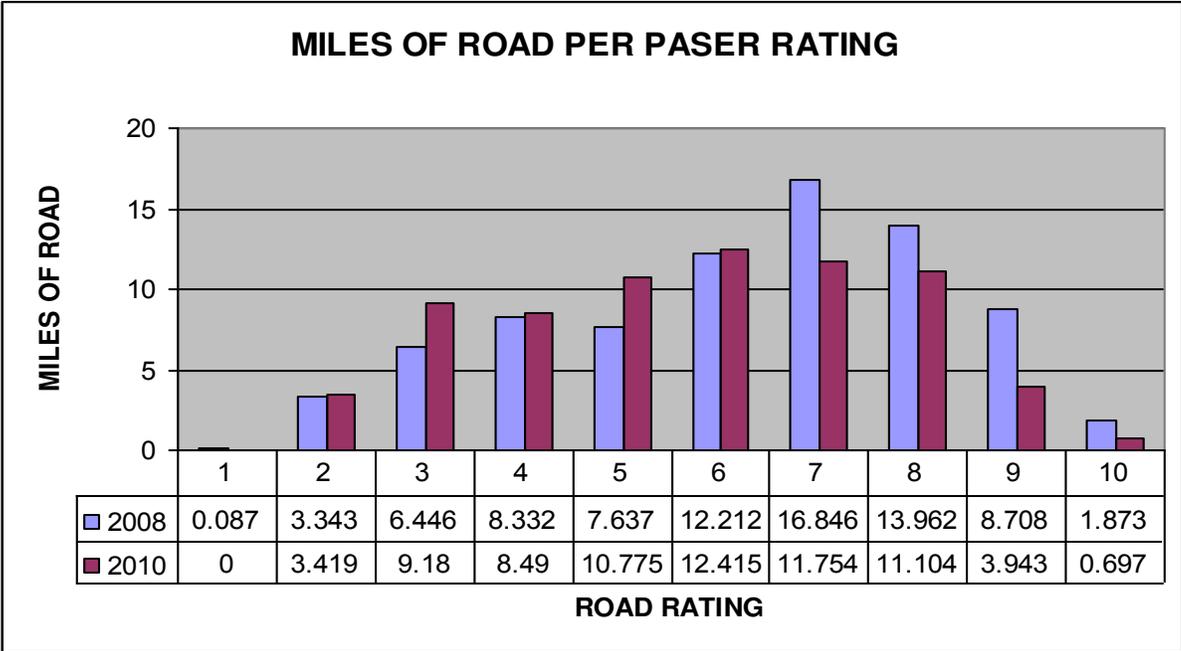


FIGURE 3

Appendix B contains a reprint of the 2010 Road Ratings for the entire City of Adrian. This list also show which roads are designated by MDOT as Major and Local streets for funding purposes.

- 2) **Costs and Funding:** In 1996 the citizens of Adrian approved a 1 mil local street millage. In 2006 this millage was renewed by the citizens. At the time of the original millage, the City streets were in poor shape. The city aggressively started reconstruction and milling projects on many of the worst streets. At this time the “worst-first” philosophy was predominant. This philosophy rehabilitated many streets but left little money for building a maintenance plan. As discussed previously, the philosophical shift amongst engineers has changed to maintaining your streets before they get too bad. Adrian currently has a very good street system and we are poised in the perfect position to shift the thinking to a strong maintenance philosophy. While there may be some “bad roads” (rated at a 2) that will sit longer the philosophy serves the greater good.

In addition to our local street millage the City receives funds through what is commonly called gas-tax monies under PA 51 of 1951 (Act 51). The City’s funds are split between Major and Local Street funds as required by the State of Michigan. Monies received from Act 51 are weighted heavier towards the Major Street fund with the City receiving approximately \$900,000 for our 28.77 miles of Major Streets equating to approximately \$31,300/mile of Major Street. In contrast we receive approximately \$295,000 for our 44.76 miles of local streets or \$6,500/mile.

With development of this plan, according to PA 338 of 2006, shifting of funds from the major and local street funds becomes more flexible. It is stipulated in Public Act 338 of 2006 that funding shifted from Major Streets to Local Streets can only be used for the “preservation” of the local street system. It is clearly stated in all the legislation that first priority of “gas tax funds” is the major street system. The City of Adrian is fortunate that we operate with a local street millage. Without this millage the City’s system would deteriorate quickly.

The City has historically required some cost sharing from residents on streets that require a complete reconstruction. This cost sharing helps to stretch our funds by requiring the residents to pay for the concrete portions of the construction. Through our special assessment process and upon approval by the City Commission the residents pay for the curb frontage adjacent to their property and the driveway approach which serves their property.

- 3) **Treatment Costs and Budgets:** The City is working to incorporate a multitude of maintenance fixes for our streets. As our knowledge base increases this system of fixes will be refined to what works best for Adrian’s climate and soils types. Currently the City’s options are limited to crack filling, milling and resurfacing, full depth reclamation and total reconstructions. Figure 4 shows estimated costs for various treatments; they are separated by those that have been utilized in the City and other techniques which will be considered for incorporation in the City’s maintenance plans.

<u>CURRENTLY USED IN THE CITY OF ADRIAN</u>				
Treatment	PASER Rating Trigger	Cost per Lane Mile (12' lane)	Additional Service Life	Cost per Year of Additional Service Life
Crack Sealing	7 to 8	\$2,500	1 to 2	\$1,667.00
Milling & Resurfacing (3" of Asphalt)	4 to 5	\$80,000	8 to 12	\$10,000.00
Base Stabilization (3" of Asphalt)	3 to 4	\$110,000	12 to 15	\$9,167.00
Reconstruction	1 to 3	\$420,000	15 to 20	\$28,000.00
<u>POSSIBLE OTHER FIXES TO UTILIZE</u>				
Treatment	PASER Rating Trigger	Cost per Square Foot	Additional Service Life (years)	Cost per Year of Additional Service Life
Slurry Seal	6	\$19,000	5 to 7	\$3,800.00
Ultra Thin Overlay	5 to 7	\$29,145	7 to 10	\$4,164.00
Micro Surfacing	5 to 6	\$13,000	5 to 7	\$2,600.00

FIGURE 4

Several years ago the City of Adrian Finance Department began a process of Capitol Budgeting for the entire city that included all departments developing a 5 year plan for projects. While the Engineering Department previously utilized long term planning it is now the “norm” for the City’s entire budgeting process. The City’s fiscal year begins on July 1 of every year. In the fall of every year, the planning process begins for budgeting of all the capitol projects. During this time we analyze the road system ratings and begin a more refined planning of where our expenditures for road reconstruction and maintenance dollars will be spent. In the past several years we have begun to actively earmarking funds for road maintenance. This has not previously been done during the capital planning process, however, it makes sense to complete this during the time the analysis is being completed for road construction projects. During planning for the 2012-13 FY capital budget the City will begin to incorporate the new 5 year maintenance plan in addition to the current process of the 5 year construction plan.

The City’s Major and Local Street funds pay for all maintenance and construction activities for the city streets and non-motorized elements. Figures 5 and 6 show the budget for the last 2 years and projections for the FY 2012-13 budgets. We don’t expect any significant changes to our operations and as discussed earlier we will be incorporating the 5-year maintenance plan into our capitol budgeting. These maintenance activity expenditures will become be expanded within Dept 463.00 – Routine Maint. Streets.

	FY2008-09	FY2009-10	FY2010-11	FY2011-12	FY2012-13
	ACTUAL	ACTUAL	AMENDED BUDGET	ADOPTED BUDGET	REVENUE ESTIMATE
Fund 202 - MAJOR STREET FUND					
546.000-GAS & WEIGHT TAX	\$997,591	\$914,783	\$900,000	\$850,000	\$850,000
547.000-STATE TRUNKLINE MAINT	\$57,519	\$35,526	\$60,000	\$54,298	\$54,298
664.000-INVESTMENT EARNINGS	\$2,865	\$132	\$5,000	\$5,000	\$5,000
676.283-CONTRIB-VIBRANT CITY GRANT FUND	\$0	\$0	\$0	\$0	\$0
676.599-CONTRIB-CAPTIAL PROJ REV FUND	\$63,803	\$34,785	\$30,000	\$70,000	\$70,000
695.000-OTHER (GRANT)	\$101,736	\$0	\$0	\$375,000	\$0
697.000-PRIOR YEARS' REVEUE	\$0	\$0	\$157,389	\$13,450	\$13,452
TOTAL REVENUES	\$1,223,514	\$985,226	\$1,152,389	\$1,367,748	\$992,750
Sub-Total for Dept. 451.00-STREET CONSTRUCTION	\$560,851	\$56,036	\$253,576	\$610,750	\$235,750
Totals for Dept 463.00-ROUTINE MAINT ROADS & STREETS	\$128,578	\$140,948	\$229,050	\$264,511	\$264,513
Totals for Dept 473.00-ROUTINE MAINT – BRIDGES	\$4,950	\$7,073	\$18,500	\$28,500	\$28,500
Totals for Dept 474.00-TRAFFIC SERVICE MAINT	\$60,737	\$62,785	\$171,396	\$199,450	\$199,450
Totals for Dept 478.00-WINTER MAINTENANCE	\$118,017	\$87,801	\$106,000	\$76,000	\$76,000
Totals for Dept 480.00-NON-MOTORIZED TRANSPORTATION	\$67,008	\$19,213	\$57,800	\$28,300	\$28,300
Totals for Dept 482.00-ADMINISTRATION & RECORDKEEPING	\$32,939	\$34,860	\$32,288	\$5,954	\$5,954
Totals for Dept 486.00-MAINT STATE TRUNKLINE US 223	\$14,605	\$12,433	\$13,900	\$13,130	\$13,130
Totals for Dept 487.00-MAINT STATE TRUNKLINE M 52	\$33,537	\$15,830	\$32,178	\$31,478	\$31,478
Totals for Dept 488.00-MAINT STATE TRUNKLINE M34	\$9,378	\$7,264	\$9,900	\$9,675	\$9,675
Totals for Dept 965.00-TRANSFERS OUT TO LOCAL STREET FUND	\$150,000	\$150,000	\$100,000	\$100,000	\$100,000
TOTAL EXPENDITURES	\$1,180,600	\$714,243	\$1,024,588	\$1,367,748	\$992,750
NET OF REVENUES AND EXPENDITURES	\$42,914	\$270,983	\$127,801	\$0	\$0

FIGURE 5

	FY2008-09 ACTUAL	FY2009-10 ACTUAL	FY2010-11 AMENDED BUDGET	FY2011-12 ADOPTED BUDGET	FY2012-13 REVENUE ESTIMATE
Fund 203 - LOCAL STREET FUND					
GAS & WEIGHT TAX	\$335,270	\$300,913	\$300,000	\$270,000	\$270,000
METRO ACT	\$60,485	\$62,482	\$60,000	\$60,000	\$60,000
SIDEWALK	\$0	\$0	\$0	\$15,000	\$15,000
INVESTMENT EARNINGS	\$926	\$0	\$1,000	\$1,000	\$1,000
CONTRIB-MAJOR STREET FUND	\$150,000	\$150,000	\$100,000	\$100,000	\$100,000
CONTRIB - CAP PROJ REV FND (SPECIAL ASSESSMENTS)	\$256,986	\$40,275	\$100,000	\$12,000	\$12,000
OTHER	\$704	\$0	\$0	\$0	\$0
PRIOR YEARS' REVENUE	\$0	\$0	\$282,793	\$0	\$0
TRANSFER IN - MUNI ST FUND (MILLAGE)	\$459,465	\$460,000	\$431,856	\$413,000	\$413,000
TOTAL REVENUES	\$1,263,836	\$1,013,670	\$1,275,649	\$871,000	\$871,000
Totals for Dept 444.00-SIDEWALKS	\$13,050	\$8,258	\$69,500	\$44,500	\$44,500
Sub-Total for Dept. 451.00-STREET CONSTRUCTION	\$965,899	\$437,227	\$730,291	\$328,151	\$328,151
Totals for Dept 463.00-ROUTINE MAINT ROADS & STREETS	\$151,001	\$170,463	\$360,200	\$359,611	\$359,613
Totals for Dept 473.00-ROUTINE MAINT – BRIDGES	\$0	\$0	\$1,400	\$6,800	\$6,800
Totals for Dept 474.00-TRAFFIC SERVICE MAINT	\$29,550	\$22,638	\$54,900	\$53,600	\$53,600
Totals for Dept 478.00-WINTER MAINTENANCE	\$90,862	\$58,151	\$81,510	\$64,000	\$64,000
Totals for Dept 482.00-ADMINISTRATION & RECORDKEEPING	\$30,503	\$39,860	\$36,288	\$4,954	\$4,954
Totals for Dept 990.00-NON-DEPARTMENTAL	\$0	\$0	\$11,460	\$9,384	\$9,382
TOTAL EXPENDITURES	\$1,280,865	\$736,597	\$1,345,549	\$871,000	\$871,000
NET OF REVENUES AND EXPENDITURES	-\$17,029	\$277,073	-\$69,900	\$0	\$0

FIGURE 6

- 4) **Multi-year Program Priorities:** This is one of the single most difficult parts of any asset management program. City residents don't distinguish between Major and Local streets and feel that all the streets should be maintained in good condition. Generally the public is focused on "their" street or areas that impact them to the greatest extent. It is difficult to explain and identify the reasons for picking one street over another. Many of the following factors are utilized when considering candidate projects:

- PASER Ratings
- Traffic Data
- Road base condition & soil data
- Future water & sewer construction plans
- Grant Eligibility
- Type of construction planned
- Project distribution throughout the City of Adrian
- Previous expenditures
- Safety Concerns

The PASER rating process is used as a base for all analysis since the rating system is consistent based on failure type. This system removes some ambiguity as to smoothness of ride that can be very subjective. The five year plan is then developed incorporating all the factors listed above. The City of Adrian has been using a multi-year program for many years and with declines in funding this program becomes an ever evolving document. A copy of the current plan is included in Appendix C.

Every fall during our capital budget process this five year plan and associated projects are presented and approved by the City Commission. It is rare that deviations occur but with any plan flexibility and modification are required to deal with particularly bad winters or unexpected issues.

- 5) **Future Conditions, Performance Measures and Optimization:** The City of Adrian monitors conditions of all City streets utilizing the PASER rating system and Roadsoft software. In time we will begin to utilize more of the modeling aspects of the Roadsoft program to predict future street needs to maximize the remaining service life (RSL). We are eager to utilize Roadsoft to its fullest extent however until that time we will continue to rate roads on a 2 year schedule working towards doing these ratings yearly as staffing allows.

It is the long term goal of the City to maintain 70% of the City's streets at a 4 or better working towards maintaining 70% of the streets at 5 or better by 2025.

This may be a lofty goal with funding and staffing issues as they are but we are hopeful that with the current condition of the streets and an increased focus on a 5 year maintenance plan that this will aid to keep us at our current or better level.

Optimization of maintenance treatments will be a longer term project requiring tracking of the treatments and how it performs in our climate. In the past the City has not kept good records as to where treatments were utilized and thus no tracking of their effectiveness has been completed to date. As we begin to incorporate a multitude of fixes throughout the City it is our intent to develop a tracking method to determine what works best for our area.

Conclusion:

This plan only scratches the surface of the process needed for protection and preservation of our road asset. It lays the basic groundwork for the future of Adrian's street system and the steps needed to reach a cost effective means for maintaining all 73.53 centerline miles of streets within the City of Adrian.

An established plan and a foundation of knowledge for maintenance treatments will help to focus every dollar of the uncertain road funding in such a manner that we remain good stewards of our taxpayer's dollars. This plan will grow stronger over time as we gather data on maintenance techniques, what works best in our area and as new technologies are developed. While funding is a source of much consternation the implementation of a good plan and the resultant successes with shrinking funds can overshadow the dilemmas.

APPENDIX A

Excerpts for the PASER Manual

Rating system

Surface rating	Visible distress*	General condition/ treatment measures
10 Excellent	None.	New construction.
9 Excellent	None.	Recent overlay. Like new.
8 Very Good	No longitudinal cracks except reflection of paving joints. Occasional transverse cracks, widely spaced (40' or greater). All cracks sealed or tight (open less than 1/4").	Recent sealcoat or new cold mix. Little or no maintenance required.
7 Good	Very slight or no raveling, surface shows some traffic wear. Longitudinal cracks (open 1/4") due to reflection or paving joints. Transverse cracks (open 1/4") spaced 10' or more apart, little or slight crack raveling. No patching or very few patches in excellent condition.	First signs of aging. Maintain with routine crack filling.
6 Good	Slight raveling (loss of fines) and traffic wear. Longitudinal cracks (open 1/4"–1/2"), some spaced less than 10'. First sign of block cracking. Slight to moderate flushing or polishing. Occasional patching in good condition.	Shows signs of aging. Sound structural condition. Could extend life with sealcoat.
5 Fair	Moderate to severe raveling (loss of fine and coarse aggregate). Longitudinal and transverse cracks (open 1/2") show first signs of slight raveling and secondary cracks. First signs of longitudinal cracks near pavement edge. Block cracking up to 50% of surface. Extensive to severe flushing or polishing. Some patching or edge wedging in good condition.	Surface aging. Sound structural condition. Needs sealcoat or thin non-structural overlay (less than 2")
4 Fair	Severe surface raveling. Multiple longitudinal and transverse cracking with slight raveling. Longitudinal cracking in wheel path. Block cracking (over 50% of surface). Patching in fair condition. Slight rutting or distortions (1/2" deep or less).	Significant aging and first signs of need for strengthening. Would benefit from a structural overlay (2" or more).
3 Poor	Closely spaced longitudinal and transverse cracks often showing raveling and crack erosion. Severe block cracking. Some alligator cracking (less than 25% of surface). Patches in fair to poor condition. Moderate rutting or distortion (1" or 2" deep). Occasional potholes.	Needs patching and repair prior to major overlay. Milling and removal of deterioration extends the life of overlay.
2 Very Poor	Alligator cracking (over 25% of surface). Severe distortions (over 2" deep) Extensive patching in poor condition. Potholes.	Severe deterioration. Needs reconstruction with extensive base repair. Pulverization of old pavement is effective.
1 Failed	Severe distress with extensive loss of surface integrity.	Failed. Needs total reconstruction.

* Individual pavements will not have all of the types of distress listed for any particular rating. They may have only one or two types.

RATING 10 & 9

**EXCELLENT —
No maintenance required**

Newly constructed or recently overlaid roads are in excellent condition and require no maintenance.



▶
RATING 10
New construction.



▶
RATING 9
Recent overlay,
rural.



▶
RATING 9
Recent overlay,
urban.



RATING 8

**VERY GOOD —
Little or no maintenance required**

This category includes roads which have been recently sealcoated or overlaid with new cold mix. It also includes recently constructed or overlaid roads which may show longitudinal or transverse cracks. All cracks are tight or sealed.

◀ **Recent
chip seal.**



◀ **Recent
slurry seal.**

▼ **Widely spaced,
sealed cracks.**



▲ **New cold mix surface.**



RATING 7

GOOD —

Routine sealing recommended

Roads show first signs of aging, and they may have very slight raveling. Any longitudinal cracks are along paving joint. Transverse cracks may be approximately 10' or more apart. All cracks are 1/4" or less, with little or no crack erosion. Few if any patches, all in very good condition. Maintain a crack sealing program.

►
**Tight and sealed
transverse and
longitudinal cracks.
Maintain crack
sealing program.**



►
**Tight and sealed
transverse and
longitudinal cracks.**



►
**Transverse cracks
about 10' or more
apart. Maintain crack
sealing program.**





RATING 6

GOOD —
Consider preservative treatment

Roads are in sound structural condition but show definite signs of aging. Seal-coating could extend their useful life. There may be slight surface raveling. Transverse cracks can be frequent, less than 10' apart. Cracks may be 1/4–1/2" and sealed or open. Pavement is generally sound adjacent to cracks. First signs of block cracking may be evident. May have slight or moderate bleeding or polishing. Patches are in good condition.

◀ **Slight surface raveling with tight cracks, less than 10' apart.**

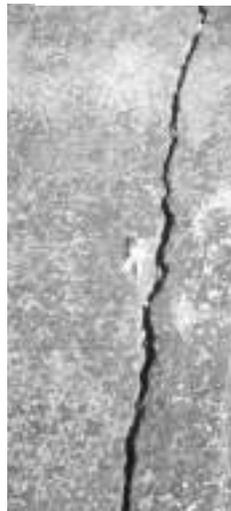
◀ **Transverse cracking less than 10' apart; cracks well-sealed.**



▼ **Large blocks, early signs of raveling and block cracking.**

▼ **Open crack, 1/2" wide; adjoining pavement sound.**

▼ **Moderate flushing.**



RATING 5

**FAIR —
Preservative maintenance
treatment required**

Roads are still in good structural condition but clearly need sealcoating or overlay. They may have moderate to severe surface raveling with significant loss of aggregate. First signs of longitudinal cracks near the edge. First signs of raveling along cracks. Block cracking up to 50% of surface. Extensive to severe flushing or polishing. Any patches or edge wedges are in good condition.

▼ Block cracking with open cracks.



► Moderate to severe raveling in wheel paths.



▼ Severe flushing.



▲ Wedges and patches extensive but in good condition.

Severe raveling with
▼ extreme loss of aggregate.



Load cracking and slight
▼ rutting in wheel path.



RATING 4

FAIR —
Structural improvement required

Roads show first signs of needing strengthening by overlay. They have very severe surface raveling which should no longer be sealed. First longitudinal cracking in wheel path. Many transverse cracks and some may be raveling slightly. Over 50% of the surface may have block cracking. Patches are in fair condition. They may have rutting less than 1/2" deep or slight distortion.



◀ **Longitudinal cracking; early load-related distress in wheel path. Strengthening needed.**

▼ **Slight rutting; patch in good condition.**



▼ **Extensive block cracking. Blocks tight and sound.**
◀ **Slight rutting in wheel path.**

RATING 3

POOR—

Structural improvement required

Roads must be strengthened with a structural overlay (2" or more). Will benefit from milling and very likely will require pavement patching and repair beforehand. Cracking will likely be extensive. Raveling and erosion in cracks may be common. Surface may have severe block cracking and show first signs of alligator cracking. Patches are in fair to poor condition. There is moderate distortion or rutting (1-2") and occasional potholes.

► **Many wide and raveled cracks indicate need for milling and overlay.**



► **2" ruts need mill and overlay.**



► **Open and raveled block cracks.**



**RATING 3**

POOR — (continued)

Structural improvement required

◀ **Alligator cracking.**
Edge needs repair
and drainage needs
improvement prior
to rehabilitation.

▼ **Distortion with patches**
in poor condition. Repair
and overlay.



RATING 2

**VERY POOR—
Reconstruction required**

Roads are severely deteriorated and need reconstruction. Surface pulverization and additional base may be cost-effective. These roads have more than 25% alligator cracking, severe distortion or rutting, as well as potholes or extensive patches in poor condition.



►
Extensive alligator cracking. Pulverize and rebuild.



▲ **Patches in poor condition, wheelpath rutting. Pulverize, strengthen and reconstruct.**



▲ **Severe rutting. Strengthen base and reconstruct.**



►
Severe frost damage. Reconstruct.



RATING 1

**FAILED —
Reconstruction required**

Roads have failed, showing severe distress and extensive loss of surface integrity.

◀
Potholes from frost damage. Reconstruct.



◀
Potholes and severe alligator cracking. Failed pavement. Reconstruct.



◀
Extensive loss of surface. Rebuild.

APPENDIX B

2010 City of Adrian Road Ratings and Street Designations

2010 City of Adrian Road Ratings

Segment Name	From	To	Act51	Rating
Addison St	Addison St.	Siena Heights	City Major	3
Beecher St	Main	Treat	City Major	8
Beecher St	Treat	Gulf	City Major	5
Beecher St	Gulf	N&S Railroad	City Major	3
Beecher St	N&S Railroad	City/Twp Line	City Major	2
Bent Oak Ave	Main	Siena Heights	City Major	9
Bent Oak Ave	Siena Heights	Riverside	City Major	5
Bent Oak Ave	Oak Hill	City Limits	City Major	4
Bent Oak Ave	Pine Shore Dr	Abbott Ct	City Major	3
Bent Oak Ave	Riverside	Pine Shore	City Major	2
Broad St	Albert	Island Park	City Major	8
Broad St	Front	Siena Heights	City Major	7
Broad St	Siena Heights	Albert	City Major	6
Burr St	Scott	Mckenzie	City Major	5
Center St	Logan	Treat	City Major	8
Center St	Michigan	Erie	City Major	7
Center St	Beecher	Logan	City Major	6
Center St	Erie	Church	City Major	5
Church St	Division	Locust	City Major	9
Church St	Broad	Division	City Major	8
Church St	Wabash	Maumee	City Major	8
Church St	Ann	Dean	City Major	7
Church St	Mcvicar	Ann	City Major	6
Church St	Locust	Park Pl W	City Major	5
Church St	Dean	Gulf St	City Major	5
Church St	Park Pl W	Mcvicar	City Major	4
Church St	Gulf St	Maumee	City Major	4
Church St	Maumee	Winter	City Major	2
College Ave	Madison	George	City Major	8
College Ave	George	Church	City Major	7
College Ave	Church	Pearl	City Major	4
College Ave	Pearl	Maumee	City Major	3
Country Club Rd	Tipton	Stoneridge	City Major	7
Country Club Rd	Stoneridge	Scott	City Major	6
Dawes Ave	Winter	Division	City Major	3
Dean St	Maumee	E Hunt St	City Major	6
Dean St	Addison St	Bristol	City Major	5
Dean St	Chestnut St	Addison St	City Major	4
Dean St	E Hunt St	Chestnut St	City Major	3
Division St	US 223	Alden Dr	City Major	7
Division St	March Dr	Logan	City Major	7
Division St	Alden Dr	May Dr	City Major	6
Division St	May Dr	March Dr	City Major	5
Division St	Logan	Clay St	City Major	5
Division St	Division	Clay St	City Major	4

<u>Segment Name</u>	<u>From</u>	<u>To</u>	<u>Act51</u>	<u>Rating</u>
Elm St	Toledo	Maple	City Major	9
Elm St	Bristol St	Siena Heights	City Major	6
Elm St	Maple	E Hunt St	City Major	5
Elm St	Chestnut	Bristol	City Major	5
Elm St	E Hunt St	Chestnut	City Major	4
Elm St	Siena Heights	Oakwood	City Major	4
Front St	Winter	Main	City Major	6
Greenly St	Maumee	Norton St	City Major	7
Greenly St	Norton St	River	City Major	6
Gulf St	Beecher	A&B Railroad	City Major	5
Gulf St	E Michigan St	Maumee	City Major	5
Gulf St	A&B Railroad	E Michigan St	City Major	4
Locust St	Church	Maumee	City Major	9
Locust St	Maumee	Toledo	City Major	8
Locust St	Frank	Church	City Major	7
Locust St	Michigan	Frank	City Major	6
Locust St	Maple	Siena Heights	City Major	6
Locust St	Toledo	Maple	City Major	5
Logan St	Division	Detroit Toledo and Ironton Rr	City Major	3
Logan St	Detroit Toledo and Ironton Rr	Center	City Major	2
Madison St	Beecher	Vine	City Major	7
Madison St	Michigan Ave	Maumee	City Major	7
Madison St	Vine	Michigan Ave	City Major	6
Main St	Church	Maumee	City Major	7
Main St	Maumee	Front	City Major	6
Maple Ave	Maumee	W Westwood Dr	City Major	8
Maple Ave	E Westwood Dr	Alexander Dr	City Major	8
Maple Ave	Northwestern	Springbrook Ave	City Major	8
Maple Ave	Winter	Addison	City Major	8
Maple Ave	W Westwood Dr	E Westwood Dr	City Major	7
Maple Ave	Alexander Dr	Northwestern Dr	City Major	7
Maple Ave	Addison St	Maumee	City Major	7
Maple Ave	Springbrook Ave	N Winter St	City Major	6
Maumee St	Wabash	City/Twp Line	City Major	8
Maumee St	Park Pl W	Park Pl E	City Major	7
Maumee St	S Dean	N Dean	City Major	7
Maumee St	Norfolk Southern Railway	Church	City Major	7
Maumee St	Winter	Park Pl W	City Major	6
Maumee St	Park Pl E	N&S Railroad	City Major	6
Maumee St	College	Winter	City Major	6
Maumee St	W Church St	College	City Major	5
McKenzie St	Maumee	Maple	City Major	10
McKenzie St	Burr	Vine St	City Major	6
McKenzie St	Merrick	Michigan	City Major	6
McKenzie St	Maple	Riverside Ave	City Major	6
McKenzie St	Vine St	Merrick	City Major	5
McKenzie St	Michigan	Maumee	City Major	5

<u>Segment Name</u>	<u>From</u>	<u>To</u>	<u>Act51</u>	<u>Rating</u>
Metcalf St	Main	Winter	City Major	3
Michigan Ave	Park	Water	City Major	7
Michigan Ave	Ferguson	Main	City Major	7
Michigan Ave	Water	Ferguson	City Major	6
Michigan Ave	Mckenzie	Park	City Major	5
Michigan St	S Locust St	Center	City Major	7
Michigan St	Mcvicar	Wabash	City Major	7
Michigan St	Dennis	Division	City Major	6
Michigan St	Center	Mcvicar	City Major	6
Michigan St	Winter	Dennis	City Major	5
Michigan St	Division	S Locust St	City Major	5
Oakwood Ave	Siena Heights	Elm	City Major	5
Oakwood Ave	Elm	City/Twp Line	City Major	4
Railroad St	Treat	Lowe	City Major	2
River St	Greenly	Maple	City Major	5
Riverside Ave	Scott	Mckenzie	City Major	8
Riverside Ave	Mckenzie	Springbrook Ave	City Major	7
Riverside Ave	Lenawee St	Grand St.	City Major	7
Riverside Ave	Springbrook Ave	Lenawee St.	City Major	6
Riverside Ave	Grand St.	Bent Oak	City Major	6
Sand Creek Hwy	City/Twp Line	US 223	City Major	7
Scott St	Beecher	Burr	City Major	3
Siena Heights Dr	Oakwood	Ormsby St	City Major	8
Siena Heights Dr	Addison	Howell	City Major	8
Siena Heights Dr	Locust	Broad	City Major	8
Siena Heights Dr	Locust	Oakwood	City Major	7
Siena Heights Dr	Elm St	Ormsby St	City Major	7
Siena Heights Dr	Broad	Bent Oak	City Major	7
Siena Heights Dr	Addison St	Elm St	City Major	6
Springbrook Ave	Maple	Riverside Ave	City Major	5
Tecumseh St	Church	Toledo	City Major	4
Tecumseh St	Michigan	Church	City Major	3
Toledo St	Elm	Tecumseh	City Major	9
Toledo St	Locust	Clinton St	City Major	7
Toledo St	Tecumseh	Locust	City Major	6
Toledo St	Clinton St	Broad	City Major	6
Toledo St	Broad	Main	City Major	3
Treat Hwy	City/Twp Line	Norfolk Southern Railway	City Major	9
Treat Hwy	Norfolk Southern Railway	Beecher	City Major	8
Treat Hwy	Tabor	French	City Major	7
Treat Hwy	Beecher	Oak	City Major	6
Treat Hwy	French	Center	City Major	6
Treat Hwy	Oak	Tabor	City Major	5

<u>Segment Name</u>	<u>From</u>	<u>To</u>	<u>Act51</u>	<u>Rating</u>
Wabash Ave	Michigan St	Church	City Major	7
Washburn St	Main	Winter	City Major	3
Winter St	Nelson	Church	City Major	7
Winter St	South	Jordan	City Major	7
Winter St	Maple Village Rd	Dawes	City Major	7
Winter St	Church	Maumee	City Major	6
Winter St	Dawes	South	City Major	6
Winter St	Jordan	Main	City Major	6
Winter St	US 223	Maple Village Rd	City Major	6
Winter St	Maumee	Washburn	City Major	4
Winter St	Front	Maple	City Major	4
Winter St	Washburn	Front	City Major	3
Abbott Ct	Oak Hill	Bent Oak	City Minor	8
Addison St	Maumee	E. Maple Ave	City Minor	6
Addison St	Hunt St.	Bristol St	City Minor	6
Addison St	E. Maple Ave	Hunt St.	City Minor	5
Addison St	Bristol St	Addison	City Minor	4
Albert St	Broad	Dead-End	City Minor	8
Alden Dr	Division		City Minor	2
Alexander Dr	Maple	Alexander	City Minor	8
Allis St	Merrick	Michigan Ave	City Minor	8
Ann St	Erie	Frank St	City Minor	8
Ann St	E Church St	Maumee	City Minor	8
Ann St	Frank St	E Church St	City Minor	7
Anthony Ct	Feeman	College Park	City Minor	9
April Ln	June	July	City Minor	2
Argyle Dr	Canterbury	Charles	City Minor	7
Auborne Rd	Scott	Trenton	City Minor	3
Baker St	Main	Caton	City Minor	3
Baker St	Caton	Winter	City Minor	2
Ballenberger Rd	Riverside	City/Twp Line	City Minor	2
Barrington Ln	Lexington Dr	Dead-end	City Minor	3
Berkshire Ct	Berkshire	Cul-de-Sac	City Minor	3
Berkshire Dr	Country Club	Berkshire Ct.	City Minor	4
Berkshire Dr	Scott Ridge	Berkshire Ct.	City Minor	3
Berry St	Dennis	Division	City Minor	6
Berry St	Winter	Dennis	City Minor	5
Bradish St	Beecher	dead-end	City Minor	5
Bristol St	Dean	Addison	City Minor	8
Bristol St	Ormsby	Finch	City Minor	8
Bristol St	Addison	Geddes	City Minor	7
Bristol St	Elm	Ormsby	City Minor	7
Bristol St	Geddes	Elm	City Minor	6
Bristol St	N Broad	Main	City Minor	5
Bristol St	Finch	Comstock	City Minor	4
Bristol St	Comstock	N Broad	City Minor	3
Broad St	Division	Haan	City Minor	3
Brookfield Ct	Meadowbrook	Cul-de-Sac	City Minor	7

<u>Segment Name</u>	<u>From</u>	<u>To</u>	<u>Act51</u>	<u>Rating</u>
Brookside Dr E	Scott	cul-de-sac	City Minor	7
Budlong St	Maumee	Rich	City Minor	5
Budlong St	Loveland	Riverside	City Minor	5
Budlong St	Rich	Loveland	City Minor	4
Burning Bush Ct	Melrose	Cul-de-Sac	City Minor	5
Butler St	N Broad	N Main	City Minor	8
Butler St	Dean	Addison	City Minor	5
Butler St	Ormsby	Comstock	City Minor	5
Butler St	Clinton	N Broad	City Minor	5
Butler St	Addison	Ormsby	City Minor	4
Butler St	Comstock	Clinton	City Minor	4
Canterbury St	Inverness	Stratford	City Minor	7
Caton Ave	South	Summit	City Minor	8
Caton Ave	Baker	South	City Minor	3
Caton Ave	Summit	Beecher	City Minor	3
Center St	Maumee	Toledo/Center Cutoff	City Minor	9
Center St	Dead-end	Beecher	City Minor	4
Chandler St	College	Maumee	City Minor	7
Charles St	Michigan	Williams	City Minor	7
Charles St	Argyle	University	City Minor	7
Charles St	Williams	Argyle	City Minor	6
Charles St	University	Maumee	City Minor	6
Cherry St	Swanson	Northwestern	City Minor	7
Cherry St	River	Maple	City Minor	5
Cherry St	Maple	Swanson	City Minor	2
Chestnut St	Ormsby	Finch	City Minor	7
Chestnut St	Dean	Addison	City Minor	6
Chestnut St	Addison	Ormsby	City Minor	6
Chestnut St	Finch	N Locust	City Minor	6
Chestnut St	N Locust	Main	City Minor	4
Clay St	State	Division	City Minor	9
Clinton St	Maumee	Maple	City Minor	8
Clinton St	Maple	Chestnut	City Minor	5
Clinton St	Bristol	Seeley	City Minor	5
Clinton St	Chestnut	Bristol	City Minor	4
College Park Dr	Feeman	Michigan Ave	City Minor	9
Company St	Mckenzie	Greenly	City Minor	3
Comstock St	Front	Maple	City Minor	7
Comstock St	Toledo	Front	City Minor	6
Comstock St	Hunt	Chestnut	City Minor	6
Comstock St	Bristol	Siena Heights	City Minor	6
Comstock St	Maple	Hunt	City Minor	5
Comstock St	Chestnut	Bristol	City Minor	5
Cross St	Main	Winter	City Minor	3
Croswell St	Toledo	Maple	City Minor	8
Croswell St	Maple	Bristol	City Minor	5
Croswell St	Bristol	Dead-End	City Minor	3
Crystal Spring Ave	Main	dead-end	City Minor	6

<u>Segment Name</u>	<u>From</u>	<u>To</u>	<u>Act51</u>	<u>Rating</u>
Dallas St	Main	Winter	City Minor	7
Dallas St	Winter	Dennis	City Minor	3
Dean St	Frank St	E Church St	City Minor	6
Dean St	Erie St	Frank St	City Minor	5
Dean St	E Church St	Maumee	City Minor	5
Dean St	Michigan	Erie St	City Minor	3
Dennis St	Dallas	Union	City Minor	8
Dennis St	South	Dallas	City Minor	7
Dennis St	Union	Dead-End	City Minor	7
Dorr	Northview	US 223	City Minor	6
Enterprise Dr	Industrial	Dead-end	City Minor	2
Erie St	Center	Ann	City Minor	4
Erie St	Division	Center	City Minor	3
Erie St	Ann	Dean	City Minor	3
Evergreen Rd	City Limits	W Maumee St	City Minor	9
Feeman Ct	College Park	College Park	City Minor	9
Ferguson Ave	Main	Michigan	City Minor	6
Finch St	Toledo	Front	City Minor	7
Finch St	Bristol	Seeley	City Minor	7
Finch St	Front	Maple	City Minor	6
Finch St	Butler	Bristol	City Minor	5
Finch St	Maple	Butler	City Minor	4
Forest St	Dead-end	Anthony	City Minor	9
Frank St	Locust	Dean	City Minor	9
Frank St	Division	Locust	City Minor	3
Frazier Dr	Oram	Scottdale	City Minor	6
French St	Beecher	Treat	City Minor	3
Front St	Toledo	N Broad	City Minor	8
Geddes St	Bristol	Mulberry	City Minor	9
George St	Michigan	Nelson St	City Minor	5
George St	Nelson St	College	City Minor	4
Gettysburg Dr	Scott	cul-de-sac	City Minor	4
Glendale Ave	Oregon	Auborne	City Minor	3
Grand St	Riverside Ave	Trestle Park	City Minor	7
Haan St	Beecher	Dead-end	City Minor	2
Harkness Dr	Mckenzie	Loveland	City Minor	4
Harrison Pl	Anthony	Dead-end	City Minor	9
Hawthorne Dr	Oregon	Trenton	City Minor	3
Helme Ave	Rogers	Springbrook	City Minor	4
High Ct	High	Dead-End	City Minor	8
High St	Stockford	Sheffield	City Minor	8
Highland Dr	Maple	Dead-end	City Minor	6
Hillcrest Dr	Budlong	Cul-de-Sac	City Minor	6
Hoch Ave	Summit	Beecher	City Minor	7
Hoch Ave	South	Summit	City Minor	6
Hoch Ave	Baker	South	City Minor	3
Howell Ave	Summit	Beecher	City Minor	7
Howell Ave	South	Summit	City Minor	6

<u>Segment Name</u>	<u>From</u>	<u>To</u>	<u>Act51</u>	<u>Rating</u>
Howell Ave	Baker	Baker	City Minor	4
Howell Ave	Baker	South	City Minor	3
Hunt St	N Locust	Clinton	City Minor	8
Hunt St	Ormsby	Finch	City Minor	7
Hunt St	Comstock	N Locust	City Minor	7
Hunt St	Croswell	Ormsby	City Minor	6
Hunt St	Finch	Comstock	City Minor	6
Hunt St	Dean	Addison	City Minor	5
Hunt St	Addison	Croswell	City Minor	4
Hunt St	Clinton	Main	City Minor	4
Hunt St	N Winter	Trestle Park	City Minor	4
Hunt St	Main	N Winter	City Minor	2
Huntington Dr	Auborne	Dead-End	City Minor	4
Industrial Dr	Industrial Dr (State)	Dead-end	City Minor	6
Inverness Dr	Renfrew	Dead-end	City Minor	8
Inverness Dr	Canterbury	Renfrew	City Minor	7
Ironwood Ct	Joy	Cul-de-Sac	City Minor	6
James St	Beecher	Treat	City Minor	9
James St	City Limits	Beecher	City Minor	8
Jordan St	Main	Winter	City Minor	9
Joy Rd	Northview	Melrose	City Minor	6
Joy Rd	Melrose	Dead-end	City Minor	5
July Dr	May	April Ln	City Minor	3
July Dr	April Ln	March	City Minor	2
June Ln	April Ln	March	City Minor	3
June Ln	May	April Ln	City Minor	2
Kimole Ln	Sawmill Ct	Riverside Ave	City Minor	7
Kimole Ln	Riverside	Lakeshire	City Minor	6
Kimole Ln	Lakeshire Trail	Sawmill Ct	City Minor	3
Lake St	Sheffield	Riverside	City Minor	8
Lakeshire Trl	Riverside	Kimole	City Minor	8
Lansing St	Summerset Dr	Marilyn Dr	City Minor	6
Lansing St	King Dr	Treat	City Minor	6
Lansing St	Mary Ct	King Dr	City Minor	5
Lansing St	Oak	King Dr	City Minor	4
Lansing St	Marilyn Dr	Mary Ct	City Minor	4
Lansing St	King Dr	Summerset Dr	City Minor	3
Lansing St	James	Oak	City Minor	2
Lawrence St	Division	Fulton Alley	City Minor	8
Lawrence St	Fulton Alley	A&B Railroad	City Minor	7
Leland Ct	Northwestern	Leland	City Minor	4
Lenawee St	Rogers	Riverside	City Minor	5
Lexington Dr	Southfield	Barrington	City Minor	4
Lexington Dr	Barrington	Dead-end	City Minor	3
Liberty St	Beecher		City Minor	3
Lincoln Ave	Scott	Mckenzie	City Minor	8
Lincoln Ave	Oden Way	Scott	City Minor	5
Loveland Rd	Budlong	Mckenzie	City Minor	6

<u>Segment Name</u>	<u>From</u>	<u>To</u>	<u>Act51</u>	<u>Rating</u>
Loveland Rd	Harkness Dr	Stockford Dr	City Minor	5
Loveland Rd	Mckenzie	Harkness Dr	City Minor	3
Loveland Rd	Stockford Dr	Northwestern	City Minor	3
Lowe Ave	Treat	Dead-end	City Minor	2
Madison Dr	Madison	Madison	City Minor	3
Maiden Ln	Main	Winter	City Minor	4
Maplewood Ct	Maple	Cul-de-Sac	City Minor	9
March Dr	June	July	City Minor	4
March Dr	Division	March	City Minor	2
Martinez Ct	Croswell	Dead-End	City Minor	2
Maumee Ct	Maumee	Extents	City Minor	5
May Dr	Division	June	City Minor	3
May Dr	June	July	City Minor	3
May Dr	July	Dead-end	City Minor	2
McVicar St	E Maumee St.	Front	City Minor	8
McVicar St	Frank St	E Church St	City Minor	4
McVicar St	Michigan	Frank St	City Minor	3
McVicar St	E Church St	E Maumee St.	City Minor	3
Meadowbrook Dr	Meadowbrook	Meadowview Ct.	City Minor	8
Meadowbrook Dr	Meadowview Ct.	Cul-de-Sac	City Minor	7
Meadowview Ct	Meadowbrook	Cul-de-Sac	City Minor	8
Melrose Ave	Joy	Northview	City Minor	5
Merrick St	Main	Bridge	City Minor	8
Merrick St	Merrick St Bridge	Mckenzie	City Minor	5
Michigan Ave	Charles	Madison	City Minor	6
Michigan Ave	Madison	Scott	City Minor	5
Michigan Ave	Scott	Mckenzie	City Minor	4
Miles Dr	Division		City Minor	3
Mill Rd	Main	Dead-End	City Minor	3
Mixer St	Chandler	Maumee	City Minor	8
Mulberry St	Ormsby	Elm St	City Minor	10
Mulberry St	Elm St	Addison	City Minor	3
Nelson St	Winter	George	City Minor	5
Northview Dr	Melrose	Dorr	City Minor	6
Northwestern Dr	Maple	Loveland	City Minor	5
Norton St	Greenly	Dead-end	City Minor	6
Oak Hill Blvd	Bent Oak	City/Twp Line	City Minor	8
Oak St	Dead-end	Lansing	City Minor	5
Oak St	Beecher	Treat	City Minor	5
Oak St	Lansing	Beecher	City Minor	4
Oden Way St	Petoskey	Lincoln	City Minor	6
Oden Way St	Vine	Petoskey	City Minor	5
Oram Dr	Frazier	Scott	City Minor	5
Orchard Ct	Orchard Rd	Cul-de-Sac	City Minor	7
Orchard Rd	Orchard Ct	Cul-de-Sac	City Minor	7
Orchard Rd	misc. curve	Orchard Ct	City Minor	6
Orchard Rd	Scott	misc. curve	City Minor	3

<u>Segment Name</u>	<u>From</u>	<u>To</u>	<u>Act51</u>	<u>Rating</u>
Oregon Rd	Trenton	Westwood	City Minor	3
Ormsby St	Toledo	Maple	City Minor	8
Ormsby St	Bristol	Siena Heights	City Minor	8
Ormsby St	Hunt	Chestnut	City Minor	7
Ormsby St	Chestnut	Bristol	City Minor	6
Ormsby St	Butler	Hunt	City Minor	5
Ormsby St	Maple	Butler	City Minor	4
Ottawa Dr	Melrose	Joy	City Minor	6
Oxford Ct	Northwestern	Oxford	City Minor	4
Park Pl E	Church	Maumee	City Minor	4
Park Pl W	Church	Maumee	City Minor	4
Park St	College Ave	Michigan	City Minor	4
Park St	Maumee	College Ave	City Minor	3
Parkview Ln	Barrington	Division	City Minor	2
Pearl St	Winter	College	City Minor	5
Petoskey Ct	Oden Way		City Minor	4
Pleasant Knoll Dr	US 223	Dead-end	City Minor	6
Race St	Maumee	Kiwanis Trl	City Minor	4
Race St	Kiwanis Trl	River St	City Minor	3
Railroad St	Gulf	Dead-end	City Minor	3
Renfrew Ave	Dead-end	Inverness	City Minor	8
Renfrew Ave	Inverness	Shrewsbury	City Minor	7
Renfrew Ave	Shrewsbury	Cul-de-Sac	City Minor	6
Rice St	Merrick	Michigan	City Minor	6
Rich St	Budlong	Mckenzie	City Minor	8
River St	Summer	Greenly	City Minor	4
River St	Race	Summer	City Minor	3
Rogers Ct	Rogers	Cul-De-Sac	City Minor	3
Rogers Rd	Helme	Lenawee	City Minor	4
Rogers Rd	Springbrook	Helme	City Minor	3
Saint Joseph St	Mckenzie	Greenly	City Minor	4
Sarah St	Frank St	Maumee	City Minor	4
Sarah St	Erie	Frank St	City Minor	3
Sawmill Ct	Ballenberger to cul-de-sac		City Minor	9
Scott Ct	Scott	Cul-de-Sac	City Minor	9
Scott Ridge Dr	Scott	Cul-de-Sac	City Minor	4
Scott St	Burr	Brookside Dr. E	City Minor	6
Scott St	Maple	Auborne	City Minor	5
Scott St	Woodfield	Riverside	City Minor	5
Scott St	Brookside Dr. E	Gettysburg Dr.	City Minor	5
Scott St	Gettysburg Dr.	Vine St	City Minor	4
Scott St	Lincoln Ave	College Ave	City Minor	4
Scott St	W. Maumee St	Maple Ave	City Minor	4
Scott St	Auborne	Woodfield	City Minor	3
Scott St	Vine St	Lincoln Ave	City Minor	3
Scott St	College Ave	W. Maumee St	City Minor	3
Scottdale Ct	Scottdale	cul-de-sac	City Minor	5
Scottdale Dr	Scottdale Ct	Scott	City Minor	7

<u>Segment Name</u>	<u>From</u>	<u>To</u>	<u>Act51</u>	<u>Rating</u>
Seel Dr	Maple	Meadowbrook	City Minor	7
Seeley St	N Lucust	Clinton	City Minor	7
Seeley St	Clinton	N Broad	City Minor	6
Seeley St	N Broad	Main	City Minor	5
Seeley St	Finch	N Locust St	City Minor	2
Sheffield St	Dead-End	Riverside Ave	City Minor	8
Sherman St	Forest	Madison	City Minor	9
Shrewsbury Ave	Renfrew	Dead-End	City Minor	7
South St	Main	Dennis	City Minor	8
South St	State	Division	City Minor	8
South St	Dennis	State	City Minor	7
Southfield Dr	Division	Lexington	City Minor	4
Southfield Dr	Lexington	Dead-end	City Minor	3
Spencer Pl	Forest	Spencer	City Minor	9
Spielman Ct	Forest	cul-de-sac	City Minor	9
Spring St	Allis	dead-end	City Minor	8
Springbrook Ave	River	Maple	City Minor	3
State St	Beecher	Berry	City Minor	8
State St	Michigan St	Union	City Minor	7
State St	Summit	Beecher	City Minor	6
State St	Berry	Michigan St	City Minor	6
State St	Union	Church	City Minor	6
State St	Dawes	South	City Minor	5
State St	South	Summit	City Minor	3
Stockford Dr	Riverside	High St	City Minor	6
Stockford Dr	High St	Dead-end	City Minor	5
Stockford Dr	Northwestern	Dead-End	City Minor	4
Stoneridge Ct	Stoneridge	Cul-de-Sac	City Minor	7
Stoneridge Dr	Country Club	Cul-de-Sac	City Minor	7
Stratford Dr	Maumee	Canterbury	City Minor	7
Summer St	River	Maple	City Minor	7
Summit St	Main	Winter	City Minor	10
Summit St	Winter	Division	City Minor	9
Swanson Ct	Cherry	Springbrook	City Minor	7
Tabor St	Beecher	Adrian/Blissfield RR	City Minor	5
Tabor St	Treat	Beecher	City Minor	3
Terrace Ave	Charles	Maumee	City Minor	4
Toledo St	Front	Elm	City Minor	9
Toledo St	Croswell	Front	City Minor	8
Trenton Rd	Maple	Auborne	City Minor	2
Union St	Dennis	State	City Minor	5
University Ave	Charles	Maumee	City Minor	5
Vine St	College Park	Madison	City Minor	9
Vine St	Scott	Mckenzie	City Minor	4
Vine St	Madison	Scott	City Minor	3
Water St	Michigan	College	City Minor	5
Westwood Dr	Maple	Oregon	City Minor	3
Westwood Dr	Maple	Oregon	City Minor	2

<u>Segment Name</u>	<u>From</u>	<u>To</u>	<u>Act51</u>	<u>Rating</u>
Williams St	Charles	Madison St	City Minor	6
Williams St	Madison St	Maumee	City Minor	3
Winter St	Maple	W Hunt St	City Minor	3
Winter St	W Hunt St	Dead-End	City Minor	2
Wolf Ridge Ct	Evergreen Rd.	Cul-de-Sac	City Minor	9
Woodfield Dr	N. Scott St	Cul-de-Sac	City Minor	3

Appendix C

City of Adrian 6 Year Construction Plan

6 YEAR BUDGET PLAN

	MAJOR STREETS							
	2012-13				2013-14			
	Project Name (Latest Rate)	Total Cost	Assessable	City Share	Project Name (Latest Rate)	Total Cost	Assessable	City Share
REBUILD	Elm - Siena Heights to Oakwood (4)	\$136,111.00	\$41,934.00	\$94,177.00				
	Total:	\$136,111.00	\$41,934.00	\$94,177.00	Total:	\$0.00	\$0.00	\$0.00
BASE STABILIZE or MILLING	Winter St. - Front to Maple (4)	\$37,465.00	\$10,786.00		Metcalf - Main to Winter (3)	\$94,400.66	\$16,198.68	
	Washburn - Main to Winter (3)	\$20,638.00			Dawes - Winter to Division (3)	\$94,400.66		
	Transfer to Local Streets	\$100,000.00	MAJOR STREET		Transfer to Local Streets	\$100,000.00	MAJOR STREET	
	Total:	\$158,103.00	TOTAL: \$252,280.00		Total:	\$288,801.32	TOTAL: \$288,801.32	
	LOCAL STREETS							
	2012-13				2013-14			
	Project Name (Latest Rate)	Total Cost	Assessable	City Share	Project Name (Latest Rate)	Total Cost	Assessable	City Share
REBUILD	Croswell - Bristol to End (3)	\$109,977.00	\$30,350.00	\$79,627.00	Haan - Beecher to Mulzer (2)	\$76,670.50	\$20,415.00	\$56,255.50
	Martinez - Croswell to End (2)	\$48,901.00	\$11,102.00	\$37,799.00				\$0.00
				\$0.00				\$0.00
				\$0.00				\$0.00
Total:	\$158,878.00	\$41,452.00	\$117,426.00	Total:	\$76,670.50	\$20,415.00	\$56,255.50	
MILLING & RESURFACING	Erie - Division to Locust (3)	\$44,093.00	-\$24,740.67		Erie - Locust to Center (3)	\$37,886.00	-\$6,568.08	
	Auborne - Trenton to Scott (3)	\$59,714.00			Glendale - Auborne to Oregon (3)	\$42,630.00		
	Huntington - Extents (4)	\$12,055.67			Mulzer - Haan to Division (3)	\$41,064.00		
					Springbrook - River to Maple (3)	\$28,377.00		
					Caton - South to Baker (3)	\$38,410.00		
					Caton - Beecher to Summit (3)	\$31,530.58		
	Alleys	\$50,000.00	Alleys	\$10,000.00				
	Total:	\$165,862.67	LOCAL STREET TOTAL: \$283,288.67		Total:	\$229,897.58	LOCAL STREET TOTAL: \$286,153.08	

All Estimates are in 2011 dollars

6 YEAR BUDGET PLAN

	MAJOR STREETS							
	2016-17				2017-18			
	Project Name (Latest Rate)	Total Cost	Assessable	City Share	Project Name (Latest Rate)	Total Cost	Assessable	City Share
REBUILD								
	Total:	\$0.00	\$0.00	\$0.00	Total:	\$0.00	\$0.00	\$0.00
BASE STABILIZE or MILLING	Division St - Church to A&B RR (5)	\$157,900.00	-\$1,342.00		Division St - A&B RR to Beecher (7)	\$113,990.00	-\$155,557.00	
	Toledo St. - Main to Broad (3)	\$48,442.00			Springbrook - Maple to Riverside (5)	\$246,567.00		
	Transfer to Local Streets	\$100,000.00			Transfer to Local Streets	\$100,000.00		
	Total:	\$306,342.00	TOTAL: \$306,342.00		Total:	\$460,557.00	TOTAL: \$460,557.00	
	LOCAL STREETS							
	2016-17				2017-18			
	Project Name (Latest Rate)	Total Cost	Assessable	City Share	Project Name (Latest Rate)	Total Cost	Assessable	City Share
REBUILD	Cherry - River to Maple (5)	\$90,942.60	\$23,070.00	\$67,872.60	Summer - River to Maple (7)	\$75,343.89	\$15,774.00	\$59,569.89
				\$0.00				\$0.00
				\$0.00				\$0.00
				\$0.00				\$0.00
	Total:	\$90,942.60	\$23,070.00	\$67,872.60	Total:	\$75,343.89	\$15,774.00	\$59,569.89
MILLING & RESURFACING	Park St - Maumee to Michigan (4)	\$93,550.00	\$47,309.40		Vine St - Madison to McKenzie (4)	\$162,768.00	-\$37,621.89	
	Woodfield - N. Scott to Extents (3)	\$27,209.00			Company St - Greenly to McKenzie (3)	\$99,510.00		
	Scott - Michigan to College (3)	\$40,989.00						
	Total:	\$161,748.00	TOTAL: \$229,620.60		Total:	\$262,278.00	TOTAL: \$321,847.89	

All Estimates are in 2011 dollars

Appendix D

Current 6 Year Street Maintenance Plan

6 YEAR MAINTENANCE PLAN

MAJOR STREETS								
2012-13			2013-14			2014-15		
Maint. Type	Street Name (Latest Rating)	Total Cost	Maint. Type	Street Name (Latest Rating)	Total Cost	Maint. Type	Street Name (Latest Rating)	Total Cost
MS	Beecher St - Division to Treat (8)	\$25,000.00	MS	Beecher St - Main to Division (8)	\$23,000.00	MS	Maumee St - College to Winter (6)	\$9,000.00
CR	Various Streets	\$10,000.00	UTO	Oakwood - Siena Hts. To Elm (5)	\$24,000.00	UTO	Burr - McKenzie to Scott (5)	\$18,000.00
UTO	McKenzie - Michigan to Maumee (5)	\$15,000.00	CR	Various Streets	\$10,000.00	MS	Siena Heights - Addison to Howell (8)	\$16,000.00
						CR	Various Streets	\$10,000.00
	Total:	\$50,000.00		Total:	\$57,000.00		Total:	\$53,000.00
LOCAL STREETS								
2012-13			2013-14			2014-15		
Maint. Type	Street Name (Latest Rating)	Total Cost	Maint. Type	Street Name (Latest Rating)	Total Cost	Maint. Type	Street Name (Latest Rating)	Total Cost
UTO	Michigan Ave. - Madison to Scott (5)	\$22,000.00	UTO	Michigan Ave - Scott to McKenzie (4)	\$20,550.00	UTO	Hunt - Main to Broad (4)	\$10,000.00
CR	Various Streets	\$18,000.00	CR	Various Streets	\$19,000.00	UTO	Chestnut - Main to Broad (4)	\$10,000.00
						CR	Various Streets	\$20,000.00
	Total:	\$40,000.00		Total:	\$39,550.00		Total:	\$40,000.00

Maintenance Types:
 MS - Microsurfacing
 UTO - Ultra Thin Overlay
 CR - Crack Repair

All Estimates are based on 2011 dollars. All ratings are based on 2010 data.

6 YEAR MAINTENANCE PLAN

MAJOR STREETS								
2015-16			2016-17			2017-18		
Maint. Type	Street Name (Latest Rating)	Total Cost	Maint. Type	Street Name (Latest Rating)	Total Cost	Maint. Type	Street Name (Latest Rating)	Total Cost
UTO	McKenzie St - Burr to Michigan (6)	\$39,000.00	MS	Siena Heights - Addison to Locust (7)	\$15,000.00	MS	McKenzie - Maple to Maumee (9)	\$13,000.00
CR	Various Streets	\$11,000.00	UTO	Maumee St. - Winter to Broad (6)	\$21,000.00	UTO	Main St. - Front to Church (7)	\$26,000.00
		\$0.00	CR	Various Streets	\$14,000.00	CR	Various Streets	\$11,000.00
	Total:	\$50,000.00		Total:	\$50,000.00		Total:	\$50,000.00
LOCAL STREETS								
2015-16			2016-17			2017-18		
Maint. Type	Street Name (Latest Rating)	Total Cost	Maint. Type	Street Name (Latest Rating)	Total Cost	Maint. Type	Street Name (Latest Rating)	Total Cost
UTO	Bristol - Main to Broad (5)	\$10,000.00	UTO	Oden Way - Lincoln to Vine (6)	\$8,000.00	UTO	Butler - Dean to Elm (5)	\$25,000.00
UTO	Seeley - Main to Broad (5)	\$10,000.00	UTO	Petosky - Extents (4)	\$7,000.00	MS	Bristol - Dean to Finch (8)	\$11,000.00
CR	Various Streets	\$20,000.00	MS	Rolling Meadows (8)	\$25,000.00	CR	Various Streets	\$10,000.00
	Total:	\$40,000.00		Total:	\$40,000.00		Total:	\$46,000.00

Maintenance Types:
 MS - Microsurfacing
 UTO - Ultra Thin Overlay
 CR - Crack Repair

All Estimates are based on 2011 dollars. All ratings are based on 2010 data.