

2014

Local Pavement Asset Management Plan for the Village of Decatur



4/14/14

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Summary of Assets and Goals of the Plan

About the Village of Decatur

The Village of Decatur sits on 1.43 square miles of land in Van Buren County, Michigan. As of the 2010 Census, its population was 1,819. It is bordered by Decatur Township to the north, south, and east, and Hamilton Township to the west. A map showing the boundaries of the Village is located in the appendix. Decatur is located approximately 30 miles from the City of Kalamazoo, and is located close to I-94, connecting Chicago to Detroit. Agricultural activity and downtown businesses draw regional residents to Decatur, while visitors are attracted to the area's parks and beaches.

The Village government operates on a council-manager model. The seven-member elected Village Council appoints a Village Manager who oversees the day-to-day operations of the Village and reports back to the Council.

Purpose of the Plan

The Village of Decatur has several reasons for wanting to develop an asset management plan. The Village is interested in reinvigorating downtown investment through infrastructure improvements. The downtown streets are part of the most heavily travelled corridor for the Village, and the Village views the provision of high quality pavement infrastructure as essential for attracting new businesses and residents. At the same time, the Village wants to continue to provide excellent services to its existing residents and businesses. The Village wants to maintain a transportation network that is safe and comfortable for all users and modes.

In addition, the Village is in the process of making significant renovations of its water and sewer infrastructure, and would like to time pavement treatments with sewer and water improvements to spend dollars as efficiently as possible. Finally, the Village wants to take advantage of all available funding sources to maintain its pavement network, and it aims to use its tax dollars in the most responsible way possible.

Current Assets

The Village of Decatur has approximately 14.7 miles of roads for which it has total maintenance responsibility, adding up to a total of 29.53 lane miles. All of these roads are standard asphalt. The Village also has 1.5 miles of federal-aid eligible roads.

Current Data and Software Tools

The Village of Decatur currently has Roadsoft, which is a free software tool for Michigan's public agencies produced by the Center for Technology and Training and Michigan Technological University. Communities make use of the software to track their Pavement and Surface Evaluation Rating System (PASER) road ratings and develop strategies for roadway asset management that meet their budget and goals. Given budget inputs and data on road conditions, Roadsoft creates an "optimized" scenario of a mix of fixes, spending dollars in the manner that produces the best overall pavement conditions.

The Village aims to rate its roads every year, and had done so consistently in the past. In recent years, however, the Village had been unable to rate its roads on a yearly basis. In 2013, the Southwest Michigan Planning Commission rated the Village of Decatur's roads as part of the contract for this plan. In the past, the Village Manager has directed appropriate personnel who have PASER training to rate the roads. The Village Manager and Public Works supervisor would then use the PASER data to evaluate which road segments are most in need of repair in a given year.

The Village can use Microsoft Excel to translate data from Roadsoft into an accessible format that can be used to track remaining surface life on roads from one year to the next. The Village uses Excel to manage its budgeting needs, including those for road work.

Possible Improvements in Data and Software Tools

During the development of this plan, one issue that was the subject of discussion between SWMPC and the Village of Decatur was the accuracy of the PASER ratings. Since SWMPC staff rated the roads on their own, there were a few significant discrepancies between SWMPC’s ratings and the Village of Decatur’s assessment of its own roads.

However, Michigan’s Transportation Asset Management Council (TAMC) acknowledges that there is a certain margin of error between different rating teams. Each year, TAMC does quality control by sending an independent rater to rate 2,000 miles of pavement throughout the state and compares it to ratings done by teams in the field that year. In 2012, 90% of the ratings done by teams in the field on the federal-aid system were within one PASER rating of the independent rater, and more than 95% were within two PASER ratings of the independent rater. From consultations with the Village Council and SWMPC’s own staff, it appears that the ratings discrepancies in the Village of Decatur fall within this margin of error.

There are steps that the Village, SWMPC, and other agencies could take in the future to ensure better accuracy and consistency in the PASER ratings. In particular, when the Village, the Van Buren County Road Commission, and/or SWMPC are rating the Village of Decatur’s local road network, all effort should be made to have a representative present from each of the interested agencies. Having each of the agencies present can ensure that all three agencies have the most up-to-date data on the Village’s road network.

Another initiative that the Village could undertake is provide the most recent PASER ratings for its local road network online. Sharing data might broaden discussions with members of the public regarding which road segments are priorities and how best to spend limited funds to maintain road assets.

Community Finances

Funding Sources

The Village of Decatur gathers revenue for road funding from a variety of sources. The largest source of revenue for roads in the Village comes from local property taxes. Revenue from local property taxes primarily goes into the Streets fund, which can be used for any activities to maintain the roads. The Village can also transfer funds from the Streets Fund to the Major Roads, Local Roads, or General Funds.

In 2013, all of the Streets Fund Revenues were transferred to other funds. The Village projects that revenues in the Streets fund will stay relatively stable or increase over the life of the asset management plan. Table 1 outlines revenues and expenditures in the Streets fund for the 2013-2014 fiscal year.

Table 1: Revenues and Expenditures in Streets Fund in 2013-2014

Revenues

Revenue Source	Amount in Adopted Budget 2013-2014
Property Taxes	\$89,000
Personal Property Tax	\$14,561
Real Estate Tax Interest	\$500
Interest Income	\$50
TOTAL	\$104,111

Expenditures

Category	Amount in Adopted Budget 2013-2014
Due to Brownfield Authority	\$3,397
General Fund Transfer	\$30,000
Transfer to Major	\$34,350
Transfer to Local Roads	\$36,364
TOTAL	\$104,111

The Village's second largest revenue source comes from the State's Michigan Transportation Fund (MTF). The MTF revenue comes from Michigan's motor fuel taxes. MTF funds go towards both the Major Streets Fund and the Local Streets Fund within the Village of Decatur. As with other communities, the Village of Decatur is concerned that it may see a reduction in MTF revenues. The Village continues to look to innovative funding sources to ensure that adequate revenue will be available in the future.

One such funding source is the countywide road millage in Van Buren County. Van Buren County voters approved the proposal of a 0.98-mill tax for road repairs and improvements in 2008. In 2012, they renewed this millage rate for another four years. The revenues from the road millage are distributed to each of Van Buren County's cities and villages, and the Road Commission receives revenues from the millage to maintain roads in the townships. In the Village of Decatur, the county road millage goes directly into the Local Roads fund. The Village of Decatur reasonably expects its road millage revenues to remain the same or increase over the life of the plan.

Tables 2 and 3 each outline revenues and expenditures in the Major Roads and Local Roads funds for the fiscal year 2013-2014.

Table 2: Major Roads Fund Revenues and Expenditures, FY 2013-2014

Major Roads Fund Revenues

Revenue Source	Amount in Adopted Budget 2013-2014
State of Michigan	\$90,000
Transfer from Streets Fund	\$34,250
TOTAL	\$124,250

Major Roads Fund Expenditures

Category	Amount in Adopted Budget 2013-2014
Salaries- Maintenance	\$10,000
Social Security	\$1,404
Workman's Comp	\$1,251
Materials	\$750
Engineering	\$975
Conferences/Workshops	\$150
Equipment Rental	\$18,000
Liability	\$755
Capital Outlay	\$56,597
Salaries- Traffic Services	\$1,450
Contractual	\$1,000
Lease/Rental	\$3,956
Salaries- Snow and Ice Removal	\$4,500

Overtime Pay	\$3,000
Social Security	\$345
Materials	\$5,000
Equipment Rental	\$7,500
Manager Salary	\$2,484
Clerk Salary	\$4,423
Audit	\$810
TOTAL	\$124,350

Table 3: Local Roads Fund Revenues and Expenditures, FY 2013-2014

Local Roads Fund Revenues

Revenue Source	Amount in Adopted Budget 2013-2014
County Road Millage	\$27,271
State of Michigan	\$39,000
Interest on Investment	\$100
Reimbursements	\$3,480
Transfer from Streets	\$36,364
TOTAL	\$106,215

Local Roads Fund Expenditures

Category	Amount in Adopted Budget 2013-2014
Salaries- Maintenance	\$22,653
Social Security	\$1,733
Workman's Comp	\$843
Materials	\$750
Engineering	\$975
Conferences/Workshops	\$250
Equipment Rental	\$32,580
Liability	\$755
Capital Outlay	\$15,464
Salaries- Traffic Services	\$4,500
Contractual	\$1,000
Lease/Rental	\$1,978
Salaries- Snow and Ice Removal	\$6,500
Electric	\$800
Overtime Pay	\$1,000
Social Security	\$345
Materials	\$5,000
Equipment Rental	\$7,500
Manager Salary	\$2,484
Clerk Salary	\$4,424
Audit	\$810
TOTAL	\$106,215

Priority Projects

In terms of roadway projects, the Village identified its downtown streets as a high priority, particularly, the need for maintenance activities on Phelps St from St. Mary's to Sherwood. However, the Village has been undertaking a major review of its sewer and water infrastructure, and has developed a list of

priority projects. In many cases, it may make sense to apply roadway treatments at the same time as major sewer and water upgrades. The plan discusses the priority sewer and water projects and the proper timing of treatments in the Process Improvement Plan section of the document.

Managing Lifecycles of Pavement Assets

The Village of Decatur consistently has re-evaluated the condition of the roads. As part of the evaluation, the Village uses the Pavement Surface Evaluation Rating System (PASER). PASER assigns a numerical value based on the observed condition of the road at the surface level. Table 4 shows the PASER rating criteria for evaluation of asphalt surfaces. For further resources on the PASER system and criteria for PASER ratings, please consult: <http://michiganltap.org/PASER/AsphaltPASER.pdf>

The Southwest Michigan Planning Commission, in partnership with the Van Buren County Road Commission and the Michigan Department of Transportation, rate the federal-aid network throughout Van Buren County. Staff conduct ratings with the assistance of the Roadsoft program. The program’s laptop data collector (LDC) splits roadways into segments. The ratings team drives each of the segments in a van, observes its condition and then discusses the rating. When there is an agreement on the appropriate rating, the rating gets entered into the laptop data collector. Once ratings are complete for a given jurisdiction, the laptop data is then uploaded to a Roadsoft database back in the office.

In order to rate roads and be able to submit the ratings data to TAMC, all individuals in the vehicle must have gone through PASER training conducted by Michigan’s Transportation Asset Management Council. They must attend the day-long training session each year in order to be eligible to rate roads in that calendar year. At the training session, participants are given clear examples of what a road segment in each rating category looks like, and are also taught to account for conditions such as the position of the sun and moisture on the roadway surface when determining the PASER ratings.

In 2013, in preparation of this plan, SWMPC rated the Village of Decatur’s local roads in addition to the required local PASER ratings.

Table 4: PASER Ratings Guide

Asphalt PASER Ratings		
PASER Rating	Condition	Treatment
9 & 10	Excellent	No maintenance required (Rating of “10” can only be warranted if segment was completely resurfaced within the last 12 months).
8	Good	Little or no maintenance
7	Fair	Crack sealing and minor patching
5 & 6	Fair	Preservative treatments (non-structural)
3 & 4	Poor	Structural renewal (overlay)
1 & 2	Failed	Reconstruction

Current Conditions

Of the 29.57 lane miles of asphalt surface in the Village of Decatur, 20.62 of them currently have a PASER rating of 4 or lower, indicating that 69.7% of the locally-managed pavement in the Village is in poor condition. Another 8.01 lane miles have a PASER rating of 5-7 indicating that 27.1% of the locally-managed pavement is in fair condition. Only 0.94 miles, or 3.1% of the pavement, are in good condition, with a PASER rating of 8-10. See Year 1 in Figure 1 for the breakdown of road conditions at the present time.

Level of Service

The Village is responsible for maintaining a local roads system that is safe for travelers, and that serves all who spend time in the Village. The Village of Decatur remains committed to maintaining all of its 14.9 miles of local roads year-round, with major and minor streets getting priority over smaller local streets.

The Village would like to have all of its roads in good condition, as determined by PASER ratings and Remaining Surface Life (RSL). Remaining surface life measures the number of years left before a roadway reaches a point where preventative maintenance treatments no longer has any effect on improving or maintaining the condition of the road.

Developing an Asset Management Strategy- Mix of Fixes Analysis

The Village of Decatur can reasonably expect that its current budget for roads across the Major Streets Fund, the Local Streets fund, and the General funds will remain stable over the next ten years, or continue to increase.

Since the Village of Decatur provides a highly-detailed, line-item budget format, it was possible to separate human resources costs, such as salaries and benefits, from funds that are likely to be spend on actual construction, maintenance, and equipment. By separating these costs, the Village can input a budget figure into Roadsoft that better reflects the funds it has available to spend on the roadway treatments themselves.

Removing human resources costs from the calculation as best as is possible, the budget available for construction and maintenance activities in FY 2013-2014 is \$135,539. This number was inserted into Roadsoft as the budget figure for each year of the plan. An annual inflation factor of 3% was applied to take into account the increasing cost of materials.

Given this budget constraint, the optimized scenario created for the Village indicates that it can reasonably expect to have 100% of its roads in good condition by 2018, provided it conducts timely treatments on its roadways.

Figure 1 shows road conditions that can be expected under this scenario over the 11-year life of the plan.

Figure 1: Pavement Conditions under an 11-Year Asset Management Scenario by the Village of Decatur

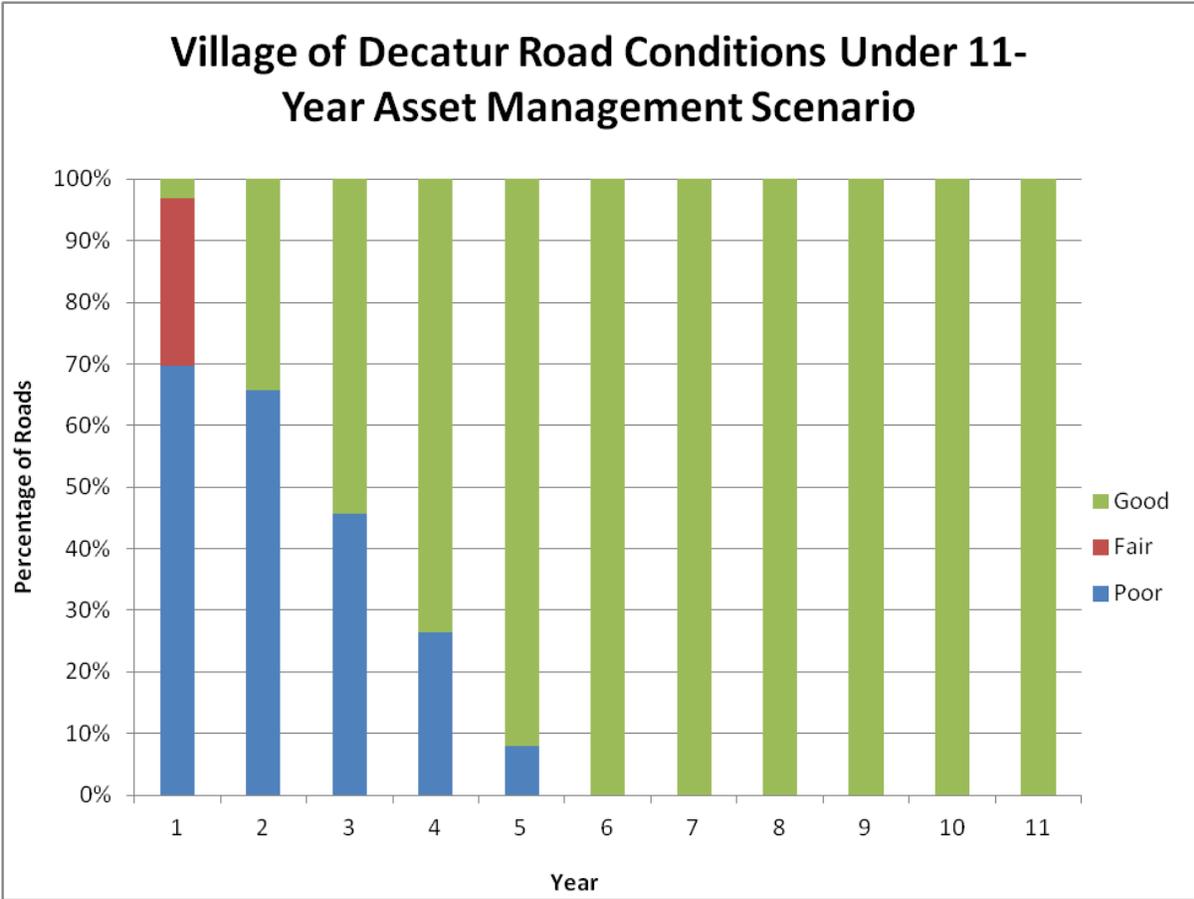


Figure 2 shows the average remaining surface life (RSL) of the Village of Decatur’s local roads over the course of the plan. As the graphic shows, the roads currently have a negative average RSL, meaning that on average, reconstruction will be needed to achieve gains in pavement quality. By the end of the plan, the average RSL is over 10 years.

Figure 2: Average Remaining Surface Life

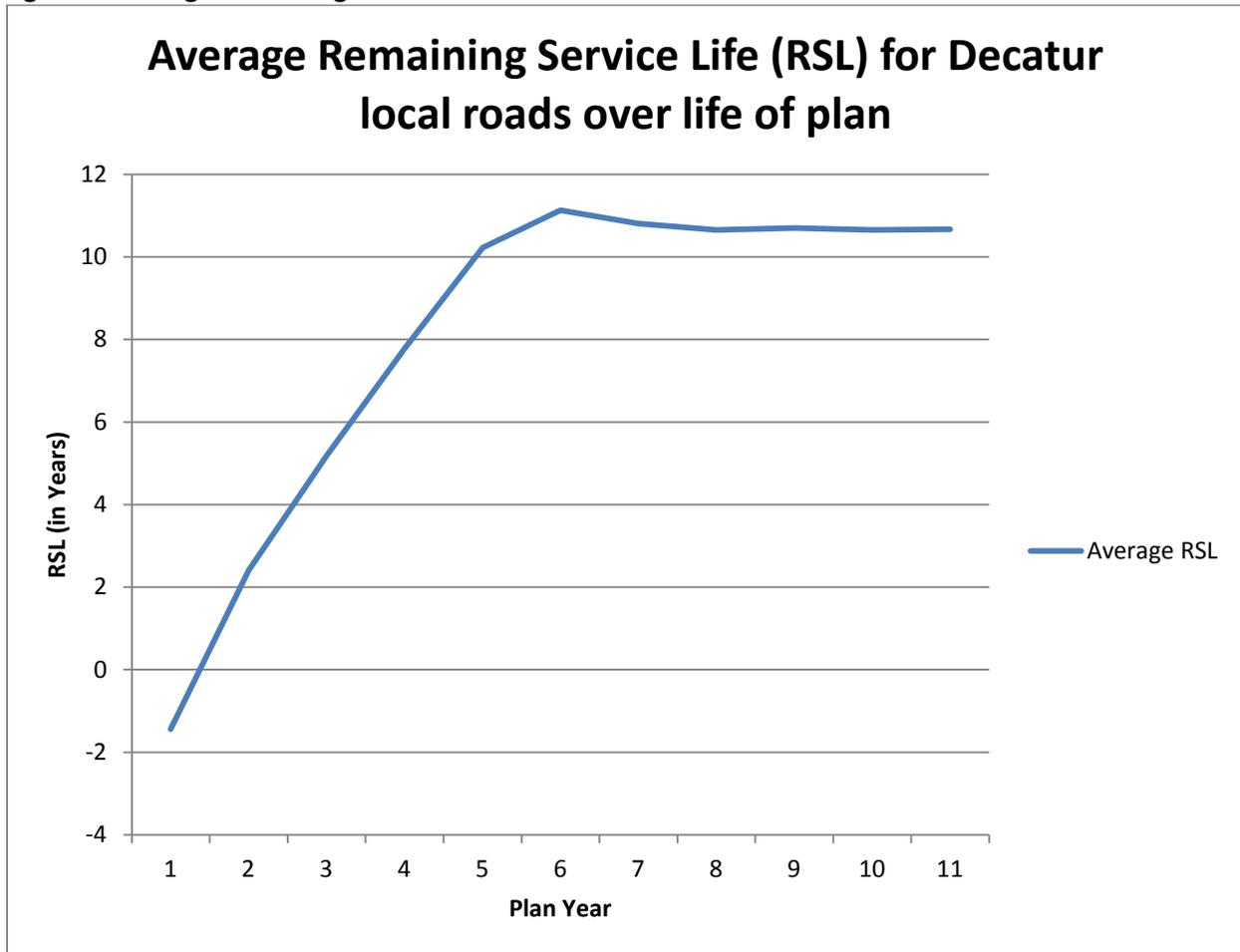


Table 5 shows the asphalt treatments that are recommended under a scenario with an annual budget of \$135,539 for roads. As the table shows, many of the more expensive reconstruction treatments are in the earlier years of the plan.

Table 5: Recommend Asphalt Treatments Under Optimized Scenario (\$135,539).

Year	Treatment	Mileage	Cost per Mile	Cost
2	Crack Seal	1.716	\$1,291	\$2,215
3	Crack Seal	1.429	\$1,291	\$1,844
4	Crack Seal	1.905	\$1,291	\$2,459
5	Crack Seal	2.540	\$1,291	\$3,278
6	Crack Seal	7.839	\$1,291	\$10,118
9	Crack Seal	15.585	\$1,291	\$20,115
10	Crack Seal	1.529	\$1,291	\$1,974
11	Crack Seal	15.069	\$1,291	\$19,449
2	Sealcoat	0.782	\$3,989	\$3,120
2	Sealcoat +	1.788	\$3,989	\$7,133
2	Reconstruction-	5.575	\$21,366	\$119,124

	1.5" Thick			
3	Reconstruction- 1.5" Thick	5.893	\$21,366	\$125,914
4	Reconstruction- 1.5" Thick	5.690	\$21,366	\$121,579
5	Reconstruction- 1.5" Thick	5.482	\$21,366	\$117,146
6	Reconstruction- 1.5" Thick	1.279	\$21,366	\$27,336
6	Crush and Shape	1.060	\$74,947	\$79,466
7	Seal Coat 22'-09	9.988	\$8,196	\$81,857
8	Seal Coat 22'-09	12.479	\$8,196	\$102,275
10	Seal Coat 22'-09	12.434	\$8,196	\$101,906

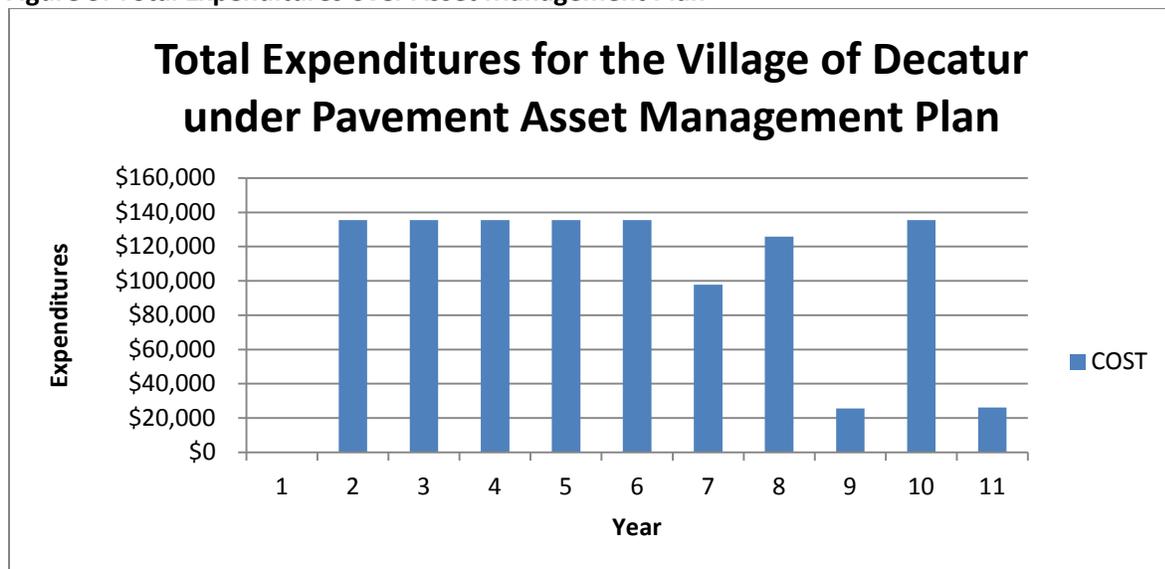
The segments that the Village identified as a priority were downtown along Phelps St between St. Mary's and Sherwood. These segments had a rating of 4 or lower, and would easily be candidates for reconstruction in the early years of the plan.

The important piece of ensuring that the roads remain in good condition in 2018 and beyond is the proper timing of preventative maintenance. The Village has historically done an excellent job of performing reconstruction of one road segment each year, without fail. However, while it does this reconstruction, it will need to simultaneously perform preventative maintenance on other segments of road in order to keep the network from deteriorating.

While the Village identified Phelps St as a high priority, there were also several other areas where the Village believes it might make sense to undertake pavement management projects at the same time as water and sewer projects. The Process Improvement Plan section addresses the Village's coordination with sewer and water planning efforts.

If the Village makes simultaneous investments in preventative maintenance and reconstruction, its expenditures on roadways will eventually decrease, and it will not need to spend the entire current budget for local roads in each year of the plan. Revenue that the Village currently spends on roads can go towards funding other needs of the Village. The graph below highlights expenditures over the course of the 11-year plan.

Figure 3: Total Expenditures over Asset Management Plan



Process Improvement Plan

The Village has historically dedicated itself to rating its roads on an annual basis. Therefore the lag time between the ratings and the execution of actual projects on the ground has been minimal. When weather patterns are cooperative, however, the Village might find it advantageous to rate roads at the beginning of its fiscal year in April to allow time to budget for maintenance needs that suddenly arise.

One area that the Village identified as an area for improvement with PASER ratings is coordination with SWMPC to ensure that local road ratings are uploaded to the Transportation Asset Management Council (TAMC), and that multiple individuals are able to offer their expertise when rating the roads.

One of the reasons that the Village decided to undertake an asset management plan in the first place was to achieve coordination of pavement assets with other investments, such as upgrades in sidewalks, ADA ramps and especially sewer and water infrastructure upgrades. This would be a major process improvement over current decision-making, where road reconstruction projects are completed on an as-needed basis and decisions about water and sewer upgrades are made separately.

Coordination with Other Infrastructure

In 2013, the Village's Public Works supervisor, in conjunction with the Village Manager and the Village Council, identified high priority segments for sewer and water upgrades that would keep the system operating at an adequate level into 2025 and beyond. The Village's goal was to come up with a water and sewer management strategy that use tax dollars and water usage fees in the most optimal way possible to improve the system.

The Village then prioritized each of these segments for inclusion in its Future Project Fund. The sewer and water project segments presented in Table 6 require significant savings on the part of the Village and are not scheduled for completion until 2025, which would be the final year of the asset management plan. However, savings in the roadway budget in later years of the plan could potentially allow for more room in the sewer and water budget to complete the projects ahead of schedule, depending on which funding sources are involved.

Table 6: Village of Decatur Water Projects Scheduled for Completion in 2025

Project Segment	Estimated Cost	PASER Rating
George St. from Mason to SE Village Limit 4" Line	\$320,000	4
Beers St from Williams to Dead End- 4"	\$280,000	4
Rosewood from Shady Lane to Edger Bergen	\$80,000	3

The segments on George St and Beers St have a PASER rating of 4, while the segment on Rosewood has a PASER rating of 3. These conditions indicate that preventative maintenance will not have any effect on the condition of the road. Preventative will not improve or maintain the condition of the surface until it is time to tear open the roadway for completion of the sewer project in the years preceding 2025. If left alone, the roadway might actually fail and pose serious safety problems. If the Village can find a way to expedite these projects, it would eliminate the need to reconstruct the road surface twice in a short time period.

The water projects listed in Table 7 are scheduled to be completed in the first five years of the plan, when the Village would be reconstructing segments of roadway that require it.

Table 7: Village of Decatur Water Projects Scheduled for Completion 2015-2019

Project Segment	Estimated Cost	Year of Completion	PASER Rating
Pine St from Lake Drive to Williams St 4" Line	\$300,000	2015	4-5
Williams St- Pine to St. Mary's	\$140,000	2015	3-5
John St from Pine St to Delaware	\$300,000	2015	6-8
Cedar St- Pine to Phelps	\$200,000	2015	4-6
North East St. Loop- Edger Bergen to East St. Mary's	\$50,000	2017	4-6

As the PASER ratings of the segments that are scheduled for water line upgrades in the next five years show, a few of these segments have better surface conditions than the projects scheduled for completion in 2025. Specifically, the Village could alter the timing of water upgrades so that the segment of John St, which is in fair-to-good condition, is completed later, while George St, Beers St, or Rosewood get both the road reconstruction treatments they need immediately along with water upgrades.

The ability to move sewer and water projects to a different year depends of course upon the current condition of the water infrastructure and engineering requirements for upgrades. That technical information on the sewer and water infrastructure is not available here. It will be up to the Village's Public Works supervisor and its council to determine whether the Village can reprioritize the water projects so that it ensures that none of its roads fail structurally over the next ten years. Reprioritizing the projects could also allow the Village to realize cost savings in later years on road maintenance, cost savings that might help to fund the water upgrades.

Whatever decision the Village makes regarding its sewer projects, it has taken an important first step by examining its water and sewer infrastructure at the same time as its road infrastructure maintenance. Coordinated improvements will lead to cost savings, as the Village will avoid having to reconstruct entire segments of roadway multiple times within a short time frame.

Sustainability Assessment

As mentioned earlier in the plan, the Village of Decatur does project that revenues from the Michigan Transportation Fund (MTF) will continue to decrease as vehicles become more fuel efficient and gasoline prices make individuals drive less. Statewide, MTF revenues have decreased 18.8% since 2006. The Village's population is relatively stable, experiencing a loss of 19 individuals between 2000 and 2010. Therefore, the Village does not anticipate gaining increased revenues from the MTF that would come if the population were growing. This decrease in MTF revenues would impact the Major Roads fund most significantly, but both the Major and Local Roads funds would see a reduction.

Recently, the Michigan Legislature has considered proposals that would raise revenues for the MTF statewide by increasing vehicle registration fees or increasing fuel taxes. At the time of this plan, no new legislation has been passed to increase or maintain current revenues. The Village should monitor any progress on these proposals when projecting revenues for future pavement management projects.

The countywide roads millage in Van Buren County has provided a means for the Village to stabilize its overall revenues for road maintenance and construction as MTF revenue has declined. The roads millage will allow the Village to continue to budget for road maintenance at current or greater levels without making spending cuts elsewhere in its budget. Therefore, the countywide road millage revenue should allow the Village to proceed with the strategies outlined in this plan.

While fluctuations in the price of materials could affect how far the budget goes in repairing the Village's roads, there is no reason to believe the Village would not be able to making the necessary minor adjustments in its budget from year to year within existing revenue streams. Under its current budget, the Village can meet its goal of having all of its roads in good condition.

Program Coordination

The Village of Decatur currently coordinates its program with the Van Buren County Road Commission, which manages projects in the surrounding townships. The Village also has a segment of M-51, which is Delaware St within the Village limits. Therefore, the Village coordinates its investments with MDOT to ensure that the timing of projects creates minimal disruption to travel and safety in the Village. The Village can now use the data in this plan to improve upon its coordination efforts.

Emerging Technology

One exciting tool that many Michigan communities are using for repair of asphalt surfaces is infrared treatment. With infrared repairs, a laser heating system applies heat to the pavement surface and adds in new asphalt mixture. The difference between infrared repair and other methods is that the infrared

technology removes some of the existing material and seals in the new material to create a joint-free, seamless asphalt mixture. The infrared process allows for more complete repair of the surface, which will extend the surface life of the road and reduce resurfacing and filling costs over many years. The Village of Decatur will have to weigh the increased costs of using the infrared process with the benefit of a reduced need for constant crack sealing and re-mixing of asphalt.

Appendix Files

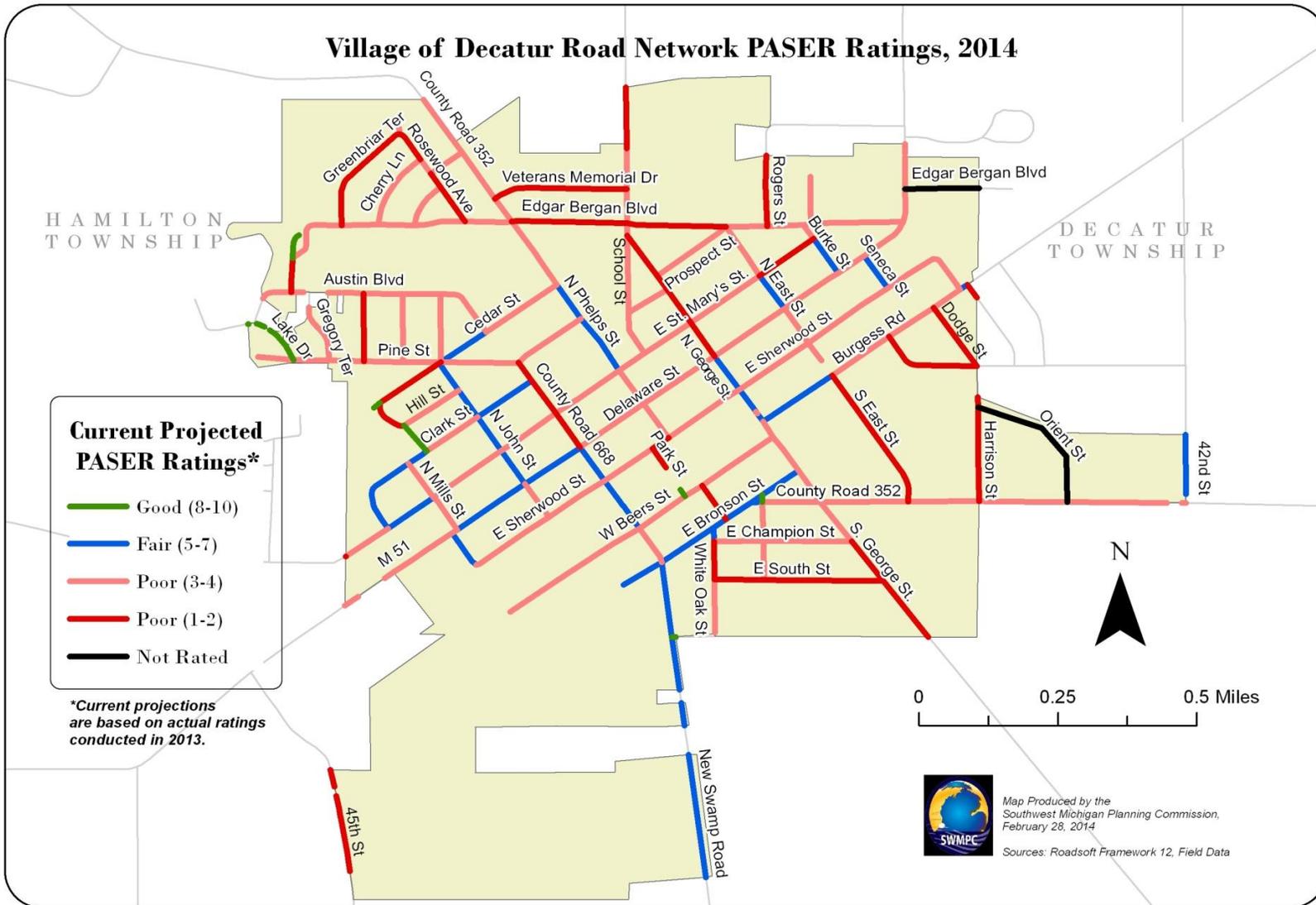
Please look towards the Appendix Files provided for further detailed but important information regarding the Village of Decatur's Asset Management Plan.

Appendix A: Map of PASER Ratings for the Village of Decatur

Appendix B: PASER Rating Triggers and Reset Values for various treatments

Appendix C: Complete PASER ratings for the Village of Decatur

Village of Decatur Road Network PASER Ratings, 2014



Appendix B: PASER Ratings and Treatment Guide for Asphalt

Trigger= PASER Rating at which the treatment is required or recommended

Reset= PASER Rating Upon Completion of a particular treatment

PASER Ratings Triggers for Various Treatments on Asphalt Surfaces

Treatment	Type	Minimum Trigger	Maximum Trigger	Reset Value	Surf (\$/Sq Yd)	Shldr (\$/Sq Yd)	Cost / Lane Mile
Crack Seal	CPM	7	7	8	\$0.20	\$0.00	\$1,290.67
Crack Seal (Comp)	CPM	7	7	8	\$0.00	\$0.00	\$0.00
Crack Seal (Asp)	CPM	7	7	8	\$0.25	\$0.00	\$1,613.33
Slurry Seal	CPM	7	7	7	\$2.00	\$0.00	\$12,906.67
Overband Crack Fill	CPM	6	7	7	\$0.36	\$0.00	\$2,323.20
Overlay - ".75 Thick	CPM	6	7	8	\$0.00	\$0.00	\$0.00
Sealcoat (Comp)	CPM	6	6	8	\$0.00	\$0.00	\$0.00
Sealcoat (Asp)	CPM	6	6	8	\$1.08	\$0.00	\$6,969.00
Sealcoat	CPM	6	6	8	\$0.60	\$0.10	\$3,989.33
Cape Seal (slurry over chip)	CPM	6	6	8	\$4.00	\$0.00	\$25,813.33
Sealcoat 22' - 09	CPM	5	7	8	\$1.27	\$0.00	\$8,195.73
Sealcoat - 07	CPM	5	7	8	\$0.93	\$0.00	\$6,001.60
Overlay - 1" Polymer	CPM	5	6	9	\$0.00	\$0.00	\$0.00
Sealcoat Double	CPM	5	6	7	\$1.20	\$0.00	\$7,744.00
Overlay - 1.5" Polymer	CPM	5	6	9	\$0.00	\$0.00	\$0.00
Overlay - 1.5" Thick	CPM	5	6	9	\$2.98	\$1.82	\$21,366.40
Chip Seal	CPM	5	6	8	\$1.30	\$0.30	\$8,741.33
Fog Seal	CPM	5	5	5	\$0.26	\$0.00	\$1,677.87
Seal Coat w/ Fog Seal (per mile) 2010	CPM	5	5	8	\$1.51	\$0.00	\$9,744.53
Seal Coat w/ Fog Seal (per half mile) 2010	CPM	5	5	8	\$3.11	\$0.00	\$20,069.87
Mill (Slope Correction) & Overlay - 2" Thick	CPM	5	5	9	\$0.00	\$0.00	\$0.00

VBCRC 22ft HMA Cap	CPM	5	5	9	\$5.36	\$0.00	\$34,589.87
VBCRC 20ft HMA Cap	CPM	5	5	8	\$5.36	\$0.00	\$34,589.87
Overlay - 180#/sy (Comp)	CPM	5	5	9	\$0.00	\$0.00	\$0.00
Overlay - 180#/sy (Asp)	CPM	5	5	9	\$1.00	\$1.00	\$7,686.67
Resurface	CPM	5	5	9	\$0.00	\$0.00	\$0.00
2" asphalt overlay	CPM	5	5	9	\$3.85	\$5.68	\$31,509.87
Overlay - 1" Thick	CPM	5	5	9	\$0.00	\$0.00	\$0.00
Cape Seal Plus(micro over chip)	CPM	5	5	7	\$6.00	\$0.00	\$38,720.00
Microsurface (Up to 3/4")	CPM	5	5	6	\$4.00	\$0.00	\$25,813.33
Sealcoat +	CPM	5	5	8	\$0.60	\$0.10	\$3,989.33
Overlay - 2.5" Thick	RH	4	4	9	\$0.00	\$0.00	\$0.00
Overlay - 3" Thick	RH	4	4	9	\$5.40	\$2.00	\$37,194.67
Overlay - 4" Thick w/ Polymer	RH	4	4	9	\$0.00	\$0.00	\$0.00
Overlay - 1 1/2" Thick	RH	4	4	9	\$2.70	\$1.00	\$18,597.33
Overlay - 2 1/2" Thick	RH	4	4	9	\$4.51	\$1.75	\$31,157.87
Overlay - 250#/SYD	RH	4	4	9	\$4.66	\$0.60	\$30,776.53
Overlay - 3 1/2" Thick	RH	4	4	9	\$6.50	\$2.50	\$44,880.00
Overlay - 300#/SYD	RH	4	4	9	\$5.59	\$0.60	\$36,778.13
Overlay - 3.5" Thick	RH	4	4	9	\$7.20	\$2.66	\$49,585.07
Overlay - 3" Thick (Comp)	RH	4	4	9	\$5.40	\$2.00	\$37,194.67
Overlay - 1.5" Polymer & Widening	RH	4	4	9	\$0.00	\$0.00	\$0.00
Overlay - 2" Polymer	RH	4	4	9	\$0.00	\$0.00	\$0.00
Overlay - 2" Thick	RH	4	4	9	\$0.00	\$0.00	\$0.00
Mill & Overlay - 1.5" Thick	RH	3	4	7	\$10.00	\$0.00	\$64,533.33
VBCRC - Overlay 2 in (Local & Prim)	RH	3	4	9	\$4.40	\$2.00	\$30,741.33
Overlay with Fabric	RH	3	4	7	\$0.00	\$0.00	\$0.00
Mill & Overlay - 1"	RH	3	4	9	\$0.00	\$0.00	\$0.00
Mill & Overlay 1.5"	RH	3	4	9	\$0.00	\$0.00	\$0.00
Overlay - 1 3/4" Thick	RH	3	4	9	\$6.22	\$2.00	\$42,486.00
Mill & Overlay - 3" Thick (Asp)	RH	3	3	9	\$0.00	\$0.00	\$0.00
Mill & Overlay - 3" Thick (Comp)	RH	3	3	9	\$0.00	\$0.00	\$0.00

Overlay - 3" Thick (Asp)	RH	3	3	9	\$8.08	\$4.25	\$57,129.60
Mill & Repave Primary (5")	RC	3	3	10	\$11.00	\$3.50	\$75,093.33
Mill & Repave - 3" Thick (Local)	RH	3	3	9	\$7.00	\$3.50	\$49,280.00
Mill & Repave - 3" Thick	RH	3	3	9	\$7.00	\$3.50	\$49,280.00
Mill & Repave - 2" Thick	RH	2	4	9	\$14.71	\$0.00	\$94,928.53
Pulv. & Pave - 3" base, 3" top	RC	2	2	10	\$7.07	\$0.60	\$46,329.07
Reconstruction - 6" base, 5 1/2" top	RC	2	2	10	\$31.00	\$10.00	\$211,786.67
Reconstruction - 6" base, 3" top	RC	2	2	10	\$14.00	\$7.00	\$98,560.00
Reconstruction - 6" base, 3" top (Local)	RC	2	2	10	\$14.00	\$7.00	\$98,560.00
Reconstruction - 6" base, 3" top (Comp)	RC	2	2	10	\$14.00	\$7.00	\$98,560.00
Reconstruction	RC	1	4	10	\$67.22	\$0.00	\$433,793.07
Crush, Shape, Overlay	RH	1	4	9	\$14.20	\$0.00	\$91,637.33
Reconstruction - 1.5" Thick	RH	1	4	9	\$2.98	\$1.82	\$21,366.40
VBCRC FA	RC	1	3	10	\$14.23	\$1.39	\$93,461.87
3.5" HMA, Pulverize Base	RC	1	3	10	\$20.19	\$0.00	\$130,292.80
Crush and Shape	RC	1	3	10	\$11.25	\$2.00	\$74,946.67
Reconstruction - 8" base, 2" top	RC	1	2	10	\$21.95	\$3.50	\$145,757.33
Reconstruction - 8" base, 3.5" top	RC	1	2	10	\$26.45	\$0.00	\$170,690.67
VBCRC Reconstruction - 2" base, 3" top (6" gravel)	RC	1	1	10	\$17.00	\$8.50	\$119,680.00
Wedge & Overlay	RH	1	1	9	\$3.33	\$0.00	\$21,489.00
Overlay 330#/SYD	RH	1	1	9	\$5.86	\$0.60	\$38,520.53