



**CITY OF STURGEON BAY BOARD OF PUBLIC WORKS AGENDA  
TUESDAY, JANUARY 7, 2020  
6:00 P.M.  
COUNCIL CHAMBERS, CITY HALL – 421 MICHIGAN ST  
HELEN BACON, CHAIRPERSON**

1. Call to order.
2. Roll call.
3. Adoption of agenda.
4. Consideration of: Approval of Five Year Capital Plan and 2020 Roadway Improvements.
5. Adjourn.

NOTE: DEVIATION FROM THE AGENDA ORDER SHOWN MAY OCCUR.

Posted:

Date:

Time:

By:

Jan 3, 2020  
12:00pm  
Jm

## EXECUTIVE SUMMARY

**DATE:**           **December 31, 2019**

**TITLE:**           **5 Year Capital Plan and 2020 Capital Roadway Improvements**

**BACKGROUND:** Using the PASER pavement rating system projects have been identified for 2020 through 2024. The five year capital plan is revised and approved each year to adjust for levels of funding, unanticipated deterioration of specific roadways, coordination with SB Utilities, and other issues that warrant the delay or acceleration of various planned roadway projects. For 2020 the proposed capital roadway improvement projects include:

- 1) E Walnut Drive (from E Walnut Place to S Tomahawk Ave): Full reconstruction of the roadway. This project will include all new curbing, pavement, and replacement of the storm sewer on the south side of the roadway. The current storm sewer is a very shallow corrugated plastic pipe that runs just behind the curbing. Due to the material and shallow depth it has been causing substantial damage to several driveways on the south side of the roadway. The new storm sewer line will be moved further south within the right of way to get better depth in order to help eliminate this problem. This roadway is located in a very low lying wet area of the City and has deteriorated much more rapidly than would typically be anticipated given its age. Therefore, a geogrid will be added beneath the roadway base to help stiffen the roadway. In addition, the roadway width (from face of curb to face of curb) will be reduced by 5'-0" from 35'-0" to 30'-0".
- 2) Circle Ridge Place (from S Ridgeway Drive to Quarter Deck Lane): Mill & pave. This project will include manhole and water valve adjustments, spot replacement of the curbing, and replacement of the pavement.
- 3) S Hudson Ave (from W Maple Street to W Pine Street): Mill & pave. This project will include manhole and water valve adjustments, misc. storm sewer repairs, spot replacement of the curbing, and replacement of the pavement.
- 4) W Pine Street (from S Lansing Ave to S Hudson Ave): Mill & pave. This project will include manhole and water valve adjustments, spot replacement of the curbing & sidewalks, and replacement of the pavement.
- 5) S Ridgeway Drive (from Tacoma Beach Road to Termination): Mill & pave. This project will include manhole and water valve adjustments, misc. storm sewer repairs, spot replacement of the curbing, and replacement of the pavement.
- 6) E Binnacle Place (from S Ridgeway Drive to S Ridgeway Ave): Mill & pave. This project will include manhole adjustments, spot replacement of the curbing, and replacement of the pavement.
- 7) S Ridgeway Ave (from E Binnacle Place to E Compass Street): Mill & pave. This project will include manhole and water valve adjustments, spot replacement of the curbing, and replacement of the pavement.
- 8) Shiloh Road (from E Leeward Street to Division Road): Mill & pave. In 2019 WPS installed a new gas line along the north edge of the roadway. Their initial intent was to do minimal patching to restore the disturbed portions of the roadway after their work was completed. However, due to various reasons they ended up doing a full depth mill & pave on the north half of the roadway. Therefore, it was decided to mill & pave the south half of the roadway so that the entire roadway will be in good condition for years to come.
- 9) Louisiana Street (from N 4<sup>th</sup> Ave to N 5<sup>th</sup> Ave): Mill & pave. This project will include spot replacement of the curbing & sidewalks, and replacement of the pavement. In addition, the City will be coordinating with the property owner at the NW corner of Louisiana Street & N 5<sup>th</sup> Ave

to add small retaining walls along the back of their sidewalks. This will allow the sidewalks to be lowered in order to remove the steps and provide proper ramps in the sidewalks at the corner.

- 10) Louisiana Street (from N 9<sup>th</sup> Ave to N 12<sup>th</sup> Ave): Mill & pave. This project will include manhole and water valve adjustments, spot replacement of the curbing, and replacement of the pavement.
- 11) N 10<sup>th</sup> Place (from Louisiana Street to N 11<sup>th</sup> Place): Mill & pave. This project will include manhole and water valve adjustments, spot replacement of the curbing, and replacement of the pavement.
- 12) Bluebird Street (from N 12<sup>th</sup> Place to N 14<sup>th</sup> Ave): Mill & pave. This project will include manhole and water valve adjustments, misc. storm sewer repairs, spot replacement of the curbing, and replacement of the pavement.
- 13) Memorial Drive (from Utopia Circle – East to Utopia Circle – West): Mill & pave. This project will include manhole and water valve adjustments, misc. storm sewer repairs, spot replacement of the curbing, and replacement of the pavement.
- 14) S 15<sup>th</sup> Ave (from Memorial Drive to Texas Street): Mill & pave. This project will include manhole and water valve adjustments, misc. storm sewer repairs, spot replacement of the curbing & sidewalks, and replacement of the pavement.
- 15) Utah Street (from S 15<sup>th</sup> Ave to S 18<sup>th</sup> Ave): Mill & pave. This project will include manhole and water valve adjustments, misc. storm sewer repairs, spot replacement of the curbing, and replacement of the pavement.
- 16) Jefferson Place (from N 18<sup>th</sup> Ave to Kentucky Place): Mill & pave. This project will include manhole and water valve adjustments, spot replacement of the curbing, and replacement of the pavement.
- 17) Barrick Road (from N Ashland Ave to N Duluth Ave): Pulverize and pave. This roadway is shared by both the City of Sturgeon Bay and the Town of Nasewaupee. Due to various annexations over the years both the City and Town have multiple small segments within this overall roadway that they are responsible for, making it very difficult for either municipality to replace their portions of the roadway without coordinating to replace the entire section. The roadway is approximately 1384 LF. The City of Sturgeon Bay's portion would cover 362 LF and the Town of Nasewaupee has agreed to pay for their 1022 LF of the overall project.
- 18) W Oak Street (from S Duluth Ave to S Columbia Ave): Pulverize and pave. This roadway is shared by both the City of Sturgeon Bay and the Town of Nasewaupee. Due to various annexations over the years both the City and Town have multiple small segments within this overall roadway that they are responsible for, making it very difficult for either municipality to replace their portions of the roadway without coordinating to replace the entire section. The roadway is approximately 2099 LF. The City of Sturgeon Bay's portion would cover 782 LF and the Town of Nasewaupee has agreed to pay for their 1317 LF of the overall project.

In addition to the capital roadway improvement projects listed above there are two other capital projects that are also proposed for 2020:

- 1) 708 N 7th Ave (along Florida Street): Sidewalk addition. The approved Amity Field Townhomes development currently under construction includes a sidewalk along Florida Street. This sidewalk addition will tie the sidewalks for the development to the sidewalks at N 7<sup>th</sup> Ave. This project was scheduled to be completed in 2019 but the gas line installations for the development needed to be placed in the same location and delayed this project into 2020. The cost for this project will be billed to TID #3 which has money budgeted to pay for the proposed sidewalk addition.

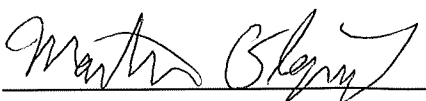
- 2) Maple / Oregon Street Bridge: Thin Polymer Overlay. In June of 2018 the City of Sturgeon Bay entered into a State Municipal Agreement with the WI DOT to add a thin polymer overlay on the bridge and bridge approaches. The design work has been completed and the WI DOT plans to bid and construct the project in 2020. This overlay will seal cracks in the deck to help prevent chlorides from penetrating into the concrete and extend the life of the concrete deck on the bridge and bridge approaches. The 2020 budget included funds for the project which are sufficient to cover the current engineering estimates.

**FISCAL IMPACT:** The proposed 2020 capital roadway improvement projects are expected to use approximately \$1,354,138.00 of the \$1,355,000 budgeted. Therefore, if the bids come in favorably all of the projects should be able to be completed as proposed. If not, modifications to the plan may be needed in order to stay within the overall 2020 capital roadway improvement budgets.

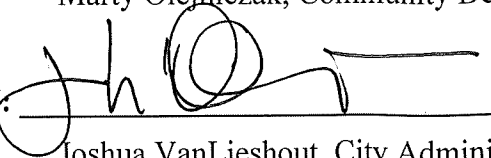
**RECOMMENDATION:** Staff recommends approval of the five year capital plan including the authorization for the preparation of bid documents for the 2020 capital roadway improvement projects as described above.

**SUBMITTED BY:**   
Chad Shefchik, City Engineer

Date: 12/31/19

**REVIEWED BY:**   
Marty Olejniczak, Community Development Director

Date: 12/31/19

**REVIEWED BY:**   
Joshua VanLieshout, City Administrator

Date: 12/31/19

## *Asphalt pavement distress*

PASER uses visual inspection to evaluate pavement surface conditions. The key to a useful evaluation is identifying different types of pavement distress and linking them to a cause. Understanding the cause for current conditions is extremely important in selecting an appropriate maintenance or rehabilitation technique.

There are four major categories of common asphalt pavement surface distress:

### **Surface defects**

Raveling, flushing, polishing.

### **Surface deformation**

Rutting, distortion—rippling and shoving, settling, frost heave.

### **Cracks**

Transverse, reflection, slippage, longitudinal, block, and alligator cracks.

### **Patches and potholes**

Deterioration has two general causes: environmental due to weathering and aging, and structural caused by repeated traffic loadings.

Obviously, most pavement deterioration results from both environmental and structural causes. However, it is important to try to distinguish between the two in order to select the most effective rehabilitation techniques.

The rate at which pavement deteriorates depends on its environment, traffic loading conditions, original construction quality, and interim maintenance procedures. Poor quality materials or poor construction procedures can significantly reduce the life of a pavement. As a result, two pavements constructed at the same time may have significantly different lives, or certain portions of a pavement may deteriorate more rapidly than others. On the other hand, timely and effective maintenance can extend a pavement's life. Crack sealing and seal coating can reduce the effect of moisture in aging of asphalt pavement.

With all of these variables, it is easy to see why pavements deteriorate at various rates and why we find them in various stages of disrepair. Recognizing defects and understanding their causes helps us rate pavement condition and select cost-effective repairs. The pavement defects shown on the following pages provide a background for this process.

Periodic inspection is necessary to provide current and useful evaluation data. It is recommended that PASER ratings be updated every two years, and an annual update is even better.

2015 2017 2019									
Year	Street Name	Start	End	Paser Rating	Paser Rating	Paser Rating	Improvement Type	Notes	
2020	E Walnut Drive	E Walnut Place	S Tomahawk Ave	4	4	4	Full Reconstruct (See Estimate)	Full Reconstruction - Slight Narrowing - New Storm Sewer - Add Geogrid	
2020	Circle Ridge Place	S Ridgeway Drive	Quarter Deck Lane		3	3	Mill & Pave		
2020	S Hudson Ave	W Maple Street	W Pine Street	6	5	5	Mill & Pave	280 LF "hollow" curb (#32 S to corner at Maple) - Flowable Pipe Fill	
2020	W Pine Street	S Lansing Ave	S Hudson Ave	4	4	3	Mill & Pave		
2020	S Ridgeway Drive	Tacoma Beach Road	South Termination		5	3	Mill & Pave		
2020	E Binnacle Place	S Ridgeway Drive	S Ridgeway Ave		5	3	Mill & Pave		
2020	S Ridgeway Ave	E Binnacle Place	E Compass Street		5	4	Mill & Pave		
2020	Shiloh Road (South Half)	E Leeward Street	Division Road			9/4	Mill & Pave	North half was redone by WPS in 2019	
2020	Louisiana Street	N 4th Ave	N 5th Ave		5	4	Mill & Pave	Coord. retaining walls & sidewalk modifications	
2020	Louisiana Street	N 9th Ave	N 12th Ave			5	Mill & Pave		
2020	N 10th Place	Louisiana Street	N 11th Place		6	4	Mill & Pave		
2020	Bluebird Street	N 12th Place	N 14th Ave		5	4	Mill & Pave		
2020	Memorial Drive	Utopia Circle - East	Utopia Circle - West			5	Mill & Pave		
2020	S 15th Ave	Memorial Drive	Texas Street	6	5	3	Mill & Pave		
2020	Utah Street	100' East of S 15th Ave	S 18th Ave	4	4	3	Mill & Pave		
2020	Jefferson Place	N 18th Ave	190 LF South of Kentucky Place			5	Mill & Pave		
2020	Barrick Road - City Portions	N Ashland Ave	370' East of N Ashland Ave		4	4	Pulverize & Pave	Coord Construction & Bidding with Town of Nasawaupsee	
2020	W Oak Street - City Portions	S Duluth Ave	792' West of S Duluth Ave		3	3	Pulverize & Pave	Coord Construction & Bidding with Town of Nasawaupsee	
							\$1,354,138.00	Total Expenses - All Proposed Projects	
			Total Miles	2.89			\$1,355,000.00	Total Capital Roadway Improvement Available Budgets	



Year	Street Name	Start	End	2015			2017			2019			Improvement Type	Notes
				Paser Rating	Paser Rating	Paser Rating	Paser Rating	Paser Rating	Paser Rating	Paser Rating	Paser Rating	Paser Rating		
2021	S Neenah Ave	300' S of E Maple Street	165' South of E Oak Street							7			Mill & Overlay (1-1/2")	Moved to 2021 Due to ATC Bay Crossing
2021	S Neenah Ave	165' South of E Oak Street	E Redwood Street	6	5					3			Mill & Pav	Moved to 2021 Due to ATC Bay Crossing
2021	S Neenah Ave	E Redwood Street	S Oxford Ave							7			Mill & Overlay (1-1/2")	Moved to 2021 Due to ATC Bay Crossing
2021	S Neenah Ave	S Oxford Ave	Hwy 42/57	6	6					3			Mill & Pav	Moved to 2021 Due to ATC Bay Crossing
2021	S Fulton Ave & W Spruce Place	W Spruce Drive	S Geneva Ave		5					4			Mill & Pav	
2021	N Geneva Ave	W Juniper Street	W Hickory Street	6	5					4			Mill & Pav	
2021	N Geneva Ave	W Hickory Street	Termination	5	4					4			Mill & Pav	
2021	W Ironwood Street	N Hudson Ave	N Fulton Ave	4	4					3			Mill & Pav	
2021	S Baraboo Ave	W Maple Street	W Oak Street		5					4			Mill & Pav	
2021	Alabama Street	N 3rd Ave	N 4th Ave							3			Pulverize & Pav	Add Spillway at N 3rd Ave
2021	Alabama Street	N 4rd Ave	N 5th Ave							3			Pulverize & Pav	
2021	N 4th Ave	Alabama Street	490' South	4	3					3			Pulverize & Pav	
2021	N 6th Ave	Delaware Street	Belmar Street	4	4					3			Mill & Pav	Dig out bad areas at Addresses 1016 / 1002 / 925
2021	Belmar Street	N 5th Ave	N 6th Ave	5	5					5			Mill & Pav	
2021	Alabama Place	Bonnie View Drive	Termination	4	4					3			Mill & Pav	
2021	Huron Street	N 14th Place	N 15th Place							3			Mill & Pav	
2021	N 6th Ave	Michigan Street	Louisiana Street							5			Mill & Pav	
													\$791,564.00	Total Expenses - All Proposed Projects
					1.91								\$785,000.00	Total Capital Roadway Improvement Available Budgets

Year	Street Name	Start	End	2015		2017		2019		Improvement Type	Notes
				Paser Rating	Paser Rating	Paser Rating	Paser Rating	Paser Rating	Paser Rating		
2022	N 18th Ave	Michigan Street	Florida Street	6	5	4				Mill & Pave	
2022	Utah Street	S 12th Ave	S 15th Ave	7	7	4				Storm Sewer Reconstruction	Replace Storm Sewers - New curb on South / 20% curb on North
2022	S Hudson Ave	W Walnut Drive	Termination	5	5	4				Mill & Pave	
2022	W Walnut Drive	S Duluth Ave	S Hudson Ave	6	5	4				Mill & Pave	
2022	Pennsylvania Street	N 3rd Ave	N 5th Ave	6	5	4				Mill & Pave	
2022	Pennsylvania Street	S 5th Ave	S 8th Ave	5	4	4				Mill & Pave	
										\$806,592.00	Total Expenses - All Proposed Projects
				1.33						\$805,000.00	Total Capital Roadway Improvement Available Budgets



2015 2017 2019									
Year	Street Name	Start	End	Paser Rating	Paser Rating	Paser Rating	Improvement Type	Notes	
2023	N 17th Drive & Florida Street	Erie Street	N 16th Place	5	5	4	Mill & Pave		
2023	N 15th Place	Florida Street	Georgia Street	4	4	4	Mill & Pave		
2023	N 15th Court	N 15th Drive	Termination			4	Mill & Pave		
2023	S 14th Ave	Rhode Island Street	Quincy Street + 180' North	6	4	4	Mill & Pave	Verify storm sewer	
2023	Texas Street	S 15th Ave	Termination	6	5	4	Mill & Pave		
2023	Cherry Court	Delaware Street	N 8th Place	4	4	4	Mill & Pave		
2023	N 8th Place	Delaware Street	North to Termination	4	4	4	Mill & Pave		
2023	N 12th Place	Bluebird Street	700' North of Bluebird Street		5	4	Mill & Pave		
2023	Bluebird Street	N 11th Place	N 12th Place	6	5	5	Mill & Pave		
2023	E Walnut Place	E Walnut Drive	S Tomahawk Ave	4	4	4	Mill & Pave		
2023	Circle Ridge Place	S Ridgeway Drive	S Tomahawk Ave			4	Mill & Pave		
2023	W Juniper Street	N Fulton Ave	N Duluth Ave	5	5	4	Mill & Pave		
2023	N Elgin Ave	W Juniper Street	W Hickory Street	6	5	4	Mill & Pave		
							\$824,860.00	Total Expenses - All Proposed Projects	
			Total Miles	1.70			\$825,000.00	Total Capital Roadway Improvement Available Budgets	

2015 2017 2019									
Year	Street Name	Start	End	2015 Paser Rating	2017 Paser Rating	2019 Paser Rating	Improvement Type	Notes	
2024	S Ridgeway Drive	E Walnut Place - 250'	Circle Ridge Place	6	6	4	Mill & Pave		
2024	Shiloh Road	E Yew Street	450' South	6	6	4	Mill & Pave		
2024	Shiloh Road	E Yew Street -450'	E Deck Street	6	6	4	Mill & Pave		
2024	E Yew Street	S Lansing Ave	S Neenah Ave	6	5	4	Mill & Pave		
2024	E Yew Street	S Neenah Ave	Shiloh Road	6	5	4	Mill & Pave		
2024	S Ridgeway Ave	E Compass Street	South Termination		5	5	Mill & Pave		
2024	E Compass Street	S Ridgeway Ave	S Ridgeway Drive	5	5	5	Mill & Pave		
2024	N 11th Place	Bluebird Place	Eagle Street	6	5	5	Mill & Pave		
2024	Florida Street	N 18th Ave	N 19th Drive	5	5	5	Mill & Pave		
2024	Rhode Island Street	S 15th Ave	375' West of S 16th Place			5	Mill & Pave		
							\$842,324.00	Total Expenses - All Proposed Projects	
			Total Miles	1.69			\$845,000.00	Total Capital Roadway Improvement Available Budgets	



Year	Street Name	Start	End	2015			2017			2019			Improvement Type	Notes
				Paser Rating	Paser Rating	Paser Rating	Paser Rating	Paser Rating	Paser Rating	Paser Rating	Paser Rating	Paser Rating		
	Bluebird Place	N 11th Place	N 12th Place	6	5	5	5	5	5	5	5	5	Mill & Pave	
	S 16th Place	Rhode Island Street	Utah Street	5	5	5	5	5	5	5	5	5	Mill & Pave	Check Storm
	N 6th Place	Florida Street	Erie Street	3	3	3	3	3	3	3	3	3	Mill & Pave	Special Assessment Needed - new curb and gutter on both sides
	W Maple Street & N Ashland Ave	N Bayfield Ave	S Baraboo Ave	6	5	5	5	5	5	5	5	5	Mill & Pave	
	Cove Road	Zenith Street	Termination	6	5	5	5	5	5	5	5	5	Pulverize & Pave	Check Storm
	Zenith Street	Cove Road	Termination	5	5	5	5	5	5	5	5	5	Pulverize & Pave	Check Storm
	S 16th Place	Michigan Street	Rhode Island Street									5	Mill & Pave	
	S 18th Ave	Michigan Street	Rhode Island Street									5	Mill & Pave	
	Alabama Street	N 15th Place	N 18th Ave									5	Pulverize & Pave	
	N 6th Ave	Jefferson Street	Kentucky Street									5	Mill & Pave	
	N Duluth Ave	W Elm Street	280 LF North of W Elm Street									5	Mill & Pave	
	N Duluth Ave	280 LF North of W Elm Street	315 LF North of W Duluth Place									5	Pulverize & Pave	
	Memorial Drive	S 3rd Ave	S 8th Ave									5	Mill & Pave	
	S 8th Ave	Michigan Street	Rhode Island Street									5	Mill & Pave	
	S 8th Ave	Rhode Island Street	Memorial Drive									5	Mill & Pave	
	N 9th Ave	Michigan Street	Louisiana Street									5	Mill & Pave	
	N 9th Ave	Louisiana Street	Big Hill Park									5	Mill & Pave	
	S 9th Ave	Michigan Street	Pennsylvania Street									5	Mill & Pave	
	S 9th Ave	Pennsylvania Street	Texas Street									5	Mill & Pave	
	S 9th Ave	Texas Street	Memorial Drive									5	Mill & Pave	
	S 15th Ave	Michigan Street	Rhode Island Street									5	Mill & Pave	

2015 2017 2019									
Year	Street Name	Start	End	Paser Rating	Paser Rating	Paser Rating	Improvement		Notes
							Type	Type	
	S 15th Ave	Rhode Island Street	Texas Street			5	Mill & Pave		Add sidewalks on west side of the roadway
	Memorial Drive	S 8th Ave	S 12th Ave			5	Mill & Pave		
	Memorial Drive	S 12th Ave	Utopia Circle - West			5	Mill & Pave		Complete sidewalks on north side of the roadway
	Michigan Street	18th Ave	N 15th Drive			5	Mill & Pave		
	Michigan Street	N 15th Drive	12th Ave			5	Mill & Pave		
	Michigan Street	12th Ave	8th Ave			5	Mill & Pave		
	Michigan Street	8th Ave	N 4th Ave			5	Mill & Pave		
	S Neenah Ave	E Walnut Street	E Yew Street			5	Mill & Pave		
			Total Miles	5.92			\$2,943,660.00		Total Expenses - All Proposed Projects



## 2020 Asphalt Replacement Analysis

Total Miles of Roadways (not including alleys):

Unimproved:	0.12
Gravel:	3.13
Concrete:	3.71
Asphalt:	67.16
Total:	74.12

Amount of Asphalt Roadways Repaved or Scheduled for Repaving:

Year	LF	Miles	Cost	Cost Per LF	Replacement Schedule
2013	5020	0.95			70.64
2014	4230	0.80			83.83
2015	5475	1.04			64.77
2016	9889	1.87	\$886,634	\$89.66	35.86
2017	6650	1.26	\$540,394	\$81.26	53.32
2018	7679	1.45	\$684,323	\$89.12	46.18
2019	6252	1.18	\$747,177	\$119.51	56.72
2020	15274	2.89	\$1,354,138	\$88.66	23.22
2021	10097	1.91	\$791,564	\$78.40	35.12
2022	7020	1.33	\$806,592	\$114.90	50.51
2023	8955	1.70	\$824,860	\$92.11	39.60
2024	8898	1.69	\$842,324	\$94.66	39.85

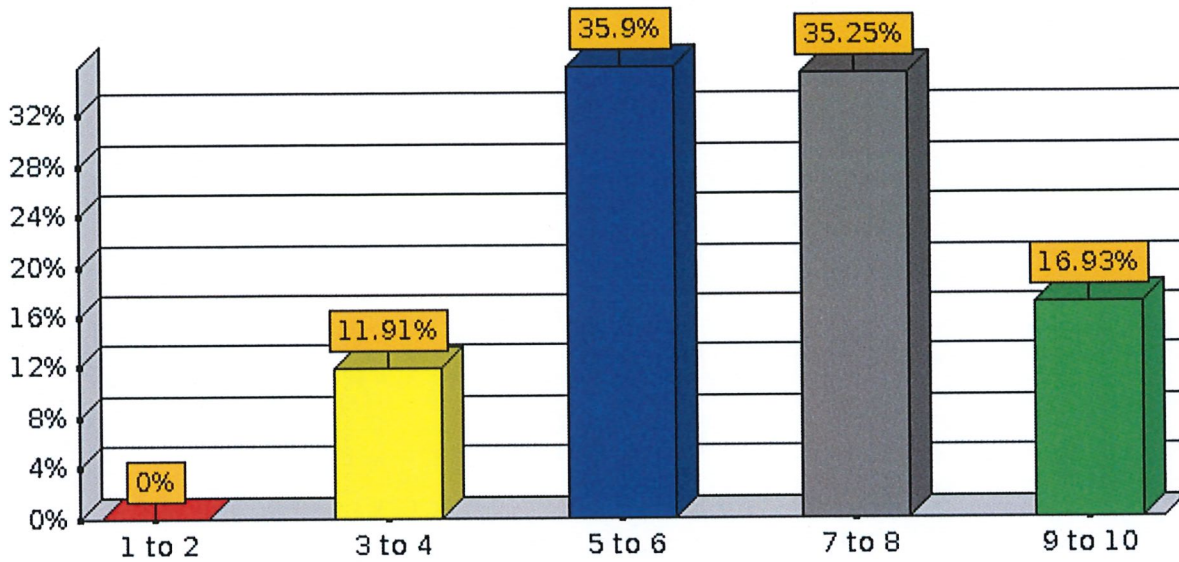
Desired Repl. Schedule	Miles of Pavement Replacement	Req. Budget (If All Projects Mill & Pave)
20	3.36	1,577,991
25	2.69	1,262,393
30	2.24	1,051,994
35	1.92	901,709
40	1.68	788,996

Mill & Pave Ave Cost Per LF:   \$89.00

**2019 - 2021**

**Condition Frequency Report - Paved  
City of Sturgeon Bay**

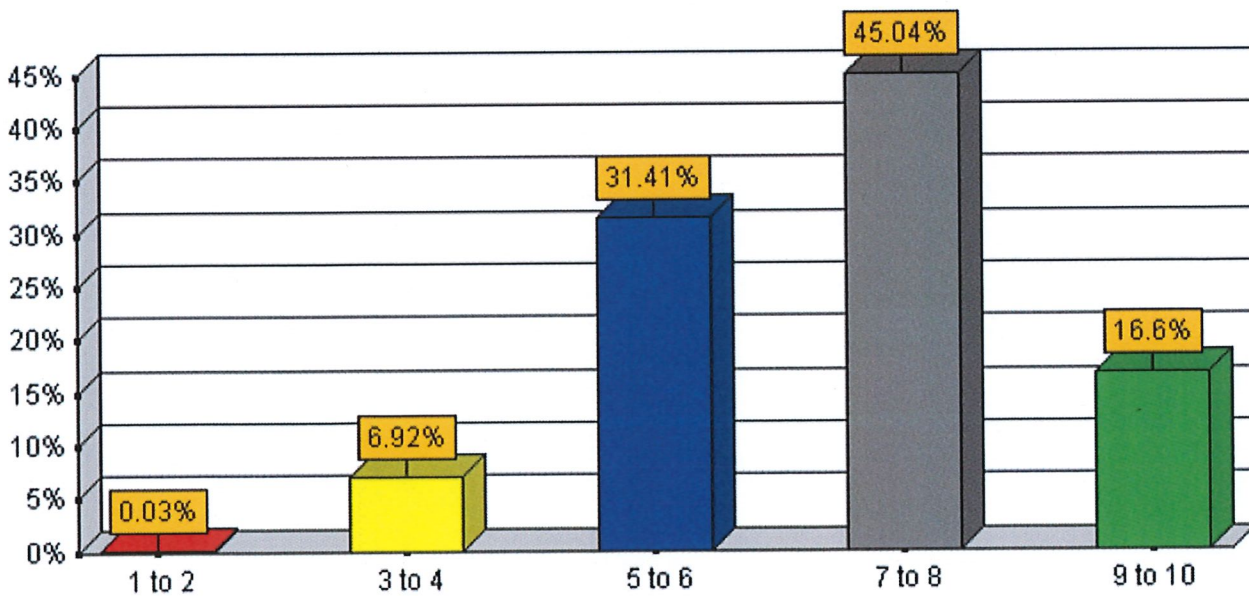
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**2017 - 2019**

**Condition Frequency Report - Paved  
City of Sturgeon Bay**

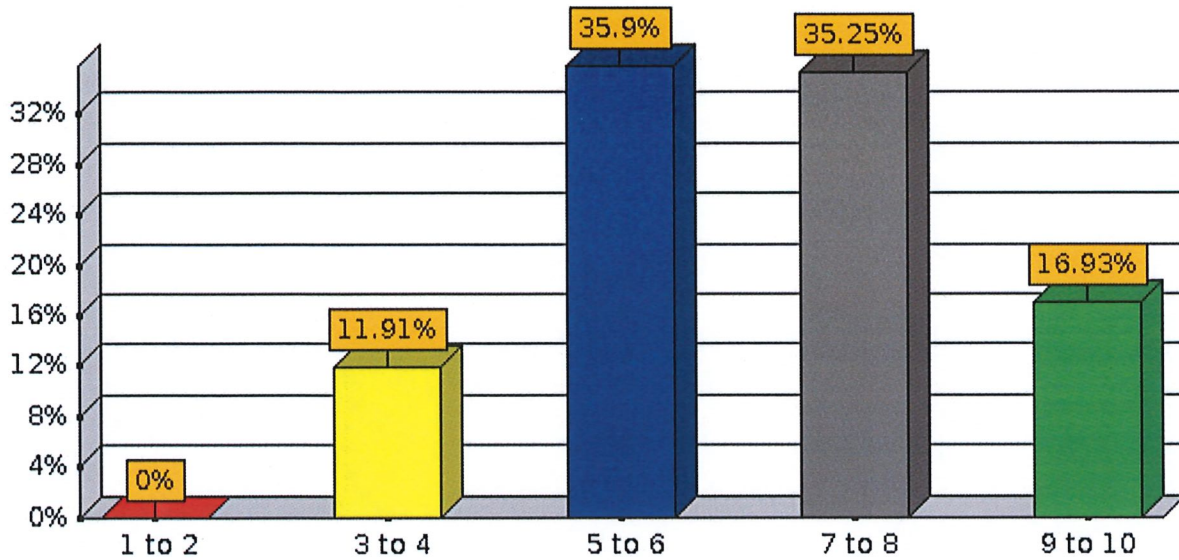
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**2019 - 2021**

**Condition Frequency Report - Paved  
City of Sturgeon Bay**

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**2015 - 2017**

**Condition Frequency Report - Paved  
City of Sturgeon Bay**

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