

*City of*



# 2018 Road Report

*January 29, 2019*

## **Introduction**

The City of Marshall maintains a road system that contains 40.14 miles of roadway. Major streets are defined as collector streets that funnel traffic from residential areas to arterial streets. Major streets consist of 16.07 miles of streets within Marshall. The Local streets, 24.07 miles, accounts for the remaining mileage and provides access to residential properties. In 2018, at the request of the city, several local streets were upgraded from Local to Major Streets due to the industrial/commercial nature of these streets. See Figure 1 for a mapped representation of the city's streets and their designations.

In 2002, Public Act 499 was enacted and formed the Transportation Asset Management Council (TAMC). This Council was created to 1) advise the Elected Officials, 2) promote asset management principles and 3) provide tools and practices for all road agencies. TAMC works to train all road agencies to rate and manage road assets in a similar manner. TAMC also gathers data from all statewide agencies to track and report, to the State Legislature, the health of the road systems at all levels; City, County and State. This information is used to continue communications at all levels regarding the condition of the State's road and bridge assets.

## **Methodology and Analysis**

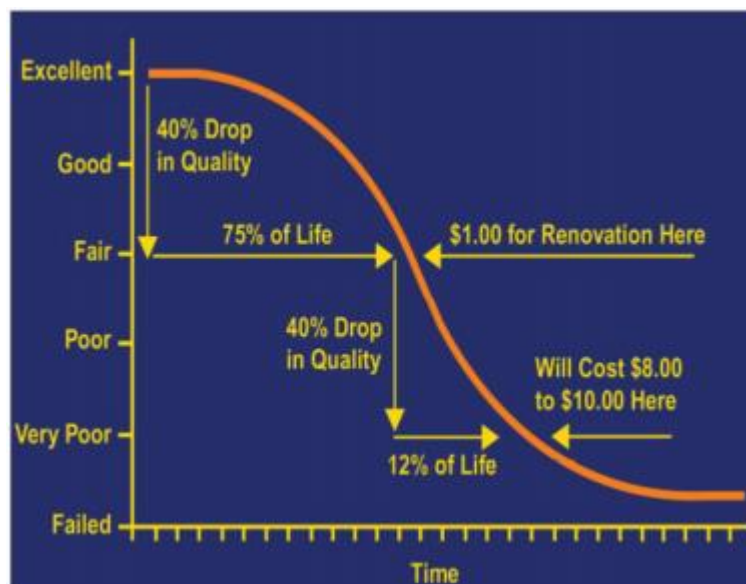
The City of Marshall's road system has been rated utilizing the Pavement Surface Evaluation and Rating system (PASER) since 2005. All City of Marshall streets are rated using the PASER rating system at least biennially. Michigan's Local Technical Assistance Program (LTAP) has developed an integrated roadway management system called RoadSoft. This program is free to road agencies to assist in the management of all facets of the roadway system.

Figures 2 through 5 were developed utilizing the RoadSoft system and show graphically the 2018 road ratings and the associated mileages of each. In 2018, due to staffing issues, road ratings did not occur. The ratings shown on these drawings are based on typical deterioration curves and the software's estimates of the roads health based on these typical curves. Figure 2 shows the ratings for the entire system broken down between the Good (10-8), Fair (7-5) and Poor (4-1) designations. These designations are uniform statewide and are based primarily on the types of maintenance/construction techniques required to repair the streets within that rating group. Figures 3 through 5, show the ratings for all streets within their relative Good, Fair, or Poor groupings.

Fair (7 to 5) rated are streets that typically receive maintenance techniques to extend the overall life of the street. As with home maintenance, spending funds wisely at the correct time, while the road is in relatively healthy shape, will give the most benefit for minimal expense. By utilizing maintenance techniques a street's life can be extended for many additional years. Fixes typically seen on Fair rated streets are crack filling, micro-surfacing, slurry sealing, milling/resurfacing, etc. Streets rated in the Poor (4 to 1) grouping generally require a structural fix such as full depth milling/resurfacing or reconstruction and these fixes are much more costly.

The RoadSoft program, with the input of maintenance and construction efforts by the city, can predict the Remaining Service Life (RSL) of the street system. The remaining service life is defined as the point where a street transitions from a 5 rating, fair condition, to a 4 or poor condition. This is also the point at which the required fix most likely becomes a structural fix and thus more expensive.

The RoadSoft program and the uniformity with which roadways are rated across the state are useful for tracking the overall health of a street network. These systems are also helpful to develop a correlation as to the dollars spent for maintenance/construction and the improvement or decline of the street asset. Refer to the following illustration for a graphic depiction of the typical decline of a street and the costs relative to the type and timing of the maintenance on the street.



Ratings over Time, showing cost of fixes

### **The Health of the Marshall System**

The City of Marshall has been fortunate to have been very active with PASER rating and the RoadSoft program since 2005 as such the city has significant data regarding its streets and the overall health. This is both good and bad; good because the data is readily available as to the history of work on the streets and bad in that the decline in the condition of the street system over the last 13 years can easily be seen.

The attached figures 6 through 8 show the trend data from 2017 to 2018 for the Overall System, as well as the individual Major and Local Systems. This data shows the continued downward trends of the street system. Included with the trend data is a pie chart showing the centerline mileages of the streets within each specific category; good, fair or poor and how the current year relates to the previous year.

### **Statewide Street Funding**

Public Act (PA) 51, 1951 as Amended, commonly called the “Gas Tax”, establishes funding for roadways within Michigan. After appropriations are made from the Gas Tax for statewide transportation needs, funds are distributed to Cities and Villages based on the city’s population and the state approved Major/Local Street mileages. Statewide cities and villages receive approximately 22% of the available transportation funding, of that, 75% of the funds are allocated for the Major Street System and 25% for the Local System. For Marshall, MDOT’s FY 19 (10/18 to 9/19) allocation is expected to be \$591,872 for Major Streets (16.07 miles) and \$203,637 for Local Streets (24.07 miles). Since 2017 the state has increased road funding providing an additional \$75,000 per year in funding for the Major Street system with additional revenues in upcoming years expected to be approximately \$50,000 per year. The Local Street system has received increased revenue of approximately \$20,000 per year with expectations for similar increases in upcoming years.

Gas Tax funds given to cities are required to cover all costs for street right-of-way maintenance; including snow plowing, traffic signage, pavement markings, traffic signal power/maintenance, ADA sidewalk ramps upgrades, bridge maintenance, etc. PA 51 also requires that 10% of these funds be spent on the non-motorized system such as sidewalks over a 10 year period. This monetary requirement is easily met by Marshall with the sidewalk ADA ramp upgrades required during street construction projects. This requirement stems from the Federal Department of Justice (DOJ) providing the following direction as to when a street project is required to provide necessary ADA ramp upgrades. These federally mandated upgrades can cost a street project approximately \$25,000 per intersection:

*“An alteration is a change to a facility in the public right-of-way that affects or could affect access, circulation, or use. Projects altering the use of the public right-of-way must incorporate pedestrian access improvements within the scope of the project to meet the requirements of the ADA and Section 504. These projects have the potential to affect the structure, grade, or use of the roadway. Alterations include items such as reconstruction, rehabilitation, widening, resurfacing ([see USDOJ-FHWA technical assistance dated 6-28-13 for additional clarification](#)), signal installation and upgrades, and projects of similar scale and effect (6-28-2013).”*

### **Marshall’s Asset Management Plan**

A five year budget and construction plan has been developed for the City of Marshall street system as part of the Capital Improvement Plan (CIP) process. Below is shown the FY 19-20 anticipated budget. After the estimated operating expenses and transfers are deducted from the allotted revenue the remaining funds are available for construction and maintenance efforts. The estimated available amount is underlined in the last row:

	2019-20 Major Street	2019-20 Local Street
Expected Revenues	\$639,535	\$220,035
Grant Funds		
Transfer to Local Street	(\$75,000)	\$75,000
<b>TOTAL REVENUE:</b>	<b>\$564,535</b>	<b>\$295,035</b>
Yearly Operating (No Capitol or Transfers)	\$308,578	\$186,125
<b>Available Construction Funds:</b>	<b><u>\$255,957</u></b>	<b><u>\$108,910</u></b>

MDOT allows cities that have submitted an Asset Management plan to TAMC a transfer of funds from the Major Street to the Local Street fund per the following rules:

*“MCL 247.663(6) and 247.663(7) of PA 51, of 1951, as amended, also known as sections 13(6) and 13(7) states: “(6) Money returned under this section to a city or village shall be expended on the major and local street systems of that city or village. However, the first priority shall be the major street system. Money returned for expenditure on the major street system shall be expended in the priority order provided in subsection (3) except that surplus funds may be transferred for preservation of the local street system. Major Street funds transferred for use on the local street system shall not be used for construction but may be used for preservation as defined in section 10(c).”*

The developed 5 year budget, dependent on the needs of the Major Street system, provides for a transfer of funds to the Local Street fund which range from \$75,000 to \$175,000 in any given year.

The unaudited fund balances for both the Major and Local Streets funds contain healthy balances, however between now and through the construction of the Monroe Street bridge project these balances may be reduced significantly. Act 51 funds cannot be transferred away from the street system funds and/or used for anything other than the items defined in PA 51. Discussions with the City Manager and Finance Director have yielded a long term street plan that in purposely intended to drawdown the street fund balances. Per city policy minimum fund balances will be maintained at a level of 1.5 times the owed debt or \$250,000 plus a reserve for emergencies of \$200,000 within these street funds.

**FY18 & FY19 Street & Bridge Construction**

During the period for FY18, July 1, 2017 through June 30, 2018, the following projects were completed with the final contract amounts shown:

MAJOR/ LOCAL	PROJECT	DATE COMPLETE	TOTAL COST	FUNDING
MAJOR	Marshall Ave. Bridge Replacement	Carried over to FY19	\$1,594,000	State Bridge Fund - \$1,514,300 Major MVH Fund - \$ 72,000 Water Fund - \$ 8,800
LOCAL	Green Street Kalamazoo Ave. to Dobbins St.	9/14/2017	\$211,854	Local MVH Fund - \$211,854
LOCAL	Montgomery Street Maple St. to Cedar St.	9/14/2017	\$73,571	Local MVH Fund - \$73,571
<b>GRAND TOTAL:</b>			<b>\$1,879,425</b>	<b>MAJOR STREETS = \$72,000 LOCAL STREETS = \$285,425 GRANT FUNDS = \$1,514,300</b>

Work planned for the current fiscal year, FY19, includes the following projects:

MAJOR/ LOCAL	PROJECT	PROPOSED DATE	EST. TOTAL COST	FUNDING
MAJOR	N. Kalamazoo Ave. /Brewer St. Mansion St. to North Dr.	5/31/19	\$252,871	State TEDF Fund - \$202,297 Major MVH Fund - \$ 50,575
MAJOR	Monroe Street Bridge Reconstruction	8/31/19	\$1,016,745	State Bridge Fund - \$965,907 Major MVH Fund - \$ 50,900
LOCAL	Hill Road S. Wooded Lane to cul-de-sac	6/30/19	\$81,514	Local MVH Fund - \$81,514
LOCAL	Wooded Lane East Dr. to Hill Rd. (@cul-de-sac)	6/30/19	\$216,979	Local MVH Fund - \$216,979
LOCAL	Hill Road Court Full Extent	6/30/19	\$35,000	Local MVH Fund - \$35,000
<b>GRAND TOTAL:</b>			<b>\$1,603,109</b>	<b>MAJOR STREETS = \$101,475 LOCAL STREETS = \$333,493 GRANT FUNDS = \$1,168,204</b>

It should be noted that the while we continue to complete projects as funds allow the overall system remains on the decline. This is discouraging, however it is representative of the amount of funds that are needed yearly to reverse the steady decline of the streets.

### **Street System Needs**

As the cost of construction and operations have increased and local street funding has remained relatively static the ability to adequately fund projects has reduced, thus the overall system is on the decline. To stop this downward trend additional Local Street funding would be warranted. If additional Local Street funds were secured transfers from the Major to Local system could be reduced and thus the Overall City System would benefit.

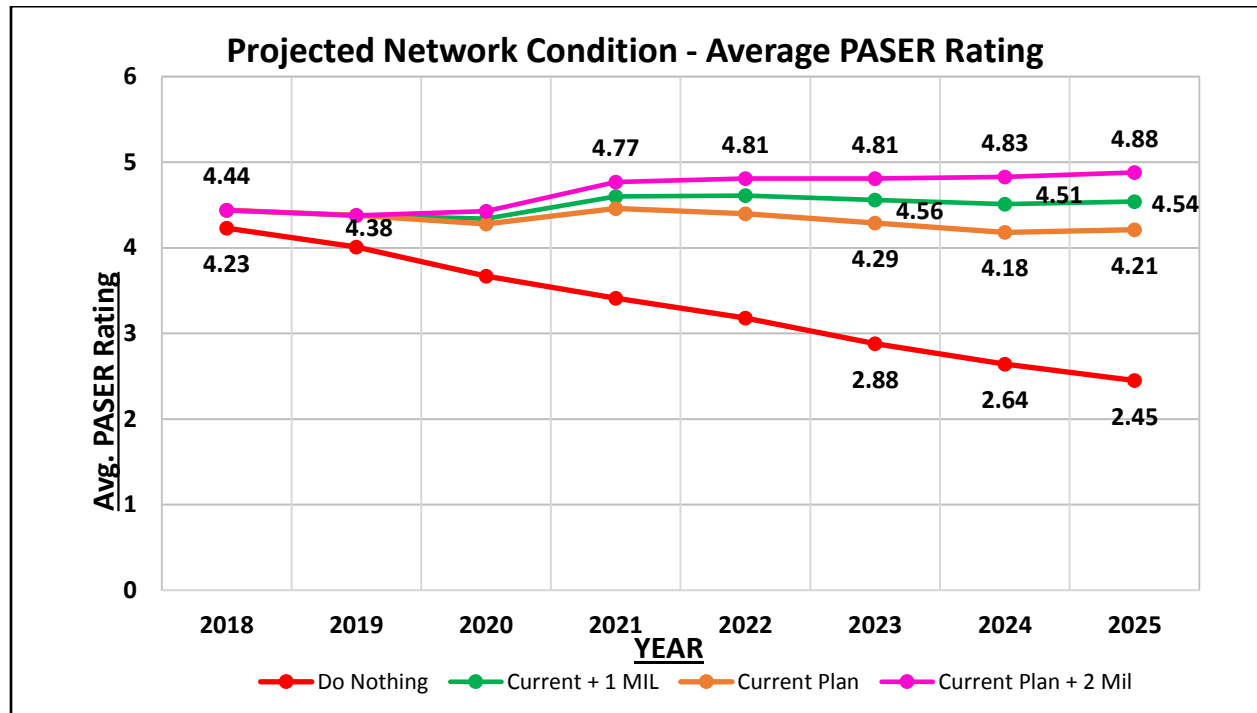
Much of the Major Street system is eligible for grant funding where the local system is ineligible for these funds. Additionally the funding allocations distributed from the state between the Major and Local Street systems also contributes to an funding imbalance between the two systems as the Major Street system receives higher funding from the State. Recently the city has been successful in securing grant funding however statewide the need for funds is great and grant requests are always very competitive.

Marshall is a member of the Marshall Small Urban area which provides \$375,000 of grant funding in odd years shared between the City and the Calhoun County Road Department (CCRD). These federal Surface Transportation Program (STP) funds are limited for use by agencies within designated urbanized boundaries defined by the U.S. Census with a population of \$5,000 to \$50,000. In 2017, the city utilized the \$375,000 in Small Urban funds plus city matching funds to reconstruct North Dr. and pave Monroe Street. The county will be using the 2019 funds and the city has submitted a project application for utilization of the 2021 Funds. The city was also successful in securing Transportation Economic Development Funds (TEDF) for the paving of N. Kalamazoo/Brewer Street which will be completed in spring of 2019. Both of these grant sources can only be utilized for Federal Aid Eligible roads within the Major Street System and almost all grants require a match of 20% or more of city funds.

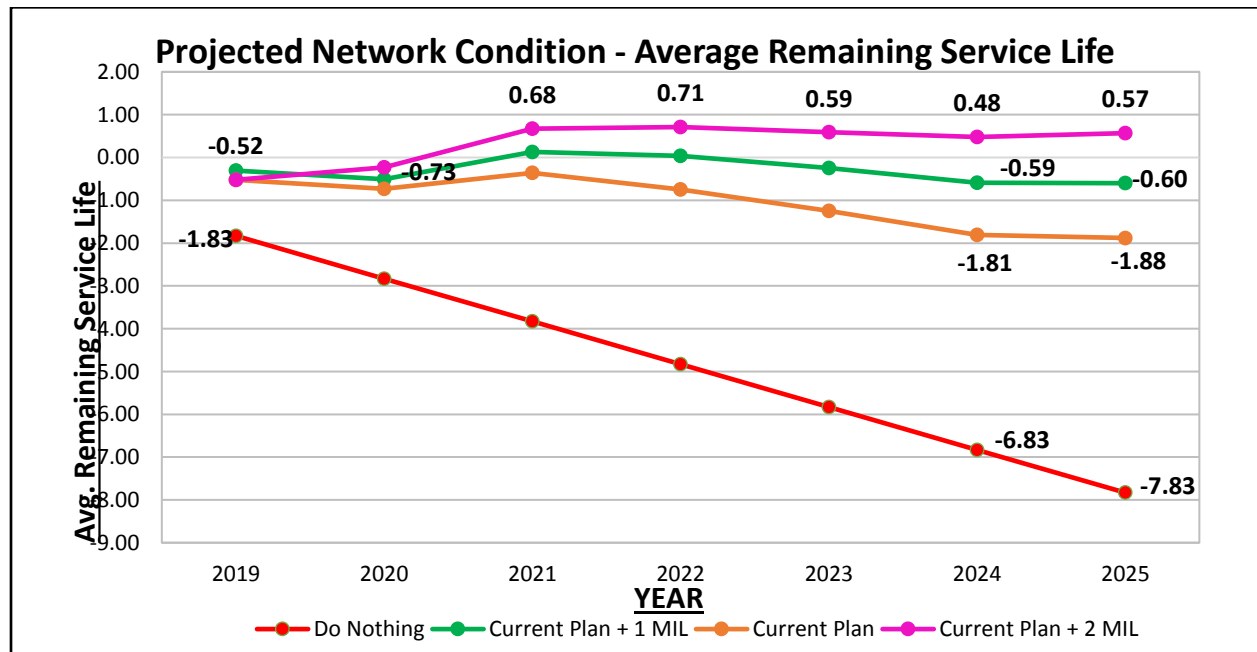
Without an influx of additional funding the overall street system will continue to decline. The two graphs on the next page show the Average PASER Rating and the Remaining Service Life (RSL) of the Overall Street System. Recall that the RSL number is the point at which a road transitions from a 5 rating to a 4 rating or when the pavement starts to provide a Substandard Service Quality. This RSL number is significant as it is the time when most road fixes required for the street will be structural in nature and thus more costly to repair. It is a common practice to spend as much as reasonably possible on maintenance, as these are cost effective, and keep the road system in the Fair category.

Currently Marshall's overall system averages can be seen on these graphs. The system is hovering right around an average rating slightly higher than a 4, this is concerning as a large portion of the streets are about to transition to a rating or RSL that forces consideration for more expensive fixes. While this RSL is a standard to be considered it should be noted that we do evaluate the proper maintenance levels needed for each specific street based on field conditions. The rating

and RSL data is testament to the need for additional funding should there be a desire to reverse this downward trend.



#### Changes in Average PASER Ratings due to Funding Levels



#### Average Remaining Service Life Remaining at Different Funding Levels



### **Funding Options**

The addition of a sustainable funding source for the Local Street system, with responsible management of funds, could improve the quality of the overall street system. There are several options available for additional funding; these include:

- 1) A voted millage earmarked for Local Street system construction and maintenance.
- 2) The establishment of a policy for Special Assessment Districts for street construction.
- 3) A fixed yearly single lot assessment earmarked for Local Street system construction and maintenance.
- 4) Combination of a millage and the special assessment process.

Below are some Pros/Cons related to these options:

#### **Pros/Cons:**

##### 1) Voted Millage:

#### Pros

- This is based on taxable valuable so this option provides uniformity based on assessed home value.
- The assessment benefits the entire city as such all businesses, residents, and visitors see the benefit even if the improvement is not necessarily on their street.
- An additional \$200,000 in funds for increased mileage of work.
- Businesses are contributing to the preservation of the City's road asset as their usage, i.e.; trucking, etc., is the most damaging to streets.

#### Cons

- Additional \$50 per 100,000 assessed taxable value per year to all residence and business owners within the City Limits
- Businesses and residents are all assessed and may not see work over the period of the millage.
- Businesses pay a greater assessment and generally don't use residential streets
- City & County Buildings, Hospitals, etc. are tax exempt and thus do not contribute to these funds.

2) Special Assessment Districts:

Pros

- Only residents impacted by the construction project are assessed.
- Project is wholly funded by the benefitting properties and the remaining Act 51 funds are available for operational expenses.

Cons

- Disproportionate as it is based on road frontage along the construction project.
- Businesses generally have very long frontages and would have the largest of assessments.
- Being that assessments have never been done in the city there may be some political heat upon starting this process.
- Residents may have difficulty paying the whole bill due to incomes. Cities have funded these assessments with interest and can run the debt over a period of time. This increases city work but is beneficial to the residents.

3) Fixed Yearly Property Assessment:

Pros

- Flat yearly fee for everyone irrespective of property size and value.

Cons

- Industrial properties pay the same assessment as everyone as such some may harbor hard feelings regarding their excessive street usage, i.e.; trucking, etc. but assessed at the same level as a residential property.

4) Combination millage/special assessment:

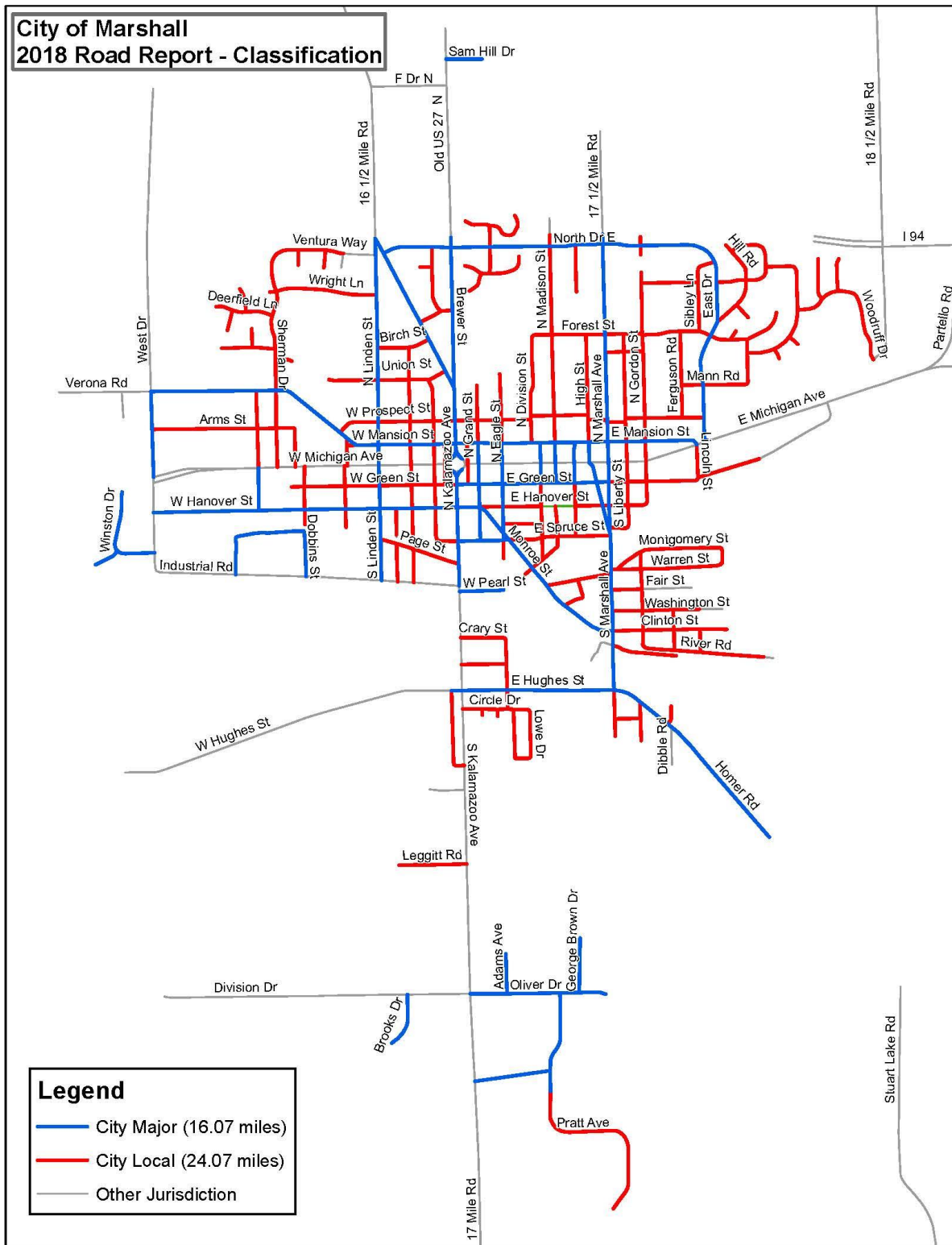
Special assess only road reconstruction projects with the assessment to property owners covering the concrete portion of the project, drive approaches and curb and gutter. The remainder of the project is paid by the Act 51 funds.

Pros

- Assessments are only established for complete road reconstruction projects, which are generally the smallest percentage of projects.
- The project concrete is covered by the properties that benefit from the newly constructed road; however the entire city millage covers the remainder of the project costs.

Cons

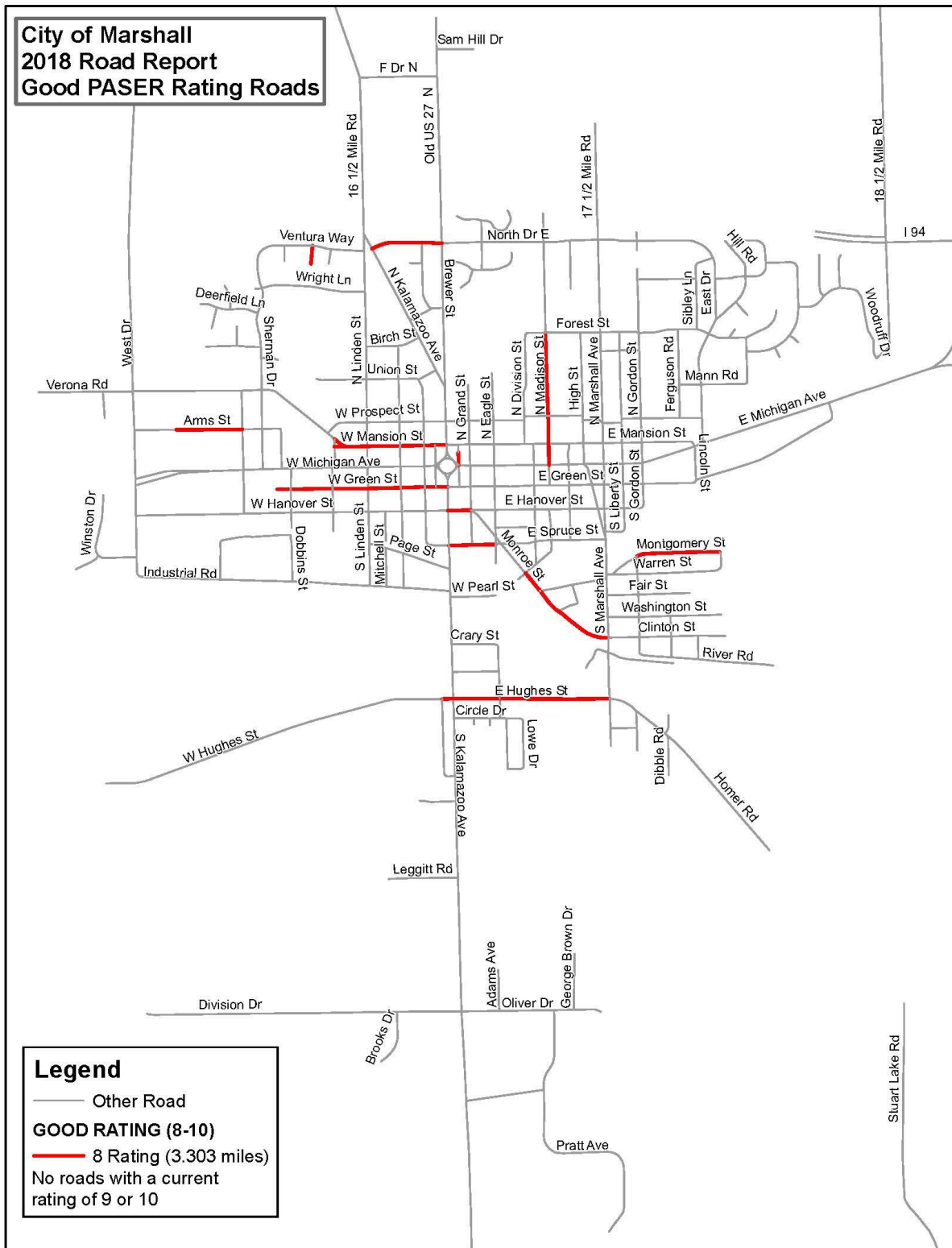
- Assessments vary by property frontage and drive approach size, a 50' frontage with a double width driveway approach would be approximately \$2,500.
- Being that assessments have never been done in the city there may be some political heat upon starting this process.



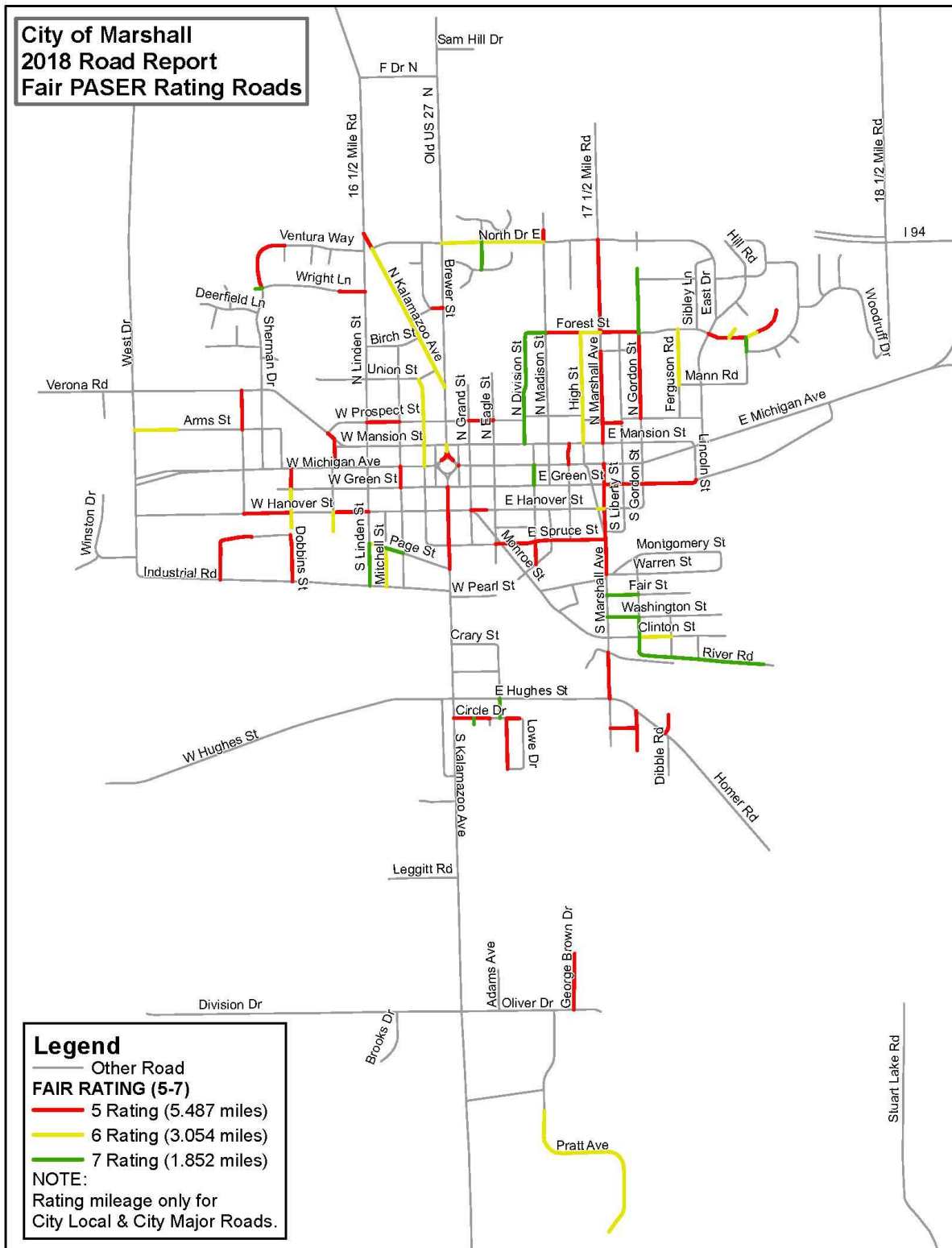
**Figure 1 – Street Major/Local Designations**



**Figure 2 – Entire System 2018 PASER Ratings**



**Figure 3 – 2018 “Good” Rated Roads**



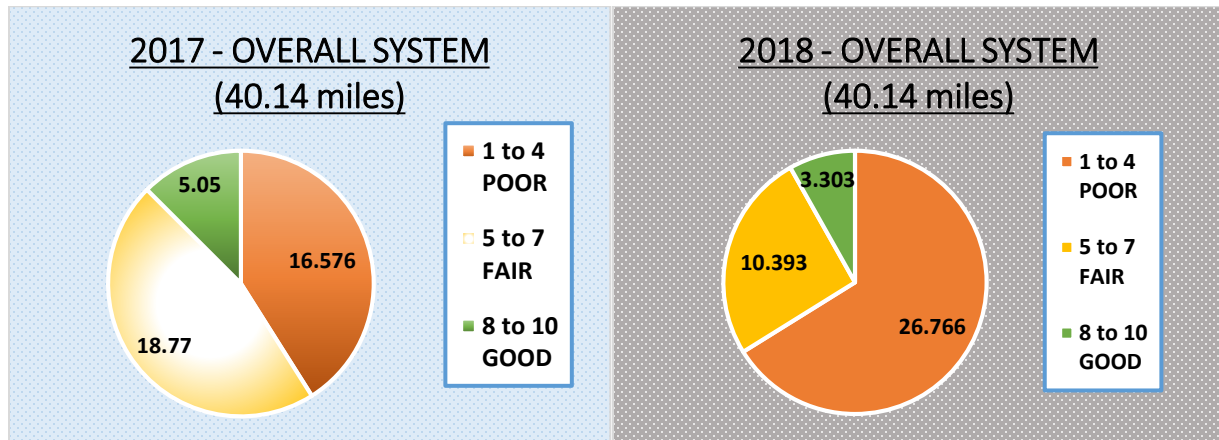
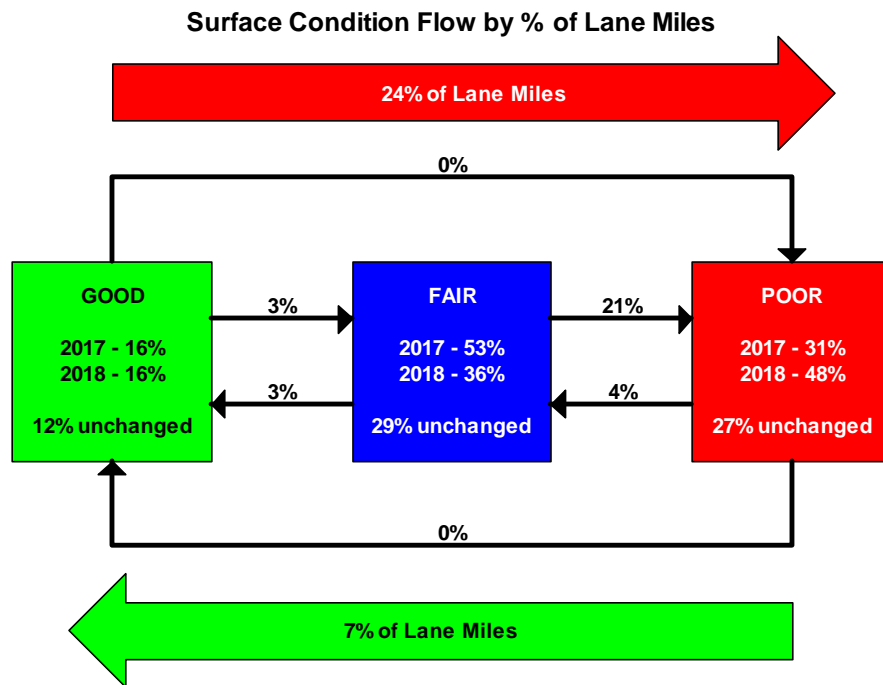
**Figure 4 – 2018 “Fair” Rated Roads**



### **Figure 5 – 2018 “Poor” Rated Roads**



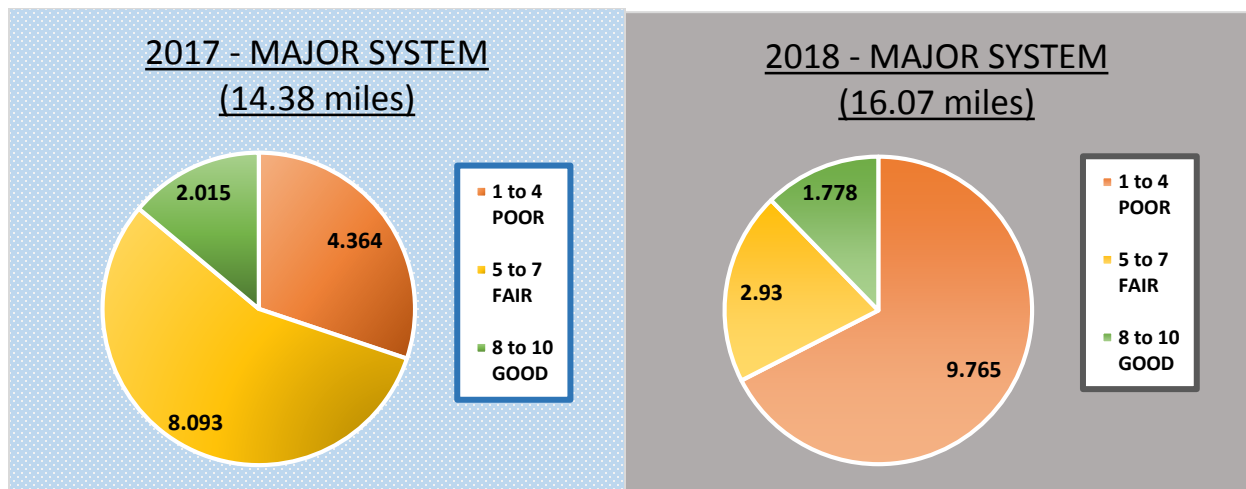
**ENTIRE SYSTEM: GOOD-FAIR-POOR TREND  
2017 TO 2018**



**Figure 6 – City of Marshall – Overall Street Trend**

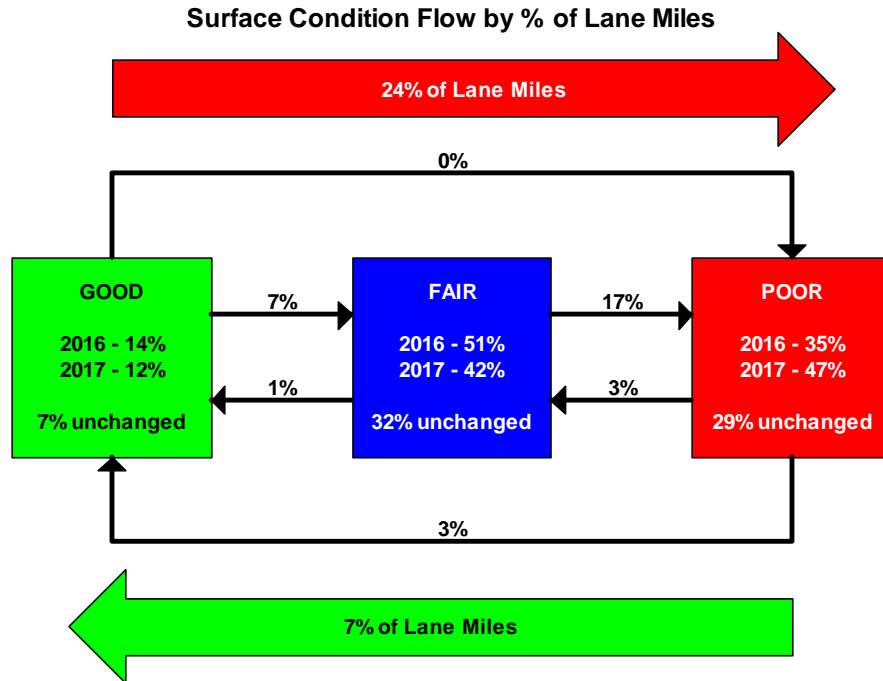
**MAJOR STREETS: GOOD-FAIR-POOR TREND  
2017 TO 2018**

Surface Condition Flow by % of Lane Miles

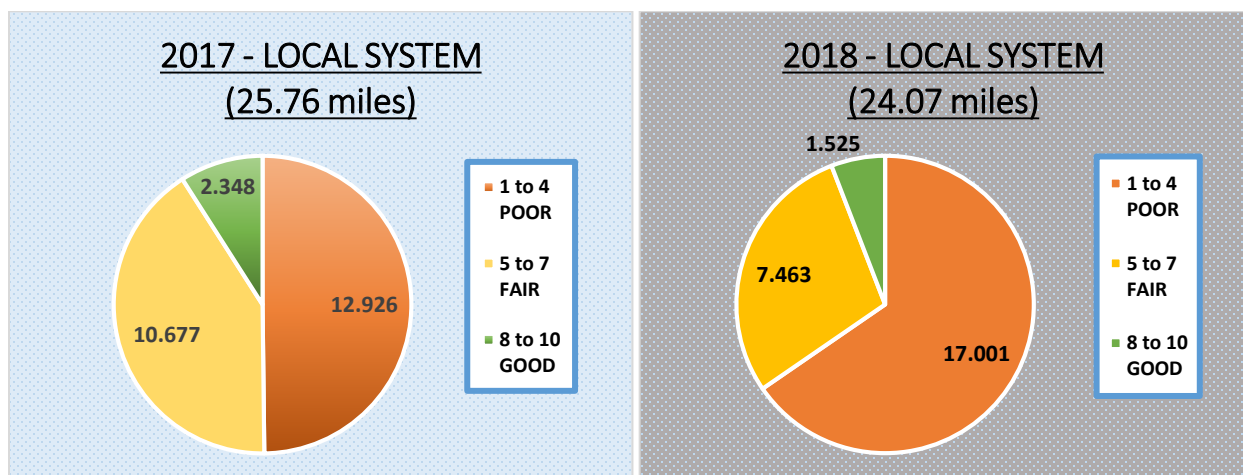


**Figure 7 – City of Marshall – Major Street Trend**

**LOCAL STREETS: GOOD-FAIR-POOR TREND  
2016 TO 2017\***



\*Data is from 2016 to 2017 since Local Roads were not rated in 2018



**Figure 8 – City of Marshall – Local Street Trend**