

City of



Marshall

2017 Road Report

December 4, 2017

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 14.38 miles of streets within Marshall. The Local streets, 25.76 miles, accounts for the remaining mileage and provide access to residential properties. See Figure 1 for a mapped representation of the 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 the health of the road systems at all levels; City, County and State. This information is used to continue communications with 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 the City of Marshall streets are rated using the PASER rating system at least bi-annually. Michigan's Local Technical Assistance Program (LTAP) has developed the RoadSoft integrated roadway management system. This program is free to road agencies to assist in the management of all facets of the roadway system.

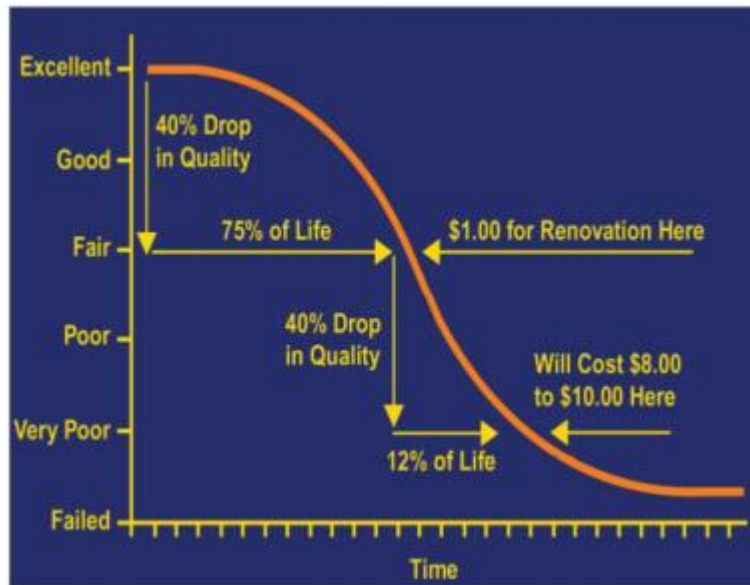
Figures 2 through 5 were developed utilizing the RoadSoft system and show graphically the 2017 road ratings and the associated mileages of each. Figure 2 shows the ratings for the entire system broken down between Good (10-8), Fair (7-5) and Poor (4-1). These groupings are uniform statewide and are based primarily 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. These fixes are much more costly.

The RoadSoft program can track the street system and with the input of maintenance and construction efforts it can predict the Remaining Service Life (RSL) of the street system. The remaining service life is considered the point at which a street transitions from a 5 rating, fair

condition, to a 4, 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 developing 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 as to 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 and as such the city has significant data regarding its streets. This is both good and bad. Good because the data is readily available as to the history of work on the streets. Bad is that the decline in the condition of the street system over the last 12 years can easily be seen.

Figures 6 through 8 shows the trend data from 2016 to 2017 for the Overall System, as well as the Major and Local Systems. This data shows the continued downward trend of the street system.

Many of the differences seen between the trends of the Major and Local Street system are due to the available funding sources. 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 between the Major and Local Street systems; this is discussed in the next section.

Street Funding

Public Act (PA) 51, 1951 as Amended, commonly called the “Gas Tax”, established 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 their populations and their Major/Local Street mileages. 75% of these funds are allocated for the Major Street System and 25% for Local System. For Marshall, MDOT’s FY 18 (10/17 to 9/18) allocation is expected to be \$520,755 for Major Streets (14.38 miles) and \$193,081 for Local Streets (25.76 miles). Additional revenue from the 2015 gas tax increase has provided small boosts in our funds. In 2016 our revenues increased for Major and Local Streets by \$106,219 and \$39,421, respectively. In year 2 these revenues dropped providing additional Major and Local Revenues of \$36,031 and \$13,358, respectively.

Gas Tax funds are required to cover costs for all street right-of-way maintenance; this includes snow plowing, traffic signage, pavement markings, traffic signal power/maintenance, ADA sidewalk ramps upgrades, bridge maintenance, etc. P.A. 51 also requires that 10% of these funds be spent on the non-motorized system such as sidewalks over a 10 year period. This requirement is easily met with the sidewalk ADA ramp upgrades required during street construction projects. The Federal Department of Justice (DOJ) has provided the following direction as to when a street project requires an ADA ramp upgrade, these upgrades cost a project approximately \$10,000 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).”

A five year budget and construction plan has been developed for the City of Marshall street system. Below the FY 18-19 anticipated budget is shown, after the estimated operating expenses and transfers are deducted from the estimated revenue the remaining amount is available for construction and maintenance efforts, this amount is underlined in the last row:

	2018-19 Major Street	2018-19 Local Street
Expected Revenues Grant Funds	\$561,166	\$208,065
Transfer to Local Street	(\$175,000)	\$175,000
TOTAL REVENUE:	\$386,166	\$383,065
Yearly Operating (No Capitol or Transfers)	\$273,000	\$150,000
Available Construction Funds:	<u>\$113,166</u>	<u>\$233,065</u>

MDOT allows cities that have submitted an Asset Management plan to TAMC to transfer funds from the Major Street fund 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, plans for the transfer of funds to the Local Street fund. These transfers will range from \$75,000 to \$175,000 in any given year.

The unaudited fund balances for both the Major and Local Streets funds contain a healthy balance, however between now and 2019’s bridge project these balances will be reduced significantly. Act 51 funds cannot be transferred and/or used for anything other than the items defined in P.A. 51, discussions with the Finance Director yielded a decision that a planned drawdown of these balances would occur. Per city policy a minimum balance will be maintained at a level of 1.5 times the owed debt and a reserve, for emergencies, of an additional \$250,000 and \$200,000 for the Major and Local street funds, respectively will also be maintained.

FY17 Street Construction

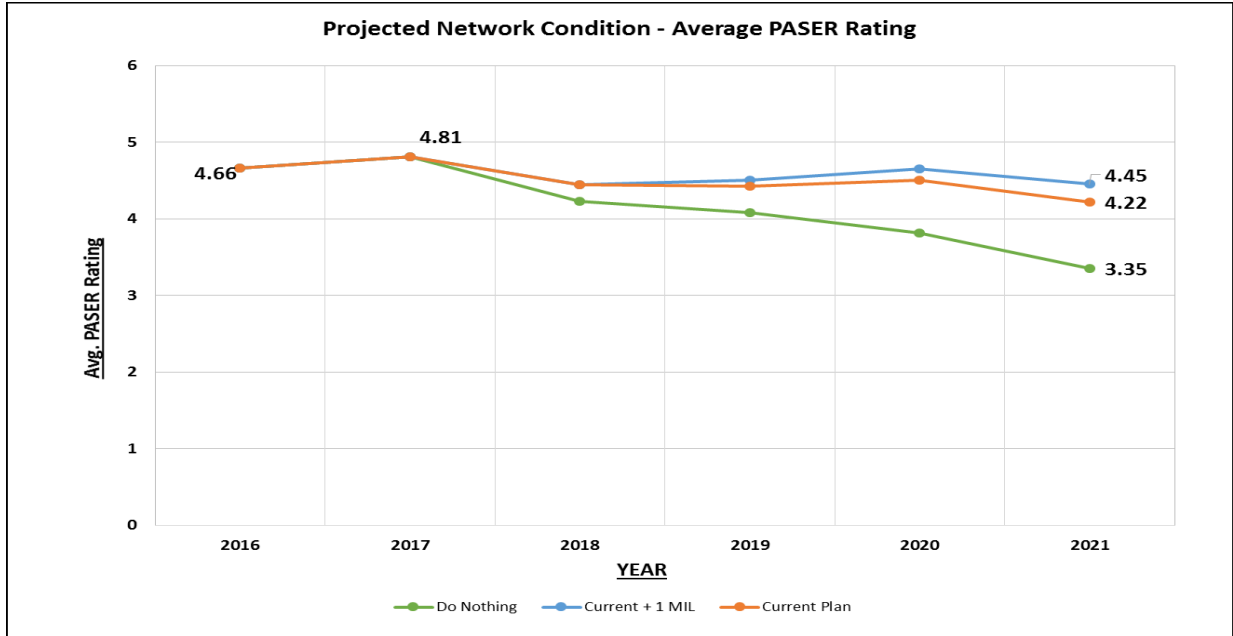
During the period for FY17, July 1, 2016 through June 30, 2017 for following projects were completed with the final contract amounts shown:

MAJOR/ LOCAL	PROJECT	DATE COMPLETED	TOTAL COST	FUNDING
MAJOR	MONROE STREET PEARL TO MARSHALL	9/30/16	\$163,163	Small Urban Grant - \$130,530 Major MVH Fund - \$32,632
MAJOR	NORTH DRIVE WEST BREWER TO KALAMAZOO	10/14/16	\$292,084	Small Urban Grant - \$233,667 Major MVH Fund - \$58,417
LOCAL	ARMS STREET FIRE DEPARTMENT TO FOUNTAIN	6/16/17	\$249,151	Local MVH Fund - \$249,151
LOCAL	N. PARK STREET MICHIGAN AVE TO BANK DRIVE	9/16/16	\$29,081	Local MVH Fund - \$29,081
LOCAL	TURQUOISE TRAIL FULL EXTENT	9/16/16	\$37,237	Local MVH Fund - \$37,237
GRAND TOTAL:			\$770,716	MAJOR STREETS = \$455,247 LOCAL STREETS = \$315,246 GRANTS = \$364,197

The expenditure of funds for the projects shown above were completed prior to the date when Marshall's roads were rated in 2017. This is noted to show that the overall system remains on the decline even with the influx of the \$770,000 of work in a single year. This is discouraging, however it is representative of the amount of funds that are needed yearly to reverse the decline of the streets into the more expensive maintenance activities.

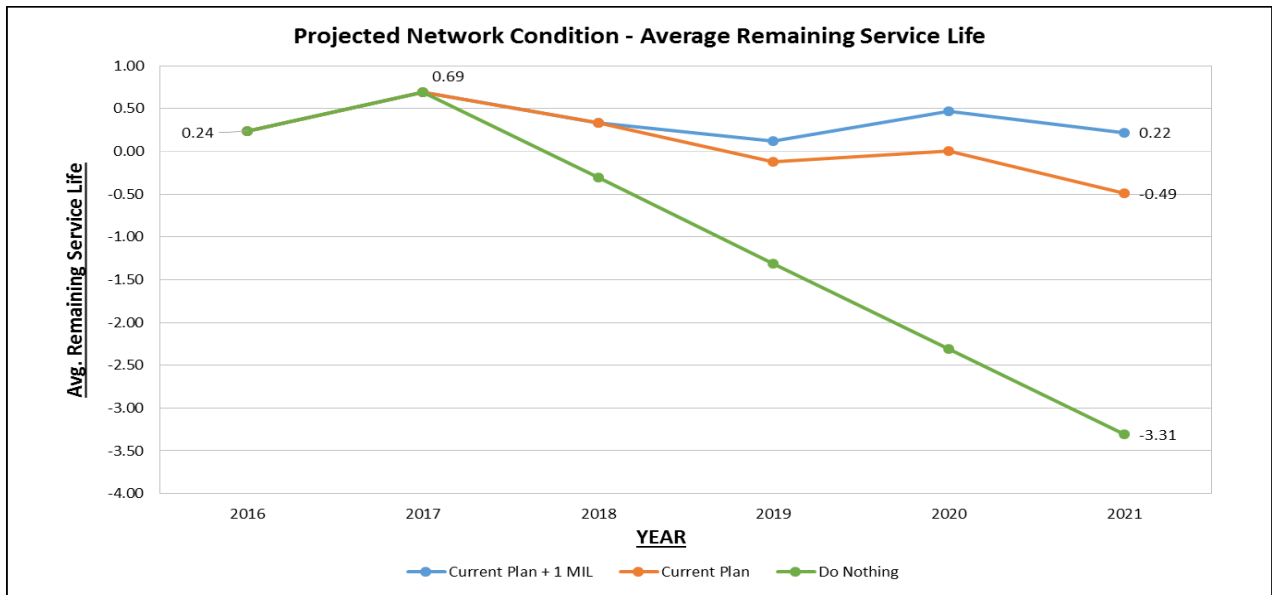
Street System Needs

As the cost of construction has increased and local street funding has remained static the ability to adequately fund construction and maintenance projects has reduced, thus the overall system is on the decline. To stop this downward trend additional Local Street funding would be warranted. As previously discussed, in this report, the Major Street system receives higher funding and the majority of the Major Street system is eligible for grant funding, however this funding is limited to several road agencies in the region. Should additional Local Street funding be secured the transfers from the Major to Local system could be reduced and thus the Overall City System would benefit.



Changes in Average PASER Ratings due to Funding Levels

Without an influx of additional funding the overall street system will continue to decline. The following illustration shows the Remaining Service Life (RSL) of the Overall Street System. The RSL number is the point at which a road transitions from a 5 rating to a 4 rating. This threshold is significant as it is the time when most road fixes required for the street will be structural 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.



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.

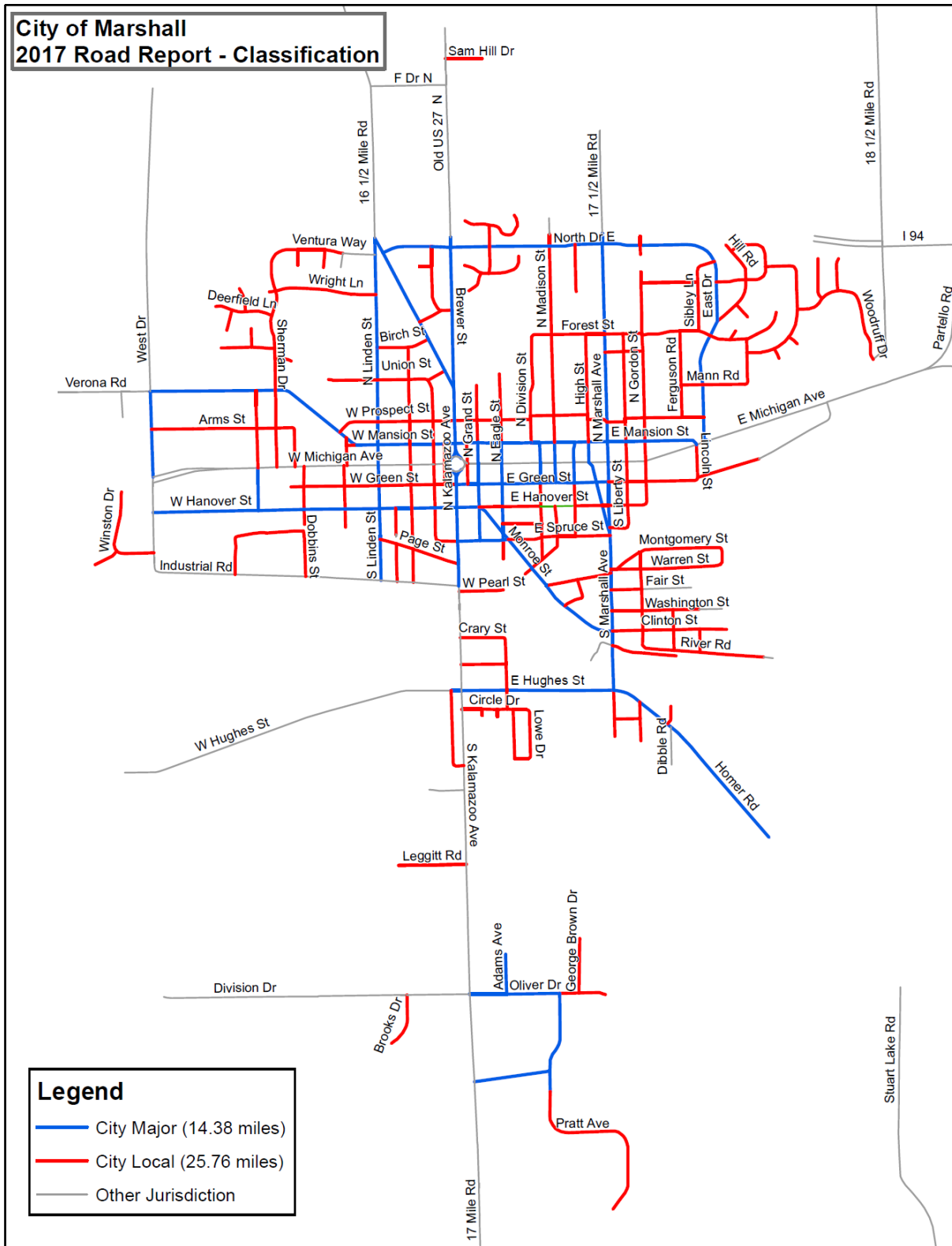


Figure 1 – Street Major/Local Designations

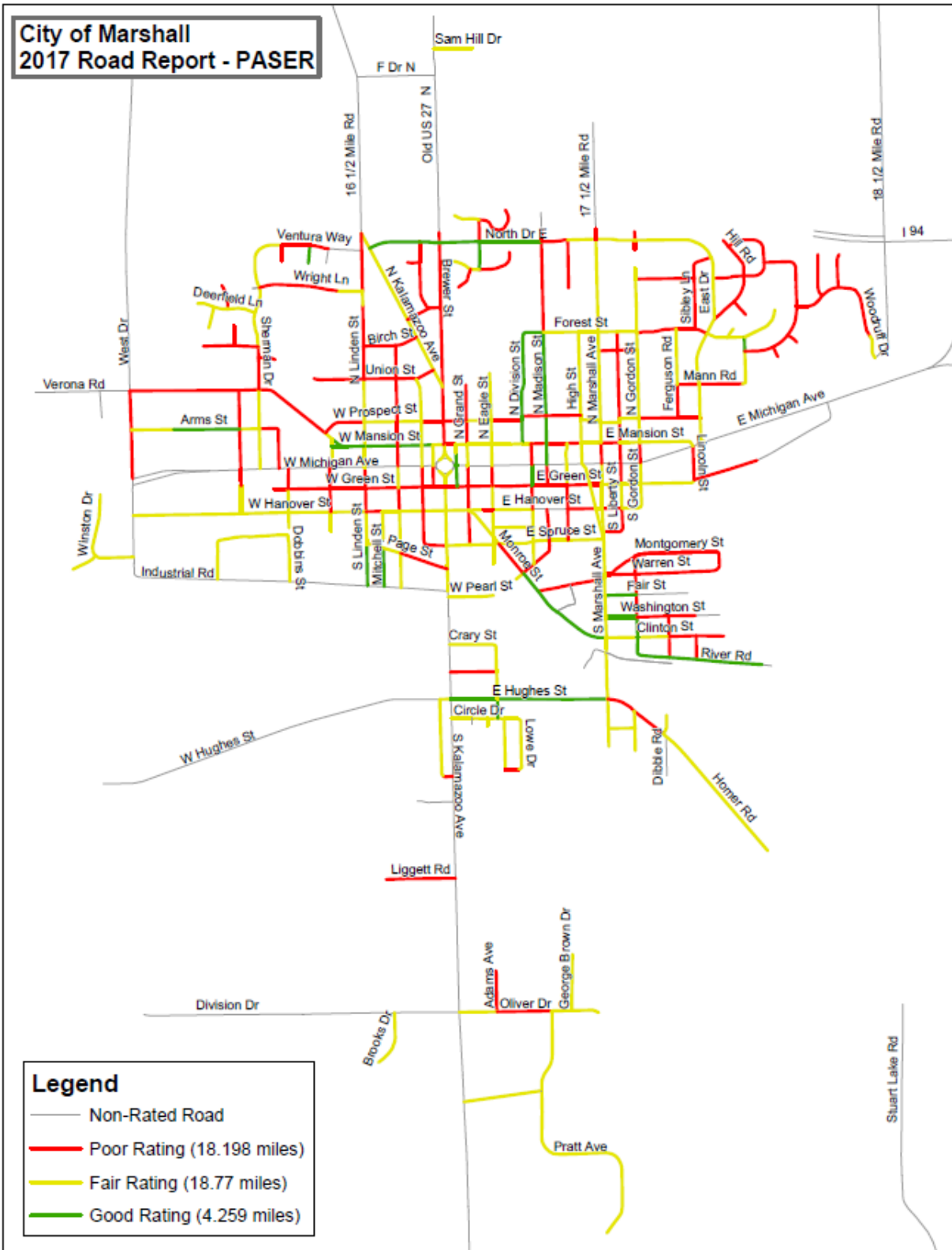


Figure 2 – Entire System 2017 PASER Ratings

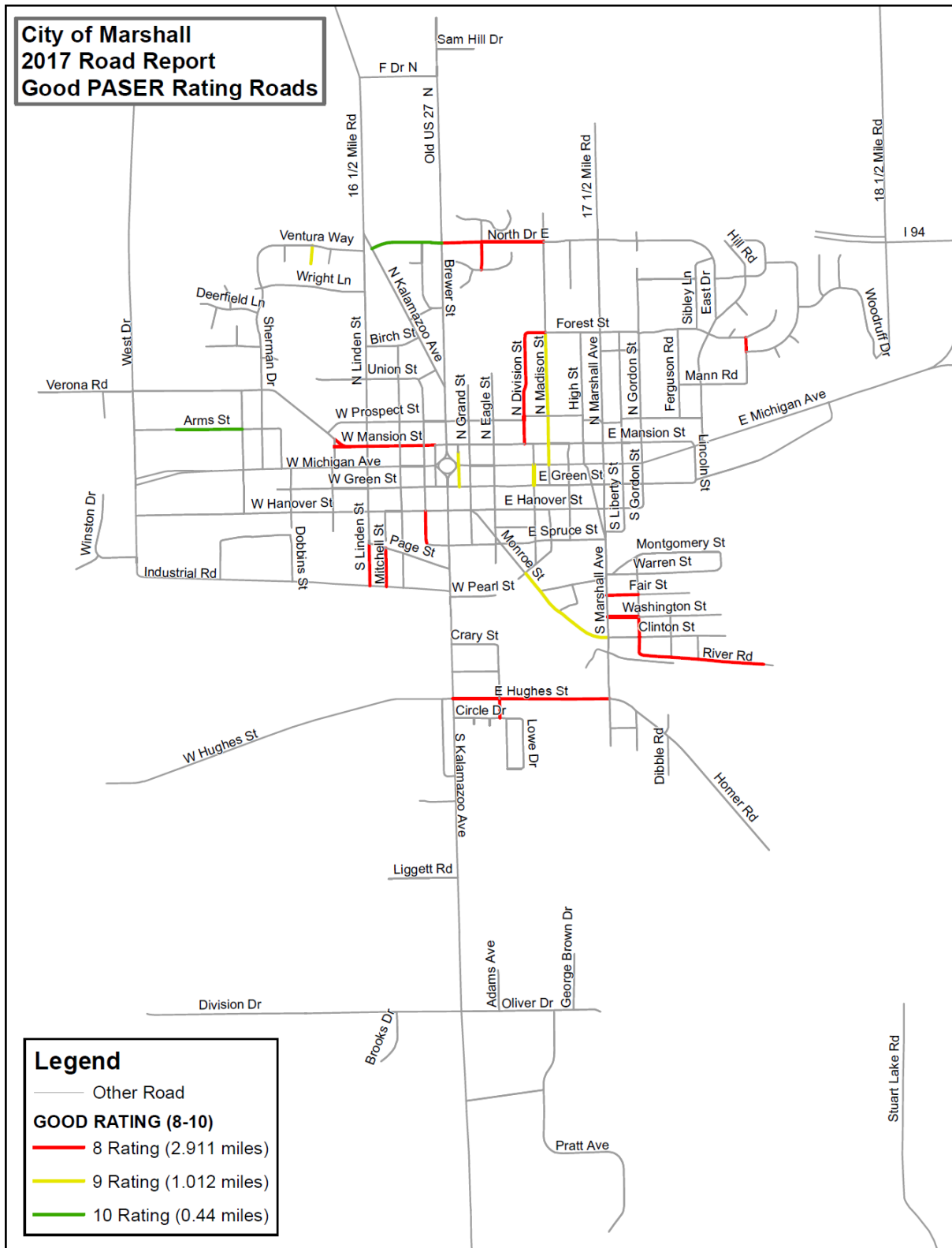


Figure 3 – 2017 “Good” Rated Roads

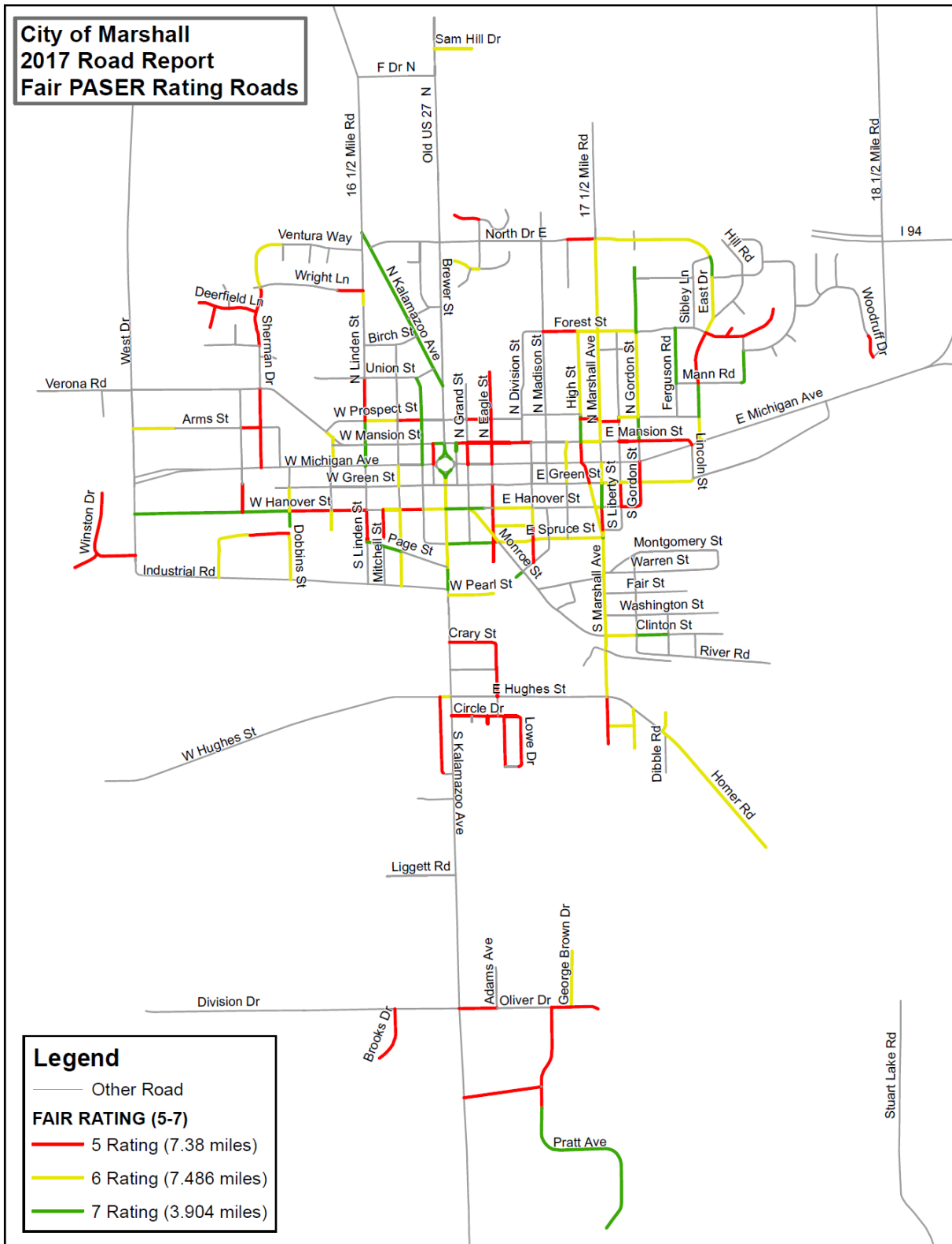


Figure 4 – 2017 “Fair” Rated Roads

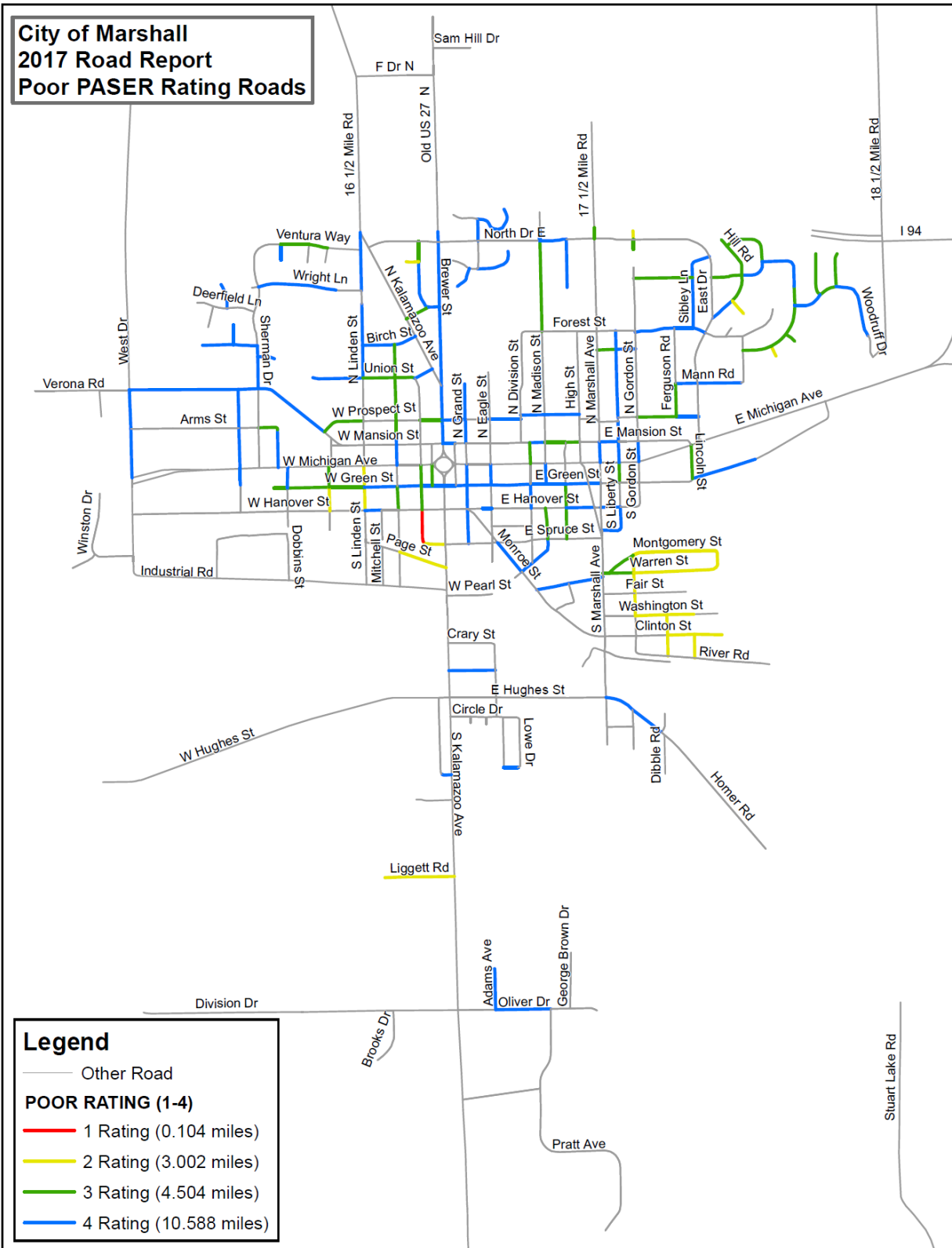


Figure 5 – 2017 “Poor” Rated Roads

**ENTIRE SYSTEM: GOOD-FAIR-POOR TREND
2016 TO 2017**

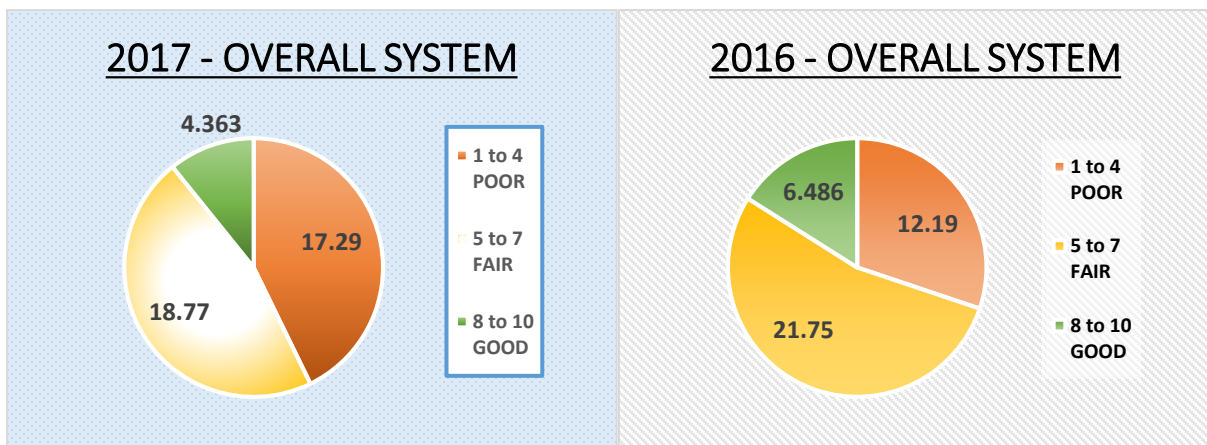
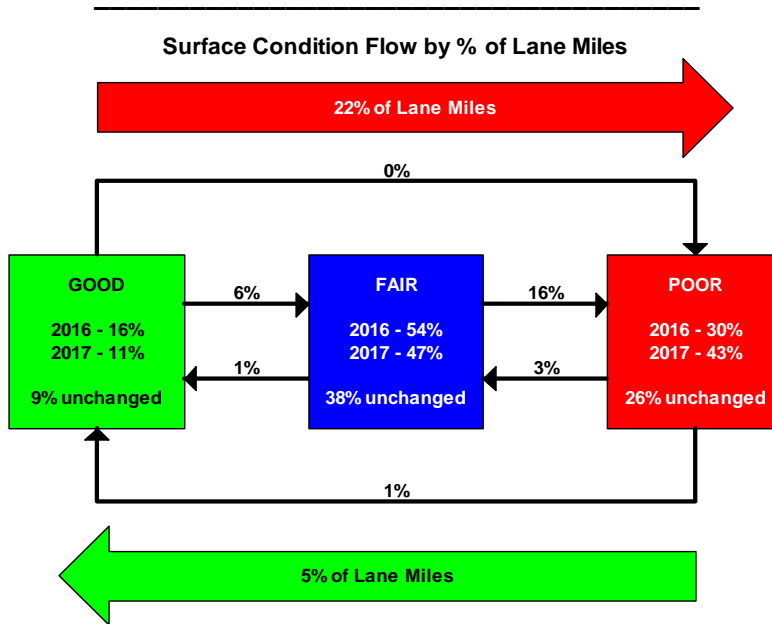


Figure 6 – City of Marshall – Overall Street Trend

**MAJOR STREETS: GOOD-FAIR-POOR TREND
2016 TO 2017**

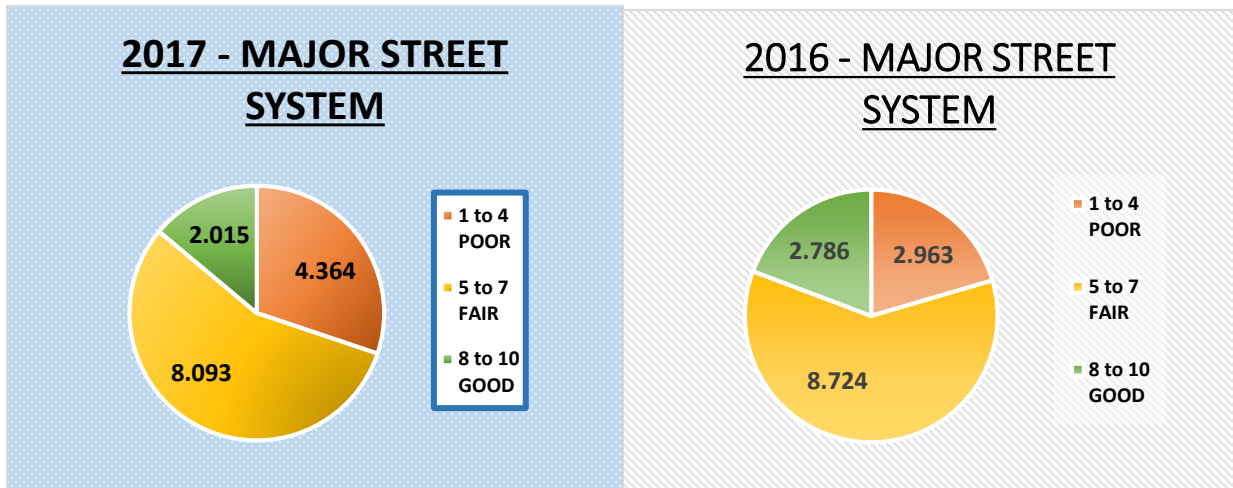
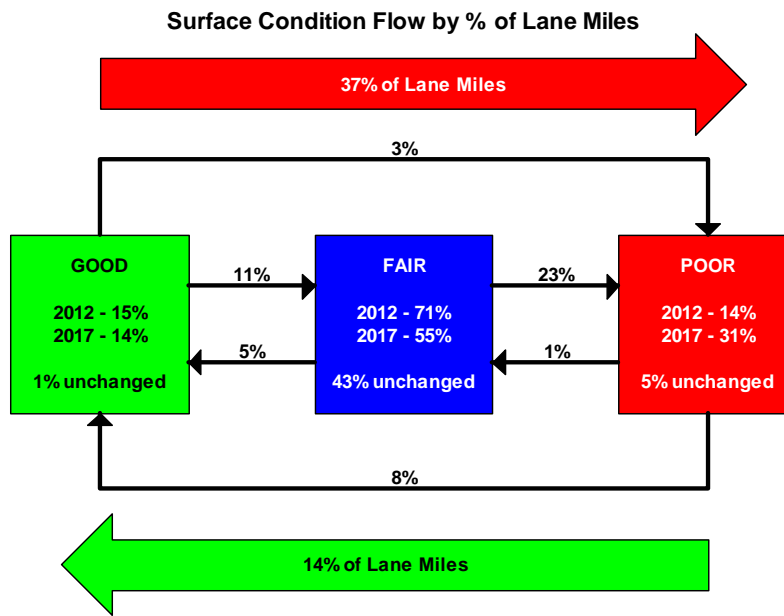


Figure 7 – City of Marshall – Major Street Trend

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

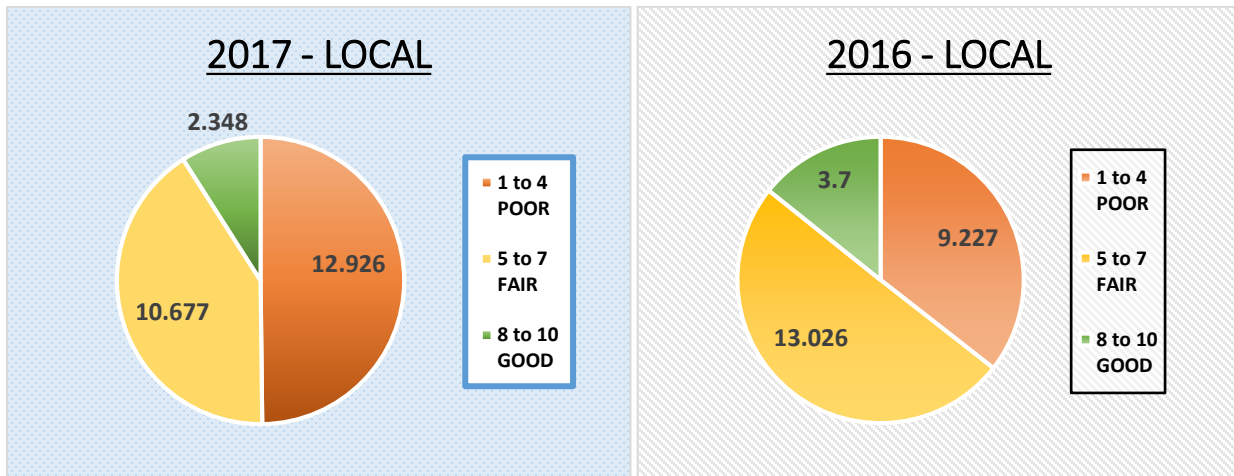
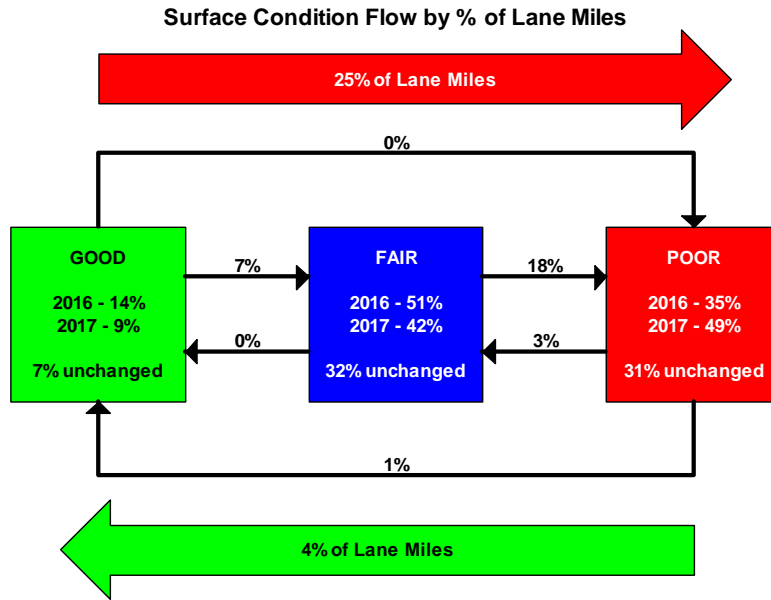


Figure 8 – City of Marshall – Local Street Trend