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# Street Asset Management Plan

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2022

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williams&works

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## ***Executive Summary***

As conduits for commerce and connections to vital services, roads are some of the most important assets in any community. The City of Lowell's roads are also some of the most valuable and extensive public assets, all of which are paid for with taxes collected from ordinary citizens and businesses. The cost of building and maintaining these assets, their importance to society, and the investment made by taxpayers all place a high level of responsibility on local agencies to plan, build, and maintain roads in an efficient and effective manner. This Street Asset Management Plan is intended to report on how the City of Lowell is meeting its obligations to maintain their public road assets.

This plan identifies the City of Lowell's road assets and condition and explains how the city works to maintain and improve their overall condition. This asset management plan helps to demonstrate City's responsible use of public funds by providing elected and appointed officials as well as the general public with the inventory and condition information of the City's road assets, and it gives taxpayers the information they need to make informed decisions about investing in the City's essential transportation infrastructure.

## ***Introduction***

The City of Lowell is responsible for maintaining and operating over 20 centerline miles of roads within its corporate boundaries. The city has adopted an “asset management” business process to overcome the challenges presented by having limited financial, staffing, and other resources while needing to meet road users’ expectations.

Asset management is defined by Public Act 325 of 2018 as “an ongoing process of maintaining, preserving, upgrading, and operating physical assets cost effectively, based on a continuous physical inventory and condition assessment and investment to achieve established performance goals”. In other words, asset management is a process that uses data to manage and track assets, like roads, in a cost-effective manner using a combination of engineering and business principles.

In the context of this plan, asset management ensures that public funds are spent as effectively as possible to maximize the condition of the road network. Asset management also provides a transparent decision-making process that allows the public to understand the technical and financial challenges of managing transportation infrastructure with a limited budget.

This process is endorsed by leaders in municipal planning and transportation infrastructure, including the Michigan Municipal League, County Road Association of Michigan, the Michigan Department of Transportation (MDOT), and the Federal Highway Administration (FHWA). The City of Lowell is supported in its use of asset management principles and processes by the Michigan Transportation Asset Management Council (TAMC), formed by the State of Michigan.

This plan outlines the City of Lowell’s strategy to maintain and upgrade pavement condition given the City’s goals, priorities of its road users, and resources provided. The plan is intended to be updated approximately every 3 years to reflect changes in road conditions, finances, and priorities.

Questions regarding the use or content of this plan should be directed to:

Michael Burns  
City Manager - City of Lowell  
301 E. Main St.  
Lowell, MI 49331  
616-897-8457  
mburns@ci.lowell.mi.us

## Pavement Assets

### Pavement Inventory

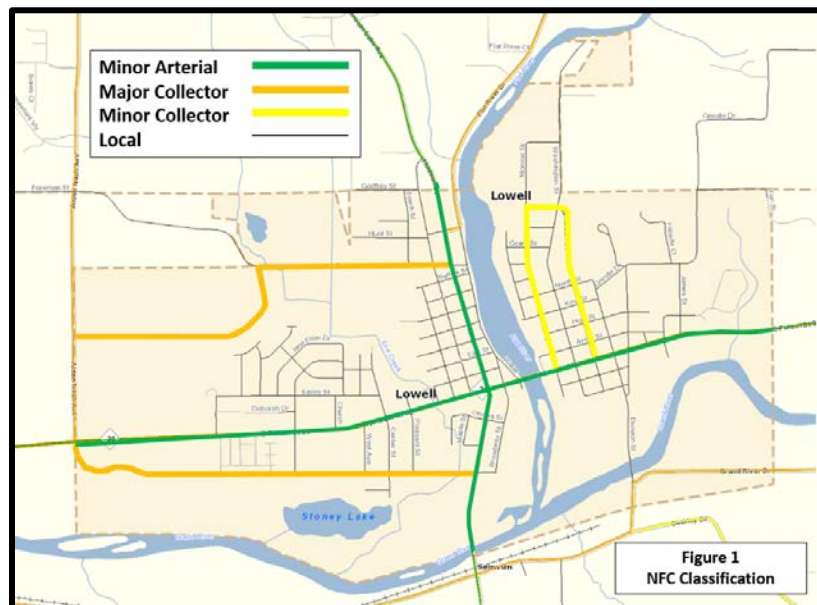
The City of Lowell is responsible for 75 named streets totaling 20.3 centerline miles of public roads within its geographical boundaries. All of the streets are paved, hot mix asphalt (HMA) streets. An inventory of these miles divides them into different network classes:

- **National Highway System (NHS) Functional Classification**
- **Michigan Act 51 Classification**

**National Highway System (NHS) Functional Classification** – Functional classification is the process by which streets and highways are grouped into classes, or systems, according to the character of traffic service that they are intended to provide. There are three highway functional classifications: arterial, collector, and local roads. All streets and highways are grouped into one of these classes, depending on the character of the traffic (i.e., local or long distance) and the degree of land access that they allow.

All the roads under the jurisdiction of the City of Lowell are have an NHS classification as either a Collector (Major and Minor) or Local Road.

Table 1 City of Lowell National Highway System (NHS) Functional Classification		
Classification	Mileage	
Major Collector	3.1	Bowes St., Gee Dr.
Minor Collector	1.3	N. Monroe, N, Jefferson, Fremont
Local	15.7	
<b>Total System</b>	<b>20.1</b>	



**Michigan Act 51 Classification** - Public Act 51 of 1951 created the Michigan Transportation Fund (MTF), and it is the main road funding source for most cities and villages. This Act defines the formula by which Michigan distributes money for road maintenance to cities, villages, and counties. The MTF receives federal funds, state fuel taxes, and vehicle registration fees. About 20% of the Act 51 funds support various state agencies; the other 80% is divided among highways (39.1%), county roads (39.1%), and municipal streets (21.8%). Under Act 51, “Major” streets in the qualifying cities and villages are the top municipal investment priority. The municipality identifies its major streets according to importance, and the rest are referred to as “Local” streets. The major streets are eligible for federal aid. Cities or villages with a transportation asset management plan (TAMP) can transfer over 50% of their Act 51 major street funding to use for local street projects.

Table 2 below provides the inventory of the City’s Major and Local streets. The streets classified as Major by the city are listed in Table 3.

Table 2 City of Lowell Act 51 Classification	
Classification	Mileage
City Major	6.8
Local	13.3
<b>Total System</b>	<b>20.1</b>

Table 3 City of Lowell Major Streets	
Major Streets	Parts of Streets that are Major
	Foreman*
Gee*	Hunt
Bowes*	Lincoln Lake
S. Valley Vista	Suffolk
S. West	Elm
S. Broadway	Chatham
N. Monroe*	Riverside
N. Jefferson	Ottawa
Water St.	S. Monroe
Fremont	Kent
	Avery

\* Streets recognized by MDOT as being eligible for Federal Aide funding

### Federal Aide Streets

Of the Major streets, the following are recognized by MDOT as being eligible for Federal Aide funding:

- Bowes Rd.
- Foreman St.
- Gee Dr.
- N. Monroe St.

### Streets under County and State Jurisdiction

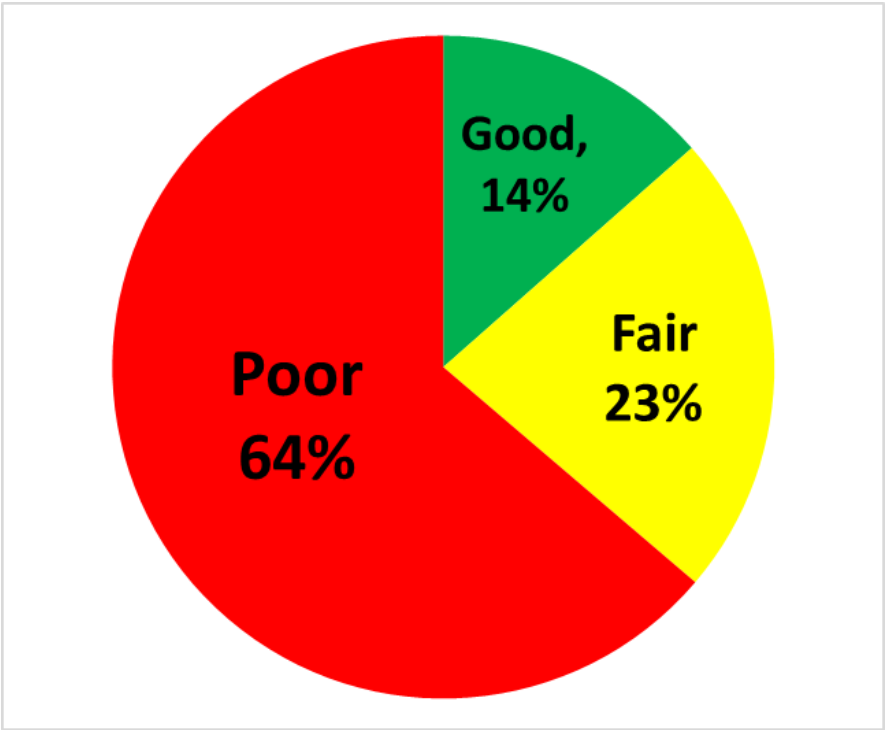
While located within the City, Hudson St. is under the jurisdiction of the Kent County Road Commission and Main St. (M-21) is under the jurisdiction of MDOT. These streets are not included in the City of Lowell Asset Inventory.

# Pavement Condition

Paved roads in Michigan are rated using the Pavement Surface Evaluation and Rating (PASER) system which uses a 1 to 10 scale to rate the pavement condition, with 10 being a newly constructed surface and 1 being a completely failed surface. PASER scores are grouped into TAMC definition categories of good (8-10), fair (5-7), and poor (1-4) categories.

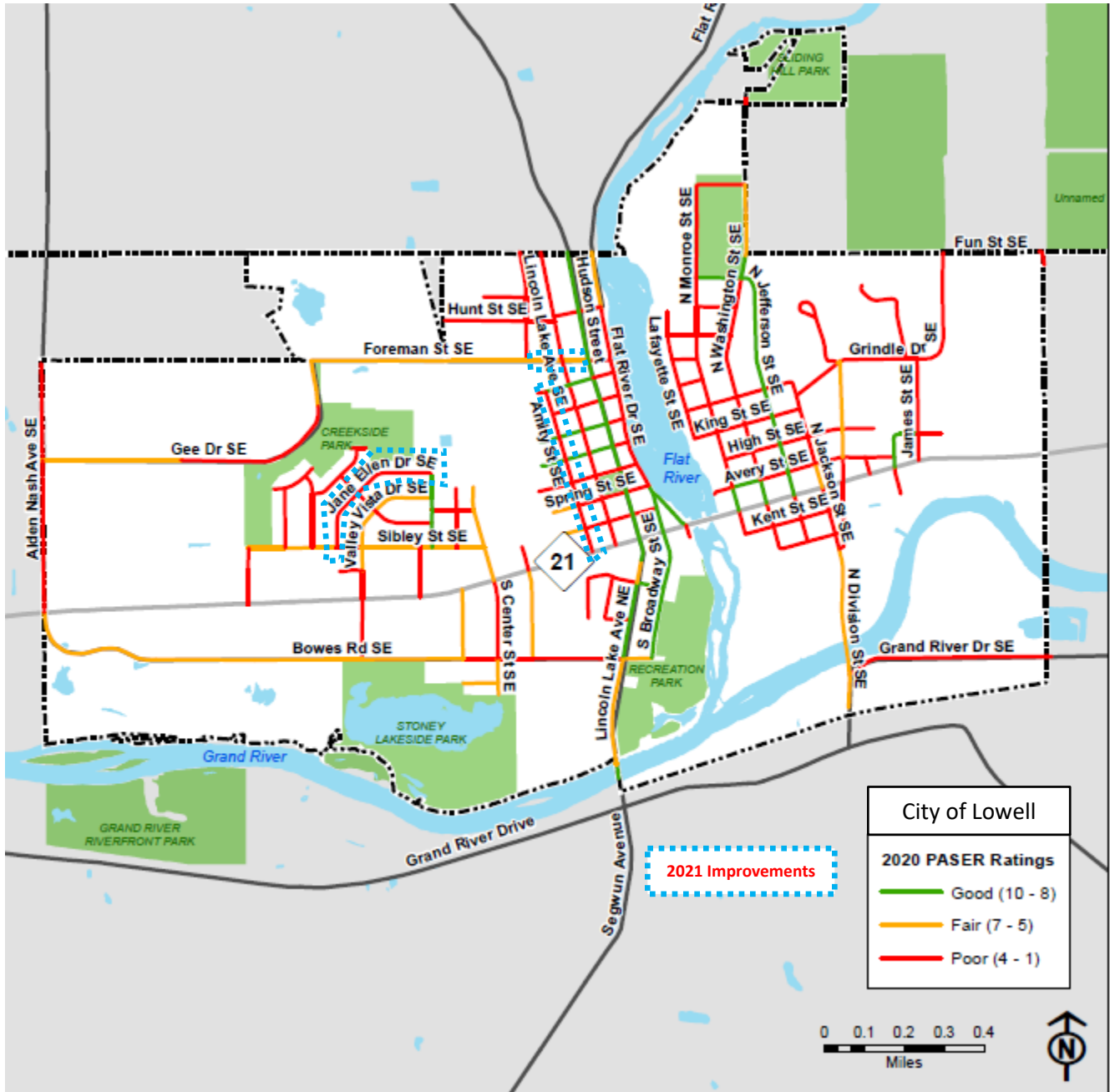
The City of Lowell works with the Grand Valley Metropolitan Council (GVMC) to collect PASER data every year on its City Major (Federal Aid) network and utilizes its own funds to have GVMC collect PASER data on the City Local (Non-Federal Aid) network on an as-needed basis, which is typically every 1 to 3 years. During the data collection process, each street segment receives a unique PASER rating.

The most recent PASER rating for the City of Lowell was completed in 2020 and 2021 by the Grand Valley Metro Council. The rated condition of the City of Lowell Streets is illustrated in the graph in Figure 2 and on the map on Figure 3.



**Figure 2**  
**City of Lowell PASER Ratings Chart 2020 - 21**

In 2021, the City made improvements to portions of three streets; Foreman Street between Hudson Street and Beech Street, Jane Ellen Drive between Sibley Street and Donna Street and Amity Street from W. Main Street to Suffolk Street.



**Figure 3**  
**City of Lowell PASER Ratings Map 2020 - 21**

## Goals

In 2019, the City of Lowell desired to establish a program that would increase the condition of the roads such that 20% of the streets within the city were in the Poor condition category and 80% in the Fair to Good condition category. At that time, a City Income tax proposal was placed on the ballot that would have generated the income necessary to accomplish this goal, however, that proposition was not approved by the voters.

The City of Lowell's current goal is to provide sufficient resurfacing improvements and proactive preventative maintenance as funding will allow in order to maintain the current overall condition of the streets with a long-term goal of achieving a net improvement to the average road conditions on an annual basis. Increasing the average road condition in the Good and Fair categories will limit exposure to the high costs associated with fixing roads that are in the Poor category.

Figure 4 below illustrates the benefit and importance of proactive preventative maintenance.

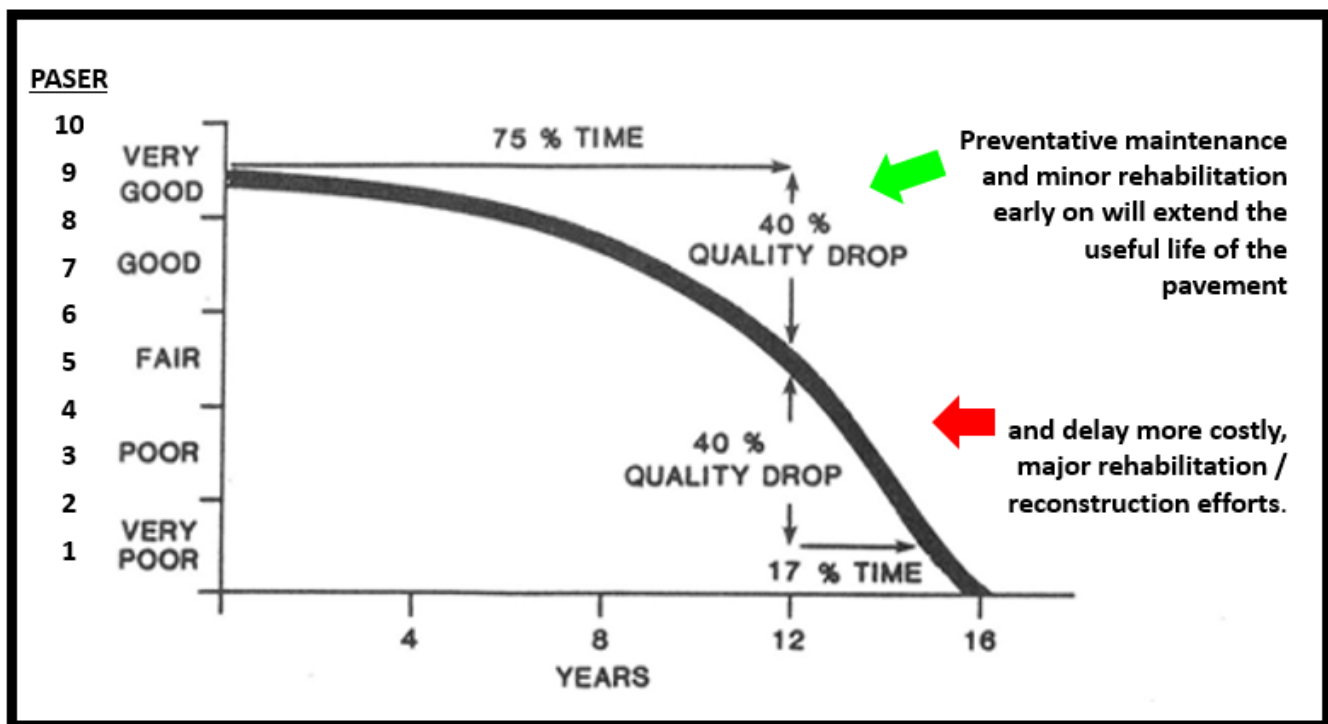


Figure 4  
Pavement Deterioration Curve

## ***Mix of Fixes***

In developing this Asset Management Plan, the City of Lowell has selected four primary treatments to be used in their available Mix of Fixes. Variations of these treatments will be applied as necessary to address the specific needs of a particular road. These treatments were selected based on local knowledge of the street compositions and conditions as well as a desire to establish a straight forward, simplified approach to managing these assets.

### **Preventative Maintenance**

**Crack Sealing** – The City of Lowell will pursue overband crack sealing in pavement beginning in the third year after new pavement is placed. Additional crack sealing will be performed on older pavements as necessary that have not reached the Rehabilitation condition.

### **Rehabilitation**

**Mill & Resurface** – A Mill & Resurface rehabilitation treatment will be used on existing streets that have adequate existing HMA depth and condition and where it is determined that the existing base materials are adequate in depth and composition. This treatment involves the partial milling of the existing HMA surface and placement of an equivalent depth of new materials.

### **Heavy Rehabilitation**

**Remove & Replace Base Materials & HMA** - Where it is determined that the existing base materials are not adequate, a more advanced level of rehabilitation will be pursued. This treatment will include:

- Removal of all bituminous pavement layers down to the aggregate base
- Removal and replacement of sand subbase and aggregate base as needed
- Apply new HMA leveling and surface courses.
- Replace failed curb & gutter sections as necessary.

**Full Reconstruction** – When it becomes necessary that the entire road must be replaced due to failure of pavement and base materials and/or if removal is necessary for utility installation, full reconstruction may be required. The treatment generally includes the following major items:

- Removal of all bituminous pavement layers down to the aggregate base
- Excavation to the down to the proposed bottom of sand subbase
- Placing underdrain under curbs (where needed for drainage)
- Placing 12-inches of sand subbase
- Placing 6 - 8-inches of aggregate base
- Paving 3 -4-inches
- Removing and Replacing majority of curb and gutter.

## ***Planned Improvements***

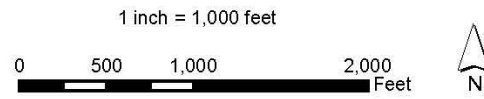
This Asset Management Plan presents a 7-year planning period. Within that timeframe, the city has identified the following planned projects. The projects were selected based on several factors including street condition, area served, coordination with planned utility projects and eligibility for funding from outside sources including grants and the City's DDA. ON the following pages, Table 4 lists the planned projects. Figure 5 presents a corresponding map and Figure 6 illustrates the estimated costs of the planned projects for each year.

**Table 4  
City of Lowell  
Planned Street Improvements 2022 – 2028**

<b>Year</b>	<b>Street</b>	<b>Treatment</b>
2022	<b>GEE DR.</b>	Mill & Resurface
2022	<b>Faith Dr SE</b>	Resurface & Gravel
2022	<b>Heffron St SE</b>	Resurface & Gravel
2022	<b>Roberta Jayne Dr SE</b>	Resurface & Gravel
2022	<b>Valley Vista Dr SE (Bowes to Main)</b>	Resurface & Gravel
2023	<b>N. MONROE</b>	Full Recon, Utilities
2023	<b>S. MONROE</b>	Full Recon, Utilities
2023	<b>KENT - Monroe to Washington</b>	Full Recon, Utilities
2023	<b>KING - Lafayette to Washington</b>	Full Recon, Utilities
2023	<b>Grindle - Jackson to Division</b>	Mill & Resurface
2023	<b>Grindle - Division to James</b>	Resurface & Gravel
2023	<b>Grindle - James to Grindle Ct.</b>	Mill & Resurface
2023	<b>Grindle - Grindle Ct. to Fun</b>	Resurface & Gravel
2024	<b>FOREMAN</b>	Mill & Resurface
2024	<b>N. WASHINGTON</b>	Full Recon, Utilities
2024	<b>S. WASHINGTON</b>	Full Recon, Utilities
2024	<b>Lafayette</b>	Resurface & Gravel
2024	<b>Grant - Lafayette to Washington</b>	Resurface & Gravel
2024	<b>High - Monroe to Washington</b>	Resurface & Gravel
2024	<b>Kent - Washington to Jackson</b>	Resurface & Gravel
2024	<b>Marsac - Lafayette to Monroe</b>	Resurface & Gravel
2024	<b>North - Lafayette to Washington</b>	Resurface & Gravel
2024	<b>Pine - Lafayette to Monroe</b>	Resurface & Gravel
2024	<b>Sherman - Monroe to Washington</b>	Resurface & Gravel
2024	<b>Riverside - Elm to Hunt</b>	Resurface & Gravel
2025	<b>Jackson - Main to North</b>	Resurface & Gravel
2025	<b>North - Jefferson to Jackson</b>	Resurface & Gravel
2025	<b>James</b>	Resurface & Gravel
2026	<b>Beech</b>	Resurface & Gravel
2026	<b>Hunt (Tracks to Hudson)</b>	Resurface & Gravel
2027	<b>Birchwood Ct.</b>	Resurface & Gravel
2027	<b>Church</b>	Resurface & Gravel
2027	<b>Laurie Gail</b>	Resurface & Gravel
2028	<b>BOWES RD. (Main to Hudson)</b>	Mill & Resurface
2028	<b>Carol Lynne Dr SE</b>	Resurface & Gravel
2028	<b>Elizabeth Dean</b>	Resurface & Gravel

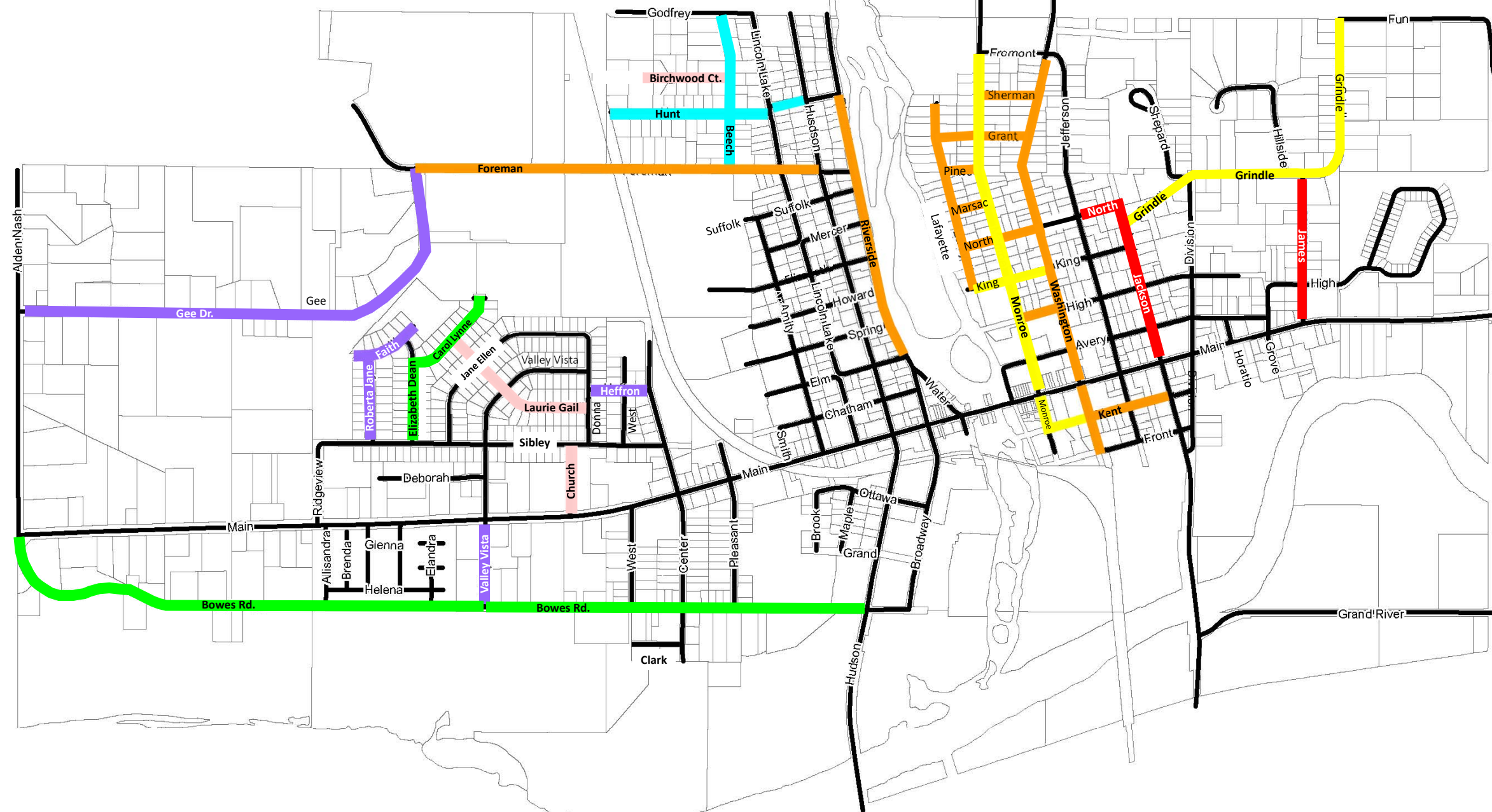


City of Lowell, Michigan



## 2022-2028 Street Improvement Areas

Figure 5

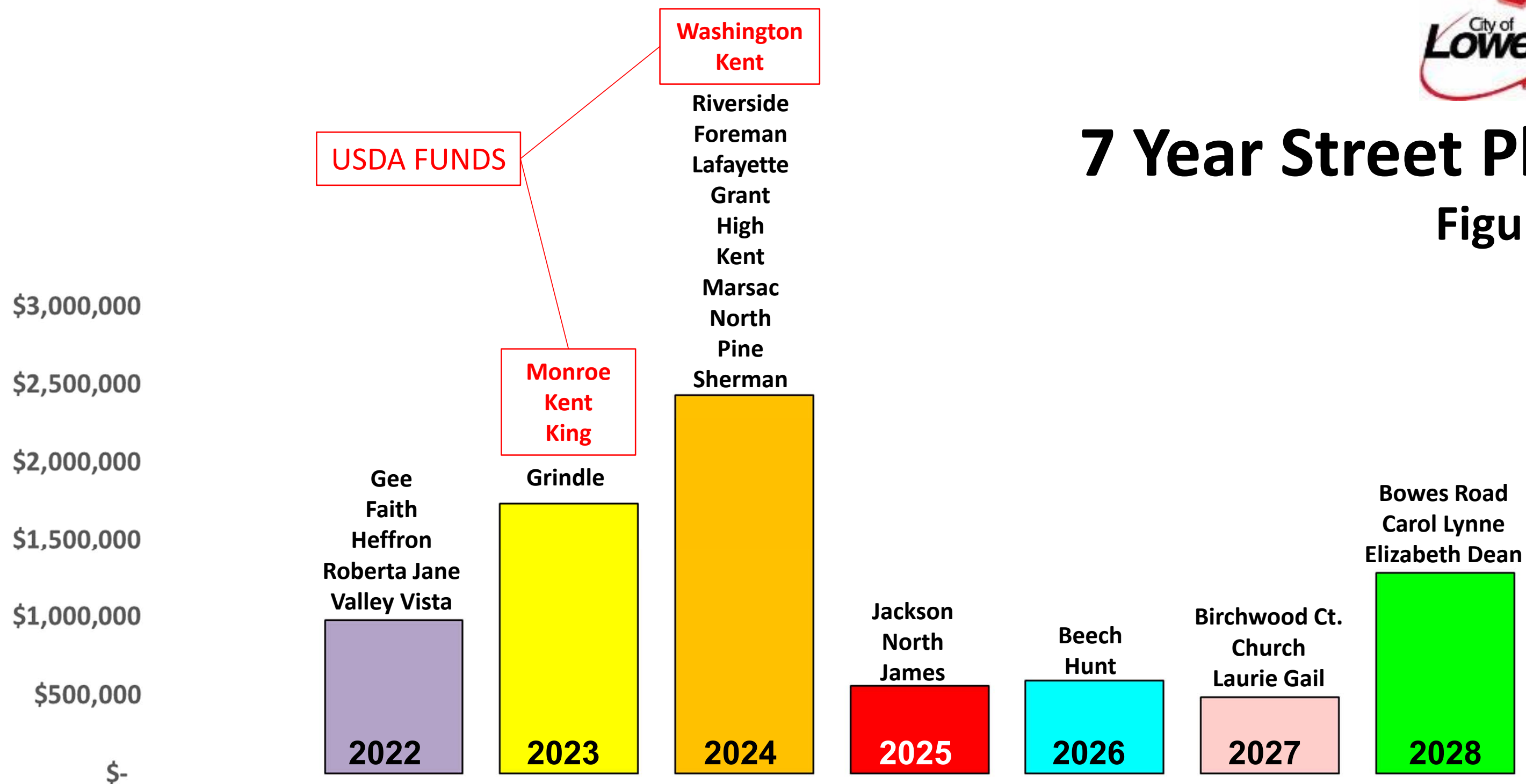


2022	
2023	
2024	
2025	
2026	
2027	
2028	



# 7 Year Street Plan

## Figure 6



## **Financial Resources**

Public entities must balance the quality and extent of services they can provide with the tax resources provided by citizens and businesses, all while maximizing how efficiently funds are used. Therefore, the City of Lowell will provide a general overview of financial resources currently devoted to transportation infrastructure maintenance. This financial information is not intended to be a full financial disclosure or a formal report. Full details of Lowell's financial status can be obtained by contacting the City Treasurer's office.

### **Revenue Sources**

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The City of Lowell uses the following resources for street funding. There is no dedicated street improvement millage.

**State Funds** – The City of Lowell's principal source of transportation funding is received from the Michigan Transportation Fund (MTF). This fund is supported by vehicle registration fees and the state's per-gallon gas tax. Allocations from the MTF are distributed to state and local governmental units based on a legislated formula, which includes factors such as population, miles of certified roads, and vehicle registration fees for vehicles registered in the agency's jurisdiction.

**Federal Funds** - These are typically competitive funding applications that are targeted at a specific project type to accomplish a specific purpose. These may include safety enhancement projects, economic development projects, or other targeted funding. Examples of federal funds include Surface Transportation Program (STP) funds, C and D funds, and Congestion Mitigation and Air Quality (CMAQ) grants.

**Local government entities or private developer contributions to projects for specific improvements** – This category includes city general fund transfers. It may also include funds received from private developers to mitigate the impact of commercial and residential development projects. Many local agencies in Michigan also use local tax millage to supplement their road-funding budget. Lowell does not have a dedicated local tax millage for roads.

**Other** – Other revenues can be gained through interest in invested funds, permit fees, equipment sales, etc.

**Charges for Services** – Funds from partner agencies who contract with Lowell to construct or maintain its roads, or roads under joint or neighboring jurisdictions.

### **Expenditure Categories**

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The City of Lowell is required to report transportation fund expenditures to the State of Michigan using a prescribed format with predefined expenditure categories. The definitions of these categories according to Public Act 51 of 1951 (PA 51) may differ from common pavement management nomenclature and practice. For the purposes of reporting under PA 51, the expenditure categories are:

- **Construction/Capacity Improvement** – According to PA 51, this financial classification of projects includes, "new construction of highways, roads, streets, or bridges, a project that increases the capacity of a highway facility to accommodate that part of traffic having neither an origin nor destination within the local area, widening of a lane width or more, or adding turn lanes of more than 1/2 mile in length."<sup>1</sup>

- **Preservation and Structural Improvement** – Preservation and structural improvements are “activities undertaken to preserve the integrity of the existing roadway system. Preservation includes items such as a reconstruction of an existing road or bridge, or adding structure to an existing road.
- **Routine and Preventive Maintenance** – Routine maintenance activities are actions performed on a regular or controllable basis or in response to uncontrollable events upon a highway, road, street, or bridge. Preventive maintenance activities are planned strategy[ies] of cost-effective treatments to an existing roadway system and its appurtenances that preserve assets by retarding deterioration and maintaining functional condition without significantly increasing structural capacity.
- **Winter Maintenance** – Expenditures for snow and ice control.
- **Trunkline Maintenance** – Expenditures spent under Lowell’s maintenance agreement with MDOT for maintenance it performs on MDOT trunkline routes.
- **Administrative** – There are specific items that can and cannot be included in administrative expenditures as specified in PA 51. The law also states that the amount of MTF revenues that are spent on administrative expenditures is limited to 10 percent of the annual MTF funds that are received.
- **Other** – Expenditures for equipment, capital outlay, debt principal payment, interest expense, contributions to adjacent governmental units, principal, interest and bank fees, etc.

Table 5 below details the revenues and expenditures for the City of Lowell for FY 21 – 24.

Table 5						
Estimated Annual Fiscal Year Revenues & Expenses (FY 21 - 24)						
Revenues	21 - 22		22 - 23		23 - 24	
Act 51	\$	745,000	\$	781,000	\$	806,000
General Funds	\$	424,000	\$	400,000	\$	412,000
USDA	\$	-	\$	63,000	\$	63,000
Misc.	\$	3,000	\$	5,000	\$	3,000
<b>Total Revenues</b>	<b>\$</b>	<b>1,172,000</b>	<b>\$</b>	<b>1,249,000</b>	<b>\$</b>	<b>1,284,000</b>
<b>Expenditures</b>						
Capital Outlay & Prof. Services	\$	851,000	\$	1,016,000	\$	540,000
Maintenance	\$	131,000	\$	142,000	\$	146,000
Traffic	\$	24,000	\$	25,000	\$	26,000
Winter Maintenance	\$	153,000	\$	156,000	\$	161,000
Administration	\$	38,000	\$	38,000	\$	38,000
Debt Service	\$	-	\$	-	\$	-
<b>Total Expenditures</b>	<b>\$</b>	<b>1,197,000</b>	<b>\$</b>	<b>1,377,000</b>	<b>\$</b>	<b>911,000</b>

*Note: Any shortfall between revenues and expenses will be covered by fund balances in the Local and Major Street funds.*

## ***Risk of Failure Analysis***

Transportation infrastructure is designed to be resilient. The system of interconnecting roads maintained by the City of Lowell provides road users with multiple alternate options in the event of an unplanned disruption of one part of the system. There are, however, key links in the transportation system that may cause significant inconvenience to users if they are unexpectedly closed to traffic. Following are the key transportation links in the City of Lowell's Road network:

- **Geographic divides:** Areas where a geographic feature (river, lake, hilly terrain or limited access road) limits crossing points of the feature. *(For the City of Lowell, these include the bridges over the Flat River which are under the jurisdiction of MDOT and the S. Hudson St. and the S. Jackson St. bridges over the Grand River which are under the jurisdiction of the Kent County Road Commission.)*
- **Emergency routes** for high-volume roads: Roads which are routinely used as alternate routes for high volume roads or roads that are included in an emergency response plan. *(For the City of Lowell, these include Bowes St., Gee Dr., Jefferson St, Foreman St. The emergency routes under the jurisdiction of the State and County include M-21 and Hudson St).*
- **Limited access areas:** Roads that serve remote or limited access areas that result in long detours if closed. *(For the City of Lowell, this includes Foreman St. from N. Hudson to Gee Dr. which serves two large public schools and four active industries)*
- **Commercial District Access:** Main access to key commercial districts: Areas where large number or large size business will be significantly impacted if a road is unavailable. *(For the City of Lowell, this includes primarily includes Main Street, which is under the jurisdiction of MDOT. It also includes Foreman St. from N. Hudson to Gee Dr. which serves two large public schools and four active industries. )*

### ***Coordination with Underground Utilities***

In developing the priority of a road rehabilitation projects, in addition to the PASER rating of each road, the City takes into account and coordinates with public and private underground utilities that may need to be upgraded. This includes public utilities such as water, sanitary sewer, and electric as well as private utilities including cable, telephone, fiber and gas. In some cases, the current need to upgrade a utility may require the rehabilitation of a road segment that has a better PASER rating than another road. Likewise, the need to make road improvements to a particular segment may accelerate the upgrade of underground utilities to minimize overall construction costs and minimize future disruptions to new paved sections.

The City of Lowell takes advantage of coordinated infrastructure work to reduce cost and maximize value using the following policies:

- Review the City's water and sanitary sewer Asset Management Plan when considering road improvements
- Communicate with private utilities to request upgrades prior to commencing new road projects

### ***Governing Body Acceptance***

This asset management plan was accepted by the City of Lowell City Council at their regularly scheduled meeting on June 6, 2022. The resolution from the official meeting in which this plan was accepted is included in the Appendix.

## ***APPENDIX***

### **Street Asset Management Plan Acceptance Resolution**

CITY OF LOWELL  
KENT COUNTY, MICHIGAN

RESOLUTION NO. \_\_\_\_\_

RESOLUTION APPROVING THE CITY OF LOWELL  
2022 STREET ASSET MANAGEMENT PLAN

Councilmember \_\_\_\_\_, supported by Councilmember \_\_\_\_\_ moved the adoption of the following resolution:

WHEREAS the City of Lowell receives partial funding for its Major and Local public streets from the State of Michigan Public Act 51 and,

WHEREAS in accordance with MCL 247.663 (Public Act 338 of 2006), in order to transfer more than 50% of its annual Act 51 major street funding for the local street system local street improvements the city must adopt and follow an asset management process for its major and local street systems.

NOW, THEREFORE, BE IT RESOLVED AS FOLLOWS:

1. *The City of Lowell hereby elects to approve and adopt the City of Lowell 2022 Street Asset Management Plan, a plan describing the City of Lowell's road assets and conditions, as prepared by Williams & Works in collaboration with the City Manager and Public Works Director.*
2. *The City Manager and Public Works Director are authorized to make minor administrative modifications to the plan, if necessary, to ensure continued compliance.*

AYES:

NAYS:

ABTAIN:

ABSENT:

RESOLUTION DECALED ADOPTED

CERTIFICATE

I, the undersigned City Clerk of the City of Lowell, Michigan (the "City"), certify that the above ordinance is a true and complete copy of an ordinance adopted at a regular meeting of the Lowell City Council held on June 6, 2022 pursuant to notice given in compliance with Act 267 of the Public Acts of Michigan of 1976, as amended.

Dated: \_\_\_\_\_

\_\_\_\_\_  
Susan Ullery, City Clerk