

Roads Committee Discoveries

Introduction

The Novi Roads Committee was formed in December of 2019 at the direction of City Council with the goal of developing a plan to prioritize road projects to maintain safety, improve road conditions and traffic flow, and explore funding opportunities.

The committee members were appointed by Mayor Bob Gatt and is composed of the following members:

- City Council Member/Committee Chair, Laura Marie Casey
- City Council Member, Andrew Mutch
- City Manager, Pete Auger
- Citizen Representative, Bryan Bartlett
- Citizen Representative, Alex Dinser
- Director of Public Works, Jeff Herczeg
- Assistant Chief of Police, Eric Zinser
- City Planner, Barb McBeth
- CEO/Finance Director, Carl Johnson
- Community Relations Specialist, Nathan Mueller
- Consulting Engineer OHM Advisors, Tim Juidici
- Consulting Engineer AECOM, Mark Koskinen

The staff and Consulting Engineer committee members provided information and presentations to the committee which were relevant to the committee's goals and objectives. Staff participation was for guidance and facilitation only, in order to maintain unbiased and transparent results.

The committee began meeting bi-monthly in January of 2020 and continued through March of 2020. Meetings were suspended during the first wave of the COVID-19 pandemic and resumed in September of 2020. With the economic conditions brought by the pandemic, the committee's task turned to developing a set of findings to share with Council and the community, excluding funding recommendations as had initially been intended.

The findings provided in this report focus on, but are not limited to, the time period from 2012 to present day and include projections out through 2025. This timeline corresponds to the previous road condition assessment provided by OHM Advisors in 2012 (Appendix X), the passing of the Road Millage in 2013, and the subsequent influx of additional road funds into the local road program. The committee also looked at long-term planning and megaprojects to address traffic movement and capacity. Furthermore, analysis of safety and accident mitigation and new design and technology opportunities were also presented and reviewed.

The initial committee meetings consisted of roundtable discussions and presentations on **ROADS 101** (Appendix X). This information provided a foundation for the committee to build on and a general direction for the group to follow.

Introductory topics included road funding, road jurisdictions, the impact of other franchise utilities, asset management, and the capital improvement planning process (see Roads 101, Appendix X). The most significant component to all discussions herein is funding. Below are Novi’s three major road fund sources and how they are generated:

- **202–Major Roads**
 - Funded by ACT 51 ~ \$4M/year
- **203–Local Roads**
 - Funded by ACT 51 ~ \$1.5M/year
- **204–Municipal Roads**
 - Funded by Metro Act Revenue approx. \$185,000/year
 - Funded by Trunkline Revenue approx. \$113,000/year
 - Funded by dedicated road millage (1.5 mills), which has generated between \$4.9-\$5.3M/year to supplement 202 and 203 through FY 2018-19

In general, the City has ~\$11M of funds dedicated to roads per year. The City expends between \$2-3M for maintenance, leaving \$7-9M targeted for capital expenditures for road improvements and non-motorized projects.

Maximizing these funds is critical since the cost of road rehabilitation and reconstruction per lane mile in today’s dollars is as follows:

Asphalt	Structural Improvement/Rehabilitation	\$300,000 – \$500,000
Asphalt	Reconstruction	\$800,000 – 1,250,000
Concrete	Structural Improvement/Rehabilitation	\$350,000 - \$500,000
Concrete	Reconstruction	\$1,000,000 – \$1,500,000

The City’s road network is a mix of jurisdictions (City, MDOT, and RCOC), which presents unique circumstances for maintenance, prioritization, and project planning. The even-numbered Mile Roads and east-west borders are RCOC roads (8 Mile shared with Wayne County), and M-5 and I-96/696 are MDOT. For the rest of the city network and road designation, refer to Roadway Jurisdiction Map (Appendix X)

Novi driver experience and satisfaction are critical, and working with other agencies to initiate, fund, and execute projects in the city has been a priority. Several projects with outside entities are currently underway or are in the planning stages. An expansion of those projects can be found later in this document under **Major Roads Projects and Traffic Improvements**.

Asset management and capital planning are essential for Novi's for budgeting purposes, and the roads program is critical within this process. In accordance with Public Act 325, the City is required to submit a Transportation Asset Management Plan (TAMP) to the Michigan Transportation Asset Management Council (TAMC). A TAMP is required for every local agency with 100 or more miles of roadway under their jurisdiction. While the City is not required to submit the TAMP until October 1, 2022, staff took a proactive approach to complete the report early. The TAMP effort also includes an additional prioritization for the road CIP program from 2020-2024, which is referred to as the **Road Report** for the purposes of this document. The TAMP document, in its own specific format, will be delivered as part of the normal ACT 51 yearly reporting in 2022.

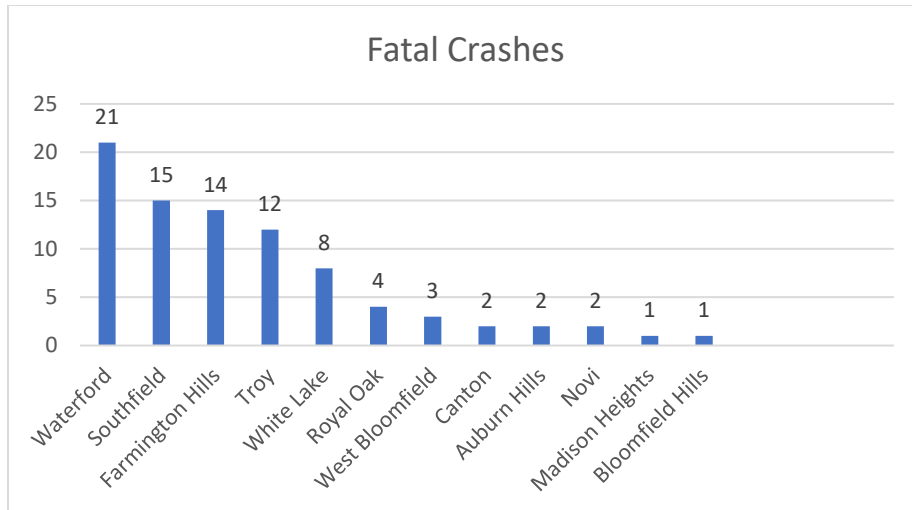
The committee was tasked with the review and endorsement of the **Road Report** (Appendix X). Over the duration of several committee meetings, staff introduced and presented the draft deliverables for feedback and discussion. The findings in the report were assembled from historical data, and updates were made through 2020. The Road Report is detailed more under the following Local Roads section of this document.

Safety

Safety for motorists living in and traveling through Novi is a priority for staff and City Council. Addressing the most dangerous intersections was a City Council goal following the Thoroughfare Master Plan update (2016, Appendix X) which identified opportunities for crash reduction by implementing countermeasures. These countermeasures included: adjusting the traffic signal timing, traffic signal modernization upgrades, and the Novi Police Department utilizing an innovative approach to reduce traffic crashes through a Data-Driven Approach to Crime and Traffic Safety (DDACTS).

The concept behind DDACTS is to analyze three to five years of data to identify where most traffic crashes are happening, both by date and time of day. Based on the data, DDACTS Zones, or "hot spots", are created. These zones become the focus of extra police presence during peak times of crime and crashes. The goal is not necessarily to issue citations, but rather initiate police contacts and have highly visible traffic enforcement. The Novi Police Department has seen significant decreases in traffic crashes in identified DDACTS Zones. The intersection of Beck Road and Grand River saw a 50% decrease in traffic crashes from 2018 to 2020. The intersection of Novi Road and I-96 saw a 34% decrease for the same period.

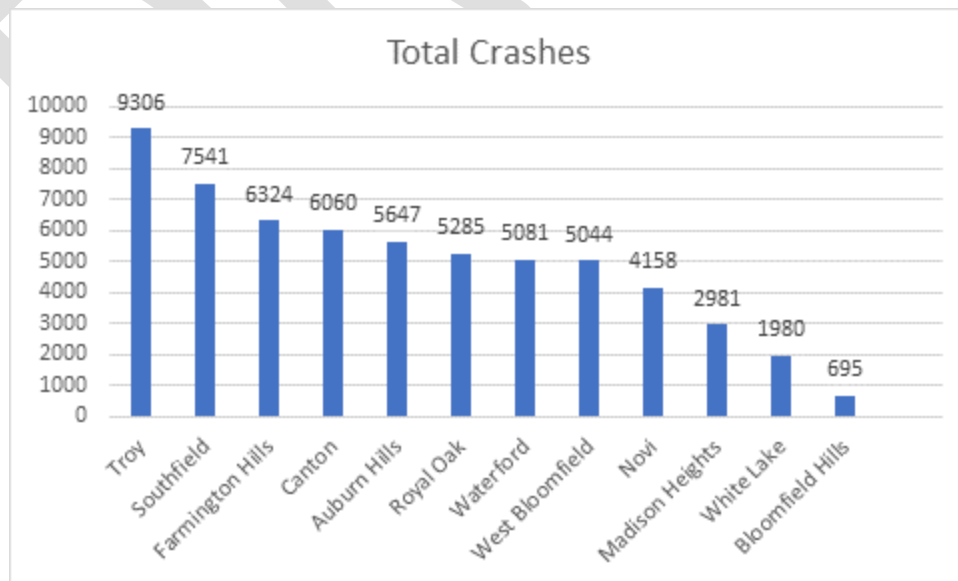
The Roads Committee reviewed crash results from 2012-2016 through the Top 15 Most Dangerous Intersection memo (Appendix X) and from 2018-2020 from the Public Safety Crash Analysis (Appendix X), and the findings were encouraging in both reports. A three-year analysis of traffic crashes from 2018-2020 show overall crashes are down 35.2% from the three years prior to 2018. Further, the City of Novi experienced two fatal crashes during the same time frame: however, neither crash was on a public roadway. One was on a construction site while the other occurred in a private parking lot.



The common characteristic in both the AECOM study and police department crash analysis is that rear-end crashes are the most common occurrence (40% of all crashes). These types of crashes are usually caused by driver distraction and are rarely severe or deadly. Countermeasures such as new roundabouts, signal modernizations, lighting, and DDACTS have been effective in reducing traffic crashes.

Furthermore, weather related crashes during the same time only accounted for 8% of the total crashes reported. This leads to the conclusion that distracted driving is four times more likely to be the cause of a crash versus poor road conditions and confirms advancements in winter maintenance operations have paid off for Novi motorists.

A comparison of data from 2018-2020 shows Novi has significantly fewer crashes than comparable jurisdictions.



*Communities with fewer crashes have less land area than Novi.

All other crash data is included in Appendix (X), along with maps of intersection improvements and countermeasures completed/planned for reference.

Local Roads

Local roads, also referred to as neighborhood roads, is comprised of ~155 centerline miles and makes up around 80% of the total network. These are the subdivision streets and other roads that Novi residents use and live on, and therefore, generally draw the most attention. Since the local roads make up a significant amount of the overall network, the information and recommendations in the Road Report are critical for planning and prioritizing. Constructing the Road Report consisted of the following steps:

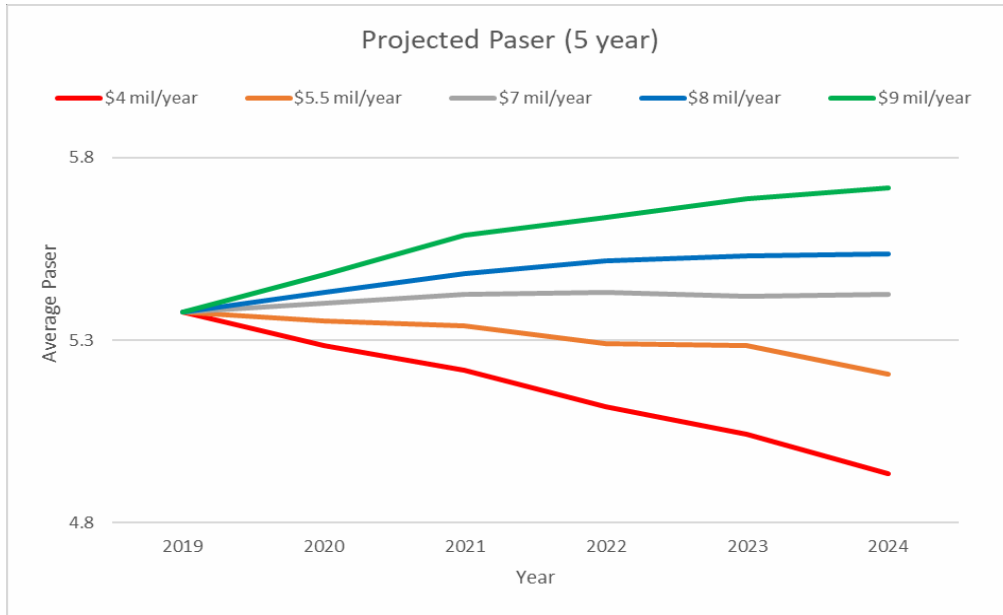
- Survey of the roads (visual, see PASER memo Appendix X)
- Update of completed projects to ensure good data
- Update of current project costs
- Budget/forecast data/optimize fixes and funding levels
- Build 5-Year plan based on need and value to enhance driver/resident experience and satisfaction

Novi has made significant investment and has improved conditions over the last several years with Neighborhood Road Programs (NRP) including Asphalt and Concrete reconstructions/rehabilitations, and a Concrete Panel Repair program (CPR). Total dollars invested in the NRP from 2014-2020 is ~\$25M. Below is the year over year costs for the local road's programs and the proposed three-year plan for the NRP. At the end of 2023 the total investment in local roads will reach almost \$40M in just over ten years' time.

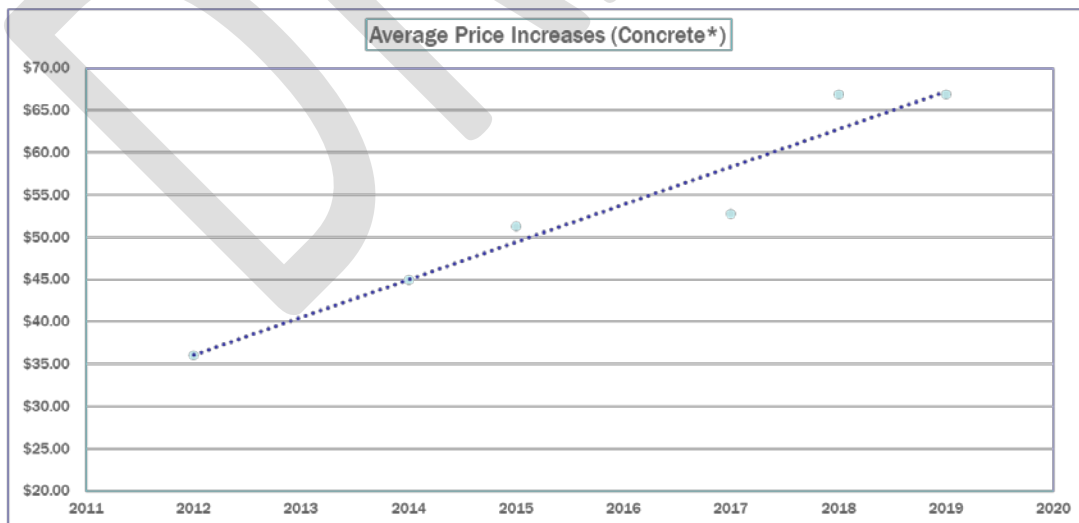
Year	NRP+CPR Costs	Program	Notes
2012	\$1,181,611.00	NRP	Additional road millage passed
2013	\$1,632,271.00	NRP	Collection of millage begins on winter tax
2014	\$1,429,864.00	NRP	Projects planned in CIP with millage collection
2015	\$4,010,101.00	NRP	Project implemented with millage funds
2016	\$2,128,387.00	NRP	
2017	\$3,236,738.00	NRP+CPR	Initiate Concrete Panel Repair Program (CPR)
2018	\$3,563,860.94	NRP+CPR	
2019	\$3,423,724.00	NRP+CPR	
2020	\$4,998,525.00	NRP+CPR	Includes Cranbrooke Phase 1
	\$25,605,081.94		Total Investment in Neighborhood Roads
	3 Year Proposed		
2021	\$5,973,069.00	NRP+CPM	Initiate Asphalt Capital Preventative Maintenance (CPM), Cranbrooke Phase 2
2022	\$3,900,000.00	NRP+CPM	
2023	\$3,700,000.00	NRP+CPM	

NRP: Neighborhood Road Programs, CPR: Concrete Panel Repair, CPM: Capital Preventative Maintenance

A graph presented in the Road Report using 2018 road data and costs of construction (page XX) showed projected network PASER ratings related to dollars invested. Based on the most recent PASER evaluation in October 2020, the last 3 years of investment in the above programs has resulted in an overall network PASER rating increase from 5.4 (2018) to 5.8 (2020), depicted on the updated graph below **(graph needs updating)**.



Although the current trend is favorable, by maintaining the existing road funding levels (\$7-\$9M), the City will see a flat or slight increase in network road condition moving forward. Construction costs since 2012 have increased ~30% per square yard of material (see below).



*concrete used as base line, but asphalt and aggregate prices have seen parallel increase

While concrete unit prices have since leveled off at an average of \$60/square yard (based on bid tabs from 2020) the reduction is likely related to COVID-19 and a drop in demand. Larger regional and state projects coming forward will likely again push price increases over the next few years. Asphalt unit prices increased from \$80/ton in 2018 to \$120/ton in 2020 and aggregate base material increased proportionately, impacting how far road dollars can be stretched.

It is estimated an additional \$1.5M - \$2M/year of road funding spent mostly on locals, with the right mix of fixes, would provide a comparable increase (in rating) to the overall network condition. Considerations (if any) for additional road funding should include a level of service/experience expectation for residents tempered by the economic conditions. Options could include a low interest bond of \$10M to boost the NRP over the next five years (\$2M/year) in order to accelerate the overall network integrity (see Finance memo).

In the short term, the asset management plan is performing adequately. However, based on the Road Report, almost 50% of the City's road network is in the "fair" range (see below) with the majority of the mileage being asphalt.

Category	Rating					Total (centerline miles)
	Excellent (9-10)	Very Good (8)	Good (6-7)	Fair (4-5)	Poor (1-3)	
Major	5.36	1.64	4.24	18.95	2.91	33.09
Local	7.47	11.95	46.65	70.08	18.44	154.60
Total Mileage	12.8	13.6	50.9	89.0	21.3	187.7
% of network	7%	7%	27%	47%	11%	100%

The total mileage of asphalt pavement in "fair" range is approximately 59.5 miles (with an estimated cost of almost \$65 million if left untouched until reconstruction is needed).

It is possible to effectively extend the life of asphalt roads in the "fair" range with less expensively through the use of surface sealers, crack filling, and minor patching, referred to as the Asphalt Capital Preventative Maintenance program (CPM). Similar to the way the CPR addressed concrete roads, this program should maintain asphalt roads in the fair/good category, and thereby, extending service life and increasing local network integrity. Therefore, implementing a CPM program is both recommended and supported by the committee.

A NRP and CPM map of work planned and performed is included in Appendix X for reference.

Major Road Projects and Traffic Improvements

While Major Roads only account for 20% of the system, they are critical for traffic movement into and out of the city. Poor conditions on major roads are usually a greater concern as they carry exponentially more traffic and generally consist of more lane miles, resulting in higher cost to maintain.

The City proactively pursues alternative funding and leverages relationships to complete major projects and stretch road dollars. Since 2014, the City has been successful in obtaining ~\$4M (since 2014) of funding from federal and local road programs to supplement Novi road projects.

Advance constructing projects and partnerships to acquire road funds with RCOC has also been beneficial. The City has recently taken advantage of agreements to front funds and to expedite construction with RCOC on projects under their jurisdiction. These agreements benefit all entities, as well as the residents, since much needed local and regional improvements are being addressed. In 2019, Novi Road and 12 Mile Road intersection (~\$1M) was reconstructed using the advanced construct method, and in 2022, 10 Mile Road from Haggerty to Meadowbrook (~\$5M) will be rehabilitated with a continuous center left-turn lane utilizing the same type of agreement. In 2017, Novi used federal funds in a partnership with RCOC and Lyon Township to rehabilitate Napier Road from 9 Mile to 10 Mile (~\$5M) including a new roundabout.

Additionally, Great Lakes Water Authority (GLWA) is installing a 54" Transmission Main through Novi starting in 2022. Four major road segments are impacted by the route and staff negotiated the complete reconstruction of all four segments in a cost-share agreement with GLWA. By reconstructing the roads now, the City stands to save significant dollars in economies of scale and only pay for half the cost of total road replacement, since GLWA replaces the portions of all roads impacted by their pipe zone.

Traffic congestion and capacity were some of the committee's most deliberated subjects. Issues with congestion are primarily during peak times (rush hour) and are impacted by residents, local business employees and traffic in the surrounding communities. However, Novi's position in the center of the mixing bowl (I-96/696, 275, M-5) creates unique circumstances and challenges (pain points identified in projects below) for traffic flow. Novi's major roads are directly affected by the regional traffic using the mixing bowl and any commuting traffic passing through the city to connect.

The MDOT flex route project scheduled to begin in 2021 will have the most regional impact on capacity. The project includes installation of an Active Traffic Management System (Flex Lane) from Kent Lake Road to the I-275/I-696/M-5 interchange, along with a full reconstruction of all lanes and shoulders and is being proposed to alleviate congestion, reduce travel time during peak hours, improve safety, and restore pavement condition.

What else is Novi doing to mitigate traffic capacity? The following projects address capacity:

Completed Projects

- Ring Roads – create alternate movement for the Grand River and Novi Road intersection *
 - Southeast - Main Street (early 2000s)
 - Northeast - Crescent to Town Center (2017)
 - Southwest – Bond Street to Flint (2020, Phase 2 connection to Grand River pending)
 - Northwest - Crescent to Grand River (2021)
- Napier and 10 Mile roundabout (2017) – improved traffic flow and safety at this historically dangerous intersection
- Grand River and Beck – Right turn lane extension (2015), Dual left turn lane (2016)

Planned Projects

- 10 Mile Road from Haggerty to Meadowbrook (2022) – continuous turn lane and selective widening *
- Taft and 9 Mile Roundabout (2022)
- Meadowbrook and 11 Mile Road – right turn lane on southbound Meadowbrook

Projects Under Consideration

- Beck Road –regional expansion (Novi, Wixom, Northville Twp.) from 6 Mile Road to Pontiac Trail, pursuing federal funding *
- 12 Mile Road from Beck Road to Cabaret Drive – expand to 4-lane boulevard, RCOE project moving into to ROW acquisition *
- Ten Mile and Wixom Road, and 10 Mile and Taft Road –analyze cost benefit of roundabouts
- Crescent Road connection to Lee BeGole/11 Mile – northeast Ring Road addition
- Taft Road/ I-96 Bridge – bridge over I-96 with connection to 12 Mile Road

**committee identified pain points*

A map and detailed listing of all major road projects discussed by the committee is included in Appendix X.

Since major road projects are both expansive and expensive, they must be considered in steps and phases to address resident and regional traffic concerns. These projects almost always include right-of-way acquisition, partnerships with other stakeholders, and funding obstacles. Most traffic challenges will not be resolved instantaneously, and the return on investment of multi-million-dollar road projects should be viewed not just locally, but regionally.

Does it make sense for the City to invest in projects that may move traffic within the city at one point but move the issue elsewhere? Consequently, the overall plan included herein has been thoroughly vetted by the committee with the following recommendations for major road projects:

- Verify the impact of the Flex Route project before committing to other projects
- Continue to pursue Beck Road funding – identified as major point of pain
 - Strong desire to complete this project with or without federal funds
- Partner with RCOC to execute 12 Mile expansion
 - Priority project and pain point for local traffic
- Cost-benefit analysis on roundabouts during the design phase for 10 Mile Road projects (Taft Road and Wixom Road intersections)
- Continue partnerships with stakeholders and other entities to capitalize on high-value investments in the region
- Consider the impact of COVID-19 on revenue and the future of commuting traffic in the region

Design

There is no singular design prescription for road construction, and each project is unique in community context. Projects are prioritized in a consistently changing landscape of revenue/budget/funding sources, development, constructability, and are based on additional factors listed below:

- **Geotechnical surveys**
 - Soil borings and pavement cores to determine existing conditions
- **Historical knowledge**
 - Past observations of the trend of pavement deterioration
- **Cost of maintenance**
 - How much does the road cost us to maintain?
- **Economies of scale**
 - Combine large segments to save on mobilization costs and to get better unit prices for volume
- **Traffic movement and interruptions**
 - How do we impact residents and commuter traffic flow and access?
- **Other capital improvement projects**
 - Are there other capital improvements to align with road construction (drains, water/sewer, sidewalks/pathways, RCOC, MDOT, GLWA)

Working as a team made of transportation planners and engineers and consulting engineers, staff takes a holistic approach to design. Projects, when applicable, are designed to make the street network safer and more convenient for drivers, transit users, pedestrians, bicycles, and other non-motorized users - making the community a better place to live.

For example, connections identified in the Non-Motorized Master plan are considered when major road projects are executed. The planned 10 Mile Road enhancements (Haggerty to Meadowbrook) include the construction of a high priority pathway segment on the south side of 10 Mile. The same project will simultaneously replace aging water main infrastructure during the road construction. This project demonstrates a practical

use of the three factors above (historical knowledge, economies of scale, other capital projects).

When planning for road expansion projects, analyzing opportunities to enhance the driver experience and create aesthetic corridors are a priority. One way to achieve this is the implementation of boulevards, which are roads with a median splitting up the lanes of traffic. They are generally safer and more pleasing than a traditional 5 lane design and can usually be accomplished within the same footprint. The expansion projects considered for 12 Mile Road (Beck to Cabaret) and the Beck Road corridor are recommended as boulevard cross-sections, with support of the committee.

Driving in a roundabout is safer when compared to a traditional, signalized intersection. In a roundabout, the cars are traveling at a slower speed, with fewer conflict points, and the accidents, which do occur, are much less severe, typically resulting only in property damage rather than personal injury. Not only are roundabouts safer, but they allow for more traffic to move through an intersection than signalized intersections. Studies have indicated that replacing traffic signals with roundabouts can increase the capacity of a road by 30 to 50 percent. The newer roundabouts in the city have proved successful (Napier and 10 Mile, Crescent NW Ring Road) and the RC recommends investigation and design for others if applicable.

The Roads Committee discussed several technological advances in pavement design considered for road projects. There are numerous products that can be added to a pavement cross-section that will increase pavement strength and durability, resulting in a longer useful life of the pavement and a reduced cost for maintenance. Geosynthetic pavement interlayers (Town Center, 11Mile, Meadowbrook) are used added to increase strength, resist crack propagation, and essentially waterproof the pavement. Pavement additives such as fibers and modified binders (used on Cabot/Lewis and Trans-X) can be added to extend the life of pavements. Geosynthetic grids are now used in the NRP to mitigate poor soil conditions and reduce the cost of extension excavation and additional stone base.

Long-Term Planning

- a. Road report refresh (2 years) Renew (5 years)
- b. How to plan for "maintenance vs. repair" future
- c. Projects by other jurisdictions (RCOC 10 Mile)
- d. Trending in the right direction
- e. Megaprojects will require some source of additional funding
- f. Let's put funding here

Summarization of Findings to Council

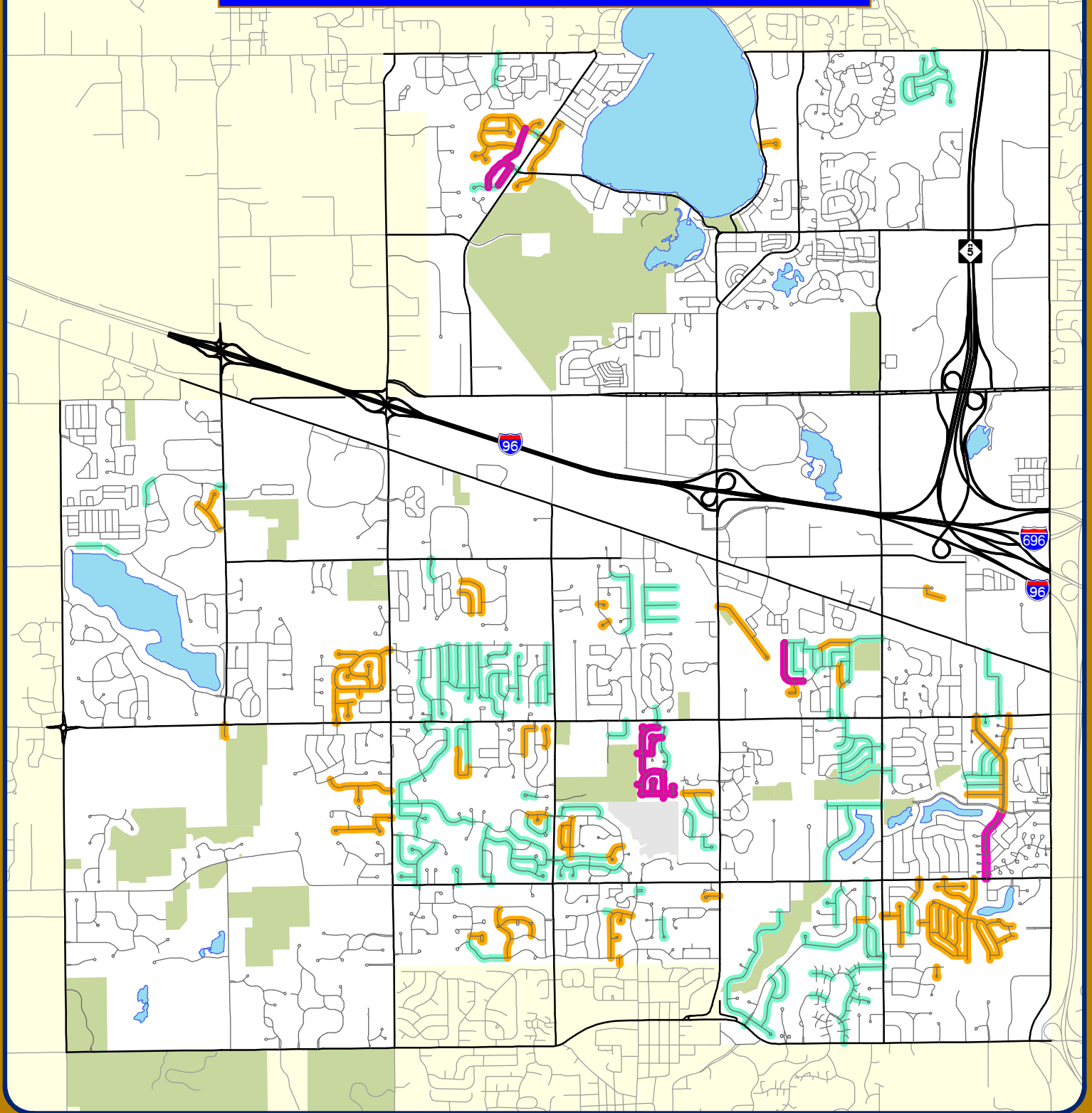
Committee Input

Appendix with Resources

1. Presentations
 - a. Meeting #1 - Roads 101
 - b. Meeting #2 - Roads 101 cont'd
 - c. Finance - Funding
 - d. Meeting #3 – RCOC Projects
 - e. Crash Analysis
 - f. 2012 OHM Road Asset and Funding Analysis
2. Reports
 - a. Road Report
 - i. PASER 2018
 - ii. PASER 2020
 - b. 10 Mile Corridor Study
 - c. Beck Road Scoping Study
 - d. Novi Road/Grand River Avenue Multi-Development Traffic Impact Study
 - e. Thoroughfare Master Plan
3. Memorandums
 - a. 10 Mile Technical Memorandum
 - b. 12 Mile Project Update
 - c. RCOC Strategic Planning Update
 - d. I-96 Flex Route
 - e. GLWA Project Update
 - f. 2020 Roads Projects Update
 - g. Roads Committee Update
 - h. PASER
 - i. Roads Prioritization
 - j. Novi Corridor Traffic Study
 - k. Top 15 Dangerous Intersections
 - l. Traffic Signal Backplates
4. Maps
 - a. NRP & CPR 2014-2021
 - b. CPM - Proposed
 - c. Major Road and Traffic Improvements (Type)
 - d. Major Road and Traffic Improvements (Status)
 - e. Intersection and Signal Improvement
 - f. Road Jurisdiction Map

Neighborhood Roads Program 2014-2021

City of Novi, Michigan



Map Author: Keri Blough
Date: December 11, 2020
Project: NRP Projects
Version #: 1.2

MAP INTERPRETATION NOTICE

Map information depicted is not intended to replace or substitute for any official or primary source. This map was intended to meet National Map Accuracy Standards and use the most recent, accurate sources available to the people of the City of Novi. Boundary measurements and area calculations are approximate and should not be construed as survey measurements performed by a licensed Michigan Surveyor as defined in Michigan Public Act 132 of 1970 as amended. Please contact the City GIS Manager to confirm source and accuracy information related to this map.

Road Construction Projects

2014-2018 2019-2020 2021



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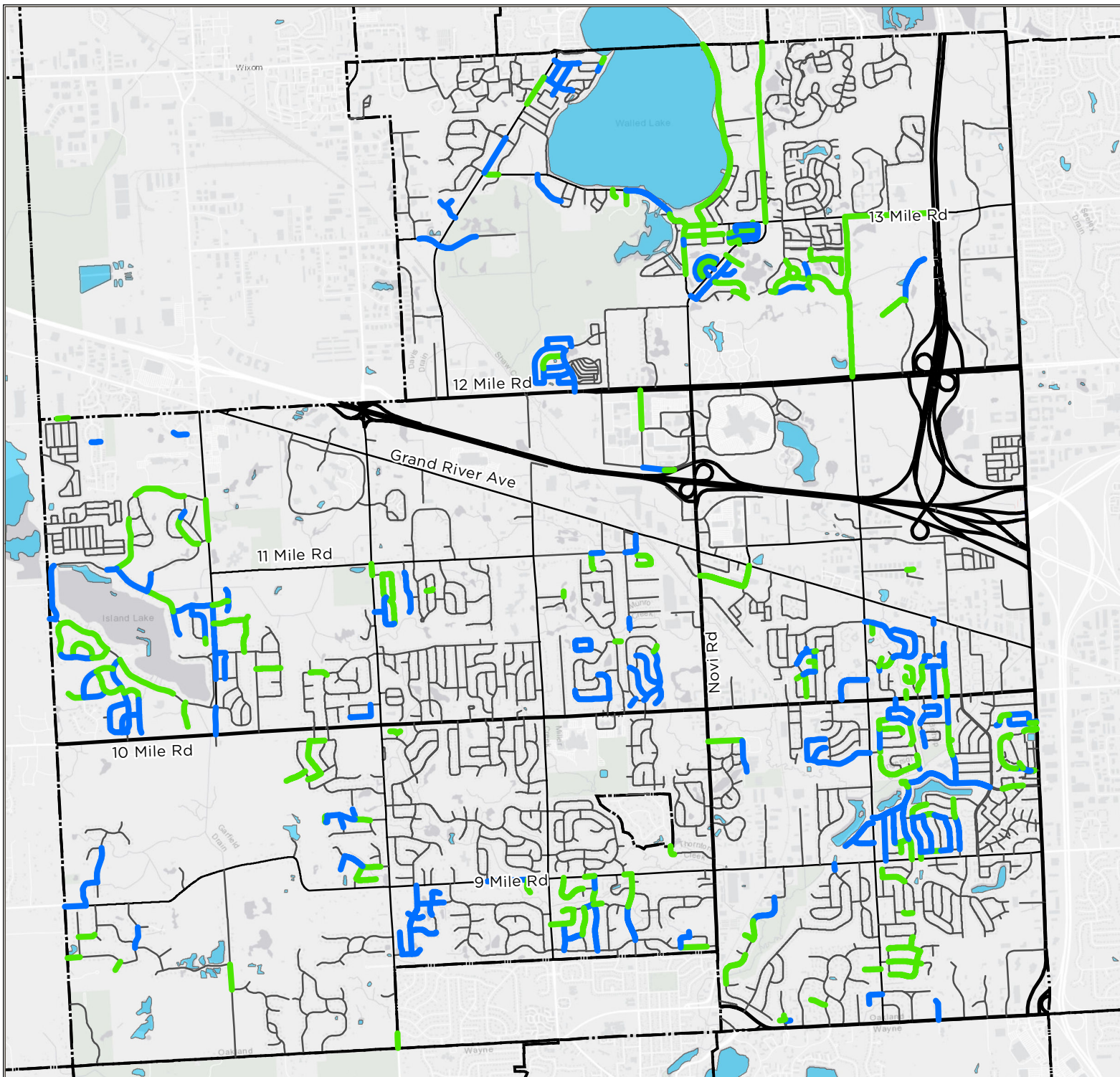
Feet
0 900 1,800 3,600 5,400

1 inch = 4,433 feet





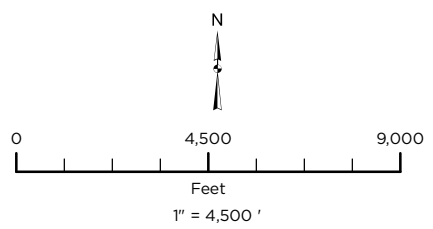
Asphalt & Sealcoat Pavers 5 and 6



- 5
- 6

Roads

- Other Principal Arterial; Interstate or Other Freeway
- Minor Arterial; Major Collector
- Minor Surface Road



Source: Data provided by State of Michigan, SEMCOG and Roadsoft. OHM Advisors does not warrant the accuracy of the data and/or the map. This document is intended to depict the approximate spatial location of the mapped features within the Community and all use is strictly at the user's own risk.

Coordinate System: NAD 1983 StatePlane Michigan South FIPS 2113 IntFeet

Map Published: December 9, 2020

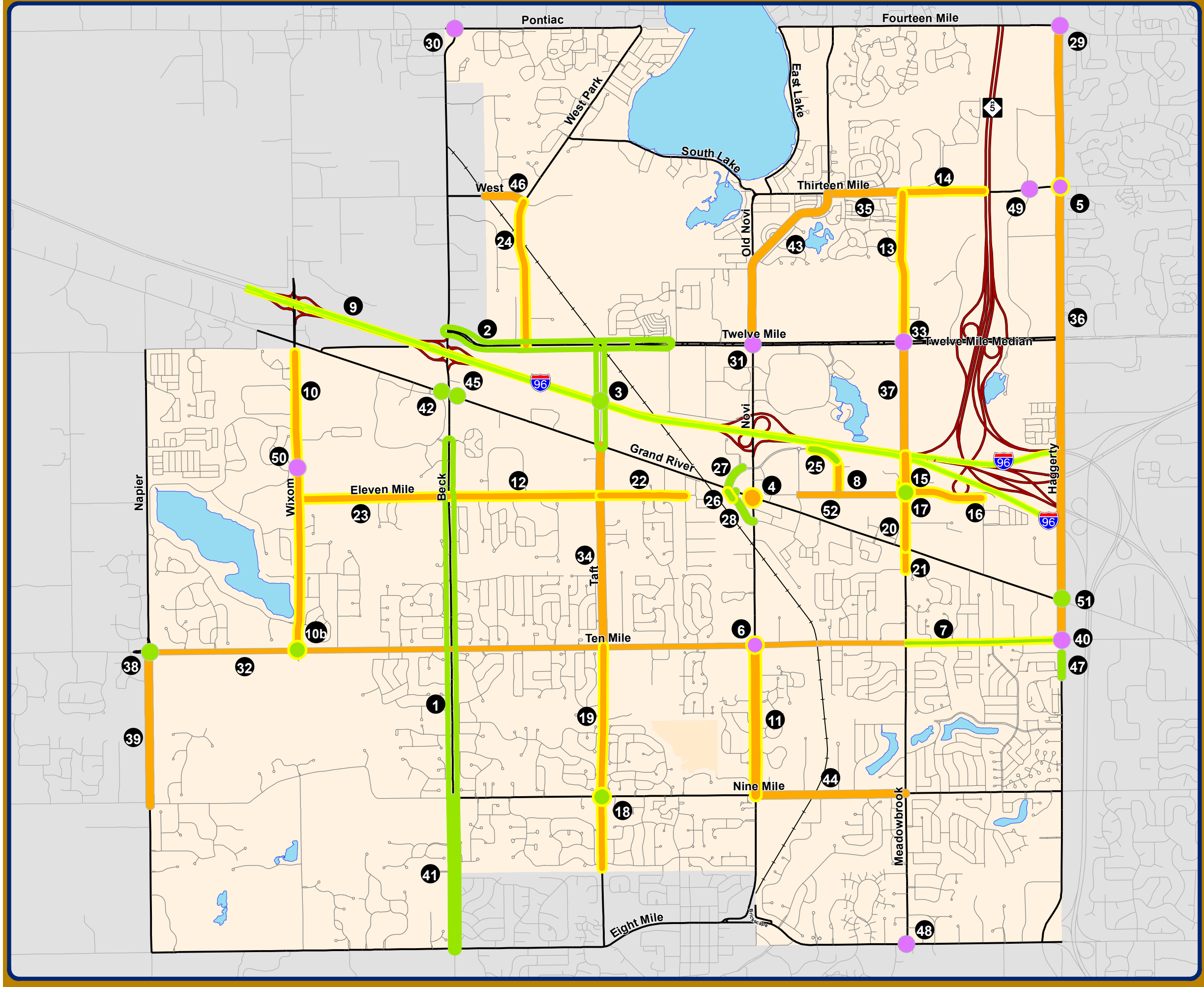
Major Road and Traffic Improvements

Completed (2014 - 2020), Planned, and Under Consideration

Legend

-  Capacity Improvement, Under Consideration
-  Capacity Improvement, Planned
-  Capacity Improvement, Completed
-  Road Surface Improvement, Planned
-  Road Surface Improvement, Completed
-  Intersection Improvement, Planned
-  Intersection Improvement, Completed

0 1,100 2,200 4,400 6,600
Feet
1 inch = 3,312 feet



City of Novi

Engineering Division
Department of Public Works
26300 Lee BeGole Drive
Novi, MI 48375
cityofnovi.org

Map Author: Anjum/Runkel
Date: January 11, 2021
Project: Major Road/Traffic Improvements
Version #: 2.0

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Minor Traffic Signal Improvements: Completed and Planned

Map Legend

- Planned Signal Improvements
- Completed Signal Improvements



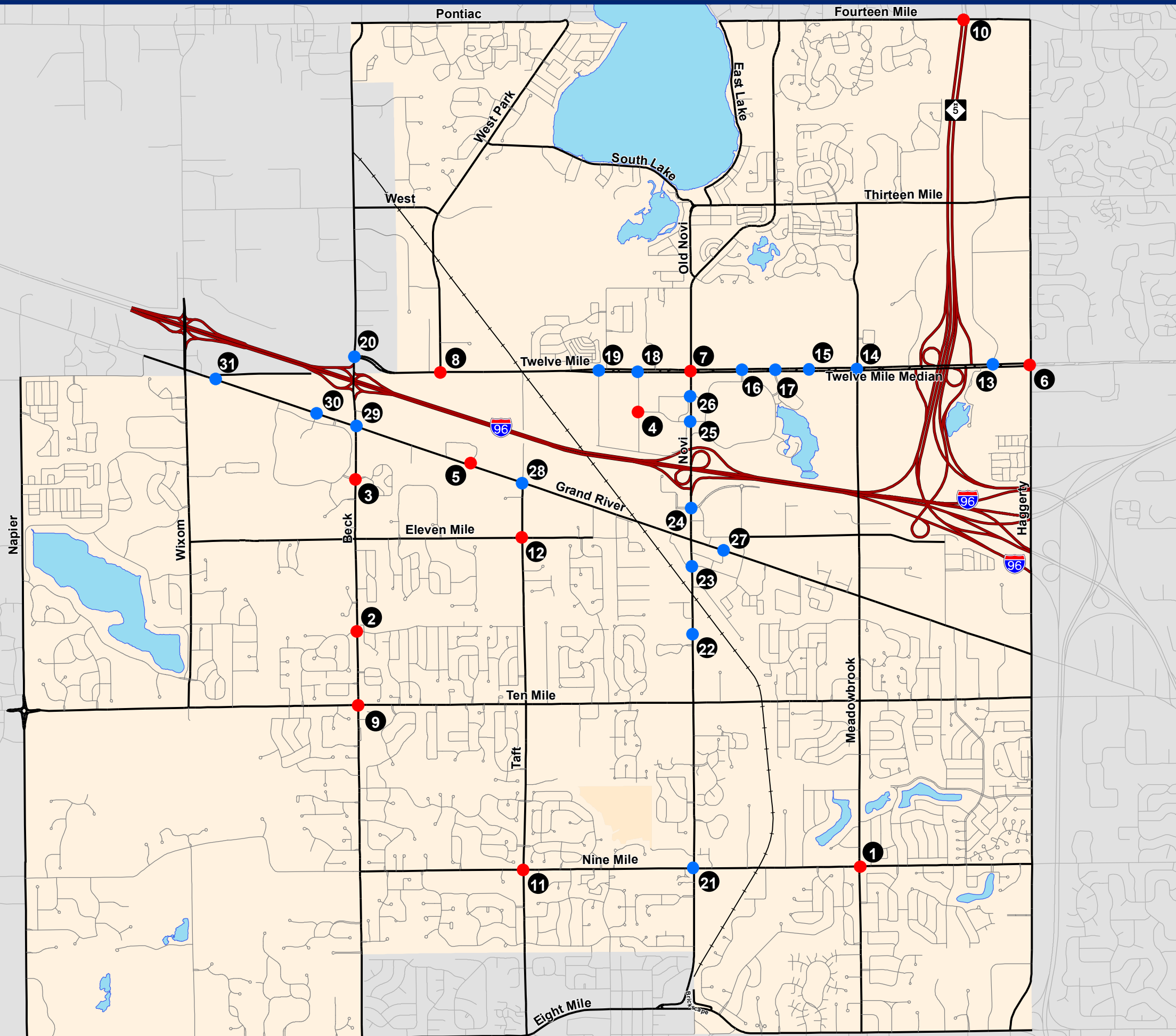
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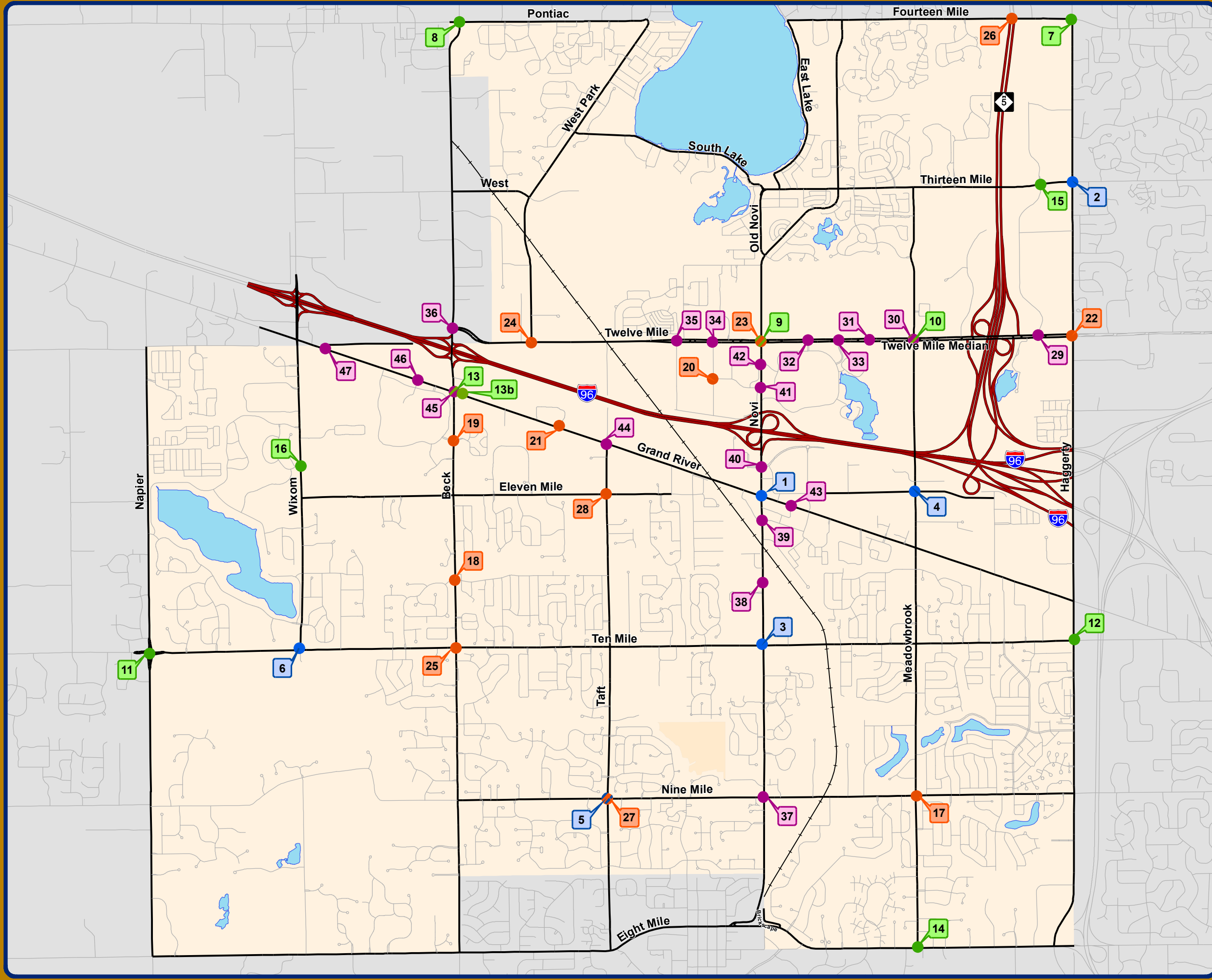
Map Author: Humna
 Date: 11-20-2020
 Project: Traffic Improvement Summary
 Version #: 1.0

Amended By:
 Date:
 Department:

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Signal Improvements: Completed and Planned

Map Legend

Major Traffic Improvements

- Planned Signal Improvements (Blue circle)
- Completed Signal Improvements (Green circle)

Minor Traffic Improvements

- Planned Signal Improvements (Orange circle)
- Completed Signal Improvements (Purple circle)

0 1,050 2,100 4,200 6,300
Feet
1 inch = 3,250 feet



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Traffic & Road Improvements - Completed (2014 - 2020), Planned, and Under Consideration
January 2021

#	Category	Status	Improvement	Project	Limits/Type	Agency	Year	Construction Cost	Outside Funding	Funding Source	Notes
Projects under Consideration											
1	Road	Consideration	Capacity	Beck Road Widening	City Limits	Multi	2026+	\$ 35,184,310.00	TBD	Major	
2	Road	Consideration	Capacity	12 Mile Road Widening	Beck Rd to Dixon Rd	RCOC	2026+	\$ 13,136,894.00	TBD	Major	
3	Road	Consideration	Capacity	Taft Road Bridge	Grand River Ave to 12 Mile Rd	City	2026+		TBD		
Planned Projects											
4	Intersection	Planned	Road Surface	Novi Rd & Grand River	CPR, Main St to Grand River	RCOC	2021	\$ 1,201,741.00	100% RCOC	N/A	
5	Intersection	Planned	Intersection	13 Mile Rd/Haggerty Rd	Traffic signal upgrade	RCOC	2021	\$ 260,000.00	50% RCOC (\$130,000) 25% Farmington Hills (\$65,000)	Municipal	\$65,000 City share
6	Intersection	Planned	Intersection	10 Mile Rd/Novi Rd	Traffic signal upgrade	RCOC	2021	\$ -	100% RCOC	N/A	
7	Road	Planned	Capacity	10 Mile Road Improvements	Meadowbrook Rd to Haggerty Rd	RCOC	2021	\$ 3,677,460.00	\$108,480 Design (County) \$458,480 Design (RCOC Board)	Municipal	\$772,500 current City share
8	Road	Planned	Road Surface	Lee BeGole Dr Reconstruction	11 Mile Rd to terminus	City	2021	\$ 854,700.00		Major	
9	Road	Planned	Capacity	I-96 Flex Route	Kent Lake Rd to 696 Interchange	MDOT	2021 - 23	\$ 223,600,000.00	100% MDOT/Federal	N/A	
10	Road	Planned	Road Surface	Wixom Road Rehabilitation	10 Mile Rd to City Limits	City (FAC funding)	2023	\$ 1,617,530.00	\$1,294,024 FAC funding	Major	\$323,506 City match
10b	Intersection	Planned	Capacity	Wixom Road & 10 Mile	Intersection	City	2023	See #10	See #10	Municipal	Part of #10 (Wixom Rd Rehab)
11	Road	Planned	Road Surface	Novi Road Resurfacing	9 Mile Rd to 10 Mile Rd	RCOC	2022	\$ 1,875,000.00	\$1,500,000 FAC funding	Municipal	\$212,430 City share
12	Road	Planned	Road Surface	11 Mile Rd Rehabilitation	Beck Rd to Taft Rd	City	2022	\$ 1,708,153.00	Applying for FAC	Major	Right turn lane addition
13	Road	Planned	Road Surface	Meadowbrook Rd Reconstruction	12 Mile Rd to 13 Mile Rd	GLWA	2022	\$ 3,900,904.00	\$3,452,797 GLWA	Major	\$448,107 City share
14	Road	Planned	Road Surface	13 Mile Rd Reconstruction	Meadowbrook Rd to M-5 Bike Path	GLWA	2022	\$ 3,164,740.00	\$1,907,793 GLWA	Major	\$1,257,747 City share
15	Road	Planned	Road Surface	Meadowbrook Rd Reconstruction	11 Mile Rd to I-96	GLWA	2022	\$ 910,154.00	\$395,132.65 GLWA	Major	\$515,021 City share
16	Road	Planned	Road Surface	11 Mile Rd Reconstruction	Meadowbrook Rd to Seeley Rd	GLWA	2022	\$ 1,839,859.00	\$1,255,206 GLWA	Major	\$584,653 City share. Road costs only.
17	Intersection	Planned	Capacity	Meadowbrook Rd/11 Mile Rd	Southbound right turn lane to 11 Mile	City	2022	\$ 134,650.00		Major	Right turn lane addition
18	Intersection	Planned	Capacity	9 Mile Rd/Taft Rd Roundabout	Roundabout at intersection	City (HSIP Funding)	2022	\$ 825,735.00	\$600,000 HSIP	Major	\$225,735 City share
19	Road	Planned	Road Surface	Taft Road Rehabilitation	City limits to 10 Mile Rd	City (FAC funding)	2022	\$ 1,137,610.00	\$910,088 FAC	Major	\$227,522 City share
20	Road	Planned	Road Surface	Meadowbrook Rd Reconstruction	Grand River Ave to 11 Mile Rd	City	2023	\$ 597,962.00		Major	
21	Road	Planned	Road Surface	Meadowbrook Rd Rehabilitation	Cherry Hill Rd to Grand River Ave	City	2023	\$ 376,232.00		Major	
22	Road	Planned	Road Surface	11 Mile Rd Rehabilitation	Taft Rd to Clark St	City	2024	\$ 1,014,341.00		Major	
23	Road	Planned	Road Surface	11 Mile Rd Rehabilitation	Beck Rd to Wixom Rd	City	2024	\$ 1,158,434.00	Applying for FAC	Major	
24	Road	Planned	Road Surface	West Park Dr Rehabilitation	12 Mile Rd to West Rd	City	2026+	\$ 2,508,140.00		Major	
25	Road	Planned	Capacity	Lee BeGole Dr Extension	Terminus to Crescent Blvd	City	2026+	\$ 1,882,170.00		Major	
26	Road	Planned	Capacity	Bond (fka Flint) St Construction - Phase 2	Terminus to Grand River	City	2025	\$ 636,519.00		Local	
Completed Projects											
27	Road	Completed	Capacity	Crescent Blvd Extension	Novi Rd to Grand River Ave	City	2020	\$ 5,019,223.00		Major	
28	Road	Completed	Capacity	Bond (fka Flint) St Construction - Phase 1	Novi Rd to Grand River Ave	City	2020	\$ 1,411,817.00	\$244,897 LRIP (2016-18)	Local	
29	Intersection	Completed	Intersection	14 Mile Rd/Haggerty Rd	Traffic signal modernization	RCOC/City	2020	\$ 263,529.00	\$206,683.20 HSIP \$28,423 RCOC	Major	\$28,423 City share
30	Intersection	Completed	Intersection	Pontiac Trl/Beck Rd	Traffic signal modernization	RCOC/City	2020	\$ 227,427.00	\$178,341.60 HSIP \$24,542.70 RCOC	Major	\$24,543 City share
31	Intersection	Completed	Intersection	12 Mile Rd/Novi Rd Improvements	Intersection improvements	RCOC	2019	\$ 1,100,000.00	\$209,370 County Board \$409,371 RCOC Board	Major	\$481,259 City share

32	Road	Completed	Road Surface	10 Mile Rd Resurfacing	Napier Rd to Haggerty Rd	RCOC	2019	\$ -	100% RCOC	N/A	
33	Intersection	Completed	Intersection	Meadowbrook Rd/12 Mile Rd	Concrete panel replacement	RCOC	2019	\$ -	100% RCOC	N/A	
34	Road	Completed	Road Surface	Taft Rd Rehabilitation	10 Mile Rd to Grand River Ave	City	2018	\$ 2,031,844.00		Major	
35	Road	Completed	Road Surface	13 Mile Rd Rehabilitation	Novi Rd to Meadowbrook Rd	City	2018	\$ 469,417.00		Major	
36	Road	Completed	Road Surface	Haggerty Rd PPO	10 Mile Rd to 14 Mile Rd	RCOC	2018	\$ -	100% RCOC	N/A	
37	Road	Completed	Road Surface	Meadowbrook Rd Rehabilitation	12 Mile Rd to I-96	City	2017	\$ 1,007,500.00	\$231,188.75 FSTP	Major	\$776,311.25 City share
38	Intersection	Completed	Capacity	10 Mile Rd/Napier Rd Roundabout	Intersection improvements	RCOC	2017	See #39	See #39	Major	See #39
39	Road	Completed	Road Surface	Napier Rd Paving	9 Mile Rd to 10 Mile Rd	RCOC	2017	\$ 6,261,300.00	\$4,796,848 Federal funding \$732,226 RCOC Board \$366,113 Lyon Township	Major	\$366,113 City share
40	Intersection	Completed	Intersection	10 Mile Rd/Haggerty Rd Rehabilitation	Intersection Rehabilitation	RCOC	2017	\$ -	100% RCOC	N/A	
41	Road	Completed	Capacity	Beck Rd Reconstruction	8 Mile Rd to 9 Mile Rd	City	2017	\$ 1,743,000.00	\$278,593.75 FSTP		\$1,464,406 City share
42	Intersection	Completed	Capacity	Beck Rd/Grand River Ave	Dual Left Turn Lane	City	2016	\$ 637,100.00	\$448,160 HSIP \$53,679 RCOC Board \$53,679 County Board	Major	\$81,582 City Share
43	Road	Completed	Road Surface	Novi Rd Rehabilitation	12 Mile Rd to 13 Mile Rd	City	2016	\$ 1,722,200.00	\$689,300 FSTP	Major	\$1,032,900 City share
44	Road	Completed	Road Surface	9 Mile Rd Rehabilitation	Novi Rd to Meadowbrook Rd	City	2016	\$ 717,800.00	\$262,260 FSTP		\$455,540 City share
45	Intersection	Completed	Capacity	Beck Rd/Grand River Ave	Rt turn lane extenstion	MDOT/City/RCOC	2015	\$ 170,486.00	\$145,823	Major	\$24,663 City share
46	Road	Completed	Road Surface	West Rd Rehab	West Part to CSX RR	City	2015				
47	Intersection	Completed	Capacity	SB Haggerty Lane Widening	Stonehenge to 23401 Haggerty	City	2015				
48	Intersection	Completed	Intersection	8 Mile Rd/Meadowbrook Rd Improvements	Traffic signal upgrade	City	2014	\$ 173,984.00		Municipal	
49	Intersection	Completed	Intersection	13 Mile Rd/Cabot Dr Improvements	Traffic signal install	City	2014	\$ 11,553.00		Municipal	
50	Intersection	Completed	Intersection	Wixom Rd/Glenwood Signal	Traffic signal install	City	2014	\$ 161,200.00		Municipal	
51	Intersection	Completed	Capacity	SB Haggerty Rd Right Lane Grand River		City	2014				
52	Road	Completed	Road Surface	11 Mile Recon	Meadowbrook to Town Center	City	2014				
Minor Traffic Signal Improvements											
1	Intersection	Completed		9 Mile Rd/Meadowbrook Rd	Traffic signal backplates	City/RCOC	2020	\$ -	100% RCOC	N/A	
2	Intersection	Completed		Beck Rd/Cider Mill Dr	Traffic signal backplates	City/RCOC	2020	\$ -	100% RCOC	N/A	
3	Intersection	Completed		Beck Rd/Providence Park	Traffic signal backplates	City/RCOC	2019	See Note		Municipal	\$25,000 for 2018-19 intersections
4	Intersection	Completed		West Oaks Dr/Donelson	Traffic signal backplates	City/RCOC	2019	See Note		Municipal	\$25,000 for 2018-19 intersections
5	Intersection	Completed		Grand River/Suburban Collection	Traffic signal backplates	City/RCOC	2019	See Note		Municipal	\$25,000 for 2018-19 intersections
6	Intersection	Completed		12 Mile Rd/Haggerty Rd	Traffic signal backplates	City/RCOC	2018	See Note		Municipal	\$25,000 for 2018-19 intersections
7	Intersection	Completed		12 Mile Rd/Novi Rd	Traffic signal backplates	City/RCOC	2018	See Note		Municipal	\$25,000 for 2018-19 intersections
8	Intersection	Completed		12 Mile Rd/ W Park Dr	Traffic signal backplates	City/RCOC	2018	See Note		Municipal	\$25,000 for 2018-19 intersections
9	Intersection	Completed		Beck Rd/10 Mile Rd	Traffic signal backplates	City/RCOC	2018	See Note		Municipal	\$25,000 for 2018-19 intersections
10	Intersection	Completed		14 Mile Rd/M-5	Traffic signal backplates	City/RCOC	2018	See Note		Municipal	\$25,000 for 2018-19 intersections
11	Intersection	Completed		Taft Rd/9 Mile Rd	Flashing beacon install	City	2019			Municipal	
12	Intersection	Completed		Taft Rd/11 Mile Rd	Flashing beacon install	City	2019			Municipal	
13	Intersection	Planned		12 Mile Rd/Cabot Dr	Traffic signal backplates	RCOC	2020	\$ -	100% RCOC	N/A	
14	Intersection	Planned		Meadowbrook Rd/12 Mile Rd	Traffic signal backplates	RCOC	2020	\$ -	100% RCOC	N/A	
15	Intersection	Planned		12 Mile Rd/Woodland Med Ctr	Traffic signal backplates	RCOC	2020	\$ -	100% RCOC	N/A	
16	Intersection	Planned		12 Mile Rd/12 Oaks W	Traffic signal backplates	RCOC	2020	\$ -	100% RCOC	N/A	
17	Intersection	Planned		12 Mile Rd/12 Oaks E	Traffic signal backplates	RCOC	2020	\$ -	100% RCOC	N/A	
18	Intersection	Planned		Donelson/12 Mile Rd	Traffic signal backplates	RCOC	2020	\$ -	100% RCOC	N/A	
19	Intersection	Planned		Cabaret/12 Mile Rd	Traffic signal backplates	RCOC	2020	\$ -	100% RCOC	N/A	

20	Intersection	Planned		Beck Rd/12 Mile Rd	Traffic signal backplates	RCOC	2020	\$ -	100% RCOC	N/A	
21	Intersection	Planned		9 Mile Rd/ Novi Rd	Traffic signal backplates	RCOC	2020	\$ -	100% RCOC	N/A	
22	Intersection	Planned		Novi Rd/Post office	Traffic signal backplates	RCOC	2020	\$ -	100% RCOC	N/A	
23	Intersection	Planned		Novi Rd/Main St	Traffic signal backplates	RCOC	2020	\$ -	100% RCOC	N/A	
24	Intersection	Planned		Crescent Blvd/Novi Rd	Traffic signal backplates	RCOC	2020	\$ -	100% RCOC	N/A	
25	Intersection	Planned		Novi Rd/ 12 Oaks S	Traffic signal backplates	RCOC	2020	\$ -	100% RCOC	N/A	
26	Intersection	Planned		Novi Rd/ 12 Oaks N	Traffic signal backplates	RCOC	2020	\$ -	100% RCOC	N/A	
27	Intersection	Planned		Grand River/Main St	Traffic signal backplates	RCOC	2020	\$ -	100% RCOC	N/A	
28	Intersection	Planned		Grand River/Taft Rd	Traffic signal backplates	RCOC	2020	\$ -	100% RCOC	N/A	
29	Intersection	Planned		Beck Rd/Grand River Ave	Traffic signal backplates	RCOC	2020	\$ -	100% RCOC	N/A	
30	Intersection	Planned		Grand River/West Market Sq	Traffic signal backplates	RCOC	2020	\$ -	100% RCOC	N/A	
31	Intersection	Planned		Grand River/12 Mile Rd	Traffic signal backplates	RCOC	2020	\$ -	100% RCOC	N/A	

Traffic Signal Improvements - Completed (2014 - 2020), Planned, and Under Consideration

November 2020

#	Category	Status	Project	Limits/Type	Agency	Year	Notes
Major Traffic Signal Improvements							
Planned Projects							
1	Intersection	Planned	Novi Rd & Grand River	Panel replacement at intersection	RCOC	2021	
2	Intersection	Planned	13 Mile Rd/Haggerty Rd	Traffic signal upgrade	RCOC	2021	
3	Intersection	Planned	10 Mile Rd/Novi Rd	Traffic signal upgrade	RCOC	2021	
4	Intersection	Planned	Meadowbrook Rd/11 Mile Rd	Southbound right turn lane to 11 Mile	City	2022	Right turn lane addition
5	Intersection	Planned	9 Mile Rd/Taft Rd Roundabout	Roundabout at intersection	City (HSIP Funding)	2022	
6	Intersection	Planned	Wixom Rd/10 Mile Rd	Left Turn Lane	City	2022	Left Turn Lane
Completed Projects							
7	Intersection	Completed	14 Mile Rd/Haggerty Rd	Traffic signal modernization	City	2020	
8	Intersection	Completed	Pontiac Trl/Beck Rd	Traffic signal modernization	City	2020	
9	Intersection	Completed	12 Mile Rd/Novi Rd Improvements	Intersection improvements	RCOC	2019	
10	Intersection	Completed	Meadowbrook Rd/12 Mile Rd	Concrete panel replacement	RCOC	2019	
11	Intersection	Completed	10 Mile Rd/Napier Rd Roundabout	Intersection improvements	RCOC	2017	
12	Intersection	Completed	10 Mile Rd/Haggerty Rd Rehabilitation	Intersection Rehabilitation	RCOC	2017	
13	Intersection	Completed	Beck Rd/Grand River Ave	Dual Left Turn Lane	City	2017	
13b	Intersection	Completed	Beck/Grand River Ave	Rt turn lane extension	MDOT/City/RCOC	2015	
14	Intersection	Completed	8 Mile Rd/Meadowbrook Rd Improvements	Traffic signal upgrade	City	2014	
15	Intersection	Completed	13 Mile Rd/Cabot Dr Improvements	Traffic signal install	City	2014	
16	Intersection	Completed	Wixom Rd/Glenwood Signal	Traffic signal install	City	2014	
Minor Traffic Signal Improvements							
Planned Projects							
17	Intersection	Completed	9 Mile Rd/Meadowbrook Rd	Traffic signal backplates	City/RCOC	2020	
18	Intersection	Completed	Beck Rd/Cider Mill Dr	Traffic signal backplates	City/RCOC	2020	
19	Intersection	Completed	Beck Rd/Providence Park	Traffic signal backplates	City/RCOC	2019	
20	Intersection	Completed	West Oaks Dr/Donelson	Traffic signal backplates	City/RCOC	2019	
21	Intersection	Completed	Grand River/Suburban Collection	Traffic signal backplates	City/RCOC	2019	
22	Intersection	Completed	12 Mile Rd/Haggerty Rd	Traffic signal backplates	City/RCOC	2018	
23	Intersection	Completed	12 Mile Rd/Novi Rd	Traffic signal backplates	City/RCOC	2018	
24	Intersection	Completed	12 Mile Rd/ W Park Dr	Traffic signal backplates	City/RCOC	2018	
25	Intersection	Completed	Beck Rd/10 Mile Rd	Traffic signal backplates	City/RCOC	2018	
26	Intersection	Completed	14 Mile Rd/M-5	Traffic signal backplates	City/RCOC	2018	
27	Intersection	Completed	Taft Rd/9 Mile Rd	Flashing beacon install	City	2019	
28	Intersection	Completed	Taft Rd/11 Mile Rd	Flashing beacon install	City	2019	
Completed Projects							
29	Intersection	Planned	12 Mile Rd/Cabot Dr	Traffic signal backplates	RCOC	2020	
30	Intersection	Planned	Meadowbrook Rd/12 Mile Rd	Traffic signal backplates	RCOC	2020	
31	Intersection	Planned	12 Mile Rd/Woodland Med Ctr	Traffic signal backplates	RCOC	2020	

32	Intersection	Planned	12 Mile Rd/12 Oaks W	Traffic signal backplates	RCOC	2020	
33	Intersection	Planned	12 Mile Rd/12 Oaks E	Traffic signal backplates	RCOC	2020	
34	Intersection	Planned	Donelson/12 Mile Rd	Traffic signal backplates	RCOC	2020	
35	Intersection	Planned	Cabaret/12 Mile Rd	Traffic signal backplates	RCOC	2020	
36	Intersection	Planned	Beck Rd/12 Mile Rd	Traffic signal backplates	RCOC	2020	
37	Intersection	Planned	9 Mile Rd/ Novi Rd	Traffic signal backplates	RCOC	2020	
38	Intersection	Planned	Novi Rd/Post office	Traffic signal backplates	RCOC	2020	
39	Intersection	Planned	Novi Rd/Main St	Traffic signal backplates	RCOC	2020	
40	Intersection	Planned	Crescent Blvd/Novi Rd	Traffic signal backplates	RCOC	2020	
41	Intersection	Planned	Novi Rd/ 12 Oaks S	Traffic signal backplates	RCOC	2020	
42	Intersection	Planned	Novi Rd/ 12 Oaks N	Traffic signal backplates	RCOC	2020	
43	Intersection	Planned	Grand River/Main St	Traffic signal backplates	RCOC	2020	
44	Intersection	Planned	Grand River/Taft Rd	Traffic signal backplates	RCOC	2020	
45	Intersection	Planned	Beck Rd/Grand River Ave	Traffic signal backplates	RCOC	2020	
46	Intersection	Planned	Grand River/West Market Sq	Traffic signal backplates	RCOC	2020	
47	Intersection	Planned	Grand River/12 Mile Rd	Traffic signal backplates	RCOC	2020	