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CITY OF MAQUOKETA
10-YEAR STREET IMPROVEMENT PLAN

Submitted to:

City of Maquoketa
Joshua Boldt
City Manager
Maquoketa, IA

3/15/2023

Table of Contents

Table of Contents	1
Introduction	2
Methodology	4
Pavement Condition Index (PCI).....	4
Existing Conditions	5
PCI Dataset Selection	5
Underground Utilities.....	5
Exhibits.....	5
Summary Street Condition Data - 2019	5
Change in Street Condition - 2013 to 2019.....	6
Street Improvement Plan with Cost Estimates	7
Criteria for Project Selection	7
Maintenance (Minor Projects)	7
Rehabilitation & Reconstruction (Major Projects).....	8
Priority Streets & Priority Groups	9
Funding	11
Recommendations and Next Steps	13
Exhibits	14

Introduction

The City of Maquoketa is responsible for approximately 35 miles of streets. Over the last 5-10 years, the City has focused on and invested in large reconstruction projects on major roads (Main St. and Platt St. in particular). During this time, street maintenance operations including crack filling, seal coating, and small mill and overlay projects have continued. As the Platt St. project comes to a close, the City has hired WHKS to develop a 10-year Street Improvement Plan for the city road system with a focus on improving minor roads and neighborhood streets. WHKS used pavement condition index (PCI) data that was collected and provided by the Iowa Department of Transportation (Iowa DOT) and the Center for Transportation Research and Education (CTRE). To develop a more holistic analysis, WHKS reviewed additional available information including utility conditions, bike routes, average daily traffic data, and the locations of schools and other community assets (see Figure 2). The purpose of this plan is to better understand existing road conditions and look for opportunities to maximize available funds to improve local and residential streets. Major road projects (rehabilitation and reconstruction) are significantly more expensive than Minor road projects (maintenance, minor rehabilitation). Figure 1 shows a project cost comparison example demonstrating potential savings when communities take a proactive approach to street maintenance.

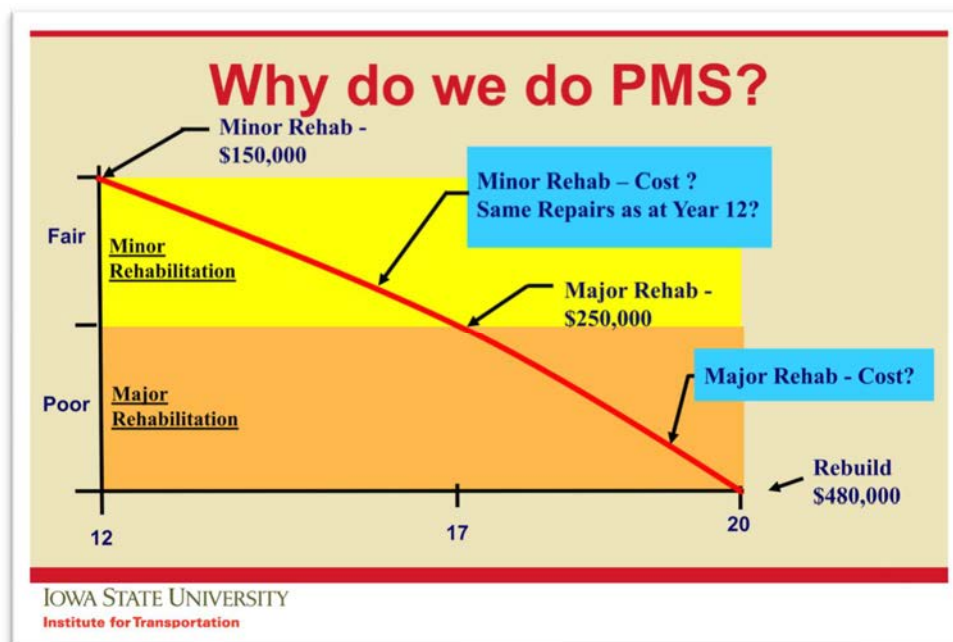


Figure 1 - Pavement Management System (PMS) – Minor (Repairs) vs Major Rehabilitation (Reconstruction) Cost Comparison (from INTRANS/CTRE IPMP presentation, 2015)

This planning document is intended to be used by the City of Maquoketa to make informed, data-driven, decisions about street maintenance and reconstruction priorities including funding pursuits, municipal budgeting, community connectivity, and areas where further investigation may be warranted. The following items are discussed below:

- Data collection and analysis methodology
- Summary findings of existing conditions
- Recommendations for street improvement projects with planning level cost estimates
- Recommendations for next steps and further study

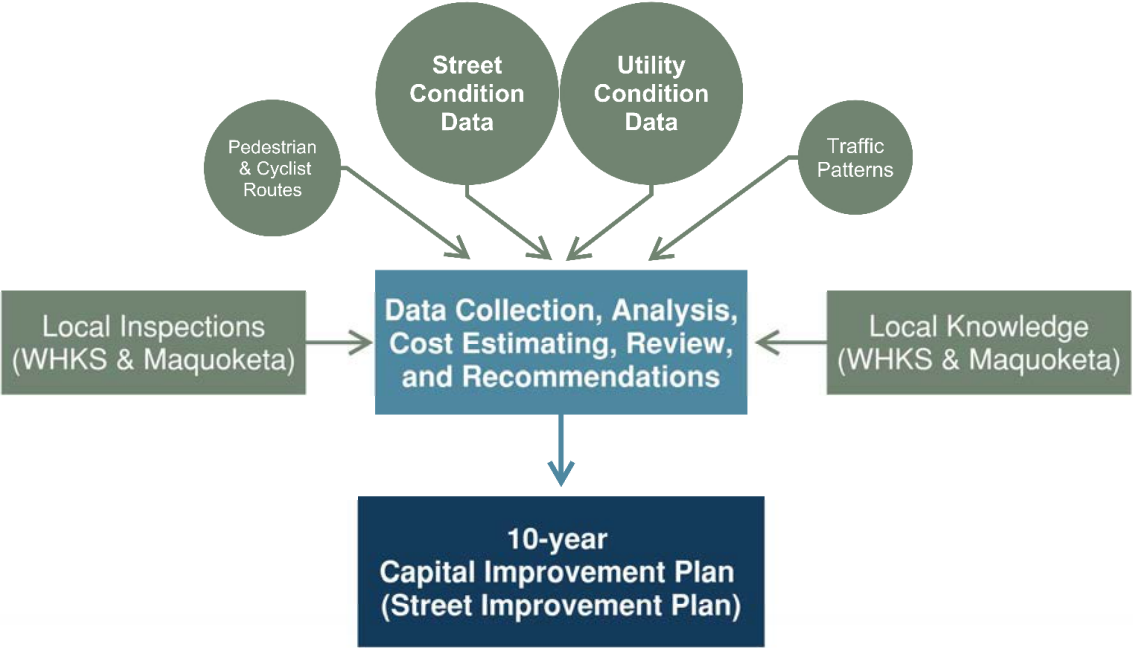


Figure 2 - Street Improvement Plan - Data Collection and Analysis

Methodology

Pavement Condition Index (PCI)

The PCI is a numerical index between 0 and 100, which is used to indicate the general condition of a pavement section. The index is widely used in Transportation Engineering and Asset Management to measure the performance of the road infrastructure. This plan was developed using data collected by the Iowa Department of Transportation, as part of their Iowa Pavement Management Program (IPMP). The IPMP promotes optimal, cost-effective decisions on highway maintenance, rehabilitation, and reconstruction, using past and projected pavement conditions. One of the key components of the IPMP is the automated data collection generated by a specialized vehicle that drives and records road condition information including texture, roughness, and pavement distress. Up to 75 different types of pavement distress are evaluated. The final PCI for the road segment is calculated based on the extent, type, and severity of distress.

The State of Iowa uses the PCI to have 5 rankings as shown in the table below.

Pavement Condition	PCI Range Value
Excellent	81 – 100
Good	61 – 80
Fair	41 – 60
Poor	21 – 40
Very Poor	0 – 20

Note: Street condition categorization is based on specific PCI numbers and should not be considered absolute. For instance, a street with a PCI of 40 is classified as “Poor” while a street with a PCI of 41 is classified as “Fair”. These ranges may be modified to capture this variability in subsequent analysis.

The PCI is an industry accepted tool for pavement condition but does have some limitations. In particular, PCI values do not include utility condition information, drainage issues, community priorities, connectivity, or functional adequacy.

There are multiple methods for pavement condition analysis. Initial discussions included consideration of the PASER method which is a visual assessment method. The PCI method provides more detail and is the typical method in Iowa.

Existing Conditions

PCI Dataset Selection

The City of Maquoketa is currently on a two-year schedule for data collection. WHKS obtained PCI data collected in 2013, 2015, 2017, 2019, and 2021. Some variation in street coverage and condition is expected and this was apparent in the data. The tables below provide a summary of some key information.

2013	2015	2017	2019	2021
33.9	35.4	9.0	33.8	34.0

Table 1 - Miles of Street Data Collected by Year

	2013	2015	2017	2019	2021
Excellent	19.3%	17.6%	-	18.1%	26.3%
Good	20.2%	16.6%	-	11.1%	37.6%
Fair	43.5%	42.6%	-	45.0%	26.1%
Poor	17.0%	23.0%	-	25.3%	10.0%
Very Poor	0.0%	0.2%	-	0.5%	0.0%

Table 2 - Street Condition - Percentages by Category

Key observations about the datasets include:

- As seen in Table 1, only 9 miles of roadway data was available from 2017 (approximately 30% of total). This was not considered sufficient to include in the analysis.
- Compared to the data from 2019, considerable improvement in street condition was seen in 2021 (see Table 2). This improvement was not the result of city street projects and was therefore unjustified. Local inspections by WHKS confirmed the presence of discrepancies between the recorded data and actual condition. WHKS noted several locations where 2021 data categorized segments of roads as “Excellent” when the condition was actually “Poor” to “Very Poor”. These findings have been passed to CTRE and discussions are ongoing.

Based on these observations, data from 2017 and 2021 was discarded. This plan is based on the dataset from 2019.

Underground Utilities

The condition of underground utilities such as storm/sanitary sewers and water lines significantly affect the type and extent of street rehabilitation work. Street improvement plans need to incorporate available utility condition information. The City of Maquoketa provided some available GIS data for the location of watermain breaks that required repairs over the last several years. This information is included in street condition maps.

Exhibits

Condition and prioritization maps, as well as enlarged tables, are included under Exhibits.

Summary Street Condition Data - 2019

Several things should be noted about this data:

- Platt St. (Iowa Highway 64) is not included in the data. Platt St. reconstruction finished in 2022 and the road condition would be categorized as Excellent.

- The quantity of streets in “Very Poor” condition increased from approximately 0 in 2013 to 0.17 miles in 2019. This does not show up visually in the figures due to its relatively small quantity.
- This data does not incorporate road maintenance projects undertaken by the City since 2019. While street maintenance work such as crack sealing extends service life, it does not necessarily improve the overall condition (e.g., taking a street from “Fair” to “Good” condition). Maintenance slows decay.

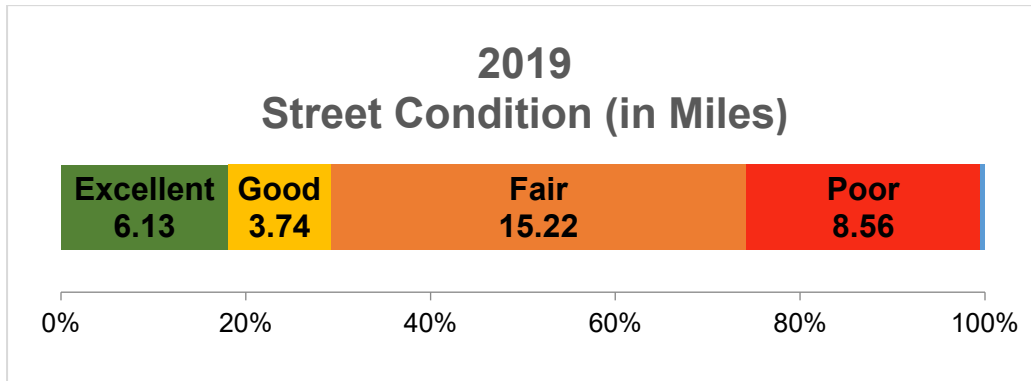


Figure 3 - City of Maquoketa - PCI Values by Mile (2019)

Change in Street Condition - 2013 to 2019

Figure 4 shows changes in street condition from 2013 to 2019. Several things should be noted from this data:

- The percentage of pavement rated “Excellent” remained relatively consistent. This fits the expectation that, in general, it takes 10-15 years for new pavement to begin to deteriorate noticeably.
- The percentage of pavement rated “Fair” also stayed relatively consistent. However, there is a noticeable decrease in pavement rated “Good” and a similar increase in pavement rated “Poor”. This shows the transition of pavement condition as it begins to deteriorate. Approximately 10% of the pavement rated “Good” deteriorated into “Fair” condition while a similar amount of pavement moved from “Fair” to “Poor”.

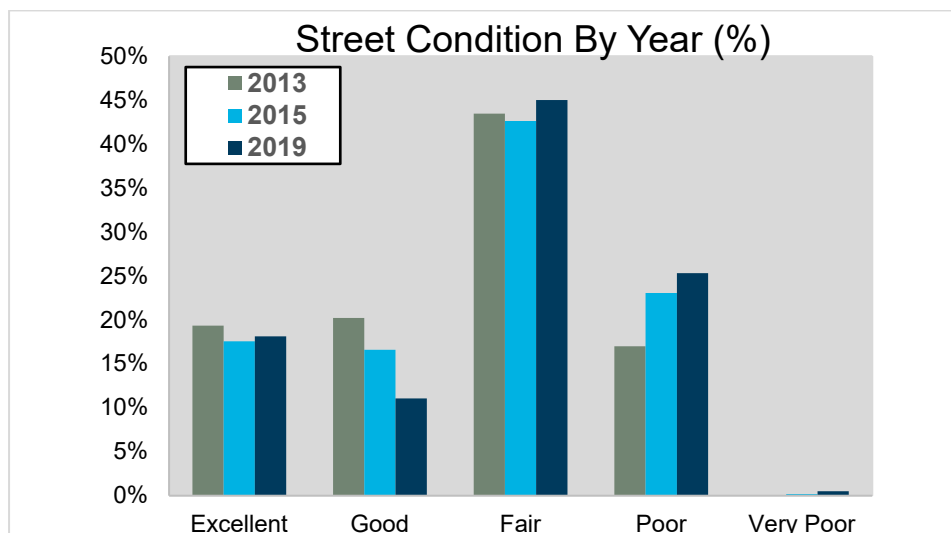


Figure 4 - Street Condition by Year

Street Improvement Plan with Cost Estimates

Street improvement plans are created to help communities understand existing conditions so that cost effective investments can be planned for and executed to help slow overall system deterioration.

Projects can be separated into three general categories:

- 1) Maintenance (Exhibit 3):
 - a. Work types: crack-sealing, seal-coating, pavement patching
 - b. Lowest cost (\$/mile)
 - c. Lowest increase in design life (5-7 years per treatment)
 - d. Minimal change in PCI
 - e. Generally based on $45 \leq \text{PCI} \leq 60$
- 2) Rehabilitation (Exhibit 2):
 - a. Work types: resurfacing, overlay, mill and fill
 - b. Generally based on $\text{PCI} \leq 45$
 - c. Increase in design life (up to 20 years)
 - d. Increase PCI
 - e. Limited underground utility work
- 3) Reconstruction (Exhibit 2):
 - a. Work types: complete replacement of pavement
 - b. Generally based on $\text{PCI} \leq 45$
 - c. Highest cost (\$/mile)
 - d. Highest increase in design life (up to 40 years for residential streets)
 - e. PCI to "Excellent"
 - f. Need for underground utility reconstruction

Criteria for Project Selection

WHKS created a list of potential street improvement projects based on the following:

- Streets were initially filtered using a PCI of 45 to capture some segments at the bottom end of the "Fair" range.
- Individual street segments with $\text{PCI} < 45$ were connected into longer corridors where intermediate/adjacent segments were generally below a PCI of 60.
- Watermain break information was overlaid to look for projects with known underground utility issues.
- Project development focused on improving overall system condition. ADT data was considered but was not the primary factor.
- Trail connectivity was considered as a factor in project selection. Connectivity is a common merit criteria factor for many potential funding programs.
- Distribution of projects through the community was also a factor.

Maintenance (Minor Projects)

The chart below gives the cost breakdown for sealing roads with a PCI of 45 to 60 (Exhibit 3). This cost is based on the per square yard price from the 2021-2022 crack sealing and GSB-88 bid tab from June of 2022 provided by the City.

Maintenance Plan Project costs for Roads with a PCI Between 45 and 60			
Miles of Road	S.Y of Road to Seal	Price per S.Y.	10 yr. Maintenance Cost
11.2	214,100	\$5.00	\$1,050,500

Table 3 - 10-year Maintenance Plan

As discussed above, investment in maintenance is the most cost-effective way to slow overall system deterioration. During this time, investments in rehabilitation and reconstruction projects will increase overall system quality. Any of the road segments shown in Exhibit 3 can be scheduled for maintenance based on available funding. It should be noted that completing projects over time, not all at once, creates a maintenance cycle that distributes future costs over time as well.

Rehabilitation & Reconstruction (Major Projects)

The projects listed below were selected using criteria described above. At a minimum, these projects were considered rehabilitation projects. From this list, reconstruction projects were selected based on pavement type, condition, and known utility issues (watermain breaks) along with some connectivity and ADT consideration. Further investigation of utility conditions, including adequacy, may change some of these projects from rehabilitation to reconstruction or vice versa. Additional information may allow projects to be split into rehabilitation and reconstruction components to reduce costs.

The project cost estimates were generated based on anticipated work type. Rehabilitation project costs do not include any utility or sidewalk work. Reconstruction projects show two estimated costs, one for the street only and one including conceptual level utility costs. These two costs were considered lower and upper bounds for planning purposes.

Priority Group #	Project ID #	Project Street	From	To	Length (ft)	Width (ft)	Surface Area (Sq.Yds)	Rehabilitation	Reconstruction	
								Est. Cost Mill and Fill	Est. Cost Street Only (Lower Bound)	Est. Cost Street + Utilities (Upper Bound)
1	8	S 2nd St	Platt St	W Maple St	1075	35	4181		\$ 899,000	\$ 1,440,800
1	9	W Maple St	5th St	S 2nd St	900	35	3500	\$ 175,000		
1	1	Arcade St	W Platt St	W Grove St	1675	31	5769	\$ 289,000		
1	2	W Grove St	Arcade St	N 5th St	1200	35	4667	\$ 234,000		
2	21	E Grove St	N Main St	N Otto St	1000	35	3889		\$ 837,000	\$ 1,341,000
2	5	North Otto St	E Platt St	E Grove St	1650	28	5133	\$ 257,000		
2	6	South Otto St	E Platt St	E Pleasant	550	24	1467	\$ 74,000		
3	32	Okeeta Dr & Swift Cir	Myatt Dr	Country Club Dr	725	32	2578	\$ 129,000		
3	24	County Club Dr	724 Country Club Dr	714 Country Club Dr	480	32	1707	\$ 86,000		
3	33	E Summit	S Main	Jacobsen Dr	5050	32	17956	\$ 898,000		
3	34	Jacobsen Dr	E Summit St	Platt St	1250	35	4861	\$ 244,000		
4	22	E Grove St	N Otto St	Walnut St	1280	35	4978		\$ 1,071,000	\$ 1,716,120
4	26	Creslane St	W Platt St	German St	440	30	1467	\$ 74,000		
4	27	German St	McKinsey Dr	Creslane St	725	30	2417	\$ 121,000		
5	23	E Grove St	Walnut St	Cardinal Dr	1500	26	4333		\$ 932,000	\$ 1,688,000
5	25	Farmland/Battles Dr	Access Lane	Access Lane	2000	32	7111	\$ 356,000		
TBD	7	North Olive St	E Quarry St	E Grove St	1025	35	3986	\$ 200,000		
TBD	4	W Quarry St	N 5th St	N 2nd St	975	28	3033	\$ 152,000		
TBD	3	W Quarry St	Arcade St	N 5th St	1225	28	3811	\$ 191,000		
TBD	10	E Maple St	Main St	Clark St	1675	35	6514	\$ 326,000		
TBD	11	S 5th St	W Pleasant St	W Summit St	2150	35	8361	\$ 419,000		
TBD	12	W Locust	Vermont St	S 4th St	1125	35	4375	\$ 219,000		
TBD	13	W Locust	S 4th St	Main St	975	35	3792	\$ 190,000		
TBD	14	E Locust	Main St	S Clark St	1675	35	6514	\$ 326,000		
TBD	15	N Jones St	W Platt St	N. Cul-de-sac	1925	35	7486	\$ 375,000		
TBD	16	S Niagara St	W Summit St	W Monroe St	1725	35	6708	\$ 336,000		
TBD	17	W Jefferson St	S 5th St	S 2nd St	950	35	3694	\$ 185,000		
TBD	18	N 5th St	W Grove St	W Apple St	500	35	1944	\$ 98,000		
TBD	19	N 5th St	W Quarry St	W Platt St	650	35	2528	\$ 127,000		
TBD	20	Emma St	N Vermont St	N 5th St	800	30	2667	\$ 134,000		
TBD	28	Longview Dr	Niles St	South 425'	425	32	1511	\$ 76,000		
TBD	29	Grant St	Niles St	Sout 425'	425	32	1511	\$ 76,000		
TBD	30	Niles St	Longview Dr	Grant St	525	32	1867	\$ 94,000		
TBD	31	Melrose Dr	Niles St	W Summit St	300	35	1167	\$ 59,000		
Total					7.68	miles		\$ 6,520,000	\$ 3,739,000	\$ 6,185,920

Table 4 - 10-year Street Improvement Plan Project List with Estimated Costs (2023 dollars, Exhibit 11)

Priority Streets & Priority Groups

WHKS created five “Priority Groups”. These groupings are intended to distribute more expensive street reconstruction project costs over time while improving neighborhood connectivity and alternate routes with rehabilitation projects. The project groups were selected based on road conditions, general connectivity, ADT, and available utility information as discussed above. Figure 5 shows a map of all recommended priority projects as well priority groups. Further investigation of each component project is necessary to define the project limits, work extents, and improve cost estimates. The projects listed as “TBD” in Table 4 are all eligible for consideration and community input should be considered before final selections.

- Project Group 1: 2nd St. is in very poor condition. Reconstruction south of Platt St. and combined with rehabilitation of W. Maple to S 5th St. improves neighborhood access in multiple directions. Rehabilitation of Arcade St. and W. Grove St to N. 5th St. is an important corridor for local access to Briggs Elementary as well as a good connection for cyclists to the Maquoketa River Trail.
- Project Group 2: E. Grove St. is in poor condition and reconstruction with utility work is anticipated. E. Grove is a good candidate for trail additions as is it quieter than Pershing Rd and provides continuity to improvements on W. Grove St. as well as Cardinal Elementary School. Work along Otto St. improves north-south neighborhood access to Platt St. and beyond.
- Project Group 3: Rehabilitation of E. Summit St. and Jacobsen Dr. would improve access to industrial/commercial areas of Maquoketa as well as the Prairie Creek Recreation Area. These two streets are generally in poor condition but the effect of truck traffic and a high ADT are expected to deteriorate the pavement at a faster rate than more lightly used streets. Preventing the need for complete reconstruction is important financially. Based on discussions from work sessions, Okeeta Dr. was identified as an important connector road not included in the 2019 PCI data set. On-site inspection confirmed its poor condition. Some adjacent rehabilitation work would be expected to provide overall cost savings if bundled together with Okeeta Dr. work.
- Project Group 4: Continuation of E. Grove St. reconstruction (to spread expenses over time) as discussed above. The addition of a portion of Creslane St. and German St. were based on the possibility of rehabilitating the poorest condition pavement in the mixed commercial and residential area to bring the overall area into good repair. ADT numbers played a part in selection of these two streets.
- Project Group 5: Finishing E. Grove St. reconstruction. In addition, the Battles Dr. and S. Farmland Dr. loop was identified as a location where rehabilitation would bring the overall neighborhood into good repair.

The work covered in the five priority groups affects 4.1 miles of pavement. In total, the projects listed cover 7.7 miles of pavement which comprises a little under 25% of Maquoketa’s streets. Table 5 shows the estimated costs per priority group.

Est. Cost per Priority Group (includes Reconstruction "Est. Cost + Utilities")	
1	\$ 2,138,800
2	\$ 1,672,000
3	\$ 1,357,000
4	\$ 1,911,120
5	\$ 2,044,000
TBD	\$ 3,583,000

Table 5 - Estimated Cost per Priority Group

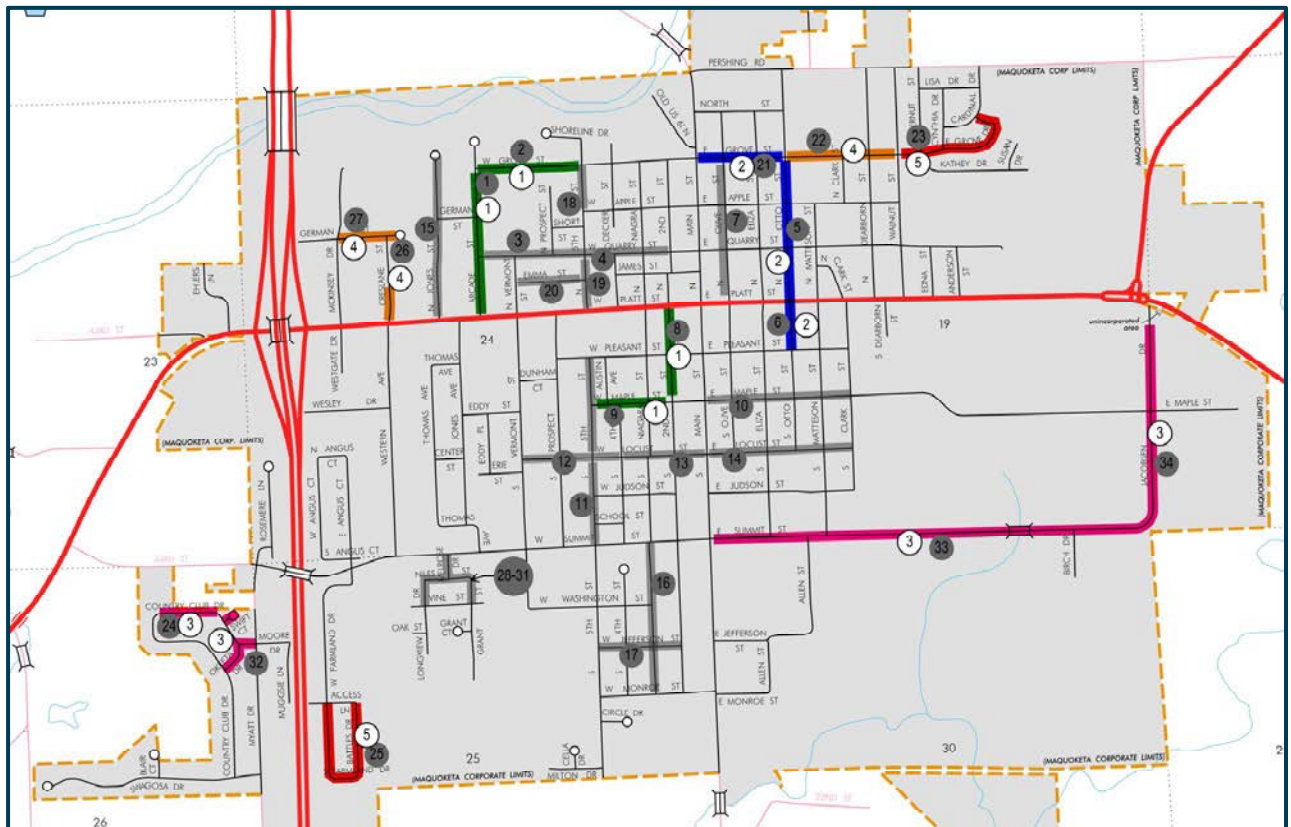


Figure 5 - Map of Proposed Projects and Project Groups (Exhibit 9 & 10)

Funding

In the last five years, the City has pursued and received grant funding from the BUILD (now RAISE), TAP, and City Bridge grant programs. While it is beyond the scope of this report to evaluate funding for specific projects, some general information is helpful to inform discussions. Table 6 shows a list of some grant programs. Many of these programs are focused on trails, environmental impacts, equity, pollution reduction, health and safety, and economic development. Typical road repair, rehabilitation, and reconstruction projects are generally considered a local responsibility.

Incorporating certain utility work, trails, community connectivity, or environmental aspects into street projects can open funding opportunities. For example, if funding is available to remove lead service lines and fittings from water distribution networks, then associated pavement replacement costs may be eligible for grant funding. Project-specific investigation of existing conditions and potential funding program requirements is essential. Preparation for any recommended rehabilitation or reconstruction project should include an investigation of existing utilities.

The recent Infrastructure Investment and Jobs Act passed by the federal government in November of 2021 increased the Highway Trust Fund program funding by approximately 25 to 30% compared to current. Notices of Funding Opportunity (NOFOs) are released by the Federal Government as grant programs open up for funding requests. These programs are generally competitive and require some investment to pursue. Communication with Maquoketa’s Regional Planning Affiliation (RPA) is important to stay up to date on these opportunities.

Program		Project Types
RISE	Revitalize Iowa's Sound Economy (RISE) Program	Road, street, bridge with economic development impact
STBG	Federal-Aid Surface Transportation Block Grant (STBG) Program	Roads, bridges, transit, trails, & planning
SRT	State Recreational Trails (SRT) Program	Trails
FRT	Federal Recreational Trails (FRT) Program	Trails
	Pedestrian Curb Ramp Construction	ADA improvements on primary roads
LRTF	Living Roadway Trust Fund	Integrated roadside vegetation management (IRVM) activities
TAP (w/ SRS)	Iowa's Transportation Alternatives Program (TAP) & Safe Routes to Schools (SRS)	smaller scale transportation projects such as: bike/ped facilities and trails, safe routes to schools, environmental, historic preservation, stormwater
ICAAP	Iowa Clean Air Attainment Program (ICAAP)	Projects that reduce traffic congestion and improve air quality.
	Federal Lands Access Program	road, bridge, trail, and transit projects providing access to federal lands

Table 6 - Potential Funding Programs

In addition to grants, some low-interest loans are available for certain projects. State Revolving Fund (SRF) low-interest loans are available for some underground utility work. Pavement work required as part of the utility project can be covered by these funds. However, these loans come with additional project requirements such as Davis-Bacon wage rates, Buy-American provisions, and environmental

assessments. These requirements may add enough additional cost that traditional loans may be more cost effective. There is a possibility that certain SRF-funded project components may be forgivable. The City is currently using SRF funding for the wastewater treatment plant project starting construction this year.

Other potential funding mechanisms include general bonds, assessments, general taxes, or increased utility fees. many communities use other methods to fund necessary projects. It is WHKS' understanding that Maquoketa has not historically used property assessments to fund street projects. Additional possibilities include implementation of a general tax or modifications to utility fees.

Recommendations and Next Steps

1. Schedule and complete maintenance projects including crack sealing, seal-coating, and patching.
2. Finalize list of proposed street projects. Review recommended projects with City Staff and Council. Prioritization (including adding/deleting projects if necessary) of major projects by City Staff and Council with input from the Community.
3. Create project concepts for selected projects. This requires determining the type and extent of work including; project limits, ADA sidewalk and trails, stormwater management, necessary easements, utility conditions, preliminary cost estimates, and project schedule.
4. Perform trail connectivity study. Review community trail connectivity and look for opportunities to connect existing trails into a more coherent network. Trail projects that connect community resources (e.g., schools, community centers, downtown areas, parks, emergency services, etc.) and improve safety are important to many funding sources. It is generally advantageous to combine these trail projects with road reconstruction projects in funding pursuits.
5. Perform review of Maquoketa's demography to identify populations within the community that would benefit substantially from specific street/trail improvements. Aged populations, youth, minorities, renters, and economically disadvantaged populations could see significant improvements in quality of life and access to opportunities. This knowledge can play an important part in increasing the impact of tax dollars.
6. Create a utility inspection and evaluation plan to determine the extent and type of utility work needed in general, as well as for specific proposed projects including:
 - a. Condition of sanitary, sewer, and water distribution lines
 - b. Capacity of existing water distribution lines to provide adequate capacity for fire protection needs
 - c. Inflow and Infiltration (I&I) evaluation to reduce unnecessary stormwater loading
 - d. Presence of lead pipes or fittings
7. Create GIS plan to begin systematically collecting utility and infrastructure data to improve future decision making and asset management.

Exhibits

- Exhibit 1 - Overall Street Condition Map
- Exhibit 2 - Streets in Poor Condition (PCI < 45)
- Exhibit 3 - Streets in Fair Condition (45 ≤ PCI ≤ 60)
- Exhibit 4 - Streets in Poor and Fair Condition (PCI ≤ 60)
- Exhibit 5 - Proposed Street Projects (Rehabilitation and Reconstruction)
- Exhibit 6 - Proposed Street Projects and Streets in Poor Condition
- Exhibit 7 - Bike Trail Map
- Exhibit 8 - Maquoketa AADT
- Exhibit 9 – Proposed Street Projects (Enlarged)
- Exhibit 10 – Proposed Street Projects and Priority Groups (Enlarged)
- Exhibit 11 – Priority Project Table



0 500 1,000
US Feet

Legend

Watermain Breaks

Location

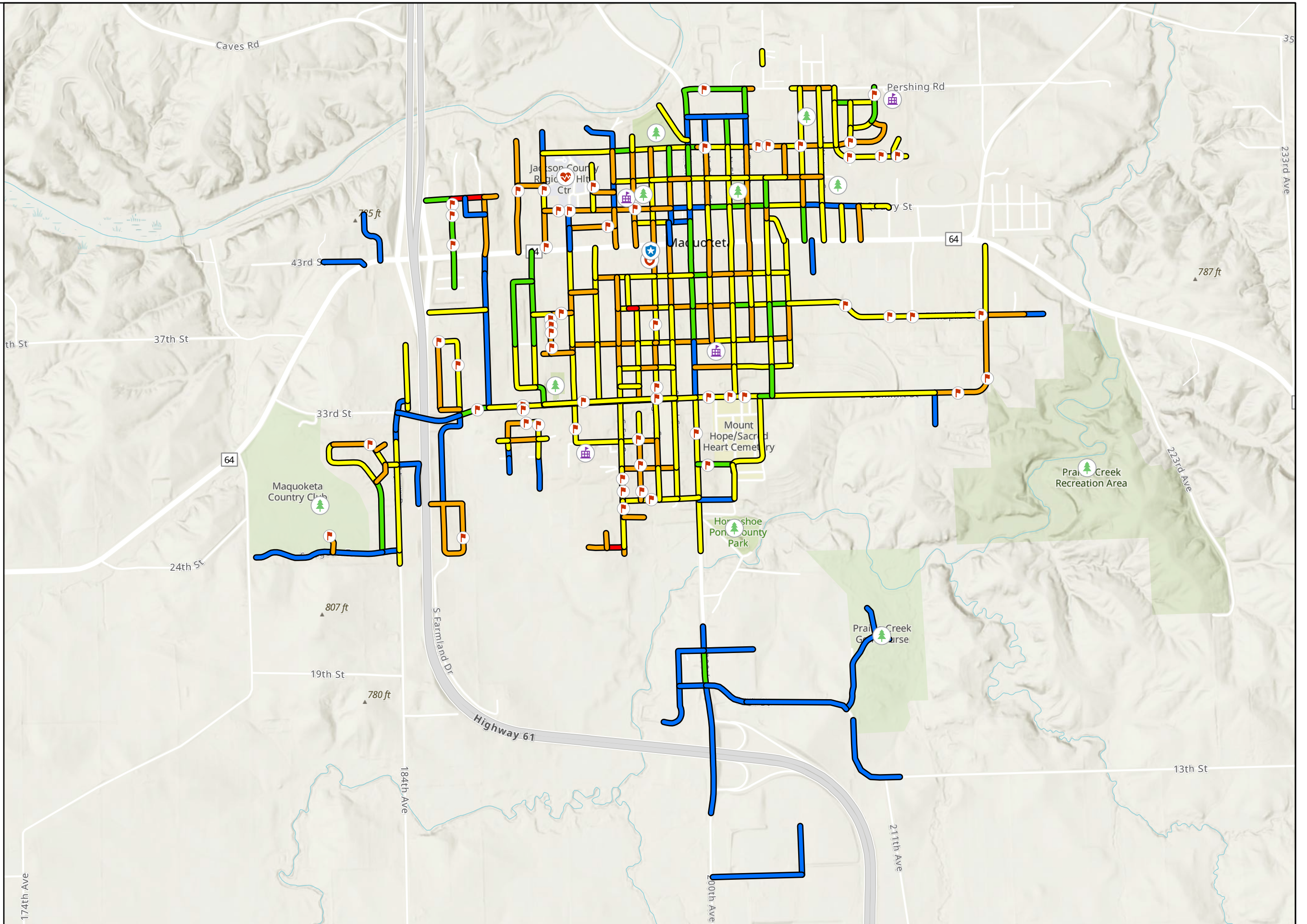
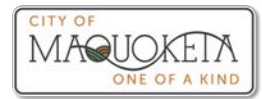
- Fire
- Hospital
- Park
- Police
- School

Condition

- Very Poor
- Poor
- Fair
- Good
- Excellent

Exhibit
1

Maquoketa Overall Street Condition Map





0 500 1,000
US Feet

Legend

Maquoketa 2019
CityPCI
PCI<45

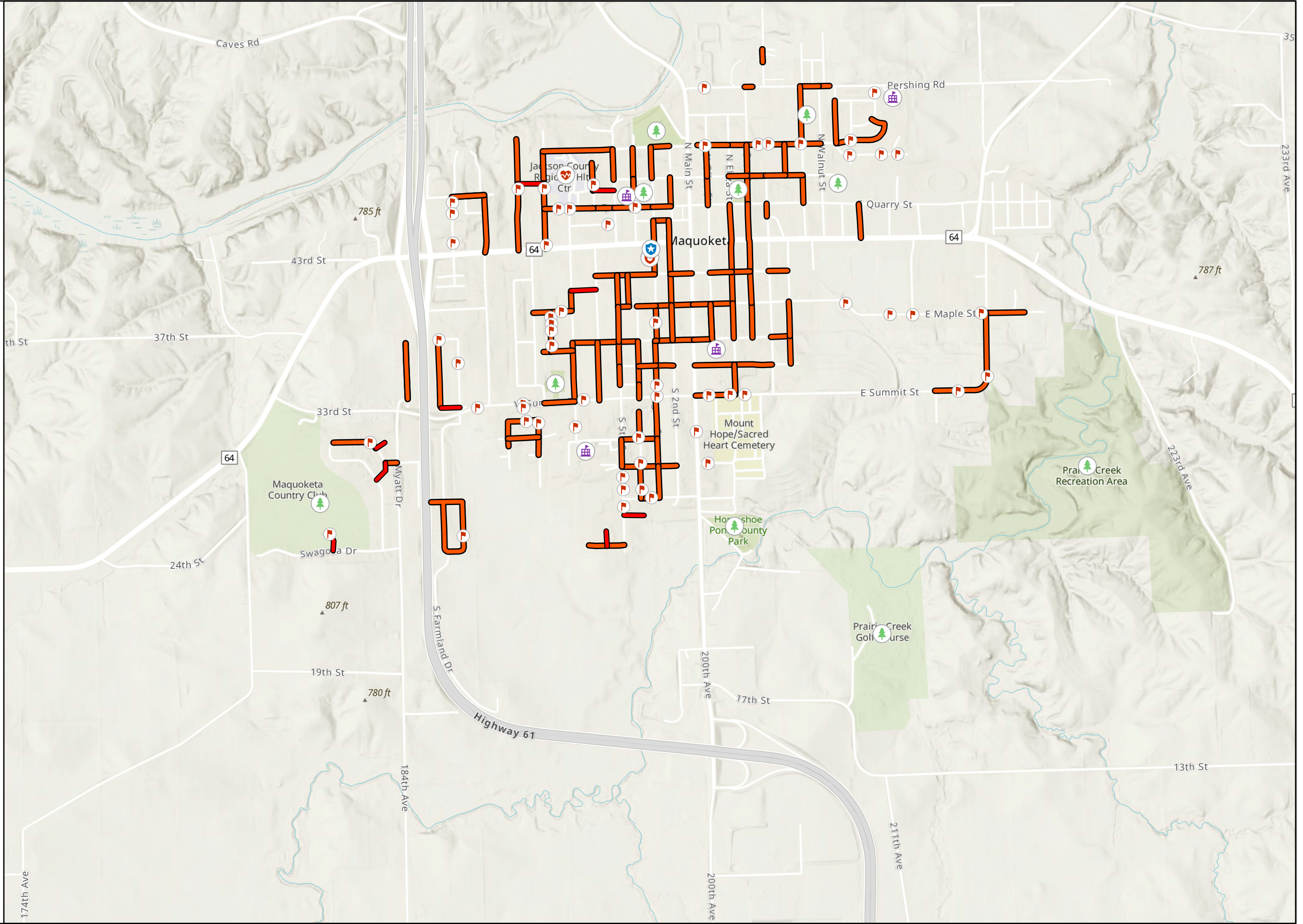
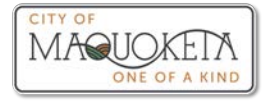
Watermain Breaks

Location

- Fire
- Hospital
- Park
- Police
- School

Exhibit 2







Maquoketa Streets in Poor Condition (PCI<45)





0 500 1,000
US Feet

Legend

-  Watermain Breaks
- Location**
-  Fire
-  Hospital
-  Park
-  Police
-  School

45 < PCI < 60

City PCI

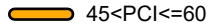
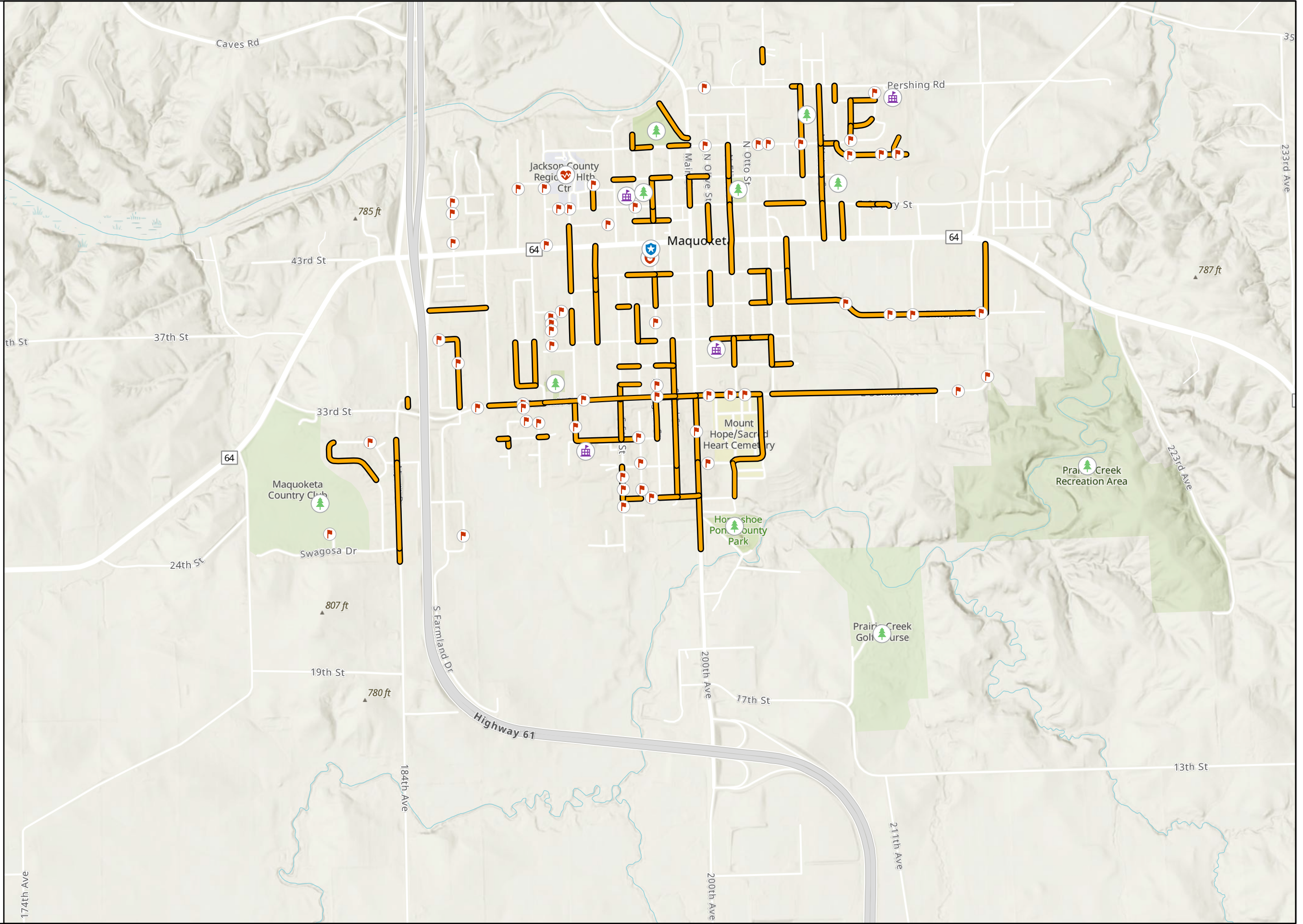
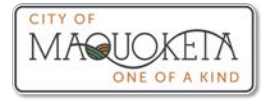
 45 < PCI <= 60

Exhibit 3

Maquoketa Streets in Fair Condition (45 ≤ PCI ≤ 60)


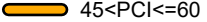





0 500 1,000
US Feet

Legend

Maquoketa 2019 CityPCI

-  PCI<45
-  45<PCI<=60
-  Watermain Breaks

Location






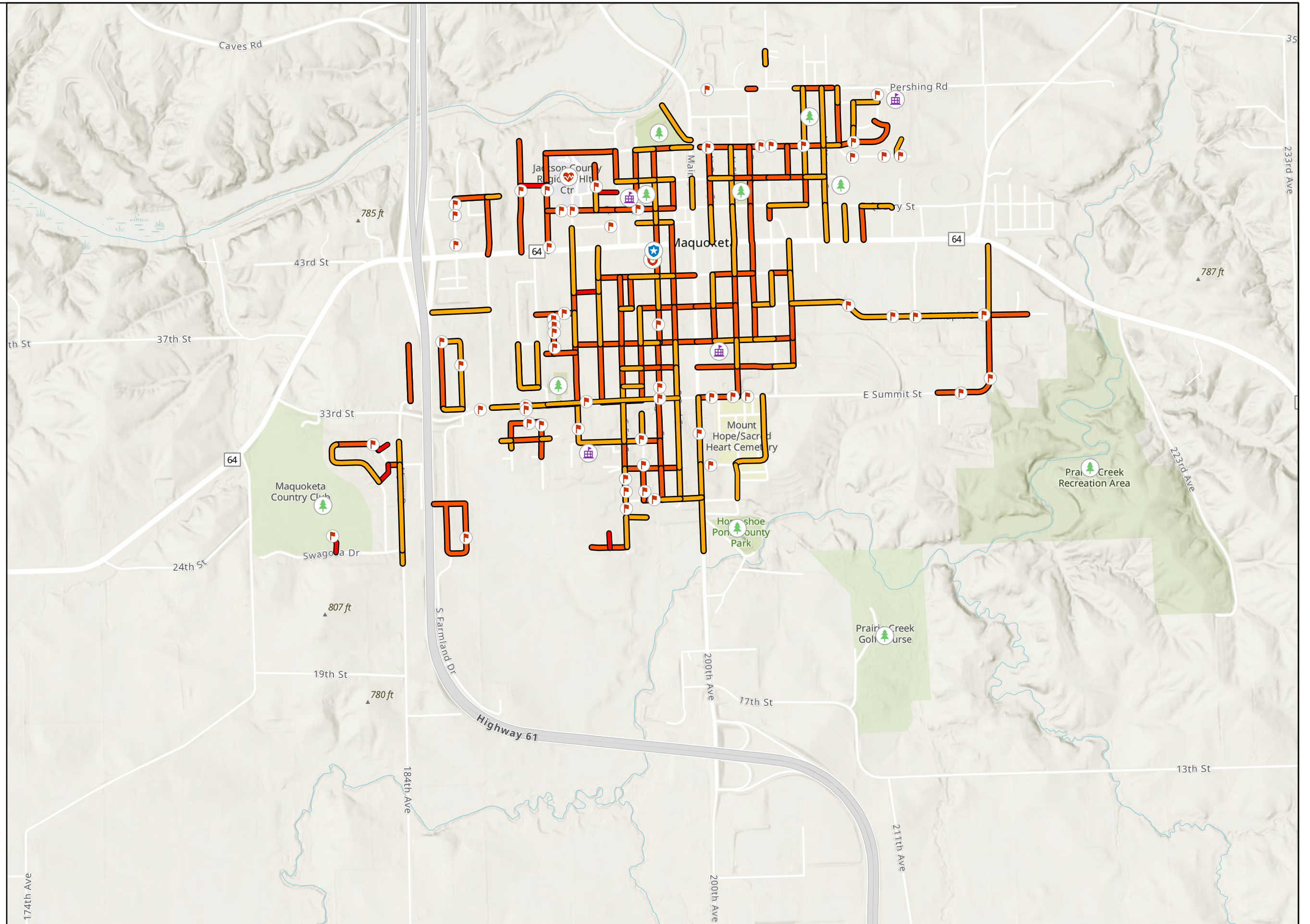
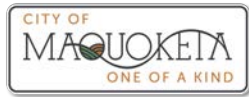
-  Fire
-  Hospital
-  Park
-  Police
-  School

Exhibit 4

Streets in Poor and Fair Condition





0 500 1,000
US Feet

Legend

Watermain Breaks

Projects

Location

Fire

Hospital

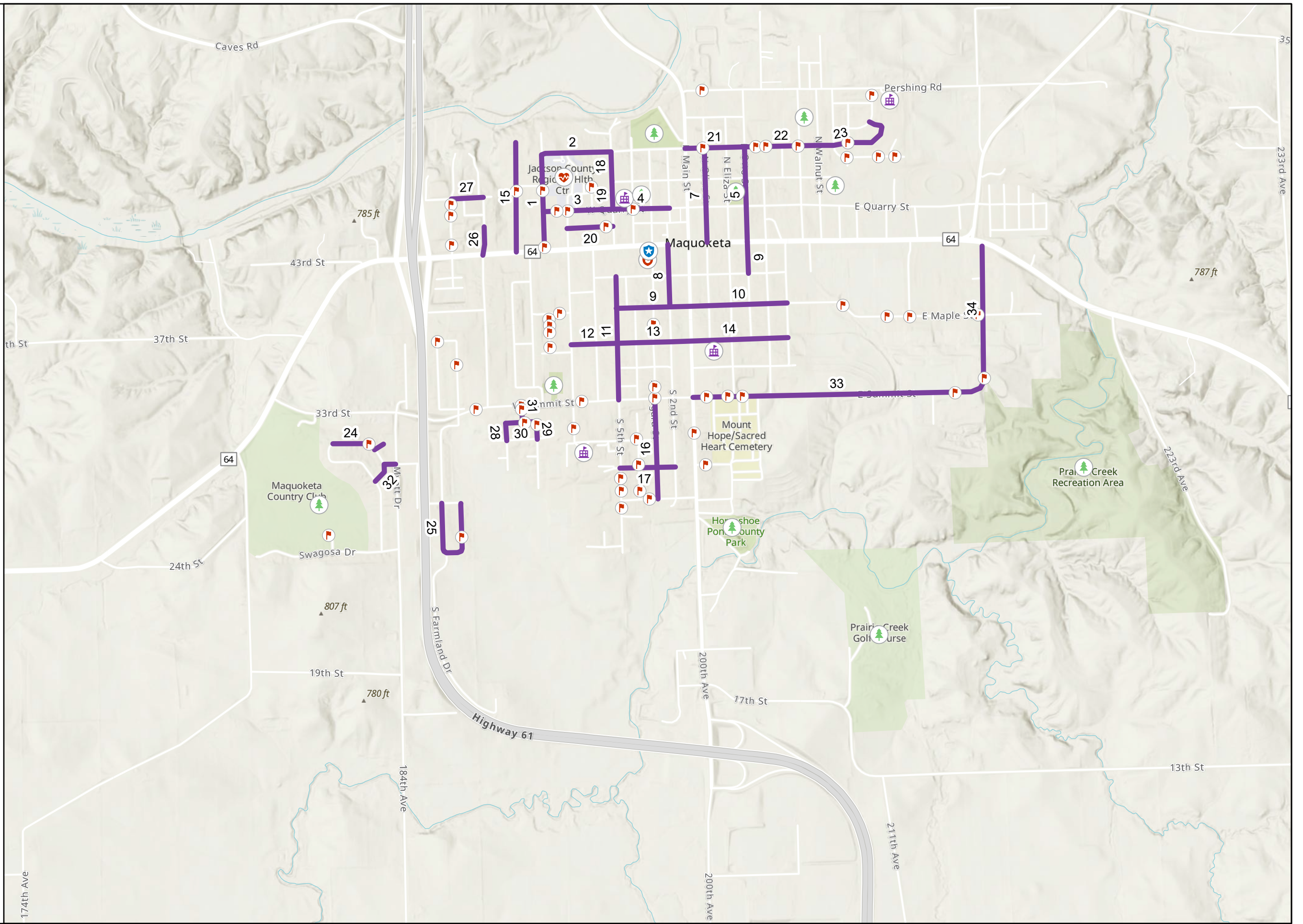
Park

Police

School

Exhibit 5

Maquoketa Proposed Street Projects





0 500 1,000
US Feet

Legend

Maquoketa 2019
CityPCI

PCI<45

Watermain Breaks

Projects

Location

Fire

Hospital

Park

Police

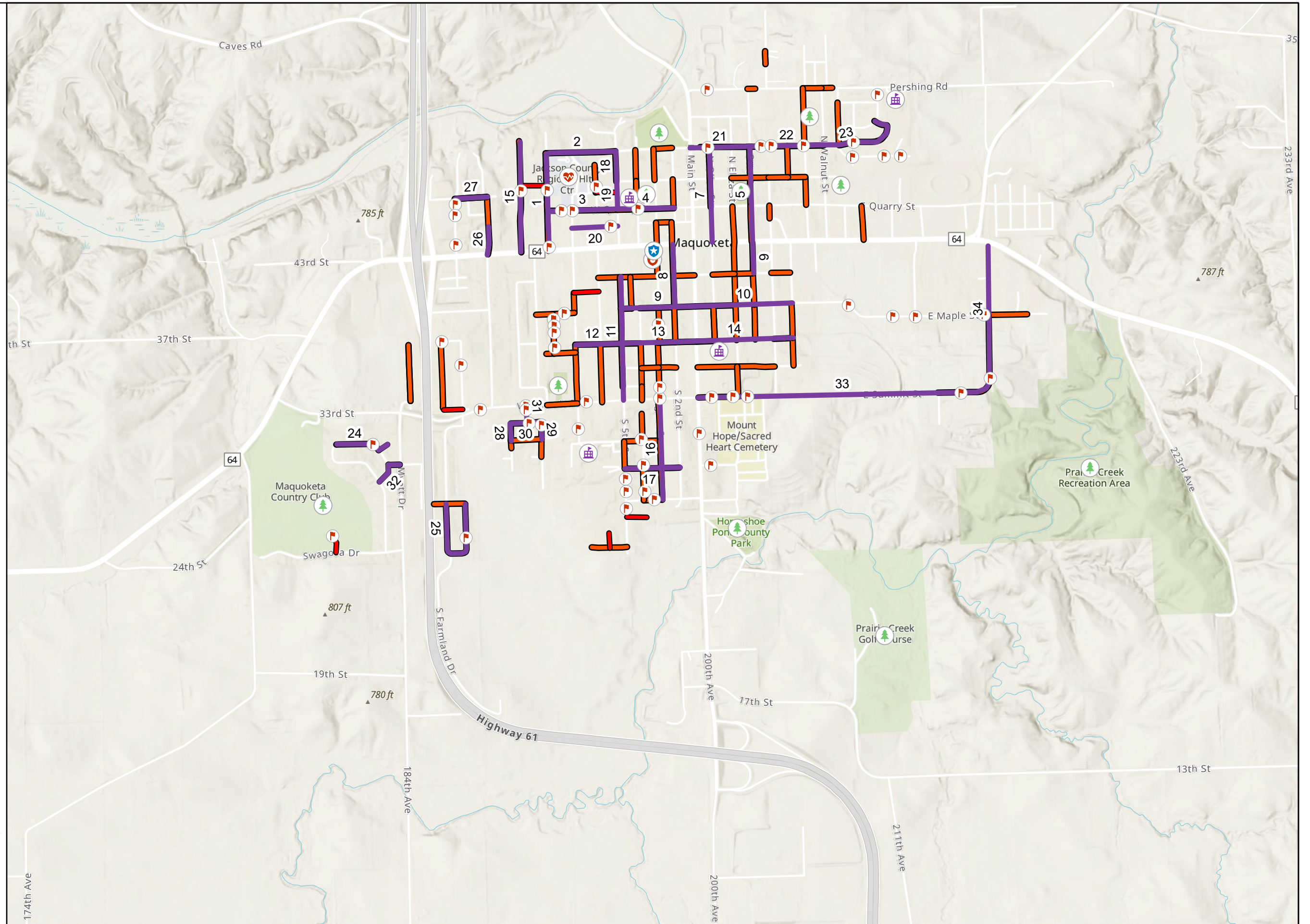
School

Exhibit 6

Maquoketa Proposed Street Projects and Streets in Poor Condition

whks
engineers • planners • land surveyors

CITY OF
MAQUOKETA
ONE OF A KIND





0 500 1,000
US Feet

Legend

Watermain Breaks

Type

Trail Existing

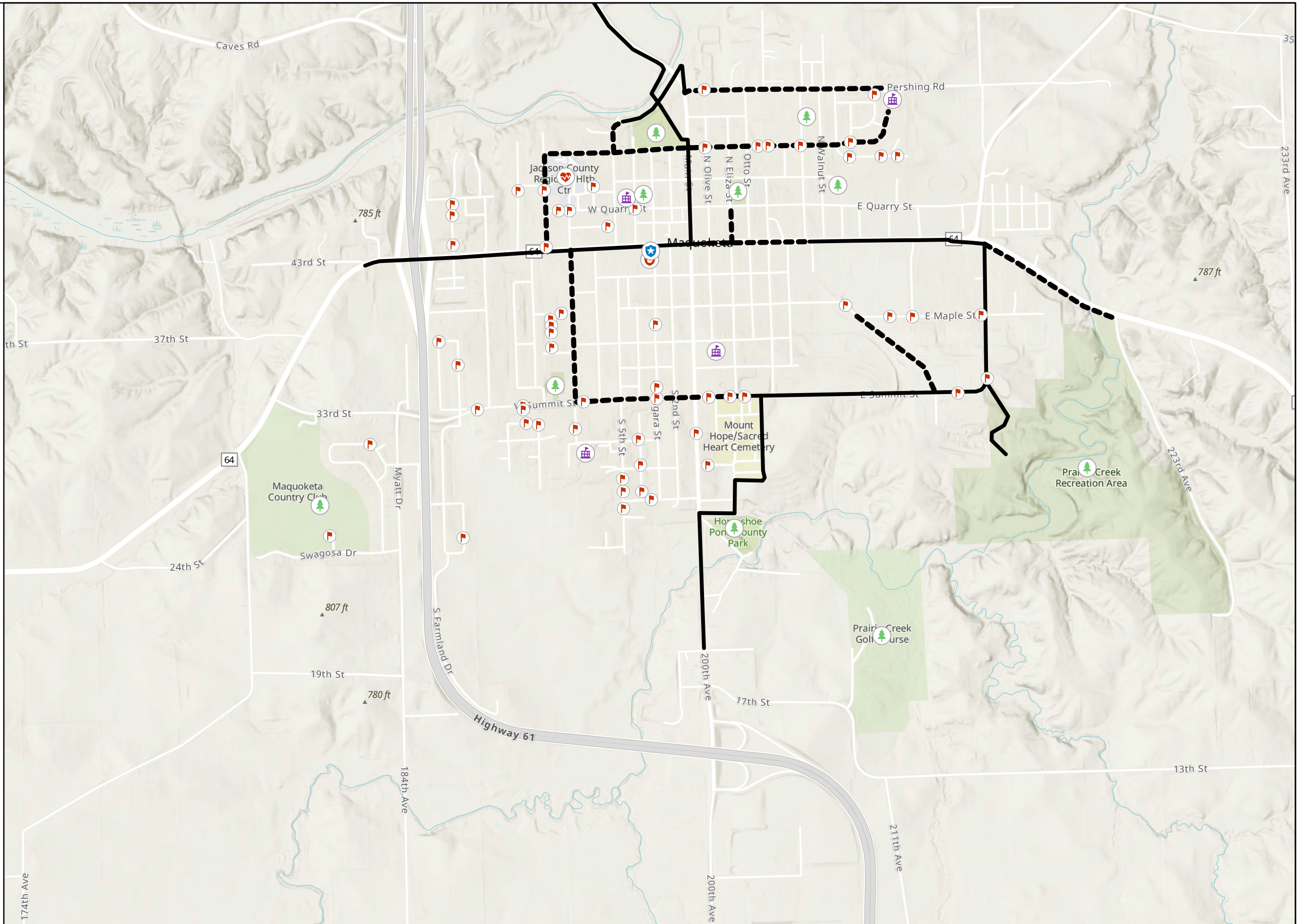
Trail Proposed

Location

- Fire
- Hospital
- Park
- Police
- School

Exhibit
7

Bike Trails





0 500 1,000
US Feet

Legend

Watermain Breaks

Location

- Fire
- Hospital
- Park
- Police
- School

AADT

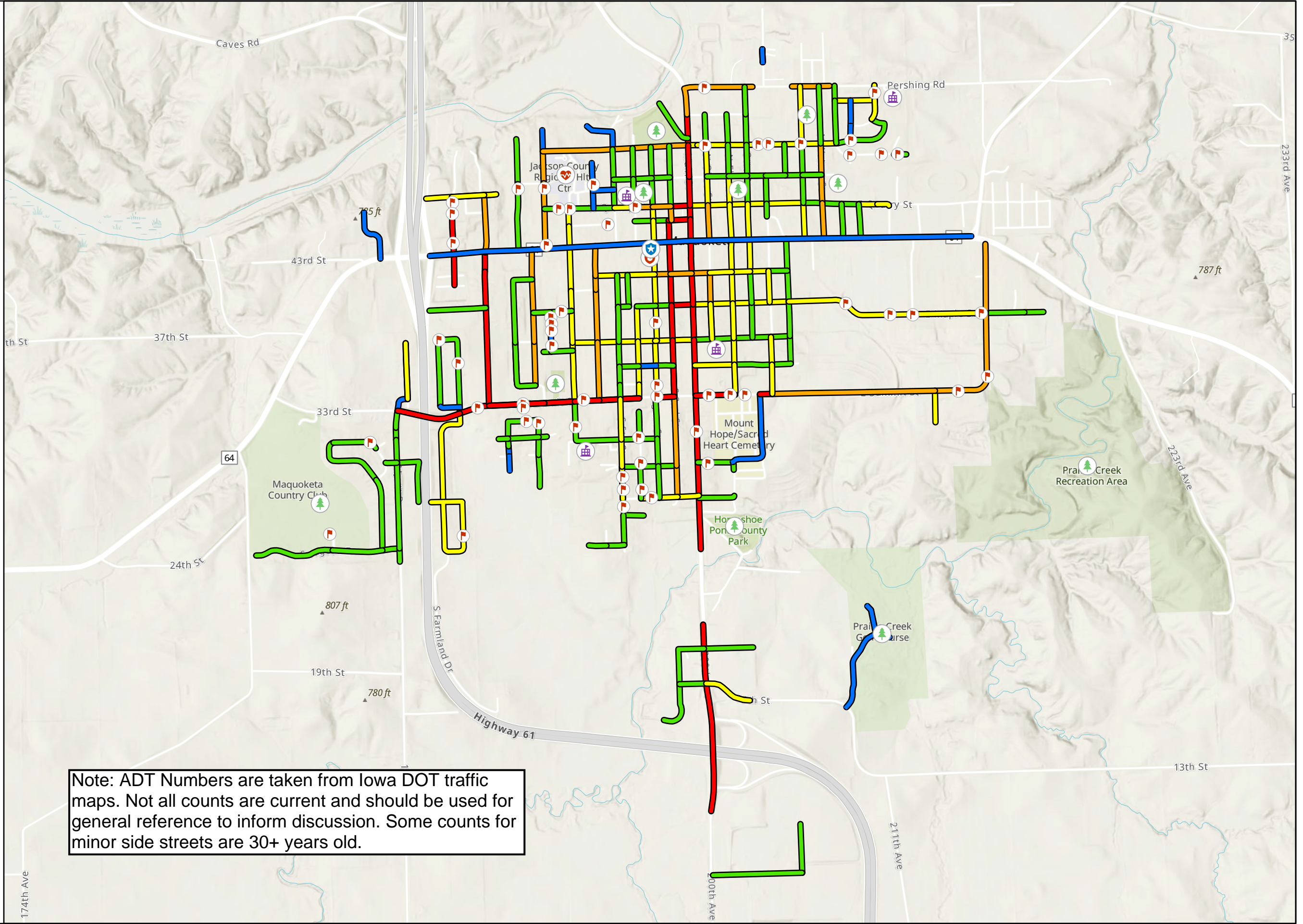
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- 101 - 500
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- >2001

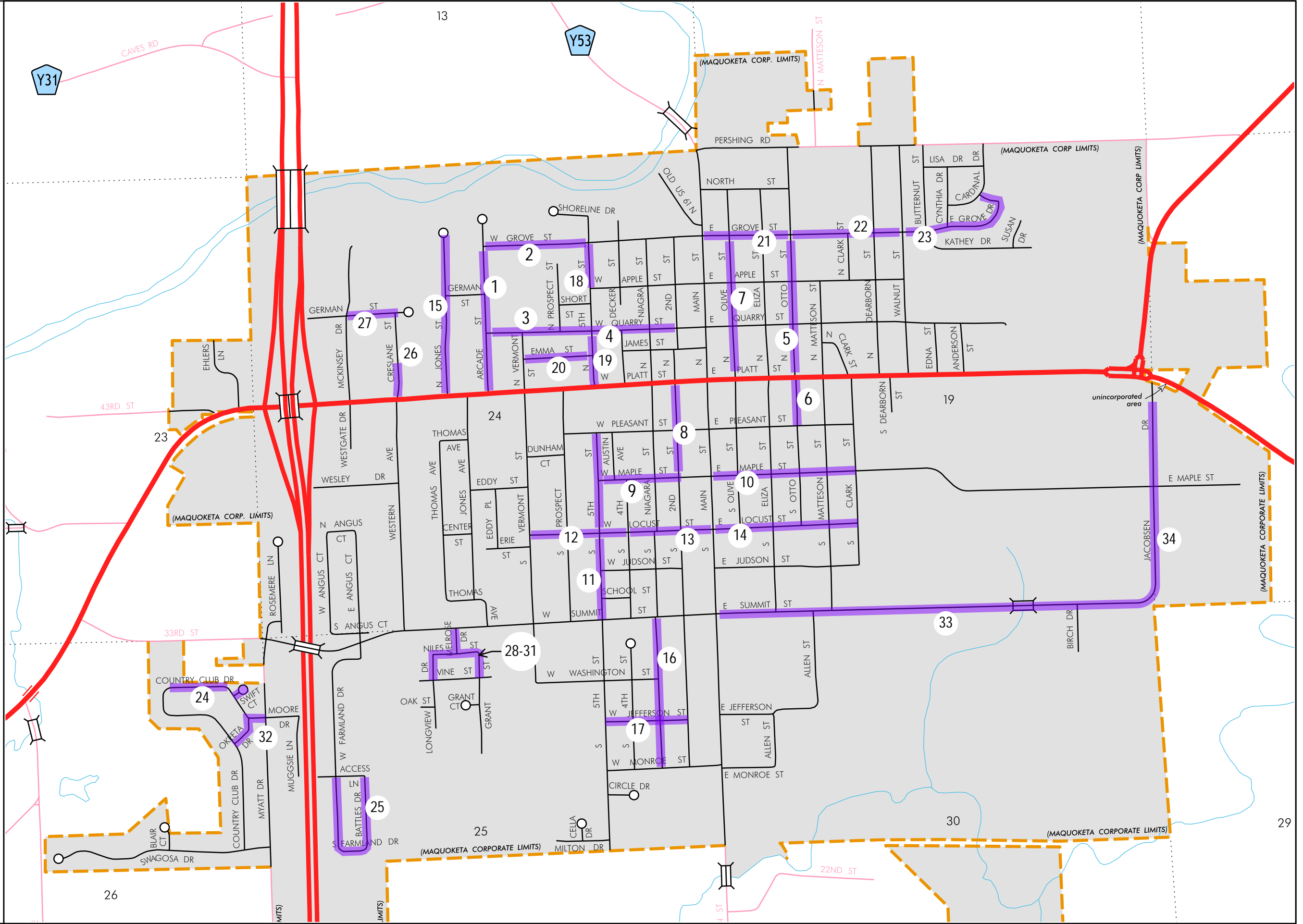
Exhibit 8

Maquoketa AADT



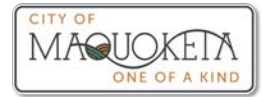
Note: ADT Numbers are taken from Iowa DOT traffic maps. Not all counts are current and should be used for general reference to inform discussion. Some counts for minor side streets are 30+ years old.





**Exhibit
9**

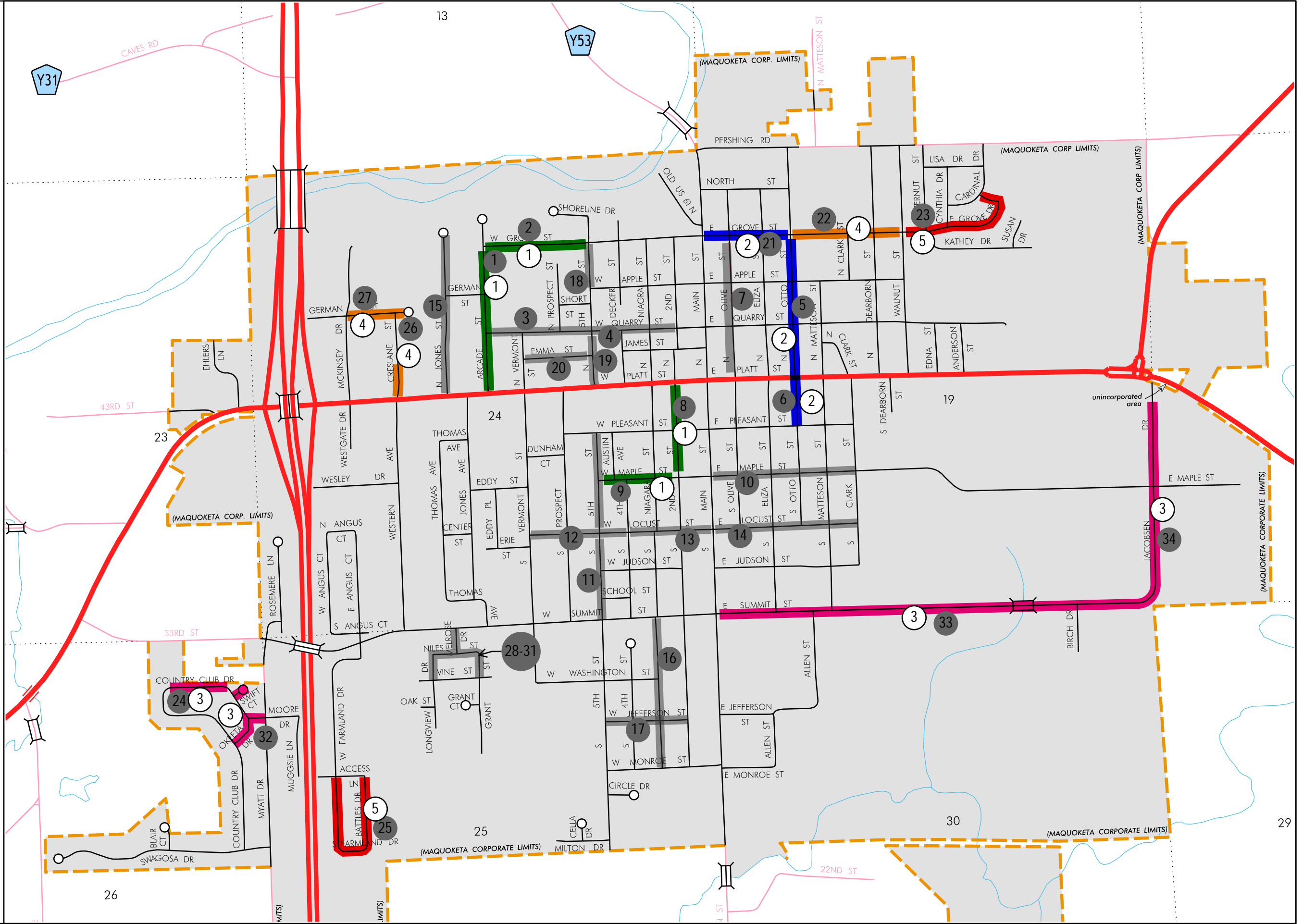
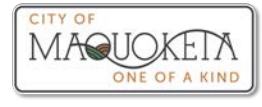
**Maquoketa
Proposed
Street
Projects
March, 2023**





**Exhibit
10**

**Maquoketa
Proposed
Street
Projects -
Priority
Groups
March, 2023**



26

(MAQUOKETA CORPORATE LIMITS)

(MAQUOKETA CORPORATE LIMITS)

29

Maquoketa 10-Year Street Improvement Plan (Projects, Prioritization, and Cost Estimates)										
Maquoketa 10 Year Program Projects										
								Estimated Mill and Fill Price		\$ 50.00 /Sq.Yd.
								Estimated Reconstruction Price		\$ 215.00 /Sq.Yd.
								Estimated Utility Cost (water, sanitary, storm)		\$ 504.00 /Ft of Road
2023 Dollars										
Priority Group #	Project ID #	Project Street	From	To	Length (ft)	Width (ft)	Surface Area (Sq.Yds)	Rehabilitation	Reconstruction	
								Est. Cost Mill and Fill	Est. Cost Street Only (Lower Bound)	Est. Cost Street + Utilities (Upper Bound)
1	8	S 2nd St	Platt St	W Maple St	1075	35	4181		\$ 899,000	\$ 1,440,800
1	9	W Maple St	5th St	S 2nd St	900	35	3500	\$ 175,000		
1	1	Arcade St	W Platt St	W Grove St	1675	31	5769	\$ 289,000		
1	2	W Grove St	Arcade St	N 5th St	1200	35	4667	\$ 234,000		
2	21	E Grove St	N Main St	N Otto St	1000	35	3889		\$ 837,000	\$ 1,341,000
2	5	North Otto St	E Platt St	E Grove St	1650	28	5133	\$ 257,000		
2	6	South Otto St	E Platt St	E Pleasant	550	24	1467	\$ 74,000		
3	32	Okeeta Dr & Swift Cir	Myatt Dr	Country Club Dr	725	32	2578	\$ 129,000		
3	24	County Club Dr	724 Country Club Dr	714 Country Club Dr	480	32	1707	\$ 86,000		
3	33	E Summit	S Main	Jacobsen Dr	5050	32	17956	\$ 898,000		
3	34	Jacobsen Dr	E Summit St	Platt St	1250	35	4861	\$ 244,000		
4	22	E Grove St	N Otto St	Walnut St	1280	35	4978		\$ 1,071,000	\$ 1,716,120
4	26	Creslane St	W Platt St	German St	440	30	1467	\$ 74,000		
4	27	German St	McKinsey Dr	Creslane St	725	30	2417	\$ 121,000		
5	23	E Grove St	Walnut St	Cardinal Dr	1500	26	4333		\$ 932,000	\$ 1,688,000
5	25	Farmland/Battles Dr	Access Lane	Access Lane	2000	32	7111	\$ 356,000		
TBD	7	North Olive St	E Quarry St	E Grove St	1025	35	3986	\$ 200,000		
TBD	4	W Quarry St	N 5th St	N 2nd St	975	28	3033	\$ 152,000		
TBD	3	W Quarry St	Arcade St	N 5th St	1225	28	3811	\$ 191,000		
TBD	10	E Maple St	Main St	Clark St	1675	35	6514	\$ 326,000		
TBD	11	S 5th St	W Pleasant St	W Summit St	2150	35	8361	\$ 419,000		
TBD	12	W Locust	Vermont St	S 4th St	1125	35	4375	\$ 219,000		
TBD	13	W Locust	S 4th St	Main St	975	35	3792	\$ 190,000		
TBD	14	E Locust	Main St	S Clark St	1675	35	6514	\$ 326,000		
TBD	15	N Jones St	W Platt St	N. Cul-de-sac	1925	35	7486	\$ 375,000		
TBD	16	S Niagara St	W Summit St	W Monroe St	1725	35	6708	\$ 336,000		
TBD	17	W Jefferson St	S 5th St	S 2nd St	950	35	3694	\$ 185,000		
TBD	18	N 5th St	W Grove St	W Apple St	500	35	1944	\$ 98,000		
TBD	19	N 5th St	W Quarry St	W Platt St	650	35	2528	\$ 127,000		
TBD	20	Emma St	N Vermont St	N 5th St	800	30	2667	\$ 134,000		
TBD	28	Longview Dr	Niles St	South 425'	425	32	1511	\$ 76,000		
TBD	29	Grant St	Niles St	Sout 425'	425	32	1511	\$ 76,000		
TBD	30	Niles St	Longview Dr	Grant St	525	32	1867	\$ 94,000		
TBD	31	Melrose Dr	Niles St	W Summit St	300	35	1167	\$ 59,000		
Total					7.68	miles		\$ 6,520,000	\$ 3,739,000	\$ 6,185,920