THE CITY OF ROCKFORD
ILLINOIS, USA

Corridor Transportation Study &
Economic Development Strategy For

11th Street (IL-251)

FROM BLACKHAWK ROAD TO CHARLES STREET



City of Rockford, Illinois

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Introduction

Purpose & Goals

The City of Rockford, Illinois desired a comprehensive transportation study and economic development strategy for the 11th Street (IL Route 251) corridor located in the south side of the City. The corridor spans from the southern City limits (Blackhawk Road) to its northern termination (Charles Street), roughly 4.75 miles in length. The corridor carries State owned route IL- 251 from the southern limits to Harrison Avenue, then becomes a City local road from Harrison Avenue to Charles Street. The current condition of 11th Street ranges from new to very poor, thus discouraging economic development and impeding mobility. As such, the aim of this study is to identify potential improvements within the right of way and to prepare an opinion of conceptual costs for such infrastructure improvements.

The 11th Street Corridor Study and Implementation Plan has been completed to provide a strategic and holistic approach towards safety, economic development, connectivity, functionality, beautification, operational capacity, stakeholder coordination, and transportation logistics along the corridor and surrounding areas while adhering to the City's budget and schedule. The Implementation Plan provides feasible and sustainable solutions such that the corridor is reinvented, reinvigorated, and repositioned within the community. These solutions will be paramount towards improving residents' quality of life and maximizing the economic redevelopment potential of the 11th Street corridor and the surrounding area. A summary of the project purpose and goals can be found in Appendix 3 – Project Goals.

Purpose & Need of this Report

The purpose and need of this 11th Street Corridor Study and Implementation Plan is to identify improvements that could transform 11th Street into an asset for the adjacent neighborhoods, including the local merchants and residents. Its purpose is to identify the highest and best use of the available construction funding, such that improvements are prioritized by the community.

Background

The 11th Street Corridor is a major entrance into the City from the south and a vital connection between the expanding Chicago Rockford International Airport and SwedishAmerican Hospital, seeing upwards of 15,000 vehicles per day on some portions, forging through many varieties of land uses and right-of-way constraints. The pavement section varies as well, ranging from a rural divided state highway on the southern portion to a four-lane undivided urban section along the northern portion. On the southern extents of the corridor is the Chicago Rockford International Airport (RFD) and Rockford Global Trade Park to the west. RFD is home to UPS's second largest hub in the United States as well as an e-commerce freight hub for Amazon. The Airport was recently named the fastest growing airport in the world in 2018. North of Sandy Hollow Road is a retail/commercial district immediately along the corridor with residential areas to the east and west. This area has recently started to see some redevelopment and investment. North of Harrison Avenue is an older industrial district with scatterings of small business and residential properties. North of Broadway, the corridor transitions to more residential with some businesses still located along the corridor. Finally, 11th Street comes to an end at Charles Street with a middle school to the northeast and SwedishAmerican Hospital Campus to the northwest, which is in the middle of a $60 million investment addition to the campus.



The current condition of 11th Street ranges from new to poor. The State of Illinois recently completed pavement resurfacing along the southern limits of the study area in 2019 and resurfaced the roadway from Sandy Hollow Road to Harrison Avenue in 2015. The City's portion of the roadway corridor, spanning from Harrison Avenue to Charles Street, ranges from good to very poor condition. The roadway section through the corridor poses multiple undesirable current conditions that threaten pedestrian and motorist safety and hinder economic development.

Stakeholders

Various stakeholders were consulted to develop an appropriate, innovative, and consensus-based vision that repositions the corridor in the community. These stakeholders provided valuable local insight and contributed to the overall success of the corridor study. Stakeholders were divided into four unique focus groups: local businesses and institutions, transportation groups, government agencies and city departments, and neighborhood and advocacy groups. A complete list of stakeholders involved in the study can be found in Appendix 1-A – Stakeholder Meeting #1 & #2.

Outreach Process – Public Engagement

Community engagement is crucial to a successful planning process and requires multiple means of promoting awareness of the project. Outreach was impacted because of COVID-19, however virtual meetings with stakeholders and the community proved to be valuable resources to the corridor study. Table 1 details the timeline of outreach events.

TABLE 1 - TIMELINE OF ENGAGEMENT

Date	Activity
11/12/2020	Stakeholder Meetings
12/2/2020	Public Meeting #1
2/9/2021	Draft Corridor Study for Review by Stakeholders
2/25/2021	Public Meeting #2

Stakeholder engagement and public engagement in 2020 was needed such that input from the community could be gathered to help define the needs of the corridor and inform the plan.

The presentations given during the various outreach meetings and notes from these meetings can be found in Appendix 1-A – Stakeholder Meeting #1 & #2 and Appendix 1-B – Public Meeting #1& #2.

Project Goals and Design Considerations

Goals of the study were created with community, stakeholder, and City input. These goals are intended to represent desired outcomes the community has identified as the 11th Street corridor redevelops. It is important to note that the goals cover a range of topics that are important to the community. When improving the failing infrastructure throughout the corridor, the goals of this plan should be the guiding principles.

Safe, Connected, and Walkable

Improve pedestrian safety by enhancing the street and sidewalk network through addition or restoration of sidewalks, crosswalks, bikeways, and lighting.

Cost-Effective, City-Centered Solutions

Identify solutions, recommendations, and investment opportunities that are feasible, sustainable, and innovative, that fulfill the vision of the City, stakeholders, and public, while also within the City's budget and reasonable schedule. Solutions are to be actionable and implementable.

Beautification

Enhance the physical environment along the corridor to promote a better sense of well-being through materials, landscaping, modern design elements, and buried utilities that serve as a catalyst to attract people to the area. Advocate for design to appeal to the rich history and bright future of the corridor.

Minimal Footprint

Focus on improvements within the right-of-way, such as sidewalks and lighting, utilizing a complete streets mentality such that the right-of-way improvements are conducive to drive economic growth. Identify locations where additional right of way is needed.

Encourage Future Redevelopment

Plan, with the community and stakeholders, for the potential long-term redevelopment of large vacant and underutilized properties along 11th Street, capitalizing on additional corridor revitalizations to facilitate future growth. Land use policies should be updated as needed to encourage future redevelopment. Consideration to efficiently move vehicles, freight and commerce through the corridor is still important.

Cohesive Corridor Segments

Understand that the corridor should be cohesive, while noting the different characteristics of each section. These unique characteristics should be identified and enhanced to create a mix of activities and destinations along 11th Street that accommodate multiple modes of transportation and provide improved connections and linkages, thus establishing a holistic and complementary corridor network.

Conceptual Costs

Develop life cycle cost analysis on proposed roadway improvement solutions to ensure the most sustainable, yet cost-efficient, solutions.

Existing Corridor Characteristics and Constraints

11th Street south of Harrison Avenue is signed as IL-251 and is controlled by Illinois Department of Transportation (IDOT) Any improvements in this section should be approved by IDOT and conform to the Bureau of Design and Environment Manual's (BDE) 3R requirements for urban and rural arterials. North of Harrison Avenue, 11th Street is a locally controlled arterial.

11th Street serves many functions along its length. South of US 20, 11th Street is classified as a minor arterial. It primarily serves to move traffic to and from communities south of Rockford, as well as provide access to the Global Trade Park and Rockford International Airport.

From US 20 to Harrison Avenue, 11th Street is a 5-lane section with a bi-directional turn lane that serves commercial developments. IDOT control of the corridor and the IL-251 designation ends at Harrison Avenue.

From Harrison Avenue to 18th Avenue, 11th Street is flanked by mixed residential-industrial land uses.

From 18th Avenue to Charles Street, the corridor is primarily residential with a pocket of commercial land uses at Broadway.

TABLE 2 - EXISTING SPEED LIMITS

Roadway Segment	Posted Speed (mph)	Classification
Blackhawk Road to US 20	50	Minor Arterial; 4-lane divided with frontage roads
US 20 to Sandy Hollow Road	45	Minor Arterial; 4-lane divided with interchange
Sandy Hollow Road to 22nd Avenue	35	5-lane (bi-directional turn lane)
22nd Avenue to Broadway	30	5-lane (bi-directional turn lane)
Broadway to Charles Street	30	4-lane

Bicycle and Pedestrian Facilities

Pedestrian facilities such as sidewalks are present along much of 11th Street north of Sandy Hollow Road, as well as on many adjacent streets. Many of the sidewalks along 11th Street are in disrepair and are at or below minimum width. Low-hanging overhead utilities and poles adjacent to or within sidewalks act as barriers for pedestrian accessibility and result in unappealing aesthetics, as well. There is one mid-block signalized pedestrian crossing approximately 0.15 miles north of Harrison Avenue. Sidewalks are offset from the corridor north of Harrison Avenue but are not offset from the corridor between Sandy Hollow Road and Harrison Avenue. There is currently no designated lanes for bicycle use nor are there signage or pavement markings to indicate shared travel lanes for bicycle use.

No pedestrian facilities exist south of US 20 or through the US 20 interchange. Recent accident history and public input has indicated that this section of 11th Street serves many pedestrians who reside south of US 20 and wish to access the commercial corridor north of Sandy Hollow.



Figure 1 - Pedestrian Crossing south of Sandy Hollow – Source: Google Earth

Multimodal Facilities

Transit service is an important use for providing mobility along the corridor and throughout the city. There are four transit routes that use the corridor within the study limits. Transit routes using the corridor are as follows:

Route 12 – Downtown Rockford to South Alpine Road via Charles Street, offering 60-minute headways and daily service. There are no transit stops within the study area.

Route 14 – Downtown Rockford to Sandy Hollow Road via 7th/11th Street, offering 60-minute headways and daily service. There are four transit stops within the study area.

Route 15 – Downtown Rockford to Blackhawk Road via Kishwaukee/11th Street, offering 60-minute headways and daily service. There is one transit stop within the study area.

Route 16/17 – Downtown Rockford to Rockford Career College/VA Clinic/Javon Bea-MercyHealth via Riverside Boulevard/Broadway, offering 70-minute headways and daily service. There are no transit stops in within the study area.

A summary of estimated activity for the aforementioned transit routes and the existing bus stops that are identified in Appendix 2 – Existing Corridor Conditions are provided in Table 3. The estimates provided are a product of ridership sample surveys that were administered by the Rockford Mass Transit District (RMTD) between May and July 2019. Ridership information for Routes 12 and 16/17 are not included in Table 3 as there are no transit stops located on these routes within the study area.

TABLE 3 - TRANSIT RIDERSHIP

Route No.	Location	Daytime Ridership	Evening Ridership	Sunday Ridership	Total Weekly Ridership
14	Sandy Hollow at Southgate Shopping Center	10	43	1	54
	Alton Avenue/ Harrison Avenue	7	50	1	58
	23rd Avenue	N/A	N/A	N/A	N/A
	22nd Avenue	N/A	N/A	N/A	N/A
15	Blackhawk Road	9	N/A	N/A	9

Roadway

The 11th Street corridor is a major entrance into the City from the south and a vital connection between the expanding Chicago Rockford International Airport and SwedishAmerican Hospital, totaling 4.75 miles in length. The corridor sees between 7,100 and 17,900 vehicles per day along various segments, with the highest vehicle counts seen between Samuelson Road and 23rd Avenue. The pavement section varies, ranging from a rural divided state highway on the southern portion from Blackhawk Road to Sandy Hollow Road to a four-lane undivided urban section along the northern portion from Sandy Hollow Road and onward; a center turn lane is provided from Sandy Hollow Road to 15th Avenue.

11th Street is classified as a principal arterial north of US 20, and a minor arterial south of US 20.

The existing roadway right of way varies dramatically along the corridor, with the City controlled portion varying between 66 feet and 84 feet.

TABLE 4 - EXISTING RIGHT OF WAY WIDTHS

Charles Street to 18th Avenue	66’
18th Avenue to Harrison Avenue	84’
Recent Improvements at Harrison Avenue	100’ and varies
Harrison Avenue to Sandy Hollow Road	66’
South of US 20	300’ and varies

The existing typical section for 11th Street can be summarized into five distinct sections. The sections below include the existing gutter that has been overlaid with asphalt.

SECTION 1 – CHARLES TO BROADWAY

Four lane section with curb and gutter, 3’ grass buffer and 5’ sidewalks. The face-to-face width of the roadway is 47 feet.

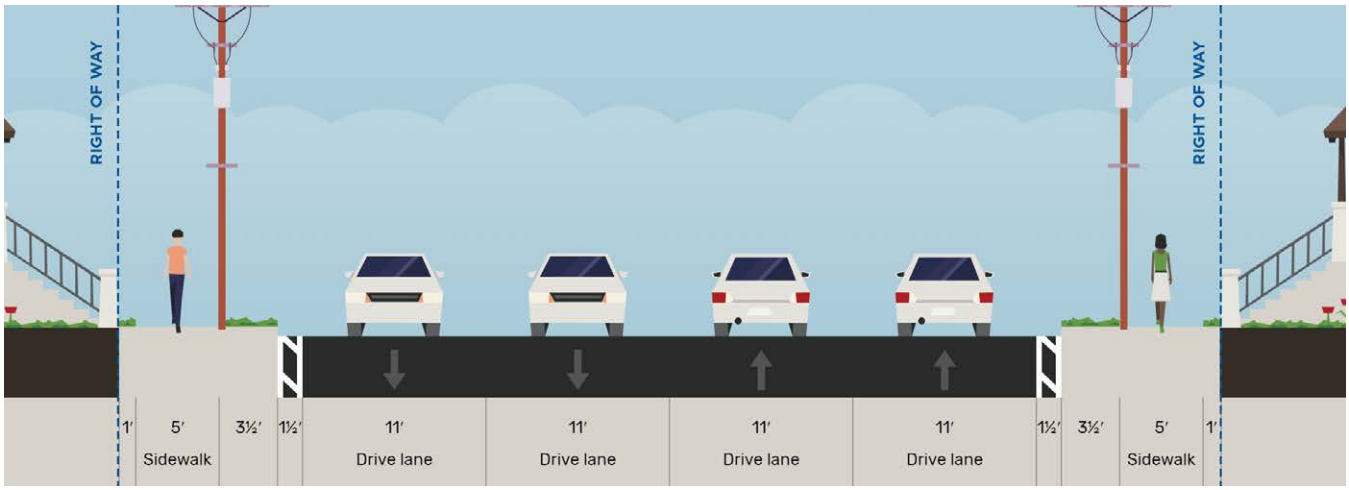


Figure 2 - Section 1 Existing Typical Section

SECTION 2 – BROADWAY TO 18TH AVENUE

Four lane section with bi-directional left turn lane, 2’ grass buffer, and 4’ sidewalks. The face-to-face width of the roadway is 52 feet.

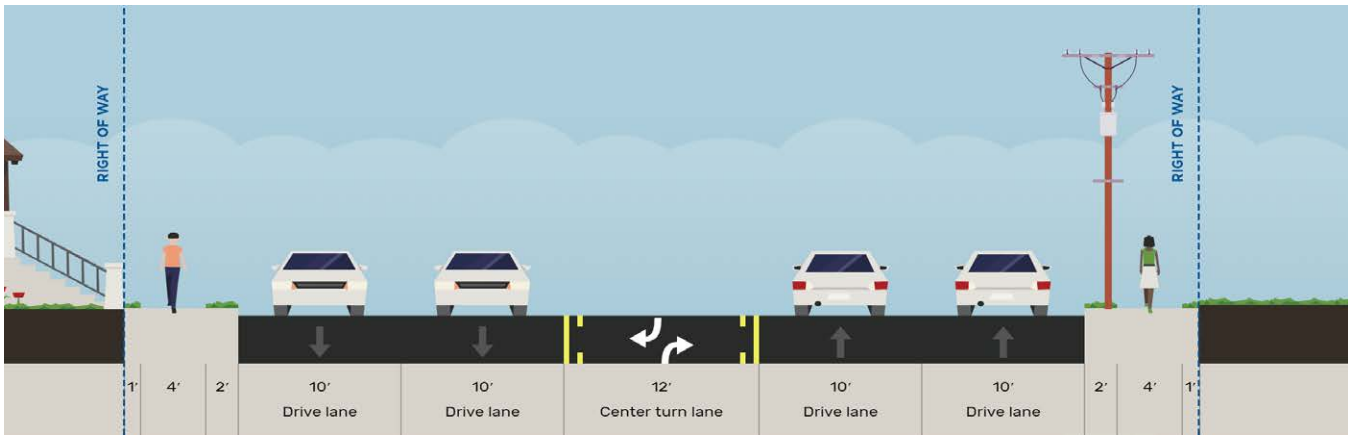


Figure 3 - Section 2 Existing Typical Section

SECTION 3 – 18TH AVENUE TO 23RD AVENUE

Four lane section with bi-directional left turn lane, 7.5′ grass buffer, 5′ sidewalks. The face-to-face width of the roadway is 56 feet.

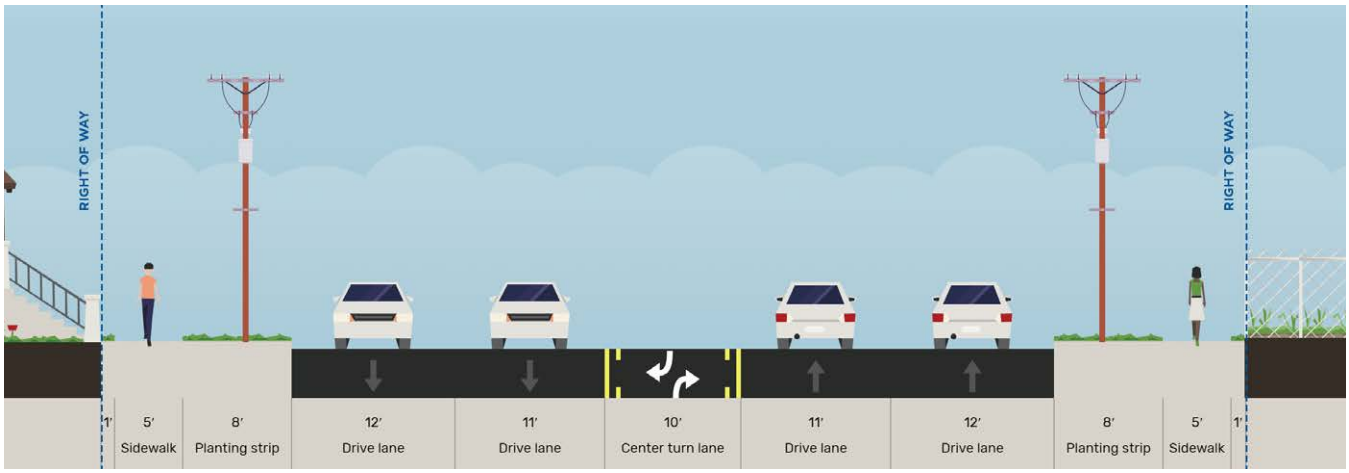


Figure 4 - Section 3 Existing Typical Section

It should be noted that the section from 23rd Avenue to Alton Avenue comprises the improvements made in 2017. As such, this section was not evaluated for cross sectional changes.

SECTION 4 – ALTON AVENUE TO SANDY HOLLOW

Four lane section with bi-directional left turn lane, 5′ sidewalks. The face-to-face width of the roadway is 56 feet.

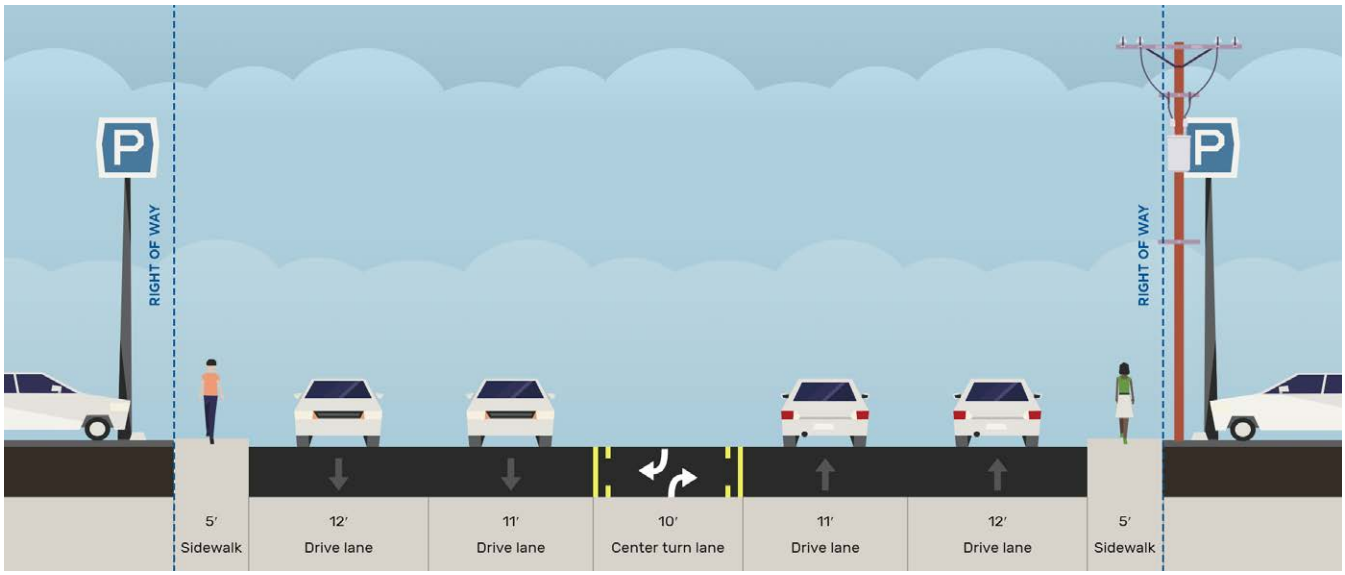


Figure 5 - Section 4 Existing Typical Section

SECTION 5 – SOUTH OF US 20

Four lane section with depressed 40' median and frontage roads (half section shown)

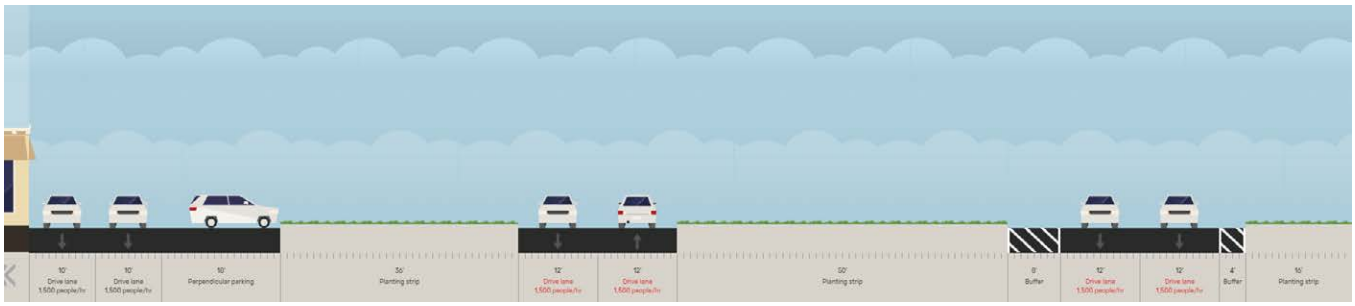


Figure 6 - Section 5 Existing Typical Section

Rail

Rockford serves as a major hub for regional rail traffic within the State of Illinois. Along the 11th Street corridor alone there are three at-grade rail crossings, as evidenced in Table 5. The at-grade crossing north of the 11th Street/11th Avenue intersection services the highest daily train volumes of eleven through trains on average within a 24-hour period.

There is another existing rail crossing near Aetna Plywood north of 20th Avenue that does not appear on the Federal Railroad Administration (FRA) mapping. The crossing number listed on the back of the cross-buck (289-939V) has been reassigned to anther crossing near Burlington, Illinois. It appears that this is no longer an active crossing. From Winnebago County Assessor's maps, Aetna Plywood owns the majority of the apparent railroad right of way east of 11th Street to where the spur joins another spur that crosses 11th Street south of 23rd Avenue. The crossing is listed in the Interstate Commerce Commission (ICC) Database, but has been closed since 2003 in the FRA database. Additional information regarding the inactive crossing can be found in Appendix 2 - Existing Corridor Conditions.

It is unclear how or when this rail spur crossing was built and maintained. As such, it is imperative that the Canadian National Railway (CN) be contacted to understand if there is an existing maintenance agreement between CN and the property owner for the switch on the main spur. Additionally, property and deed research may provide additional information regarding the spur's maintenance and ownership.



Figure 7 - Undocumented Railroad Crossing

TABLE 5 - RAIL CROSSINGS WITHIN PROJECT LIMITS

Location	FRA Crossing #	Daily Thru Trains	Daily Switching Trains	Trains Per Week*	Maximum Speed (mph)	Rail Owner
South of Woodruff Ave	174435A	1	0	N/A	10	Union Pacific
North of 11th Ave	290016U	11	0	N/A	25	Canadian National
North of 20th Avenue	N/A	N/A	N/A	N/A	N/A	Private Spur not in FRA database
North of Harrison Ave	290048A	0	0	2	10	Private Spur from Canadian National

**Should be considered if less than one daily use of rail crossing by thru or switching trains.*

Stormwater Management

Drainage issues are apparent along the corridor, as curb heights are substandard and storm sewer inlets have been covered by various asphalt overlays. An existing stormwater main line is present under Harrison Avenue that conveys flow to the west. A box culvert that conveys flow within a concrete swale bisects the 11th Street corridor north of Reed Avenue. There is currently limited access to this box culvert via an existing ramp. Record of these existing conditions can be found in Appendix 2 – Existing Corridor Conditions.

The City Public Works Department has requested that, should the box culvert under 11th Street south of Reed Avenue be replaced in the future, the culvert should be sized large enough to drive a skid-steer loader through it to assist with maintenance.

The Public Works Department also desires the storm sewer under Harrison Avenue to be connected to the storm sewer under 11th Street to provide a connection to the Rock Fork South Drainage Ditch.

Parks and Recreation

Within the study area, there are four City parks: Jamestown Park, Ken-Rock Park, Keye-Mallquist Park, and Keith Creek Greenway. The 11th Street corridor serves as the western boundary of Keye-Mallquist Park; Keith Creek Greenway is perpendicular to the corridor between 6th and 7th Avenue.

Operational Analysis

The existing average daily traffic (ADT) varies from 7,000 to 17,000 vehicles per day (vpd) throughout the corridor. The existing cross section varies from a 4-lane divided section south of US 20, to a 5-lane section with a bidirectional turn lane north to Broadway, back to a 4-lane undivided section north of Broadway. Per IDOT Bureau of Design and Environment Manual section 48-6.A, 11th Street has excess capacity south of Airport Drive and north of 23rd Avenue. The Region 1 Planning Council (R1PC) provided existing ADT information for 11th Street by segment, which can be found in Appendix 4 – Operational and Safety Analysis. This information was converted into design hourly volumes by multiplying the ADT by the K-factor, which is the percentage of daily traffic that occurs in the highest single hour. Values for K typically

range from 8 to 12% for urban facilities and 12 to 18% for rural facilities. The table below shows the existing traffic levels on 11th Street. The highlighted segments currently have excess capacity.

TABLE 6 - EXISTING TRAFFIC VOLUMES

11th Street Segment	Existing Average Daily Traffic (vpd)	Design Hourly Volume (vph)		
		8% of ADT	12% of ADT	18% of ADT
Blackhawk Rd to Samuelson Rd	7,750	--	930	1,400
Samuelson Rd to Airport Dr	10,000	--	1,200	1,800
Airport Dr to US 20	17,900	1,430	2,150	3,220
US 20 to Sandy Hollow Rd	13,600	1,090	1,630	--
Sandy Hallow Rd to Harrison Ave	16,133	1,290	1,940	--
Harrison Ave to 23rd Ave	12,800	1,020	1,540	--
23rd Ave to Broadway	9,667	770	1,160	--
Broadway to Woodruff Ave	9,288	740	1,100	--
Woodruff Ave to 5th Ave	10,000	800	1,200	--
5th Ave to Charles St	9,200	740	1,100	--

The table below shows the maximum design hourly volume for each lane configuration.

TABLE 7 - IDOT MAXIMUM TRAFFIC VOLUMES FOR LANE CONFIGURATIONS

		Maximum Two-Way DHV (vph)	Reference
IDOT Controlled Segments	Urban 2-lane Arterial	< 1,250	IDOT BDE Fig. 48-6.A
	Urban 4-lane Arterial	2,050 – 1,250	
	Rural 2-lane Minor Arterial	< 1,050	IDOT BDE Fig. 47-2.K
	Rural 4-lane Minor Arterial	5,050	IDOT BDE Fig. 47-3.C
City of Rockford Controlled Segments	Urban 2-lane Arterial	< 1,400	IDOT BLR Fig. 33-3D
	Urban 4-lane Arterial	1,400 – 2,400	IDOT BLR Fig. 33-3D

R1PC provided design year 2050 traffic projections. The highlighted segments potentially have excess capacity in the design year of 2050.

TABLE 8 - PROJECTED TRAFFIC VOLUME

11th Street Segment	Existing Average Daily Traffic (vpd)	Design Hourly Volume (vph)		
		8% of ADT	12% of ADT	18% of ADT
Blackhawk Rd to Samuelson Rd	8,879	--	1,070	1,600
Samuelson Rd to Airport Dr	10,493	--	1,260	1,890
Airport Dr to US 20	18,379	1,470	2,210	3,310
US 20 to Sandy Hollow Rd	15,362	1,230	1,840	--
Sandy Hallow Rd to Harrison Ave	17,733	1,420	2,130	--
Harrison Ave to 23rd Ave	14,076	1,130	1,690	--
23rd Ave to Broadway	10,506	840	1,260	--
Broadway to Woodruff Ave	10,893	870	1,310	--
Woodruff Ave to 5th Ave	11,590	930	1,390	--
5th Ave to Charles St	8,544	680	1,030	--

To test the potential impacts of a road diet that narrows 11th Street from 4 lanes to 2 lanes from 23rd Avenue to Charles Street, R1PC ran a scenario with the proposed reduction of capacity on 11th Street. South of Harrison Avenue, the change has minimal impact.

TABLE 9 - PROJECTED TRAFFIC VOLUMES WITH REDUCTION IN NUMBER OF THROUGH LANES FROM 23RD AVENUE TO CHARLES STREET

11th Street Segment	Existing Average Daily Traffic (vpd)	Design Hourly Volume (vph)		
		8% of ADT	12% of ADT	18% of ADT
Blackhawk Rd to Samuelson Rd	8,829	--	1,060	1,590
Samuelson Rd to Airport Dr	10,749	--	1,290	1,930
Airport Dr to US 20	18,605	1,490	2,230	3,350
US 20 to Sandy Hollow Rd	15,284	1,220	1,830	--
Sandy Hallow Rd to Harrison Ave	16,880	1,350	2,030	--
Harrison Ave to 23rd Ave	11,825	950	1,420	--
23rd Ave to Broadway	6,980	560	840	--
Broadway to Woodruff Ave	7,543	600	910	--
Woodruff Ave to 5th Ave	8,197	660	980	--
5th Ave to Charles St	5,386	430	650	--

The data provided by R1PC can be found in Appendix 4 – Operational and Safety Analysis.

R1PC's traffic projections for the arterial roadways parallel to the 11th Street Road Diet shows that the traffic diverted away from 11th Street can be accommodated by the surrounding roadway network.

TABLE 10 - R1PC'S TRAFFIC PROJECCTIONS OR ARTERIAL ROADWAYS

Route	2050 ADT	
	No-Build	Build
11th St - 23rd Avenue to Charles St (AVG ADT)	11,807	9,075
20th St - 23rd Avenue to Chartles St (AVG ADT)	6,803	7,250
9th St - 23rd Avenue to Chartles St (AVG ADT)	2,844	3,587
7th St - 23rd Avenue to Charles St (AVG ADT)	2,155	2,287
6th St - 23rd Avenue to 1st Avenue (AVG ADT)	4,857	4,647
Kishwaukee St - 23rd Avenue to 1st Avenue (AVG ADT)	11,099	11,981

Safety Analysis

Crash data from the City were evaluated for the period from 2014 to 2018. During this time, nearly 650 crashes occurred on the 11th Street corridor between Blackhawk Road and Charles Street. Most notably, there have been many pedestrian fatalities that have occurred.

The fatal pedestrian crashes have been clustered south of US 20. Not represented in the 2014-2018 data are 3 recent fatal pedestrian crashes between Airport Drive and US 20. All three crashes involved a pedestrian crossing 11th Street at night away from the intersection.

Maps showing the locations of crashes from 2014-2018 are shown in Appendix 4 – Operational and Safety Analysis. The maps show that the pedestrian crashes are spread across the corridor. Interestingly only one crash involving a pedestrian occurred in the section north of Broadway that does not have a bi-directional turn lane.

High severity crashes are clustered at intersections, but with no intersection on the corridor experiencing higher severe crash rates than the other intersections.

The Interactive Highway Safety Design Model (IHSDM) was used to find the predicted number of crashes for each segment and critical intersection. Outputs from the IHSDM can be found in Appendix 4 – Operational and Safety Analysis. The table below shows the predicted number of crashes compared to the crash history for the years 2014-2018.

TABLE 11 - CRASH HISTORY AND IHSDM PREDICTED CRASHES

11th St Segments and Intersections	IHSDM Predicted Crashes (2015-2019)		2015 - 2019 Crash History, Crashes	
	Fatality/ Injury	Property Damage Only	Fatality/ Injury	Property Damage Only
11th St (500' South of Blackhawk Rd to Blackhawk Rd)	0.5	0.4	0	0
11th St at Blackhawk Rd	14.9	17.0	2	6
11th St (From Blackhawk Rd to Samuelson Rd)	4.6	4.0	4	6

11th St Segments and Intersections	IHSDM Predicted Crashes (2015-2019)		2015 - 2019 Crash History, Crashes	
	Fatality/ Injury	Property Damage Only	Fatality/ Injury	Property Damage Only
11th St at Samuelson Rd	19.5	25.3	6	18
11th St (From Samuelson Rd to Airport Dr)	1.6	1.5	0	1
11th St at Airport Dr	31.1	47.5	1	5
11th St (From Airport Dr to Sandy Hollow Rd)	3.1	7.6	10	19
11th St at Sandy Hollow Rd	4.5	9.1	17	59
11th St (From Sandy Hollow Rd to Brooke Rd)	8.7	18.3	18	50
11th St at Brooke Rd	3.7	6.7	6	13
11th St (From Brooke Rd to Harrison Ave)	8.2	17.3	23	38
11th St at Harrison Ave	4.6	9.2	18	53
11th St (From Harrison Ave to W 23rd Ave)	2.1	4.4	4	8
11th St at W 23rd Ave	2.5	4.1	4	5
11th St (From W 23rd Ave to E 23rd Ave)	4.4	9.0	0	0
11th St at E 23rd Ave	2.5	4.4	3	7
11th St (From E 23rd Ave to 18th Ave)	0.4	0.8	5	9
11th St at 18th Ave	2.4	5.1	13	23
11th St (From 18th Ave to 15th Ave)	1.9	3.8	4	6
11th St at 15th Ave	2.7	5.6	10	20
11th St (From 15th Ave to Broadway)	1.0	1.9	0	1
11th St at Broadway	4.0	5.6	17	37
11th St (From Broadway to Woodruff Ave)	1.6	2.9	4	10
11th St at Woodruff Ave	3.5	5.6	3	9
11th St (From Woodruff Ave to 5th Ave)	2.7	5.0	12	24
11th St at 5th Ave	2.9	6.0	2	7
11th St (From 5th Ave to Charles St)	0.8	1.5	1	5
11th St at Charles St	5.2	15.3	6	17

Based on the predicted crash frequency, the sections of 11th Street from Airport Drive to Harrison Avenue and from 23rd Avenue to Woodruff Avenue have experienced crashes at more than double the predicted rate.

Land Use & Occupancy

There are many varieties of land uses and right-of-way constraints adjacent to the corridor. Land south of US 20 is characterized as industrial, although there are numerous vacant properties without structures located within the study area. Between US 20 and Barnum Road/Pershing Avenue, there are some commercial developments. However, there are many vacant properties. Land between Harrison Avenue and 18th Avenue contains a mix of residential and industrial uses, yet

many dilapidated buildings litter the façade of the 11th Street corridor. There are fewer vacant properties between 18th Avenue and Charles Street, as much of the land adjacent to the corridor is residential.

Market Potential

The market potential for redevelopment along the 11th Street corridor was assessed. The goal of the market assessment was to ensure the transportation improvements being recommended are complementary to the dynamics and goals for redevelopment of the Study Area. Overall, there is fairly limited redevelopment potential throughout the Study Area in the near term. Further, given the current market position, it is unlikely that public improvements in the right-of-way will drastically alter the Study Area's near term market potential. Key findings are summarized below and the full market assessment can be found in Appendix 5 – Market Study.

RETAIL

Our market research indicated that retail performance, including achievable rental rates and vacancy rates, in the Study Area has been relatively weak compared to the City of Rockford as a whole. Over the past 10 years, there has been limited new retail development within the Study Area. Nationally and locally, brick and mortar retail store sales have been adversely impacted by changes in consumer behavior including the growth of e-commerce. The pace of many of these changes have been accelerated by the COVID-19 pandemic. Therefore, there is likely to be limited potential for new retail development in the future.

Given these retail trends, it will be critical to continue to support local-serving retail businesses in the Study Area. In particular, the City could focus effort and City funds on the two existing neighborhood centers, the Broadway retail cluster and the 11th Street Plaza. In the near term, it may be necessary to assist small business struggling with COVID-19 by providing financial support to help businesses withstand the downturn. Furthermore, interviews indicated that many residents rely on transit and pedestrian facilities to access retail businesses along the 11th Street Corridor. In order to support retail accessibility and viability in the neighborhood, public realm improvements could be implemented to enhance safety and walkability and provide gateway, streetscape features and other amenities at key commercial nodes.

MEDICAL OFFICE

Nationally, healthcare providers have shifted from providing services traditional hospital settings towards a "hub and spoke model" that delivers many services in non-hospital satellite and outpatient facilities while still providing acute care in hospitals. Within the Rockford MSA, there are three primary healthcare networks which employ the hub-and-spoke model: MercyHealth, OSF HealthCare, and SwedishAmerican. SwedishAmerican is located at the northern end of the Study Area. The hospitals for each healthcare network are located along highly trafficked arterials, such as State Street and Riverside Boulevard. Outpatient facilities for these three networks have either located near the hospital or clustered with other medical office buildings.

Since 2010, there appears to have been fairly limited new satellite medical office development in the City, however, there has been recent investment in hospital facilities, including the recent SwedishAmerican hospital expansion. Despite limited new deliveries and higher medical office vacancy rates, existing healthcare networks within Winnebago County may choose to build new medical office facilities. Future expansion would likely be dependent on the healthcare needs of patients within the healthcare networks' service area and the existing capacity to serve those patients. Given the proximity of SwedishAmerican, future medical office development within the Study Area would likely depend highly on SwedishAmerican's expansion plans. If expansion were to occur within the Study Area, it appears that locations along Charles Street and/or State Street near the SwedishAmerican Hospital could be attractive. Both Charles Street and State Street offer proximity to the hospital as well a good traffic counts and visibility which make new medical office development more likely here than in other parts of the Study Area. Additionally, SwedishAmerican Hospital is surrounded by significant surface parking. Thus, SwedishAmerican may consider redevelopment of some of those surface parking lots on the hospital campus to support demand for new outpatient facilities. Additionally, the presence of SwedishAmerican Hospital in the northern portion of the Study Area and surrounding outpatient centers along Charles and State Streets provide an opportunity to reinforce this node as a strong medical district with enhanced medical district branding along the commercial frontage of Charles and State Streets.

INDUSTRIAL

The City of Rockford is one of Northern Illinois' legacy industrial hubs with over 22 million square feet of existing industrial space in the City limits, including a combined 12.2 million square feet within the Study Area. Most of this space is located in the Harrison and Kishwaukee cluster and the Global Trade Park cluster. Industrial buildings within these two

primary clusters have historically been used for manufacturing. However, over the past decade older buildings have been converted to warehouse and distribution uses and many new buildings are also designed for these types of tenants.

Despite new industrial development occurring in the County, there has been limited new industrial development within the Study Area and recent market performance in the Study Area has been weaker than the countywide industrial market. While the County as a whole is anticipated to see more new industrial development, the Study Area will likely struggle to compete with greenfield sites with interstate access. Some prospective industrial users may find the Global Trade Park industrial cluster attractive due to the proximity to robust transportation networks including the Chicago-Rockford International Airport and US 20.

Unfortunately, deindustrialization is not a new phenomenon in the City of Rockford. Many of the industrial buildings within the Study Area, particularly in the Harrison and Kishwaukee cluster, are older and may not be suitable for modern businesses. The scale and form of these buildings may deter prospective industrial users who would prefer a purpose built building in a greenfield with interstate access. The City has already taken proactive measures to support the repurposing of obsolete industrial buildings. As vacancies continue to rise, there should be continued efforts to reposition obsolete industrial buildings to accommodate alternative uses.

Zoning

The Rockford 11th Street Corridor roughly divides itself into four "character areas" as a result of the zoning requirements. Across all areas, R2 residential setbacks are set to 25 feet, which is standard for a moderately-dense urban residential area. I4 industrial parcels have a 30 foot setback, which is typical, but disrupts the urban "fabric" when located near a residential district. C3 commercial parcels have a 15' setback, leading to a less-urban neighborhood retail area. This discourages walkability in favor of car-centric design.

The corridor approximately breaks down as follows:

1. **The residential area from Charles Street to 18th** that is predominantly zoned R2 residential. This area is bisected by a freight rail line and several accompanying I4 industrial parcels, as well as the Broadway neighborhood retail area which is lined by C4 commercial parcels. Abraham Lincoln Middle School and the SwedishAmerican Hospital anchor the northern end of the corridor but are not represented as institutional uses. Additionally, the Keith Creek Greenway is currently zoned residential despite its ongoing transformation into a public greenspace.
2. **The industrial area from 18th to Harrison Avenue** that is predominantly zoned I1 industrial. There is a strip of R2 residential in this area that is largely incompatible with the surrounding industrial uses.
3. **The commercial area from Harrison Avenue to US 20** that is predominantly zoned C3 commercial. There are six R1 residential parcels that front the corridor in this area but they do not heavily contribute to the character of the area. One of these parcels is located between Hamilton and Lyran Avenues and is occupied by a now-vacant community center. As a result of the C3 15 foot setback, the entire area feels car-focused and does not feel friendly to pedestrians.
4. **The industrial area south of US 20** is predominantly zoned I3 industrial. This area is functionally separate from the rest of the corridor and is defined by a highway condition with many aging industrial parcels and vacant greenfield spaces. From Capital Drive to Samuelson Road, there is a small residential and commercial area with some aging housing and motels.

Permit Data

One redevelopment site requiring a permit near the 11th Street corridor is located at the former location of a big box store on Sandy Hollow Road, west of 11th Street; construction at this site is expected to begin by 2022.

It should be noted that the Rock River branch of the Rockford Public Library on 11th Street closed during the course of the study.

Future Corridor Characteristics

Several developments and public works projects are planned for the study area.

Planned Private Developments

This 11th Street Corridor Plan takes into account the private-sector redevelopment projects that are planned, reflect a commitment of investment, and can reasonably be expected to be carried out in the near future. One of the challenges that exists along the corridor is the relative absence of private-sector development activity, however the planned development at Sandy Hollow Road represents positive investments being made in the area.

WILLS AVENUE/11TH STREET RETAIL DEVELOPMENT

The 11th Street Corridor provides retail stores and services to residents living nearby. This retail function helps make 11th Street important to nearby residents. Increasing the number of quality small businesses within the corridor will improve the quality of life for these residents. The Wills Avenue/11th Street Retail Development is a small, multi-tenant retail building that is to be built at this intersection. The size of the building is planned to be 11,200 square feet, large enough to accommodate two small restaurants/eating establishments and a laundromat. While this is a small new development, it nonetheless will add to the inventory of local businesses serving nearby residents, and will make a positive contribution to 11th Street as a shopping district. It is also a good model for the type of development needed on a number of small, vacant parcels within the commercial portion of the corridor.

US 20/11TH STREET DEVELOPMENT

A larger and more significant development is planned for the former K-Mart anchored shopping center site on the northwest quadrant of the US 20/11th Street interchange. The former shopping center reflected a bygone era before Rockford's retail market shifted to the eastern perimeter of the community. This site has been vacant for many years. Recently, there has been interest to redevelop the property. The hope is that any project will bring positive investment and new businesses to the area.

Planned Public Projects

The Rock River Sanitation District has planned for rehabilitations and additions to their service lines; these planned infrastructure enhancements can be found in Appendix 6 – Planned Infrastructure Projects. A realignment of the sanitary sewer line from 15th Avenue to Broadway is planned to relocate the line beneath the street. Further, an additional line is to be placed from 8th Avenue to 7th Avenue in anticipation for future development in the vicinity. Further improvements include manhole reconstructs/replacements, main line repairs, and service replacements in various locations along the corridor. A source of funding for this work has yet to be determined.

The City has been purchasing properties along Keith Creek for a future flooding abatement project with plans to widen and re-meander the creek. A regional trail along Keith Creek is anticipated as part of these improvements.



Figure 8 - Keith Creek Restoration Exhibit

Reinvestment by the Park District is planned for Keye-Mallquist Park. The District will build a new playground, an outdoor fitness area, a multiuse sports field, and a multiuse court. There will also be a new picnic area, improvements to the restrooms and storage building, and renovations to the basketball courts and ball field. Construction began in the fall of 2020 and is planned to finish in summer 2021.

Roadway reconstruction is planned on Sandy Hollow Road from Kishwaukee Street to 9th Street. The concrete pavement section of this area is one of the poorest conditioned arterial streets in the City. Improvements will build upon the repair work on intersecting Kishwaukee Street performed in 2018, and will include reconstructing the roadway to a narrower three-lane section with sidewalk and a multi-use path. The City is also working with the Illinois Railway Railroad to improve the railroad crossing surface in coordination with the project. These improvements are estimated to add safety, add pedestrian and bi-

cycle accommodations around the neighboring school, and provide a newly paved facility. The improvements are projected to be completed in the Fall of 2022. Additional details of the Sandy Hollow Road reconstruction can be found in Appendix 6 – Planned Infrastructure Projects.

There are various locally sponsored roadway projects near the corridor that are anticipated to occur over the next 30 years according to the City's 2050 Metropolitan Transportation Plan (MTP), which can be found in Appendix 13 - 2050 Metropolitan Transportation Plan. It should be noted that the following projects presented, especially the projects within the mid-range and long-range time frame, are conceptual and are intended to only be used as a guide for the City.

Current locally sponsored roadway projects near the 11th Street corridor include the 15th Avenue Corridor Improvements from Rock River to 11th Street and the Logistics Parkway Extension from Milford Avenue to Samuelson Road. These projects are expected to begin by 2025.

Anticipated short-range locally sponsored roadway projects are the Longwood Street/9th Street/6th Street Two-Way Conversion from East State Street to Whitman Street and the Harrison Avenue Reconstruction from Rock River to IL-251 (Kishwaukee Street). These short-range projects are expected to begin by 2030.

Mid-range projects include the Charles Street Culvert over Keith Creek from 20th Street to Hunter Avenue and the resurfacing, restoration, and rehabilitation of the Madison Street Corridor from Grove Street to Y Boulevard. These mid-range projects are expected to begin by 2040.

Long-range projects near the 11th Street corridor that are anticipated to begin by 2050 include the widening of Airport Drive from Kishwaukee Street to Beltline Road and the widening of Sandy Hollow Road from Alpine Road to Mulford Road. A rail consolidation program, aimed to enhance key rail components and eliminate redundant, non-critical rail assets, is also considered a long-range project for the City.

As part of the City's own Long Range Arterial & Collector Street Repair Plan, in the next 5-10 years, the City is planning to resurface the following nearby streets:

- 15th Avenue from Rock River to 11th Street (2025; in conjunction with the 15th Avenue Bridge Replacement),
- 18th Avenue from 6th Street to 11th Street (2028),
- 7th Street from 15th Avenue to 23rd Avenue (2028),
- 9th Street from Sandy Hollow Road to Brooke Road (2028),
- 23rd Avenue from 11th Street to the Railroad Tracks (2028),
- 18th Avenue from 11th Street to 14th Street (2030), and
- New Milford School Road from Falcon Road to 11th Street (2030).

Vision of the Corridor

Overview

The over-arching vision for the 11th Street Corridor Plan is, quite simply, to improve the quality of life for those who use 11th Street on a daily basis, primarily those who live and work along the corridor. The Plan seeks to make 11th Street a positive asset to the neighborhood, not just a street that gets people from "point A to point B." An improved 11th Street can be a positive asset to the surrounding neighborhoods in a number of ways.

Aesthetically Pleasing

It can be improved to be an attractive place, a place that people enjoy spending time in.

Multimodal Opportunities

It can be a street that provides people with multiple options for getting to their destinations, including car travel, taking the bus, walking, and riding a bike.

Increased Safety

It can be a safer place to live, work, and shop due to improved lighting, pedestrian crosswalks, and mitigation of accident hazards.

Encourage Small Business

It can be a place that provides more local businesses to serve nearby residents, increasing convenience and access to needed goods and services.

Economic Growth

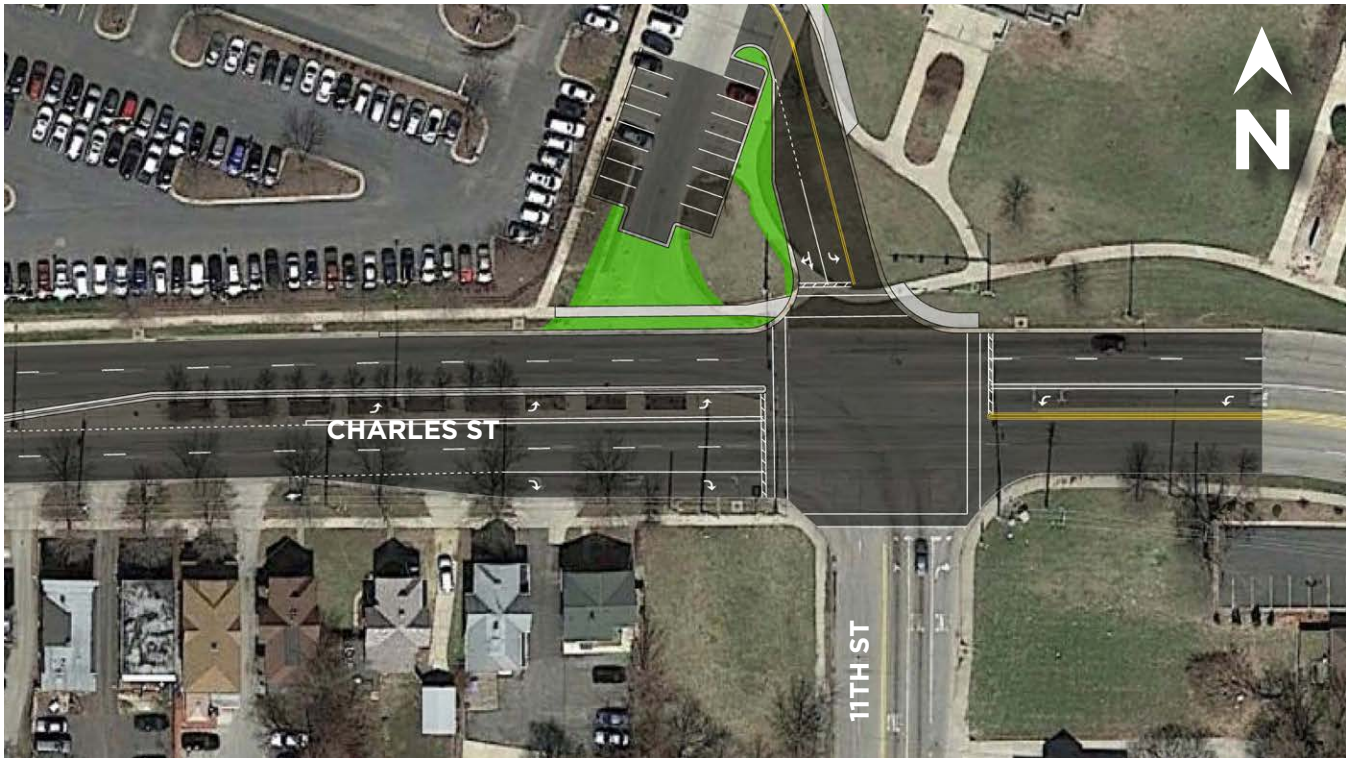
It can be a place that provides more economic opportunity in the form of jobs at local businesses and a place to start or expand a small business.

Recommended Program of Improvements

Many corridor improvements were considered to transform 11th Street into an asset for the adjacent neighborhoods. A concept map of the various corridor improvements can be found in Appendix 7 – Concept Map of Improvements. These improvements are intended to fulfill desired outcomes that the community has identified while best utilizing the available construction funding. Recommended improvements to the corridor impact the pedestrian realm, aesthetics, roadway, land use, and corridor-adjacent features. A summary of the improvements found in the concept map are described below. Supplemental graphics and information for various improvements can be found in Appendix 8 – Proposed Conceptual Improvements.

1. Street Realignment at Charles Street

At the northern end of the project, aligning the Abraham Lincoln Middle School entrance with the intersection of Charles Street at 11th Street would improve safety at the intersection and provide a more direct route for busses travelling eastbound on Charles Street, allowing them to make a direct left turn into the school entrance.



2. Trail-Sidewalk Redesign/Integration at Keith Creek

Integrating 11th Street improvements at Keith Creek would improve the aesthetics of the corridor and connect pedestrians and cyclists to this City greenspace asset. If the bridge on 11th Street needs to be replaced with the retaining walls that flank the creek as part of the Keith Creek flooding abatement plan, it is recommended to incorporate recommend incorporating a space parallel to the creek for the Keith Creek Trail to pass under 11th Street to eliminate pedestrian/vehicle conflict points, similar to the Mel Anderson Path under Auburn Street.

3. Woodruff Avenue Intersection Improvements

Improvements at the intersections of Woodruff Avenue and Railroad Avenue, such as grade changes, upgraded cross-walks or raised intersection platforms, will provide greater visibility for pedestrians and motorists.

The intersection of 11th Street and Railroad Avenue near Benson Stone has reduced intersection sight distance due to the proximity of the building to the corridor. As part of the road diet, it is recommended that the realigned road be shifted east to allow for drivers on Railroad Avenue to pull up past the corner of the building and see further down 11th Street when evaluating gaps in traffic.

4. 11th Street at Broadway Left Turn Lanes

The existing signal is split phase to allow for a protected left for the sidestreets, but that makes the signal cycle longer and reduces the efficiency of the signal. Adding the left turn lanes on Broadway will allow for simultaneous left turns from east and west approaches. During the public engagement process, a concern was raised by the Broadway Busines Group that drivers waiting to make a left turn from Broadway onto 11th Street are routinely passed on the right in the parking lane, creating an unsafe condition as opposing left turning traffic doesn't expect the blocked through movement to be in conflict. Creating the left turn lanes on Broadway will require the removal of approximately marked parking spots along Broadway west of 11th Street and will impact a RMTD bus stop in the northwest quadrant.

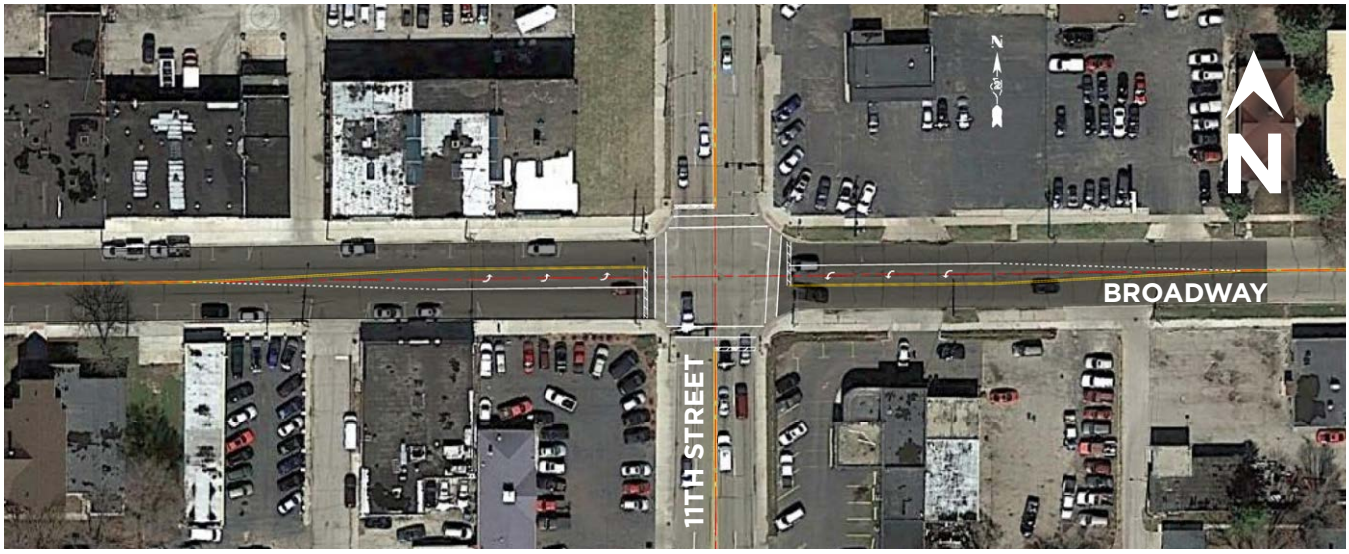


Figure 9 - Revised Striping at Broadway

5. Replace Pedestal Mounted Signal Heads at 15th Avenue and 18th Avenue

The existing signals at 15th Avenue and 18th Avenue do not have mast arms overhead of the travel lanes. Overhead signals improve driver's apprehension of the signals. A study of the impact of replacing pedestal mounted signals with mast arm signals (Crash Modification Factor ID 1420) suggests that converting a signal from pedestal-mounted to mast arms can result in a 50% reduction in crashes.

6. Placemaking Elements

Placemaking is the process of bringing community members of all backgrounds to strategically shape the physical and social character of the public realm through arts and cultural activities that encourage resident connections, neighborhood development, safety, economic advancement, civic pride, and an authentic "sense of place."

A well-conceived approach to placemaking has the potential to foster a beautiful, connected, healthy, and resilient community. 11th Street lacks a sense of identity and feels indistinct from other parts of Rockford. With a few (often inexpensive) measures, the 11th Street community has the potential to build a positive sense of place and community ownership among residents.

It is beyond the scope of this plan to create a comprehensive program of placemaking improvements, but there are still starting points that residents and stakeholders can use to kick-start the process. Both public parks and the currently vacant community

center are well suited for community gatherings and can provide a staging ground for initiatives. Residents can work together with community organizations to create cultural programming and unique art pieces or infrastructure. For example, many communities have worked to create unique branding with banners, neighborhood gardens, seasonal planters, park benches, and murals. Initiatives like these, in combination with community-focused programming, can inexpensively create a sense of place in a neighborhood.

Placemaking initiatives are not just about creating attractive and interesting spaces, but are also about building connections and engaging residents from all backgrounds. Any one initiative will not transform the 11th Street corridor. But with time and perseverance, a full community-driven schedule of placemaking initiatives can turn dilapidated ill-defined neighborhood areas into inviting, livable spaces designed for commerce and connection.

7. Rail Spur Crossing Removal

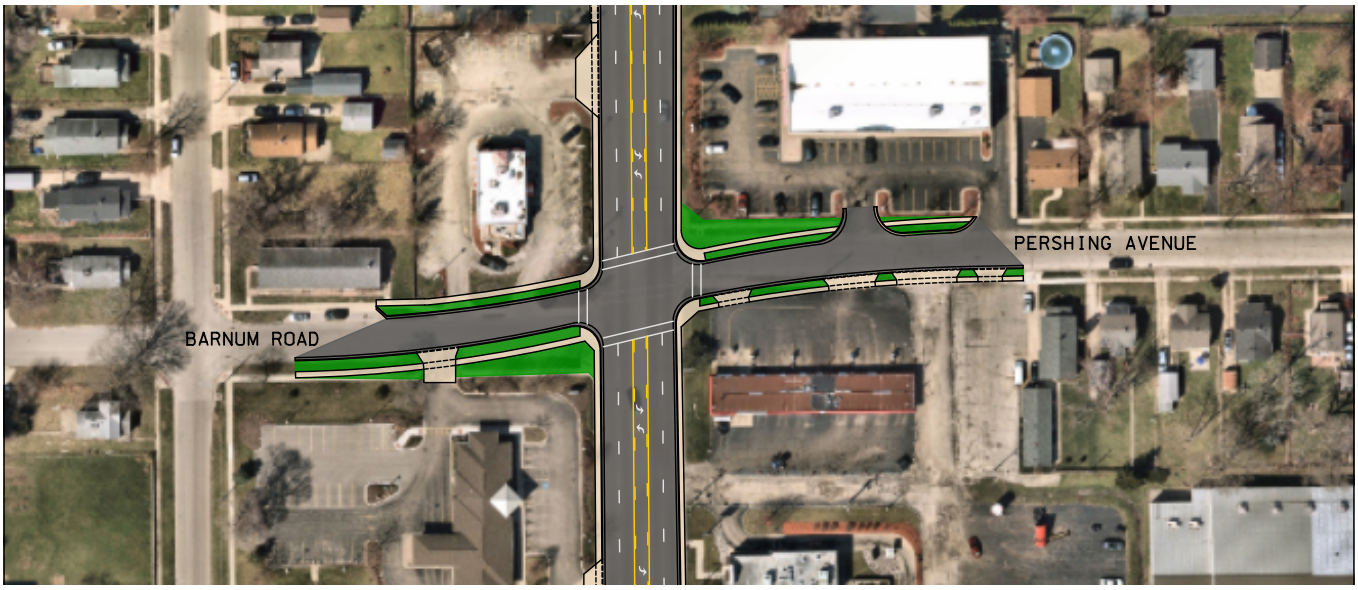
An existing rail spur north of 20th Avenue lacks at-grade crossing lights and gates. As it does not appear this an active rail line, it is recommended that the crossing be removed or repaired in coordination with the property owner.

There are two possible routes for remediation:

1. Contact property owner and refresh maintenance agreement for existing crossing to remain in place after repairs.
2. Petition ICC for removal of crossing. Would require use of eminent domain and a case for why removing the crossing is in the best interest of the public.

8. Pershing and Barnum Intersection Realignment

The intersections of Barnum Street and Pershing Avenue are offset as they intersect 11th Street. There is a marked crosswalk between the two offset legs. The offset exposes pedestrians to conflicts with the left turning traffic from both side streets. Realigning the intersection to eliminate the offset will create a more conventional intersection with fewer conflicts for pedestrians.



9. Guardrail at Rock Fork South Drainage Ditch

The guardrail protecting the Rock Fork South Drainage Ditch between Wills and Reed does not appear to meet current standards. It is recommended that the existing guardrail be replaced with a curved rail section that meets current guardrail criteria.

10. Sidewalk Connections Off-Corridor to Improve Access to Transit

Increasing pedestrian connectivity away from 11th Street was identified as a need during the initial public involvement meetings. Comfortable routes for pedestrians to access transit encourage ridership. Adding sidewalk along Wills Avenue and Sawyer Avenue east and west of 11th Street would accomplish this goal.

11. Bicycle System Expansion

A bicycle route along Sandy Hollow Road to 9th Street, then north to 20th Avenue is suggested to provide improved multimodal mobility along the corridor. The bicycle route will connect to proposed pedestrian infrastructure on Sandy Hollow Road and will create a connection between Jamestown Park and the proposed 11th Street road diet.

A bicycle route will provide a critical linkage for cyclists in Rockford that may feel unsafe or discouraged by the car-centric street design of 11th Street and the surrounding areas. In addition to fostering the health benefits associated with cycling, a bike route will provide a critical linkage for people who do not have access to a car. Further, the bike route will make the neighborhood more accessible by bolstering the safety of those travelling on heavily trafficked roads, while also connecting residents to points of interest such as area parks, shopping, schools, and community centers.

If the bike route is not on 11th Street, it will be important to include wayfinding or bike route signage directing cyclists to the bike facilities.

12. Right of Way Fence South of US 20

Due to the number of pedestrian fatalities on 11th Street south of US 20, safety improvements should be made. Many of the fatalities are not at the intersections and pedestrians are crossing 11th Street in this "rural section of roadway" where drivers are not expecting pedestrians to be. Improving the signalized intersections south of US 20 so that pedestrian crosswalks are included, and then placing fencing such that pedestrians need to cross 11th Street at the intersections would provide better visibility for pedestrians and drivers.

From the US 20 interchange south to Samuelson Road, a fence between 11th Street and the frontage roads is recommended to prevent pedestrians from crossing at locations other than the added crosswalks at intersections. Splitter islands are desired at Samuelson Road to provide pedestrian refuge and improve pedestrian safety.



Figure 10 - Guardrail at Rock Fork South Drainage Ditch – Source: Google Earth

13. US 20 Interchange Pedestrian Path

Until a new interchange can be built, a potential solution is to add a pedestrian path through the interchange on one or both sides of 11th Street.

Looking at the west side of 11th Street, the westbound to southbound loop ramp located in the northwest quadrant of the interchange could be converted to stop control as shown in blue below. This would improve pedestrian safety and remove the weaving movement. A portion of the weave lane could be used to accommodate the path under the US-20 overpass.

The crosswalks across the non-stop controlled ramps (southbound to westbound and southbound to eastbound) are recommended to be accentuated with Rectangular Rapid Flash Beacons (RRFB) and advanced flashers that are actuated when a pedestrian pushes the detection button on the RRFB. As an alternative, the southbound to eastbound ramp could be re-routed to be more square with 11th Street to reduce vehicle speeds that would further improve pedestrian safety.

The existing eastbound to southbound ramp is currently stop controlled at 11th Street.

The pedestrian path from Sandy Hollow to the southbound-westbound ramp could become a carriage walk using the existing shoulder width and avoiding impacting the culvert south of Sandy Hollow.

The south end of the pedestrian path could connect to the west outer road, encouraging pedestrians to avoid walking on the shoulder of 11th Street.

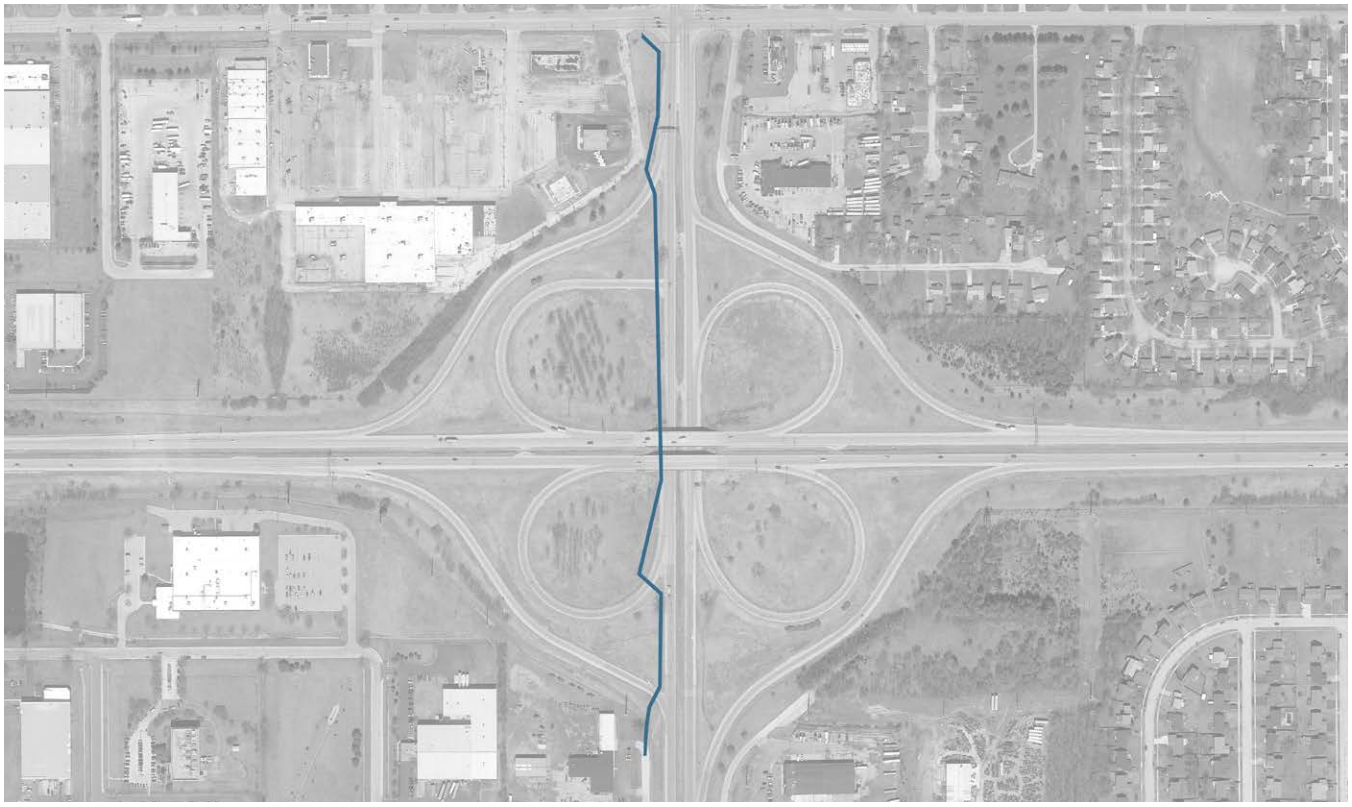


Figure 11 - Potential Pedestrian path through Interchange

14. US 20 Interchange Reconfiguration

Redesigning the 11th Street/US 20 cloverleaf interchange to accommodate pedestrian and cyclist connectivity through the 11th Street corridor from north to south is desired and should be studied in the future. An initial evaluation, included in Appendix 4 - Operational and Safety Analysis, using traffic demand projections from Region 1 Planning Council (R1PC) shows that a diamond type interchange will be sufficient to accommodate design year traffic volumes.



Figure 29 - Potential Interchange Reconfiguration

15. Rebuild Splitter Islands at Airport Drive and Blackhawk Road

South of US 20, it is recommended to reconfigure the existing "porkchop" right-turn splitter islands at Airport Drive and Blackhawk Road to improve the angle of visibility for drivers making right turns at these intersections. Decreasing the radii of the right turning movement allows for drivers to look out of their driver's side window to evaluate gaps, as opposed to looking over their shoulder, and provides them more visibility of pedestrians. This improvement is recommended to be completed in conjunction with adding pedestrian accommodations at these intersections.

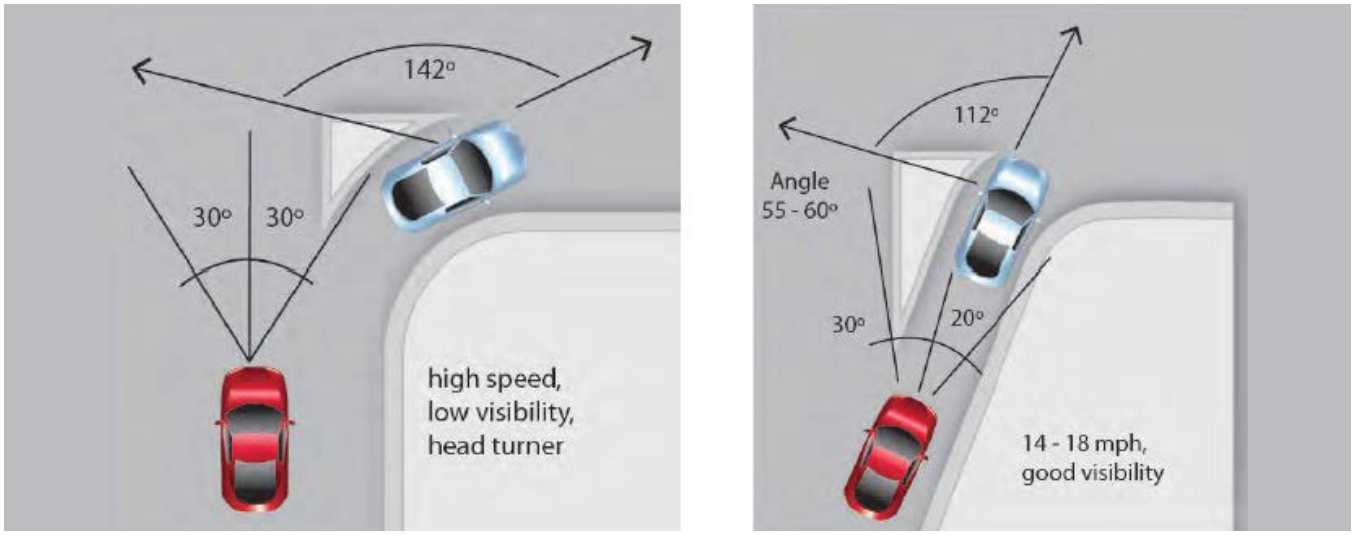


Figure 12 - Improved Angle of Visibility by Adjusted Right turn Splitter Island

16. Add Splitter Islands at Samuelson Road

Currently, splitter islands are not present at the intersection of 11th Street and Samuelson Road. Drivers wishing to make a right turn at this intersection must use faded or indiscernible pavement markings to stay within channelized areas. As such, it is recommended that splitter islands be added at the intersection of Samuelson Road to decrease driver confusion, increase visibility, and provide a pedestrian refuge. Further, implementing splitter islands at this intersection would maintain the continuity of the corridor south of US 20 if existing splitter islands are reconfigured at Airport Drive and Blackhawk Road.

17. Pedestrian Paths across 11th Street South of US 20

At the south end of the project, pedestrian signage and crossings are recommended at Airport Drive, Samuelson Road, and Blackhawk Road. These new crossings will complement the proposed pedestrian and transit improvements throughout the corridor.

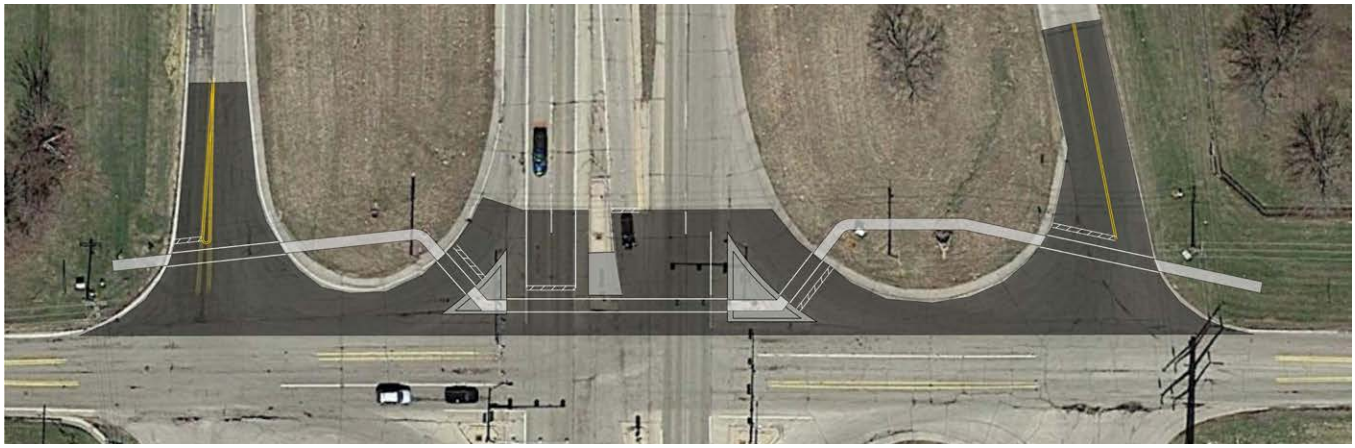


Figure 13 - Example Pedestrian Crossing South of US 20

18. Road Diet

Several scenarios for cross sectional changes were investigated for the corridor to better reprioritize the public right of way to serve the current and future needs of the community. The scope of these physical improvements was limited to the existing right of way. Temporary easements may be required to construct the proposed changes, but no permanent right of way acquisition is anticipated. Moving overhead utilities underground for the entire corridor should be pursued as the road diet is implemented.

New landscaping elements and lighting is included in all options. Implementing a road diet will likely require the reconstruction of the existing traffic signals.

It is recommended that the multi-use path be placed on the west side of 11th Street. This allows for a direct connection to the 9th Street bike route without the need to cross 11th Street. Similarly, the crosswalk across Charles Street is on the west side. Near Railroad Avenue, placing the multi-use path on the west side will have the effect of pushing the road away from Benson Stone and improving intersection sight distance.

City prefers 11' lanes if desired & allowed. – take another look at this in the proposed typical sections.

SECTION 1 – CHARLES STREET TO BROADWAY

The existing right of way through this section is 66 feet, and the existing curb face to curb face width is 47 feet. Because the existing storm sewer system trunk line primarily runs down the west curb line, holding the west curb line near the existing location will reduce the construction costs significantly. The existing west curb face is approximately 9.5 feet from the right of way line.

A road diet is recommended between Charles Street and 23rd Avenue. This section of roadway does not require 4 vehicular lanes based on the current and projected traffic volumes and would better serve the neighborhood by improving the pedestrian and bicycle facilities within this area. Several options for how the road diet can be created were analyzed.

Existing Typical Section



Figure 14 - Section 1 Existing Typical Section

Option 1C - No change in curb lines, reappropriate right of way – Preferred Interim Condition

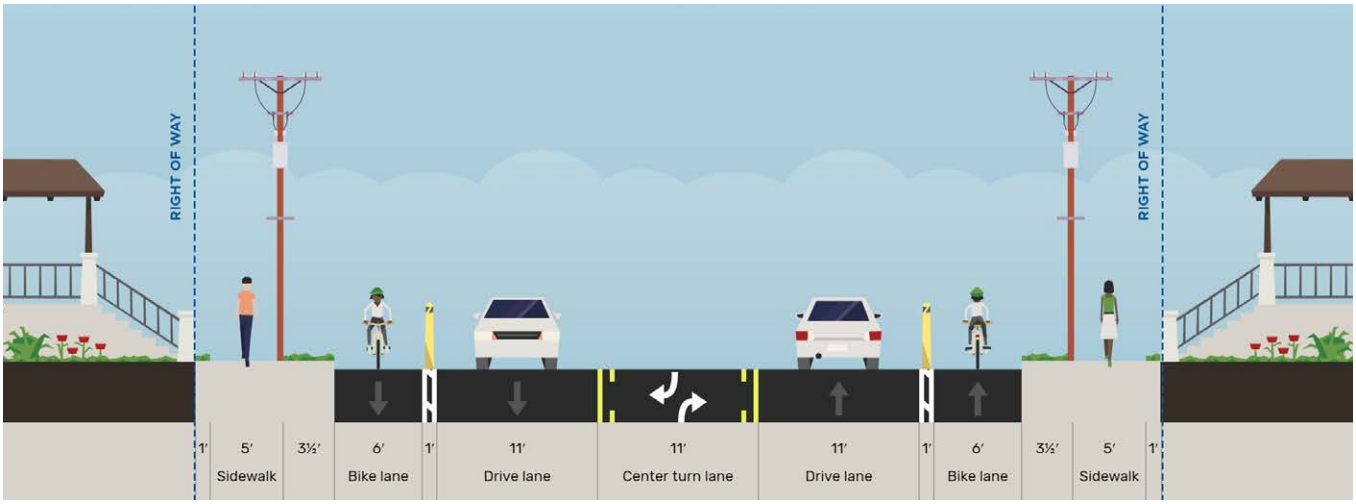


Figure 15 - Road Diet Option 1C

Road diet option 1C can be implemented without changes to the surrounding infrastructure. It is the preferred interim condition until funding can be found to implement the preferred final option. The bike lanes are intended to be temporary until bicycles can be accommodated on a multi-use path in the future.

This option does not require significant construction cost, but still provides for a safer bicycle route, and increases the offset from vehicles to pedestrians. This option will require consideration of maintenance snow plowing due to the incorporation of delineators or bollards within the pavement.

Option 1G – Multi-use Path on west side – Preferred Final Condition

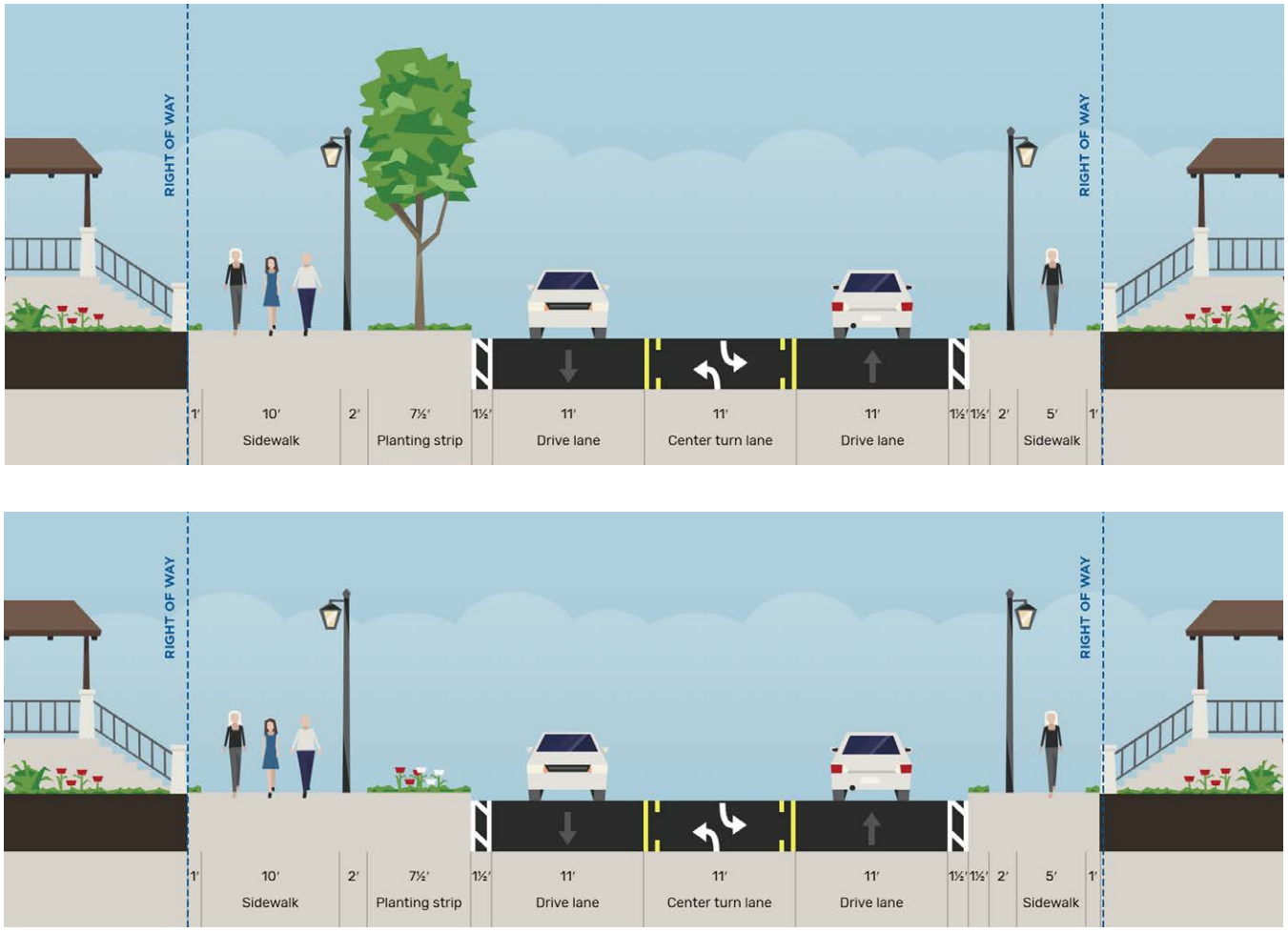


Figure 16 - Road Diet Option 1G with and without street trees

Road diet option 1G is preferred as it provides a desirable bicycle lane width and has a curb to curb face width of 36 feet, allowing for a car to pass a bus stopped at the curb without encroaching on the opposing travel lane. Further, bicycles and pedestrians can utilize the multi-use path to the west.

Option 1B – Bike lanes, multiuse path, no bi-directional turn lane. This will be a potential future option if vehicular traffic decreases and bike/ped traffic increases.

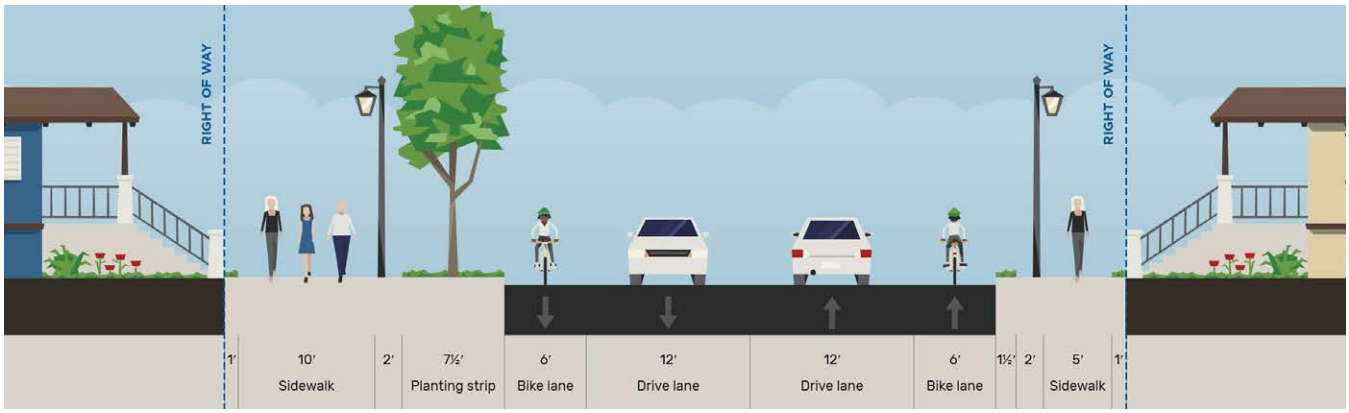


Figure 17 - Road Diet Option 1B

Should bike lanes be desired in the future, 11th Street could be restriped with minimal re-work to create the bike lanes, as shown in road diet option 1B. This option includes a 5' bike lane that is comprised of 4.5' of rideable surface and 1.5' of gutter pan.

SECTION 2 – BROADWAY TO 18TH AVENUE

The existing right of way through this section is 66 feet, and the existing curb face to curb face width is 52 feet. The existing storm sewer system trunk line primarily runs down the east curb line. It is recommended that a raised median be introduced at select locationsin this section to create two-stage pedestrian crossing connections at Keye-Mallquist Park.

The City of Rockford Public Works Department has the following recommendations for the design of landscaped medians.

- Inverted crown [slight] – Dome type grates / open top manhole covers tied into storm system would need to be factored into the design. This would need to be tied into the laterals moving the water to the roadway storm sewer system.
- Irrigation – The inverted medians in the City retain moisture fairly well, and therefore irrigation may not be required for turf medians. Consider location of irrigation control boxes to minimize risk of getting hit by vehicles.
- Tree planting in center medians – The Public Works Department would like to be a part of selection. Trees with a large canopy spread at maturity not desirable especially along truck routes.
- Turf grass preferred – no landscaping or mulch.
- Keep dense landscaping on the end caps and select native perennial plantings.
- Width
  - 10' minimum for landscaped islands.
  - Concrete surface for medians less than 10' in width, stamped concrete designs have held up well.

In the section where the median separates the north and south bound travel lanes, AASHTO recommends a minimum travel way width of a17 foot single travel laneto allow a passenger car to pass a stalled passenger car. This criteria set the minimum one-way curb to curb width for the section.

Existing Typical Section

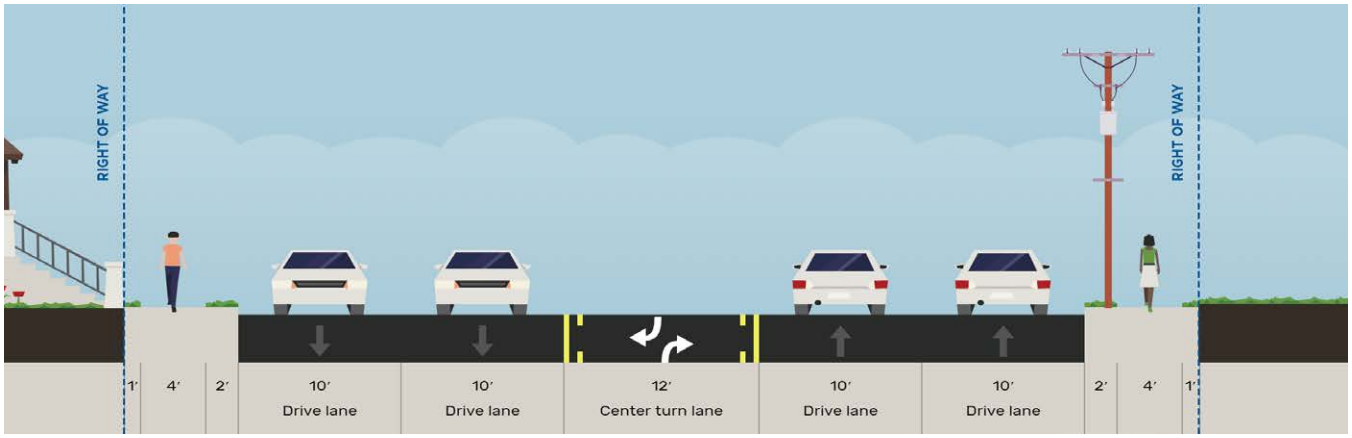


Figure 18 - Section 2 Existing Typical Section

Option 2C – No change in curb lines, reappropriate right of way – Preferred Interim Condition

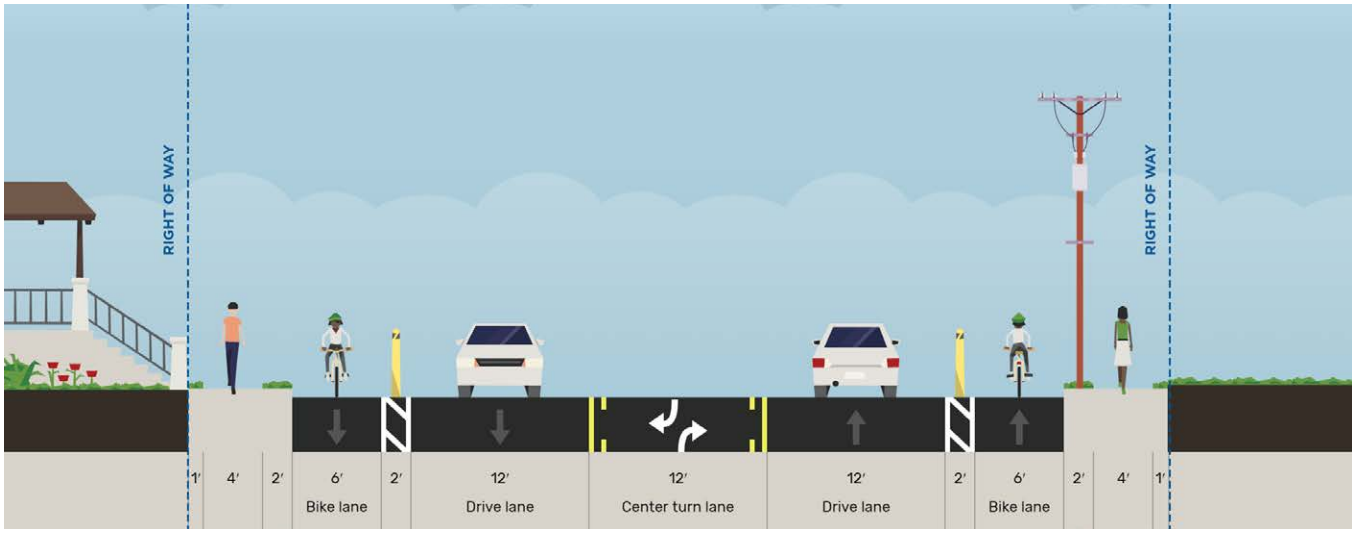


Figure 19 - Road Diet Option 2C

Road diet option 2C does not require significant construction cost, but provides for a bicycle route, and increases the offset from vehicles to pedestrians.

One additional interim solution is to pave the remaining green space adjacent to the sidewalk to bring the sidewalk up to a minimum 6′ width at the back of curb. It is recommended that the future back of curb elevations in the final road diet be evaluated before this is implemented to avoid creating areas of stormwater ponding along the sidewalk in the future condition.

Option 2H – Multi-Use Path on west side

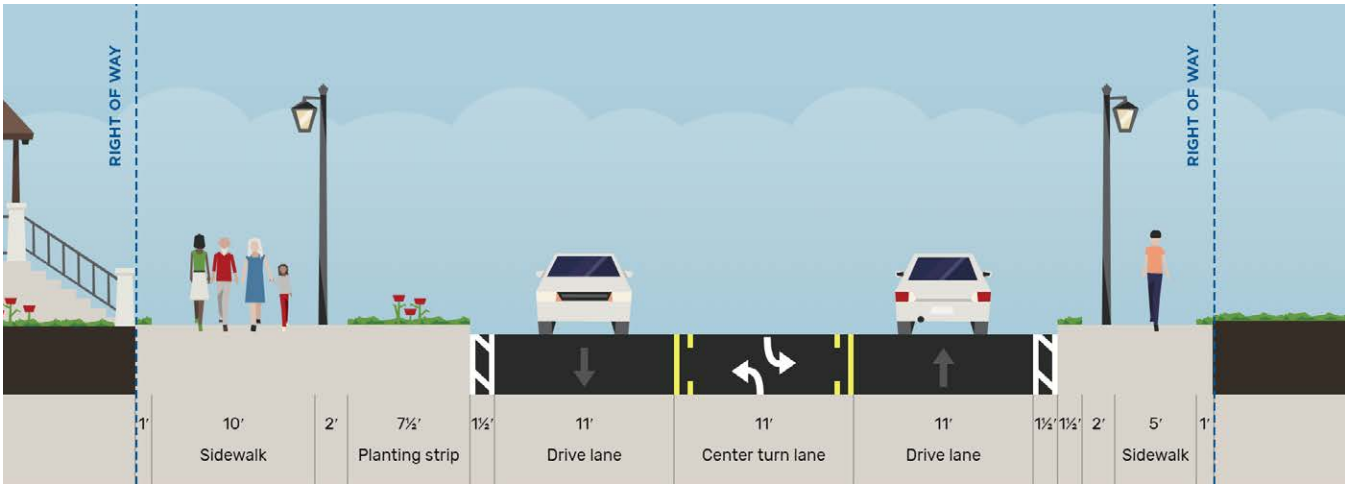


Figure 20 - Road Diet Option 2H

Option 2H – No change in curb lines, reappropriate right of way – Preferred Interim Condition

Road diet option 2H would also allow for a wide pedestrian median refuge island large enough to comfortably accommodate cyclists. These medians are recommended to be localized to the crossing area and not continuous. This option would keep the west curb line in place.

Street tree locations would be limited by the presence of the existing water main which is approximately 17′-22′ inside the west (left) right of way line.

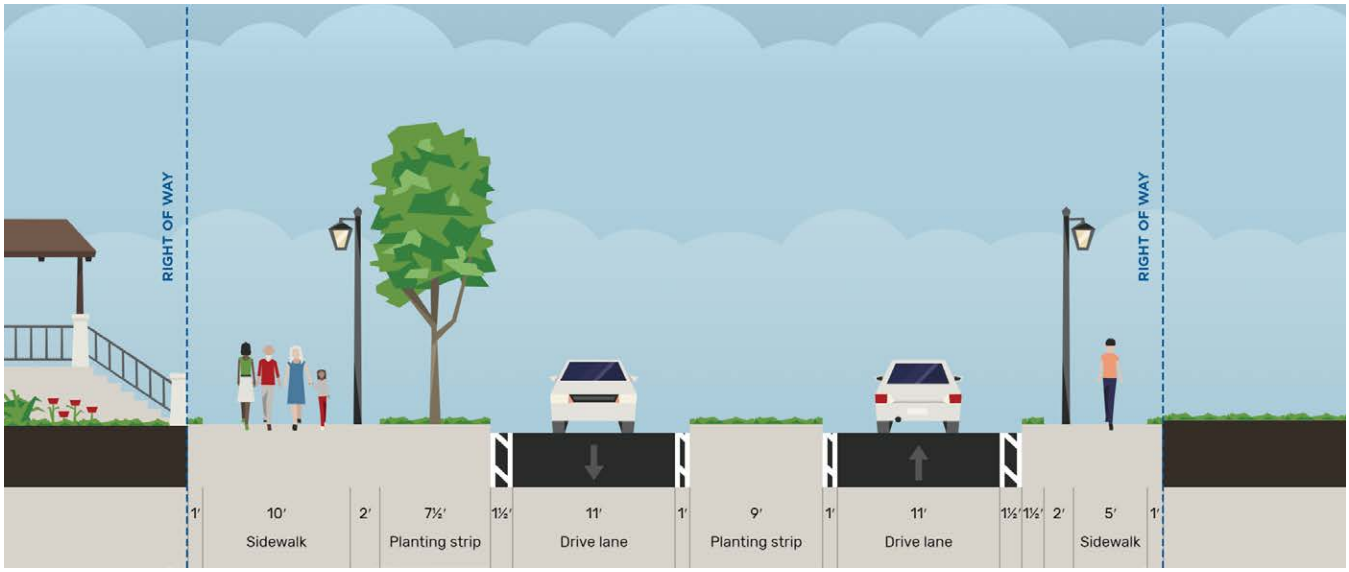


Figure 21 - Road Diet Option 2H with localized median refuge island

Placing the multi-use path on the west side of 11th Street will make the connection across 11th at Keye-Mallquist Park more important. It is recommended that a refuge island wide enough for cyclists be included at the crossing to break up the crossing into two stages. The island is restricted to the crossing area and not intended to be continuous throughout the segment.

SECTION 3 – 18TH AVENUE TO 23RD AVENUE

The existing right of way through this section is 84 feet, and the existing curb face to curb face width is 56 feet. The storm sewer trunk line continues down the west side of the street. The wider right of way and existing sidewalk buffer allows for additional flexibility in the proposed cross-sectional changes. Since this section also includes the proposed neighborhood gateway and median landscaping features, this width is included in the potential alternatives.

Existing Typical Section

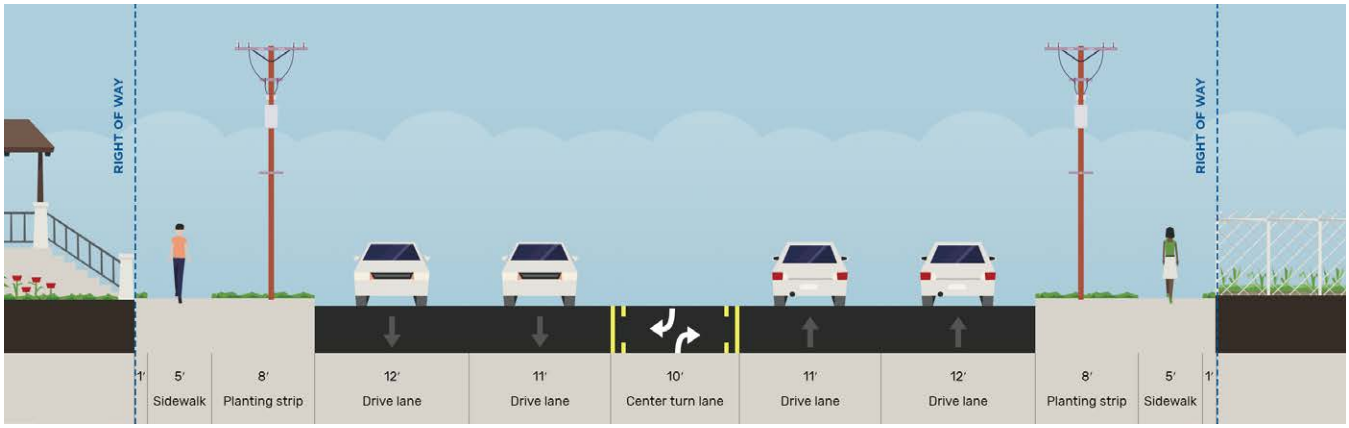


Figure 22 - Section 3 Existing Typical Section

Option 3B – No change in curb lines, reappropriate right of way – Preferred Interim Condition

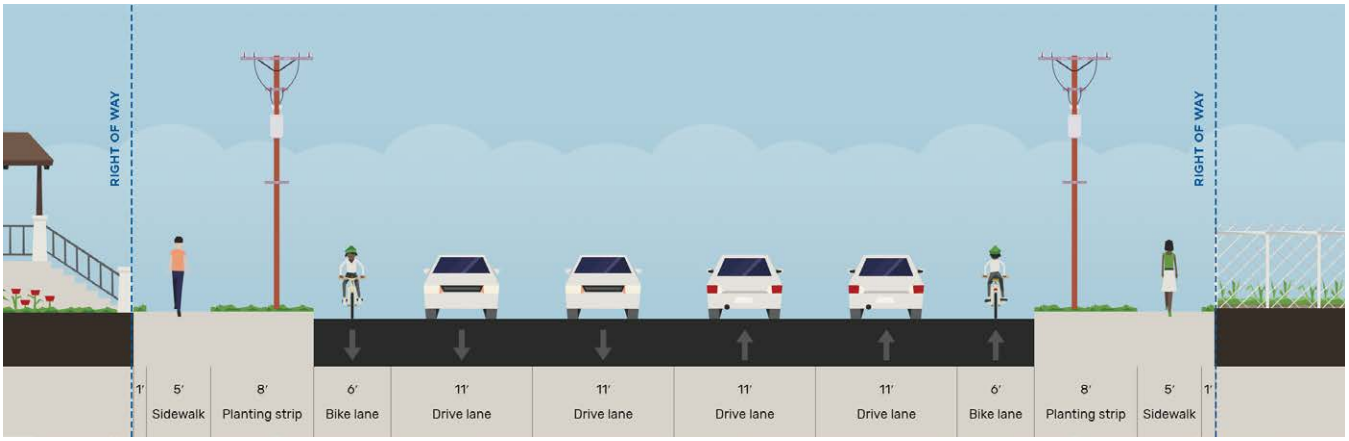


Figure 23 - Road Diet Option 3B

Road diet option 3B constructs the multi-use path on the west side as desired in the final condition, then buffers the pedestrians from the vehicular traffic with a buffered bike lane.

Option 3C – Multi-Use path on west side, 4 lanes

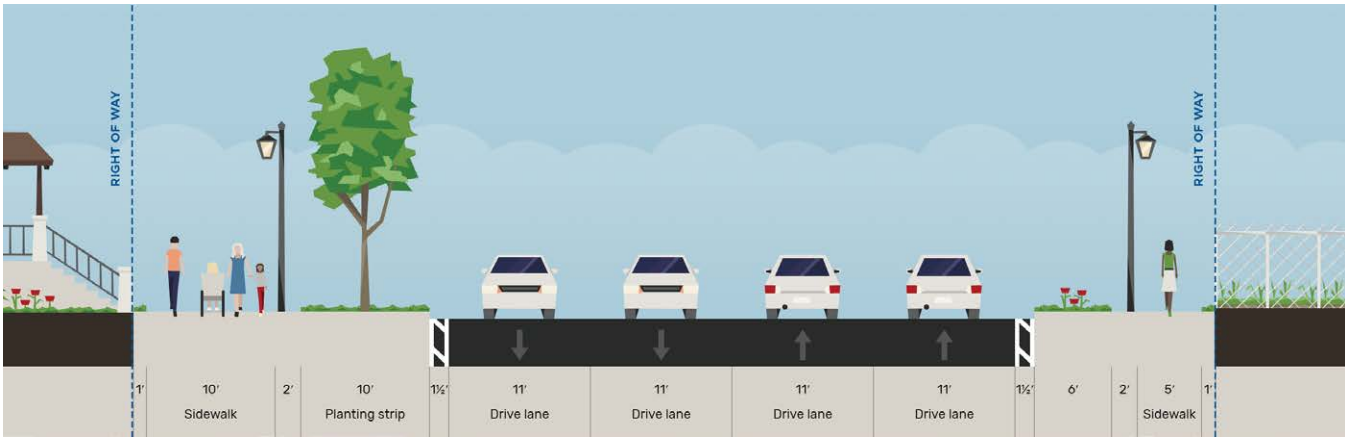


Figure 3C - Road Diet Option 3C

The existing right of way allows for a 4 lane road in this section, but projected traffic volumes do not require a 4 lane section. A three lane section with a center turn lane is also a viable alternative to Option 3C.

SECTION 4 – ALTON AVENUE TO SANDY HOLLOW ROAD

A reduction in the number of lanes was not considered in this section. The current and projected design year traffic volumes are too high to allow for a road diet. Due to the 66' right of way width, options are limited without acquiring new right of way. One option is to narrow the existing lanes to widen the sidewalks to 7 feet.

Existing Typical Section

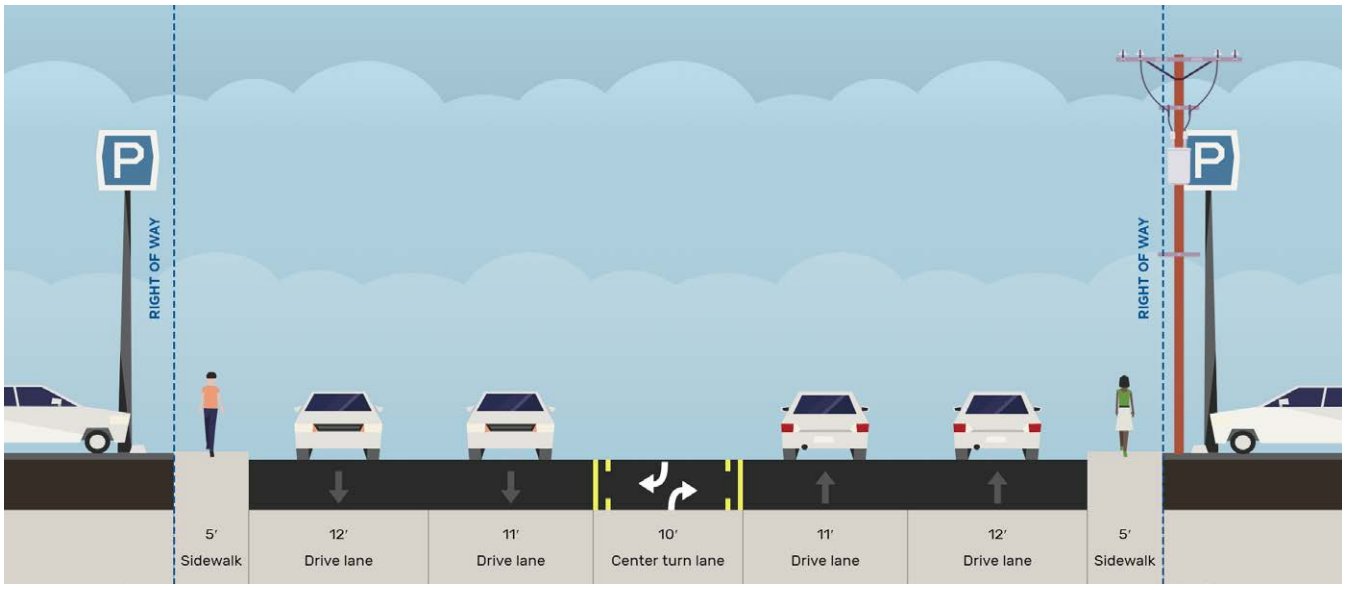


Figure 24 - Section 4 Existing Typical Section

Option 4A – Narrow lanes on 11th Street

To create the minimum 7' sidewalk width to meet the City of Rockford standards, the lane widths will need to be reduced below the 11' minimum 3R lane width for urban arterials in Chapter 49 of the IDOT BDE manual. Because of this restriction, no cross-sectional changes are recommended in Section 4.

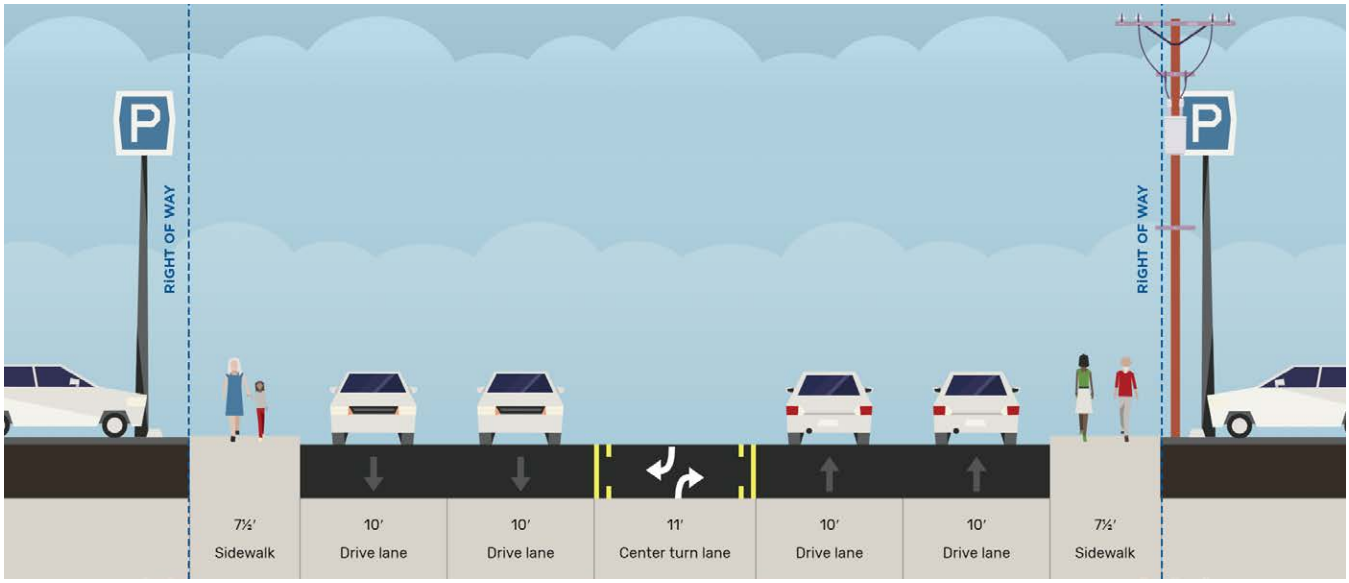


Figure 25 - Road Diet Option 4A

Option 4B – Right of Way Acquisition to widen sidewalk – Preferred

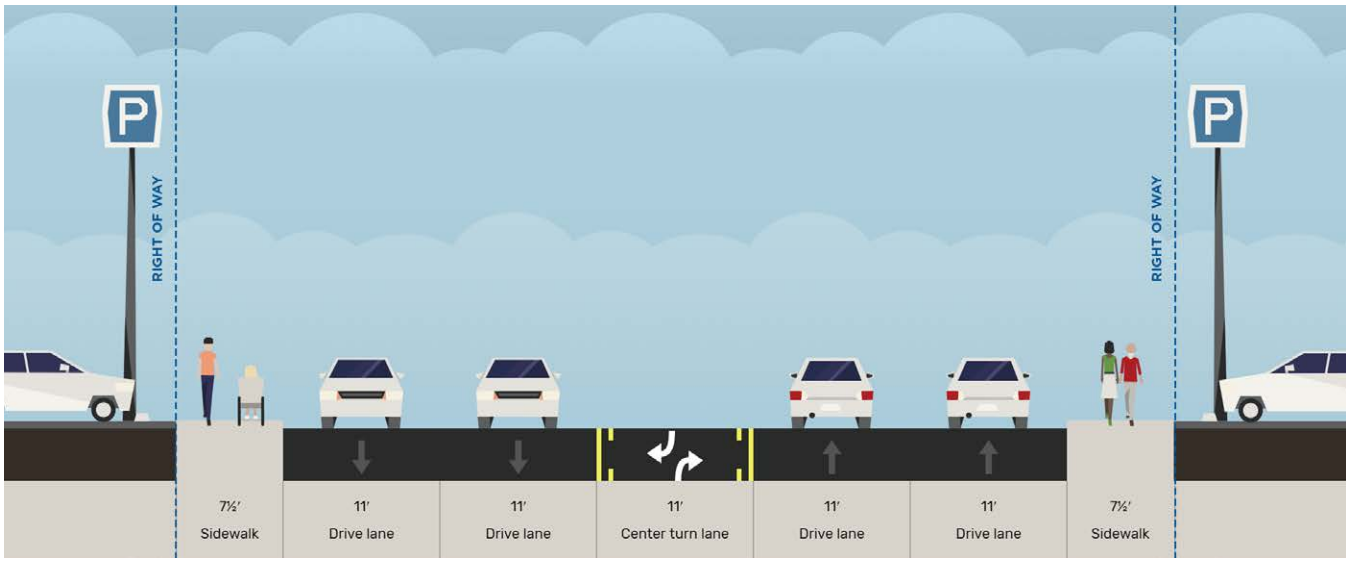


Figure 26 - Road Diet Option 4B

If right of way could be acquired, a combination of narrowing the lanes to the minimum 11' width and widening the sidewalk to the City's preferred 7' width would improve the pedestrian experience with approximately 2 feet of additional right of way or sidewalk easement on both sides of the road.

If additional right of way can be purchased as part of a reconstruction of 11th Street, a multi-use path should be incorporated.

Another alternative is that as a property redevelops, the property owner would be required to dedicate right of way or transportation easement to the City for sidewalk. To further that, the property owner could even be required to construct sidewalk or multi use path/trail at their own cost. This has proven effective in some cities where right of way is needed to make such pedestrian improvements.

19. Resurface 11th Street from Harrison Avenue to Charles Street

The pavement in the City controlled section is in poor condition and in need of repair. Pavement repair patches and a new surface is recommended to extend the life of the pavement.

20. Improved Unsignalized Mid-BlockPedestrian Crossings

Mid-block crosswalks are suggested at several locations along the corridor to provide ADA compliance, update pedestrian crossing signals, and improve pedestrian safety. The locations of these crossings were chosen to increase access to transit and local amenities and was based on public and stakeholder feedback. The three recommended locations are:

- Between Barnum Road and Sawyer Road at Schnucks. Give access to one of the busiest RMTD stops and the shopping center.
- Wills Avenue. Provides access across 11th Street between the bus stops at Reed Avenue and Alton Avenue. Also coincides with new commercial development west of 11th Street and is half-way between the existing signals at Harrison Avenue and Brooke Road.
- 16th and 17th Avenues. New crossing would provide two-stage crossing for pedestrians to access Keye-Mallquist Park.

Proposed improvements include raised medians with landscaping to accentuate mid-block pedestrian crossings. The pedestrian warning signs with actuated Rectangular Rapidly Flashing Beacons are recommended at all proposed mid-block crossings.



Figure 27 – Example Improved Unsignalized Crossing

21. ADA upgrades at Intersections

It is recommended that the intersections along the corridor receive ADA improvements to bring them into compliance. It is recommended that signalized intersections be prioritized in allocating ADA transition plan funds as the signalized intersection provides controlled access across 11th Street.

22. Sidewalk Infill, Replacement, and Obstacle Removal

It is recommended that the priorities in the City's ADA transition plan be followed with a focus on improvements that replace deteriorated sidewalk and remove barriers to wheelchairs, such as the signal pole at 18th Avenue that effectively prevents a wheelchair using pedestrian from accessing the sidewalk. There are various locations throughout the corridor that should receive sidewalk improvements. These locations are presented in greater detail in Appendix 10 - Conceptual Cost Estimates.



Figure 28 - Sidewalk Obstruction



Figure 29 - Sidewalk Exception



Figure 30 - Missing Sidewalk south of Woodruff Avenue



Figure 31 - Missing Curb Ramp Parallel to 11th Street

23. Transit Improvements

Various improvements are suggested for the transit networks present throughout the corridor. Improvements such as benches, shelters, lighting, and paths at bus stops will provide refuge for pedestrians and allow for designated transit stops to be easily identified. If greenspace is available, bus pads are recommended at transit stops to provide a hard surface for those waiting for the bus to stand. It is also desired that designated transit stops meet ADA compliance. These improvements will encourage future use of the transit network throughout the corridor, leading to an increase in ridership.

Transit improvements should be coordinated with the Rockford Mass Transit District. Improvements should be targeted at locations to move people safely across 11th Street, ideally providing bus stops at marked crossings and providing bus service in both the northbound and southbound direction. Improvements to bus stops at the southern end of the corridor are also recommended.

24. Leading Pedestrian Interval at Signalized Intersections

The traffic signals should be phased to provide a Leading Pedestrian Interval. A leading pedestrian interval (LPI) gives pedestrians the opportunity to enter an intersection 3-7 seconds before vehicles are given a green indication. LPIs enhance the visibility of pedestrians in the intersection by allowing pedestrians to establish their presence and reinforce their right-of-way over turning vehicles, especially in locations with a history of conflict. LPIs have been shown to reduce pedestrian-vehicle collisions as much as 60% at treated intersections. Some things to consider when implementing an LPI is right turn on red rules and audible noises for visually impaired pedestrians. A LPI may be more effective if right turn on reds are limited or restricted. Costs of this FHWA proven safety countermeasure are minimal and depend on an existing

signals capability to incorporate these additional timings.

Some potential locations along the 11th St Corridor that could be good candidates for an LPI are Brooke Rd (pending signal modifications), 18th Ave, 15th Ave, Broadway St, 5th Ave, and Charles St. According to the City of Chicago's pedestrian plan, it found that intersections within 200-ft of a school or park, T-intersections, intersections with three pedestrian crashes or more within three years, and intersections with high numbers of conflicts between pedestrians and vehicles turning right should be prioritized. This would be the first application of LPI's in the City of Rockford.

25. Driveway Access Standards

Several properties along the corridor have wide or numerous driveways. It is recommended that these driveways be reconstructed to meet width and separation requirements of IDOT standards provided in Appendix 9 – IDOT Standard Drawings for Driveways. This recommendation would occur either when a property redevelops or when right of way improvements are constructed.

- 12' - minimum width for drives when distance between right of way and face of curb < 15'
- No minimum width provided in IDOT standards when distance between right of way and face of curb/shoulder ≥ 15'

26. Corridor Lighting

Currently, lighting on the 11th Street corridor is not adequate and needs to be upgraded. Some areas are well lit, such as the recently improved intersection of11th Street and Harrison Avenue, but much of the corridor is unfriendly to pedestrians after dark. Corridor lighting is recommended between intersections throughout the corridor which will encourage walking and business patronage. Larger scale lighting, similar to what is present at the intersection of 11th Street and Harrison Avenue, should be installed at various intersections throughout the corridor to enhance driver visibility and pedestrian safety. Comprehensive lighting improvements will increase the economic and social environment in the neighborhood and could potentially be the "first step" to improving the 11th Street corridor.

27. Utility Relocation

If enhancement funds can be appropriated for the corridor, or a plan with ComEd can be worked out, moving all of the overhead utilities underground would be a significant benefit to the corridor. The elimination of visual clutter would beautify the corridor and reduction in roadside obstacles would improve safety for drivers, pedestrians and cyclists.

Until funds can be found to place the utilities underground, an interim solution is to focus on utility conflicts that impede the flow of pedestrians. Utility poles within public right of way that block the pedestrian path may be moved to a new location within right of way by the utility company at no cost to the City. However, there are several locations where the poles present a barrier to pedestrians and there is no additional right of way to move the poles. Adjusting these poles would require the acquisition of new easement for the utility or the acquisition of right of way to widen the sidewalk around the pole and create the minimum clearance required by ADA guidelines. Based on the length of utility easements that would need to be acquired, right of way or sidewalk easement may need to be purchased to create the required clearance around the utility pole may be desirable. See additional information in the funding section of this report.



Figure 32 - Utility Pole blocking pedestrian path

28. Landscaping

Much of the 11th Street corridor is unfortunately defined by a lack of positive or consistent greenery. A vast majority of the corridor frontage lacks street trees of any kind and more than half of the street frontages north of US 20 lack a planting strip with grass or shrubbery. Portions of the corridor with greenery are often poorly maintained or overgrown.

Simple, well-maintained landscaping is one of the most cost-effective tools for transforming both the real and perceived quality of life in a neighborhood. If implemented on 11th Street, fresh trees, shrubbery, and grass (where appropriate) would enhance the values of commercial and residential properties, reduce the urban heat island effect, and simply improve the image of the corridor for residents and visitors.

The Rockford Zoning code mandates that "1 shade tree must be planted for every 50 lineal feet of frontage a property has on

a street right-of-way…" As the corridor develops into the future, it will be important to enforce this tree planting requirement among other existing landscape requirements. When a City does not have the capacity to undertake a large tree planting project, neighborhood advocacy groups are often effective organizations to plant both shade and ornamental trees. Tree planting days can often be financed by local, state and national arbor organizations. These types of initiatives are popular because they often build a comradery among residents, in addition to beautifying the neighborhood.

29. Land-Use Plan Changes

The mix of land uses in the 11th Street corridor are often incompatible and have led to an environment that often feels like a patchwork of random buildings, rather than a cohesive environment. Changes to land use policy in select areas of the corridor have the potential to improve the long-term prospects of the built environment on 11th Street. These suggested land use improvements should help to catalyze future economic growth throughout the corridor. A future land use map for all proposed changes can be found in Appendix 12 - Future Land Use Map. Key modifications include:

1. Update the future Land Use Plan to designate the parcels running perpendicular to 11th Street between 7th and 8th Avenues as recreational space to accommodate the Keith Creek Greenway.
2. Consolidating the land use policies of parcels near the at-grade rail crossing at Woodruff Avenue will provide unity and improved land utilization in this ill-defined area.
3. Consolidate land use policies near 18th Avenue to streamline the manufacturing next to the railroad crossing. Inappropriate uses near the rail lines should eventually be removed and aesthetic standards need to be enforced. Streamlining uses in this area and others will allow all land on 11th Street to reach its highest, best use.
4. Emphasize commercial/mixed-use infill development in the parcels surrounding Harrison Avenue and other neighborhood crossroads.

30. Zoning Enhancements

Enhancing the appearance of the corridor to create an attractive environment will require multiple approaches including:

1. Enhancement within the ROW
2. Selective acquisition of additional ROW or easements for sidewalk and streetscape improvements
3. Strengthening the enforcement of the landscaping requirements of the Rockford Zoning Ordinance.

Currently, very little landscaping exists on commercial and industrial properties within the Corridor. The problem is not a lack of good zoning standards for landscaping the frontage of commercial and industrial properties. Rather, the problem is that these properties were developed before the landscaping requirements were put into the zoning ordinance, so these properties are exempt due "legal nonconforming" status. Due to weak market demand, it is unlikely that these properties will be redeveloped in the foreseeable future, which would trigger compliance with the landscaping standards. A continuation of the present conditions in perpetuity will make creating an attractive condition along 11th Street impossible to realize.



Typical older commercial development on 11th Street.



Typical older industrial development on 11th Street.

There is a way to strengthen the City's ability to enforce compliance with landscaping standards. By adding an amendment to the ordinance that establishes "amortization provisions," it is possible to require compliance on the legal nonconforming properties. The legal premise upon which amortization rests is that, after a certain length of time, the property owner has realized the full value in the original development and can be required to comply with new regulations.

It is recommended that, should the City pursue adding amortization provisions, it should do so very judiciously. Requiring compliance with the landscape requirements could place a financial hardship on some property owners. The landscaping to be required along 11th Street should be carefully structured to fit onto the properties in question and to minimize the cost. Required landscaping should be very targeted to frontage landscaping that enhances the Corridor as opposed to all required landscaping on the site.

In looking at the City's Zoning Ordinance, Section 52-002-B. Frontage/ROW Landscaping, Subsection 1 addresses Frontage Strip Landscaping. The landscaping requirements of this section apply to all commercial and industrial property throughout Rockford, and thus, is not targeted to the specific conditions that exist along 11th Street. It is recommended that special Frontage Strip Landscaping be established for older commercial corridors like 11th Street, where the parcels are smaller and existing development requires that a narrower strip of landscaping be applied. This would minimize the cost and the landscaping would be specifically designed for older corridors.

31. Economic Development Initiatives

As stated in the Vision for the Corridor, increased economic opportunity is an important component of the vision. Increased economic opportunity can be achieved through public-sector intervention to bring to the Corridor the financial and technical resources needed to stimulate investment in businesses. These financial and technical resources can take the following forms:

TAX-INCREMENT FINANCE DISTRICT

A potentially viable way to bring needed financial resources to the 11th Street Corridor is for the City to establish a tax-increment finance (TIF) district over the Corridor. In order for a TIF district to be established, the area must exhibit conditions that meet the eligibility requirements of the TIF Act, which are likely to be present. TIF funds are generated when new investment occurs, creating an "increment" of property tax revenue that goes into the TIF account. It is true that, given local market conditions and the modest prospects for private-sector investment, it is likely that a TIF district established along 11th Street would generate a modest increment of revenue. However, a modest increment of revenue is all that is needed to provide the funds needed to incent small businesses to open or to renovate their buildings/properties. A series of small projects implemented over time will produce meaningful progress toward achieving the Vision.

COMMUNITY DEVELOPMENT BLOCK GRANTS

The U.S. Department of Housing and Urban Development (HUD) provides Community Development Block Grants (CDBG) to communities with low-moderate income populations to provide needed assistance. The City of Rockford receives CDBG funds. The demands on CDBG funds are typically high and cities must decide how to use them among competing needs. The City uses CDBG funds to establish low-interest loans or grants to assist small businesses to make façade renovations, improve interior retail space or buy furnishings and new equipment needed for business startups. While this program is already in place, targeted outreach could be focused on the 11th Street Corridor as a priority area.

BUSINESS FIRST PROGRAM

The City of Rockford, together with Winnebago County, has established a Business First Program to assist individuals in redeveloping an existing property or open a new business in an existing property. This program is well suited for use along 11th Street, where a number of existing commercial properties are vacant and need new tenants. The Business First Program provides a range of assistance, including helping secure loans from the Small Business Administration, addressing building code violations, and providing general information on starting new businesses.

32. Future Policy Strategies for the Corridor

A range of local economic development tools could be used to induce Study Area redevelopment.

- **Tax Increment Financing (TIF) Districts**: TIF is a program that allocates future increases in property taxes from

a designated area (TIF district) to pay for improvements within that area to spur economic development. TIF is not an increase in taxes; it is only a re-allocation of how they are used. TIF revenues could be utilized to offset extraordinary development costs, such as site remediation and public improvements in the TIF district, which may be a financial hindrance for prospective developers. TIF is a tool already being used by the City; the Study Area intersects 5 TIF districts, the newest of which is set to expire in 2032. Existing TIF obligations to previous projects may limit the revenue available for new projects.

- **Business Districts (BD)**: A BD is a legally defined contiguous area of a municipality that has the power to impose a sales and/or hotel tax (up to 1% by 0.25% increments). BD revenues can be expended on site preparation costs, public infrastructure costs, hard construction costs, and/or relocation costs, among others. The designation process is often quicker and simpler than TIF District and funds are available sooner than TIF revenues.
- **Special Service Areas (SSA)**: An SSA is a property-taxing mechanism that can be used to fund a wide range of special or additional services and/or physical improvements in a defined geographic area. The establishment of a new SSA requires the approval of a majority of the property owners, so typically SSA's are used to make business districts more successful. SSA revenues can be used for support programs such as marketing, special events, and transportation, as well as infrastructure improvements, including streetscaping, sidewalk paving, and street improvements. Revenues can also support redevelopment and storefront improvement costs. SSAs are typically used to support central business districts and downtown areas instead of neighborhood retail centers. Implementation requires support from property owners and taxpayers within the district.

Additionally, the Study Area also has several state and federal economic development districts. These districts offer various tax incentives to attract commercial and industrial tenants and reduce real estate-related costs. Incentives from these programs could be coupled with City-led economic development incentives such as TIF, BD and SSA. Additional information can be found in Appendix 5 – Market Study.

33. Corridor Maintenance

Yearly maintenance costs were also developed for the 11th Street corridor. An opinion of probable corridor maintenance cost was developed and considers maintenance items such as landscaping maintenance, trash removal, light bulb replacement, snow plowing of multi-use path, and any other maintenance in addition to current City maintenance efforts. Not included in the opinion of probable maintenance costs are maintenance of flexible delineators, vacuuming/sweeping of curbs/gutters, restriping, milling/resurfacing, and snow plowing of vehicle lanes.

Program Implementation

The overall improvement recommendations will require several steps forward to be implemented. This section attempts to highlight those necessary steps, funding and implementation partners, and other considerations that affect the goal set forth for the 11th Street corridor.

Conceptual Opinion of Probable Cost

The opinions of probable construction costs for the recommended improvements below are conceptual and were developed prior to any design. Note that these costs have several exclusions as listed in Appendix 10 – Conceptual Cost Estimates. These exclusions include utility relocations, right of way and more. It should also be noted that the conceptual costs for the previously presented program of improvements were developed as independent projects. As such, it is possible that some proposed improvements, and therefore costs, may overlap within the study area.

TABLE 12 - CONCEPTUAL OPINION OF PROBABLE COST SUMMARY

	Recommended Improvements	Opinion of Probable Cost
1	Street Realignment at Charles Street	$833,000
2	Trail-Sidewalk Redesign/Integration at Keith Creek	To Be Determined
3	Woodruff Avenue Intersection Improvements	$582,000
4	11th Street at Broadway Turn Lanes	$131,000

	Recommended Improvements	Opinion of Probable Cost
5	Replace Pedestal Mounted Signal Heads	$1,330,000
6	Placemaking Elements	To Be Determined
7	Rail Spur Crossing Removal	$74,000
8	Pershing and Barnum Intersection Realignment	$1,747,000
9	Guardrail at Rock Fork South Drainage Ditch	$13,000
10	Sidewalk Connections Off-Corridor	$261,000
11	Bicycle System Expansion	$9,000
12	Right of Way Fence South of US 20	$209,000
13	US 20 Interchange Pedestrian Path	$1,219,000
14	US 20 Interchange Reconfiguration	$8,710,000
15	Rebuild Splitter Islands	$1,167,000
16	Add Splitter Islands at Samuelson Road	$572,000
17	Pedestrian Paths Across 11th Street South of US 20	$725,000
18	Road Diet - 1C	$193,000
	Road Diet - 1G	$9,277,000
	Road Diet - 2C	$75,000
	Road Diet - 2H	$4,000,000
	Road Diet - 3B	$109,000
	Road Diet - 3C	$8,219,000
	Road Diet - 4B	$8,838,000
19	Resurface 11th Street from Harrison Avenue to Charles Street	$2,829,300
20	Improved Unsignalized Pedestrian Crossings	$459,000
21	ADA upgrades at signalized and unsignalized intersections	$1,616,000
	Improved crosswalk markings	$24,000
22	Sidewalk Infill and Replacement	$1,347,000
23	Transit Improvements South of US 20	$628,000
	Transit Improvements North of US 20	$341,000
24	Leading Pedestrian Interval at Signalized Intersections	N/A
25	Single-Property Multiple Drives	$171,000
	Excessive Drive Widths	$238,000
26	Pedestrian Scale Lighting	$8,571,000
	Intersection Lighting	$3,175,000

	Recommended Improvements	Opinion of Probable Cost
27	Undergrounding of ComEd Power Lines	$3,000,000
28	Landscaping	To Be Determined
29	Land-Use Plan Changes	N/A
30	Zoning Enhancements	N/A
31	Economic Development Initiatives	N/A
32	Future Policy Strategies for the Corridor	N/A
33	Yearly Maintenance Costs	$150,000

Pedestrian safety enhancements south of US 20 that should be implemented concurrently

Public drive access upgrades that should be implemented concurrently

Corridor lighting upgrades that should be implemented concurrently

ADA upgrades that should be implemented concurrently

Transit upgrades that should be implemented concurrently

Funding Sources

The City of Rockford Capital Improvement Program has funding in Fall 2021 for preliminary engineering and then funding of construction dollars ($5M) for 2025. However, this funding will not be enough to fund all the potential improvements. In addition, there is likely not one funding source that will address all improvements at one time.

A number of state and federal funding sources may be available to support these improvements, particularly focusing on enhancing safety and quality of life. Under each of these opportunities, the project would benefit from coordination and consultation with the MPO, IDOT and FHWA staff, and state and federal elected officials.

Possible funding options for targeted improvements include those listed below.

- Undergrounding of power utility - Undergrounding of power utility - Rider with LGC with ComEd to bury the overhead utility poles north of US 20.
- Illinois Transportation Enhancement Program – This program could fund pedestrian and bike facilities, streetscapes. It cannot fund recreational trails or fences (unless addressing a significant safety issue, which may apply for added fencing south of US 20). This program is a competitive IDOT process, and includes a 25% set aside. for high-need communities.
- Illinois Department of Transportation (IDOT) Safe Routes to School – This program could apply for improvements near the middle school at the intersection of 11th Street and Charles.
- US FTA Bus and Bus Facilities Program – The 11th Street transit improvements are on the small side of what the US FTA typically funds, but could be utilized for bus stop improvements.
- Community Development Block Grant – The City of Rockford would need to use their entitlement funds for this, so consideration of how this impacts other community projects would need to be determined by the City.
- Federal Recreational Trails Program through Illinois Department of Natural Resources (IDNR) – multi-use trail could be funded through this program. The program funds 80%.
- Surface Transportation Program (STP) (federal funds through MPO) – could be utilized.
- Highway Safety Improvement Program (HSIP) – for safety improvements.
- State line-item appropriations or federal earmarks.
- Coordination with IDOT Bureau of Safety is recommended prior to application for HSIP funding.

Other funding sources available, but for which these improvements may not be a good fit, include:

- EPA Public Works – this needs to have a tie to economic development along the corridor.

- BUILD (or similar program) grant.

Most all funding sources require matching dollars from the community for monies received, and therefore the City of Rockford would need to utilize allocated dollars as matching funds. Note that many funding sources require IDOT approval.

Other City-wide TIP funding sources which may be available include:

- Community Enhancement and Economic Development Funds ($1,000,000/yr).
- Capital Lighting and Traffic Signals Program ($100,000/yr).
- Sidewalk and Active Transportation Program ($750,000/yr).

Implementation Strategy

The recommendations outlined in this report will come at a significant cost. When funding is available, the recommendation of this study is to implement all of the improvements. In order to realize improvements in the short-term, the recommended improvements are broken down in to three phases: Low/No cost improvements; Short term or lower cost construction projects; and Longer term or higher cost construction projects.

Implementation of any of the items within the three phases will signify the importance of the corridor to the City of Rockford. Note that prioritization overlaps the three phases, and needs to be considered when programming improvements.

LOW/NO COST IMPROVEMENTS

These improvements can be made without spending construction dollars.

- Driveway Access Standards
- Leading Pedestrian Interval at Signalized Intersections
- Utility Relocation
- Land-Use Plan Changes
- Zoning Changes
- Economic Development Initiatives
- Future Policy Strategies for the Corridor
- Placemaking

SHORT TERM OR LOWER COST CONSTRUCTION PROJECTS

These projects may be completed with local funds or state match funds. These projects have been ranked based on their cost effectiveness in realizing the goals of this study.

- Sidewalk infill and obstacle removal
- Bicycle system expansion
- Improved unsignalized pedestrian crossings
- 11th Street at Broadway left turn lanes
- Right of Way fence south of US 20
- Rebuild splitter islands at Airport Drive and Blackhawk Road
- Pedestrian paths across 11th Street south of US 20
- Replace pedestal mounted signal heads at 15th Avenue and 18th Avenue
- Resurface 11th Street from Harrison Avenue to Charles Street
- Landscaping
- ADA upgrades at intersections
- US 20 Interchange pedestrian path
- Interim Road Diet from 23rd Avenue to Charles Street
- Transit improvements
- Sidewalk connections off-corridor to improve access to transit
- Rail spur crossing removal
- Woodruff Avenue intersection improvements
- Guardrail at Rock Fork South Drainage Ditch
- Add splitter islands at Samuelson Road

LONGER TERM OR HIGHER COST CONSTRUCTION PROJECTS

Implementing these design recommendations will require significant funding or right of way acquisition. They represent the long-term vision for the corridor.

- Road diet from 23rd Avenue to Charles Street
- Pedestrian scale lighting
- US 20 Interchange reconfiguration
- Trail-Sidewalk redesign/integration at Keith Creek
- Street realignment at Charles Street
- Pershing and Barnum intersection realignment

APPENDICES

Appendix 1-A – Stakeholder Meeting #1 & #2

Appendix 1-B – Public Meeting #1 & #2

Appendix 2 – Existing Corridor Conditions

Appendix 3 – Project Goals

Appendix 4 – Operational and Safety Analysis

Appendix 5 – Market Study

Appendix 6 – Planned Infrastructure Projects

Appendix 7 – Concept Map of Improvements

Appendix 8 – Proposed Conceptual Improvements

Appendix 9 – IDOT Standard Drawings for Driveways

Appendix 10 – Conceptual Cost Estimates

Appendix 11 – Design Criteria

Appendix 12 - Future Land Use Map

Appendix 13 - 2050 Metropolitan Transportation Plan



APPENDIX 1-A

Stakeholder Meeting #1 & #2

- Stakeholder Meeting #1 – 11/12/2020
  - Flier
  - Focus Groups for 11th Street Corridor Schedule
  - Presentation for Stakeholder Meeting #1
  - Stakeholder Meeting #1 Notes
  - Design Element Suggestions
- Stakeholder Meeting #2 – 02/09/2021
  - Flier
  - Presentation for Stakeholder Meeting #2
  - Stakeholder Meeting #2 Notes

THE CITY OF ROCKFORD ILLINOIS, USA

Stakeholder Meeting #1

11th Street Corridor Study



We encourage you to attend our virtual stakeholder meetings Nov 12th, 2020 to provide input on the existing conditions and how they can be improved

Project Purpose and Goals

The Corridor Study Goals include:

- Focusing on transportation solutions to improve pedestrian safety, reduce pedestrian fatalities, and beautify the corridor
- Inform the community on how to move forward, beyond the study, while achieving the goals of the community
- Focus on improvements within the right of way such as sidewalks and lighting, utilizing a complete streets mentality such that the right of way improvement are conducive to drive economic growth
- Utilize the improvements within the right of way as a catalyst to attract people to the area
- Understand that the corridor should be cohesive, while noting the different characteristics of each section
- Provide a conceptual cost for right of way improvements for future programming

https://projectmeetingonline.com/11th-street-corridor-study/

Stakeholder Meeting #1

Focus Groups for 11th Street Corridor

November 12th.- 9am to 4pm

Local Businesses and Institutions:

1. Chamber of Commerce
2. RACVB
3. Collins Aerospace
4. Benson Stone
5. Swedish American
6. Chicago Rockford International Airport
7. St. Edwards Church
8. Library – Rock River Branch
9. Blackhawk Bank
10. John's Pizza

Transportation Group:

1. IDOT
2. RMTD
3. R1PC
4. RRWRD
5. Winn County Highway Department

Government Agencies and City Departments

1. RHA
2. Park District
3. Public Works
4. Community Development
5. Fire Department
6. Police Department
7. Council Members

Neighborhood Groups and Advocacy Groups

1. iBikeRockford
2. RAMP
3. Rockford Traffic Commission Members
4. Transform Rockford
5. Keith Creek Neighborhood Churchill's Grove
6. 11th Street Neighborhood

7. Keye-Mallquist Neighborhood
8. Brooke United Methodist

Preliminary Schedule for Sept 25th meetings.

9:00 to 10:00 – Local Business and Institutions

10:30 to 11:30- Transportation

1:30 to 2:30- Government Agencies and City Departments

3:00 to 4:00- Neighborhood Groups and Advocacy Groups

Stakeholder Meeting #1

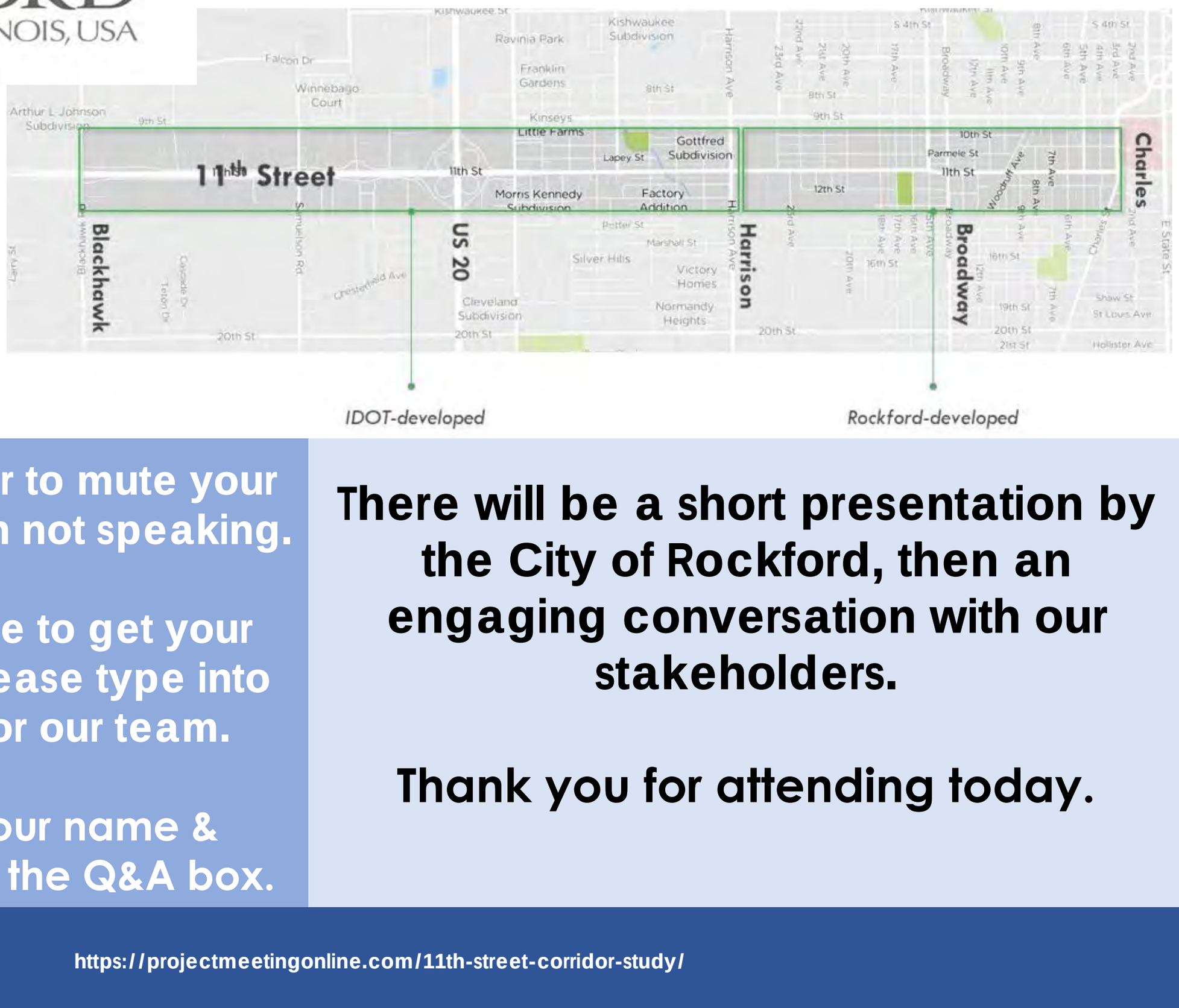
11th Street Corridor Study

In partnership with:

CMT

camiros

SBFRIEDMAN



Please remember to mute your microphone when not speaking.

If you are unable to get your comments in, please type into the Q&A box for our team.

Please type your name & organization into the Q&A box.

There will be a short presentation by the City of Rockford, then an engaging conversation with our stakeholders.

Thank you for attending today.

https://projectmeetingonline.com/11th-street-corridor-study/

THE CITY OF ROCKFORD ILLINOIS, USA

Stakeholder Meeting #1

11th Street Corridor Study



The City of Rockford is studying 11th Street, from Blackhawk Avenue at the southern City limits north through US 20, Harrison Street, and up to Charles Street on the northern limits.

The roadway section through the corridor poses multiple undesirable current conditions. This study aims to identify improvements within the right of way and costs for the infrastructure improvements.

The study will fulfill the vision of the City, including an actionable strategy to implementation within the City's budget and schedule.

The City is engaging stakeholders and will engage the public soon. This process is used so the community can inform the plan.

You LIVE there, you WORK there, you UTILIZE the corridor!

Our team wants to hear from you at this meeting.

https://projectmeetingonline.com/11th-street-corridor-study/



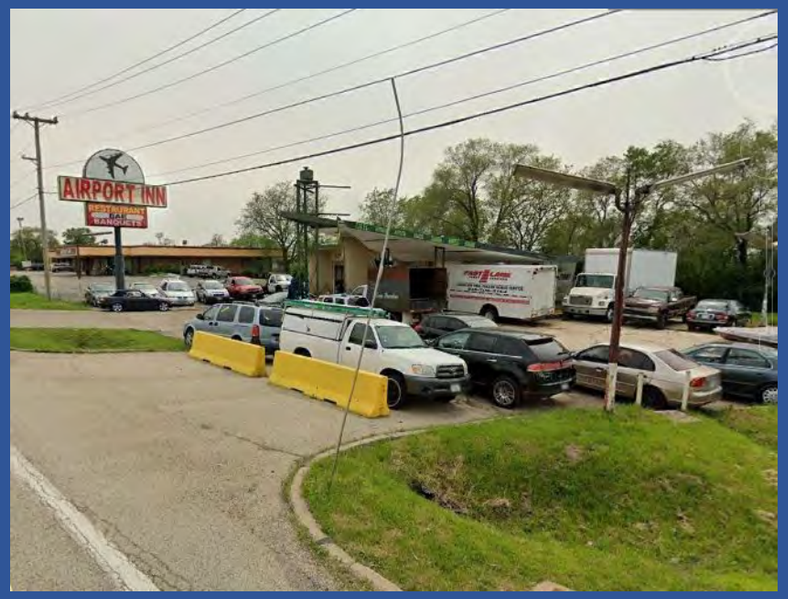


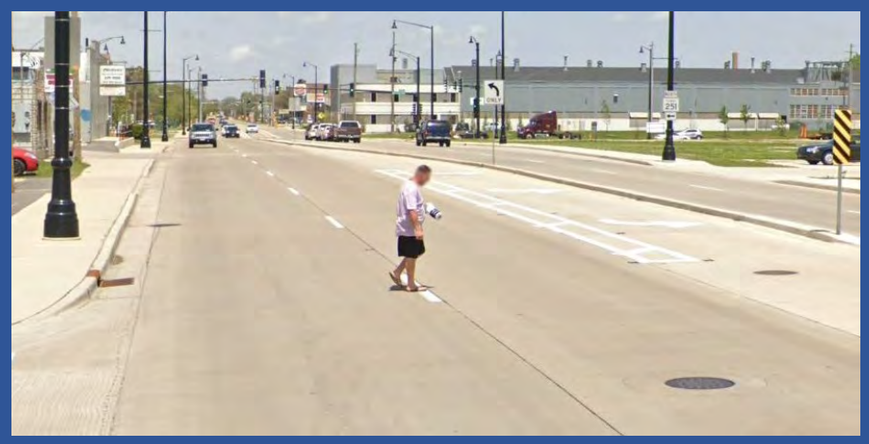




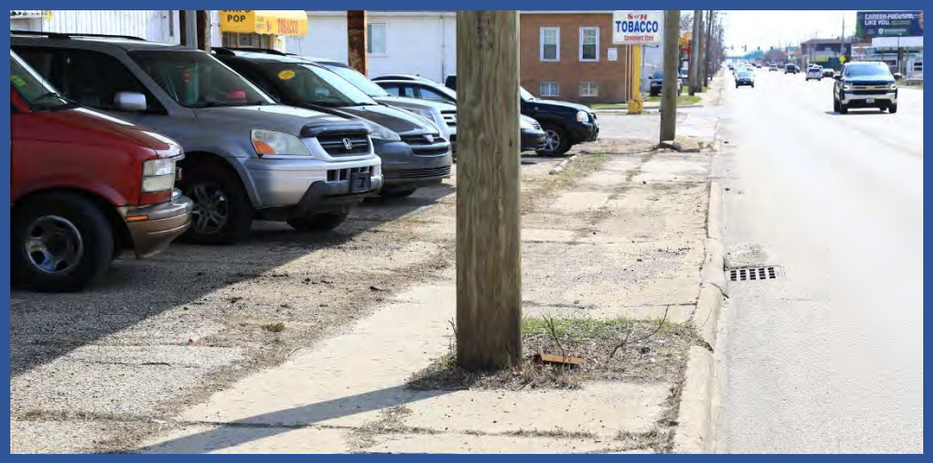
11th Street Existing Conditions



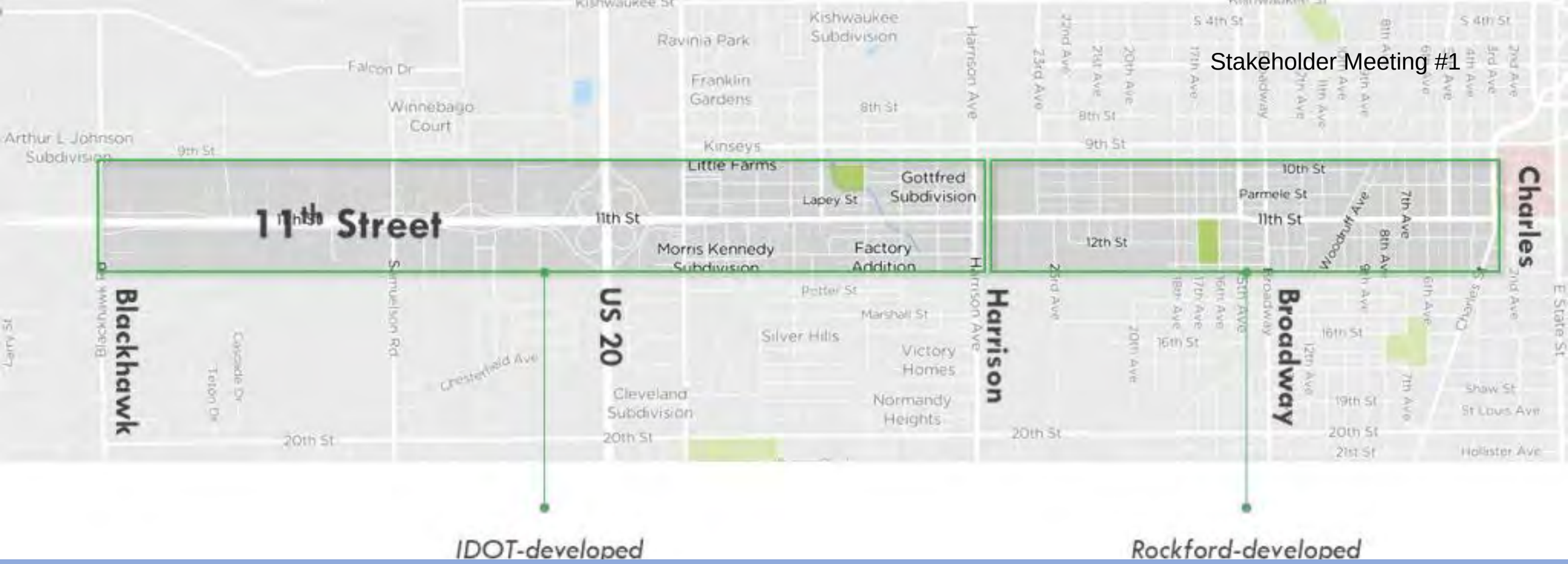












City Receives Grant funding for a Corridor Study

Team kicks off the Corridor Study – September 2020

Data Collection – October 2020

Stakeholder Meetings – November 12, 2020

Public Meeting #1 – December 2, 2020

Corridor Plan Development – December 2020 – January 2021

Draft Corridor Study for Review by Stakeholders – February 2021

Public Meeting #2 – February 2021

Final Deliverable – March 2021

https://projectmeetingonline.com/11th-street-corridor-study/



Corridor Study Purpose and Goals

- Focusing on transportation solutions to improve pedestrian safety, reduce pedestrian fatalities, and beautify the corridor
- Inform the community on how to move forward, beyond the study, while achieving the goals of the community
- Focus on improvements within the right of way such as sidewalks and lighting, utilizing a complete streets mentality such that the right of way improvement are conducive to drive economic growth
- Utilize the improvements within the right of way as a catalyst to attract people to the area
- Understand that the corridor should be cohesive, while noting the different characteristics of each section
- Provide a conceptual cost for right of way improvements for future programming

How can you help inform the 11th Street Corridor Study ?

Stakeholder Meeting #1

LOCAL BUSINESSES AND INSTITUTIONS

- What are your overall thoughts of the corridor?
- Describe how 11th St is important to your business/use in terms of how it affects access and how it affects your image/identity.
- Are there locations where traffic backups happen frequently? Why do you think this is?
- Are there issues with busses and blocked traffic?
- Is there enough lighting along 11th Street?
- Are there locations where vehicles "cut thru"?
- Are there areas of crime along the corridor?
- What are the strengths & weaknesses of 11th St as a retail corridor?
- Who is your customer base (locals, city-wide, nearby employees)?
- Are business support services needed due to COVID-19?
- Are there advantages of the Harrison/Kishwaukee & Global Trade Park industrial clusters?
- What are the barriers to development within the study area / industrial clusters?
- Are there any current expansion plans for your business?
- Has the Airport growth impacted current operations?
- Are there Swedish-American engagement programs within the neighborhoods? Has medical district branding been considered?
- What is the patient base for the hospital – locals or beyond?
- How do people access the hospital – cars/bus/walk?
- Is there an interest in any medical expansion to 11th Street?
- Where do hospital staff/visitors shop (Downtown, State St, 11th St)?
- Do you hear from customers that it is difficult to get to your business?

- What are your overall thoughts of corridor improvements needed?
- Is the character of the corridor appropriate? Is there a "perception" issue?
- What would you like to see in the public space?
- What would you like to see in the space adjacent to the public realm?
- What amenities are needed in the public space?
- Do you think that improving the appearance of the corridor will benefit your business/use?
- Are there intersections that you avoid from a safety perspective (speed, can't see well, etc.)?
- Are there any desired retail/commercial businesses missing that could support your business or hospital staff/visitors/patients?
- Do you think the City should consider strengthening development control regulations along this corridor through an overlay zoning district to require on-site landscaping, minimum building façade standards and other visual upgrades on private property?
- Do you have any suggestions for attracting new businesses/uses to the corridor?

How can you help inform the 11th Street Corridor Study ?

TRANSPORTATION AGENCIES

- What are your overall thoughts of the corridor?
- How would you characterize the corridor?
- Where do people catch the bus?
- Where do people walk?
- Where do people cross 11th Street? Why?
- Is there an area of greatest pedestrian use or gathering space?
- Are there locations where there are stormwater issues? Ponding water?
- Are there locations where traffic backups happen frequently? Why do you think this is?
- Are there locations where pedestrians and vehicles frequently interact?
- What is the reason for the pedestrian crashes/near misses/fatalities?
- Are there issues with busses and blocked traffic?
- Do you ride your bike along 11th Street?
- Is there enough lighting along 11th Street?
- Are there locations where vehicles “cut thru”?
- What locations do people visit along the corridor?

- The ADT along the corridor decreases from about 22,000 south of Route 20 to around 10,000 north of Harrison Avenue. Regarding the northern portion of the Corridor, where traffic volumes are considerably lower, do you think it is feasible, from a transportation perspective, to reallocate space within the ROW to non-motorized modes of transportation and green space/streetscaping?
- What are your overall thoughts of corridor improvements needed?
- Where do people need to catch the bus?
- Where do people want to walk?
- Where do people want to cross 11th Street in a crosswalk?
- Is a pedestrian gathering space needed?
- What would people like to see in the public space?
- What would people like to see in the space adjacent to the public realm?
- Where do people want to ride your bike along 11th Street?
- Where is lighting needed along 11th Street?
- What amenities are needed in the public space?
- Any other thoughts for suggested improvements?

How can you help inform the 11th Street Corridor Study ?

GOV'T AGENCIES & CITY DEPARTMENTS

- What are your overall thoughts of the corridor? How would you characterize it?
- Are there locations where traffic backups happen frequently? Why do you think this is?
- Are there issues with busses and blocked traffic?
- Is there an area of greatest pedestrian use or gathering space?
- Are there locations where there are stormwater issues? Ponding water?
- Are there locations where pedestrians and vehicles frequently interact?
- What is the reason for the pedestrian crashes/near misses/fatalities?
- Is there enough lighting along 11th Street?
- Are there locations where vehicles "cut thru"?
- Are there areas of crime along the corridor?
- How important is improving the 11th St corridor relative to other areas of need in Rockford?
- What do you think the long –term effects would be of the City/public sector not intervening to improve the 11th Street Corridor?
- Do you think the City should consider strengthening development control regulations along this corridor through an overlay zoning district to require on-site landscaping, minimum building façade standards and other visual upgrades on private property?
- What are the barriers to development within the study area / industrial clusters?
- Has any support for COVID-19 been provided to businesses along the corridor?
- Are there any current permits for expansion plans or new businesses on/near the corridor? Airport? Global Trade Park? Kishwaukee/Harrison area? Swedish American? Other local businesses?
- Are there any public projects planned within or near the 11th St corridor?
- What partnerships/investments have been made and/or are in the pipeline?
- How are the TIF districts performing within the Study Area? (especially Global Trade Park TIFs)
- How does the City typically deploy TIF funding? (i.e. support development projects, public improvements?)
- How is CDBG funding deployed throughout the City? (i.e. streetscaping, business support, affordable housing, HOME).
- Have Enterprise Zones been an effective tool for incentivizing redevelopment?
- Have any businesses in the Study Area utilized Enterprise Zone incentives?

How can you help inform the 11th Street Corridor Study ?

GOV'T AGENCIES & CITY DEPARTMENTS

- What are your overall thoughts of corridor improvements needed?
- Is the character of the corridor appropriate? Is there a "perception" issue?
- What would you like to see in the public space? And the space adjacent to the public realm?
- What amenities are needed in the public space?
- To what degree can the Keith Creek greenway be improved to make it a significant asset for the area?
- Twenty years from now, what do you think the condition of the residential neighborhood that surrounds the 11th Street Corridor will be?
- The preliminary findings from the market study suggest little/no demand for commercial, industrial and residential uses. Does this align with your personal assessment of development potential?
- Any other thoughts for suggested improvements?
- Has medical district branding been considered?
- How has the City contributed to the sustainability and vibrancy of the Study Area?
- Does the City have ideas for how they could increase and/or enhance the partnership efforts?
- Are there pipeline projects which could impact TIF revenue available for future projects in the Study Area?
- What is the current interest for extended/new TIFs within the Study Area? Would the City consider a TIF to support redevelopment around the 11th Street Plaza?
- Is there a CDBG funding allocation which is targeted towards the Study Area? If not and/or limited allocations, could funding be reallocated towards the Study Area?
- What other local economic development tools has the City considered using to support redevelopment efforts? (i.e. business districts, SSAs?)

How can you help inform the 11th Street Corridor Study ?

Stakeholder Meeting #1

NEIGHBORHOOD & ADVOCACY GROUPS

- What are your overall thoughts of the corridor?
- Do you consider 11th St to be part of your neighborhood?
- What are the major assets within the corridor?
- Do you think the corridor has improved or declined over the last 20 years?
- Where do you catch the bus?
- Where do you walk?
- Where do you cross 11th Street? Why?
- Is there an area of greatest pedestrian use?
- Are there locations where there are stormwater issues? Ponding water?
- Are there locations where traffic backups happen frequently? Why do you think this is?
- Are there locations where pedestrians and vehicles frequently interact?
- Are there issues with busses and blocked traffic?
- Do you ride your bike along 11th Street? Or in the lanes? Do you feel safe doing so?
- Is there enough lighting along 11th Street?
- Are there locations where vehicles "cut thru"?
- What locations do you visit along the corridor?
- Are there areas of crime along the corridor?
- What should be done with old & obsolete industrial buildings?

- What are your overall thoughts of corridor improvements needed?
- What is more important: improving the appearance of the corridor OR attracting better quality businesses?
- If the appearance of the corridor were improved, would new residents be attracted to the neighborhoods along 11th St?
- How would you like to see the Keith Creek greenway improved?
- Is the character of the corridor appropriate? Is there a "perception" issue?
- Where do you need to catch the bus?
- Where do you want to walk?
- Where do you want to cross 11th Street in a crosswalk?
- Where do you want to cross 11th Street in a crosswalk?
- Are there intersections that you avoid from a safety perspective (speed, can't see well, etc.)?
- Is a pedestrian gathering space needed?
- What would you like to see in the public space?
- What would you like to see in the space adjacent to the public realm?
- Where do you want to ride your bike along 11th Street? Bike lanes/path?
- Where is lighting needed along 11th Street?
- What amenities are needed in the public space?
- Do you think the City should consider strengthening development control regulations along this corridor through an overlay zoning district to require on-site landscaping, minimum building façade standards and other visual upgrades on private property?
- Any other thoughts for suggested improvements?

11th Street Corridor Study



Stakeholder Meeting Notes – Nov. 12, 2020

Overview of 11th St Corridor Improvement Goals:

- Pedestrian fatalities
  - 3 in past 5 years
- Roadway and Pedestrian Access
  - Railroad Crossings are difficult
  - Overhead utilities block sidewalk access
  - Poor visibility at some locations
  - Old, missing and inaccessible sidewalks
- Transportation Solutions
  - Safety concerns
  - Beautification
  - Designs within Right of Way

Local Businesses and Institutions Meeting:

Altomease Carter, Rockford Public Library:

- Infrastructure and Utilities
  - Replaced the lights in library/grocery parking lot has helped
    - Staff complained of no lights after work
- Pedestrian Accessibility
  - Wants a bus bench outside Schnucks grocery

- Limited sidewalks for people to walk
- Poor visibility when turning on to 11th street from Parking Lot due to signage
- Vacant buildings in area
- Most patrons drive, some walk or take the bus. Few youth patrons.
- Poor pedestrian access routes and crossing access for patrons west of 11th Street

- *Rockford Public Library Closing*
  - November 25th closing date
  - Completely out by January
  - Due to budget short fall from COVID-19
  - Unknown whether library will re-open in the future or not

Jeff Polsean, Greater Rockford Airport Authority:

- Infrastructure
  - Rebranding of existing structures on south side of Route 20 would help
  - Incentivize new hotel development in the area
  - Rebuilding of the South Main Corridor has traffic diverted from 11th Street.
    - Usage of both depends about where people are traveling from
    - And how Google Maps, Waze, etc are routing people
  - Lower end hotels
    - Airports drive most of hotel stays in that area
    - Business CEOs, flight crews are main consumers in that area
    - Not any hotels that meet some business standards for employee stays
    - Love's truck stop has a relationship with hotels
- Community Need and Beatification
  - Believes 11th St is more commercial development than industrial
  - 11th St needs to compliment the South Main Corridor
  - Corridor has increased in value for city
  - Needs to be fresh interest into city.
- Traffic
  - People pay attention to GPS and not signage
  - Look into wayfinding signs and their effectiveness – are these effective anymore?
- Land Usage
  - Development possibilities in Blackhawk island area
  - Create opportunities for industrial partnership and development
  - Currently most of land development in area is owned by CRG
  - South side of the airport dips into floodplain

Transportation Agencies Meeting:

Mike Kuehn, IDOT:

- Pedestrian Accessibility
  - Complete the streets approach is appropriate and INDOT supports this
  - Several fatalities along 11th street
    - Looked into concepts to help

        - Has not been on IDOT Capital program
    - Sidewalk additions in the north are different than in the south
    - IDOT has not started design to address issues
    - Could add midblock crossing and refuge island/raised median
        - Incentivize walking instead driving
    - Create good connections into and out of the neighborhood
- Infrastructure
    - Design driveways to IDOT standard along 11th street
        - Many are not clearly defined
        - Landscaping options could help
    - Improve sidewalks
        - Tight existing right of way
        - Poles in the way
        - Difficulties maintaining ADA standards
        - Look at permits to extend sidewalks into private property
    - Take lighting design and extend it to the bypass

Mike Stubbe, Rockford Mass Transit District:

- Pedestrian Accessibility
    - Use 11th Street from 22nd south on 7th Street transit route
        - Look at possibly extending that alignment
    - Limited areas south of Harrison street where pedestrians can cross the street
    - Look at 4 or 5 lane crossing streets to potentially add a refuge area
    - Strategic sidewalks for bus stops
    - Pedestrian Crossing particularly at 21st and Kishwaukee
- Bus Routes
    - West frontage road near Blackhawk has limited accessibility for pedestrians
    - Limited usage by pedestrians
        - Is it work it to invest?
    - Bus stops at business areas
    - Receives requests for access to Bergstrom Building on Falcon Rd.
    - Main commercial draw is the grocery store Schnucks
    - Wants corridor to be bidirectional anywhere possible, but needs sidewalk & bus stop infrastructure to do so
    - Designated bus stops
        - Benches, shelters, and paths
        - Bus pads are needed if greenspace is there
        - Additional feet of concrete for ADA especially
        - Lighting for ped visibility
        - Increase in ridership

Kyle Gruhn, Rock River Sanitation District:

- Utilities

- $500,000 budget for rehabilitations
- Realigning their mainline from 15th to Broadway
  - Wants it to be in the street and not behind curb.
- Adding another line from 8th to 7th Ave.
  - To serve future development in the area

Sydney Turner, Region 1 Planning Council:

- Regional Trails
  - Council received funding from IDOT for regional trail along Keith Creek
    - Kickoff next year
    - Could have pathway along creek that could tie into 11th Street
  - Several Parks along 11th Street
    - Tie into 11th Street through transportation not just pedestrian access.
  - Access points along corridor
    - Many entrances not used
    - Looking to consolidating them
    - Possible landscaping to define entrances

Government Agencies and City Departments Meeting:

Karl Franzen, City of Rockford:

- Economic Development
  - Prime Jobs
  - Capitalizing on the airport
  - North of US 20
    - Transients and pedestrians impacting business
  - South of US 20
    - Not enough quality restaurants and hotels for visitors
  - Branding of Global Trade Park
    - IDOT has a problem with non-wayfinding signs
    - Create a consensus between all the businesses in the area
    - Look at the 3 different branding parts for 11th Street
  - Trustee Program
    - Get properties into private businesses
    - Properties given to non-profit organizations
    - Looking to give future properties to more economically advantageous businesses
  - Site improvements along Business frontage
    - No clear driveway or landscaping
    - Overlay Zoning District
      - Standards with landscape or pavement requirements
      - Possibly focus on a few key areas for improvement
- Enterprise Zone 1
  - Much of commercial or industrial area covered

- Modifying boundary
  - Bring in annexed area
- Looking at bringing in residential area behind the Happy Mart
- Benefit of the building material sales tax exemption and investment tax credit
- Modified tax abatement policy
  - bringing in Park District and School District
  - Used for any parcel not located within a TIF to make it more competitive

- Traffic
  - Interchange with US 20
    - High truck traffic exits compared to South Main intersection
    - Cater to commercial needs between US 20 and Harrison
  - Going north on 11th Sr has high density and low-income neighborhoods
    - Non-motorized travel needed
    - Improvements to sidewalk/bike facilities needed
- Sandy Hollow shopping center
  - Local developer to redevelop big box store and adjacent commercial stores
    - Council will approve soon
    - Anticipate new construction within next two years
    - Site is no longer in play - plan has been determined
    - Owned by First Midwest Group
  - Additional parcels available for redevelopment
    - 6 acres of greenfield southwest
    - Strip mall

Jamie Rott, Rockford Water Division:

- Watermain Improvements
  - 80 to 100-year-old watermain between Charles and Harrison – high risk
  - Improvement to south main watermain
  - Primarily city funding for construction of any improvements
  - Looking at staying in the R/W
  - Located under the pavement
  - Some properties right on the property line
    - Difficult obtaining an easement entire length

Laura Snyder, Rockford Housing Authority:

- Pedestrian Access
  - Ease of access to bus lines should be improved
  - Clear pathways to everyday living facilities are important

Mitch Leatherby, City of Rockford Street Maintenance:

- Maintenance Concerns
  - Straight curbs without bump outs for ease of maintenance/plowing
  - Sweeping and snow removal should be considered

- Think about accumulation of storm water
- Look at what medians are used elsewhere in the City
  - Grass with trees in the middle tends to be best.
- Look at storm sewer problem areas

Tim Bragg, Rockford Park District:

- Keye Mallquist Park
  - Summer programs
    - Kids generally walk
    - Look to improve sidewalks in area
  - Park district looking to do reinvestments
    - Link: https://rockfordparkdistrict.org/news/rockford-park-district-awarded-state-grant-to-reinvest-in-popular-southeast-neighborhood-park
- Lighting
  - Strategic locations
  - Conserve energy – LED's
  - Residential areas nearby
- Keith's Creek Greenway
  - Funding is the largest concern
  - Coordinate changes with regional greenway plan

Neighborhood Group and Advocacy Groups Meeting:

Barb Chidley, Family Friendly Neighborhoods:

- Bus Stops
  - No bus shelters or places to sit while waiting on busses
  - No sidewalk around them
  - People stand in mud
- Traffic Safety
  - Intersection at Broadway is problematic at 11th St
    - No turn lanes on Broadway
    - Cars going around others and potentially sideswiping other cars
      - Could split phasing/change timing to reduce incidences - City
  - 11th Street and Woodruff
    - Difficult to see cars over the railroad when on Woodruff turning onto 11th Street
- Community Need
  - big box store for residents
  - nowhere to get all their needs

Ashley Sarver, Urban Planner & Neighborhood Bike Advocate:

- Pedestrian Safety
  - Many pedestrians cross midblock – seems very unsafe
  - Around Taco Bell and Dollar Tree
    - Not great places to cross

        - Intersection is skewed
        - People darting across the street
    - Biking
        - Bike lanes to travel on
        - Possible lane width narrowing
    - Curb cuts make it hard to see where to walk
        - Especially near tattoo parlor on 11th Street
        - Hard to see incoming cars
- Land Usage
    - Depth of lots makes it hard to accommodate buildings
        - Look at lots with few residential areas for commercial use
    - Commercial district at Broadway
        - Create gateway to welcome people
- Keith Creek Greenway
    - Looking at water quality along Keith creek (Section 309 Grant)
    - 1PC has Grant for masterplan of Greenway between 6th and 7th Ave.
    - Could become an east-west connecter
    - Incorporate some recreational facilities and pathways
    - Sidewalks run close to the street with fast moving traffic
        - Look at adding more of a buffer for sidewalk
        - Speed limit change

Dennis Rich, Keith Creek Neighborhood Association:

- Keith Creek Greenway
    - Property prices decreased
    - Improvements within R/W
        - Decrease floodplain
        - Pathways/bikeway along creek with lights
        - Unification of east-west sections
    - Look at the current bridge structure over the creek

Pastor Bill Dalberg, Broadway Business District:

- Traffic
    - Main access to Broadway from 11th Street and Kishwaukee
    - Many residents do not have cars and rely on other modes of travel
    - Have a gateway feature to Broadway Business district

Terri Schierer, Keye Mallquist Neighborhood Association:

- Pedestrian Accessibility (11th ,16th and 17th Streets)
    - More people would be using bikes if more/better sidewalk exists
    - Better access for wheelchairs is needed
    - Bad perception of area
    - Better access for youth to be able to cross 11th Street is needed

Stakeholder Meeting #1

11th St Design Items – Mitch Leatherby COR PW

Center Median – If landscape style is desired

Inverted crown [slight] – similar to W State St has been most ideal for maintaining. Strictly mowing and occasional mulching around planted trees.

Irrigation – W. State is irrigated. We have found that due to the design being inverted, it may retain moisture after natural rainfalls better than others that are crowned, or swale-type designs. We run the irrigation because it is there but most likely this turf would maintain its vigor without it. Another challenge with irrigation is placement of control boxes. Generally, they need to be located somewhere in the terraces and are almost always at risk of getting hit by vehicles.

Turf grass – no landscaping or mulch

If landscaping is a must have – Keep it on the end caps. Select native perennial plantings

Tree planting in center medians – would like to be a part of selection. Trees with a large canopy spread at maturity not desirable especially along truck routes.

Storm water - Dome type grates / open top manhole covers tied into storm system would need to be factored into the design. This would need to be tied into the laterals moving the water to the

10'+ width most ideal.

Solid Medians - concrete– If included – May be the best option for anything under 10' width. Stamped concrete designs have held up well.

Guard rails – Keep adequate distance behind the curb [where applicable]

Bump outs – Not ideal along routes such as these. If a must have - Gradual taper is best for sweeping / plowing.

No recessed curbs with inlets within – debris collects

Multi use paths – Concrete preferred. Otherwise HMA. Wide ADA approaches at intersection for snow plows clearing the paths.

Consider - Add connection to storm main south of Harrison under 11th st – tie into SE channel. Existing runs under Harrison heading west

Access into box culvert via ramp north of Reed ave. Design box culvert under 11th st to allow for typical maintenance equipment – Bobcat loader

THE CITY OF ROCKFORD ILLINOIS, USA

Stakeholder Meeting #2

11th Street Corridor Study



Our team will present the DRAFT Corridor Improvements Plan at a virtual stakeholder meeting February 9th at 9am. Please attend to provide comments on the recommendations.

Project Purpose and Goals

The Corridor Study Goals include:

- Focusing on transportation solutions to improve pedestrian safety, reduce pedestrian fatalities, and beautify the corridor
- Inform the community on how to move forward, beyond the study, while achieving the goals of the community
- Focus on improvements within the right of way such as sidewalks and lighting, utilizing a complete streets mentality such that the right of way improvement are conducive to drive economic growth
- Utilize the improvements within the right of way as a catalyst to attract people to the area
- Understand that the corridor should be cohesive, while noting the different characteristics of each section
- Provide a conceptual cost for right of way improvements for future programming

https://projectmeetingonline.com/11th-street-corridor-study/

THE CITY OF ROCKFORD ILLINOIS, USA

Stakeholder Meeting #2

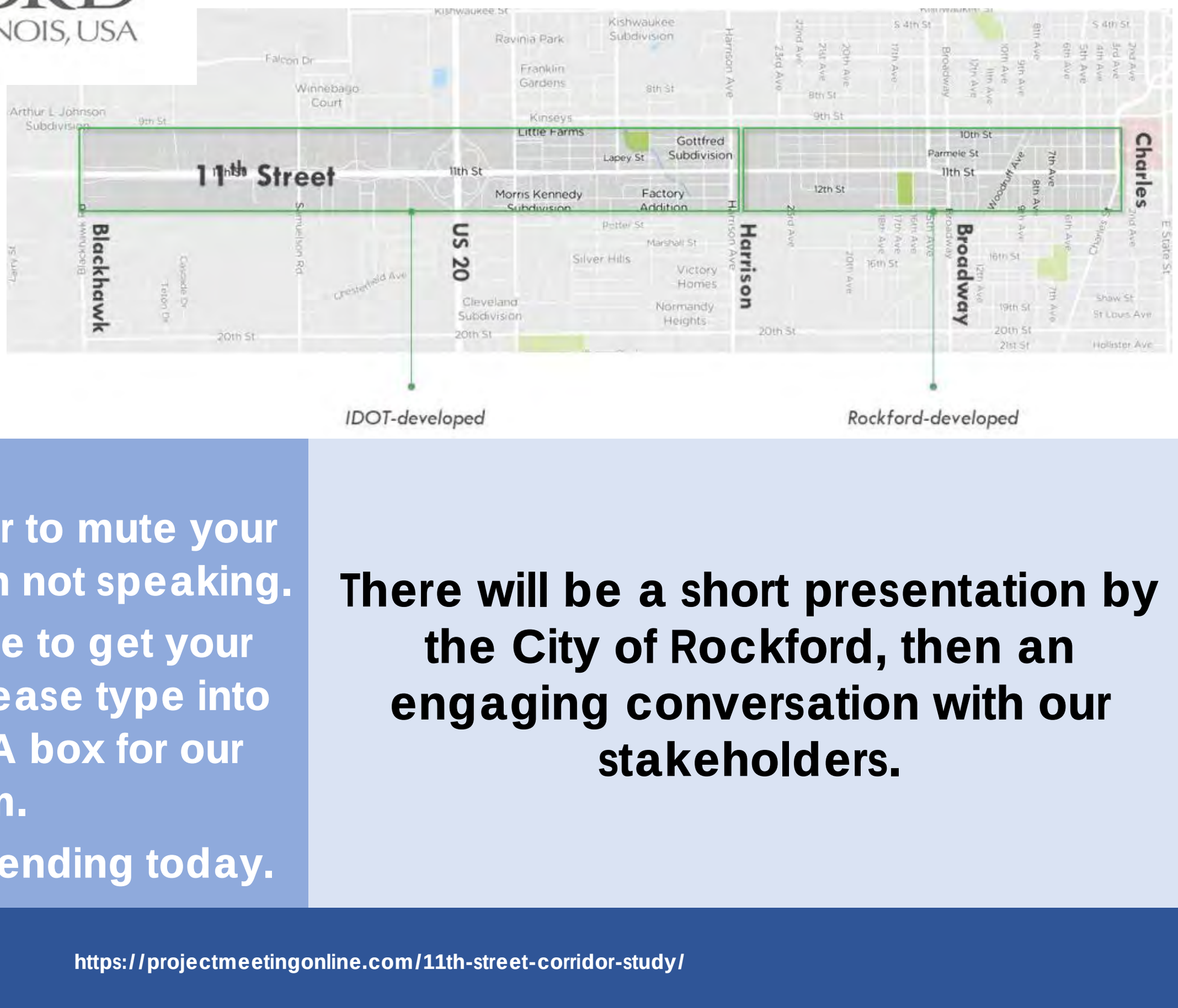
11th Street Corridor Study

In partnership with:

CMT

camiros

SBFRIEDMAN



Please remember to mute your microphone when not speaking.

If you are unable to get your comments in, please type into the chat or Q&A box for our team.

Thank you for attending today.

There will be a short presentation by the City of Rockford, then an engaging conversation with our stakeholders.

https://projectmeetingonline.com/11th-street-corridor-study/

THE CITY OF ROCKFORD ILLINOIS, USA

Stakeholder Meeting #2

11th Street Corridor Study



IDOT-developed *Rockford-developed*

The City of Rockford is studying 11th Street, from Blackhawk Avenue at the southern City limits north through US 20, Harrison Street, and up to Charles Street on the northern limits.

The roadway section through the corridor poses multiple undesirable current conditions. This study aims to identify improvements within the right of way and costs for the infrastructure improvements.

The study will fulfill the vision of the City, including an actionable strategy to implementation within the City's budget and schedule.

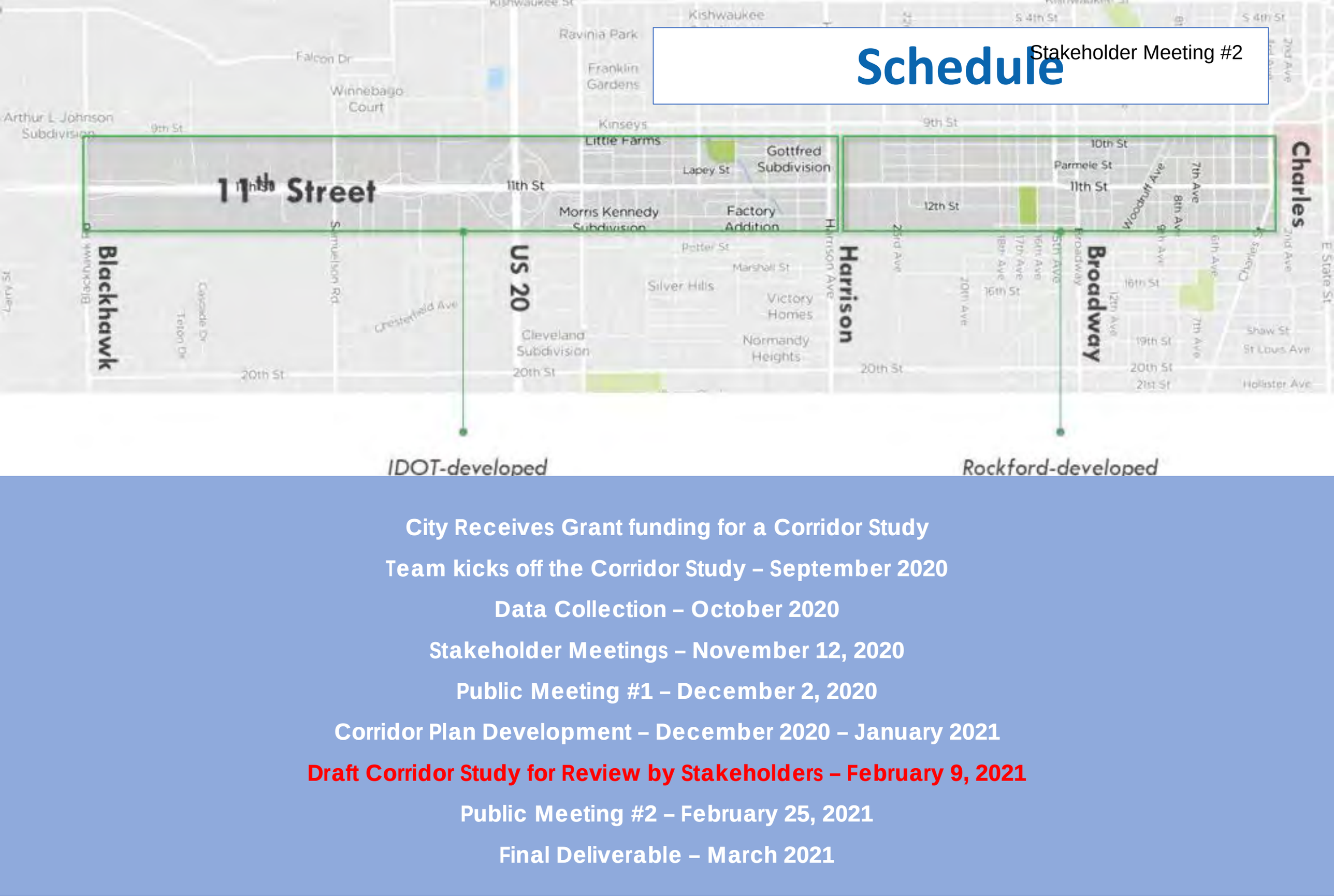
We are here today to present several improvement alternatives, and gather your feedback on them.

Ultimately, the improvements need to be prioritized so that a plan for their funding, design and construction can move forward.

Our team wants to hear from you!

https://projectmeetingonline.com/11th-street-corridor-study/

Schedule



City Receives Grant funding for a Corridor Study

Team kicks off the Corridor Study – September 2020

Data Collection – October 2020

Stakeholder Meetings – November 12, 2020

Public Meeting #1 – December 2, 2020

Corridor Plan Development – December 2020 – January 2021

Draft Corridor Study for Review by Stakeholders – February 9, 2021

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Final Deliverable – March 2021

https://projectmeetingonline.com/11th-street-corridor-study/

Corridor Study Purpose and Goals

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- Understand that the corridor should be cohesive, while noting the different characteristics of each section
- Provide a conceptual cost for right of way improvements for future programming

Safe, Connected and Walkable Corridor

Beautification of the Corridor

Focus on Construction Improvements within the Existing ROW

Solutions which Encourage Future Redevelopment

Cohesive Corridor Segment Solutions

Build Consensus on what the community wants with the City's needs

Cost-Effective, Affordable, Implementable, Actionable Solutions

By achieving these goals, the City is improving failing infrastructure throughout the Corridor.

VISION OF THE CORRIDOR





Improve Quality of Life

Safety

Attractive

Business Friendly

Multiple Transportation Options

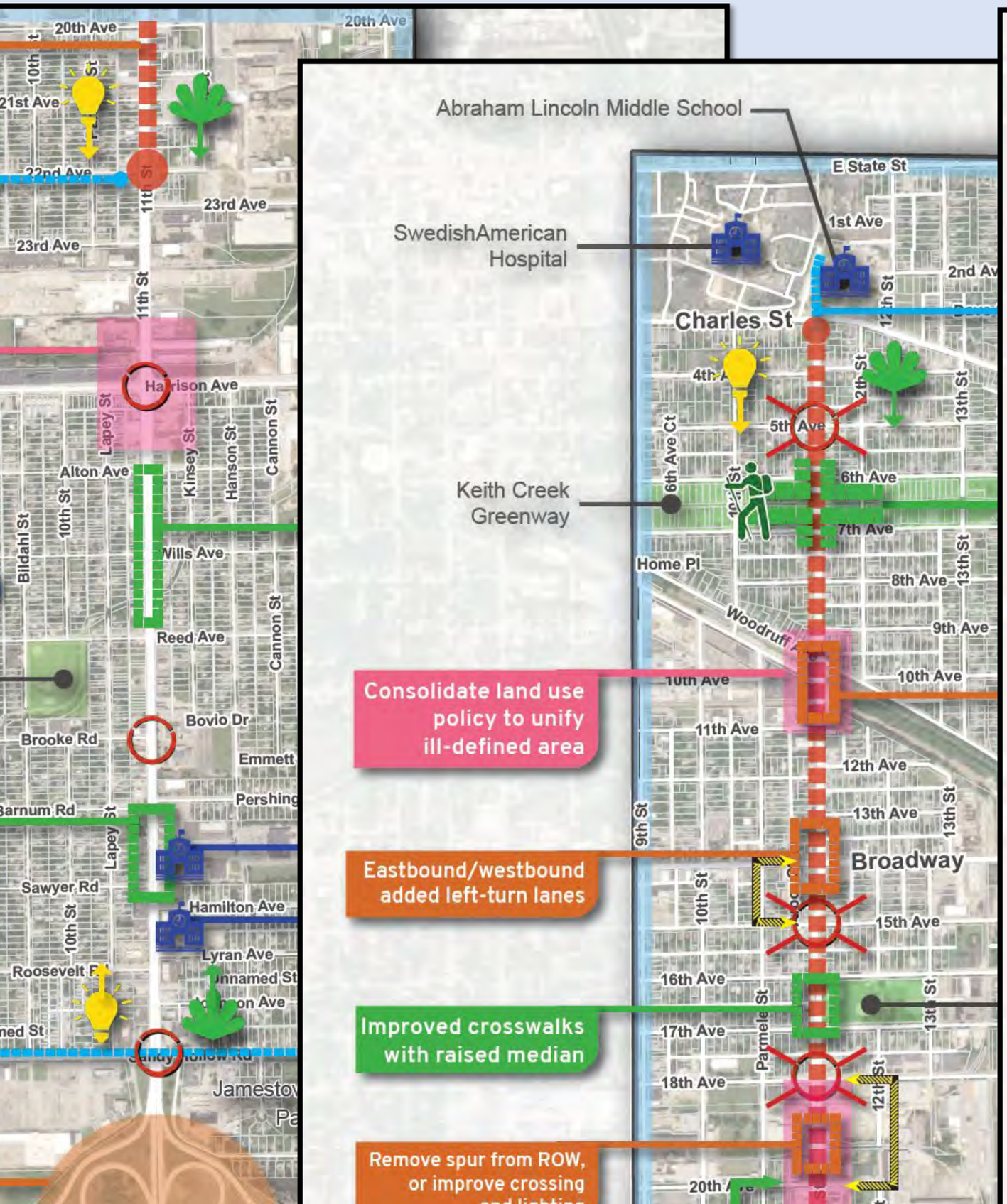
Economic Opportunity

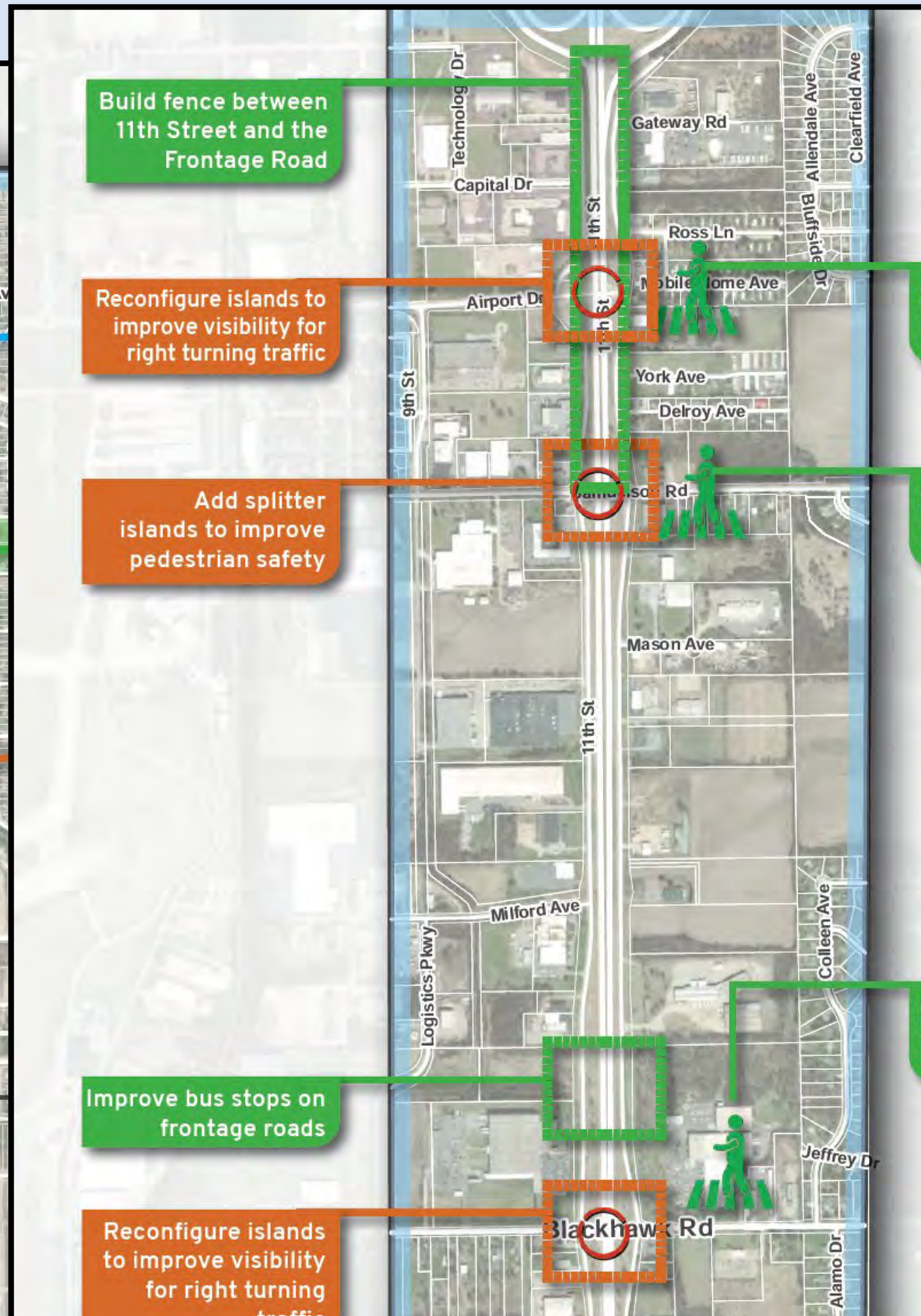




RECOMMENDED PROGRAM OF IMPROVEMENTS

Stakeholder Meeting #2



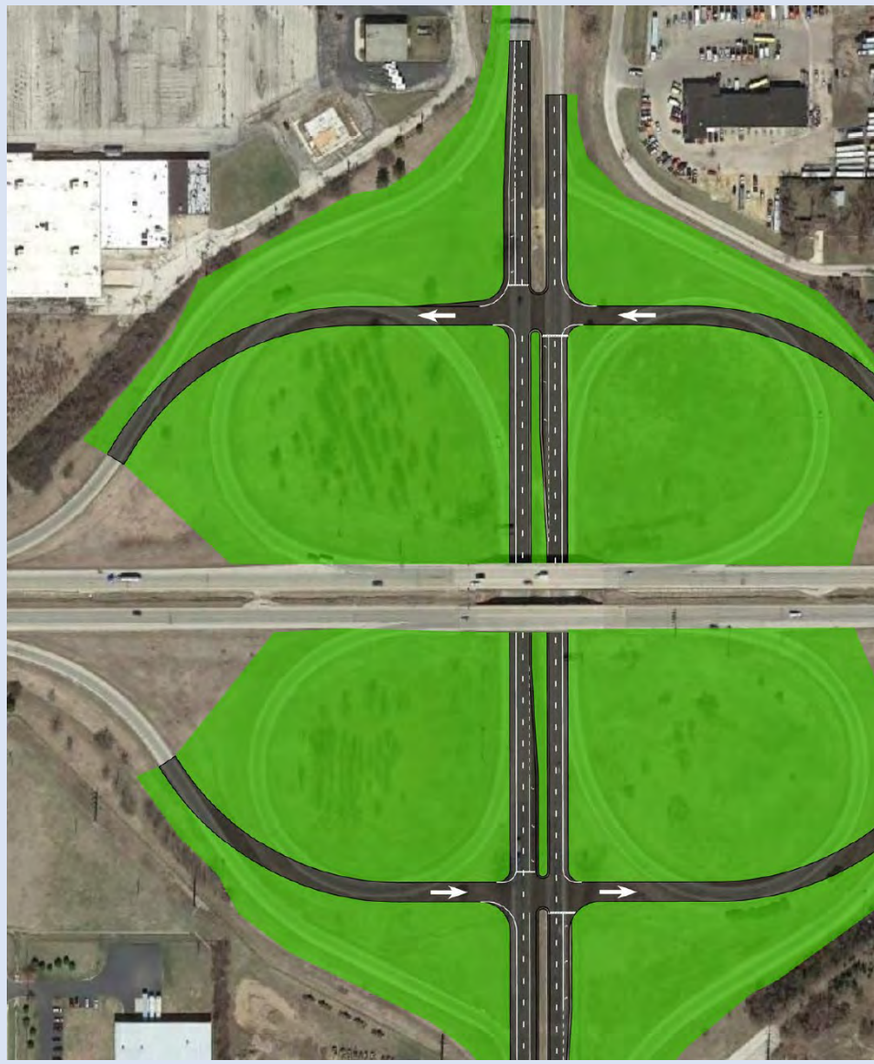


RECOMMENDED PROGRAM OF IMPROVEMENTS

- Low / No Cost Improvements
- Short Term or Lower Cost Construction Projects
- Longer Term or Higher Cost Construction Projects





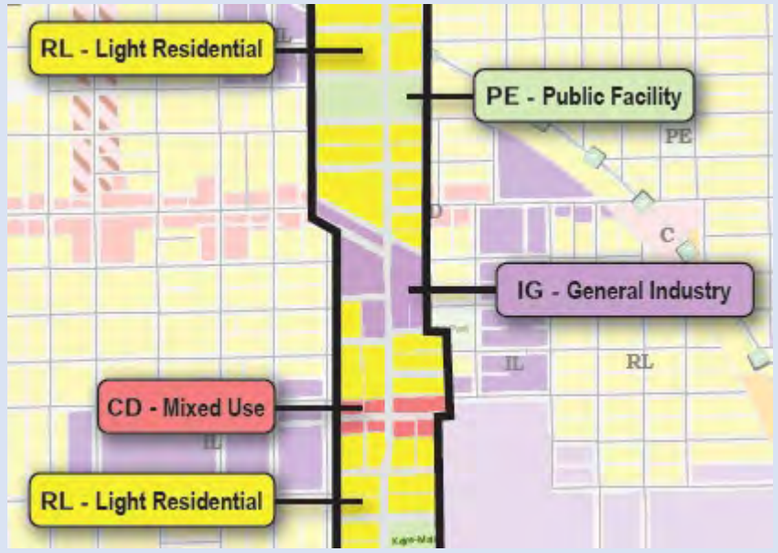


LOW OR NO CONSTRUCTION COST PROPOSED IMPROVEMENTS



Policy and Standards Changes

- Land-Use Plan Changes
- Zoning Changes
- Economic Development Initiatives
- Future Policy Strategies for the Corridor
- Driveway Access Standards



Construction Solutions

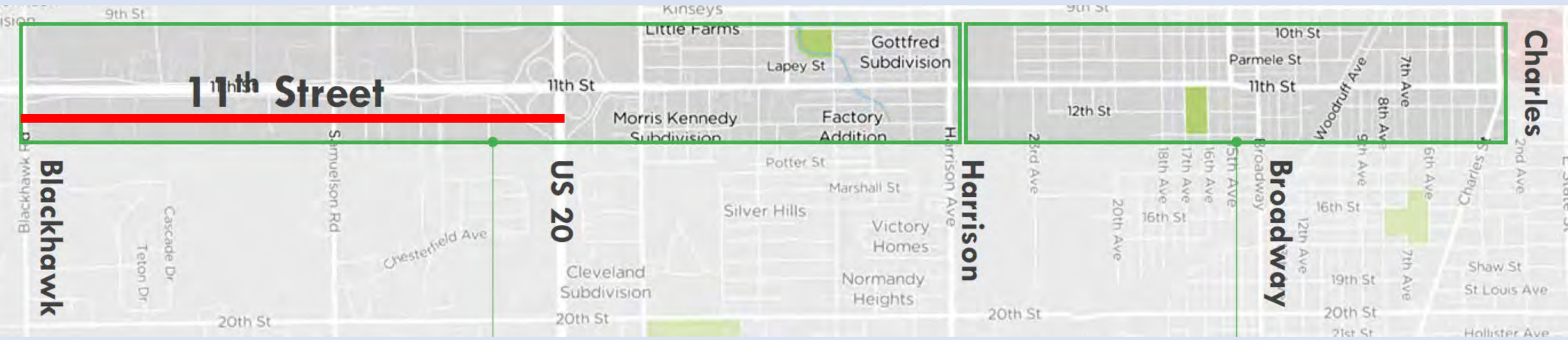
- Leading Pedestrian Interval at Signalized Intersections
- Utility Relocation
- Placemaking Elements





SHORT TERM - US-20 INTERCHANGE AND SOUTH

Stakeholder Meeting #2

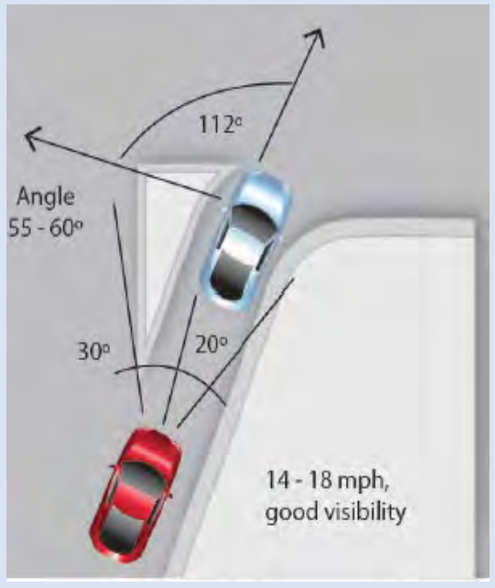


- Right of Way fence south of US 20
- Rebuild splitter islands at Airport Drive and Blackhawk Road
- Pedestrian paths across 11th Street south of US 20
- US 20 Interchange pedestrian path
- ADA upgrades at signalized intersections
- Add splitter islands at Samuelson Road
- Transit improvements
- Sidewalk connections off-corridor to improve access to transit

IMPROVEMENTS SOUTH OF US-20

Stakeholder Meeting #2





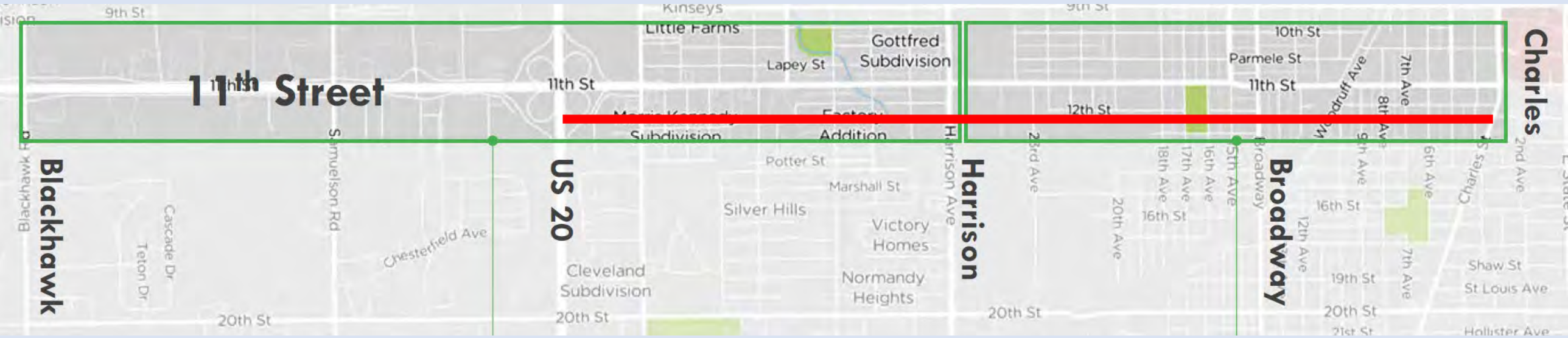






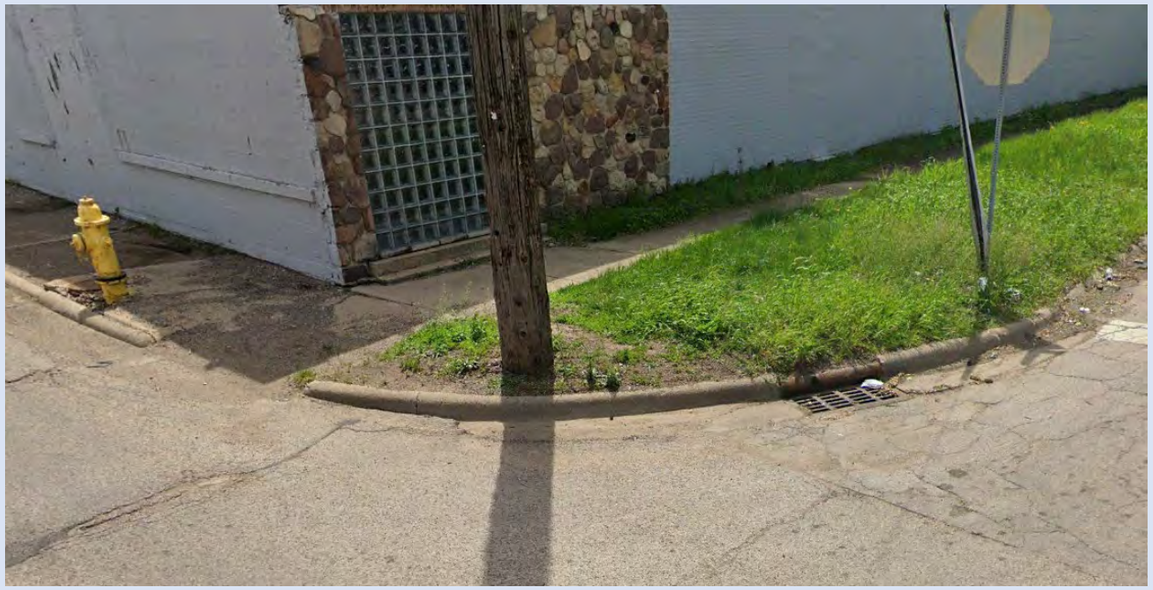


SHORT TERM – NORTH OF US-20



- Sidewalk repair, driveway reconstruction, and obstacle removal
- Bicycle system expansion
- Improved unsignalized pedestrian crossings
- 11th Street at Broadway left turn lanes
- Replace pedestal mounted signal heads at 15th Avenue and 18th Avenue
- Resurface 11th Street from Harrison Avenue to Charles Street
- Landscaping
- ADA upgrades at signalized intersections
- Transit improvements & sidewalk connections off-corridor
- Rail spur crossing removal
- Guardrail at Rock Fork South Drainage Ditch
- Unwarranted signal removal
- Interim Road Diet from 23rd Avenue to Charles Street

SYSTEM UPDATES







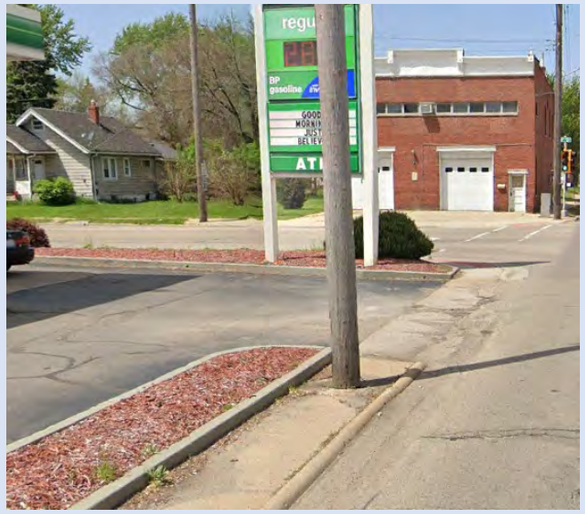


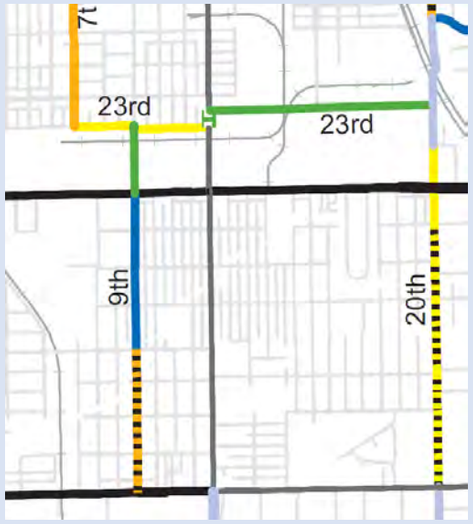


CONNECTIVITY IMPROVEMENTS

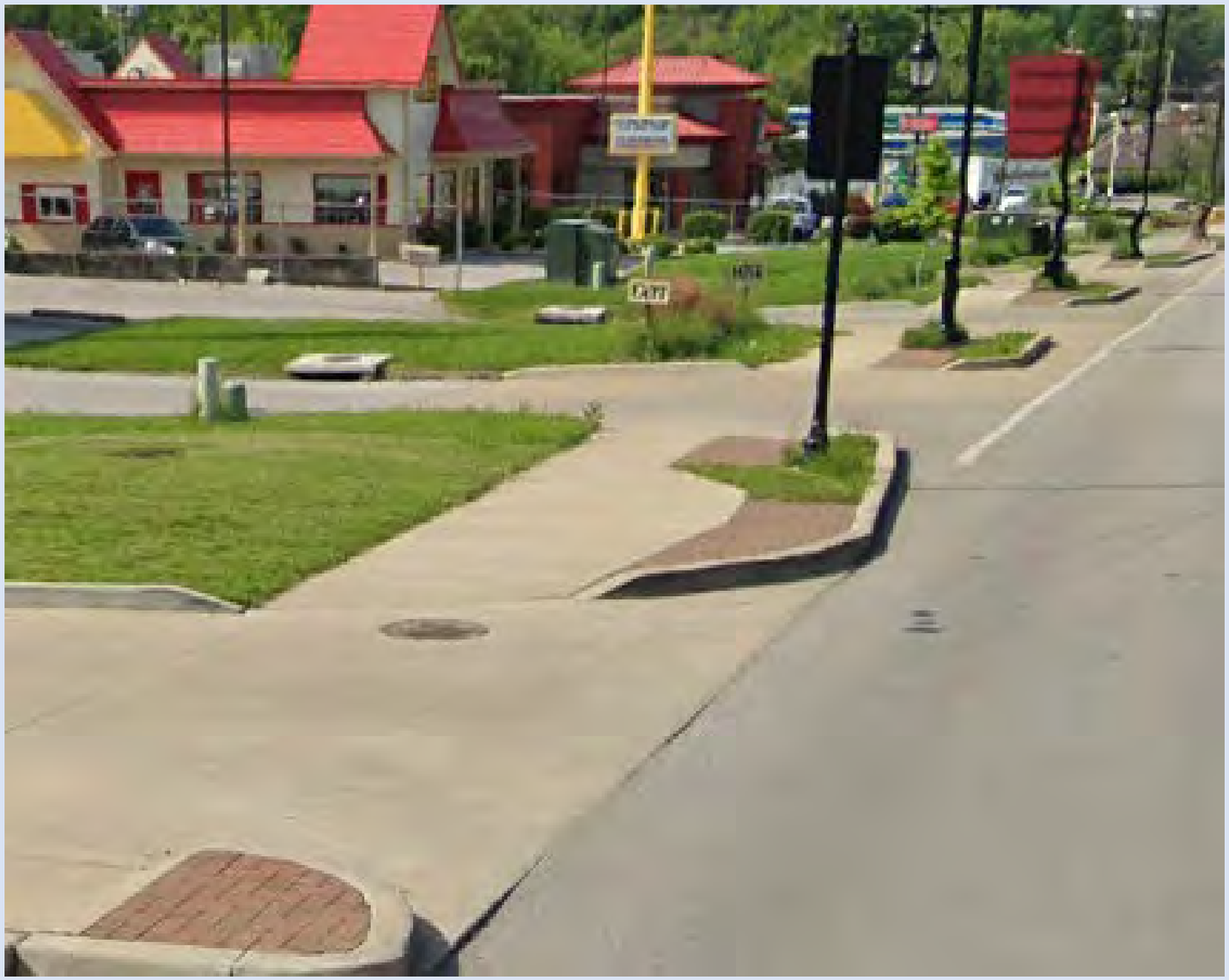
Stakeholder Meeting #2













SIGNAL IMPROVEMENTS

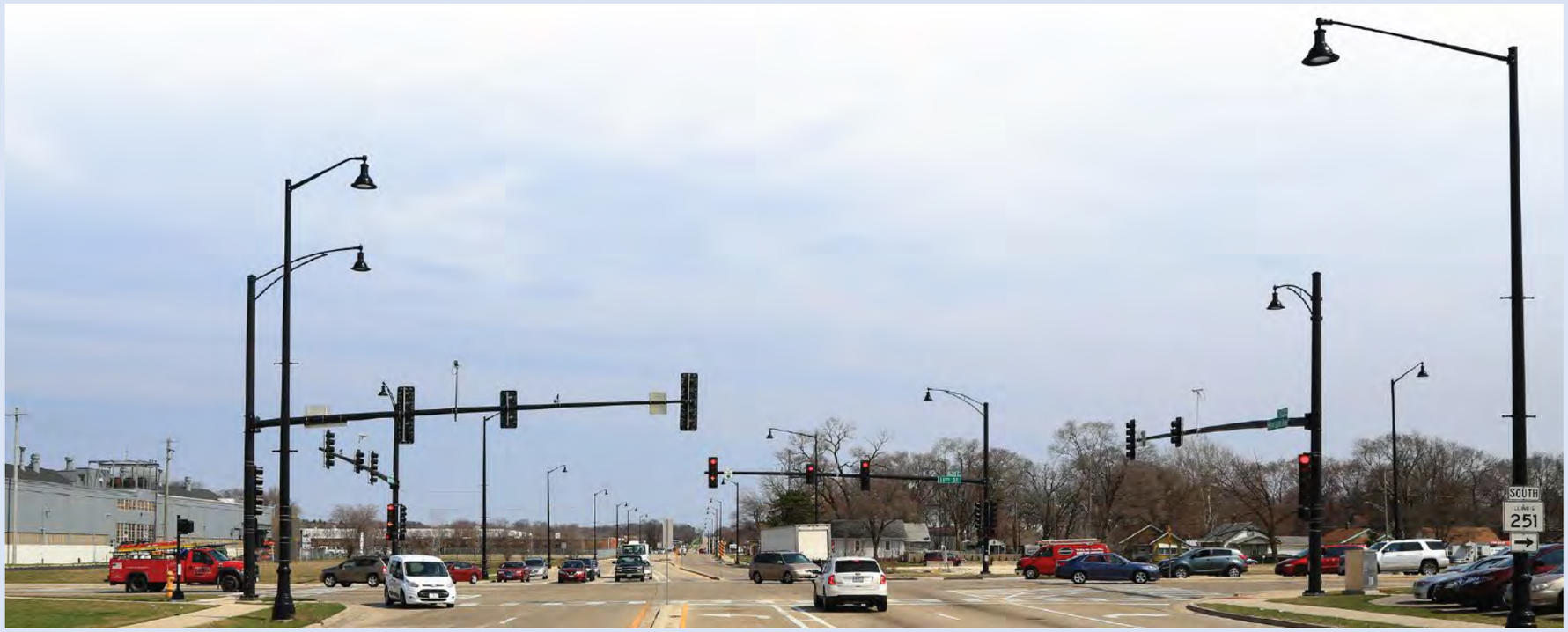


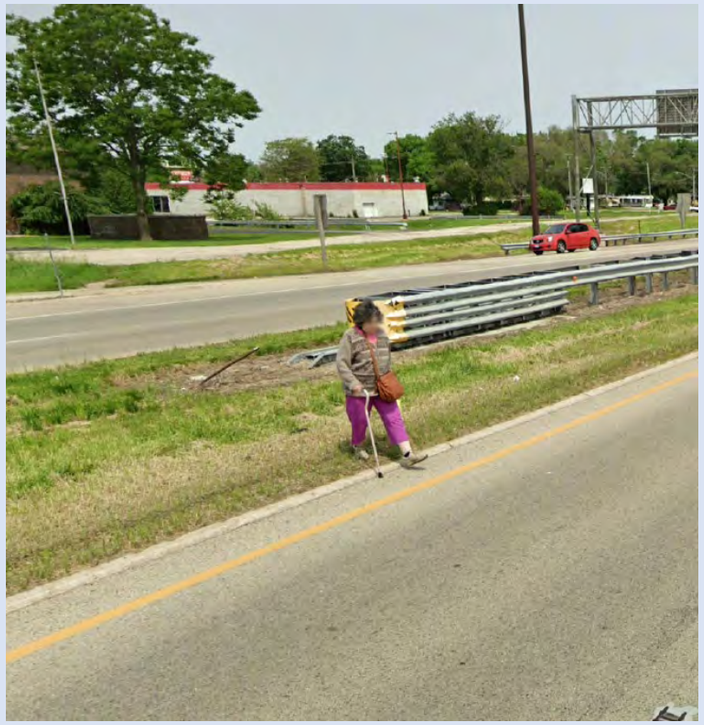




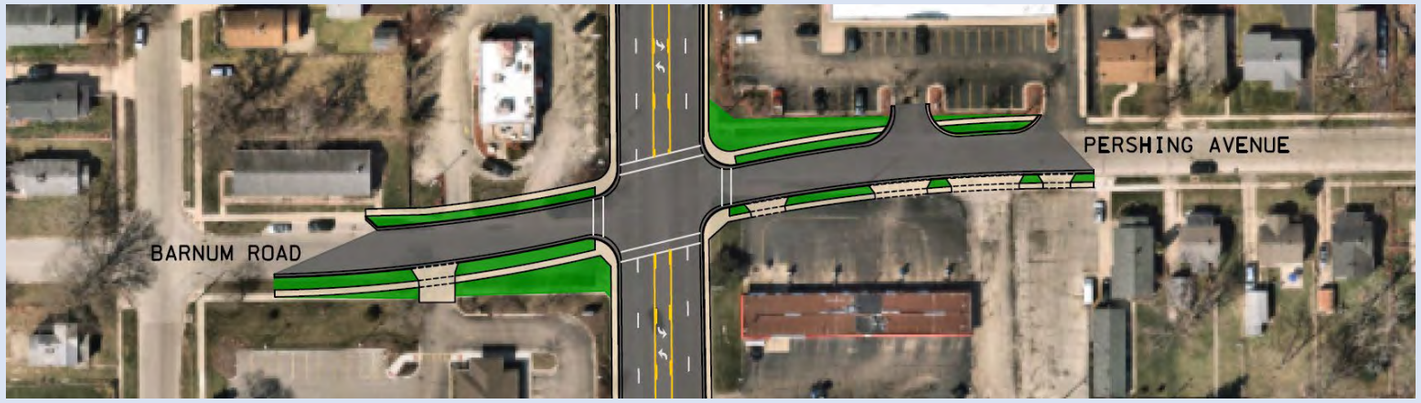
LONG TERM OR HIGHER CONSTRUCTION COST PROJECTS

- US 20 Interchange reconfiguration
- Trail-Sidewalk redesign/integration at Keith Creek
- Street realignment at Charles Street
- Pershing and Barnum intersection realignment
- Woodruff Avenue intersection improvements
- Road diet from 23rd Avenue to Charles Street
- Pedestrian scale lighting



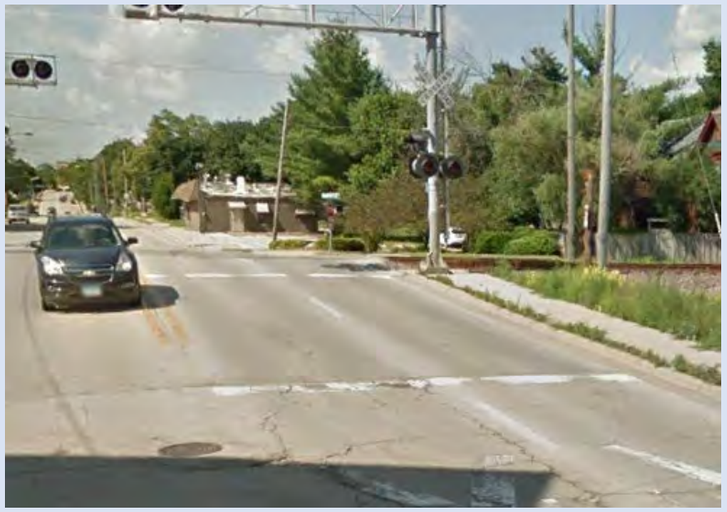


INTERSECTION REALIGNMENTS & TRAIL INTEGRATION





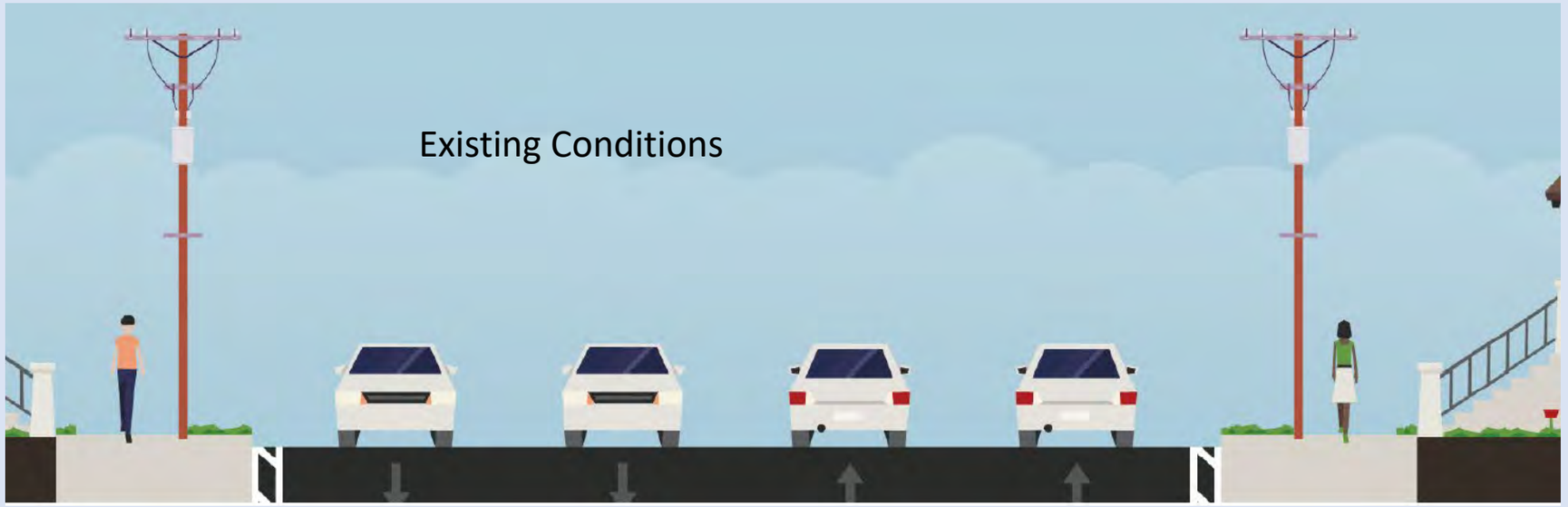


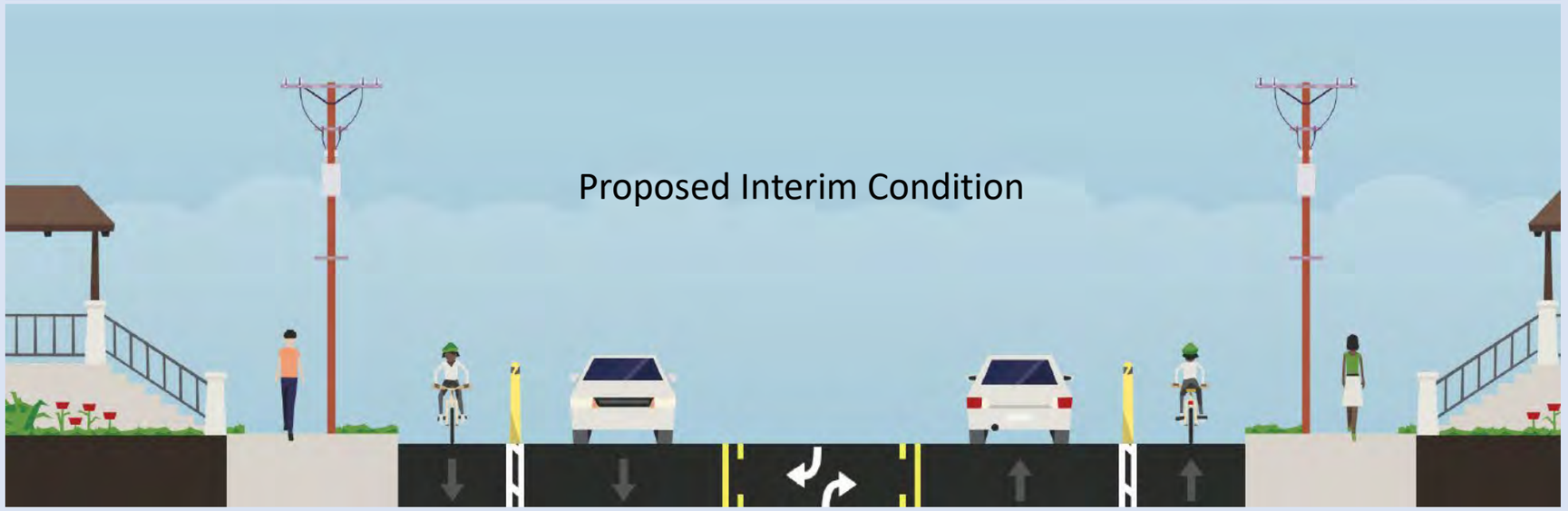




ROAD DIET & STREET LIGHTING – CHARLES TO BROADWAY







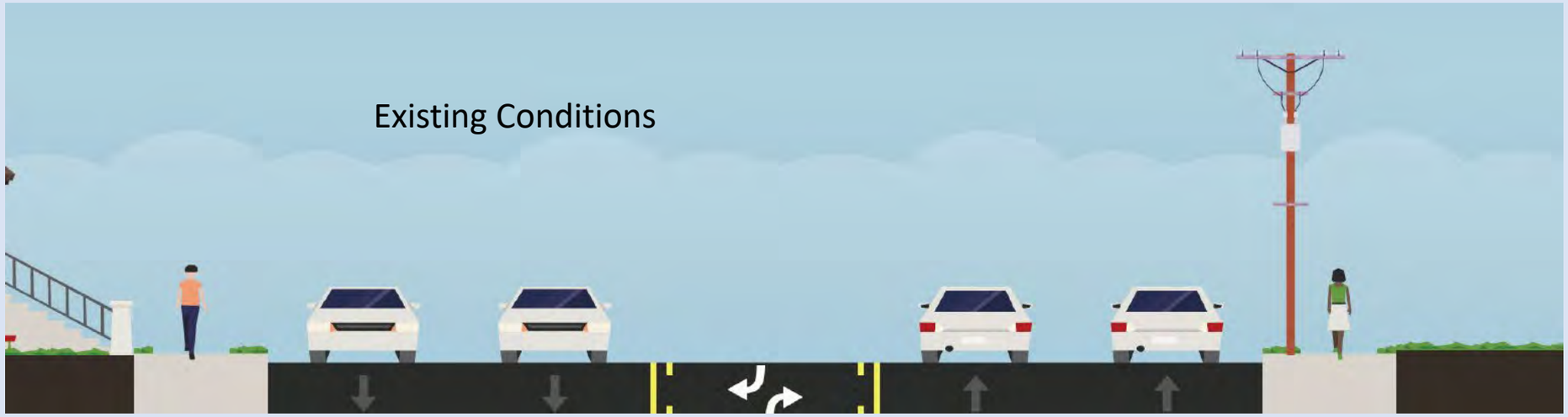


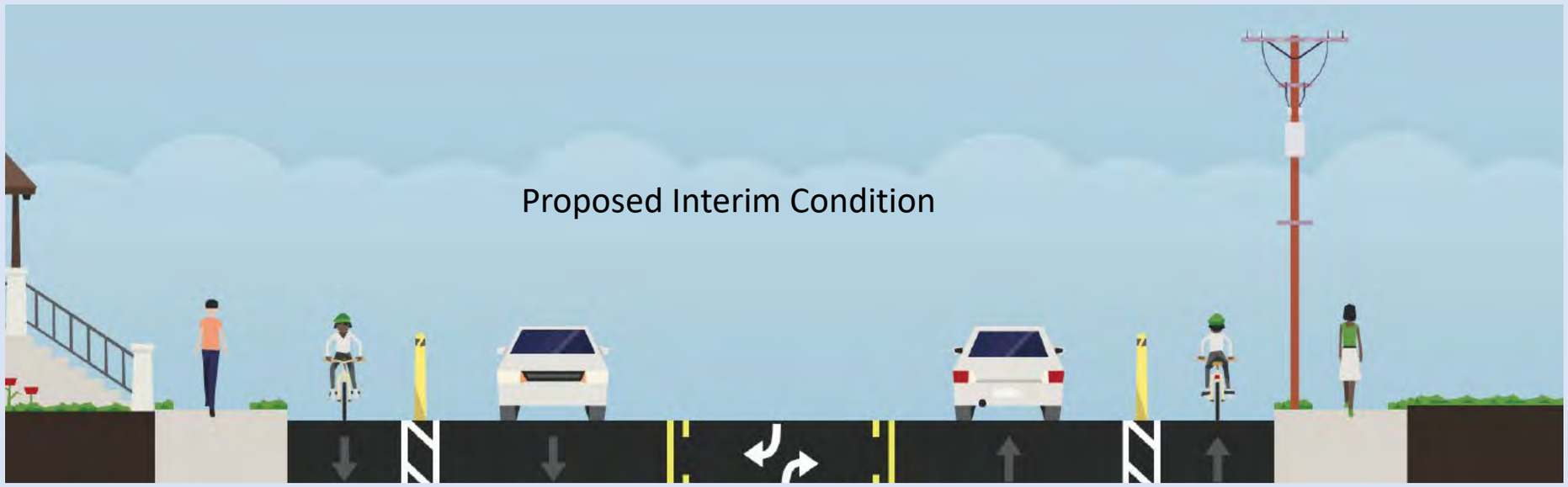
ROAD DIET & STREET LIGHTING – BROADWAY TO 18TH AVE

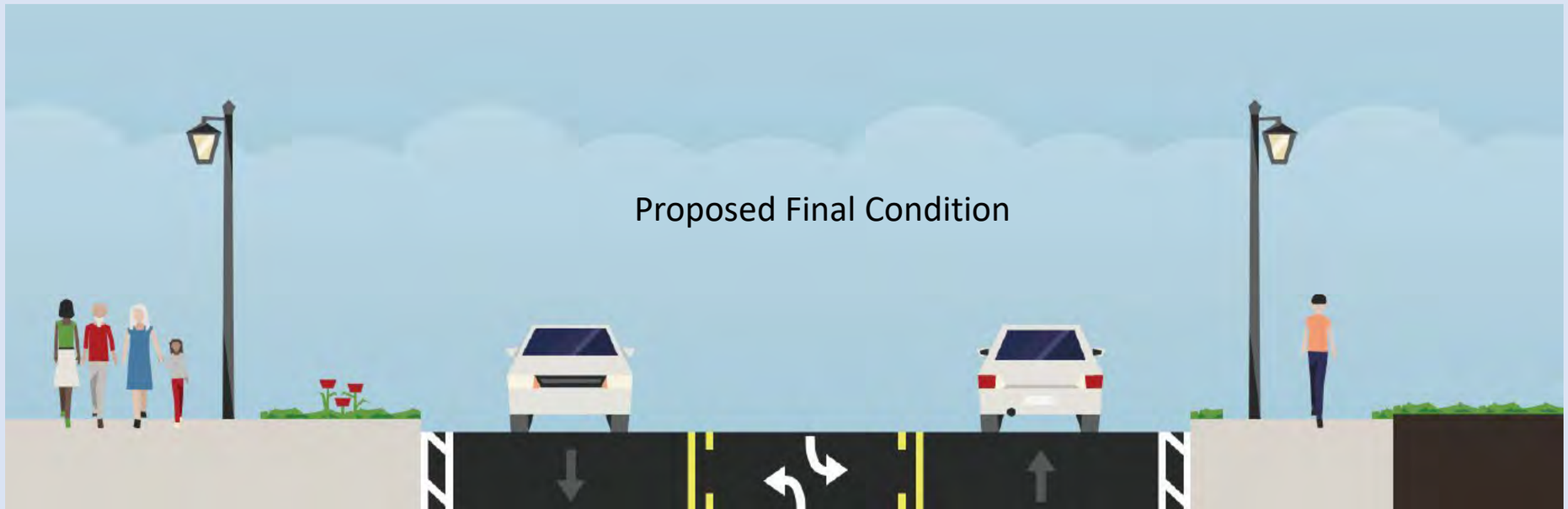
Stakeholder Meeting #2





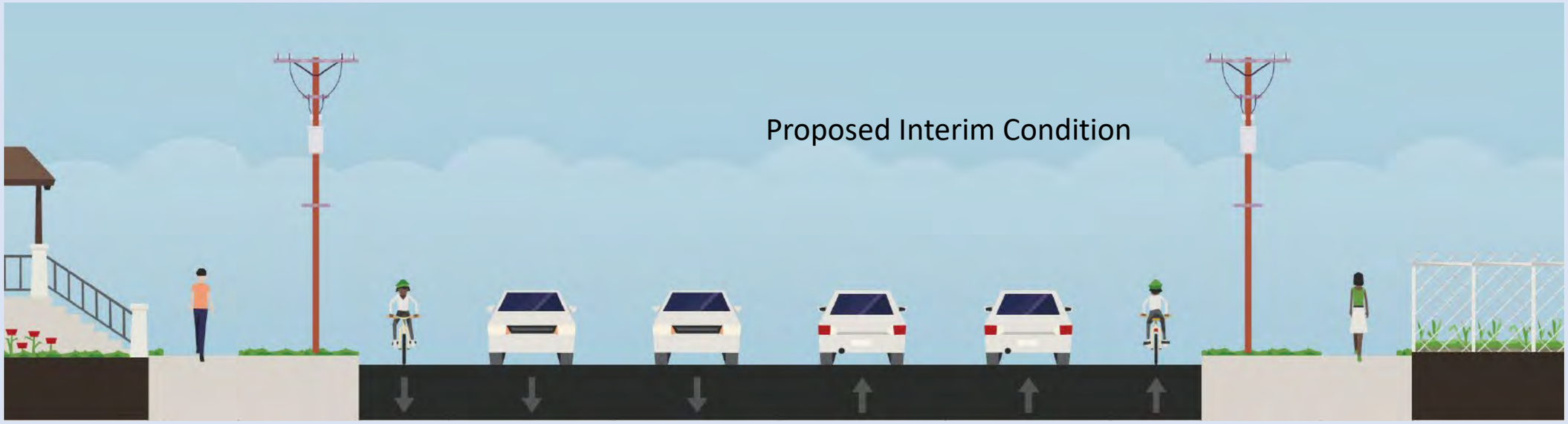






ROAD DIET & STREET LIGHTING – 18TH AVE TO 23RD AVE

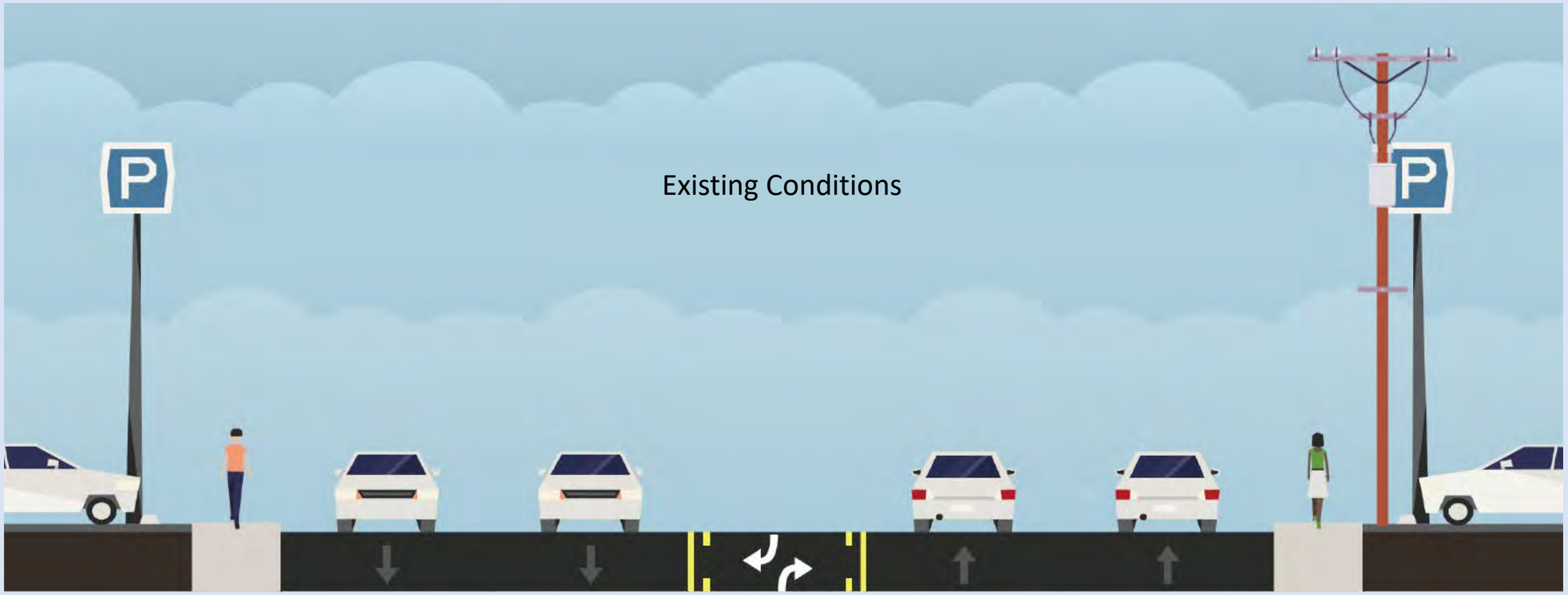


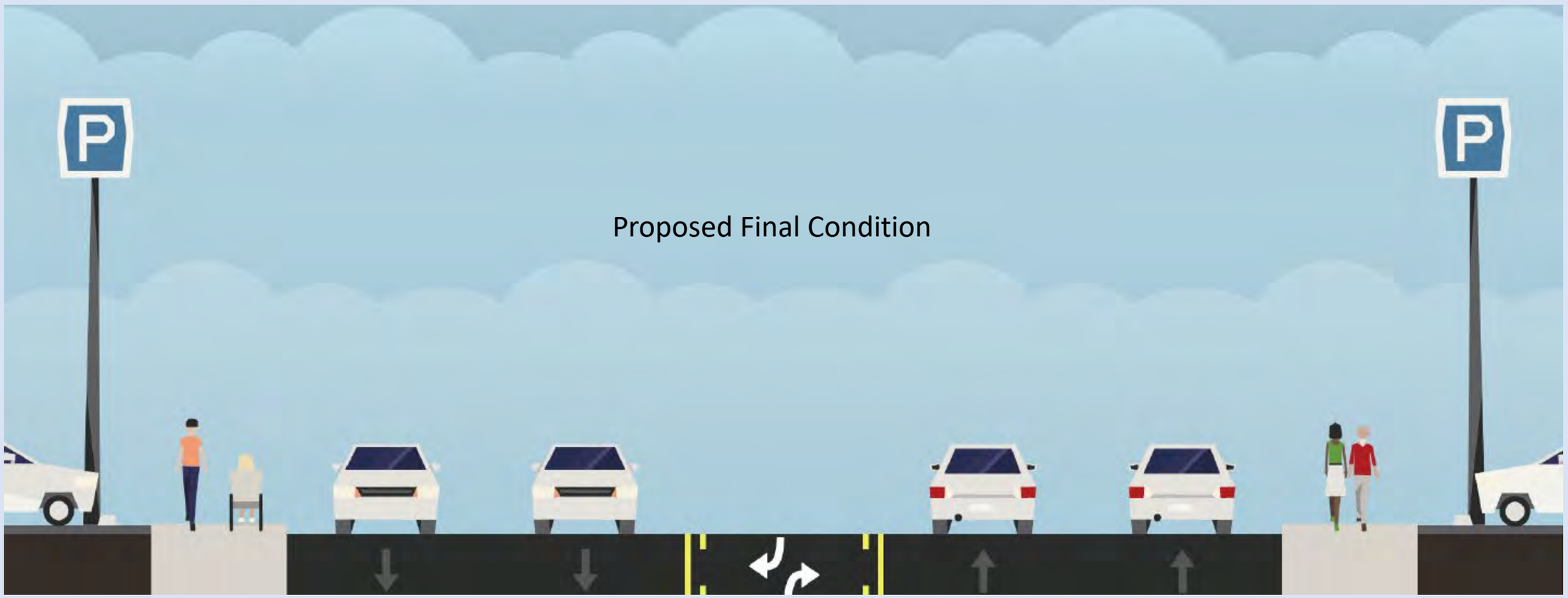




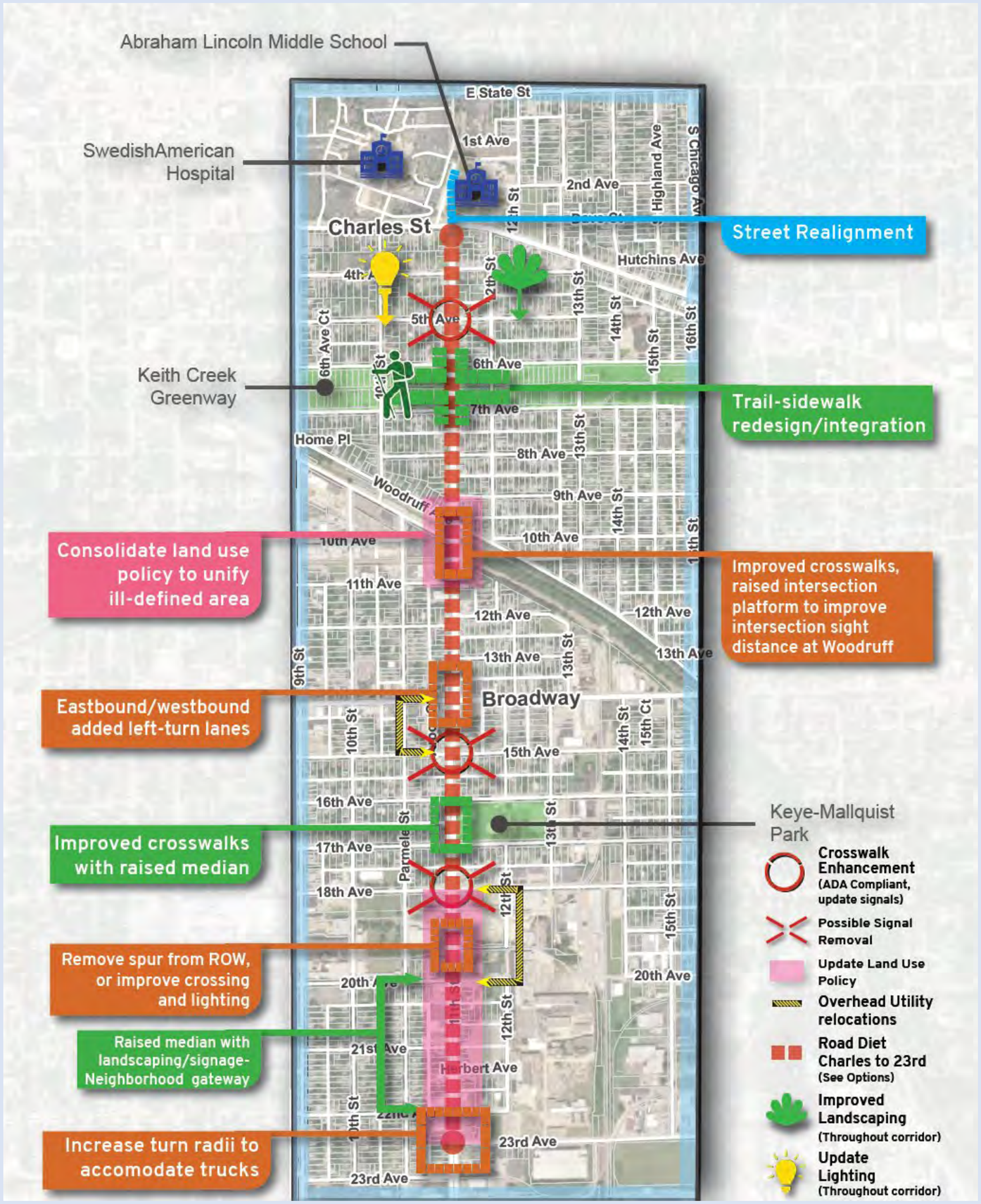
ROAD DIET & STREET LIGHTING – 23RD AVE TO SANDY HOLLOW

Stakeholder Meeting #2

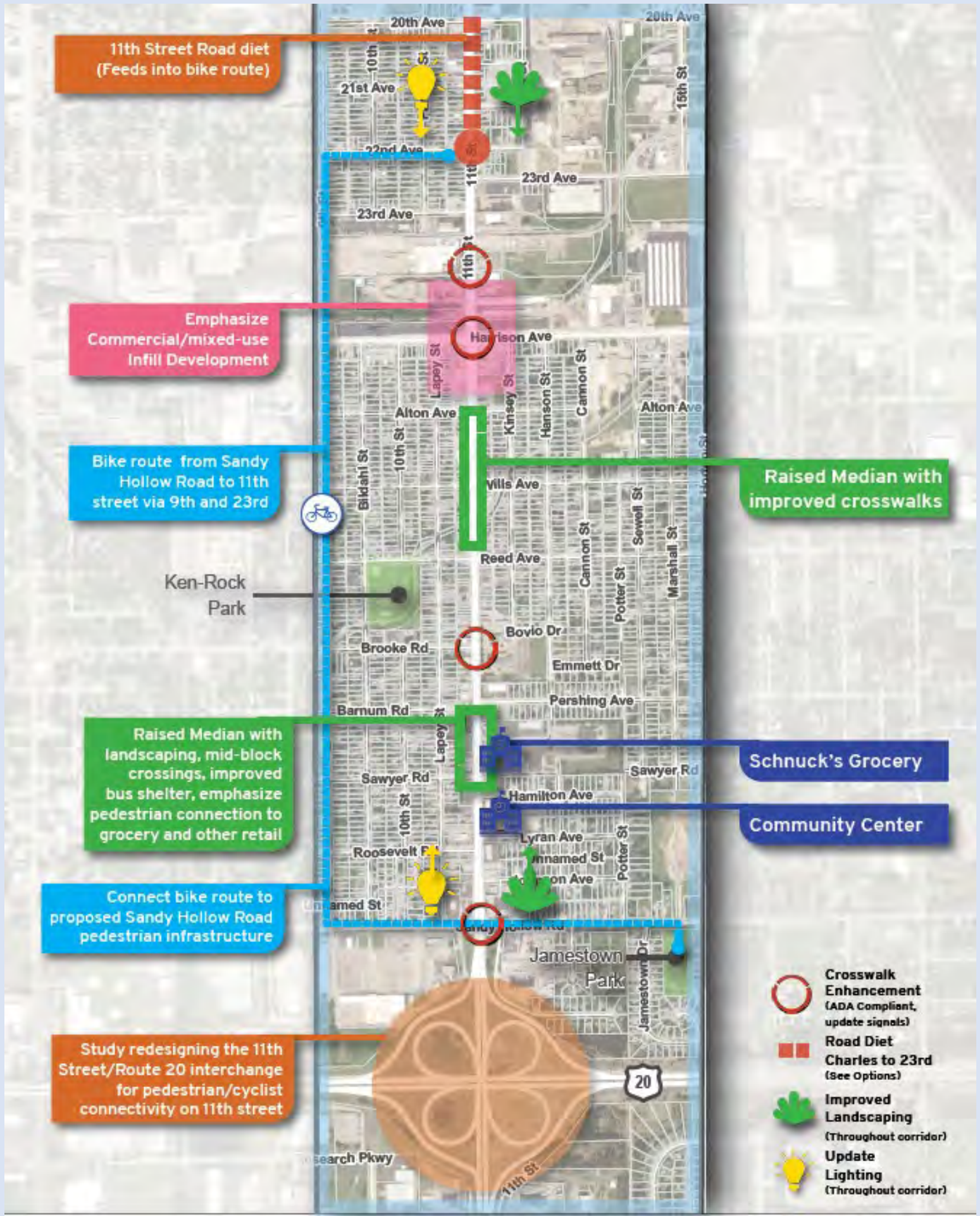




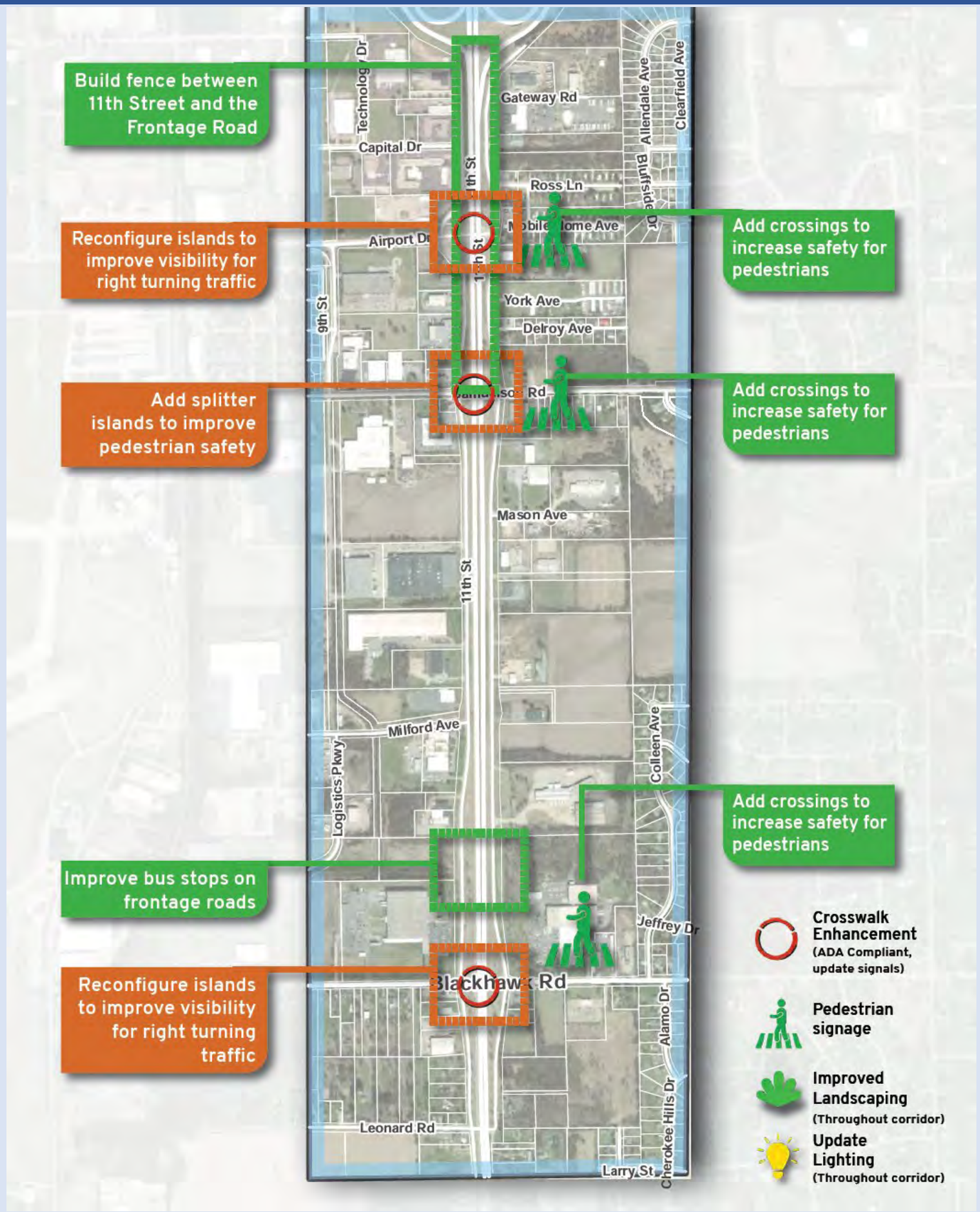
RECOMMENDED PROGRAM OF IMPROVEMENTS – 1 of 3



RECOMMENDED PROGRAM OF IMPROVEMENTS – 2 of 3



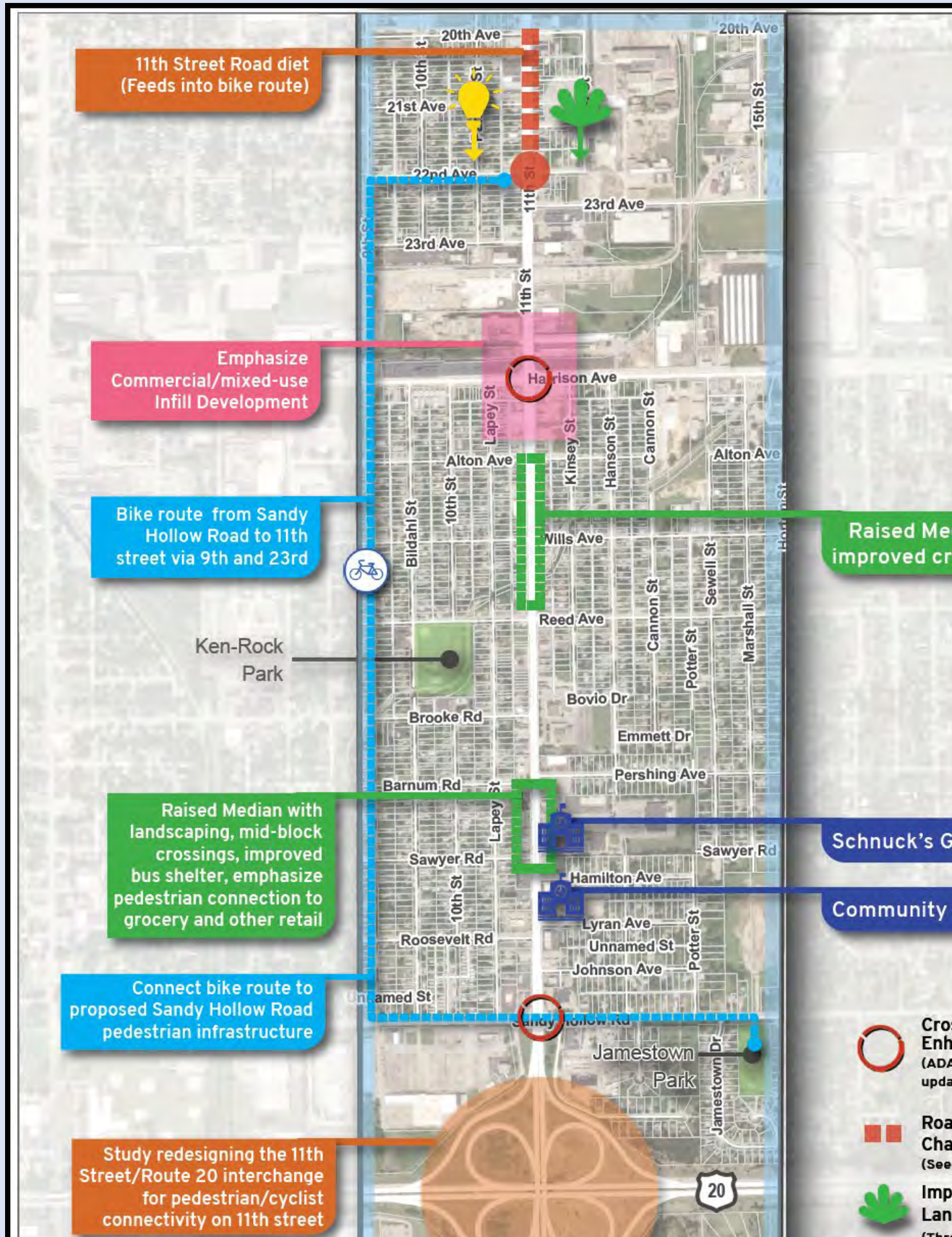
RECOMMENDED PROGRAM OF IMPROVEMENTS – 3 of 3



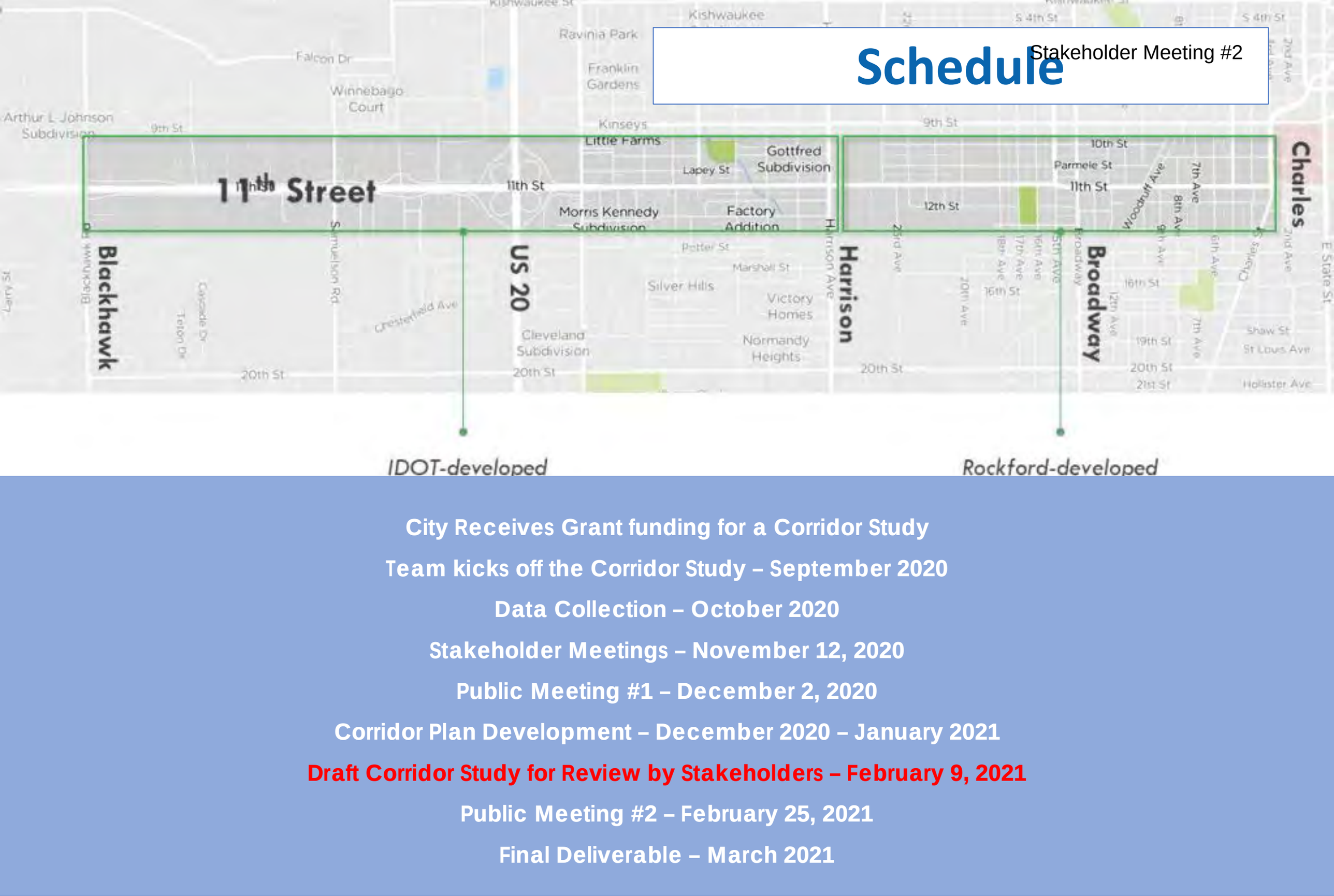
QUESTIONS AND DISCUSSION

- Likes or dislikes, why?
- Prioritization?
- Segments that need more attention?
- Where is the best value?
- All Transportation Modes addressed?





Schedule



City Receives Grant funding for a Corridor Study

Team kicks off the Corridor Study – September 2020

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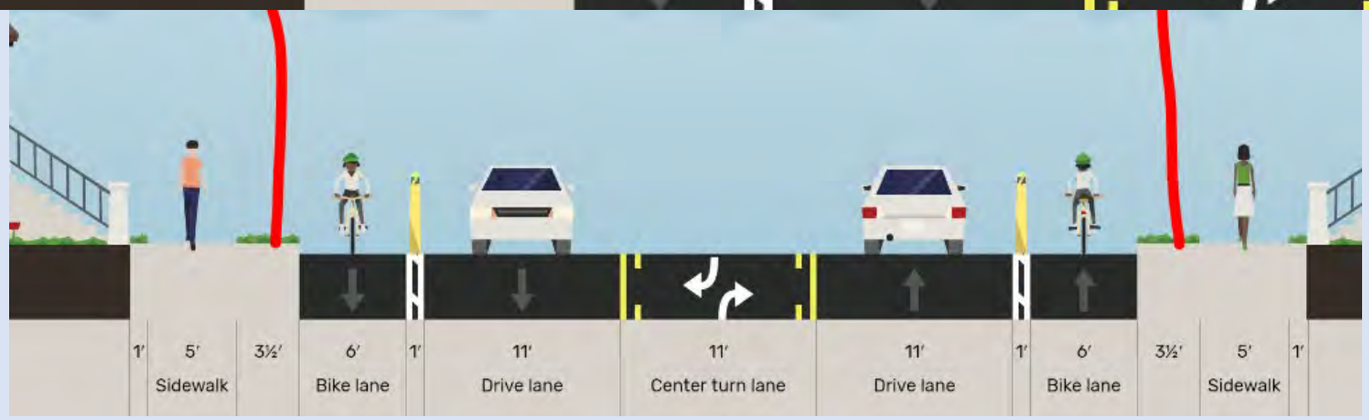
Final Deliverable – March 2021

https://projectmeetingonline.com/11th-street-corridor-study/

INTERIM ROAD DIET and BICYCLE SYSTEM EXPANSION

Charles Street to Broadway

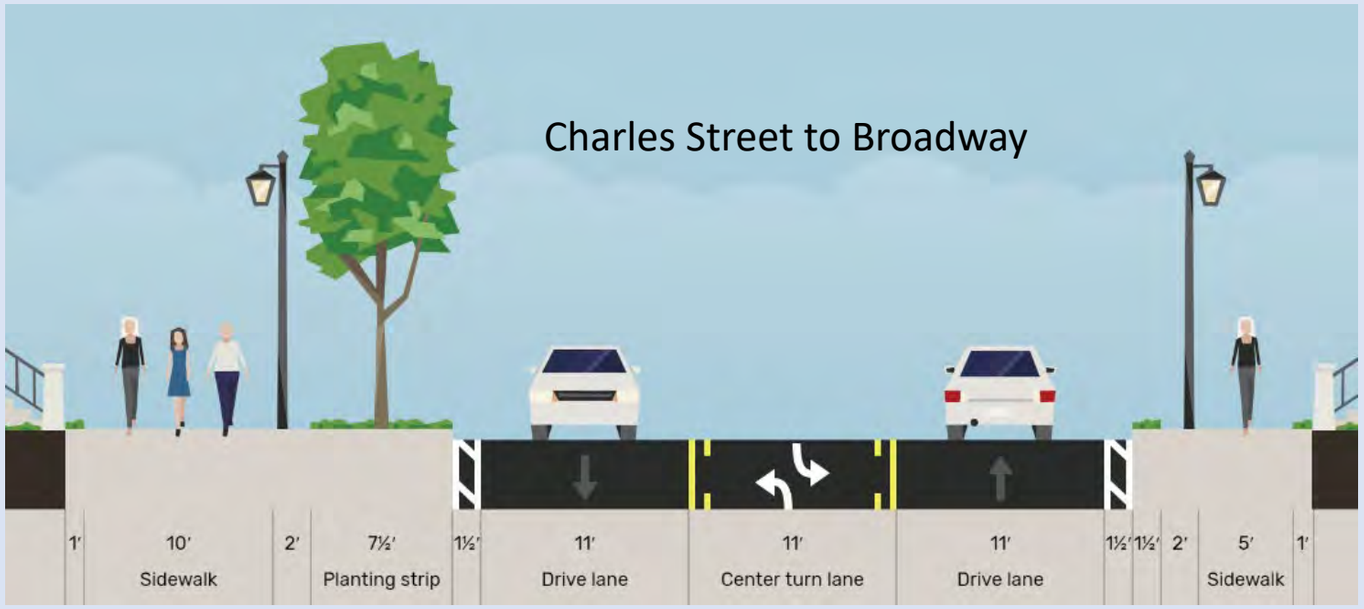




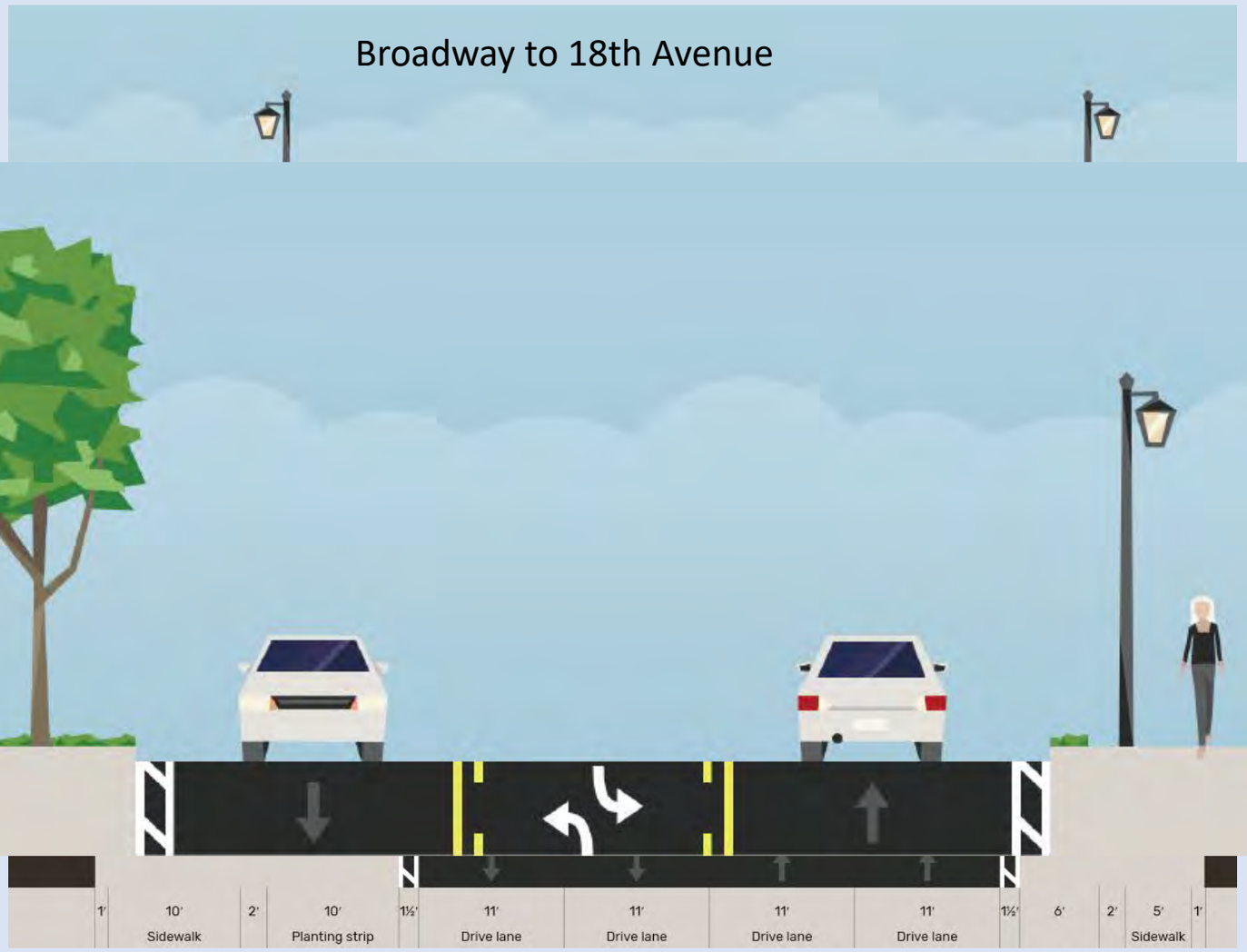
18th Avenue to 23rd Avenue



FINAL ROAD DIET, STREET LIGHTING, TRAIL INTEGRATION









11th Street Corridor Study



Stakeholder Meeting Notes – Feb. 9, 2021

- Tim Hinkens, City of Rockford – greetings and introductions
  - Looking to improve entire section of 11th Street within city limits from airport to hospital
    - One of worst-condition roads in city
    - Major gateway into city from the south
      - Similar traffic to South Main St
    - Airport and hospital are expanding
    - Wanting a safer, improved corridor – not just expanding roadway
    - Two ped fatalities have occurred during time of study alone – ped improvements are obvious
  - Concerns and info from previous meetings were compiled to create what is presented here to improve corridor
- Cassie Reiter, CMT – deeper introduction
  - Schedule
    - Took all data from previous meetings and put together in "Plan" to review before presenting another draft for public meeting later this month
    - Final deliverable will be given in March
  - Purpose & goals
    - Results of engagement – ultimately improve failing infrastructure along corridor
  - Vision of corridor
    - What do you envision corridor to look like?
    - Is there something that we missed? Or something you thought about later that you want to bring up now? Should we go about an improvement differently?

- Tim Hinkens - City looking to start this summer with engineering solutions from this study
    - Improvements will happen in next 4-5 yrs
- Andrew Schlichting, CMT – overview of improvements
    - Some improvements can be done in pieces rather quickly that get us to the end goal, while we wait for funding for higher cost improvements
    - Focusing many improvements on where transit stops are, where peds are moving
    - There is value in realigning the roadway in several locations
    - Road diets
        - Somewhat limited by utilities – some variability in landscaping/beautification
        - Interim conditions work towards final condition we propose once larger funding is secured
        - Multi-use path (MUP) should be on west side – looked at both options (east vs. west side of road)
            - There is already a bike path on 9th street to the west
            - Don't have to cross 11th to get to hospital or 9th bike path
            - Shifting traffic to east also helps sight distance issue at Woodruff
            - Prioritizes pedestrian path
        - 23rd to Sandy Hollow will need bigger solutions
            - High volumes of vehicles
            - Limited right of way
    - Tim – can you give examples of low cost to no cost type solutions/policy changes recommended?
        - Bill James, Camiros
            - Land use plan changes – some sections of corridor are mixed resident/industry, resident/commercial
                - Not a lot of economic demand for new uses
                - More cohesive use districts needed to clearly define land uses
                - Modest but important land use zoning map changes for clear establishment of uses on particular blocks
            - Zoning changes
                - Landscaping requirements
                    - Would improve vision of corridor
                - Can't wait for redevelopment to occur to implement updated landscaping strips - redevelopment is slow
                - Amortizations should be used with this level of non-conformity along corridor
                    - Not popular with property owner but this is how it can be done quickly
            - Economic development initiatives
                - TIFs could be useful
                    - Would need further study to see if funding of this type could be obtained
                - Possible to get small amount of increment to be used for certain types of improvements to corridor from TIF over time

        - Can result in meaningful changes along corridor
    - Andrew - walk through concept map
        - Utilities going underground near Broadway is larger improvement that might need to be targeted first
        - Traffic data is somewhat dated – need more updated non-covid counts to validate findings

DISCUSSION/QUESTIONS:

- Sydney Turner, Region 1 Planning Council –
    - want to look through each of the roadway typical sections again
    - Andrew – interim conditions have no major changes inside the sidewalks. All improvements are inside the curb lines – no change to ROW or pavement section
    - Tim – pedestrian crossing at Schnucks was a direct outcome of first round of these meetings
- John Groh, RACVB –
    - From neighborhood development perspective, as road changes and shrinks, is there anything being done to enhance homeowner experience?
        - Took away yardage to expand roadway years ago. Is there restoration of yardage?
        - Do improvements only benefit roadway? Or will yards be reclaimed for homeowners?
    - Andrew – in sections where applicable, instead of wide buffer strips between sidewalk and road, can relocate buffer strips in front of housing (still in ROW but feels like a bigger yard)
        - Can get landscape easement to add trees/plantings in peoples yards – Bill thinks it could be applicable to residential and commercial properties
    - Tim – mostly talking how we can improve road north of Harrison because it is city controlled
        - Ultimately proposing less pavement/concrete than what is there already
        - Pedestrian level lighting will add to pedestrians' perception of safety – will bleed into and aide house adjacent to roadway feeling safer with additional lighting
        - Feel better knowing your house is right off a bike lane as opposed to a higher speed road
        - Restoration on peoples properties is something we can look into and work with community to improve things outside of ROW
- Ashley Sarver, I Bike Rockford –
    - Really like accommodations for bike/ped even in the interim solutions
    - Area that really sticks out is south of 23rd Avenue
        - Not really a great solution to incorporate bike lanes
        - Traversing this area – people just cross where they please and use center turn lane as their sidewalk to achieve more visibility from cars
        - Where we see most collisions/fatalities with pedestrians
    - North of 23rd are there reduced lane widths?

        - Andrew - Yes, 11' lanes throughout
    - Tim – City desires reduced lane widths
        - reduced lane widths result in traffic calming
        - reduces speed naturally (geometrically)
        - Going from 12' lane to 11' lane is very helpful for pedestrian safety
    - Andrew – narrow lanes help people to obey speed limit – part of road diet benefit
- Mary McNamara Bernsten, Rockford Area Arts Council –
    - Installation of public art should be considered
    - See public art installed in purposeful way
        - muiltipurpose for corridor to unify thru shape and form
        - incorporate industry or historically valuable neighborhood themed art with sculptures or at bus stops
        - intersections not as high traffic art could be installed on smaller scale to reflect boroughs or surrounding commercial/industrial uses
    - Artistic unification is important to visual success and longevity of corridor improvements
        - Bill – is there funding that we can use?
    - Funding can be obtained for public art installations
        - Themed art is great draw
        - Inundates an area/space
        - Public dollars would be good
    - Andrew – breaks in feel of road can be good place for larger scale installations
        - Artistic representation or branding to amplify residential areas
- Ashley Sarver, I Bike Rockford –
    - Question about landscape buffers on private property
    - Areas that are going to be hard to do – new tenants might not want to implement
    - Are there phased approaches to get landscaping strips installed?
        - Bill – amortization can be done
            - Gradual expiration of legal nonconforming status
            - Can put a sunset clause on legal nonconforming status to get them to comply with landscaping strip installation requirements
            - Absence of market demand means properties likely won't be redeveloped for a long time, so city ordinance only of landscaping on private property might not ever be implemented
            - Assistance could be provided via TIFs to make changes more palatable to property owners
- Scott Capovilla, City of Rockford –
    - Landscaping ordinance
        - When someone reconstructs parking lot they are required to bring it to compliance regarding landscaping
        - Sometimes they can't do that, but City will work with them to get some landscaping strip without impacting parking too much
        - Most recently gravel parking lots and driveways in commercial areas were pushed for amortization
        - Within so many years, must comply with ordinance to best of your ability

    - Landscaping provides uniformity and just makes sense
- Nelson Sjostrom, City of Rockford –
    - Vacant property registry – when properties are on there, owner is supposed to submit a plan to get property back to compliance
        - Currently have been enforcing building requirements but not zoning requirements
            - Enforcing zoning requirements is something to look into so that landscaping is there if building becomes reoccupied
- Scott Capovilla, City of Rockford –
    - Really concerned with vacant properties on 11th –
        - want to get buildings upgraded and up to date now – parking lots/exterior are not higher priority
        - Need to reconsider making building upgrades as "1A" priority and parking/land as "1B" priority
- Tim Bragg, Rockford Park District –
    - Does city staff still have in its toolbox making special recommendations for Special Use Permits if something is out of compliance regarding landscaping
        - Scott – try to enforce zoning ordinance with landscaping and sign design to bring properties into compliance when ownership is changing
        - Most people don't like to see big wayfinding signs
            - Smaller signs are preferred by drivers and reduce clutter
- Tim Hinkens, City of Rockford –
    - Important to enforce neighbors to make improvements on their side
    - Don't think it's unreasonable to ask people with means to do so to bring their properties up to standards based on long term vision of corridor
- Mike Kuehn, IDOT –
    - IDOT does not have any short term plans for the corridor south of Harrison
    - Obviously with pedestrian fatalities, we need to work together to figure out a way to minimize fatalities
    - Several different mechanisms to look at to improve IDOT area
        - ITAP funding
        - Use safety funding (HSIP)
    - More likely will be spot improvements vs whole corridor
        - But can chase down smaller improvements until we get larger project as a whole funded
    - Tim Hinkens – believes we have justification for HSIP funds based on fatalities
        - Are countermeasures like a fence that is proposed or adding sidewalk eligible to receive funding for HSIP?
            - Mike – maybe, never tried it before but worth a conversation with Bureau of Safety
            - Should be discussed and pursued together, just a matter of finding the "right" countermeasure to present for funding
    - Interchange – currently not in IDOT program to replace interchange but will need to replace it sooner or later

    - Had design set up for a single-point urban interchange to get some connection between Sandy Hollow and US 20
    - Fan of diverging diamond interchange but a diamond interchange would suffice as well
    - Proximity of Sandy Hollow is an issue, so some distance would be nice
- Cassie – closings

ZOOM CHAT QUESTIONS/COMMENTS:

- Participants "introduced" in chat
    - Tim Bragg – Rockford Park District
    - Barb Chidley – Neighborhood Specialist for the City of Rockford
    - Jeff Polsean – Greater Rockford Airport Authority
    - Sydney Turner – Region 1 Planning Council
    - Randy Berke – Rockford Police
    - Michael Kuehn – IDOT District 2
    - Mike Stubbe – RMTD
    - Michael Slife – Rockford Public School
    - Ashley Sarver – I Bike Rockford
    - Kyle Gruhn – Four Rivers Sanitation Authority (Rock River Water Recl District)
    - Mary McNamara Bernsten – Rockford Area Arts Council
- Questions
    - Can you give a couple of examples of 'future policy changes'? In the policy and standards section of the low/no-cost solutions – Mary McNamara Bernsten
        - Answered live by Bill James
    - Would all proposed final solutions include/require the burying of utilities? – Ashley Sarver
        - Answered in chat by Cassie Reiter – Final road diet solutions would require moving or burying utilities
    - Is the City working with the Forest Preserves/Severson?NLI to look at native species for plantings? – better success rate – Mary McNamara Bernsten
        - Answered in chat by Cassie Reiter – Native plantings and working with the City will be important when design of the improvements begins
    - Do unwarranted traffic signals act as a de-facto safe pedestrian crossing? Will taking those out reduce options for pedestrians to cross 11th?
        - Answered in chat by Cassie Reiter – That is a consideration that will need further study during the design phase

- Comments
    - As Tim noted at the beginning of the meeting, there have been several recent pedestrian fatalities. IDOT supports improving the pedestrian facilities in the corridor. We will need to work with the City on ensuring the improvements adhere to IDOT policies along the IL 251 section. – Mike Kuehn

- And [it will be helpful to get] more feedback directly from those residents impacted – Barb Chidley
    - RE: public outreach/what homeowners can do to improve look and feel of 11th Street/how these recommendations impact home owners along corridor
- Cassie, I am happy to hand deliver invitations to those residences along 11th Street. But online meetings are not accessible for many residents. Perhaps we could strategize some ways to meet them where they are. – Barb Chidley
- % for art with public improvements should be the standard in our city – John Groh

APPENDIX 1-B

Public Meeting #1 & #2

- Public Meeting #1 – 12/02/2020
  - Public Meeting Flier
  - Public Meeting Presentation
  - 11th Street Survey
  - Corridor Study Q & A
  - Public Meeting Survey
  - Webinar Reports
  - Comment Log
  - Facebook Posts and Comments
- Public Meeting #2 – 02/25/2021
  - Public Meeting Flier
  - Public Meeting Flier with Contact Information
  - Public Meeting Presentation
  - Corridor Study Q & A / Comments

THE CITY OF ROCKFORD ILLINOIS, USA

Public Meeting #1

11th Street Corridor Study



We encourage you to visit the website in order to provide input on the existing conditions and how they can be improved.

The virtual public meeting will be held December 2,2020 at 6 pm.

Project Purpose and Goals

The Corridor Study Goals include:

- Focusing on transportation solutions to improve pedestrian safety, reduce pedestrian fatalities, and beautify the corridor
- Inform the community on how to move forward, beyond the study, while achieving the goals of the community
- Focus on improvements within the right of way such as sidewalks and lighting, utilizing a complete streets mentality such that the right of way improvement are conducive to drive economic growth
- Utilize the improvements within the right of way as a catalyst to attract people to the area
- Understand that the corridor should be cohesive, while noting the different characteristics of each section
- Provide a conceptual cost for right of way improvements for future programming

https://projectmeetingonline.com/11th-street-corridor-study/

Public Meeting #1

11th Street Corridor Study

In partnership with:

CMT

camiros

SBFRIEDMAN



Please type any comments or questions into the Q&A feature.

Thank you for attending today.

There will be a presentation by the City of Rockford and their planning team.

Then a survey to complete regarding your thoughts about the corridor. Please complete the survey.

https://projectmeetingonline.com/11th-street-corridor-study/

THE CITY OF ROCKFORD ILLINOIS, USA

Public Meeting #1

11th Street Corridor Study



The City of Rockford is studying 11th Street, from Blackhawk Avenue at the southern City limits north through US 20, Harrison Street, and up to Charles Street on the northern limits.

This study aims to identify improvements within the right of way to fix undesirable current conditions.

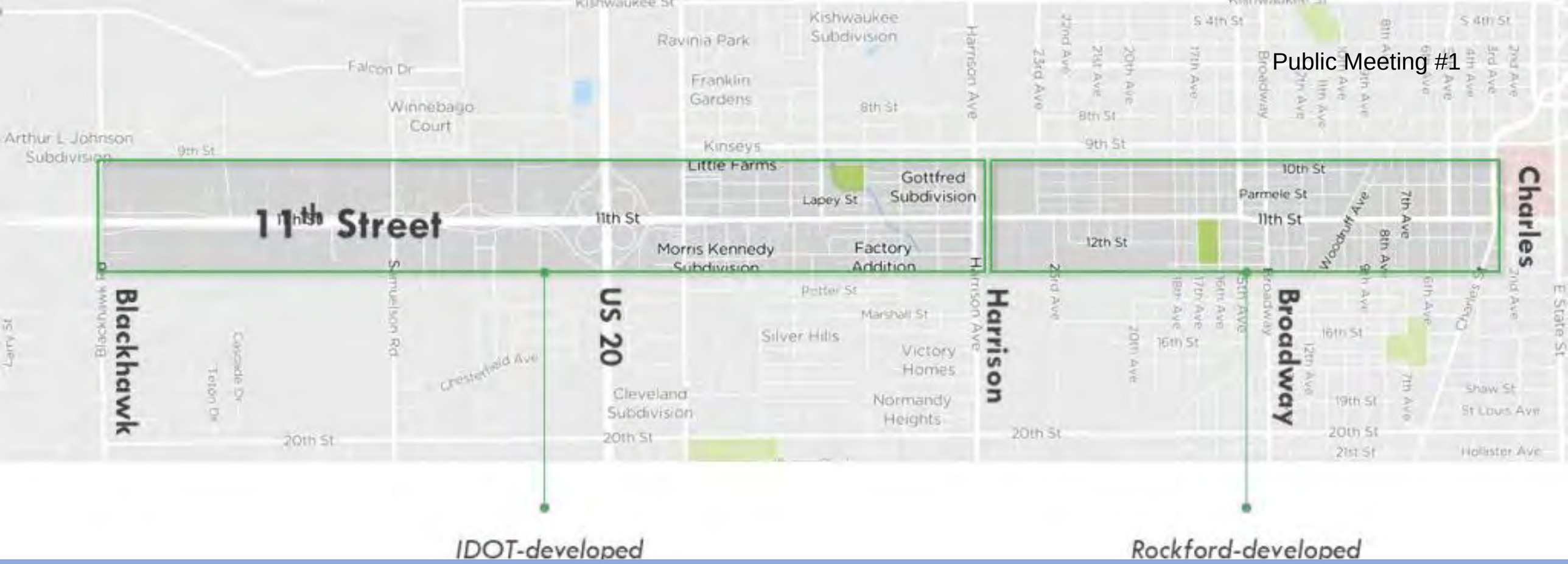
The study will fulfill the vision of the City, including an actionable strategy to implementation within the City's budget and schedule.

The City is engaging the public both during his presentation and online. This process is used so the community can inform the plan.

You LIVE there, you WORK there, you UTILIZE the corridor!

Our team wants to hear from you at this meeting.

https://projectmeetingonline.com/11th-street-corridor-study/



City Receives Grant funding for a Corridor Study

Team kicks off the Corridor Study – September 2020

Data Collection – October 2020

Stakeholder Meetings – November 12, 2020

Public Meeting #1 – December 2, 2020

Corridor Plan Development – December 2020 – January 2021

Draft Corridor Study for Review by Stakeholders – February 2021

Public Meeting #2 – February 2021

Final Deliverable – March 2021

https://projectmeetingonline.com/11th-street-corridor-study/



Corridor Study Purpose and Goals

- Focus on transportation solutions to improve pedestrian safety, reduce pedestrian fatalities, and beautify the corridor
- Inform the community on how to move forward, beyond the study, while achieving the goals of the community
- Focus on improvements within the right of way such as sidewalks and lighting, utilizing a complete streets mentality such that the right of way improvement are conducive to drive economic growth
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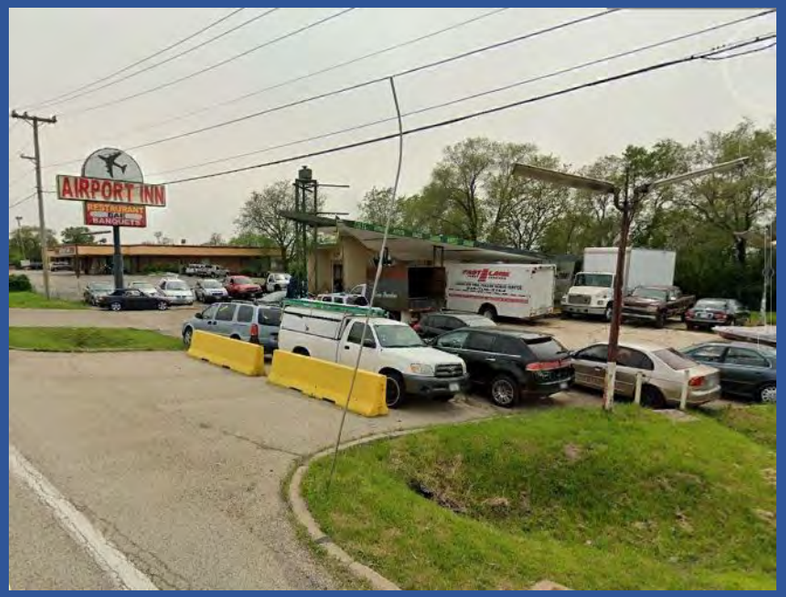


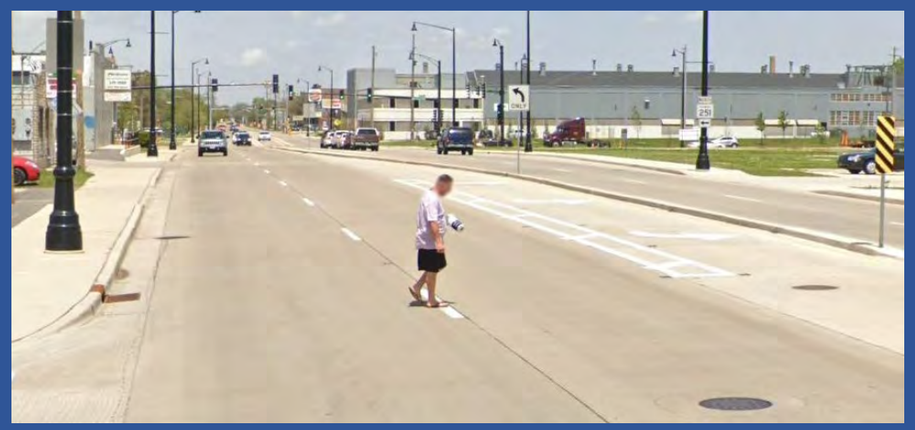




11th Street Existing Conditions

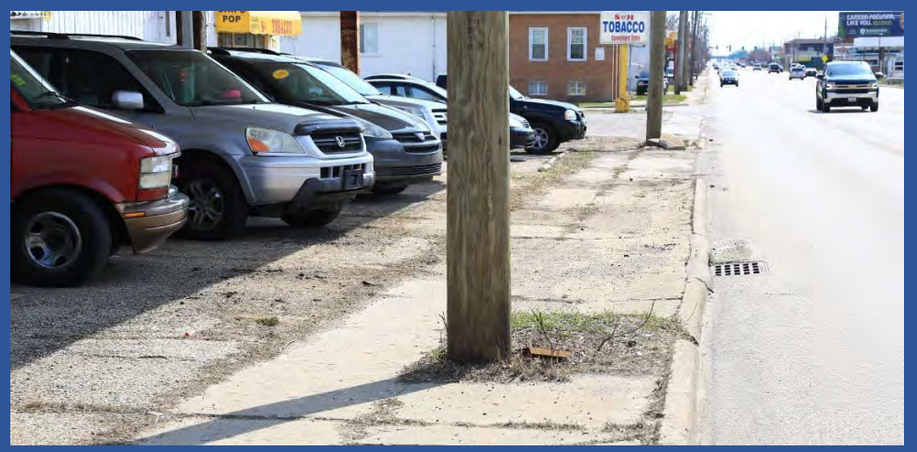






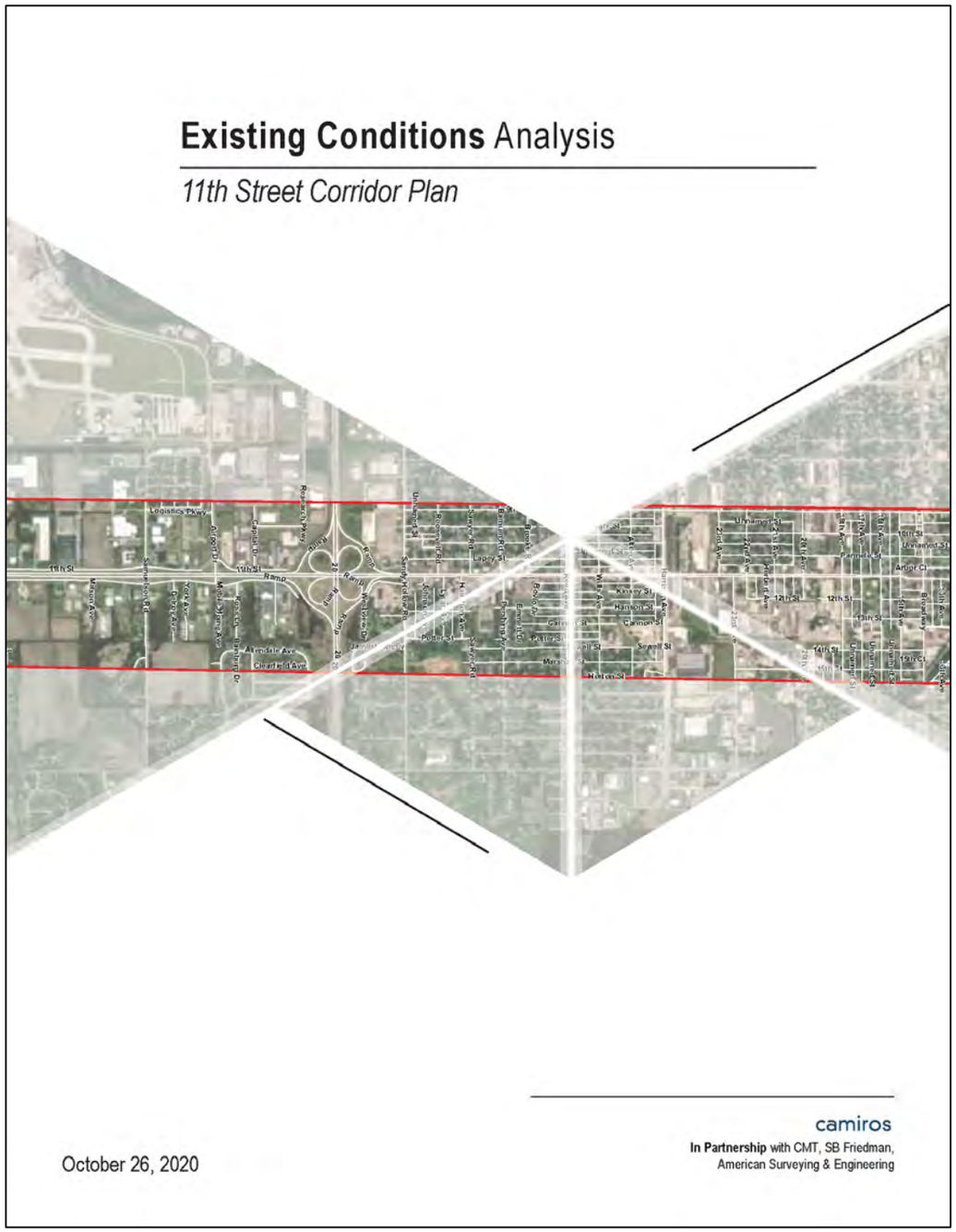






What have we heard so far ?

landscaping
better bus stops
better sidewalks
more east west crosswalks
beautification
bike facilities
community store to serve needs
lighting
gateway feature for Broadway Business District
improve visibility when turning out of the grocery parking lot Woodruff
define driveways
desire a complete streets approach
11th Street corridor should complement the Main Street corridor

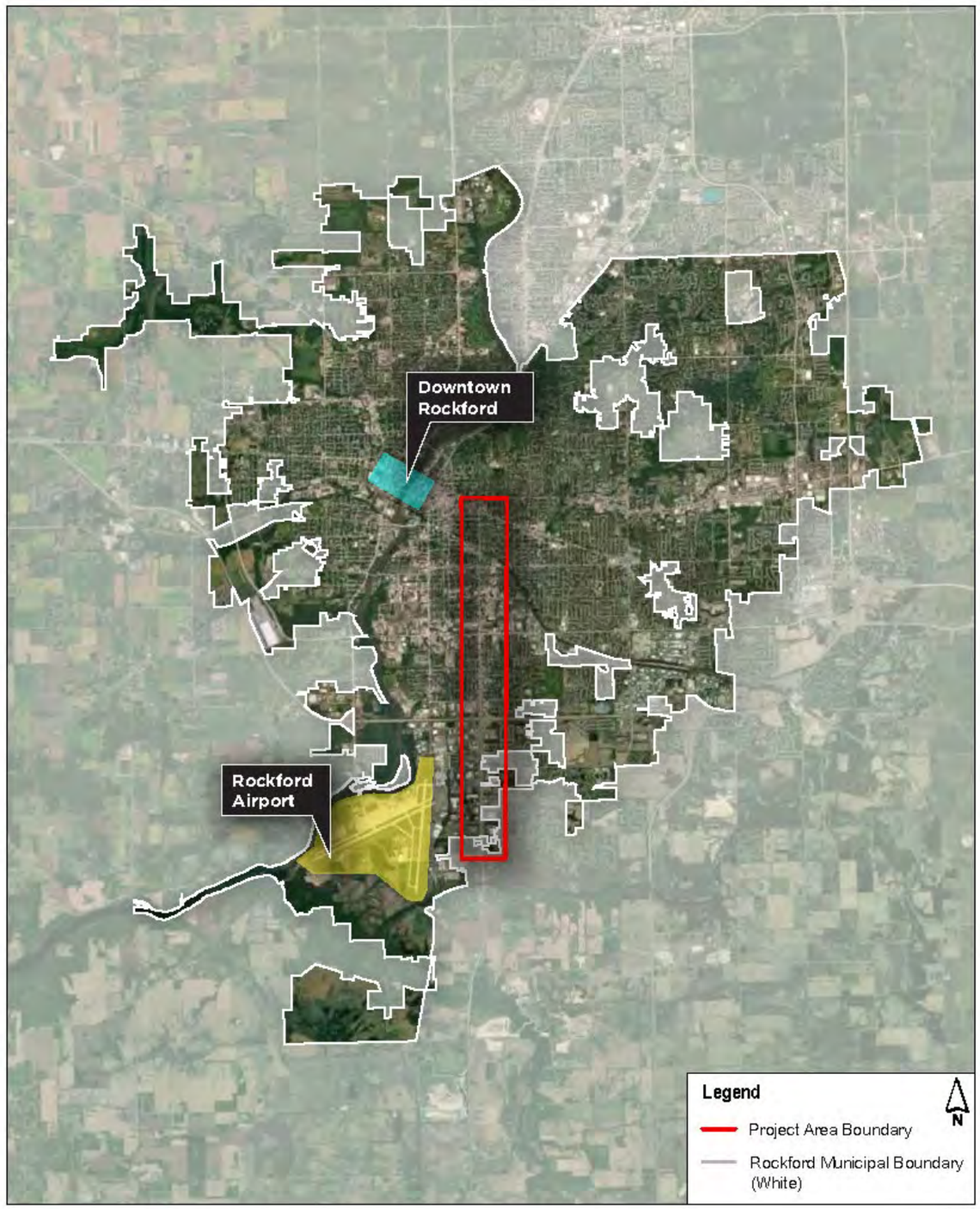


Purpose of Existing Conditions Analysis:

- Provides the context from which a new planning process must start
- Identifies current conditions, potential assets and challenges of the planning area

Slides contents:

- City context map
- Current conditions maps
- Zoning key provisions maps
- Sidewalk network map
- Bus network map
- Average daily traffic maps
- Parks/Open space map
- Properties subject to change



City Context

- 4.75-mile stretch along 11th Street
- Spans across several neighborhoods
- Proximity to Downtown Rockford and the Rockford Airport
- Northern boundary: Charles Street
- Southern boundary: Blackhawk Road

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PURPOSE OF MARKET STUDY

A study designed to uncover the real estate market dynamics along the 11th Street Corridor



Key analysis steps:

- The Study Area's attributes in terms of access, visibility and unique local market context;
- The existing supply and performance of retail, medical office and industrial space in the Study Area; and
- Existing and new economic development strategies to support redevelopment within the Study Area.

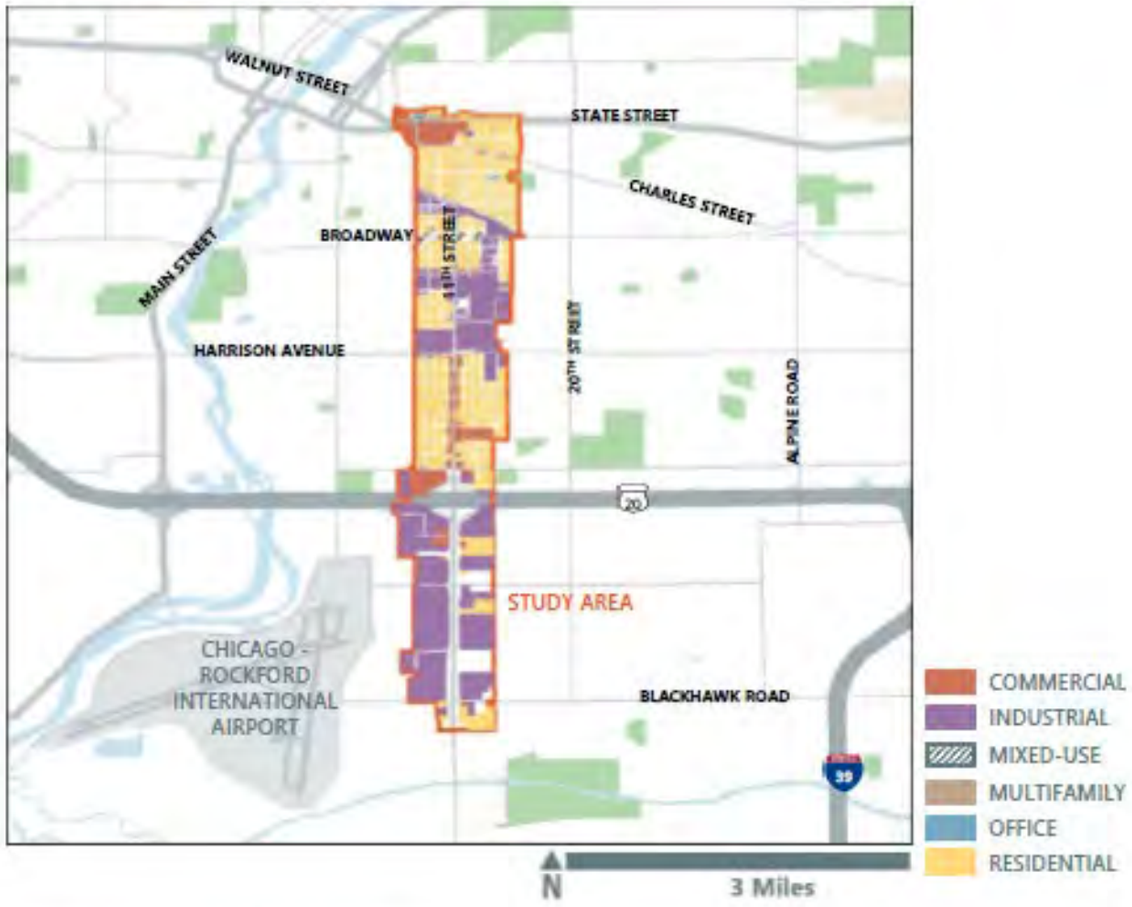
This market-driven approach ensures the transportation improvements being recommended within the public right-of-way are complementary to the dynamics and goals for redevelopment of the Study Area.

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STUDY AREA OVERVIEW

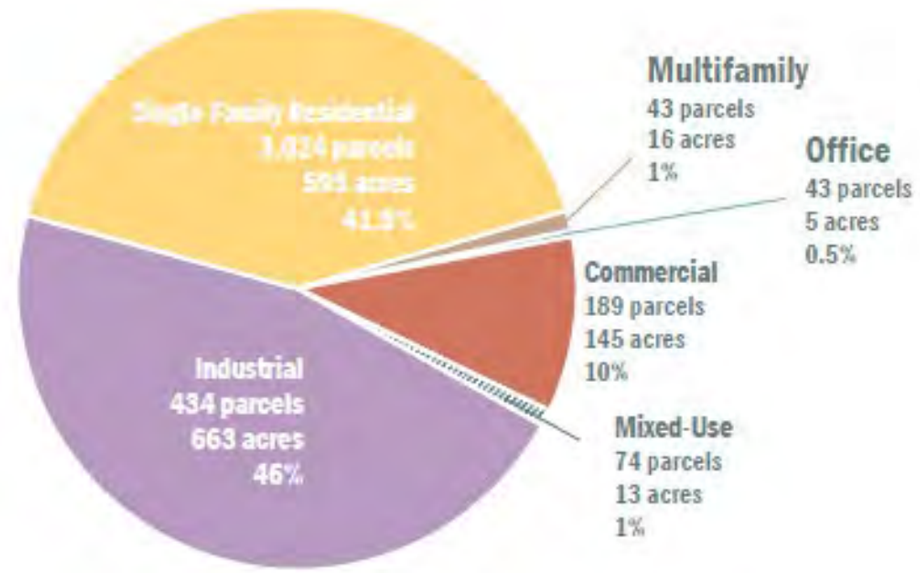
The Study Area spans from Downtown Rockford to the edge of the City along the 11th Street Corridor

STUDY AREA EXISTING ZONING



Source: City of Rockford, Esri, SB Friedman

Study Area Acreage by Zoning



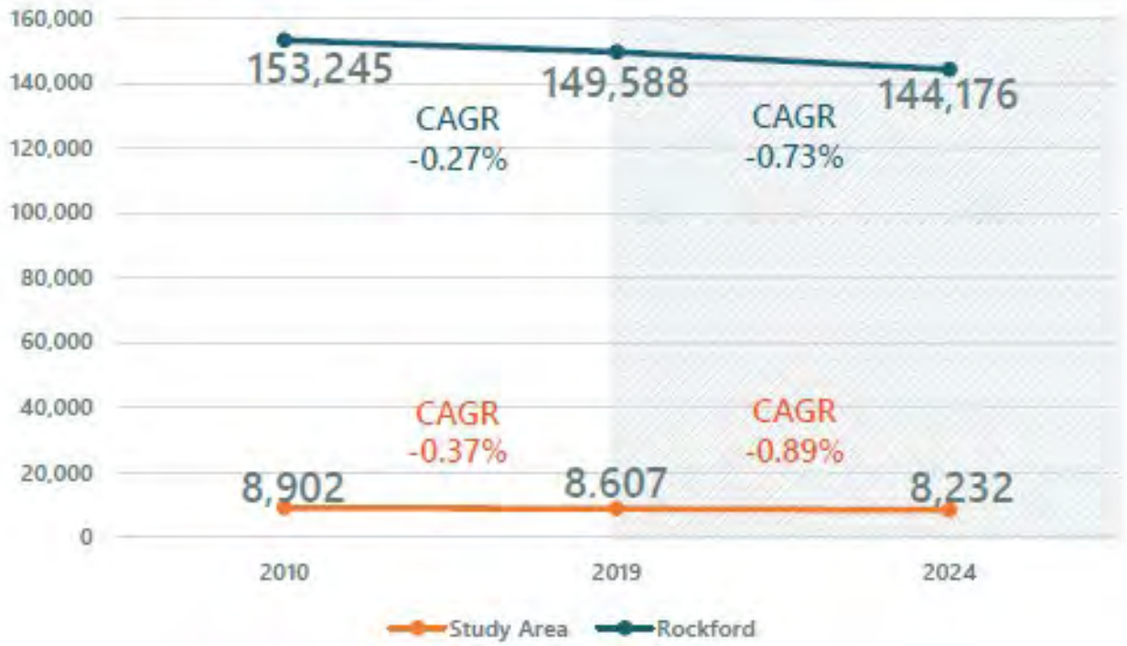
Source: City of Rockford, SB Friedman

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DEMOGRAPHICS

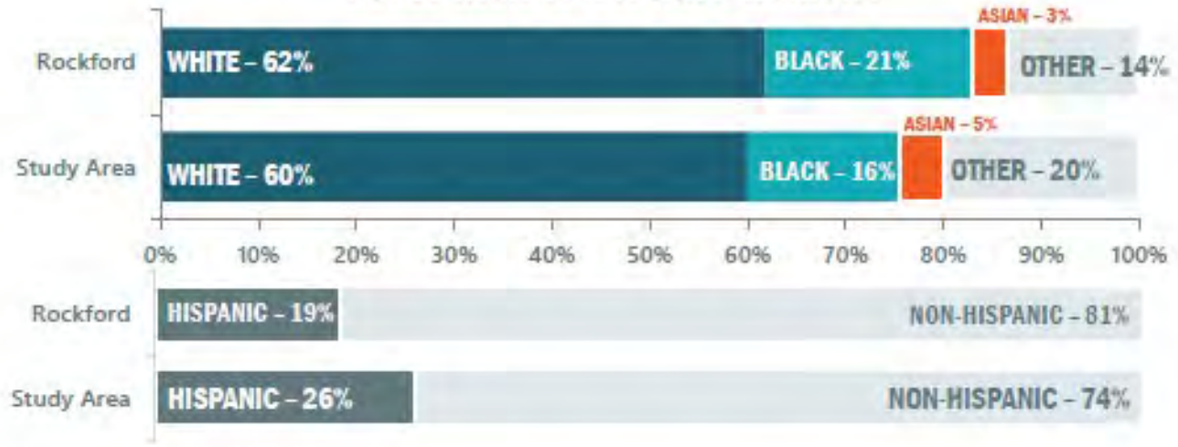
Residents within the Study Area have lower household incomes on average than the rest of the City

HISTORIC AND PROJECTED POPULATION COUNTS





POPULATION BY RACE AND ETHNICITY



Source: Esri, SB Friedman

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RETAIL

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RETAIL – LOCAL RETAIL CHARACTERISTICS

The Study Area comprises older, local-serving retail space

STUDY AREA RETAIL SUPPLY



Source: CoStar, Esri, SB Friedman

- The Study Area contains approximately 610,000 square feet of retail space.
- There are three smaller retail clusters located within the Study Area: Southgate Shopping Center, 11th Street Plaza and Broadway.
- The 11th Street Plaza is the primary full-service grocery-anchored center serving the Study Area with tenants such as Schnucks, Family Dollar, and CVS.


SOUTHGATE SHOPPING CENTER


11TH STREET PLAZA


BROADWAY CORRIDOR

Image Source: Matthews, Realtor.com

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RETAIL – KEY TAKEAWAYS



LIMITED NEAR-TERM RETAIL POTENTIAL

- Over the past 10 years, there has been limited new retail development within the Study Area.
- There is likely to be limited potential for new retail development in the future.



SUPPORT LOCAL-SERVING RETAIL

- Continued efforts should be made to consolidate retailers within existing neighborhood centers in the Study Area to reduce vacancies.
- Small business financial support programs, such as the City of Rockford's Microenterprise Loan Program and Community Development Block Grants (CDBG), may also be necessary to assist small businesses during COVID-19.



PUBLIC REALM IMPROVEMENTS

- Interviews indicated that many residents rely on transit and pedestrian facilities to access goods and services along the corridor.
- Public realm improvements to enhance safety and walkability could support retail accessibility.
- Opportunity to enhance gateway, streetscape features, and amenities at key commercial nodes.

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MEDICAL OFFICE

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MEDICAL OFFICE – REGIONAL SUPPLY

Medical office developments within the County are located near hospitals and major roadways

WINNEBAGO COUNTY MEDICAL OFFICE SUPPLY



- Three primary healthcare providers: MercyHealth, OSF Healthcare and SwedishAmerican
- Since 2010, there have been approximately 60,000 square feet of new medical office space delivered countywide in three buildings

	MercyHealth	OSF Healthcare	SwedishAmerican
Hospitals	3 hospitals	1 hospital	1 hospital
Primary Care	7 facilities	6 facilities	8 facilities
Specialty Care	10 facilities	6 facilities	8 facilities
Urgent Care	1 facility	3 facilities	1 facility
Total Facilities	21 facilities	16 facilities	18 facilities

Source: Esri, MercyHealth, OCF Healthcare, SB Friedman, SwedishAmerican

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MEDICAL OFFICE – KEY TAKEAWAYS



EXPANSION POTENTIAL

- Future medical office development within the Study Area would likely depend on SwedishAmerican's expansion plans.
- Within the Study Area, locations along Charles and State Streets near the SwedishAmerican Hospital could be attractive due to access and visibility.
- Depending on the scale of new development, SwedishAmerican may consider densification of existing surface parking lots within the existing hospital campus.



MEDICAL DISTRICT BRANDING

- The presence of the SwedishAmerican hospital and adjacent outpatient facilities creates an opportunity to establish a medical district brand in the northern portion of the Study Area along the commercial frontage of Charles and State Streets.

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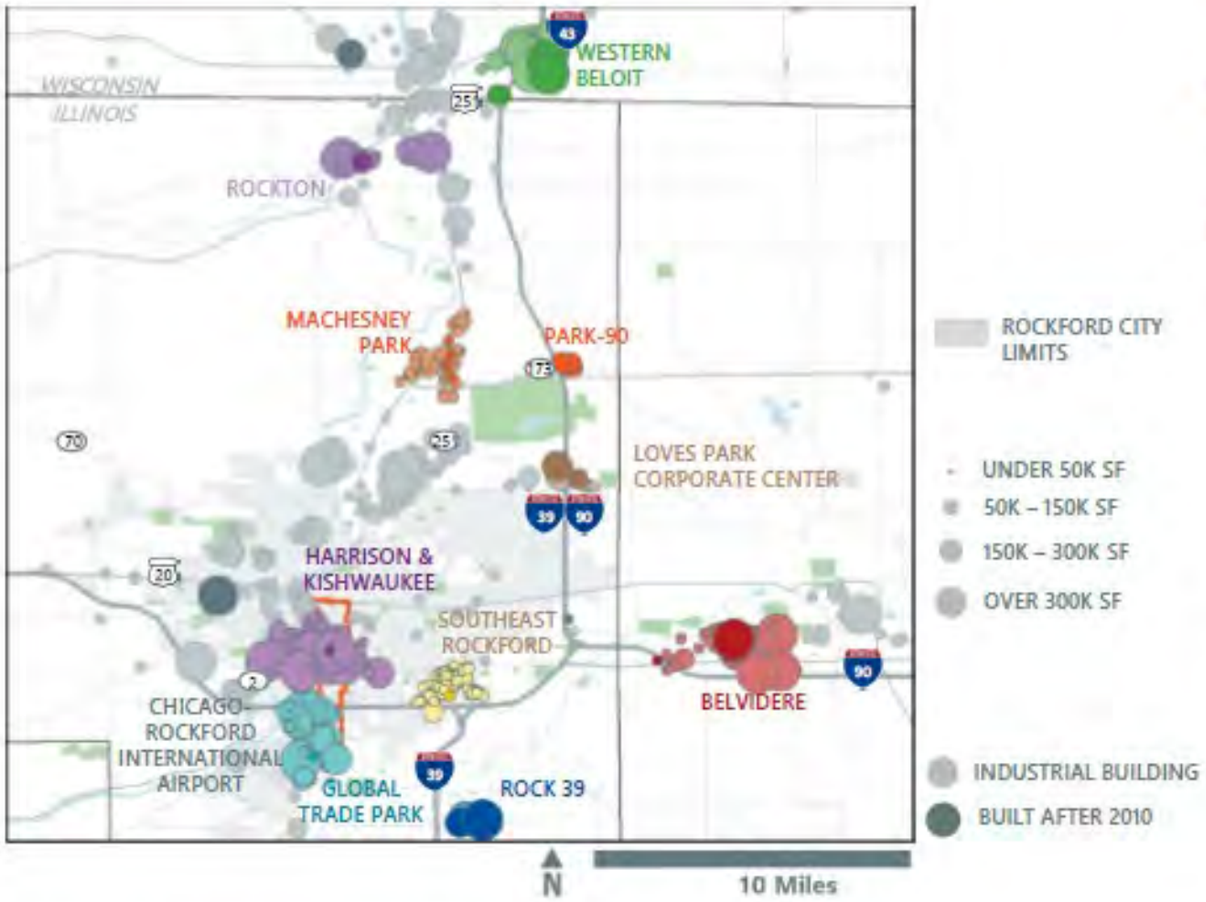
INDUSTRIAL

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INDUSTRIAL – REGIONAL INDUSTRIAL CLUSTERS

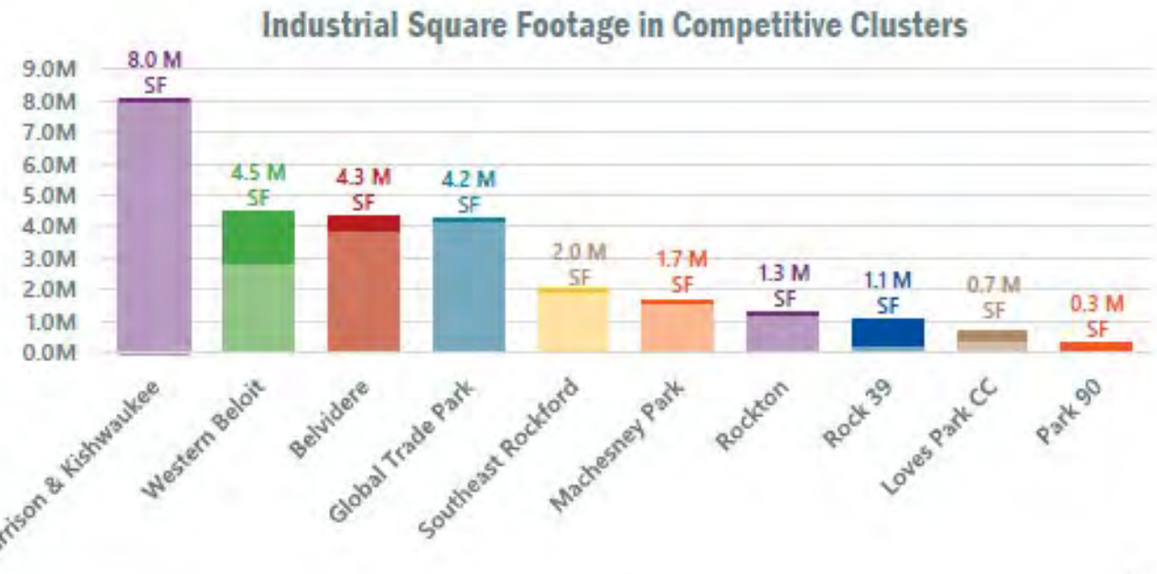
Newer industrial buildings within the region have located near major interstates and roadways

REGIONAL INDUSTRIAL SUPPLY



Source: CoStar, Esri, SB Friedman, WMTV NBC-15

- Within the City of Rockford, there are over 22M SF of existing industrial space.
- Since 2010, approx. 2.7M SF of new industrial development have been delivered in Rockford and surrounding competitive clusters.
- Newer industrial development has emerged outside of legacy industrial clusters in greenfield sites at interstate locations, such as I-39 and I-90.



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INDUSTRIAL – KEY TAKEAWAYS



MARKET POTENTIAL

- County is anticipated to continue to expand its industrial presence.
- Larger-scale distribution tenants typically prefer greenfield sites with interstate access.
- Prospective industrial tenants may find the Global Trade Park industrial cluster attractive due to its access to the Chicago-Rockford International Airport, US-20, and multiple railroad networks. There are also shovel-ready pads available within the Global Trade Park.



REPURPOSING OF OBSOLETE BUILDINGS

- Industrial buildings within the Study Area are typically older and may be considered obsolete for modern industrial users.
- The repurposing of industrial buildings for newer industrial users may deter prospective tenants who would prefer cheaper greenfield development with interstate access that can be built to specification.
- There should be continued efforts to reposition obsolete industrial buildings to accommodate alternative uses.

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MARKET POTENTIAL SUMMARY

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11th STREET CORRIDOR MARKET POTENTIAL SUMMARY

RETAIL

- Local and national trends in retail development indicate limited potential for new retail development within the Study Area.
- The preservation of the existing local, neighborhood-serving retail stores in the Study Area should be prioritized.
- Public realm improvements to enhance safety and walkability could support retail accessibility.

MEDICAL OFFICE

- New medical office development within the Study Area will likely be dependent on expansion plans of SwedishAmerican.
- Additional outpatient facilities and 'medtail' spaces would likely locate along Charles and State Streets.
- The existing cluster of the SwedishAmerican hospital and supportive outpatient facilities in the northern portion of the Study Area may have the potential to be marketed as a 'medical district'.

INDUSTRIAL

- The industrial market within the County has seen a shift towards logistics, distribution, and warehouse developments which have primarily located on greenfield sites near the interstate system.
- While most industrial buildings within the Study Area are older manufacturing buildings, the Global Trade Park has the potential to attract industrial tenants by leveraging its access to various transportation networks.
- Older industrial buildings within the Study Area could be repurposed for alternative uses.

Assessing Specific Segment Needs

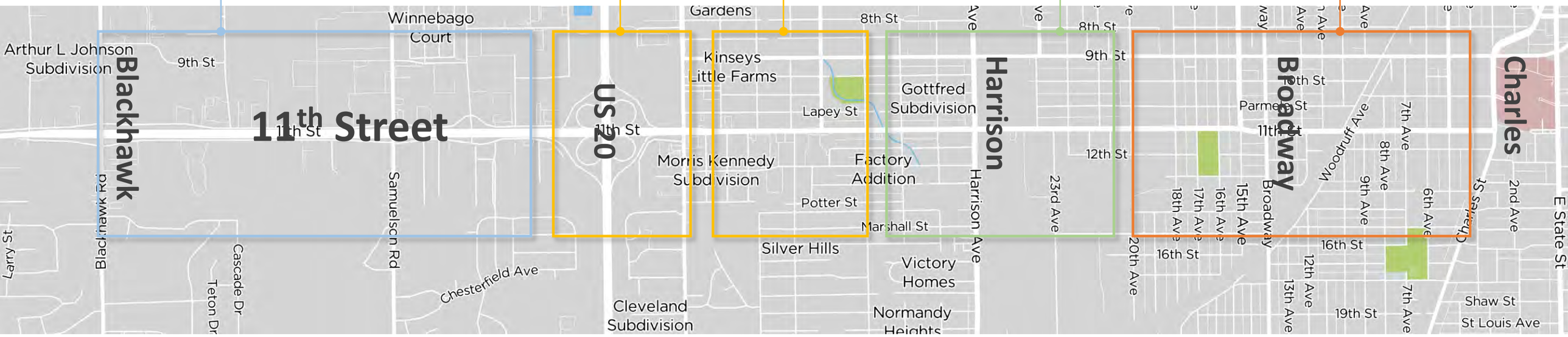
- Larger users
- Frontage roads change character of 11th Street
- Several failed businesses

- Not much regional draw
- Failed shopping center
- Many redevelopment opportunities

- Small commercial corridor
- Not much retail draw

- Residential/industrial mix is not working well
- Five-lane cross-section Better industrial land to the south

- Residential/ neighborhood focus
- Potential for road diet to allow ROW enhancement





Assessing Specific Segment Needs

- Residential/neighborhood focus
- Potential for road diet to allow ROW enhancement



Abraham Lincoln Middle School



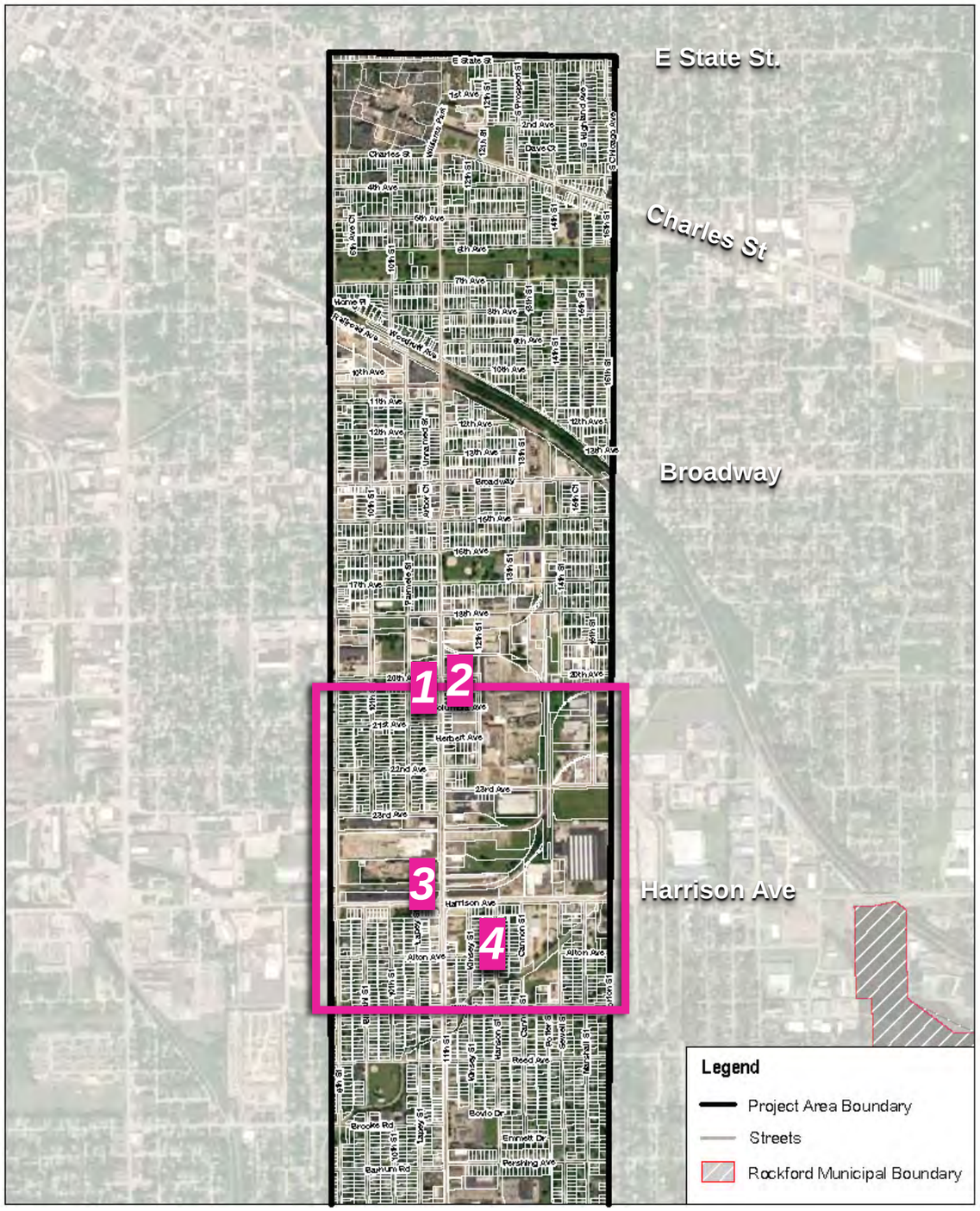
Keith Creek Open Space



Keye-Mallquist Park



Dilapidated Industrial Site



Assessing Specific Segment Needs

- Residential/industrial mix is not working well
- Five-lane cross section
- Better industrial land to the south



Poor quality streetscape



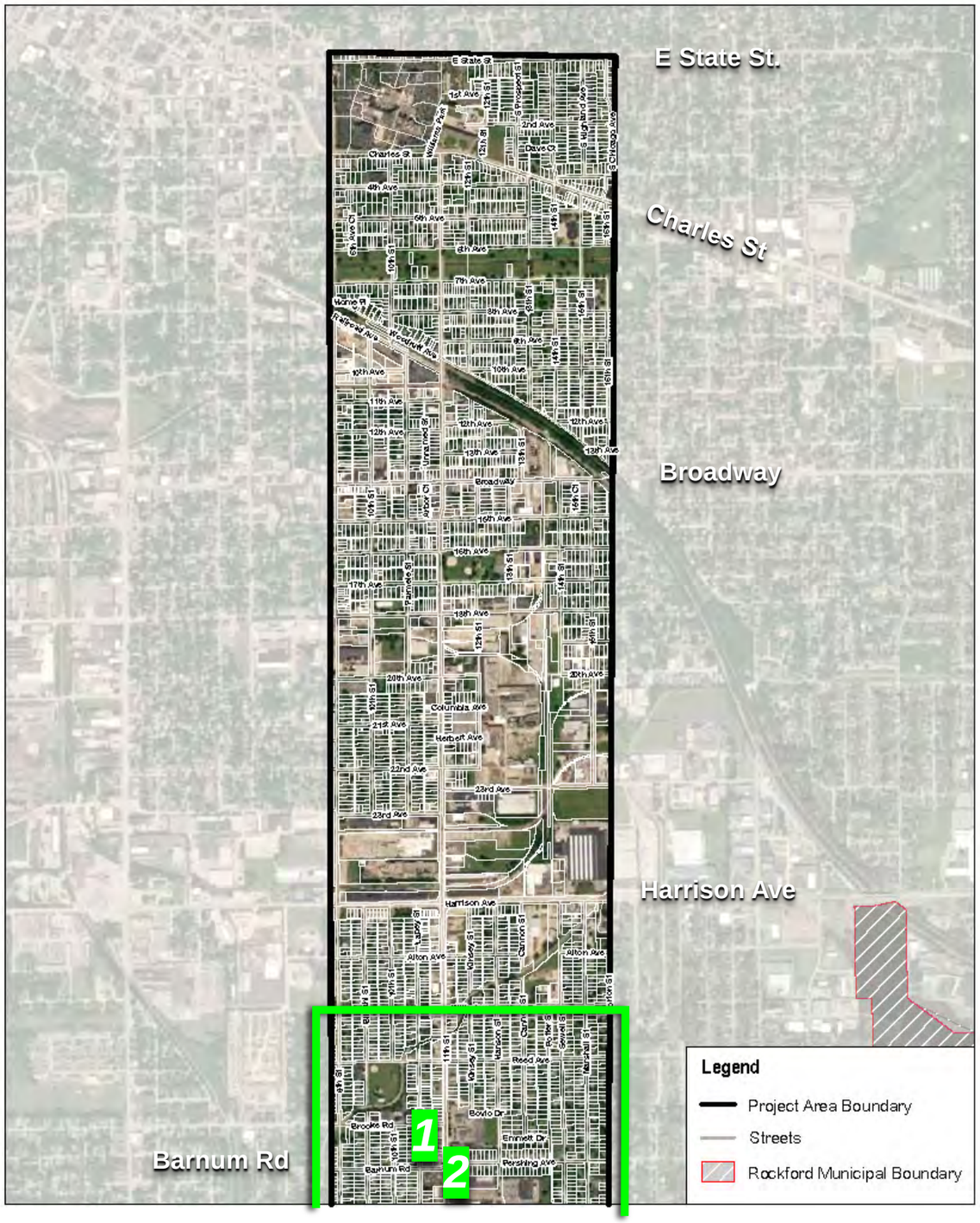
Motel in industrial area



Recently improved streetscape



Typical residential dwelling

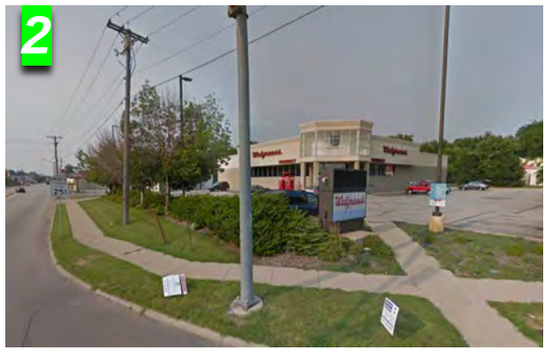


Assessing Specific Segment Needs

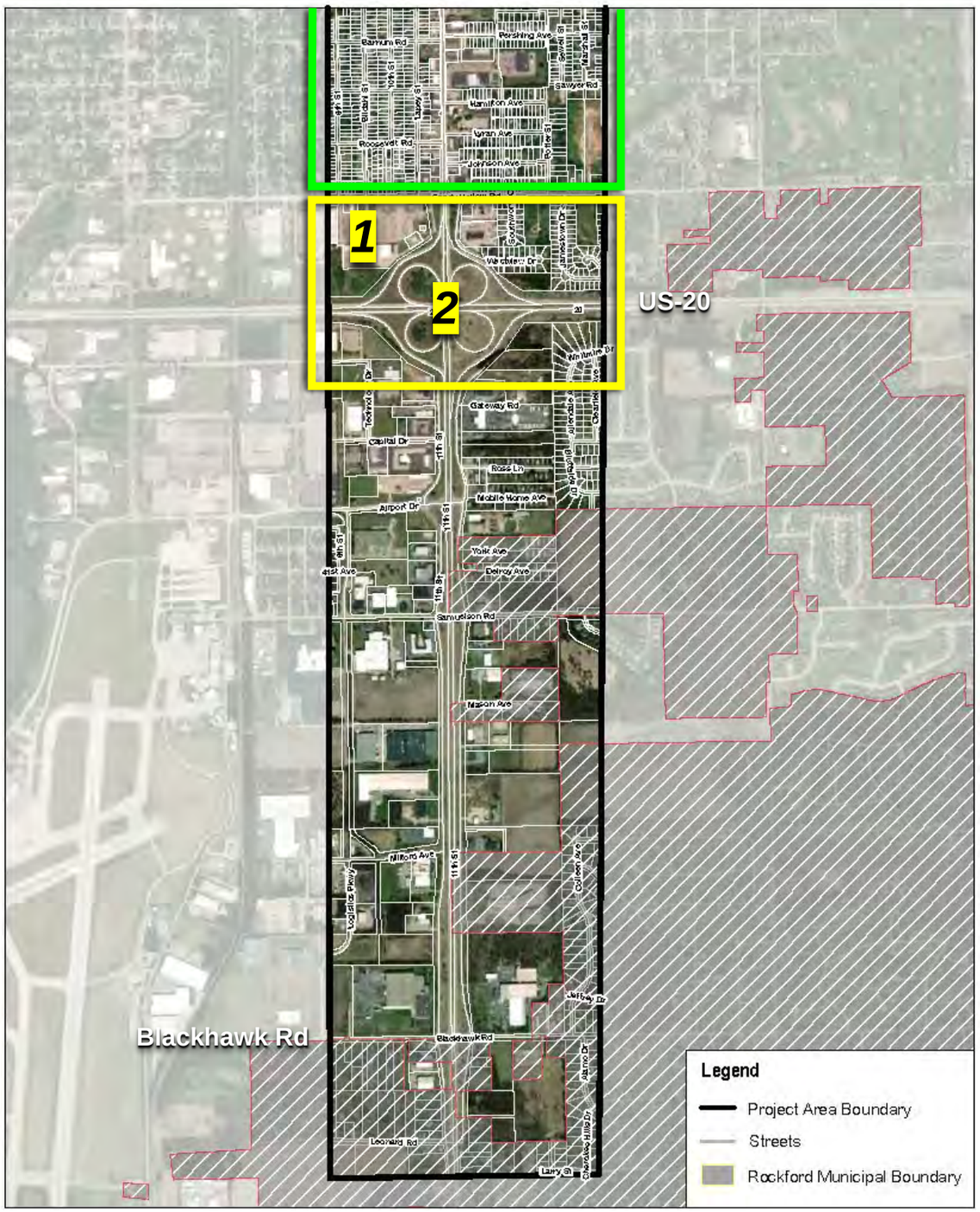
- Small commercial corridor
- Not much retail draw



Aging commercial building



Walgreens



Assessing Specific Segment Needs

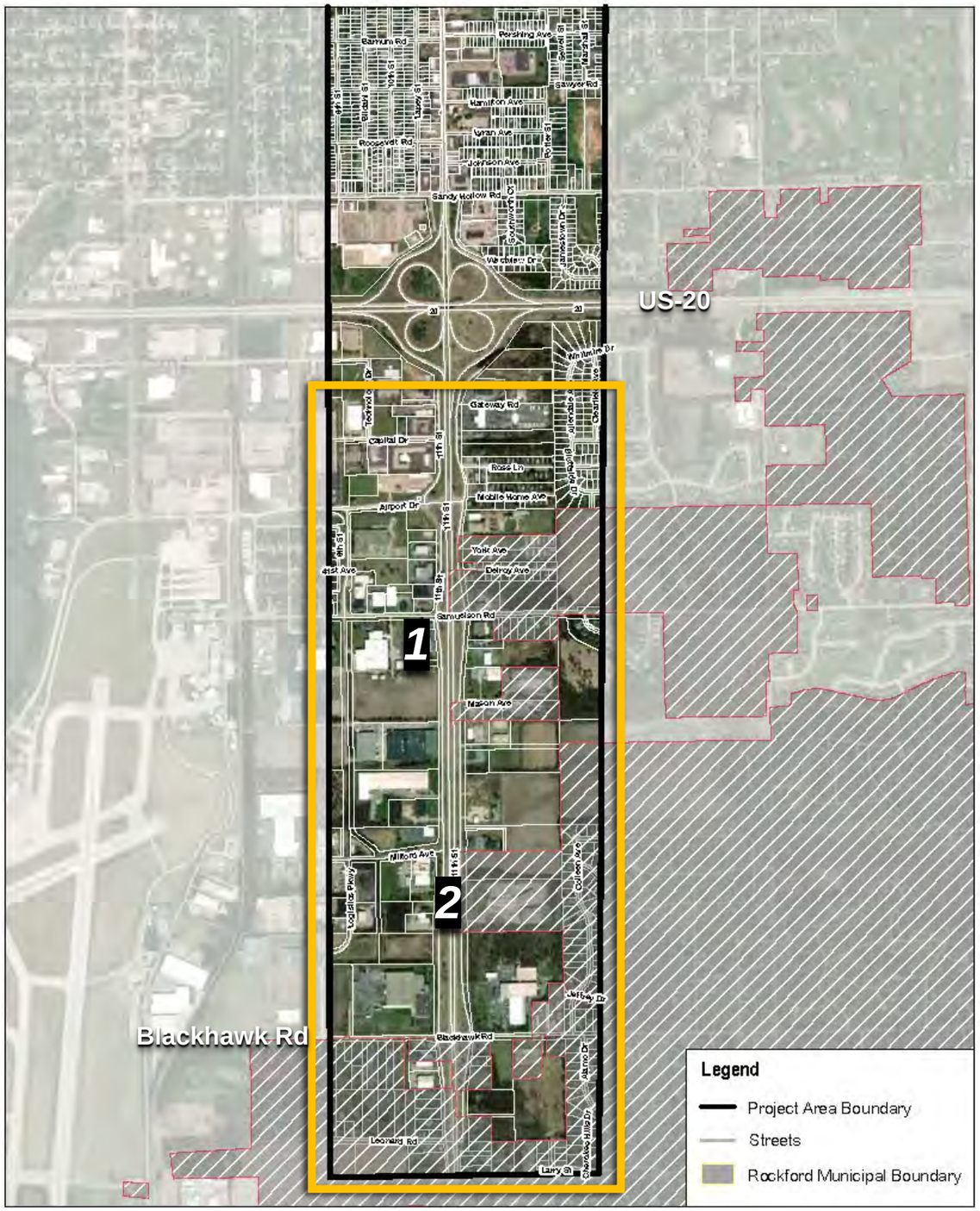
- Not much regional draw
- Failed shopping center
- Many redevelopment opportunities



Vacant shopping center



Highway Interchange



Assessing Specific Segment Needs

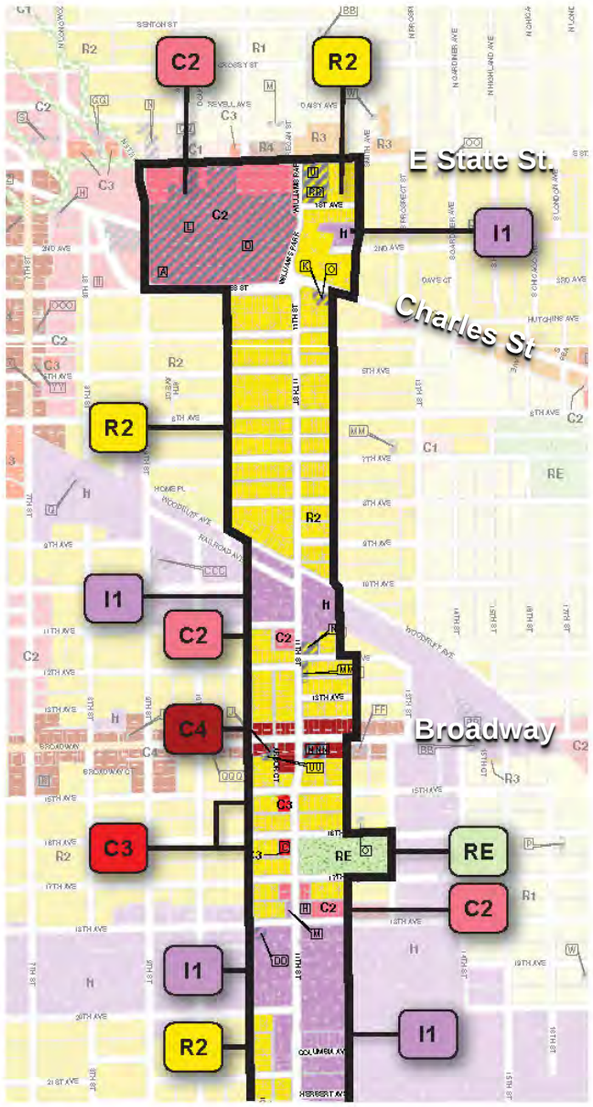
- Larger users
- Frontage roads change character of 11th Street
- Several failed businesses



The Airport Inn



Highway Conditions



Source: City of Rockford's Zoning Ordinance

Minimum Lot Width at Bldg Setback (Feet)

R2	80'
RE	125'
C2	-
C3	-
C4	-
I1	-

Maximum Building Height (Square Feet)

R2	35'
RE	35'
C2	50'
C3	No height limit; Maximum FAR of 4:1
C4	No height limit; Maximum FAR of 4:1
I1	45'

Front Setbacks (Feet)

R2	25 *
RE	25 *
C2	15**
C3	15**
C4	15**
I1	30'

**Buildings and structures in R districts must be set back from the front property line a distance equal to the average front yard depth that exists on the nearest 2 lots on either side of the subject lot...Where no average front setback exists, the front façade of a residential structure must be set back a minimum of 25 feet (20-005-E)*

***Parking area and lots must be set back a minimum of 20 feet from the property line adjacent to any public street. (21-005-D)*

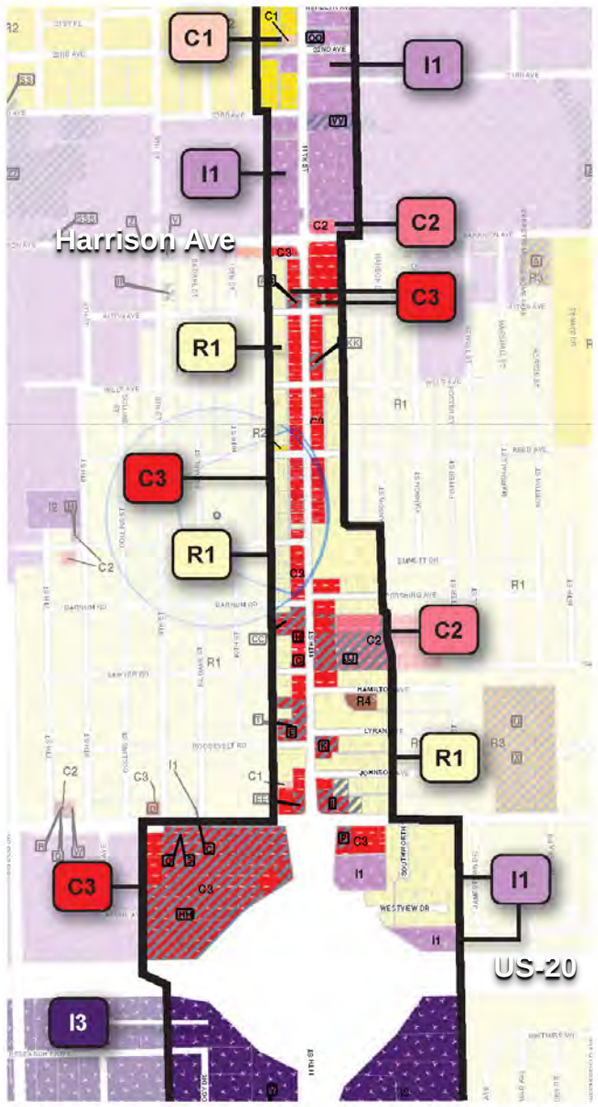
Front Parking Lot Setback (Feet)

R2	See Below
RE	See Below
C2	20'
C3	20'
C4	20'
I1	10'

Off-street parking is prohibited in a front setback for residential uses however a driveway needed to access parking is permitted within the required front yard. Off-street parking for nonresidential uses must be set back a minimum of 20 feet from the property line adjacent to any public street. (50-008-A)

Zoning Districts

- R2 - Two-Family Residential
- RE – Rural Estate
- C2 – Limited Commercial District
- C3 – General Commercial District
- C4 – Urban Mixed-Use District
- I1 – Light Industrial



Source: City of Rockford's Zoning Ordinance

Minimum Lot Width at Bldg Setback (Feet)

R1	70'
C1	-
C2	-
C3	-
I1	-
I3	-

Maximum Building Height (Square Feet)

R1	35'
C1	35'
C2	50'
C3	No height limit; Maximum FAR of 4:1
I1	45'
I1	75'

Front Setbacks (Feet)

R1	25 *
C1	15' **
C2	15' **
C3	15' **
I1	30'
I3	30'

**Buildings and structures in R districts must be set back from the front property line a distance equal to the average front yard depth that exists on the nearest 2 lots on either side of the subject lot...Where no average front setback exists, the front façade of a residential structure must be set back a minimum of 25 feet (20-005-E)*

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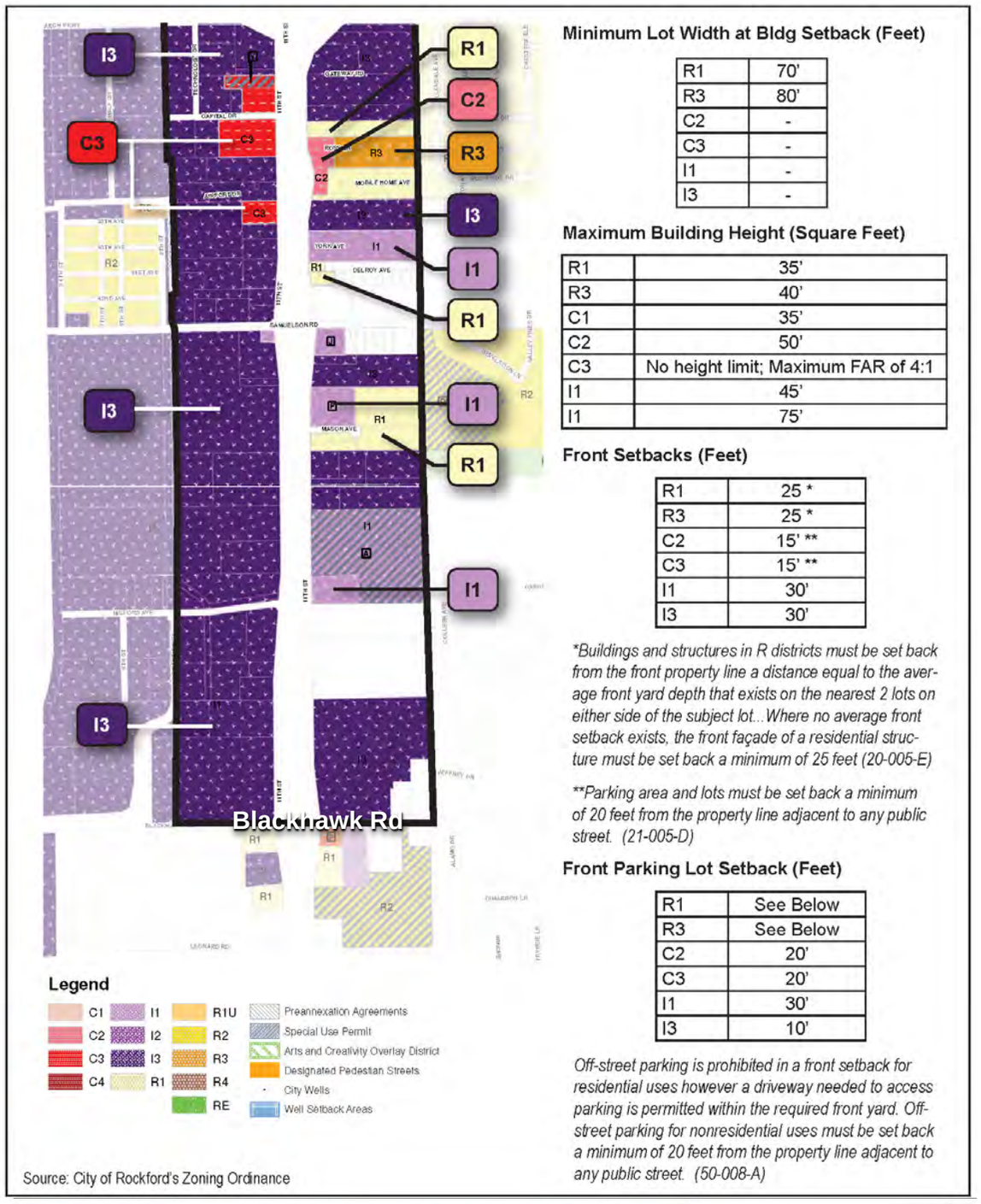
Front Parking Lot Setback (Feet)

R1	See Below
C1	20'
C2	20'
C3	20'
I1	30'
I3	10'

Off-street parking is prohibited in a front setback for residential uses however a driveway needed to access parking is permitted within the required front yard. Off-street parking for nonresidential uses must be set back a minimum of 20 feet from the property line adjacent to any public street. (50-008-A)

Zoning Districts

- R1 - Single-Family Residential
- C1 – Limited Commercial District
- C2 – General Commercial District
- C3 – Urban Mixed-Use District
- I1 – Light Industrial
- I3 – Airport Industrial District



Source: City of Rockford's Zoning Ordinance

Minimum Lot Width at Bldg Setback (Feet)

R1	70'
R3	80'
C2	-
C3	-
I1	-
I3	-

Maximum Building Height (Square Feet)

R1	35'
R3	40'
C1	35'
C2	50'
C3	No height limit; Maximum FAR of 4:1
I1	45'
I1	75'

Front Setbacks (Feet)

R1	25 *
R3	25 *
C2	15' **
C3	15' **
I1	30'
I3	30'

**Buildings and structures in R districts must be set back from the front property line a distance equal to the average front yard depth that exists on the nearest 2 lots on either side of the subject lot...Where no average front setback exists, the front façade of a residential structure must be set back a minimum of 25 feet (20-005-E)*

***Parking area and lots must be set back a minimum of 20 feet from the property line adjacent to any public street. (21-005-D)*

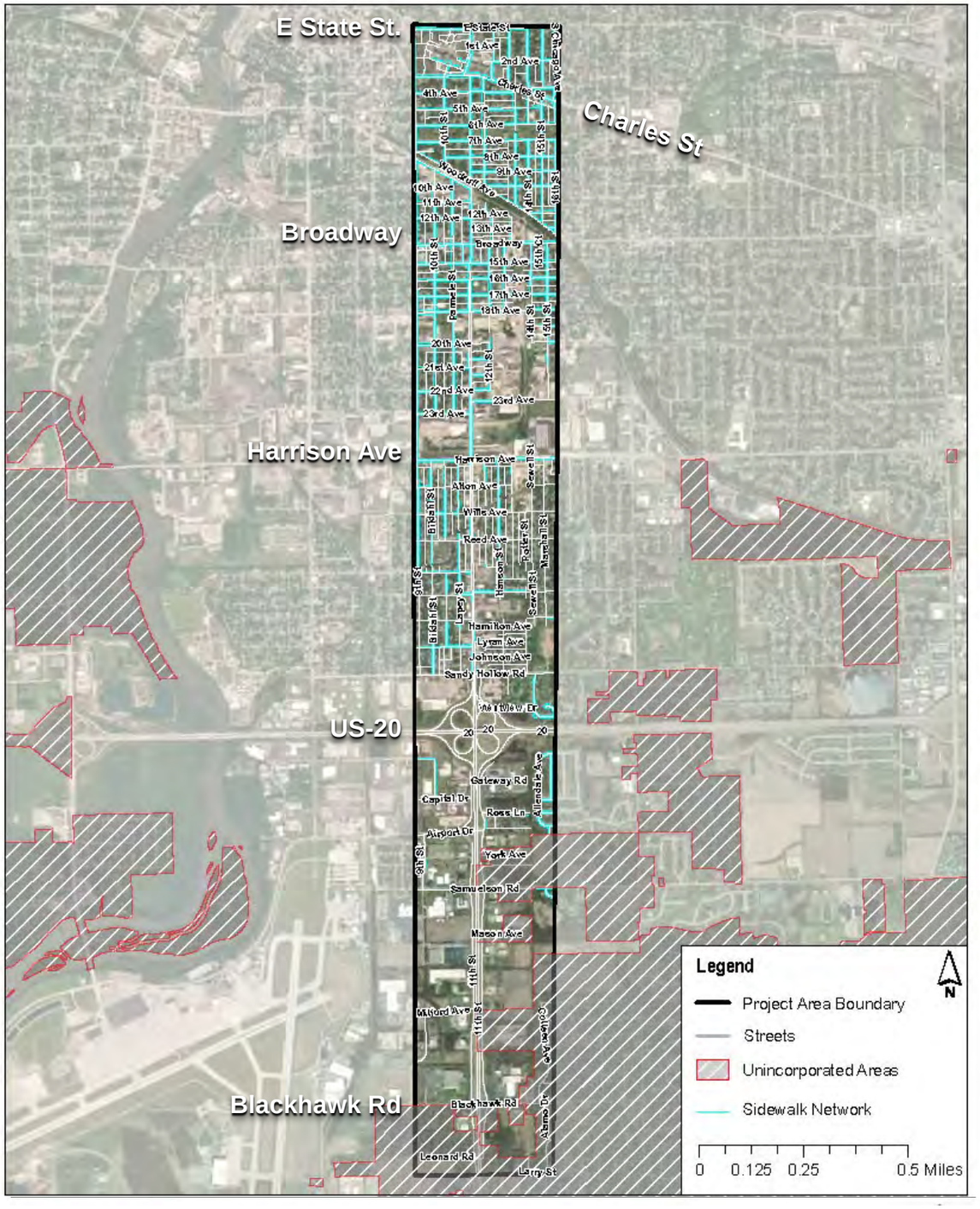
Front Parking Lot Setback (Feet)

R1	See Below
R3	See Below
C2	20'
C3	20'
I1	30'
I3	10'

Off-street parking is prohibited in a front setback for residential uses however a driveway needed to access parking is permitted within the required front yard. Off-street parking for nonresidential uses must be set back a minimum of 20 feet from the property line adjacent to any public street. (50-008-A)

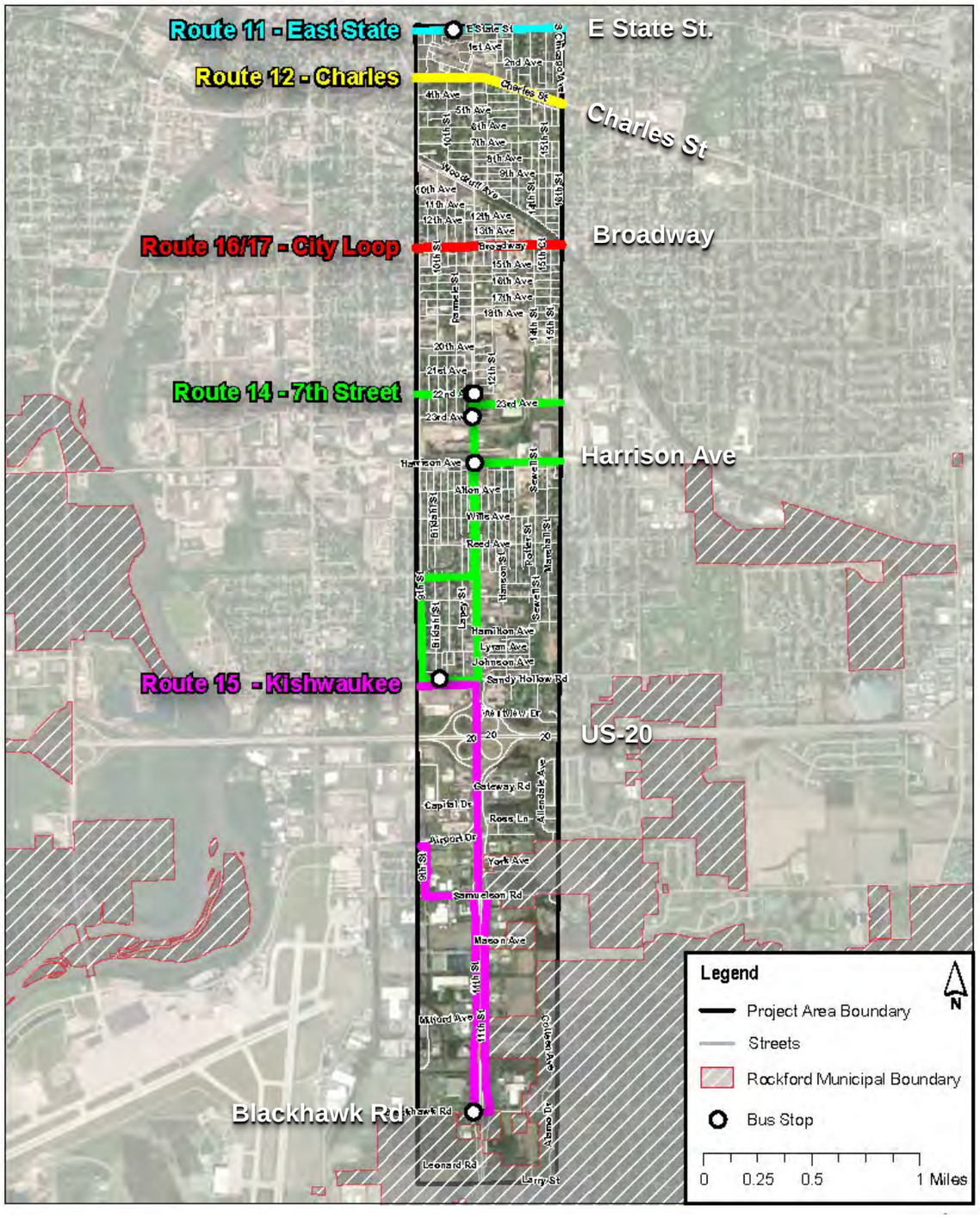
Zoning Districts

- R1 - Single-Family Residential
- C1 – Limited Commercial District
- C2 – General Commercial District
- C3 – Urban Mixed-Use District
- I1 – Light Industrial
- I3 – Airport Industrial District



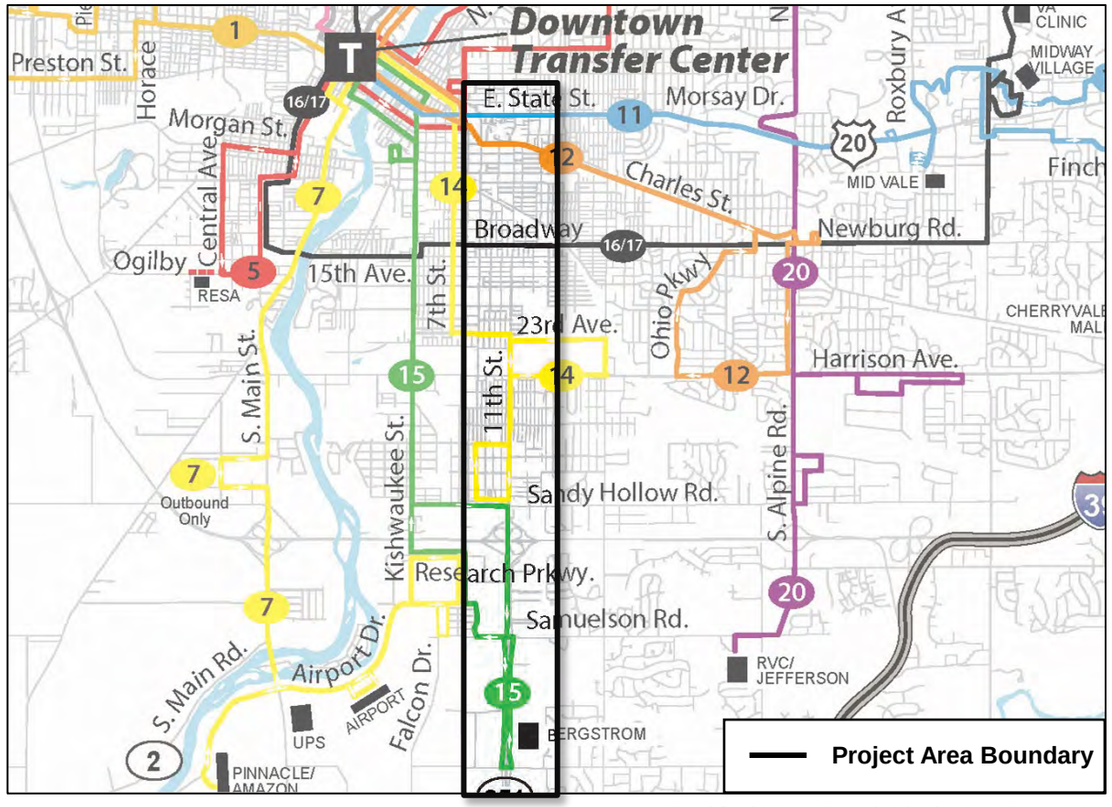
Sidewalk Network

- The northern half of the corridor is better connected than the southern half of the corridor.
- Matches existing residential/commercial development pattern.
- Where are the areas in greatest need?



Rockford Mass Transit District Bus Routes

- Five bus routes intersect with the 11th Street Corridor
- Only five total bus stops along the corridor



Rockford Mass Transit District Bus Route Map

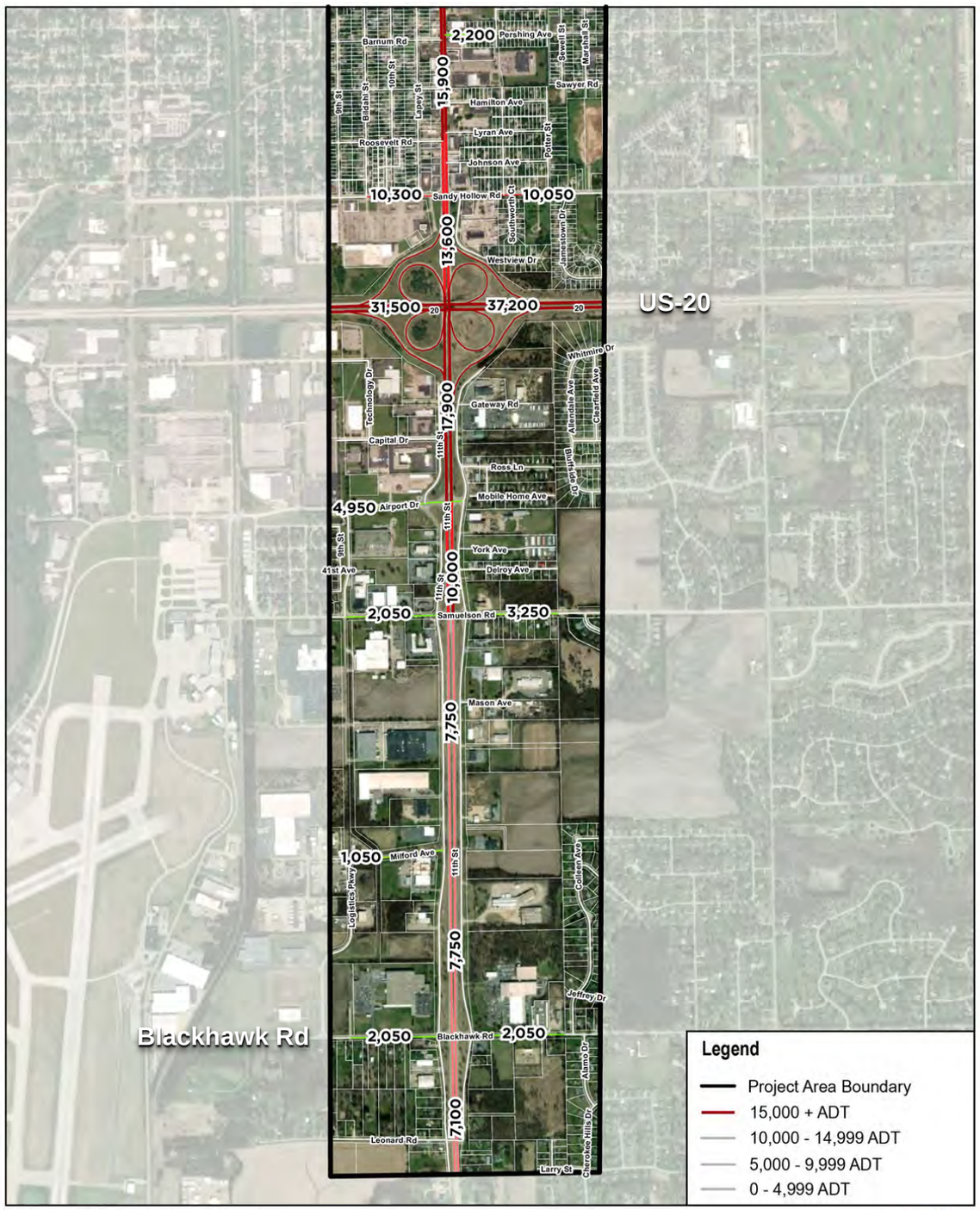


Average Daily Traffic - North
Existing Conditions Analysis 11th Street Corridor Plan | October 26, 2020

In Partnership with CMT, SB Friedman, American Surveying & Engineering

Average Daily Traffic Counts

- **9,000 - 12,800** in between Charles Street and Harrison Avenue
  - **19,500** along Charles Street
  - **13,000~** along Harrison Avenue
- **16,000~** south of Harrison Avenue

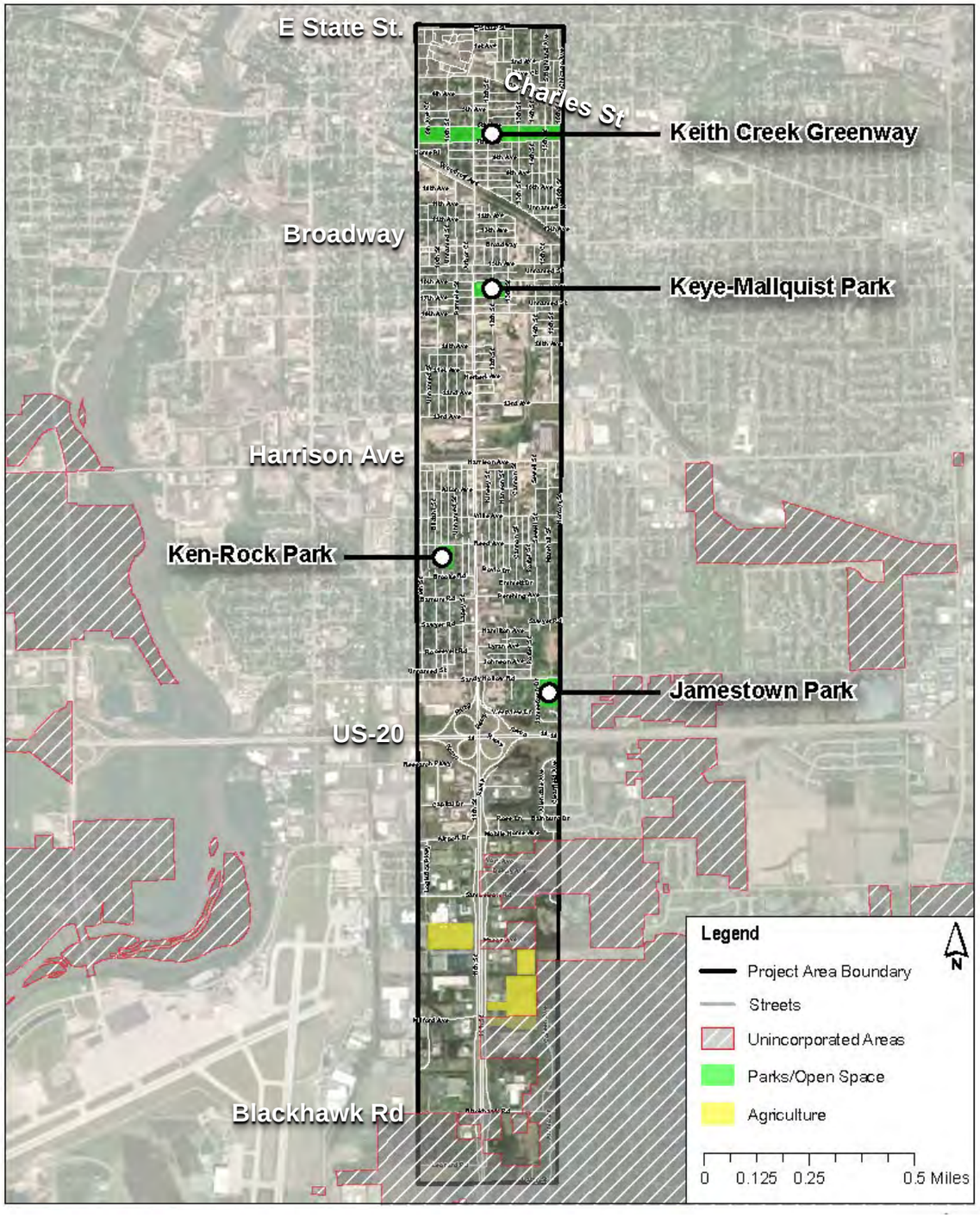


Average Daily Traffic South
Existing Conditions Analysis 11th Street Corridor Plan | October 26, 2020

camiros
In Partnership with CMT, SB Friedman, American Surveying & Engineering

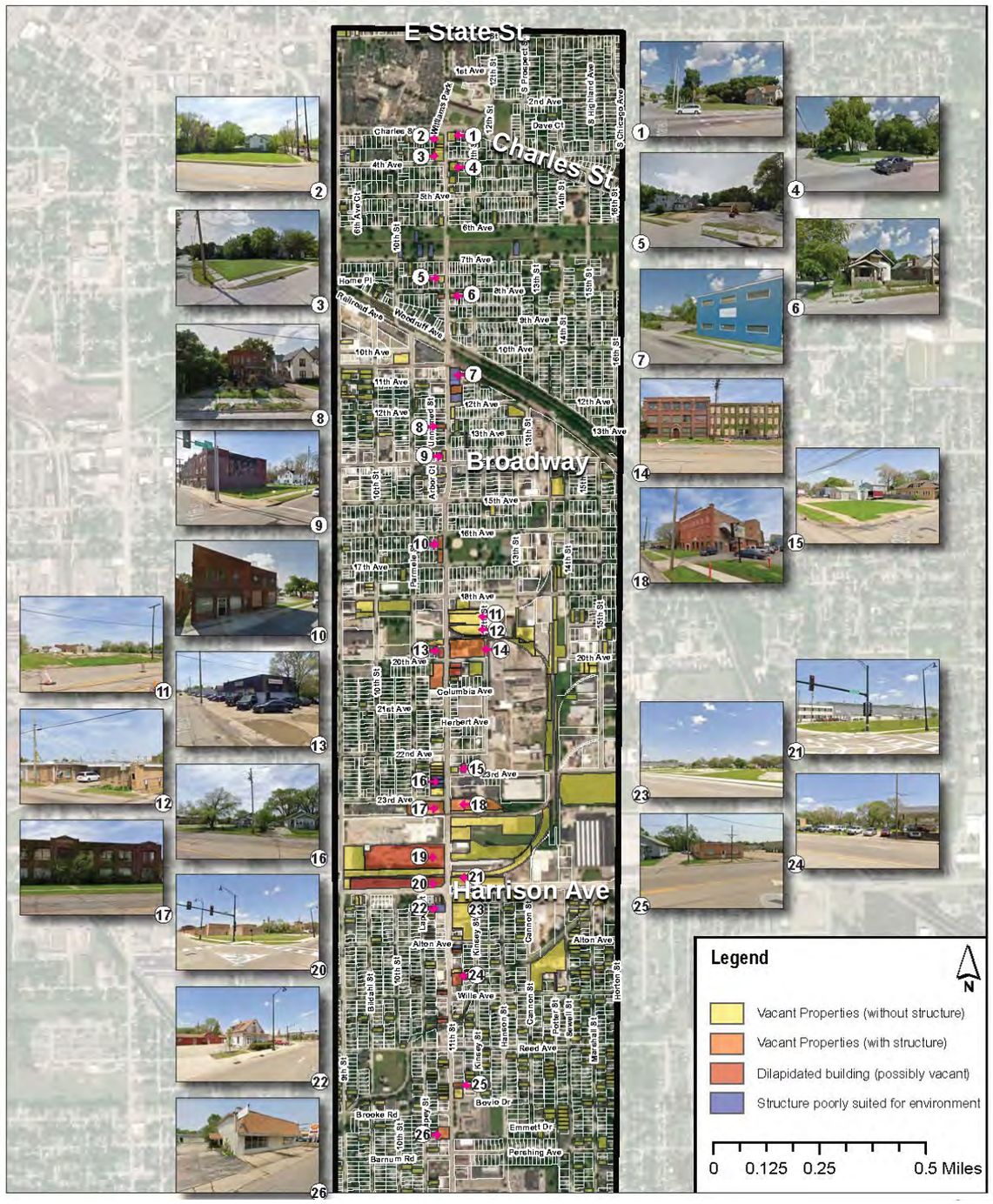
Average Daily Traffic Counts

- **13,600 - 16,000** north of Highway-20
- **31,500 - 37,200** along Highway-20
- **7,000 - 18,000** south of Highway-20



Parks & Open Space

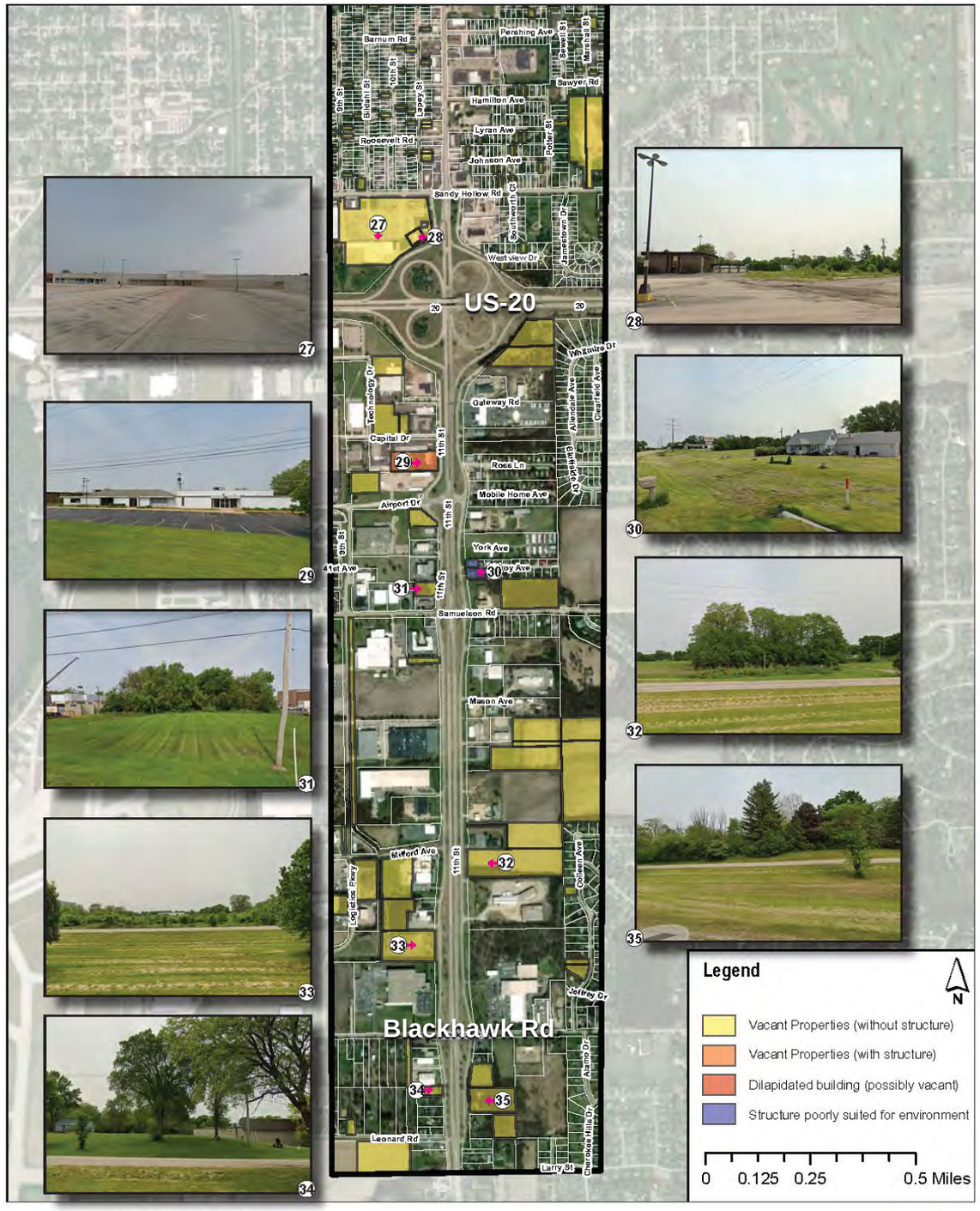
- **Four** parks and open spaces along or near the corridor
- **Agricultural** uses along the southern half of the corridor



Properties Subject to Change

Criteria included…

- Vacant properties (without a structure)
- Vacant properties (with a structure)
- Dilapidated buildings (possibly vacant)
- Structure poorly suited for environment



Properties Subject to Change - South
Existing Conditions Analysis 11th Street Corridor Plan | October 26, 2020

camiros
In Partnership with CMT, SB Friedman,

Properties Subject to Change

Criteria included…

- Vacant properties (without a structure)
- Vacant properties (with a structure)
- Dilapidated buildings (possibly vacant)
- Structure poorly suited for environment



11th Street Physical Improvements
(North of Harrison Street)

- Medians
- Parkway landscaping
- Corridor lighting
- Crosswalk improvements
- Bike lanes
- Placemaking elements such as public art, signage

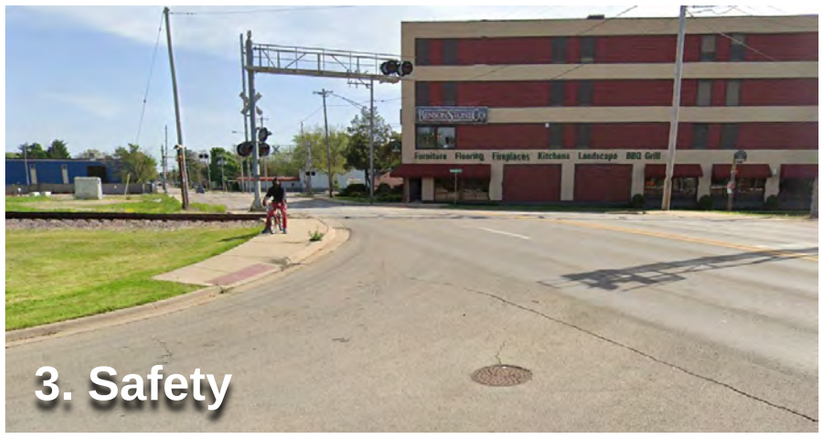


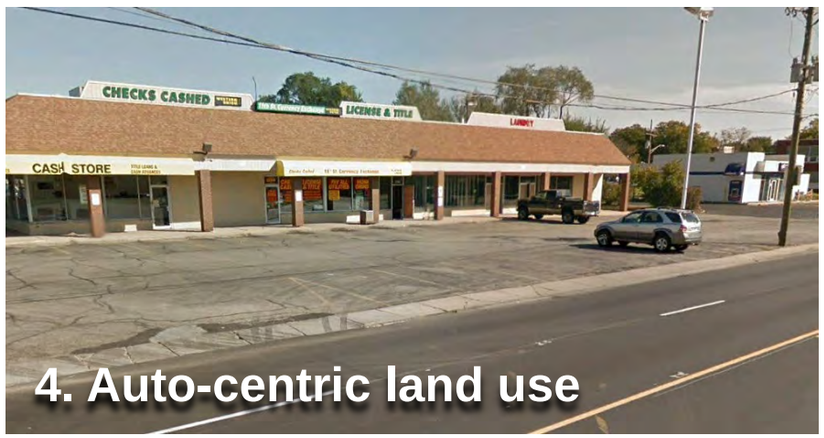


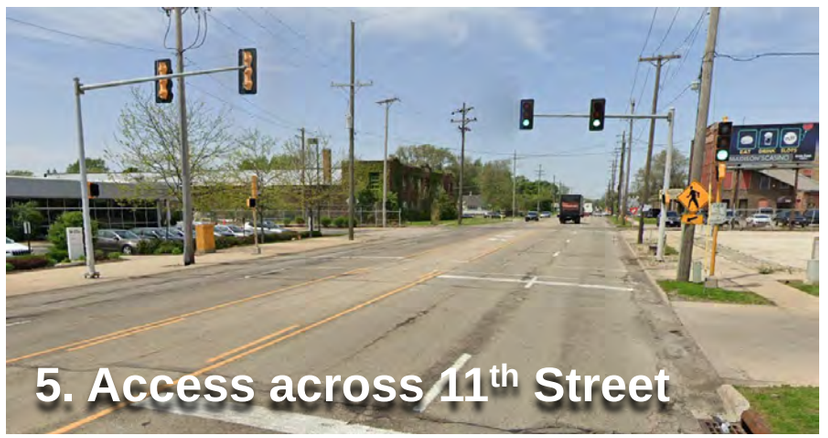
Existing Conditions













Improvement Toolbox

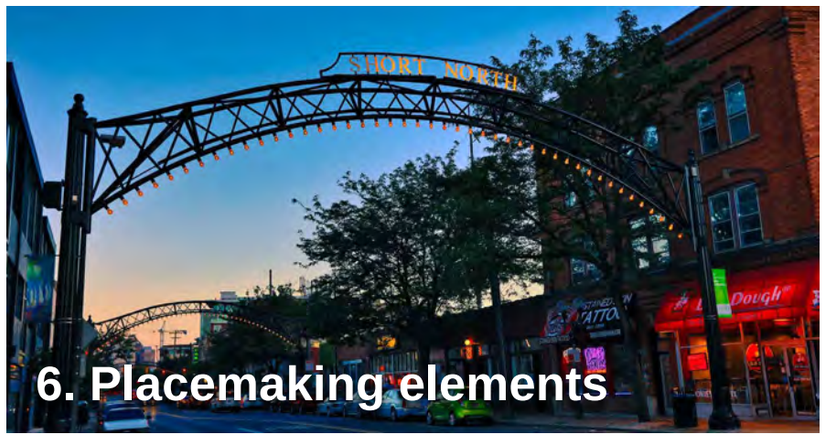








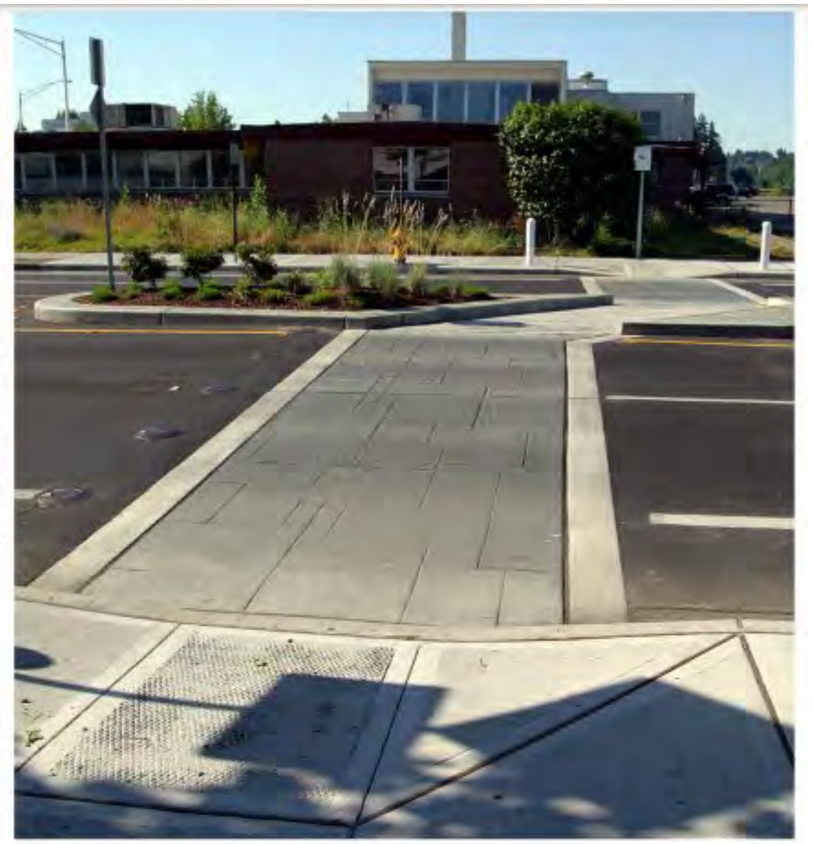




Medians









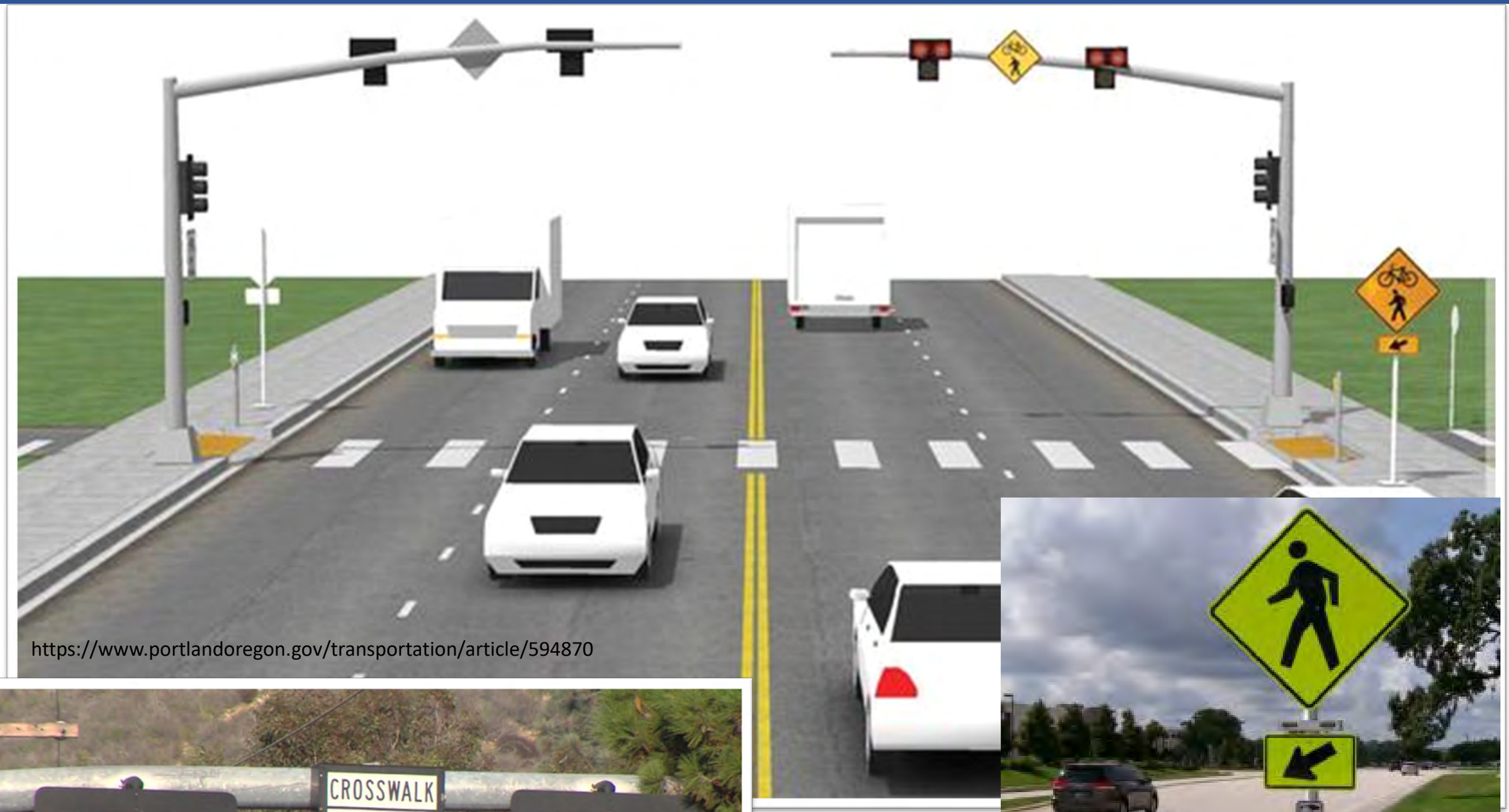




Lighting



Improved Crosswalks



https://www.portlandoregon.gov/transportation/article/594870





https://www.cityofirvine.org/transportation-department/pedestrian-hybrid-beacon

Pavement Improvements

Public Meeting #1



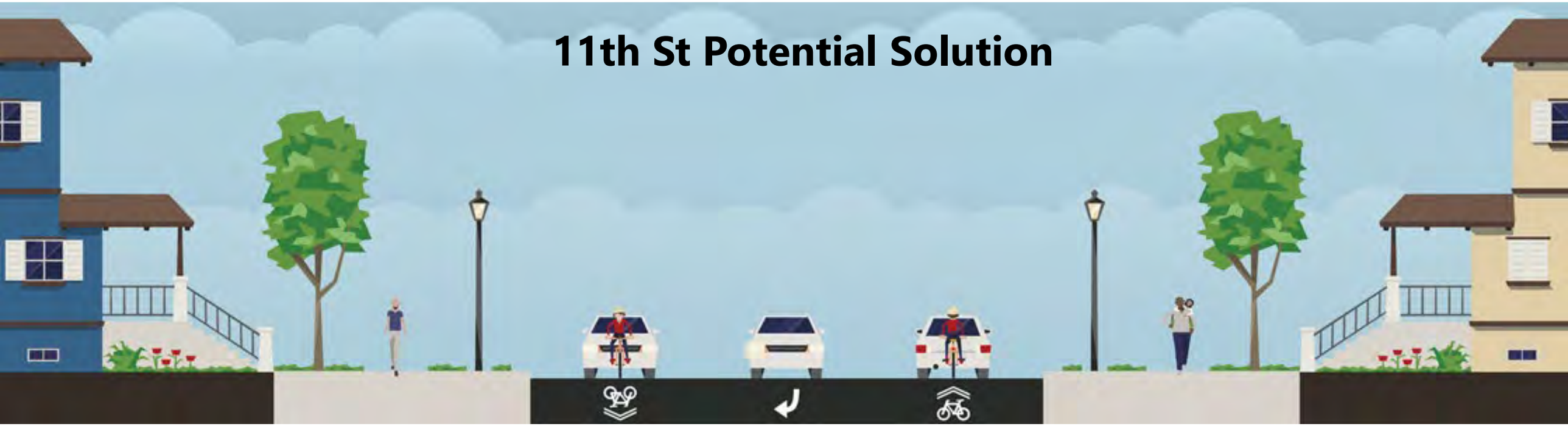
Recovering the Pedestrian Realm

Public Meeting #1

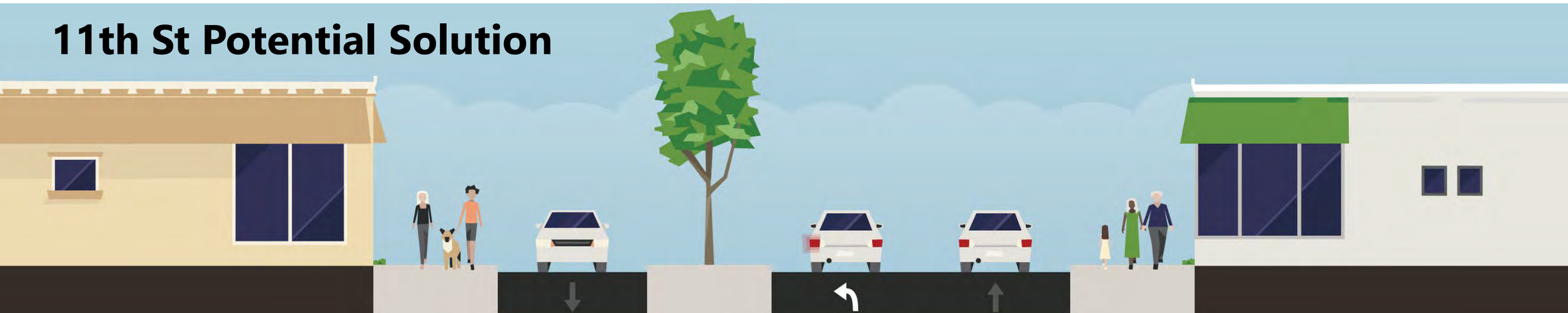
11th St Existing



11th St Potential Solution



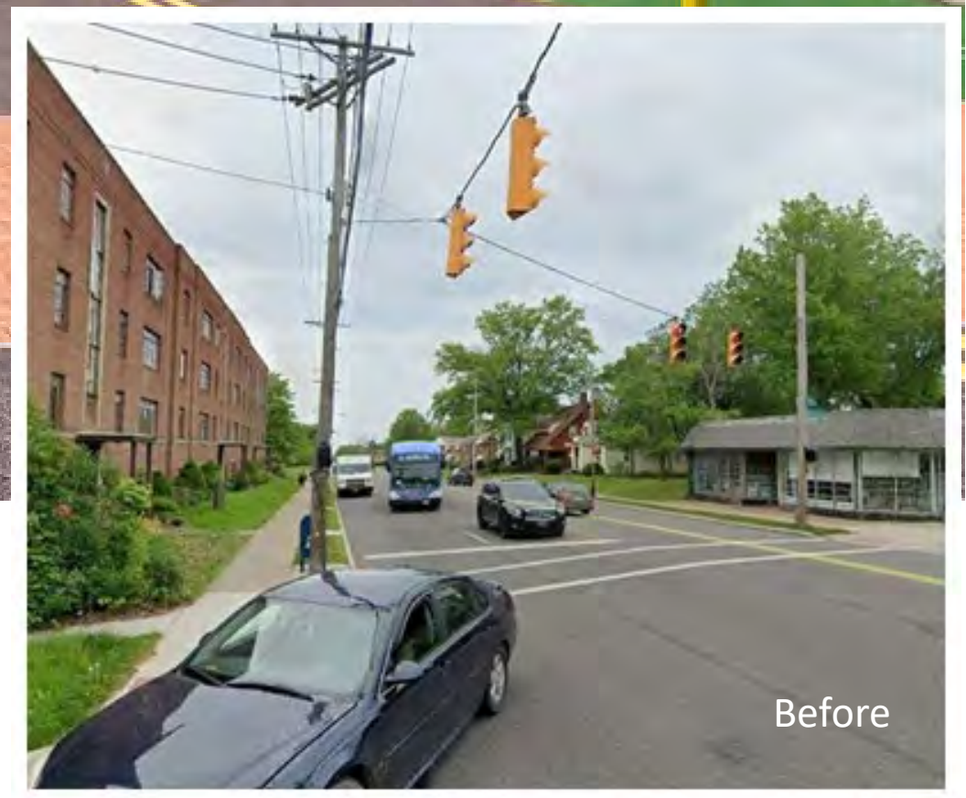
11th St Potential Solution



Cycling Accommodations

NOBLE ROAD

Cleveland Heights, OH



Before

Recovering the Pedestrian Realm & Beautification



WINTHROP AVE

Indianapolis, IN





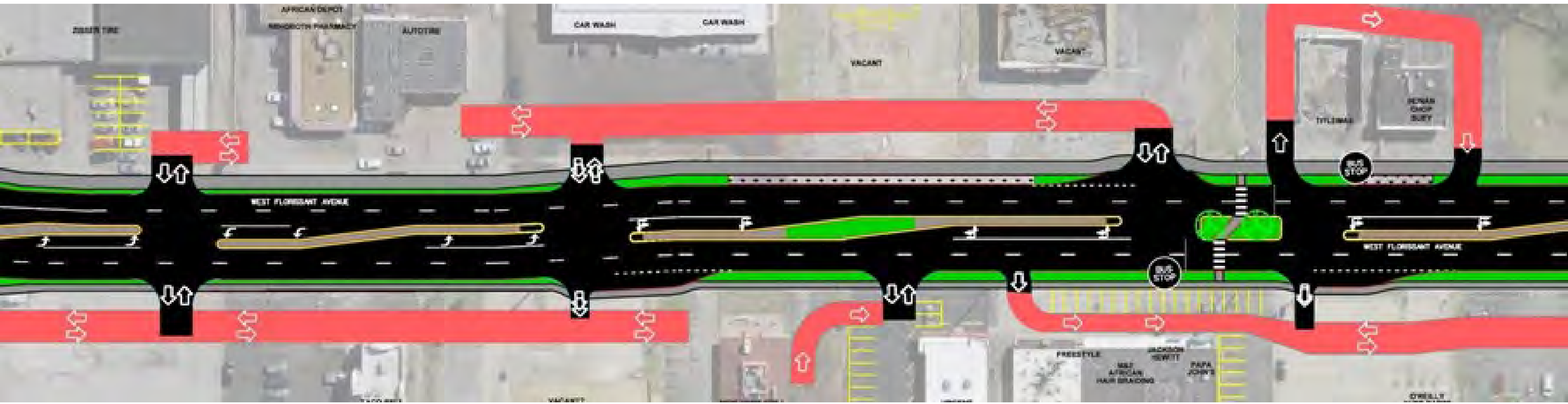
Consolidating Driveways/Access Management

West Florissant Avenue, St. Louis County, MO

BEFORE



AFTER



Intersection Improvements







Placemaking

Public Meeting #1



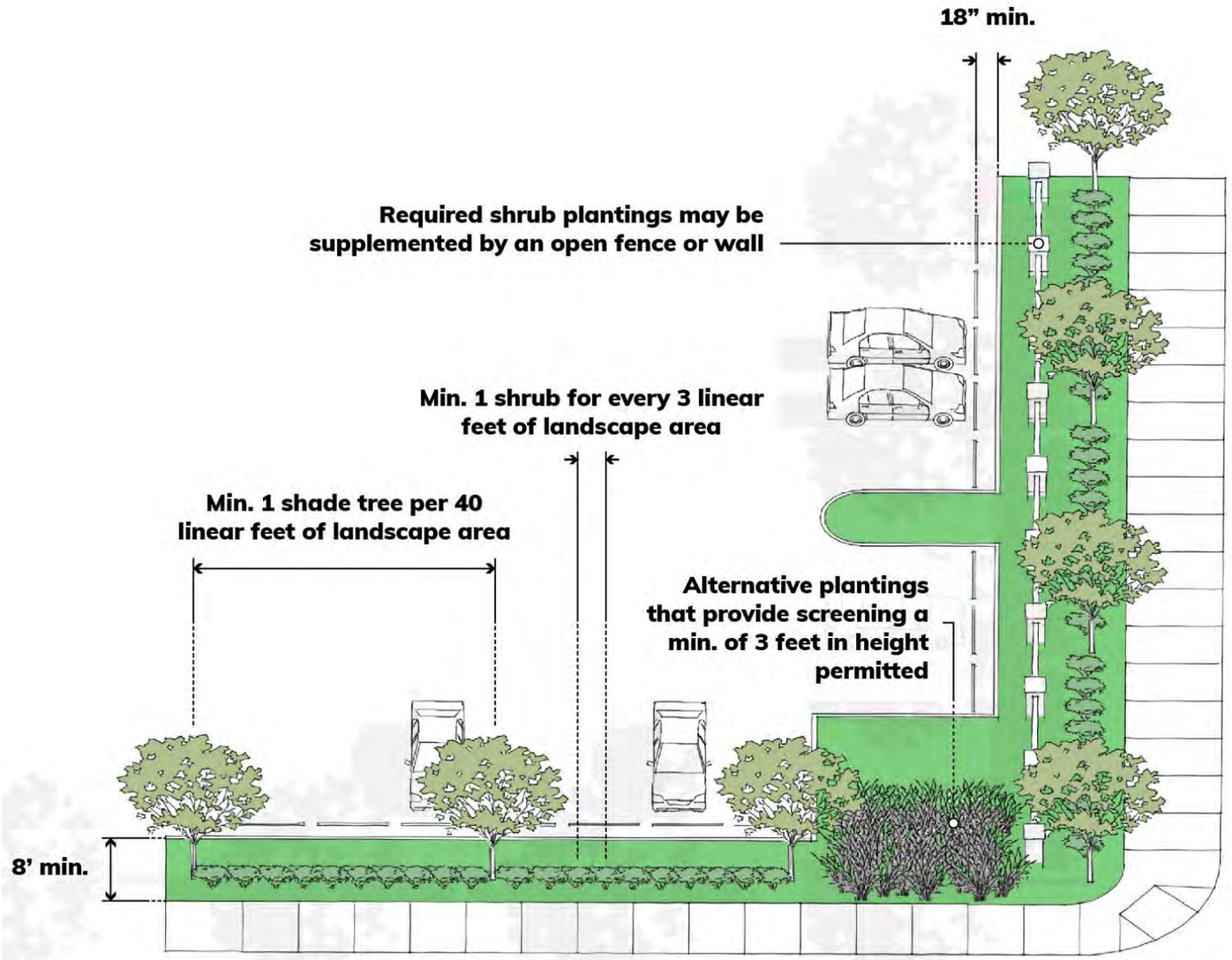






Outside the Right of Way – Perimeter Landscaping





Outside the Right of Way – Storefront Façade Improvements

IMPROVEMENTS ON PRIVATE PROPERTY

Storefront façade renovation funded by ***tax-increment financing*** or by ***Community Development Block Grant*** funds.





West Florissant Avenue, St. Louis County, MO
Image Courtesy of SWT Design

Prioritization of Improvements

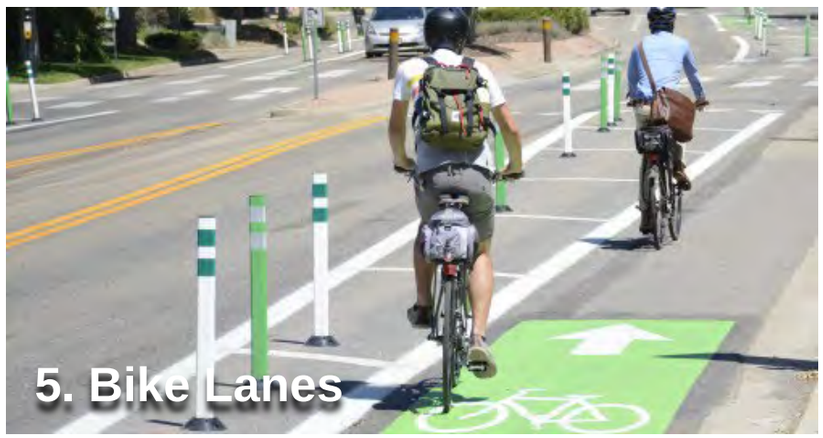
What type of physical improvements would you most like to see along 11th Street?

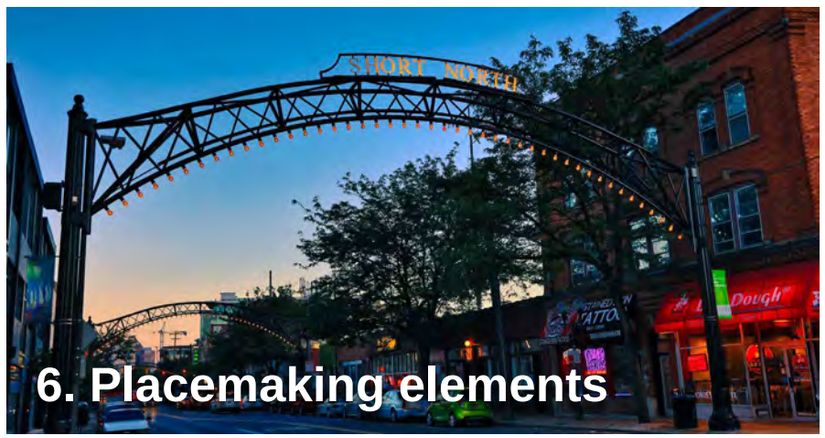












11th Street Corridor Study

In partnership with:

CMT

camiros

SBFRIEDMAN



Please type any comments or questions into the Q&A feature.

Thank you for attending today.

https://projectmeetingonline.com/11th-street-corridor-study/

11th Street Corridor Study - Public Meeting Survey

*** Which statement best defines how 11th Street relates to your neighborhood?**

- [ ] It is just a way to get to my neighborhood
- [ ] It is the major street that leads to my neighborhood and thus helps define the image/identity of my neighborhood
- [ ] The local businesses on 11th Street directly serve my neighborhood
- [ ] Other (please specify)

*** How important do you consider 11th Street to be to your neighborhood?**

Very Unimportant	Unimportant	Somewhat Unimportant	Neither Important or Unimportant	Somewhat Important	Important	Very Important	Not Sure
○	○	○	○	○	○	○	○

*** How important do you consider the following improvements for 11th Street?**

	Very Unimportant	Unimportant	Somewhat Unimportant	Neither Important or Unimportant	Somewhat Important	Important	Very Important	Not Sure
Reducing Traffic Congestion	○	○	○	○	○	○	○	○
Beautifying the street through streetscaping or additional green space	○	○	○	○	○	○	○	○
Improving connectivity for pedestrians and bicyclists	○	○	○	○	○	○	○	○
Attracting new and/or different businesses to 11th Street	○	○	○	○	○	○	○	○

Others (please specify)

THE CITY OF ROCKFORD ILLINOIS, USA

11th Street Corridor Study - Public Meeting Survey

*** Where are new east-west pedestrian crossings (crosswalks) needed? (select up to three)**

- ☐ North end at Keith Creek
- ☐ Between Broadway and the rail tracks
- ☐ At Keye-Mallquist Park
- ☐ At Brooke Rd/St. Edwards Church
- ☐ At Taco Bell/Schnucks
- ☐ At McDonalds
- ☐ At Samuelson Rd
- ☐ At Blackhawk Rd

*** What amenities would you like to see outside of the vehicular lanes? (select up to two)**

- ☐ Sidewalk or trail
- ☐ Grass and landscaping (trees, shrubs)
- ☐ Pedestrian lighting
- ☐ Benches and trash receptacles
- ☐ Bus shelters

11th Street Corridor Study - Public Meeting Survey

*** What layout do you prefer as a pedestrian?**

- ○ Sidewalk adjacent to curb and vehicular lane
- ○ Sidewalk separated from curb and vehicular lane with grass
- ○ Wide sidewalk

*** What layout do you prefer as a cyclist?**

- ○ On-street shared lanes with vehicles
- ○ On-street bike lanes
- ○ Multi-use path separated from curb and vehicular lane
- ○ Multi-use path adjacent to curb and vehicular lane

THE CITY OF ROCKFORD ILLINOIS, USA

11th Street Corridor Study - Public Meeting Survey

*** Do you feel that 11th Street is generally safe from crime?**

- ○ Yes
- ○ No
- ○ Not Sure

*** If 11th Street were improved with a continuous 10-foot-wide walking/biking path, would you walk or bike along the corridor more frequently?**

- ○ Yes
- ○ No
- ○ Not Sure

THE CITY OF ROCKFORD ILLINOIS, USA

11th Street Corridor Study - Public Meeting Survey

*** Which statement best describes your current shopping habits along 11th Street?**

- ○ I shop along 11th Street **a few times a week**
- ○ I shop along 11th Street **about once a week**
- ○ I shop along 11th Street **a few times a month**
- ○ I shop along 11th Street **once a month**
- ○ I shop along 11th Street **less than once a month**
- ○ I shop along 11th Street **a few times per year**
- ○ I shop along 11th Street **once a year or less**
- ○ I **never** shop along 11th Street

How likely would you be to shop along 11th Street more often if new or different businesses came in?

Very Unlikely	Unlikely	Somewhat Unlikely	Neither Likely or Unlikely	Somewhat Likely	Likely	Very Likely	Not Sure
○	○	○	○	○	○	○	○

11th Street Corridor Study – Q&A from Public Meeting

What is meant by complete streets?

➔ "Complete Streets" is a policy the City adopted to ensure we consider ALL modes of transportation (buses, pedestrians, bicycles, etc) when doing a road project.

How well do the businesses keep their walks clear of snow and free of tall grass?

➔ City will be aware of types of improvements proposed in front of someone's business. Codes are in place to enforce owners to keep up their areas within the right of way. When the city invests in an area, owners tend to better their maintenance. Another option is multi use paths that are maintained by city. The City should set an example on the corridor to better the condition.

Is there any consideration to having consistency with other areas of the city as in matching verses hodgepodge all over city?

➔ There is an effort to do that. The arterial lighting from Harrison Ave. is the same on Main St. and State St. The design team understands the existing streetscape and will look to match that. However, there are certain elements that 11th street could have on its own design to make it unique. We are considering everything.

Are all of the railroads utilized?

➔ We are looking into how well the railroads are being utilized and taking it into consideration. The parallel tracks on 11th street are being looked at being consolidated into one track in the long-term.

What did your survey indicate was the bike traffic?

➔ The number of bikes is not always counted, and infrastructure does not support it. All historical data on it is before COVID-19 and with the low traffic volume no counts have be done recently. We have tapped into some third-party websites and see that people are choosing not to use 11th street for bike needs. We will look at the survey to see what community desire is for bike lanes.

Based on your passed experience, what has been the impact of emergency services with the various plans?

➔ When the plan is created it will be ran by emergency services and city services to ensure it doesn't disrupt their response times.

After talking about the lack of residential growth in the past and projected into the future they talked about creating more residential. What is the logic of that?

➔ We will look at supporting pedestrian movement throughout the corridor. Thanks for pointing out the pedestrian activity at Harrison. It is on our radar and Andrew has pointed this out in his presentation. We will look for resident input on potential improvements.

➔ Will look at making the corridor an amenity for the people that live there and more attractive so people will want to stay. The corridor will be difficult to sustain without the potential residential investment it would bring.

There is heavy pedestrian usage both at the northern end (around Lincoln) as well as between Harrison and the bypass. Not much was said about that (though I may have missed it).

➔ Question and commet to be put into survey.

I'm really interested to know if the city could/would take a look at snow removal strategy. Shoveling gets buried by trucks currently.

➔ The design will look to use a modern design to create a buffer between road and sidewalk and create a terrace area. If there is space it will be proposed. Also allows pedestrians to be separate from the roadway. It could have multiple solutions in different segments for commercial and residential. We are looking to keep this within the existing right of way constraints. We are not looking to take out many houses but possibly realign some intersections.

Will there be studies of other areas in the city that may address commercial and tourism closer to downtown in 2021?

➔ Follow-up wanted: extend.mpg.now@gmail.com

My concern is mostly 251 south of Bypass 20. I often exit the Bypass from the West going southbound on to 251. It's so often people are walking in the dark and appear to come from nowhere. Additionally, the bus stop is almost in the lane of 251. Snowplows typically plow forcing people awaiting the bus into moving traffic. There is no escape for the pedestrian nor the driver by them time an unexpected person is in the street. Lights, off-street bus waiting, bike lanes and well painted lit painted lines would help considerably.

➔ Thank you for your comments. There will be a survey at the end of the presentation so that improvements can be ranked. We appreciate this information provided.

Would those residential be mixed use buildings?

➔ We would look at what services would support that kind of development. If we have a good public transit and bike infrastructure that would facilitate residents to easily go to stores that are close by or live above retail development.

Funding for community centers? Ken Rock?

➔ Could look at potential grant opportunities.

It seems like 5 million is not much money. How can we get a sense of how far that will go?

➔ Not sure what improvements the city will prioritize until the study is completed, but the city is committed to improving the corridor.

Will there be any crime reduction programs as well?

➔ It will not be directly addressed but some of the proposed improvements can help positively impact the problem. We also look into CPTED (Crime Prevention Through Environment Design) when putting together plans.

Public Meeting #1

Respondent ID	Collector ID	Start Date	End Date
12224539704	397341345	2020-12-03 10:56:33	2020-12-03 11:06:16
12223833966	397341345	2020-12-03 07:48:41	2020-12-03 08:08:20
12223676463	397340743	2020-12-03 07:00:41	2020-12-03 07:13:30
12222336110	397341345	2020-12-02 19:34:28	2020-12-02 19:44:53
12222327970	397340743	2020-12-02 19:30:44	2020-12-02 19:40:15
12222313152	397340743	2020-12-02 19:22:43	2020-12-02 20:13:05
12222288526	397340743	2020-12-02 19:12:24	2020-12-02 19:13:16
12222287298	397340743	2020-12-02 19:11:49	2020-12-02 19:15:05
12222268821	397340743	2020-12-02 19:03:48	2020-12-02 19:09:04

Public Meeting #1

Which statement best defines how 11th Street relates to your neighborhood?
It is just a way to get to my neighborhood
It is just a way to get to my neighborhood
It is just a way to get to my neighborhood

It is the major street that leads to my neighborhood and thus helps define the image/identity of my neighborhood
It is the major street that leads to my neighborhood and thus helps define the image/identity of my neighborhood
It is the major street that leads to my neighborhood and thus helps define the image/identity of my neighborhood
It is the major street that leads to my neighborhood and thus helps define the image/identity of my neighborhood
It is the major street that leads to my neighborhood and thus helps define the image/identity of my neighborhood

The local businesses on 11th Street directly serve my neighborhood
The local businesses on 11th Street directly serve my neighborhood
The local businesses on 11th Street directly serve my neighborhood
The local businesses on 11th Street directly serve my neighborhood
The local businesses on 11th Street directly serve my neighborhood

Other (please specify)
11th Street is not in my neighborhood, but I utilize it regularly as the primary north/south route in to and out of the City
We would use a bike path to visit some of our favorite restaurants and friends along 11th St
it does not relate to my neighborhood
provides access to Atwood Park

Public Meeting #1

How important do you consider 11th Street to be to your neighborhood?		
- Not Sure	- Very Unimportant	- Unimportant
	Very Unimportant	

Public Meeting #1

- Somewhat Unimportant	- Neither Important or Unimportant	- Somewhat Important	- Important	- Very Important
			Important	
				Very Important
				Very Important
		Somewhat Important		
				Very Important
				Very Important
	Neither Important or Unimportant			
			Important	

How important do you consider the following improvements for 11th Street?	
Reducing Traffic Congestion - Very Unimportant	Reducing Traffic Congestion - Unimportant
	Unimportant
Very Unimportant	
	Unimportant
Very Unimportant	

Reducing Traffic Congestion - Somewhat Unimportant	Reducing Traffic Congestion - Neither Important or Unimportant
Somewhat Unimportant	

Reducing Traffic Congestion - Somewhat Important	Reducing Traffic Congestion - Important
	Important
Somewhat Important	

Reducing Traffic Congestion - Very Important	Reducing Traffic Congestion - Not Sure
Very Important	
Very Important	

Beautifying the street through streetscaping or additional green space - Very Unimportant
Very Unimportant

Beautifying the street through streetscaping or additional green space - Unimportant

Beautifying the street through streetscaping or additional green space - Somewhat Unimportant

Beautifying the street through streetscaping or additional green space - Neither Important or Unimportant

Beautifying the street through streetscaping or additional green space - Somewhat Important
Somewhat Important
Somewhat Important

Beautifying the street through streetscaping or additional green space - Important
Important
Important
Important

Beautifying the street through streetscaping or additional green space - Very Important
Very Important
Very Important
Very Important

Beautifying the street through streetscaping or additional green space - Not Sure

Improving connectivity for pedestrians and bicyclists - Very Unimportant
Very Unimportant

Improving connectivity for pedestrians and bicyclists - Unimportant

Improving connectivity for pedestrians and bicyclists - Somewhat Unimportant

Improving connectivity for pedestrians and bicyclists - Neither Important or Unimportant

Improving connectivity for pedestrians and bicyclists - Somewhat Important
Somewhat Important

Improving connectivity for pedestrians and bicyclists - Important

Improving connectivity for pedestrians and bicyclists - Very Important
Very Important
Very Important
Very Important
Very Important
Very Important
Very Important
Very Important

Improving connectivity for pedestrians and bicyclists - Not Sure

Attracting new and/or different businesses to 11th Street - Very Unimportant
Very Unimportant

Attracting new and/or different businesses to 11th Street - Unimportant

Attracting new and/or different businesses to 11th Street - Somewhat Unimportant

Attracting new and/or different businesses to 11th Street - Neither Important or Unimportant

Attracting new and/or different businesses to 11th Street - Somewhat Important
Somewhat Important

Public Meeting #1

Attracting new and/or different businesses to 11th Street - Important
Important
Important
Important

Attracting new and/or different businesses to 11th Street - Very Important
Very Important
Very Important
Very Important
Very Important

Attracting new and/or different businesses to 11th Street - Not Sure

Repairing the current roadway pavement - Very Unimportant	Repairing the current roadway pavement - Unimportant
Very Unimportant	

Repairing the current roadway pavement - Somewhat Unimportant

Repairing the current roadway pavement - Neither Important or Unimportant
Neither Important or Unimportant

Repairing the current roadway pavement - Somewhat Important	Repairing the current roadway pavement - Important
	Important
	Important

Repairing the current roadway pavement - Very Important	Repairing the current roadway pavement - Not Sure
Very Important	
Very Important	
Very Important	
Very Important	
Very Important	

Others (please specify)
*Beautify while maintaining the feel of an urban corridor, primarily north of Harrison Avenue. Beautification should not automatically equate to additional green spa
Please Please improve the sidewalk like the new Harrison ave area and N. Main. It is very dangerous for bicyclist and pedestrians. Almost unnegotiable currently. Tha

http://projectmeetingonline.com/wp-content/uploads/2020/12/11th-street-map-big-scaled.jpg
(1) North end at Keith Creek
(1) North end at Keith Creek
(1) North end at Keith Creek
(1) North end at Keith Creek
(1) North end at Keith Creek
(1) North end at Keith Creek
(1) North end at Keith Creek

(2) Between Broadway and the rail tracks	(3) At Keye-Mallquist Park	(4) At Brooke Rd/St. Edwards Church
	(3) At Keye-Mallquist Park	
(2) Between Broadway and the rail tracks		(4) At Brooke Rd/St. Edwards Church
	(3) At Keye-Mallquist Park	(4) At Brooke Rd/St. Edwards Church
(2) Between Broadway and the rail tracks		
(2) Between Broadway and the rail tracks		
(2) Between Broadway and the rail tracks	(3) At Keye-Mallquist Park	

Public Meeting #1

(5) At Taco Bell/Schnucks	(6) At McDonalds	(7) At Samuelson Rd	(8) At Blackhawk Rd
	(6) At McDonalds		
(5) At Taco Bell/Schnucks			
(5) At Taco Bell/Schnucks	(6) At McDonalds		
	(6) At McDonalds		(8) At Blackhawk Rd
			(8) At Blackhawk Rd
(5) At Taco Bell/Schnucks			
			(8) At Blackhawk Rd

What amenities would you like to see outside of the vehicular lanes? (select up to two)	
Sidewalk or trail	Grass and landscaping (trees, shrubs)
Sidewalk or trail	
Sidewalk or trail	
Sidewalk or trail	
Sidewalk or trail	Grass and landscaping (trees, shrubs)
Sidewalk or trail	Grass and landscaping (trees, shrubs)
	Grass and landscaping (trees, shrubs)

Public Meeting #1

Pedestrian lighting	Benches and trash receptacles	Bus shelters
Pedestrian lighting		
		Bus shelters
Pedestrian lighting		
		Bus shelters
Pedestrian lighting		Bus shelters
Pedestrian lighting		

What layout do you prefer as a pedestrian?
http://projectmeetingonline.com/wp-content/uploads/2020/12/Sidewalk-adjacent-to-curb-and-vehicular-lane.jpg

http://projectmeetingonline.com/wp-content/uploads/2020/12/Sidewalk-separated-from-curb-and-vehicular-lane-with-grass3.jpg
http://projectmeetingonline.com/wp-content/uploads/2020/12/Sidewalk-separated-from-curb-and-vehicular-lane-with-grass3.jpg
http://projectmeetingonline.com/wp-content/uploads/2020/12/Sidewalk-separated-from-curb-and-vehicular-lane-with-grass3.jpg
http://projectmeetingonline.com/wp-content/uploads/2020/12/Sidewalk-separated-from-curb-and-vehicular-lane-with-grass3.jpg
http://projectmeetingonline.com/wp-content/uploads/2020/12/Sidewalk-separated-from-curb-and-vehicular-lane-with-grass3.jpg
http://projectmeetingonline.com/wp-content/uploads/2020/12/Sidewalk-separated-from-curb-and-vehicular-lane-with-grass3.jpg
http://projectmeetingonline.com/wp-content/uploads/2020/12/Sidewalk-separated-from-curb-and-vehicular-lane-with-grass3.jpg
http://projectmeetingonline.com/wp-content/uploads/2020/12/Sidewalk-separated-from-curb-and-vehicular-lane-with-grass3.jpg

http://projectmeetingonline.com/wp-content/uploads/2020/12/Wide-Sidewalk_Urban.jpg
http://projectmeetingonline.com/wp-content/uploads/2020/12/Wide-Sidewalk_Urban.jpg

What layout do you prefer as a cyclist?
http://projectmeetingonline.com/wp-content/uploads/2020/12/On-street-shared-lanes-scaled.jpg

http://projectmeetingonline.com/wp-content/uploads/2020/12/On-street-bike-lanes2.jpg
http://projectmeetingonline.com/wp-content/uploads/2020/12/On-street-bike-lanes2.jpg
http://projectmeetingonline.com/wp-content/uploads/2020/12/On-street-bike-lanes2.jpg
http://projectmeetingonline.com/wp-content/uploads/2020/12/On-street-bike-lanes2.jpg

http://projectmeetingonline.com/wp-content/uploads/2020/12/multi-use-path-separated-from-curb-and-vehicular-lane.jpg
http://projectmeetingonline.com/wp-content/uploads/2020/12/multi-use-path-separated-from-curb-and-vehicular-lane.jpg
http://projectmeetingonline.com/wp-content/uploads/2020/12/multi-use-path-separated-from-curb-and-vehicular-lane.jpg
http://projectmeetingonline.com/wp-content/uploads/2020/12/multi-use-path-separated-from-curb-and-vehicular-lane.jpg
http://projectmeetingonline.com/wp-content/uploads/2020/12/multi-use-path-separated-from-curb-and-vehicular-lane.jpg

http://projectmeetingonline.com/wp-content/uploads/2020/12/multi-use-path-next-to-vehicular-lane.jpg
http://projectmeetingonline.com/wp-content/uploads/2020/12/multi-use-path-next-to-vehicular-lane.jpg

Public Meeting #1

Do you feel that 11th Street is generally safe from crime?		
Yes	No	Not Sure
	No	
		Not Sure
	No	
		Not Sure
Yes		
	No	
	No	
	No	

If 11th Street were improved with a continuous 10-foot-wide walking/biking path, would you walk or bike along the corridor more frequently?
Yes
Yes
Yes
Yes
Yes
Yes
Yes
Yes

Public Meeting #1

		Which statement best describes your current shopping habits along 11th Street?
No	Not Sure	I shop along 11th Street a few times a week
		I shop along 11th Street a few times a week
	Not Sure	I shop along 11th Street a few times a week
		I shop along 11th Street a few times a week

I shop along 11th Street about once a week	I shop along 11th Street a few times a month	I shop along 11th Street once a month
	I shop along 11th Street a few times a month	
	I shop along 11th Street a few times a month	

Public Meeting #1

I shop along 11th Street less than once a month	I shop along 11th Street a few times per year
	I shop along 11th Street a few times per year
I shop along 11th Street less than once a month	
	I shop along 11th Street a few times per year

Public Meeting #1

I shop along 11th Street once a year or less	I never shop along 11th Street

How likely would you be to shop along 11th Street more often if new or different businesses came in?	
- Very Unlikely	- Unlikely

Public Meeting #1

- Somewhat Unlikely	- Neither Likely or Unlikely	- Somewhat Likely	- Likely	- Very Likely	- Not Sure	
		Somewhat Likely				
				Very Likely		
			Likely			
			Likely			
			Likely			
				Very Likely		
		Somewhat Likely				
				Very Likely		

Public Meeting #1

Question Report

Report Generated:	12/3/2020 12:23		
Topic	Webinar ID	Actual Start Time	# Question
Rockford 11th Street Corridor Study Public Meeting	986 7717 8477	12/2/2020 17:44	13

Question Details

#	Question	Asker Name	Answer(s)	
1	My concern is mostly 251 south of Bypass 20. I often exit the Bypass from the West going southbound on to 251. It's so often people are walking in the dark and appear to come from nowhere. Additionally, The bus stop is almost in the lane of 251. Snow plows typically plow forcing people awaiting the bus into moving traffic. There is no escape for the pedestrian nor the driver by them time an unexpected person is in the street. Lights, offstreet bus waiting, bike lanes and well painted lit painted lines would help considerably.	Ginger Haae	Thank you for your comments. There will be a survey at the end of the presentation so that improvements can be ranked. We appreciate this information provided.	
2	I hear him speaking of greenspace & landscape, however I haven't heard anything about actual bike / pedestrian lanes yet.	Karen Lindstrom	live answered	Karen, you wi Karen, did we answer your comment within the presentation?
3	How well do the businesses keep their walks clear of snow and free of tall grass?	Aprel Prunty	answered within presentation	
4	I see this is being recorded. where can we view this later or share with friends?	Karen Lindstrom	It is on the project website: https://projectmeetingonline.com/11th-street-corridor-study/	
5	Is there any consideration to having consistency with other areas of the city as in matching verses hodgepodge all over city	Aprel Prunty	this question is being answered live	
6	would those residential be mixed use buildings?	Karen Lindstrom	answering live	
7	Funding for community centers? Ken Rock?	Bryan Kruschke	answering live	
8	Are all of the railroads utilized	Aprel Prunty	answering live	
9	What did your survey indicate was the bike traffic	Aprel Prunty	Answering live	
10	Will there b3 any crime reduction programs as well?	Andrea Magnuson	answering live	
11	Based on your passed experience, what has been the impact of emergency services with the various plans?	Aprel Prunty	answering live now	
12	It seems like 5 million isn't much money. How can we get a sense of how far that will go?	Bryan Kruschke	Answering live now	
13	Thank you all.	Aprel Prunty	Thank you for attending! We apprecaite your questions and feedback.	

Public Meeting #1

Name	Date	Comments	Answers	Affiliation
Ellen Rathbone	11/24/2020	Just some quick thoughts off the top of my head: thematic sections. Could be based on history, culture, neighborhoods, or even nature found along each section. All tie together with a similar design, but each celebrating what makes that section. Makes it visually appealing. Could make it a bit of a tourism destination.		Resident
Anthony Vaiarella	11/24/2020	The portion of 11th St between 18th Ave and just north of Harrison Ave could use a resurfacing job. That would connect the portions of the street that were resurfaced within the last few years. The RR crossing in front of Aetna Plywood also needs to be resurfaced, as it is currently so rough that drivers have to slow down to a crawl when crossing it.		Resident
Amuri M Edouard	12/2/2020	African Union for Solidarity and Development (AUSD) We are very gladful for Ms. Barb. Cindy and City Team for the care and informations that you provide to us for the City development. We promise to work with you shoulder to shoulder to ensure our Community members to follow the rules and regulations of our City. And participate for all invitation, events, and Neighborhood meetings from city		Other
Nicole Forquer	12/2/2020	I live off of 11th and 5th, the streets are atrocious by the railroad tracks right after Broadway St. The roads have potholes and uneven cement everywhere all the way from Blackhawk to Charles(But especially near Broadway). How did it get so bad and why?! I've lived at my residence for the past 3 years and I purposely will avoid 11th street at all costs except for when I have to pull into my driveway! I feel the street is literally damaging my car's suspension and shocks due to how uneven and messed up 11th street is. Once you pass the tracks after Broadway the road gets so much worse. I am so glad to see that Rockford is actually going to make a change for their residence. #RockfordPride		Resident
Bryan Kruschke	12/2/2020 Answer - 12/8/2020	Topic: Beautification Curb appeal is something that needs to be addressed on 11th Street. New sidewalks, curbs, street lights and bike lanes should be front and center, but after that, I believe some sort of incentive should be provided to the local businesses to improve their façade and parking lots. What is the city considering to help reinvest in our local businesses that are included in the 11th St. corridor study?	This is a very relevant question to the 11th Street Corridor Study. Particularly since the market analysis indicated little demand for new businesses within the corridor, there is a need for public intervention to stimulate reinvestment in businesses. The proposed public investment infrastructure and beautification typically does induce some private-sector business investment, but the City can stimulate a higher level of business investment through the establishment of a tax-increment finance district, which can be used to fund storefront façade renovations and other improvements on private property. Alternatively, or in addition, Rockford could use a portion of its Community Development Block Grant funds from the federal government for loans/grants for improvements to small businesses. The City could also provide technical assistance to business owners who want to apply for funds from the Small Business Administration to either start or expand a business.	Premier Woodwork Inc.
Bryan Kruschke	12/4/2020	I have been using the 11th Street corridor from a young age. Playing basketball at Ken-Rock and shopping at Eagle or K-Mart with my mom. I currently use it as a route for our family business, Premier Woodwork Inc., located on 7th St and Broadway. We have also helped create a Broadway Business District Association that has gathered many Broadway leaders and business owners. I believe 11th St. should focus on streets, sidewalks and bike lanes to connect to downtown via Charles and State St. Key areas that I see that need work; Railroad/ Street by Aetna Plywood and the Railroad/Street by UTC. I think a strong investment should be made at Keye-Mahlquist Park. There is a large green space that could attract many local neighbors. If you were able to travel by bicycle it may even connect other neighborhoods as well.		Resident Business Owner Commuter

JM Hurst Sidewalks! You can have a pedestrian light at certain corners if you don't want to put in traffic signals. You need to put sidewalks all over Rockford to encourage mobility in town. I say this as someone who lived in Chicago most of my life. We need sidewalks to incorporate physical activity. Just my opinion

5d · 8

Kevin Balluff Less than half the people use the crosswalk or sidewalks anyway. Kind of like the bus stops. The bus gets there quicker if you stand in traffic looking up the street to see if the bus is coming...SMH

4d

JM Hurst It's the city's fault it snowed. It their fault the way they handle the snow.

4d

Top Fan

Rob Belles JM Hurst That's OK this time the year the city will just cover that sidewalk with snow

4d · 1

Teresa Hill JM Hurst I have been suing that for years. Tried to get Transform Rockford to take it on too. I was not successful.

5d

Top Fan

Janet Magnuson First Ave and Charles, pedestrian crossing north over Charles from the southeast corner of the intersection. Pedestrian has white figure crossing signal light; east bound auto traffic has green light.

5d · Edited · 1

Top Fan

Janet Magnuson Just reported this to the City and they said they would check it out.

5d

Kathy Cline Ullrich I would suggest those doing the study actually get into the neighborhood and walk and experience the corridor as a pedestrian.

5d

Top Fan

Darryl Swanson Sure need one for East state st. west of Fairview.

5d

Erin Colleen Concealed carry.

5d

Erin Colleen Henry Hamberlin Jr. I love you back, Henry! I hope things get more normal sooner than later. It would be nice to see you! I'll tell you about the near death experience later

5d

Henry Hamberlin Jr. Erin Colleen Erin you are more than meets the eye my friend. I appreciate and respect your comment. I wasnt making a joke but I like your comment cause I appreciate the safety of all my friends especially my women friends. I did not know of your life. Being threaten in 2012. Love you my friend.

5d

Erin Colleen Henry Hamberlin Jr. Yes, really. I support legal guns and self defense. Especially after getting beat within an inch of my life on Halloween 2012 by a group of guys. Illegal guns and people with no training and no respect for them are the problem. ... See More

5d · Edited

Henry Hamberlin Jr. Erin Colleen Erin! Really?

5d


Darren Smith You can start with cutting the bushes down in front of the shopping center where you exit enter schmucks, it blocks view of traffic of the nothbound lane on exiting, lights same place with crosswalk just like sundstrand has down the street
5d
Janet McComb Lights and sidewalks
11
5d
Christopher Derrickson Janet McComb sounds complicated
5d
Top Fan
Nang Keophila Janet McComb Agree!
1
5d
Darren Smith Paul J Trybul they wont do anything on collins until they do storm drains, like they tried to do at roosevelt & 8th st and it still floods roosevelt
1
5d
Janet McComb Paul J Trybul 11th St needs them
1
5d
Paul J Trybul Janet McComb I'm on south Collins St no sidewalks or curbs.
5d
Rebecca Wallgren Whatever happened to the underpass that was in front of KenRock?
5d
Ron Wallgren I think it was starting to deteriorate. Not to mention it was a little bit creepy in there.
1
5d

Rebecca Wallgren Yeah, why?

5d

Ron Wallgren Rebecca Wallgren they filled it in.

5d

Jeff Vaughan Curious on the studies, are they mandated in order to get certain funding? With the smart men and women you have working for you I would think they would be able to figure out what to do to enhance safety.

5d

Dorien Conover Peterson Jeff Vaughan, report making does seem like the business I should have gone into 40 years ago.

5d 2

Jeff Vaughan Dorien Conover Peterson true, but I don't think you need to spend 100k plus on most of these studies, why I was wondering if it was tied to funding 🤦

5d 1

Dorien Conover Peterson Jeff Vaughan, sometimes residents or frequent users have a perspective they haven't considered, no matter how smart they are.

5d 1

Evelyn Terryberry Thanks for asking for our input.
I would suggest solar lights, cameras and sidewalks.

5d

Jerry Palmer Scam site.

5d

Marcy Rice Wilson Solar lights

5d 1



Top Fan

Rob Belles Should have done this 10-15 years ago when you windened it and created a freeway.

5d

2

Top Fan

Rob Belles #1 STOP making turn radius for every long semi. Makes the crossing point of the street un-crossable. That intersection by Nicholsons and Charles is the worst in the area.

5d

1

Jason Frank More stop lights. Can never have enough stop lights. And don't snyc them or have sensors. Just have them change randomly to save money to help pay for the Blvd maintenance. The more trees and bushes and landscspes in middle of the street the better. 11th St Blvd.

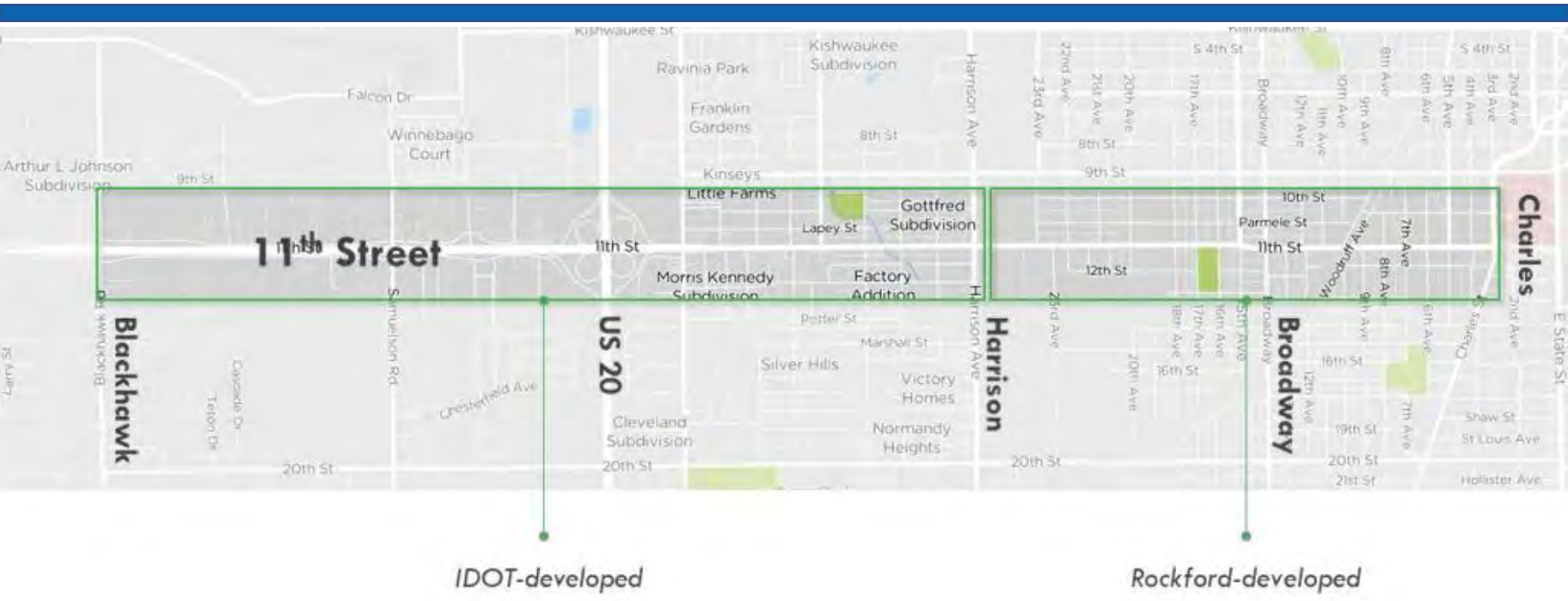
5d · Edited

2

THE CITY OF ROCKFORD ILLINOIS, USA

Public Meeting #2

11th Street Corridor Study



Our team will present the DRAFT Corridor Improvements Plan at a virtual public meeting February 25th at 6 pm. Please attend to provide comments on the recommendations.

Project Purpose and Goals

The Corridor Study Goals include:

- Focusing on transportation solutions to improve pedestrian safety, reduce pedestrian fatalities, and beautify the corridor
- Inform the community on how to move forward, beyond the study, while achieving the goals of the community
- Focus on improvements within the right of way such as sidewalks and lighting, utilizing a complete streets mentality such that the right of way improvement are conducive to drive economic growth
- Utilize the improvements within the right of way as a catalyst to attract people to the area
- Understand that the corridor should be cohesive, while noting the different characteristics of each section
- Provide a conceptual cost for right of way improvements for future programming

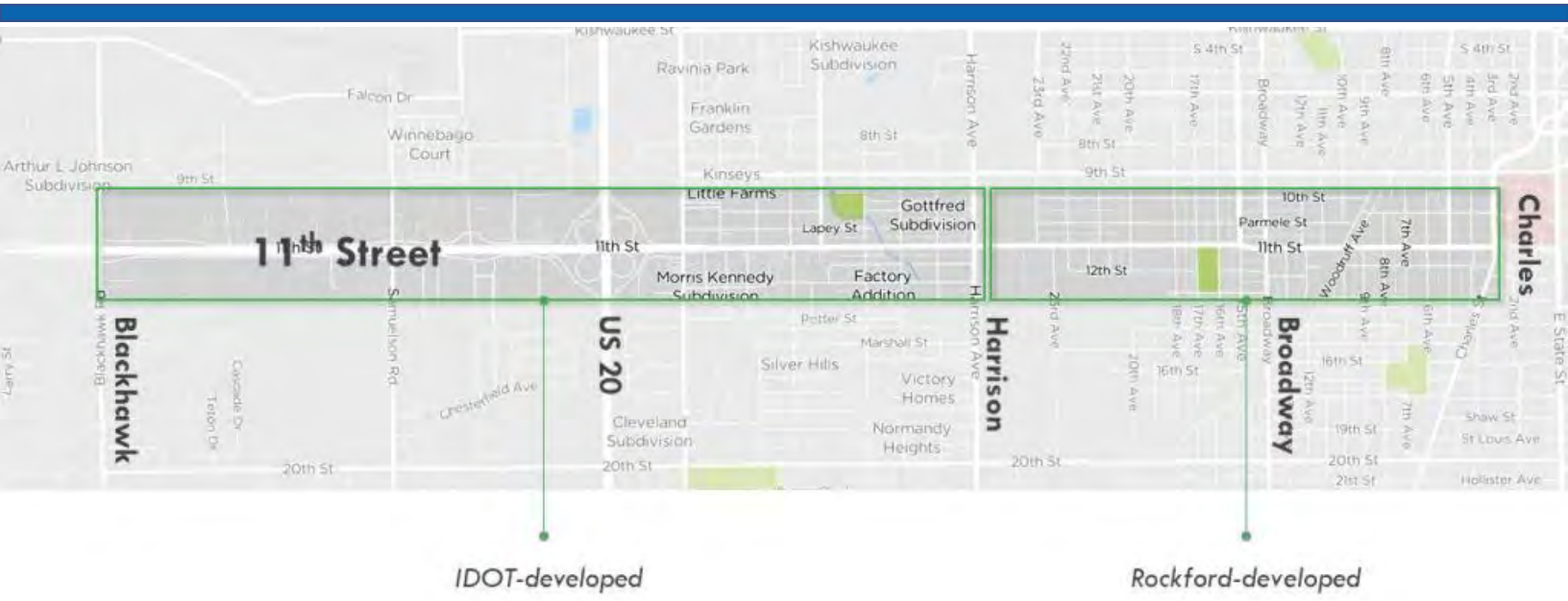
REGISTER AT:
https://projectmeetingonline.com/11th-street-corridor-study/ or at
Register in advance for this webinar:
https://cmtengr.zoom.us/webinar/register/WN_PvR9n-0STQOQhjDRDicQnQ

Or Call in: 1-312-626-6799
Webinar ID: 939 2787 5992
Passcode: 833622

THE CITY OF ROCKFORD ILLINOIS, USA

Public Meeting #2

11th Street Corridor Study



Our team will present the DRAFT Corridor Improvements Plan at a virtual public meeting February 25th at 6 pm. Please attend to provide comments on the recommendations.

If you are unable to attend, please contact Tim Hinkens at 779-348-7647 with any questions or feedback.

Project Purpose and Goals

The Corridor Study Goals include:

- Focusing on transportation solutions to improve pedestrian safety, reduce pedestrian fatalities, and beautify the corridor
- Inform the community on how to move forward, beyond the study, while achieving the goals of the community
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- Utilize the improvements within the right of way as a catalyst to attract people to the area
- Understand that the corridor should be cohesive, while noting the different characteristics of each section
- Provide a conceptual cost for right of way improvements for future programming

REGISTER AT:
https://projectmeetingonline.com/11th-street-corridor-study/ or at
Register in advance for this webinar:
https://cmtengr.zoom.us/webinar/register/WN_PvR9n-0STQOQhjDRDicQnQ

Or Call in: 1-312-626-6799
Webinar ID: 939 2787 5992
Passcode: 833622

Public Meeting #2

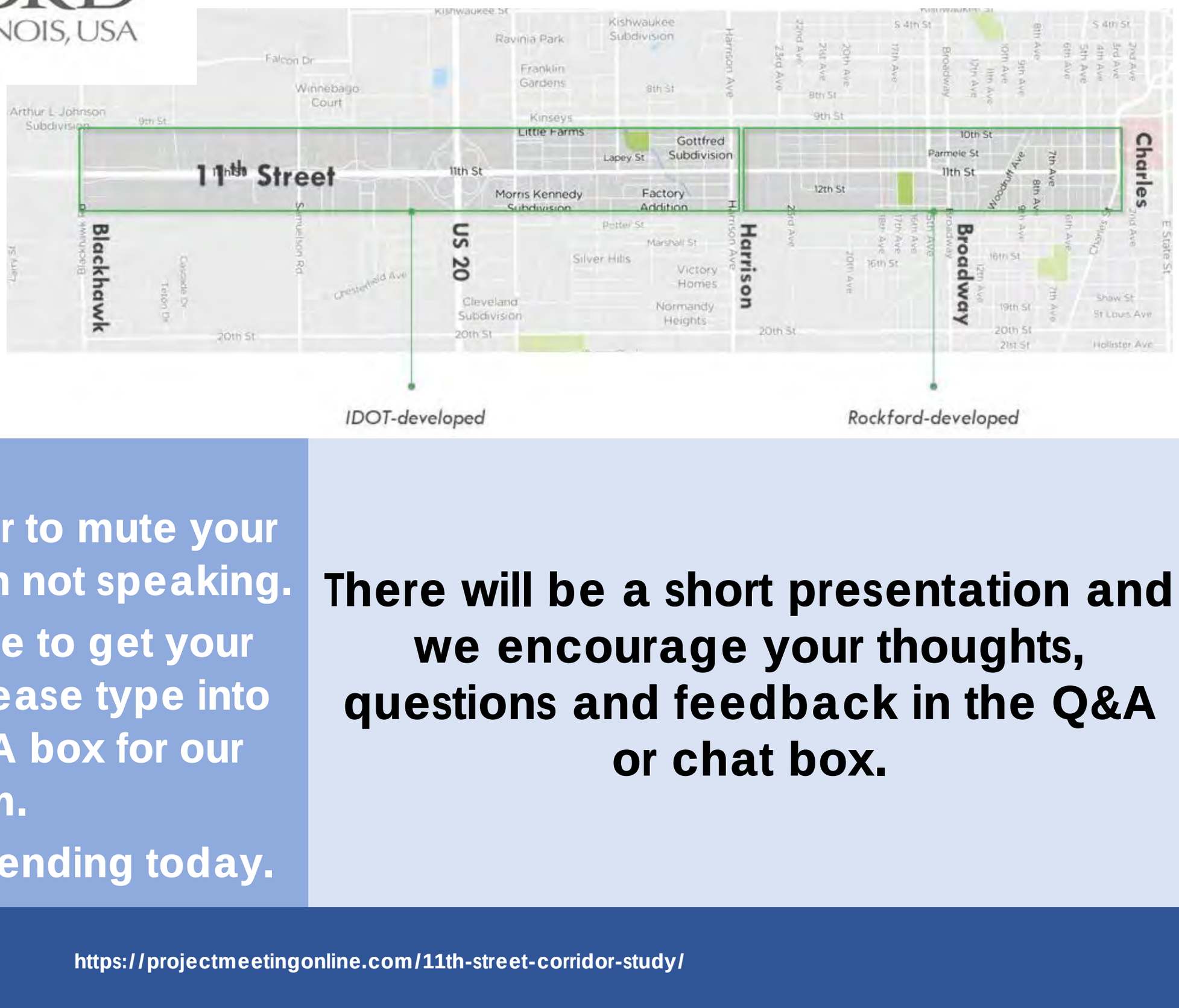
11th Street Corridor Study

In partnership with:

CMT

camiros

SBFRIEDMAN



Please remember to mute your microphone when not speaking.

If you are unable to get your comments in, please type into the chat or Q&A box for our team.

Thank you for attending today.

There will be a short presentation and we encourage your thoughts, questions and feedback in the Q&A or chat box.

https://projectmeetingonline.com/11th-street-corridor-study/

THE CITY OF ROCKFORD ILLINOIS, USA

Public Meeting #2

11th Street Corridor Study



The City of Rockford is studying 11th Street, from Blackhawk Avenue at the southern City limits north through US 20, Harrison Street, and up to Charles Street on the northern limits.

The roadway section through the corridor poses multiple undesirable current conditions. This study aims to identify improvements within the right of way and costs for the infrastructure improvements.

The study will fulfill the vision of the City, including an actionable strategy to implementation within the City's budget and schedule.

We are here today to present several improvement alternatives, and gather your feedback on them.

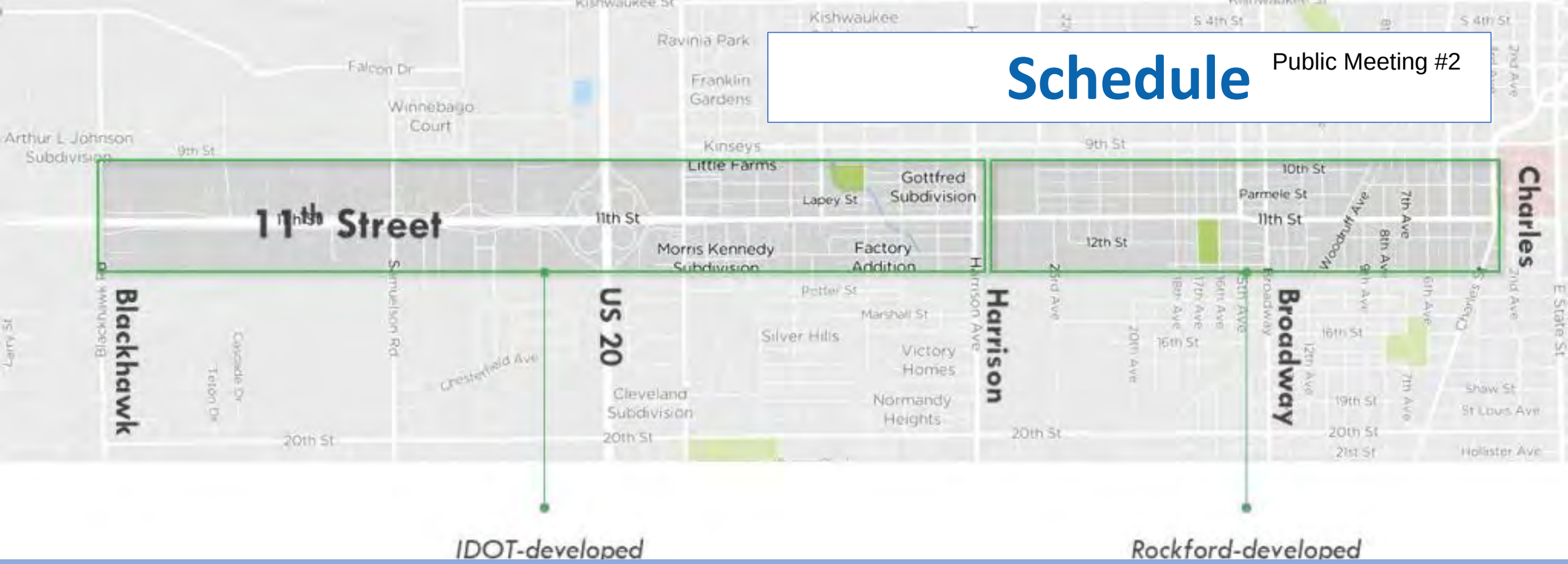
Ultimately, the improvements need to be prioritized so that a plan for their funding, design and construction can move forward.

Our team wants to hear from you!

https://projectmeetingonline.com/11th-street-corridor-study/

Schedule

Public Meeting #2



City Receives Grant funding for a Corridor Study

Team kicks off the Corridor Study – September 2020

Data Collection – October 2020

Stakeholder Meetings – November 12, 2020

Public Meeting #1 – December 2, 2020

Corridor Plan Development – December 2020 – January 2021

Draft Corridor Study for Review by Stakeholders – February 9, 2021

Public Meeting #2 – February 25, 2021

Final Deliverable – March 2021

https://projectmeetingonline.com/11th-street-corridor-study/

Corridor Study Purpose and Goals

Public Meeting #2

- Focusing on transportation solutions to improve pedestrian safety, reduce pedestrian fatalities, and beautify the corridor
- Inform the community on how to move forward, beyond the study, while achieving the goals of the community
- Focus on improvements within the right of way such as sidewalks and lighting, utilizing a complete streets mentality such that the right of way improvement are conducive to drive economic growth
- Utilize the improvements within the right of way as a catalyst to attract people to the area
- Understand that the corridor should be cohesive, while noting the different characteristics of each section
- Provide a conceptual cost for right of way improvements for future programming

Safe, Connected and Walkable Corridor

Beautification of the Corridor

Focus on Construction Improvements within the Existing ROW

Solutions which Encourage Future Redevelopment

Cohesive Corridor Segment Solutions

Build Consensus on what the community wants with the City's needs

Cost-Effective, Affordable, Implementable, Actionable Solutions

By achieving these goals, the City is improving failing infrastructure throughout the Corridor.

https://projectmeetingonline.com/11th-street-corridor-study/

VISION OF THE CORRIDOR





Improve Quality of Life

Safety

Attractive

Business Friendly

Multiple Transportation Options

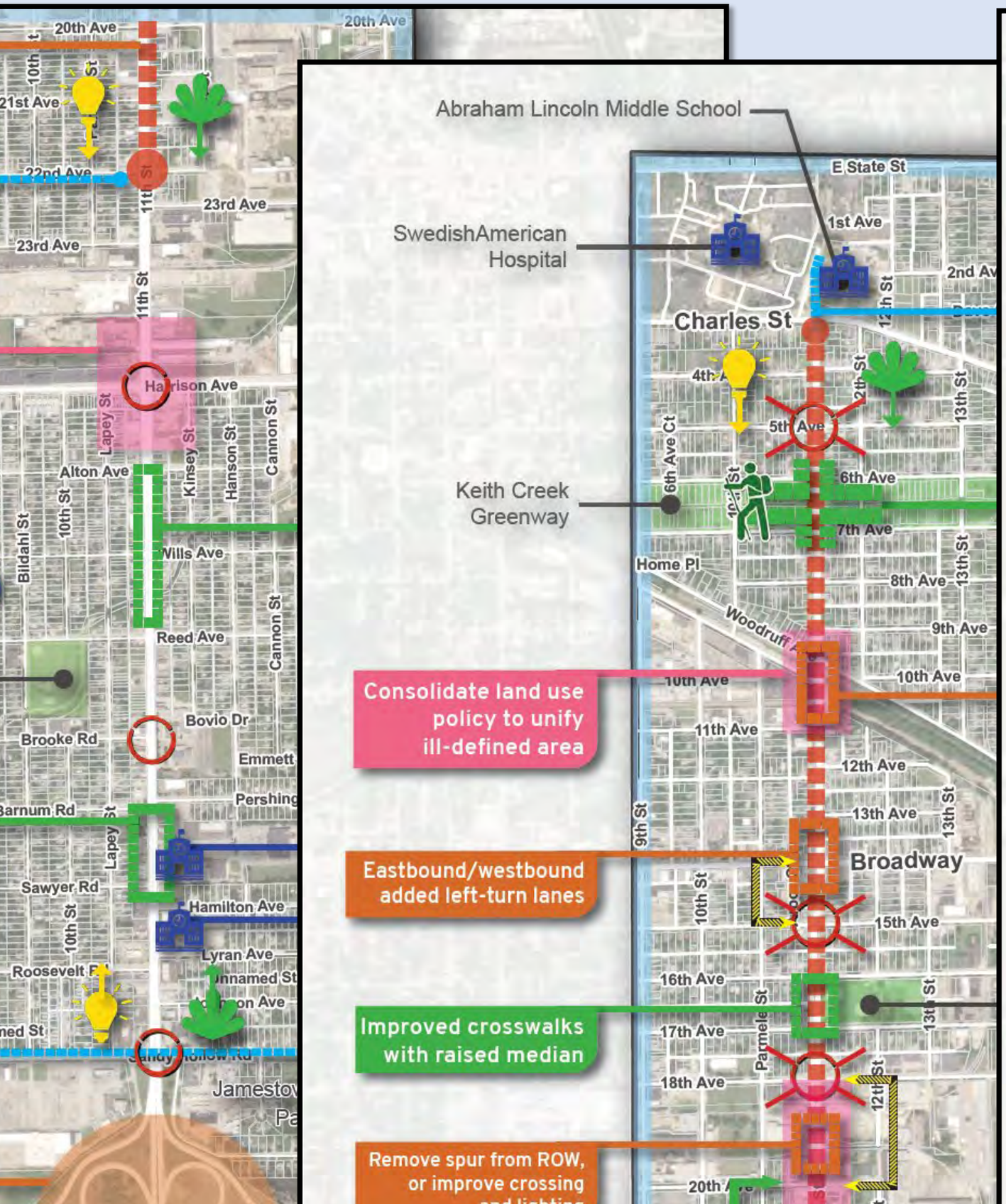
Economic Opportunity





RECOMMENDED PROGRAM OF IMPROVEMENTS

Public Meeting #2

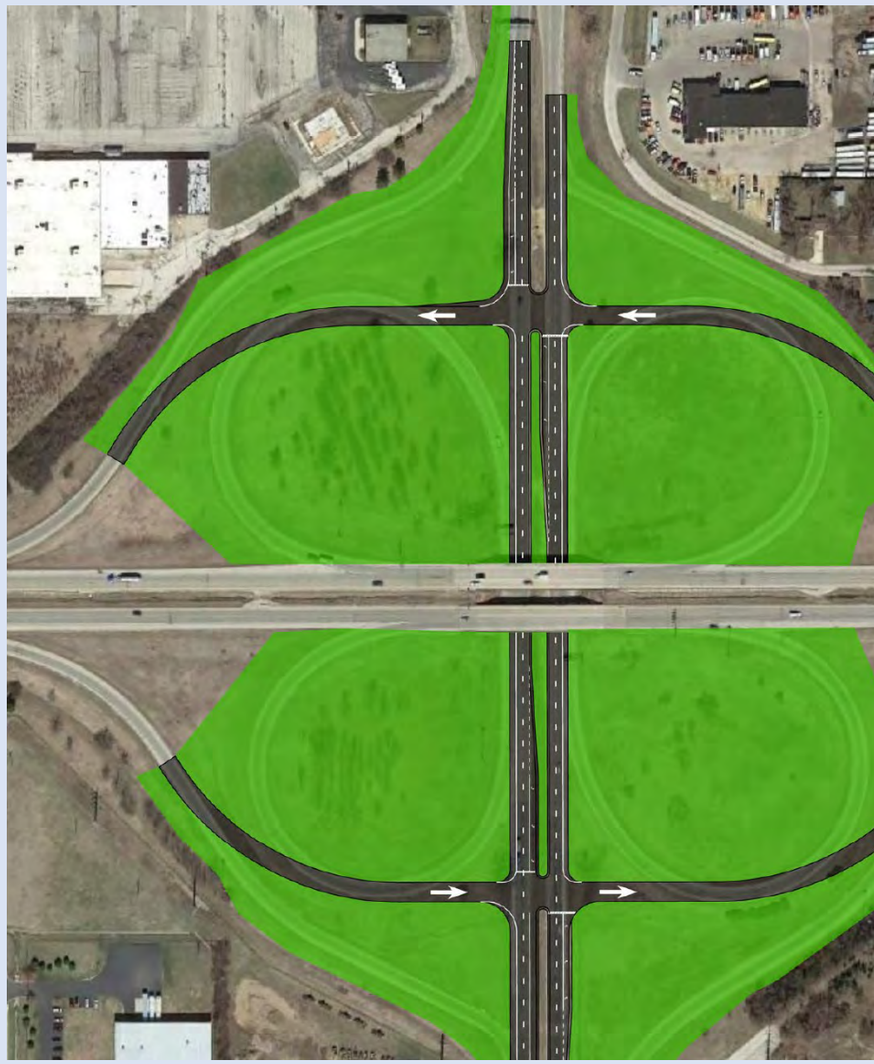


RECOMMENDED PROGRAM OF IMPROVEMENTS

- Low / No Cost Improvements
- Short Term or Lower Cost Construction Projects
- Longer Term or Higher Cost Construction Projects





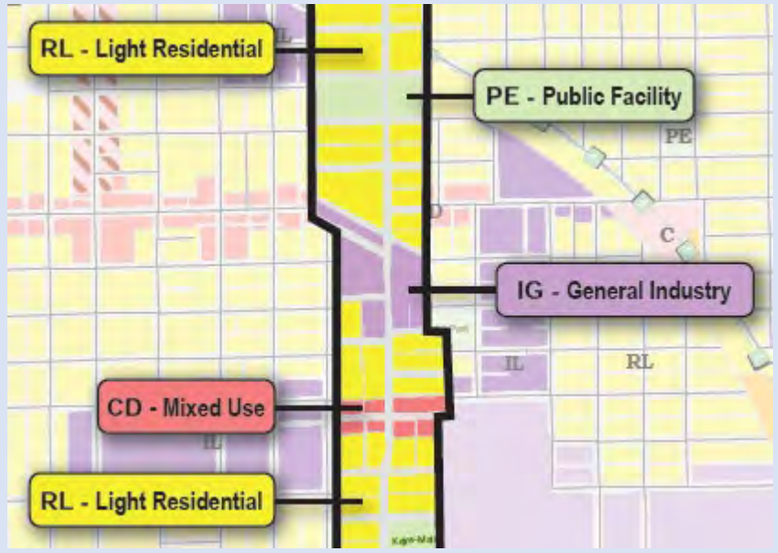


LOW OR NO CONSTRUCTION COST PROPOSED IMPROVEMENTS



Policy and Standards Changes

- Land-Use Plan Changes
- Zoning Changes
- Economic Development Initiatives
- Future Policy Strategies for the Corridor
- Driveway Access Standards



Construction Solutions

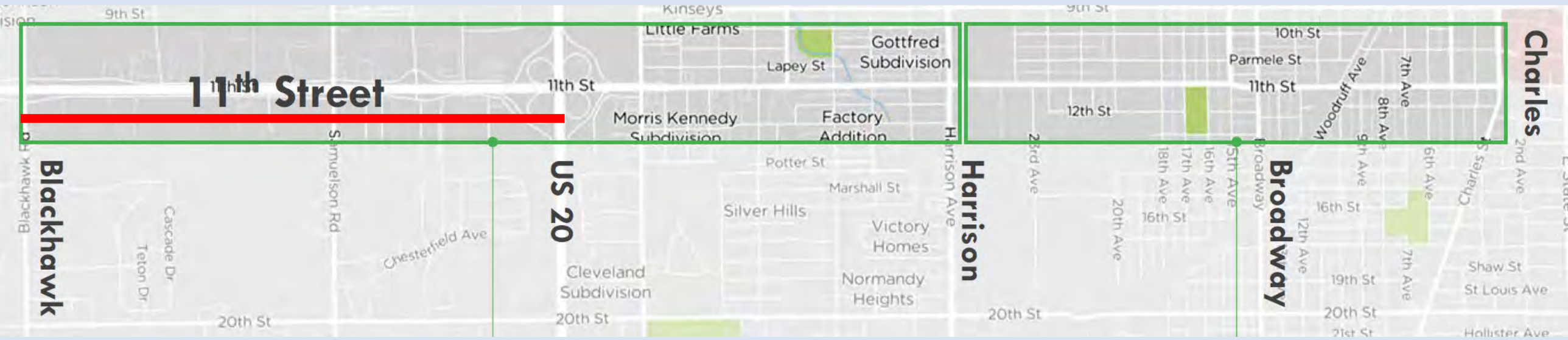
- Leading Pedestrian Interval at Signalized Intersections
- Utility Relocation
- Placemaking Elements





SHORT TERM - US-20 INTERCHANGE AND SOUTH

Public Meeting #2

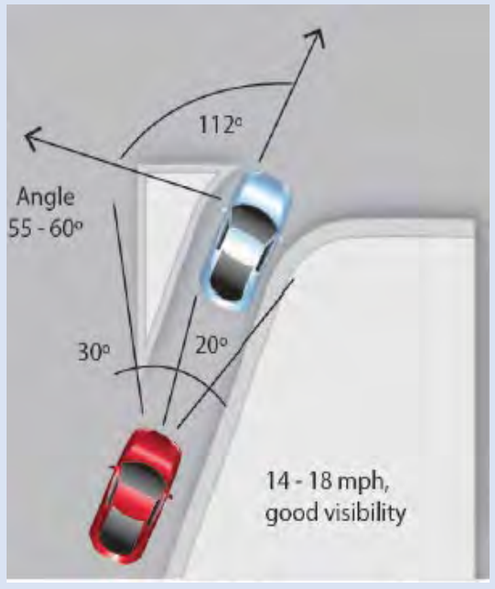


- Right of Way fence south of US 20
- Rebuild splitter islands at Airport Drive and Blackhawk Road
- Pedestrian paths across 11th Street south of US 20
- US 20 Interchange pedestrian path
- ADA upgrades at signalized intersections
- Add splitter islands at Samuelson Road
- Transit improvements
- Sidewalk connections off-corridor to improve access to transit

IMPROVEMENTS SOUTH OF US-20

Public Meeting #2





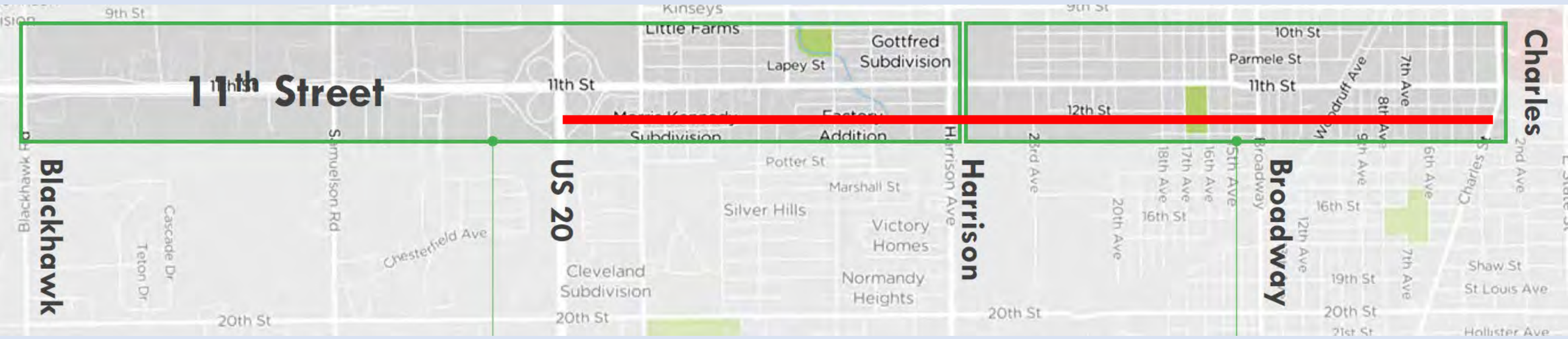






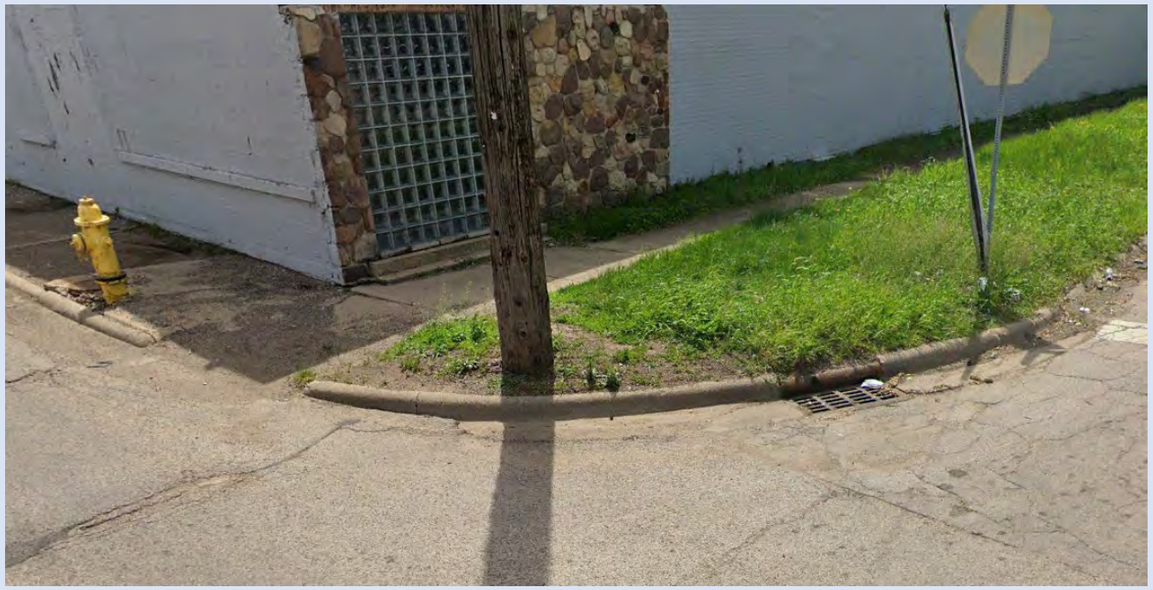


SHORT TERM – NORTH OF US-20



- Sidewalk repair, driveway reconstruction, and obstacle removal
- Bicycle system expansion
- Improved unsignalized pedestrian crossings
- 11th Street at Broadway left turn lanes
- Replace pedestal mounted signal heads at 15th Avenue and 18th Avenue
- Resurface 11th Street from Harrison Avenue to Charles Street
- Landscaping
- ADA upgrades at signalized intersections
- Transit improvements & sidewalk connections off-corridor
- Rail spur crossing removal
- Guardrail at Rock Fork South Drainage Ditch
- Unwarranted signal removal
- Interim Road Diet from 23rd Avenue to Charles Street

SYSTEM UPDATES



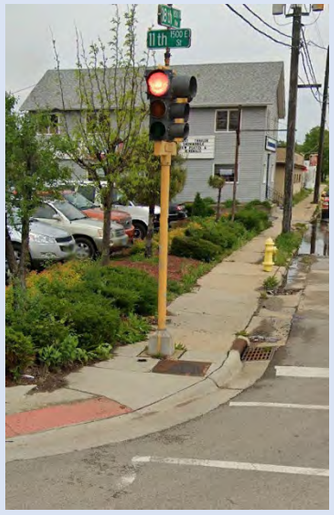


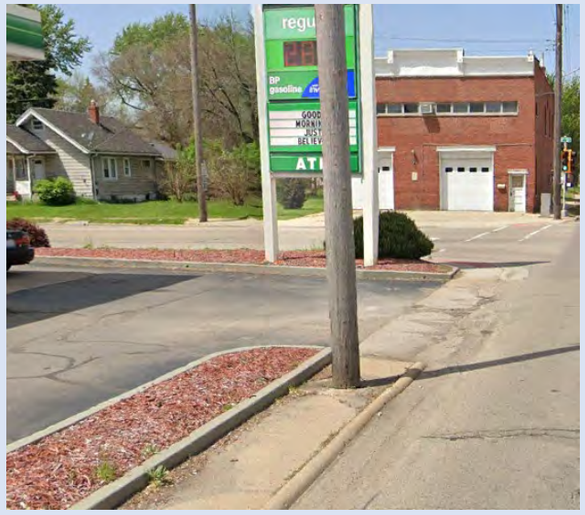


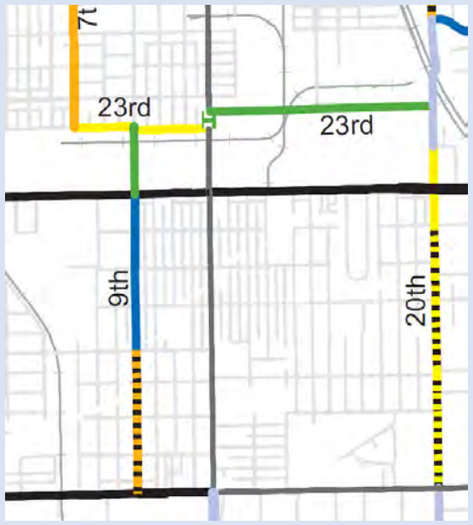




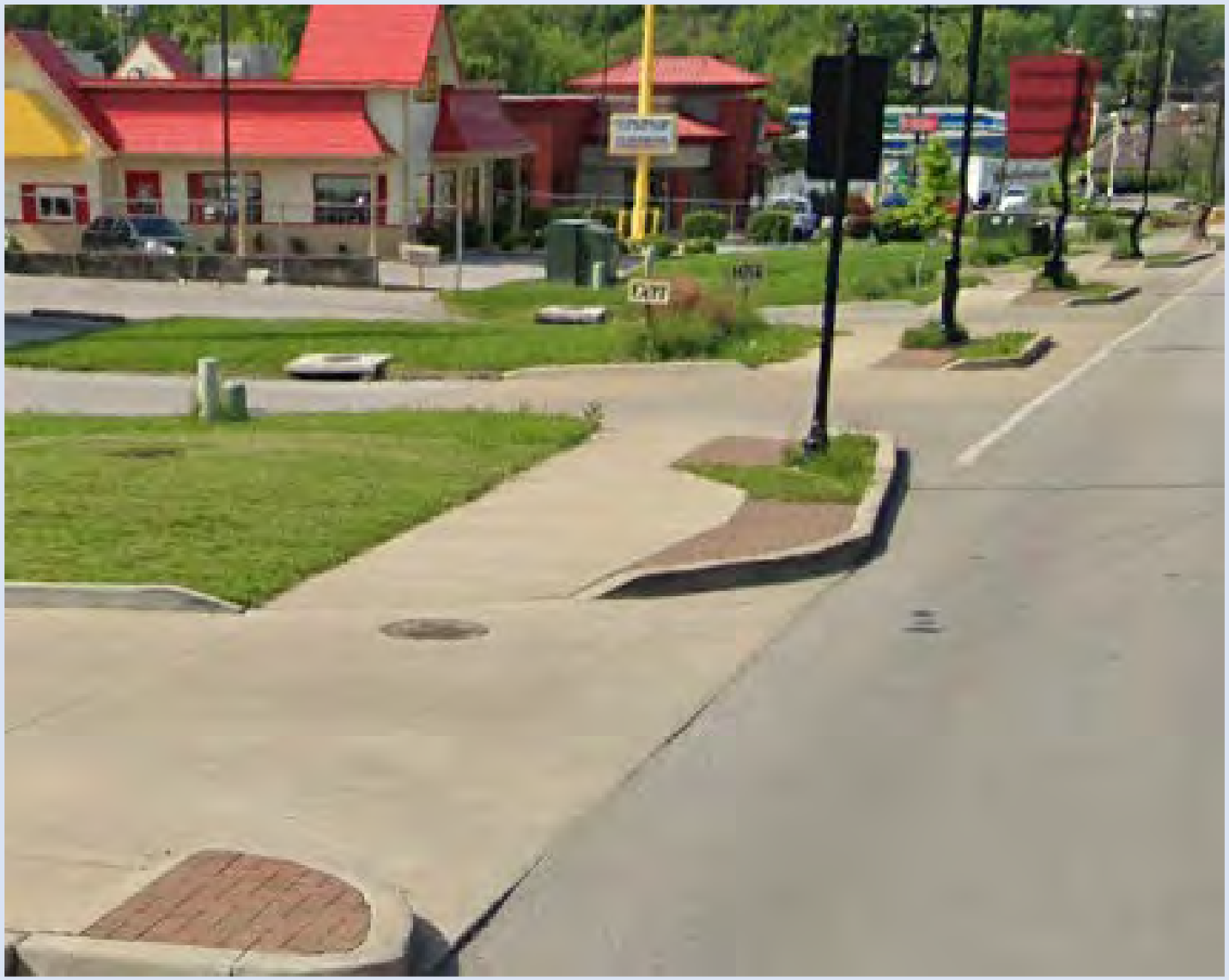
CONNECTIVITY IMPROVEMENTS













SIGNAL IMPROVEMENTS



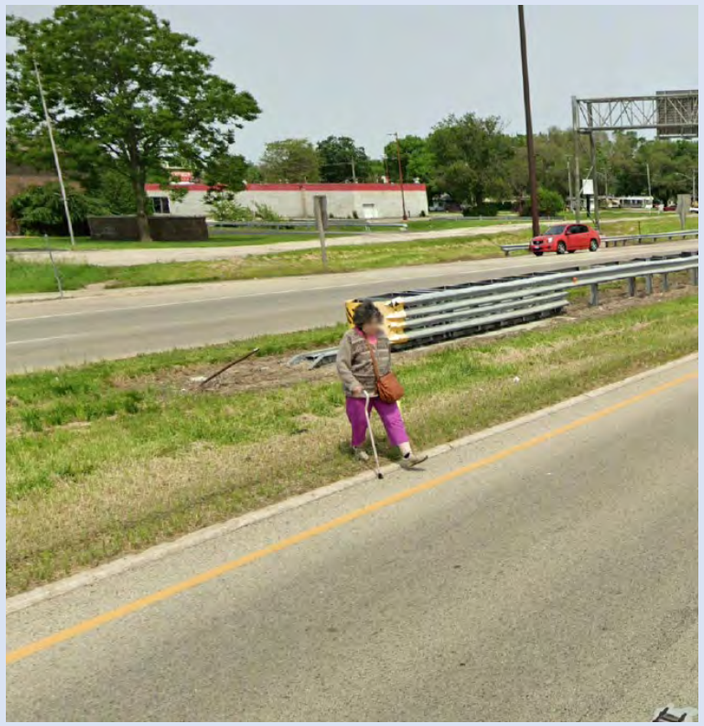




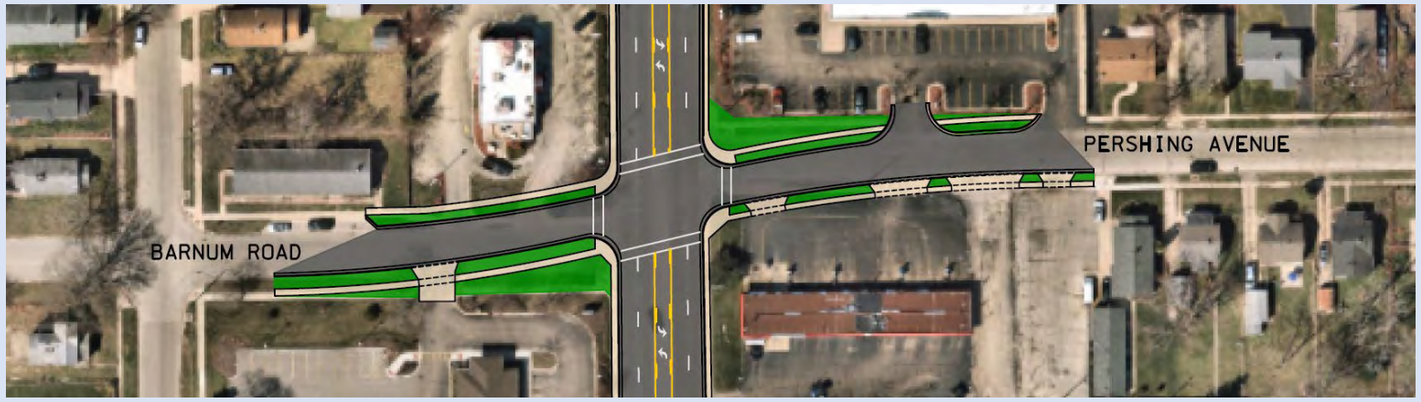
LONG TERM OR HIGHER CONSTRUCTION COST PROJECTS

- US 20 Interchange reconfiguration
- Trail-Sidewalk redesign/integration at Keith Creek
- Street realignment at Charles Street
- Pershing and Barnum intersection realignment
- Woodruff Avenue intersection improvements
- Road diet from 23rd Avenue to Charles Street
- Pedestrian scale lighting



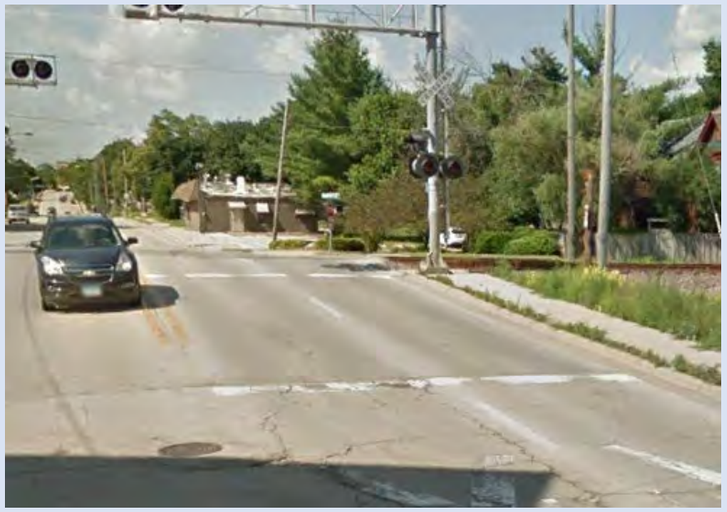


INTERSECTION REALIGNMENTS & TRAIL INTEGRATION





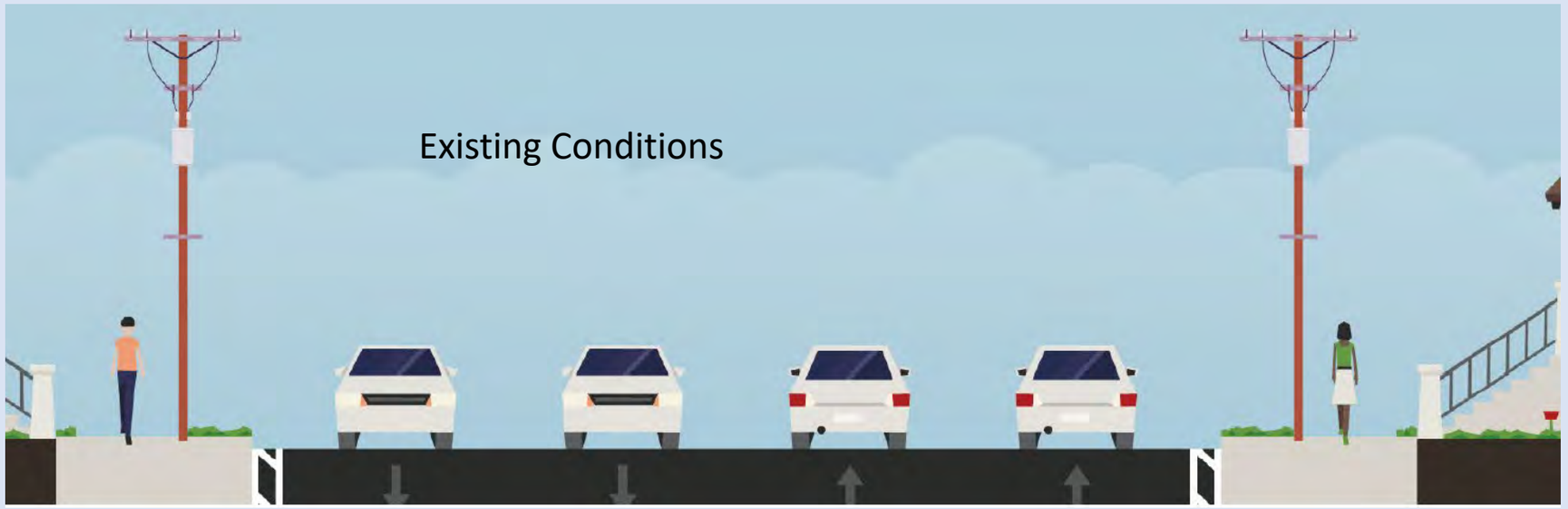


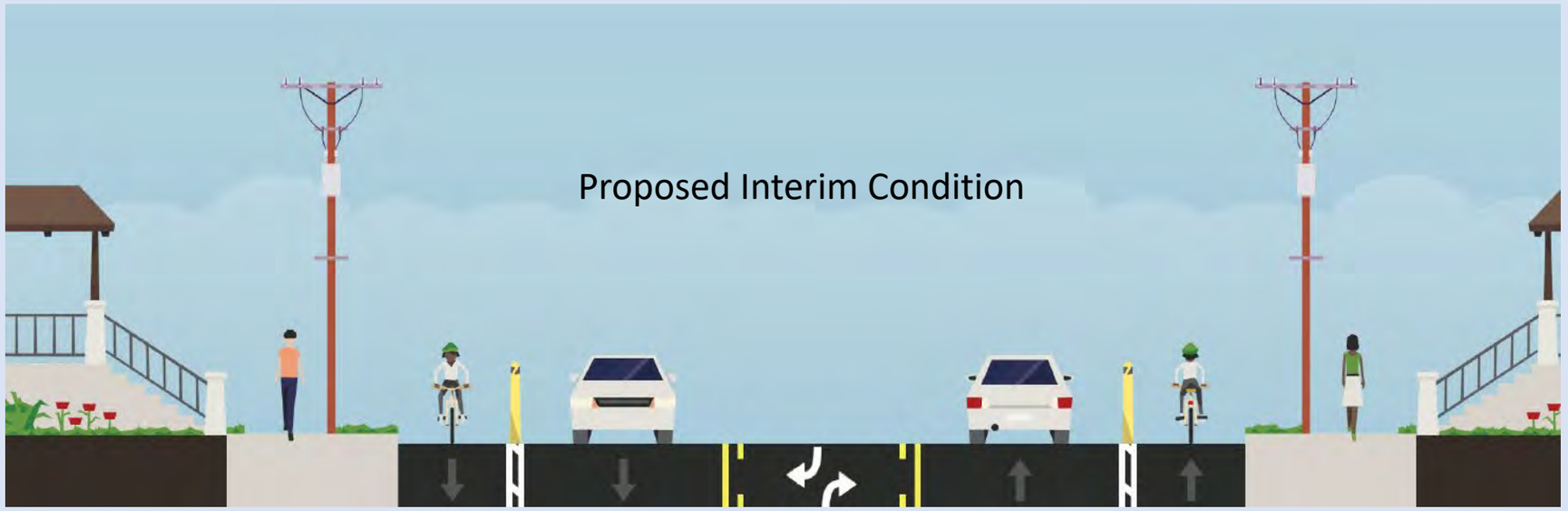




ROAD DIET & STREET LIGHTING – CHARLES TO BROADWAY





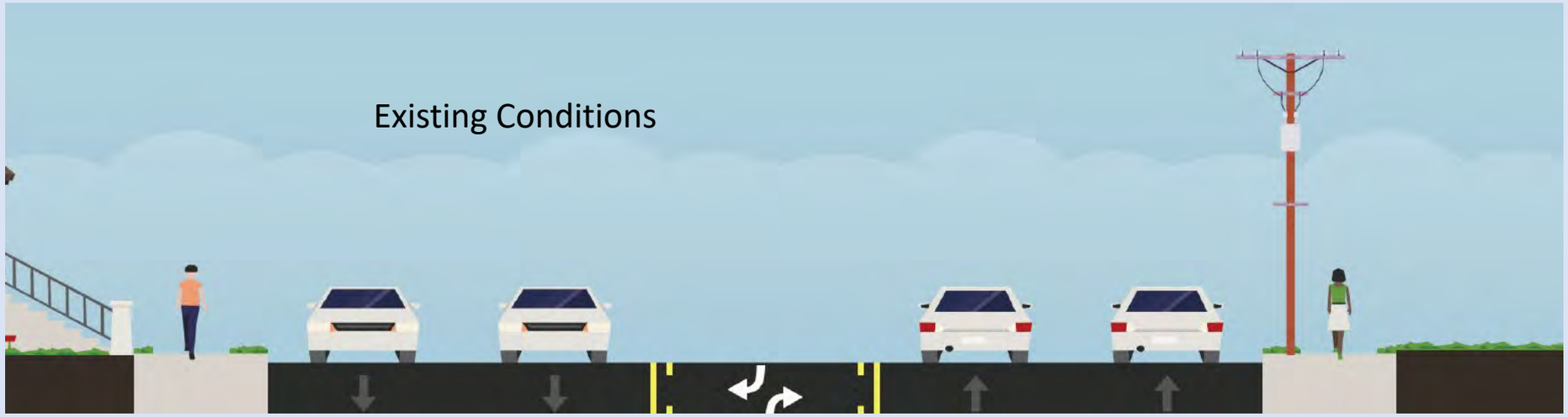


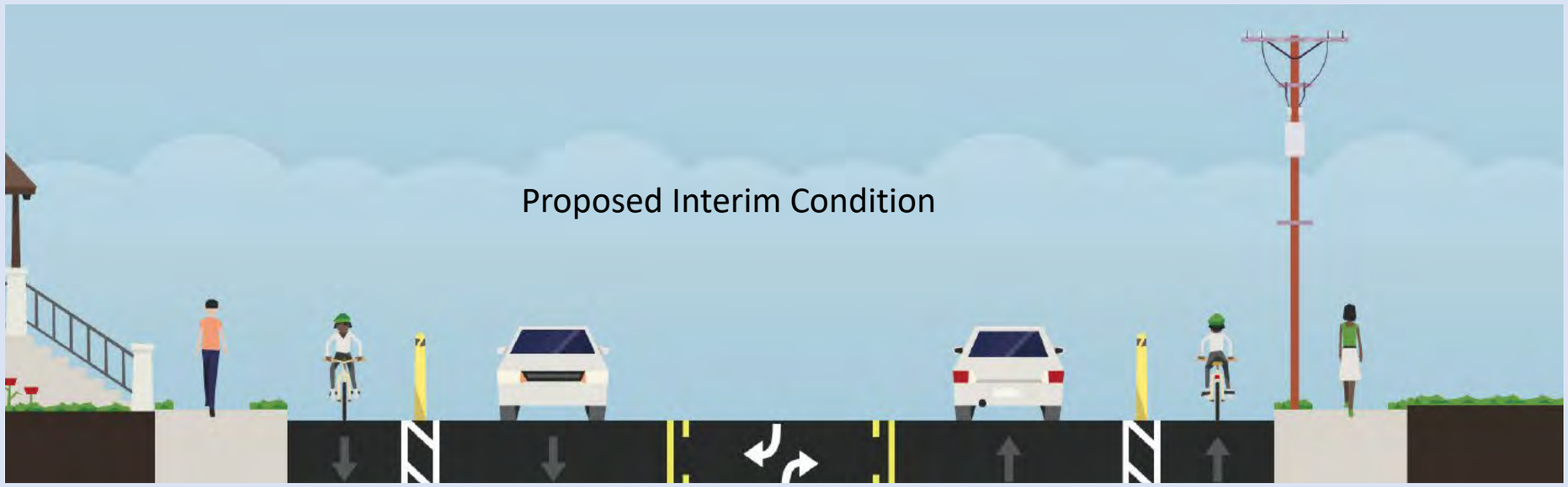


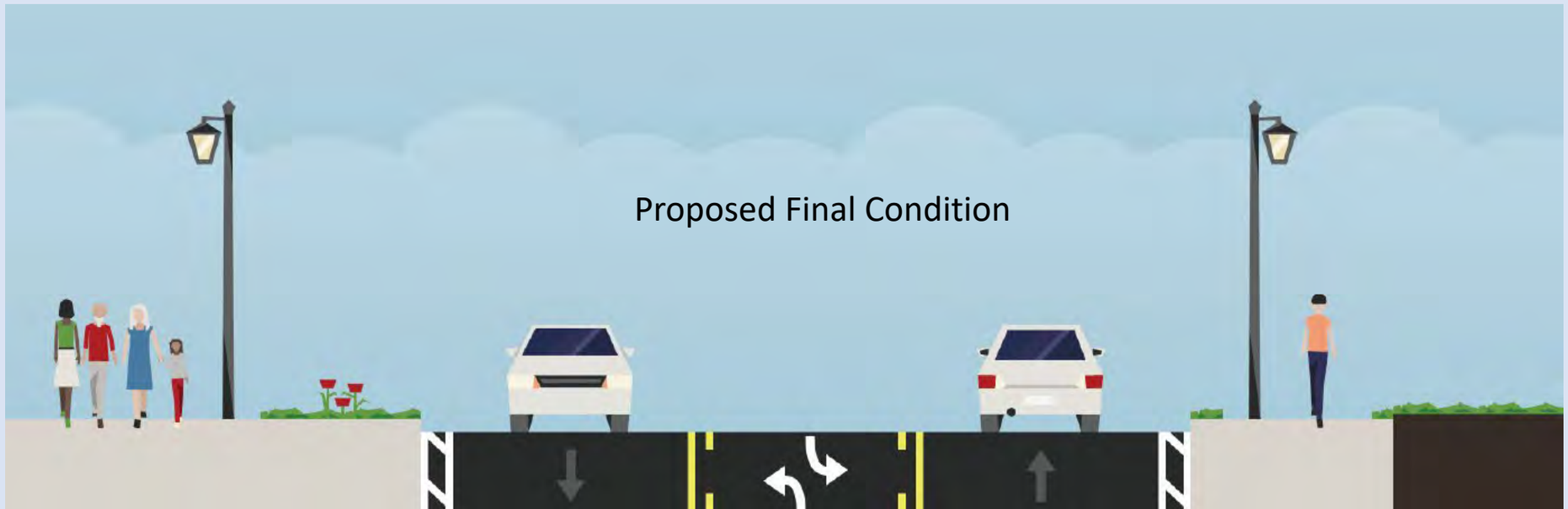
ROAD DIET & STREET LIGHTING – BROADWAY TO 18TH AVE





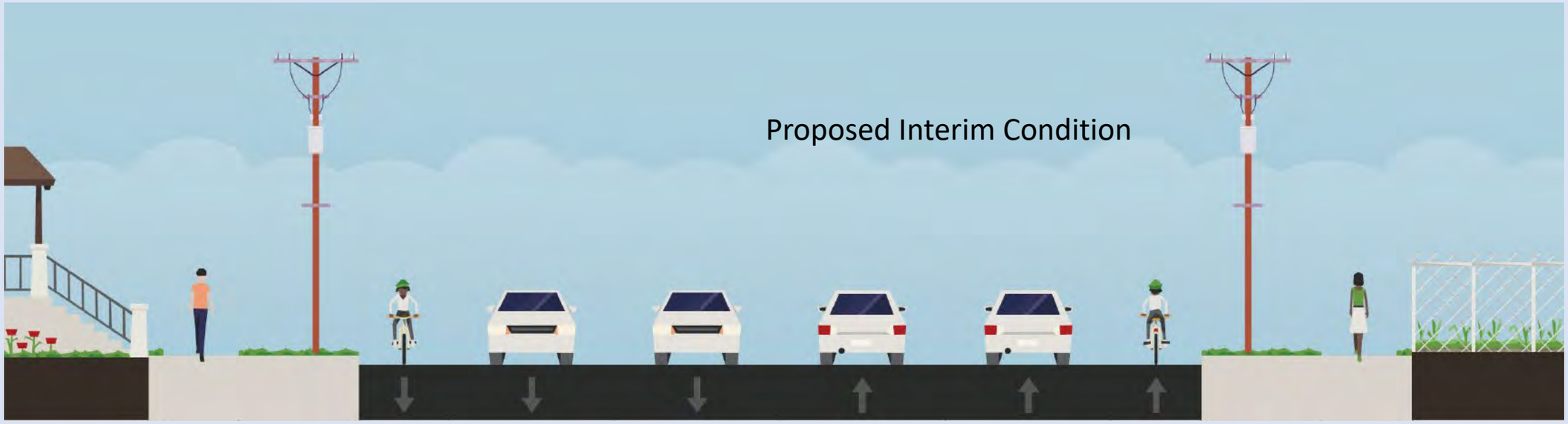






ROAD DIET & STREET LIGHTING – 18TH AVE TO 23RD AVE

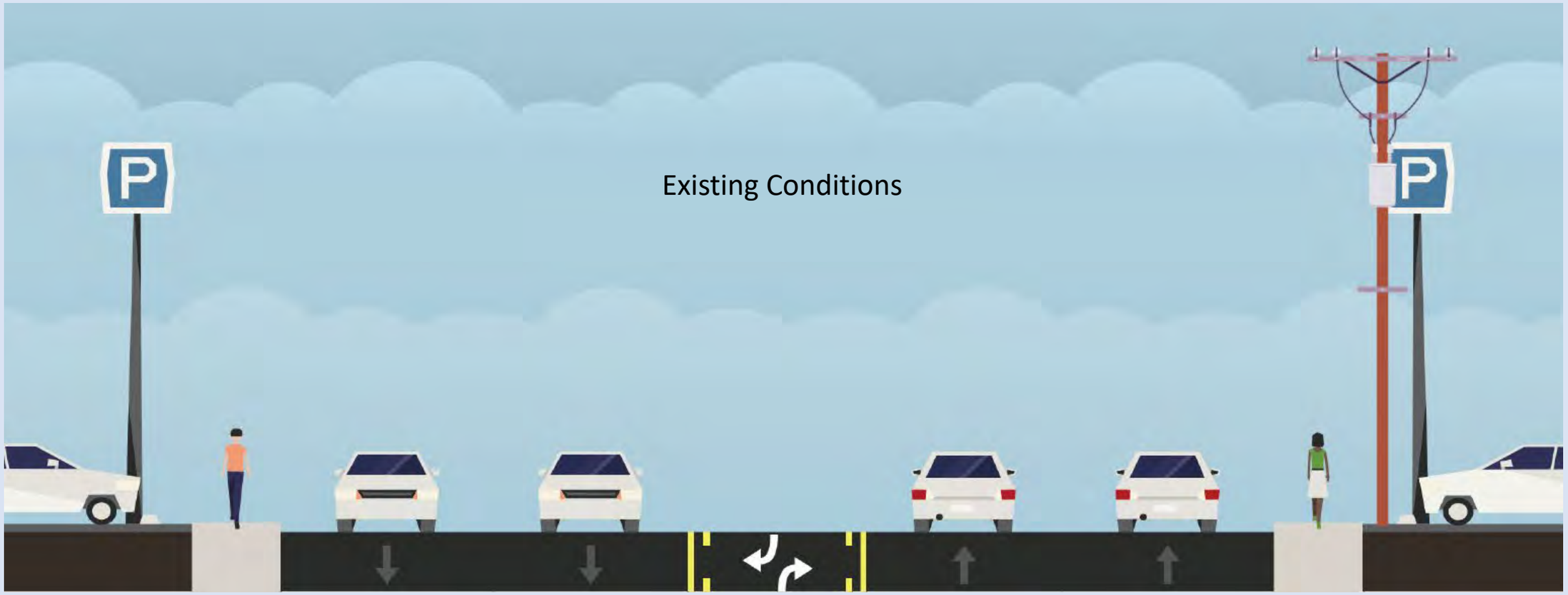


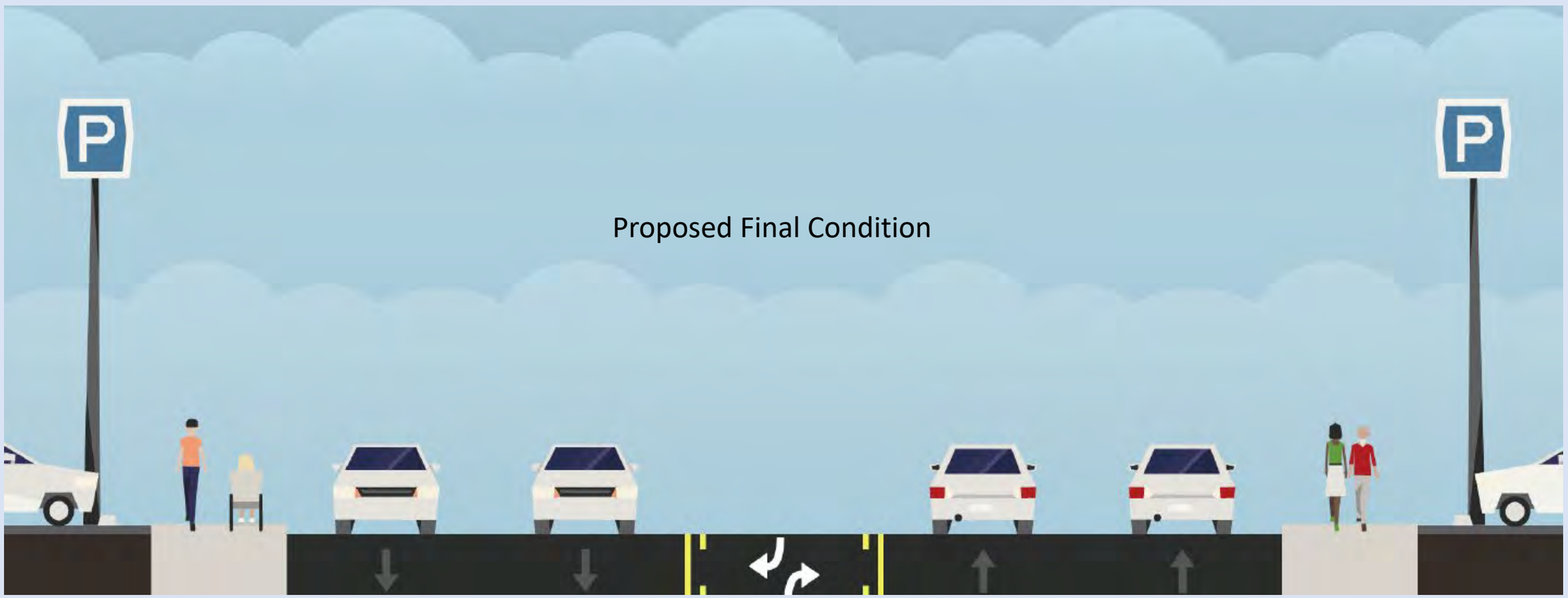




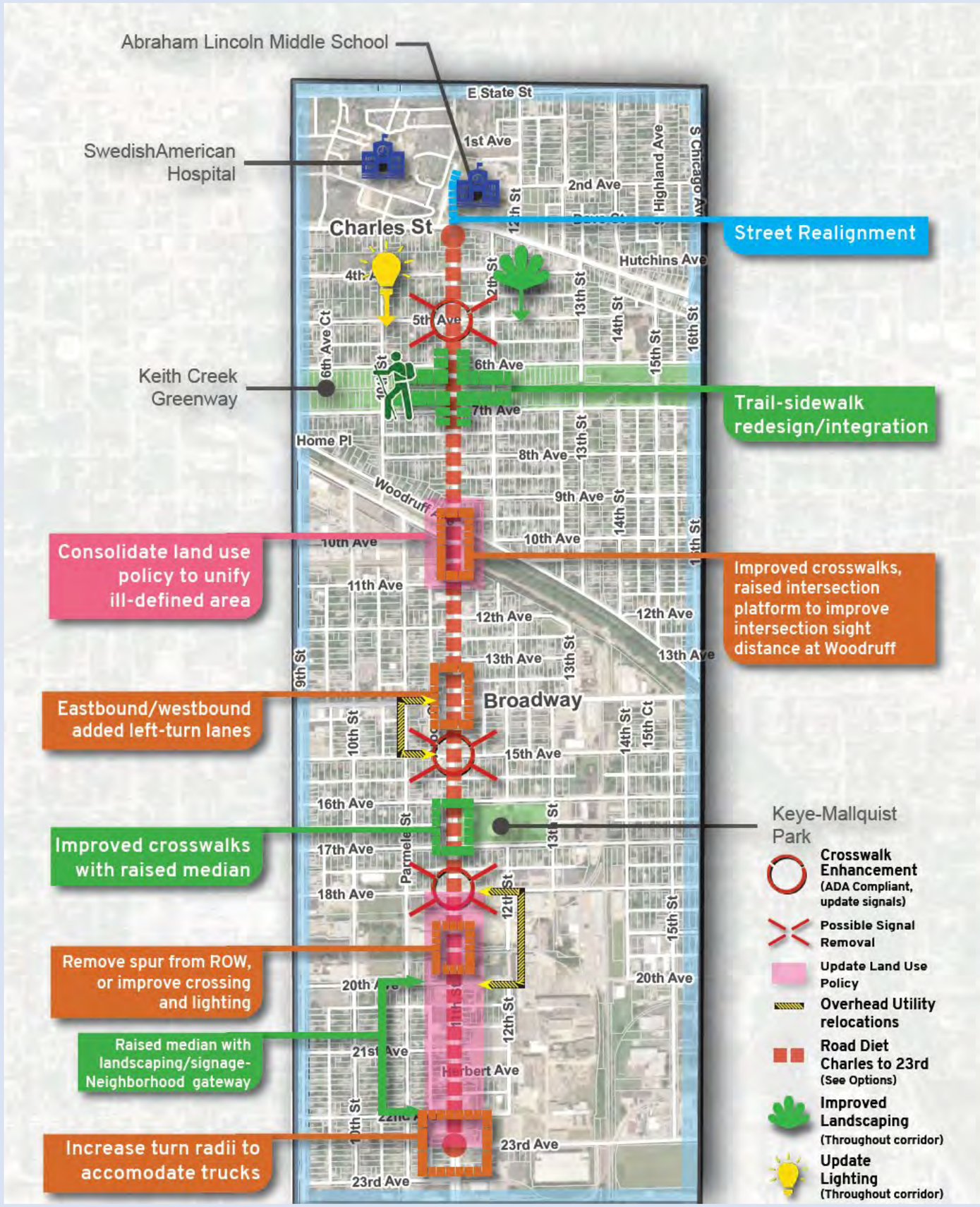
ROAD DIET & STREET LIGHTING – 23RD AVE TO SANDY HOLLOW

Public Meeting #2

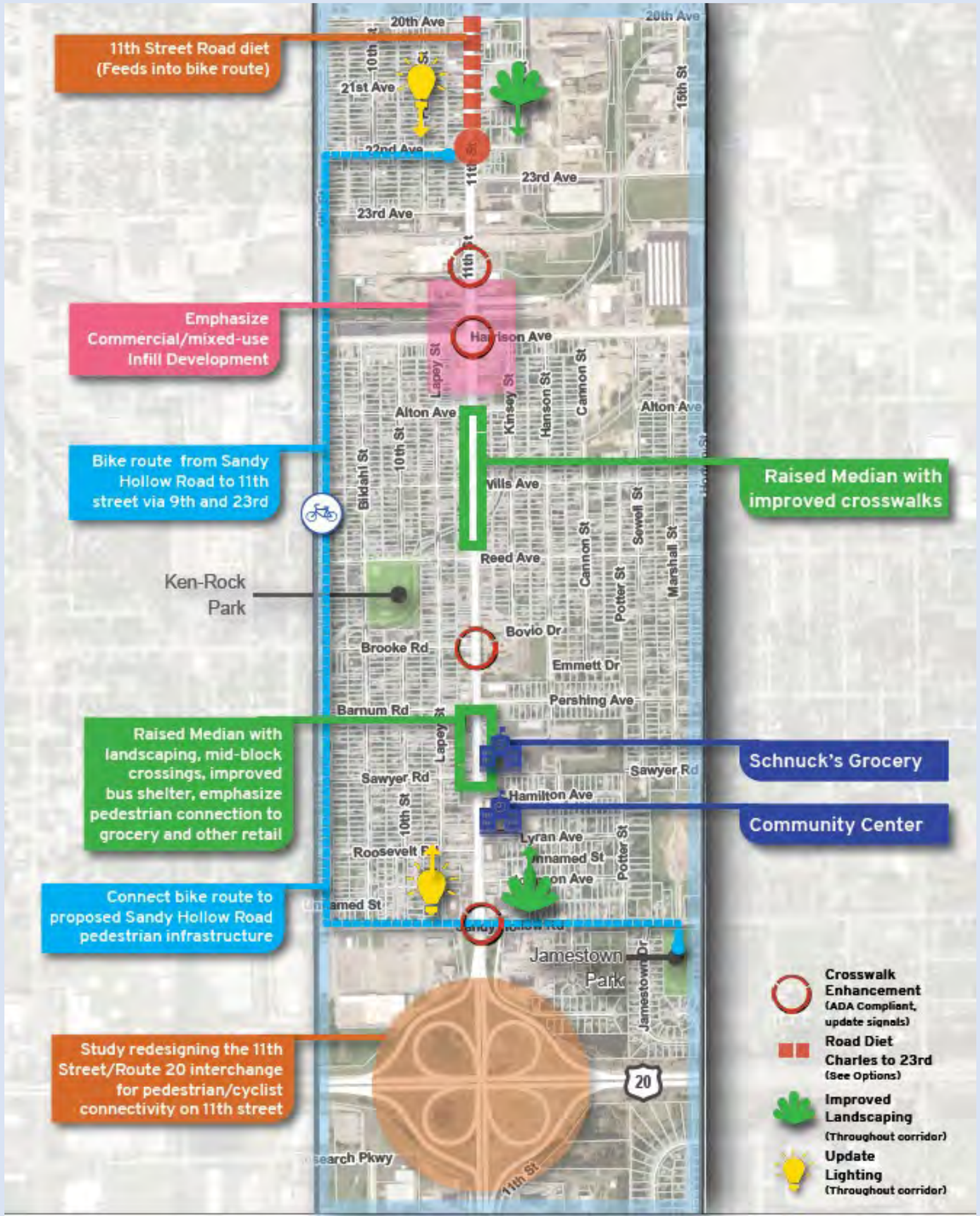




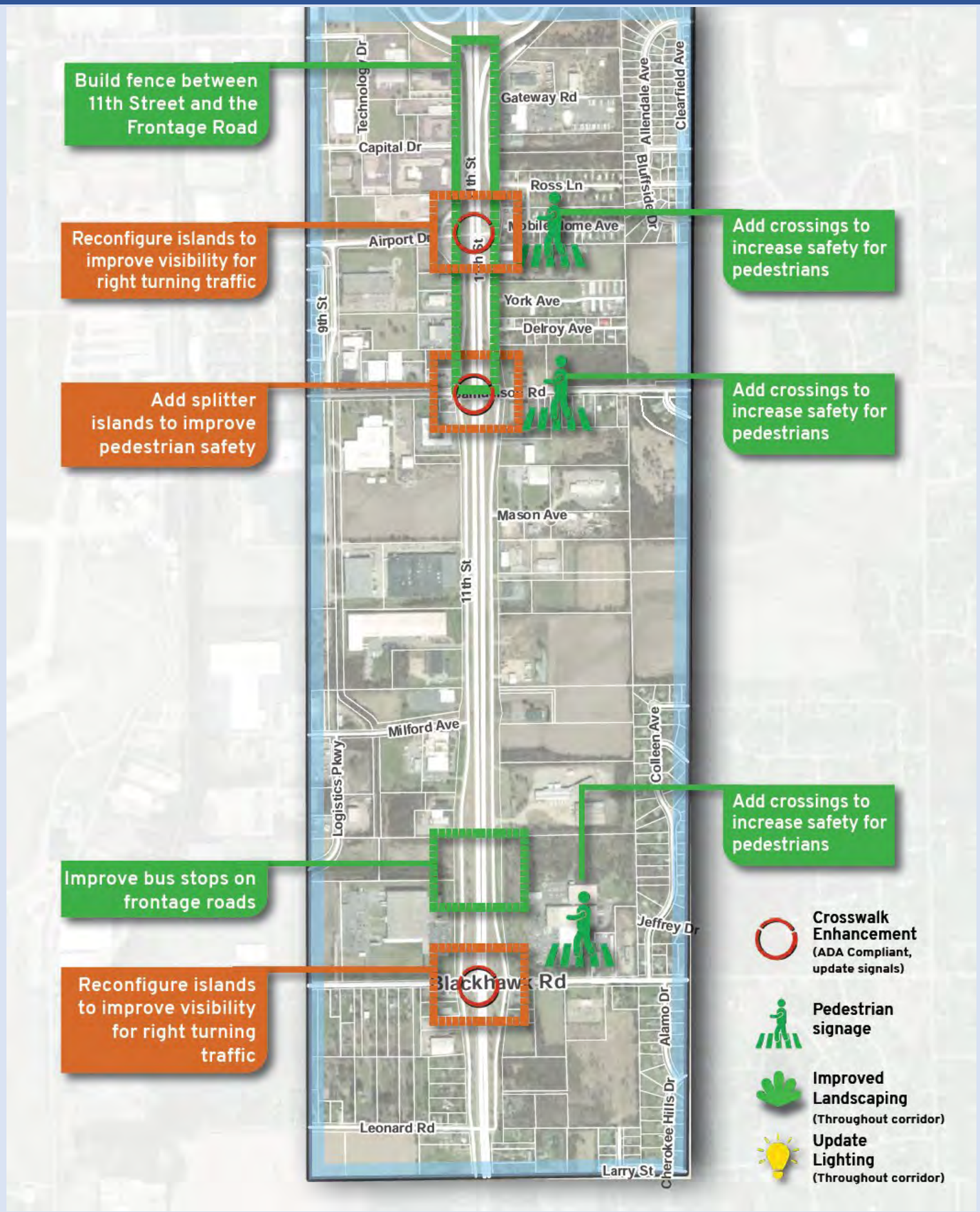
RECOMMENDED PROGRAM OF IMPROVEMENTS – 1 of 3



RECOMMENDED PROGRAM OF IMPROVEMENTS – 2 of 3



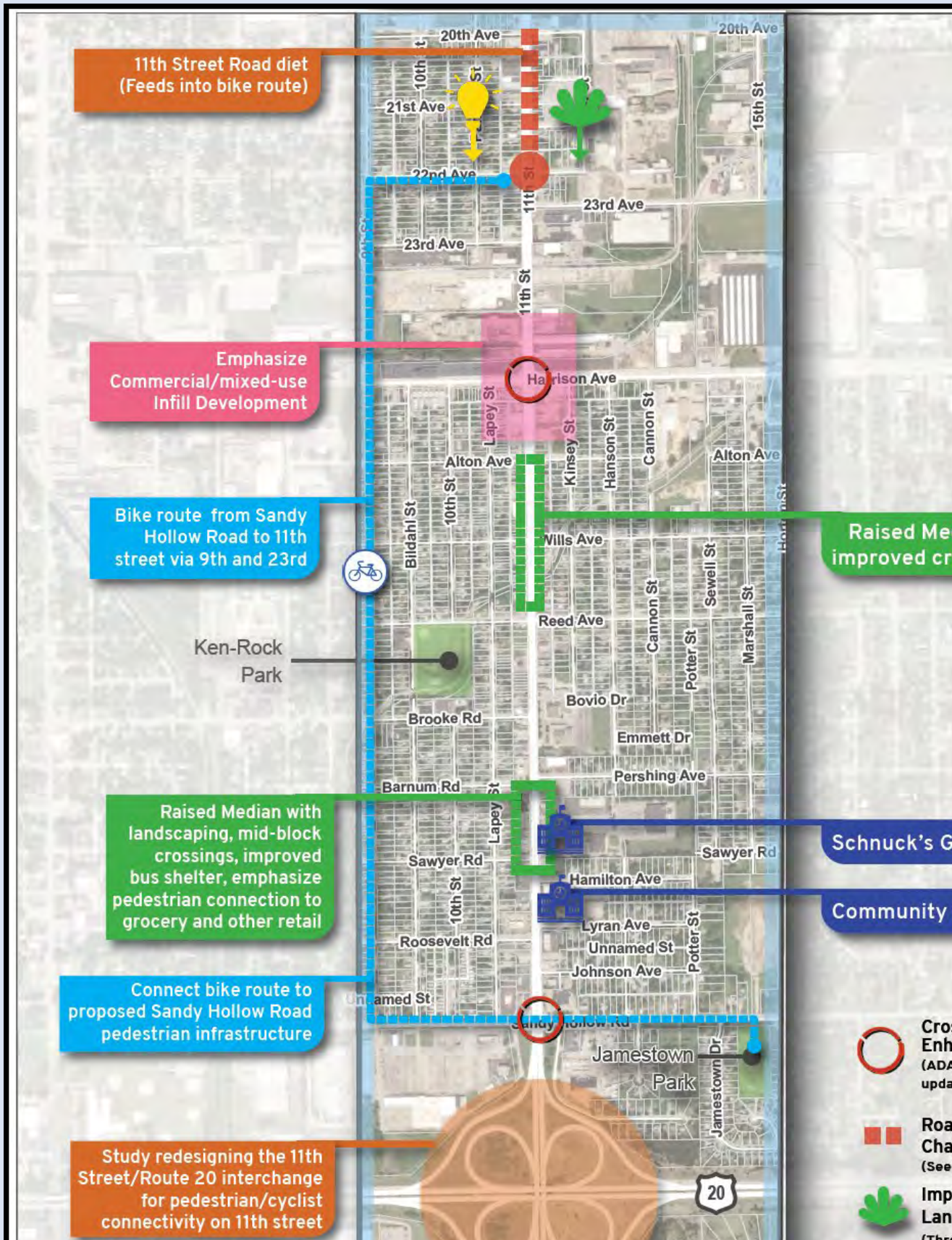
RECOMMENDED PROGRAM OF IMPROVEMENTS – 3 of 3



QUESTIONS AND DISCUSSION

- Likes or dislikes, why?
- Prioritization?
- Segments that need more attention?
- Where is the best value?
- All Transportation Modes addressed?





11th Street Corridor Study – Q&A from Public Meeting #2

For the area around Schnucks, when you start work on this, what is impact on the residential streets would be? I know one of the main entrances is on 11th Street. The other roadway entrances leading to Schnucks that are not on 11th Street are very rough. Do you have any plans to prep us for the reduced access we would be having for a while?. Do you have any plans for how that would impact pedestrian access?

- ➔ We don't have any exact answers yet, but we would make sure people would continue to have access to 11th Street. We don't expect for 11th street to be closed completely, but there might be a side road closure in select locations. We could stagger those closures if needed. Road closures on the 11th Street corridor would not be like the closures done on Main Street. During the design phase, once we know exactly what and how improvements would be constructed, we will look for more public input.

At any point, is it practical to include roundabouts? They are aesthetically pleasing in other areas of the city.

- ➔ Implementing roundabouts were looked into at various intersection, however a large concern was the size of roundabouts. Even a very small roundabout is at least 100' in diameter and we have about 100' across intersections from right-of-way point to right-of-way point. Implementing a roundabout would mean buying properties at intersection corners and possibly relocating drives and businesses. Usually, roundabouts are great when traffic is "evenly distributed" – when the side road has similar traffic volumes to the main road. The neighborhood streets that intersect the corridor are very small relative to 11th Street, and the roundabout footprint would take up a lot of right-of-way at those intersections. However, roundabouts could be implemented at the bypass if the interchange is reconfigured. Roundabout circles could become a great gateway feature entering the City from the south. Interchange ramps such as the proposed diamond interchange make for good roundabout locations, as traffic signals are not closely spaced together. Instead, you are traveling through two or more roundabouts, and traffic would likely not back up onto the bypass.

11th Street Corridor Study – Public Comments from Corridor Study Website

- Reed and 11th St have had many accidents, some fatal. It's virtually impossible to turn left to get out. Traffic pattern is bizarre. First there's nothing coming one way, but heavy traffic on the other side. Then that side clears up, but the other one has no end in sight of oncoming cars. I can't even imagine how pedestrians can cross there.
  I personally never go out that way. I go down Southworth, through all the potholes and turn on Sandy hollow. Many years ago there was an underground tunnel by McDonald's, but it is gone now also.
  It was pretty deteriorated by the time it was closed. If a stoplight isn't warranted, at least some kind of traffic flow control would be helpful for Reed Avenue and 11th St area.

- Having lived on the south east side of Rockford my entire life..the roads are the least of our worries...why don't you do what you did for the Westside..im ashamed of they way the city has neglected this side of town we have nothing but banks and gas stations some which are closed and fast food dollar stores and over priced snucks. Thanfully we have a Aldi..twice we were told we're getting a Walmart and that went away with the wind. Now we have the covid center. Thanks for that. What ever happened to all this money your getting from the lottery and the Marijuana stores and gambling and you want another tax increase . NO NO NO...I for one have had enough of this bologna and believe you better quit trying to Buffalo people..I know my opinion doesn't matter but now that I have voiced it I feel better and hope and pray you bring back a part of town that is in desperate need of attention and repair!
  From a life long resident who's considering leaving Illinois...were taxed out!

11th Street Corridor Study – Public Phonecalls to City

- When the City removed the bridges over Keith Creek to the east and west of 11th Street, it funneled cyclists and pedestrians to 11th Street. As somebody who cycles to work every day, [it is] inconvenient to have to cycle a few blocks to 13th Street to avoid having to cycle on 11th Street at that crossing.
    - The study is considering a road diet with bicycle facilities here, or other accommodations, which seemed to satisfy his comment.

- [Why are there] inconsistencies in lighting along the corridor? For instance, there appears to be two intersection lights at 5th Avenue and another street light just 30' west of the intersection that seems to be overkill.

- [Why are there] no pedestrian signals on the west side of 11th Street at 5th Avenue… but at Charles Street there are no pedestrian signals on the east side of 11th Street. This suggests the City wants kids walking to the middle school to cross 11th Street twice!

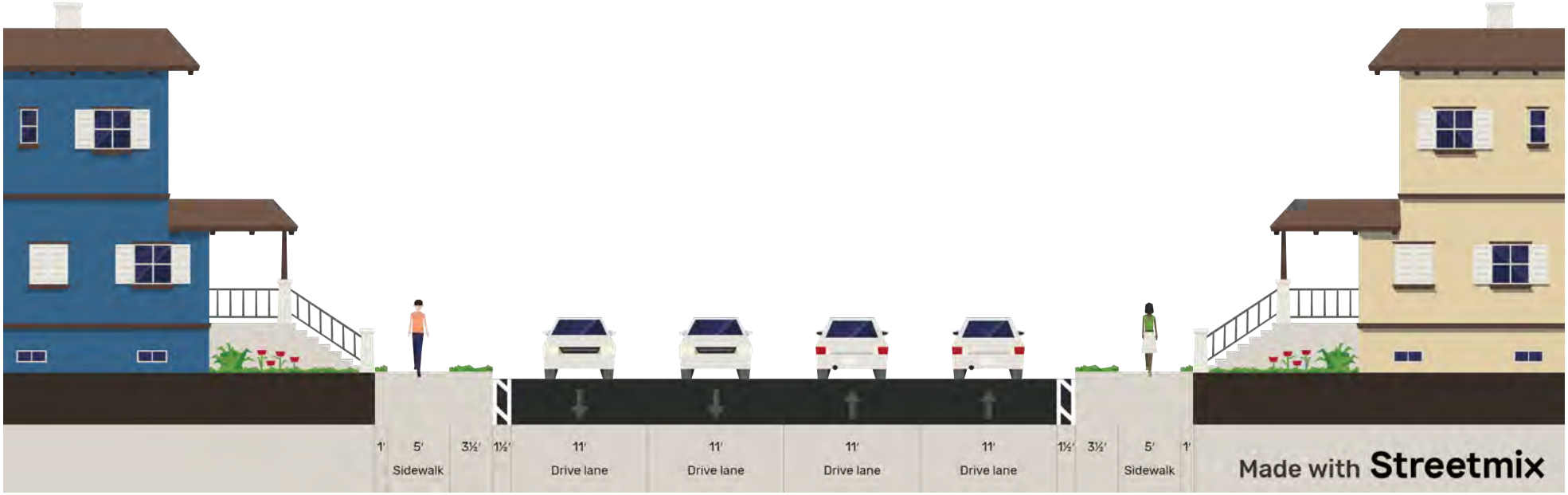
- [There is] a huge barrier for pedestrians is snow not being removed from the sidewalks- and in this particular area this is not because people are lazy, but because the sidewalks are so close to the roadway that snow plows pile large amounts of snow onto the sidewalks and residents physically can't remove that amount of snow, don't have the financial resources to pay someone to do it, and also don't have anywhere to put it. Suggest either create further distance from the roadway and sidewalks, or, if the City is serious about keeping pedestrians out of the street, make a deal to remove the snow themselves from sidewalks with little setback from the curb.

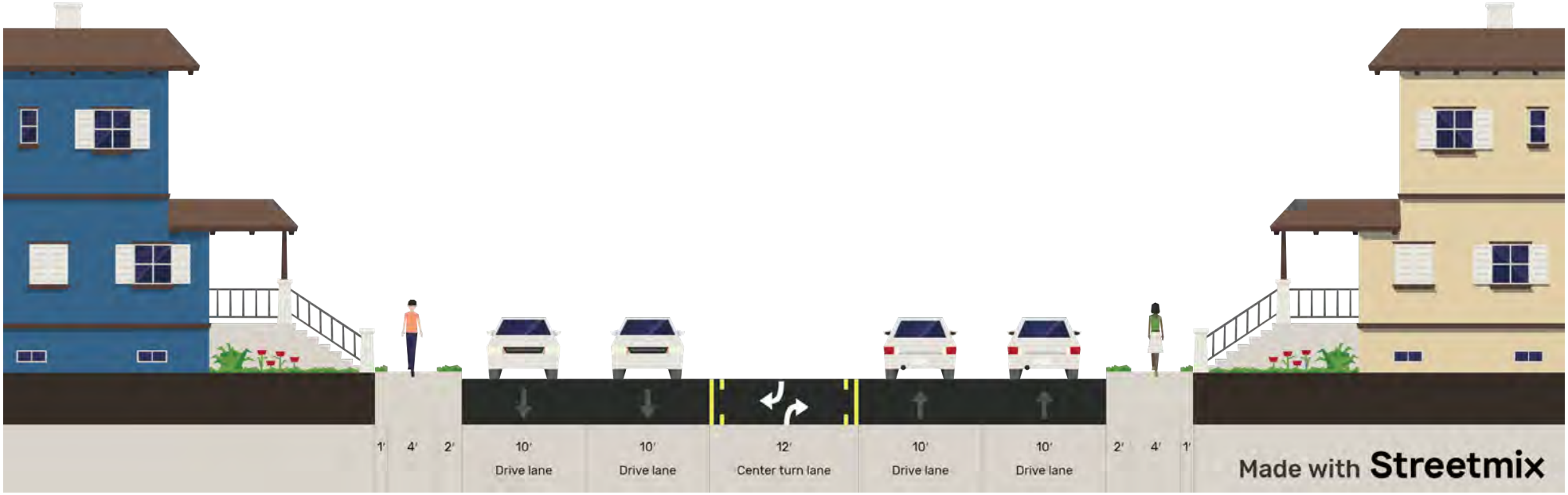
- This may be more of a design concern than a study concern, but a property owner's particular driveway is offset from his garage. He says his garage pre-dates the 80's roadway widening. He was hoping that when the roadway was improved, his driveway entrance could be relocated to line up with his garage.

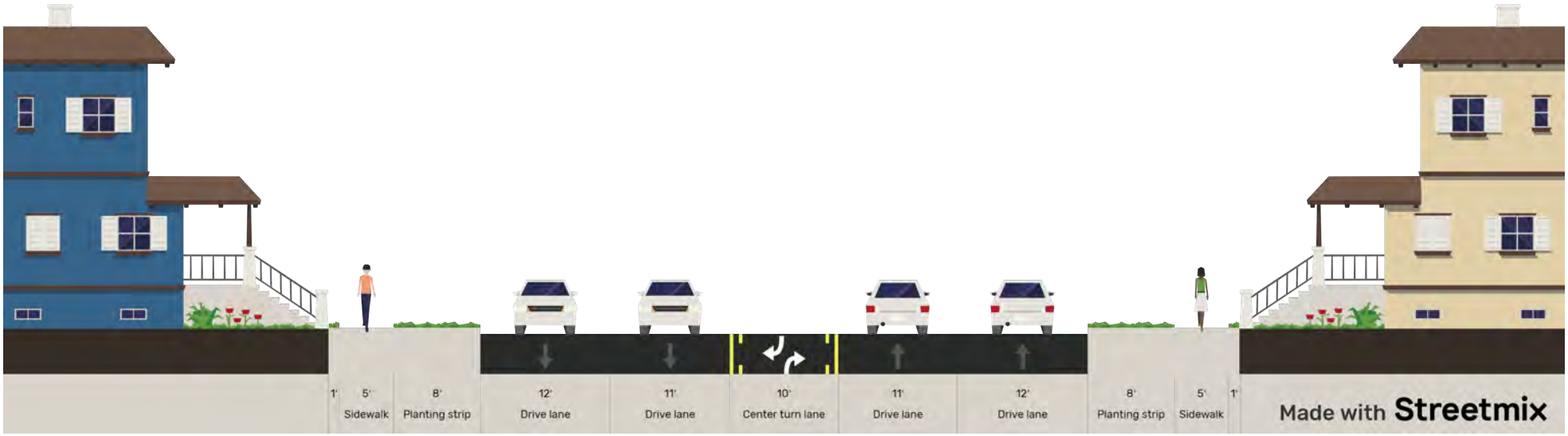
APPENDIX 2

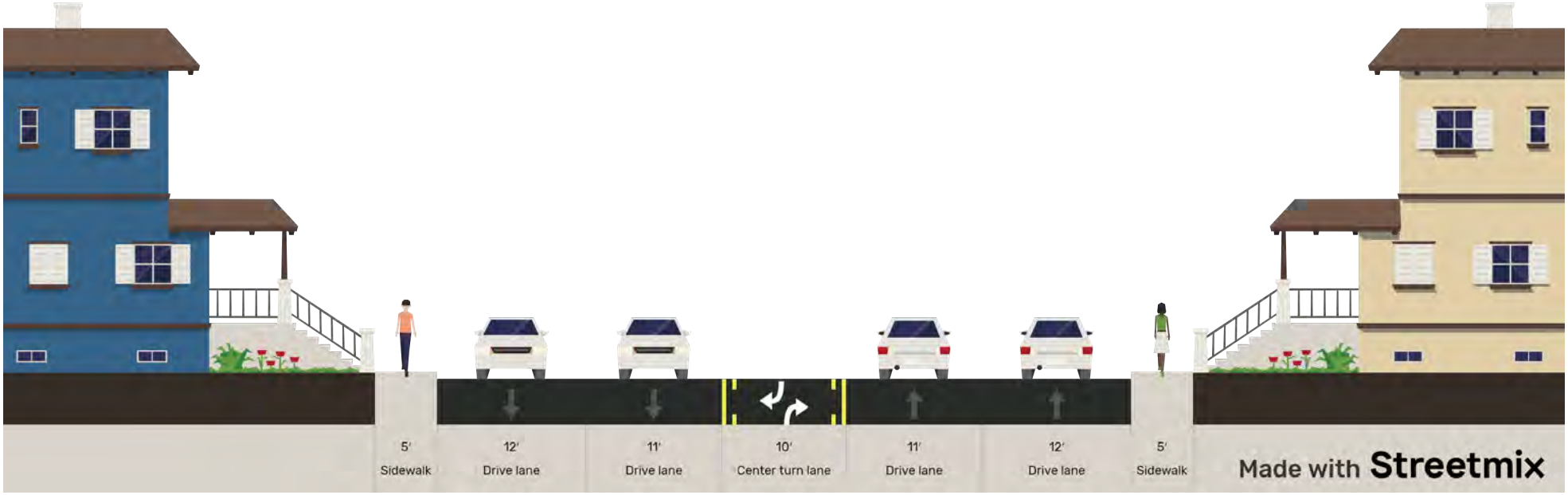
Existing Corridor Conditions

- Existing StreetMix Typicals
  - Existing 11th – Charles to Broadway
  - Existing 11th – Broadway to 18th
  - Existing 11th – 18th to 23rd
  - Existing 11th – Harrison to Sandy Hollow
- Existing Conditions Analysis
- Flood Insurance Rate Map (FIRM)
- Rail Crossing Reports
  - FRA #174435A
  - FRA #290048A
  - FRA #290016U
- Rail Crossing Information for inactive spur north of 20th Avenue
- Utility Facilities Mapping
- Transit Ridership Maps


1'
5'
Sidewalk
3½'
1½'
11'
Drive lane
11'
Drive lane
11'
Drive lane
11'
Drive lane
1½'
3½'
5'
Sidewalk
1'
Made with Streetmix


1′
4′
2′
10′
Drive lane
10′
Drive lane
12′
Center turn lane
10′
Drive lane
10′
Drive lane
2′
4′
1′
Made with Streetmix


1'
5'
Sidewalk
8'
Planting strip
12'
Drive lane
11'
Drive lane
10'
Center turn lane
11'
Drive lane
12'
Drive lane
8'
Planting strip
5'
Sidewalk
1'
Made with Streetmix


5′
Sidewalk
12′
Drive lane
11′
Drive lane
10′
Center turn lane
11′
Drive lane
12′
Drive lane
5′
Sidewalk
Made with Streetmix

Existing Conditions Analysis

11th Street Corridor Plan



camiros

In Partnership with CMT, SB Friedman,
American Surveying & Engineering

October 26, 2020

CONTENTS

City Context

2020 Future Land Use

Zoning

Zoning Front Setback Requirements

Zoning Key Provisions

Landscape Requirements Summary

Review and Approval Procedures Summary

Sidewalk Network

Rockford Mass Transit District

Average Daily Traffic County

Parks and Open Space

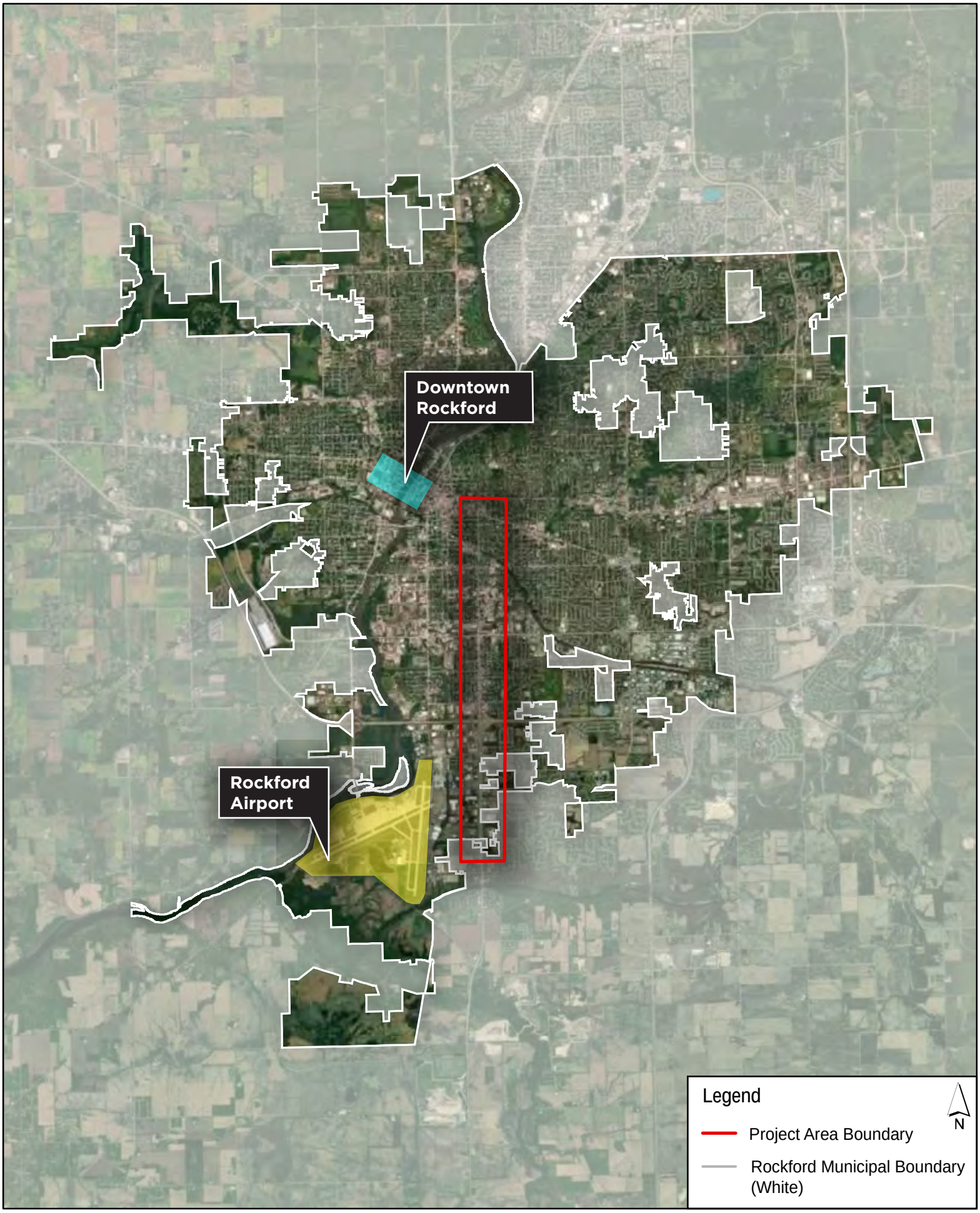
Existing Streetscape Improvements

Subject to Change

Flood Hazard

Tree Coverage

Institutional Ownership



City Context Map

Existing Conditions Analysis 11th Street Corridor Plan | October 26, 2020

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In Partnership with CMT, SB Friedman, American Surveying & Engineering

2020 Future Land Use Categories

Source: 2011 Amended City of Rockford Comprehensive Plan)

Residential Categories: In addition to strictly residential uses, allow other nonresidential uses that are customarily found in neighborhoods and which are allowed in these areas as permitted uses or with a Special Use Permit in Rockford's Zoning Ordinance. Examples of these could include day care facilities and public schools.

- *Subdivision Review Area (SRA):* Areas within the City's planning jurisdiction (within 1½ miles of the City limits) that are unlikely to receive sanitary sewer service. The City retains review authority over any new subdivisions in these areas to ensure such things as continuity of the transportation system, and adequate infrastructure to allow entrance of all forms of emergency services into the subdivision.

- *Low-Density Residential (RL):* A range of 2-7 dwelling units per acre; could include single-family homes, townhouses, duplexes or any combination of these.

- *Medium-Density Residential (RM):* A range of 5-15 dwelling units per acre; could include single-family homes, duplexes, townhouses, apartments, or any combination of these.

- *High-Density Residential (RH):* More than 15 dwelling units per acre; could include townhouses, garden apartments, multistory apartments, or any combination of these.

Commercial Categories:

- *Retail (C):* Stores selling merchandise; no outside storage. Example: Clothing store.

- *Office Overlay (CO/O):* Office development in existing buildings, including those built as single-family homes, where those buildings have historic value. Office use would only be allowed if placed in the existing building.

- *Recreation/Entertainment/Tourist (CR):* Establishments catering to tourist, convention and local markets. Examples: Motels and restaurants.

- *Office (CO):* Concentrations of office space. Examples: real estate office, medical office.

- *Heavy Commercial (CH):* Activities requiring a large land area but with low traffic volume; may include substantial outdoor storage. Examples: car dealer, lumber yard.

- *Commercial Mixed Use (CD):* Allows a mixture of retail and office commercial with residential uses; roughly equivalent to the C-4 District in the Zoning Ordinance. Example: Mixed use buildings on Broadway and on 7th Street.

- *Central Business District (CBD):* Rockford's downtown, also known as the River District; includes a broad range of commercial and residential uses

2020 Future Land Use Categories (continued)

Source: 2011 Amended City of Rockford Comprehensive Plan)

Industrial Categories:

- *Light Industry (IL):* Office/research parks; small, clean manufacturing plants; and other industrial-type uses that would not negatively impact adjacent residential areas.

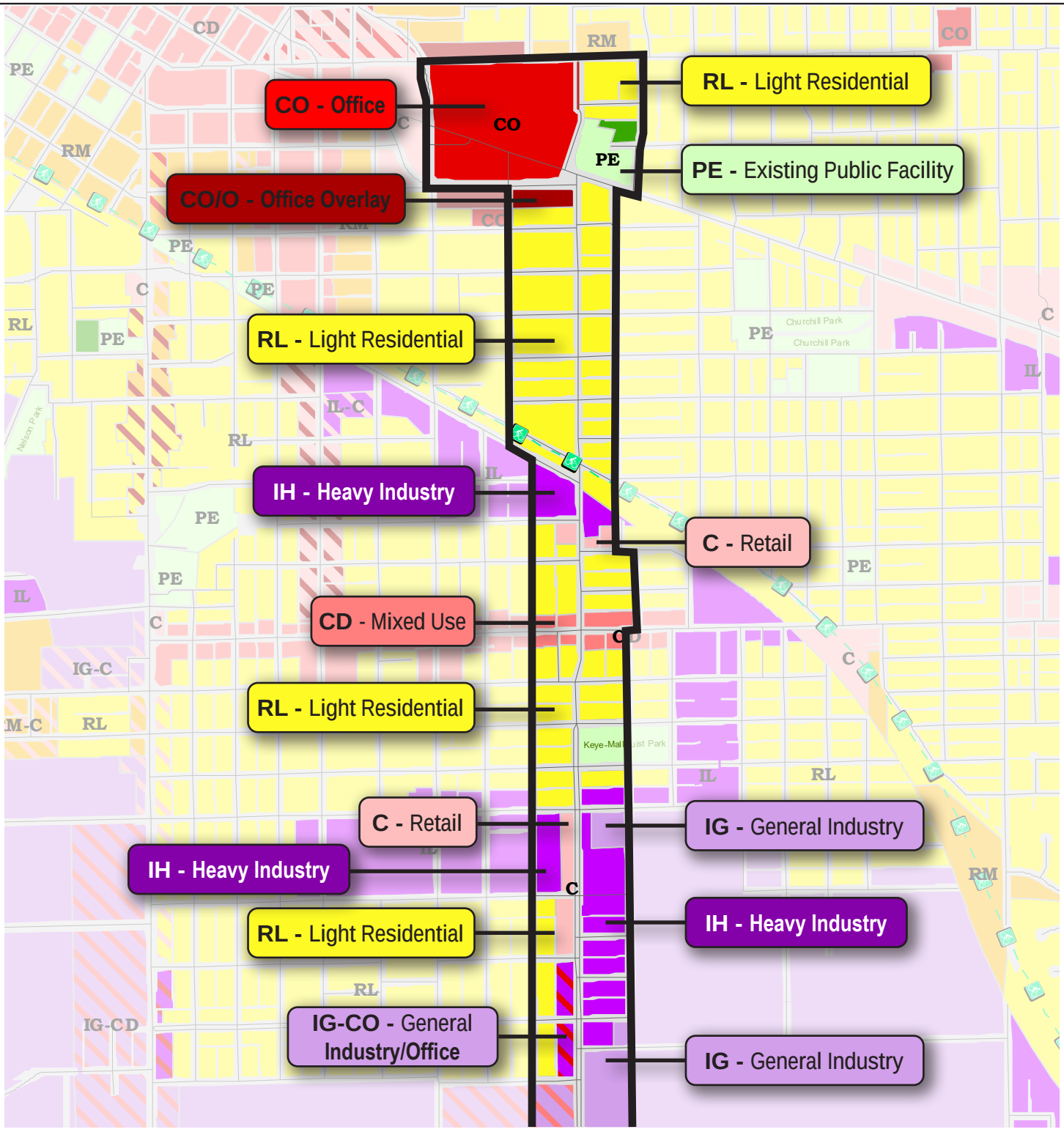
- *Tech Industry (T):* Technology-based employment centers; environmentally clean operations; no outdoor storage.

- *General Industry (IG):* Most manufacturing and processing operations, including large plants and warehouses; and uses generating large amounts of truck, rail or auto traffic.

- *Heavy Industry (IH):* Potentially hazardous or noxious uses that should be kept separate from nonindustrial activities

Public/Quasi-Public Categories

- *Existing Facility (PE):* All existing parks, forest preserves, public schools, colleges, country clubs, public buildings, and country clubs; other properties open to the public, such as churches, that are on large lots (minimum of 5 acres).



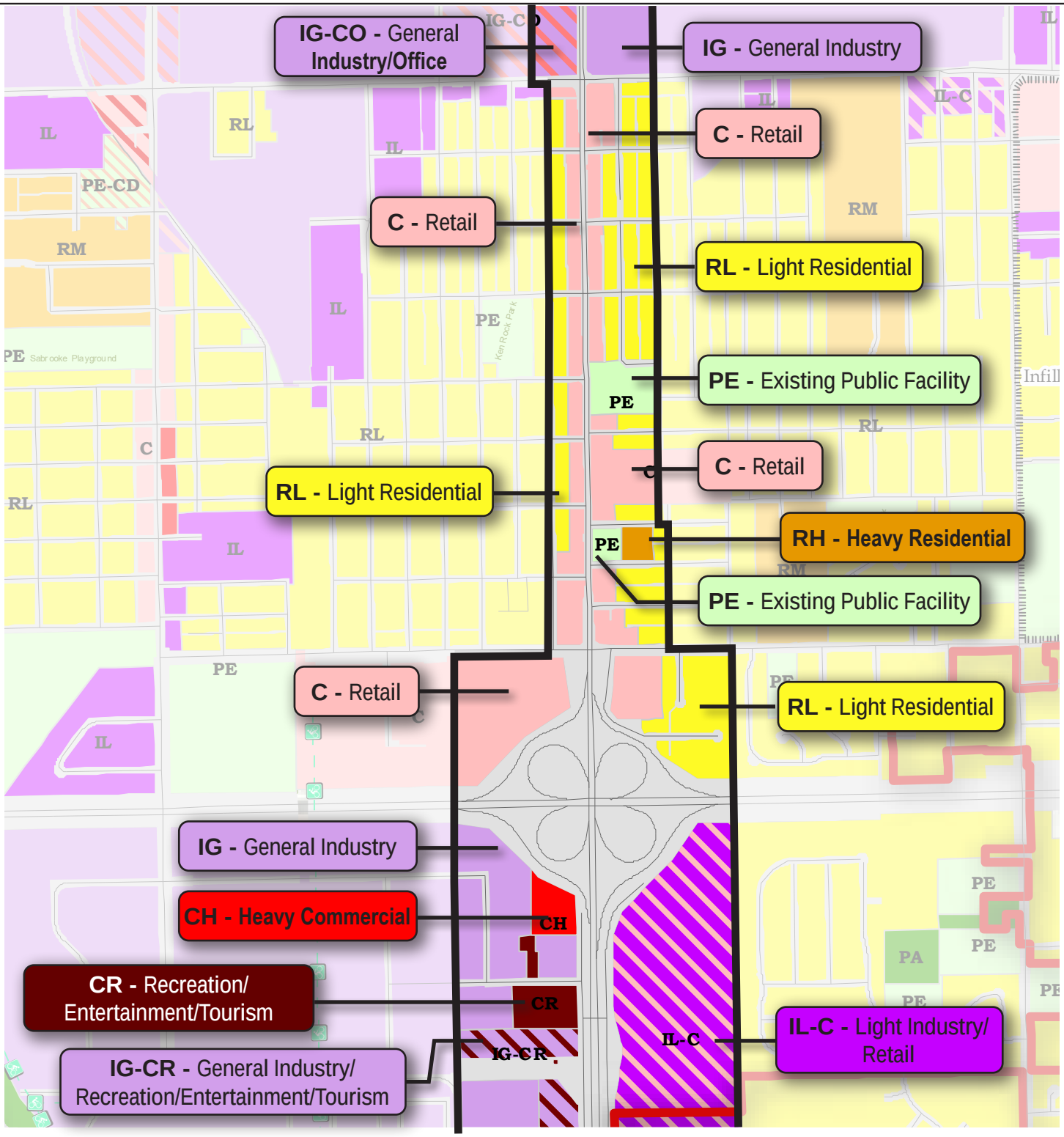
Legend

- C- Retail
- CD- Mixed Use
- CH- Heavy Commercial
- CO- Office
- CO/O- Office Overlay
- CR- Recreation/Entertainment/Tourism
- PA- Priority Park Acquisition
- PE- Existing (Quasi-) Public Facility
- U- Area Unsuitable for Development
- IG- General Industry
- IL- Light Industry
- IH- Heavy Industry
- T- Tech Industry
- RL- Light Residential
- RM- Medium Residential
- RH- Heavy Residential
- FUD- Future Urban Development
- SRA- Subdivision Review Area
- RH-CBD- Central Business District Overlay
- Multiple Designation Areas
- C-CO
- C-CO/O
- C-CR
- CH-IL
- CH-RL
- CO-CR
- U-PA
- IG-C
- IG-CD
- IG-CR
- PE-CD
- IL-C
- IL-CO
- T-IG
- T-IL
- T-CO
- T-C-IL
- T-C-CO
- RL-C
- RM-C
- RM-CO
- RH-CO
- RL-CO/O
- RM-CO/O
- RH-CO/O
- LandUse2020Streets
- Proposed Interchanges
- Proposed Roundabout
- Rockford City Limits
- Infill Areas
- Existing Parks
- Right Of Ways

Source: City of Rockford's 2020 Comprehensive Plan Map, Amended 2011

2020 Future Land Use (1 of 3)

Existing Conditions Analysis 11th Street Corridor Plan | October 26, 2020



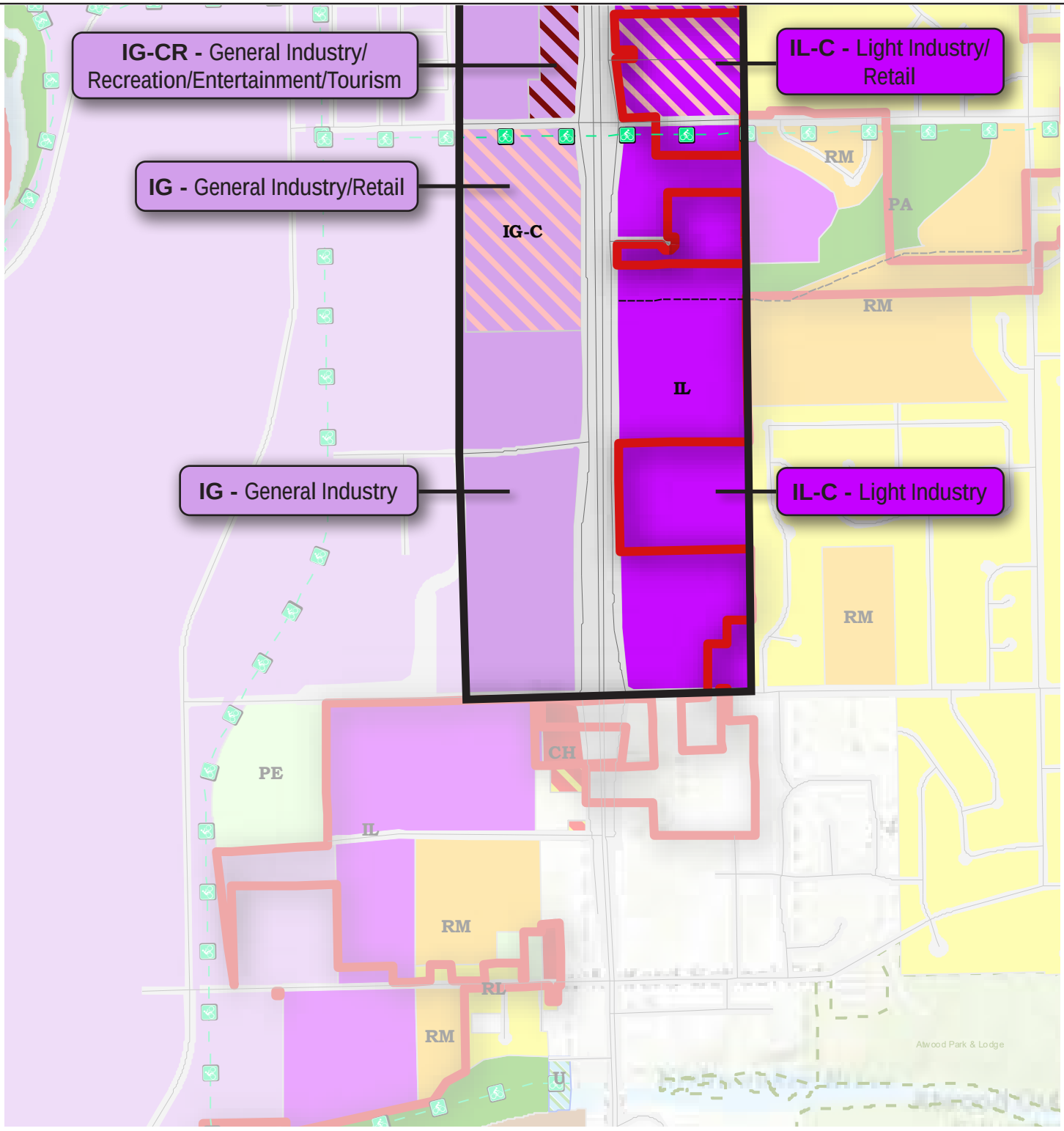
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- C-CO/O
- C-CR
- CH-IL
- CH-RL
- CO-CR
- U-PA
- IG-C
- IG-CD
- IG-CR
- PE-CD
- IL-C
- IL-CO
- T-IG
- T-IL
- T-CO
- T-C-IL
- T-C-CO
- RL-C
- RM-C
- RM-CO
- RH-CO
- RL-CO/O
- RM-CO/O
- RH-CO/O
- LandUse2020Streets
- Proposed Interchanges
- Proposed Roundabout
- Rockford City Limits
- Infill Areas
- Existing Parks
- Right Of Ways

Source: City of Rockford's 2020 Comprehensive Plan Map, Amended 2011

2020 Future Land Use (2 of 3)

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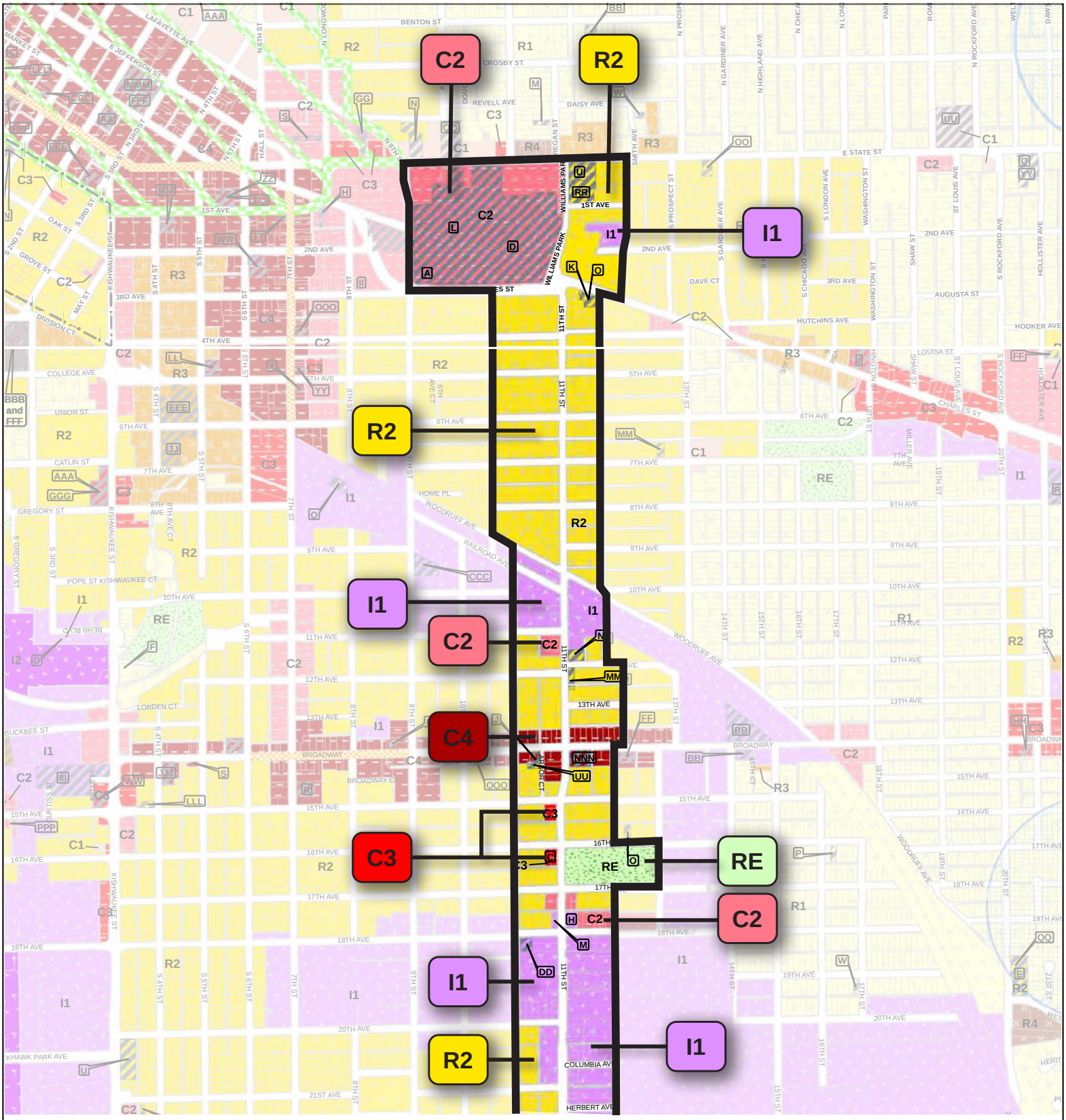
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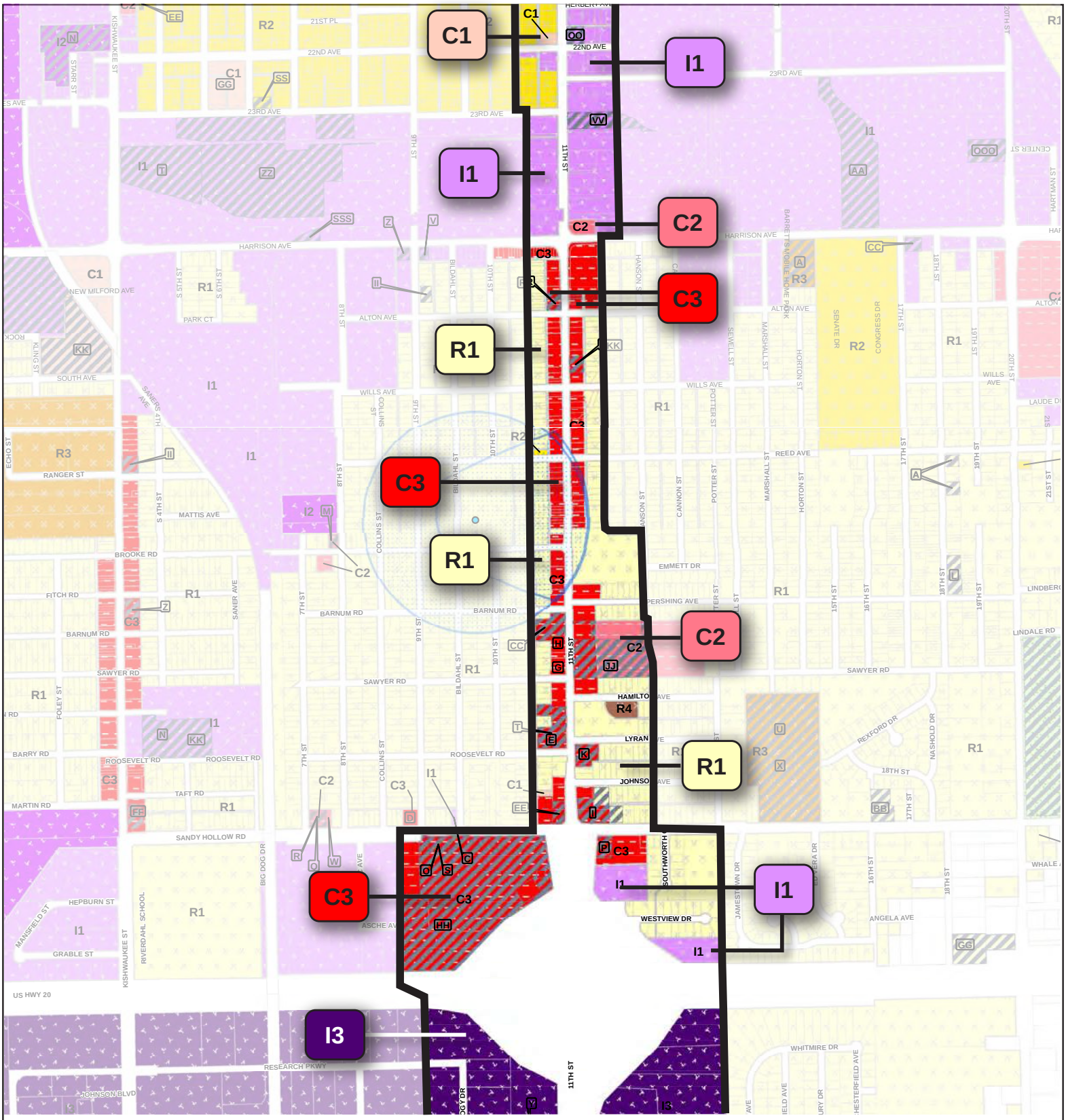
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- CO- Office
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- CR- Recreation/Entertainment/Tourism
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- U- Area Unsuitable for Development
- IG- General Industry
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- IH- Heavy Industry
- T- Tech Industry
- RL- Light Residential
- RM- Medium Residential
- RH- Heavy Residential
- FUD- Future Urban Development
- SRA- Subdivision Review Area
- RH-CBD- Central Business District Overlay
- Multiple Designation Areas
- C-CO
- C-CO/O
- C-CR
- CH-IL
- CH-RL
- CO-CR
- U-PA
- IG-C
- IG-CD
- IG-CR
- PE-CD
- IL-C
- IL-CO
- T-IG
- T-IL
- T-CO
- T-C-IL
- T-C-CO
- RL-C
- RM-C
- RM-CO
- RH-CO
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- LandUse2020Streets
- Proposed Interchanges
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- Rockford City Limits
- Infill Areas
- Existing Parks
- Right Of Ways

Source: City of Rockford's 2020 Comprehensive Plan Map, Amended 2011

2020 Future Land Use (3 of 3)

Existing Conditions Analysis 11th Street Corridor Plan | October 26, 2020


C2
R2
I1
I1
R2
I1
C2
C4
C3
RE
C2
I1
R2
C2
I1
R2
I1
C2
C2
C2



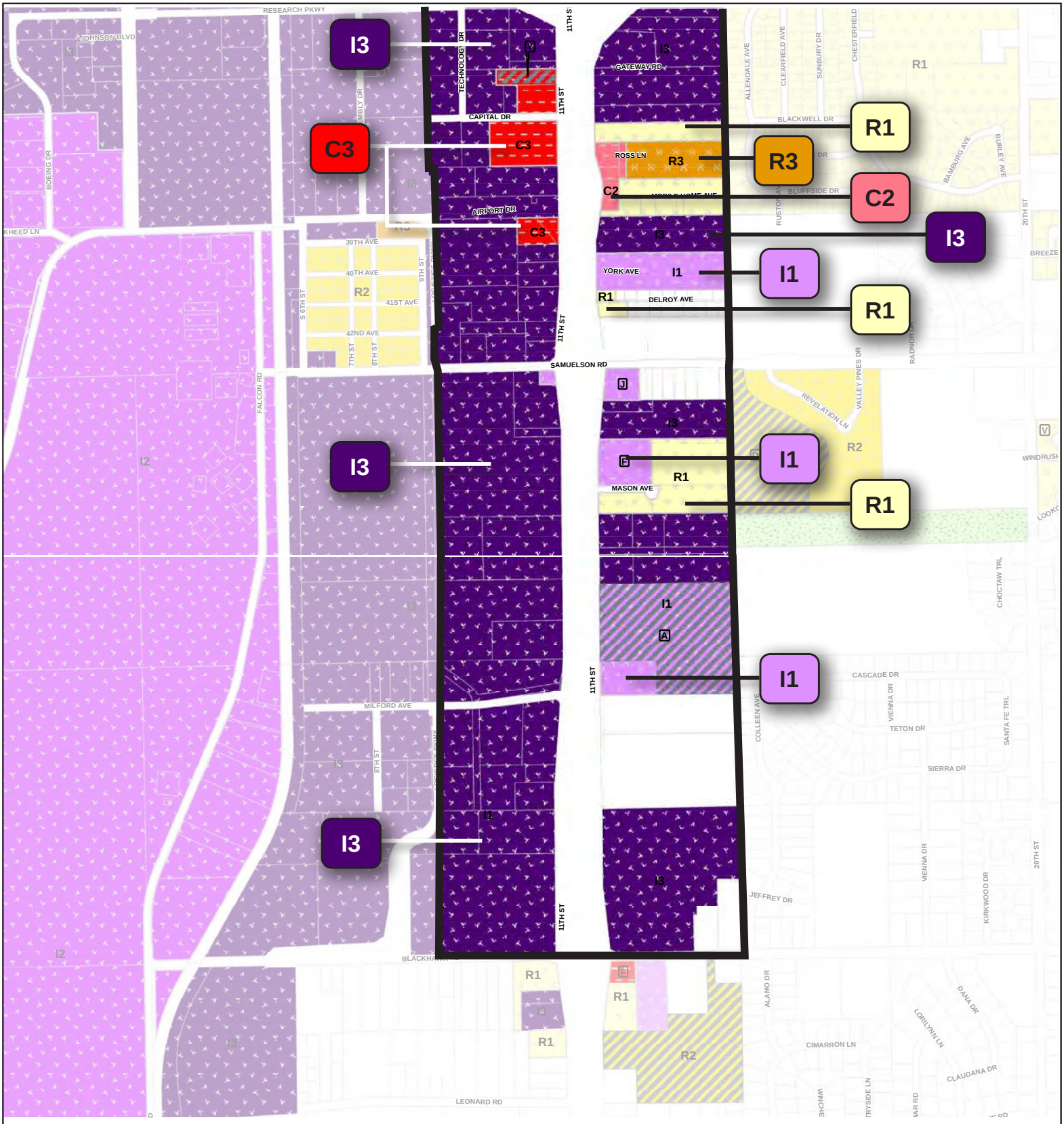
Source: City of Rockford's Zoning Ordinance

Zoning (2 of 3)

Existing Conditions Analysis 11th Street Corridor Plan | October 26, 2020

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Legend

- C1, C2, C3, C4
- I1, I2, I3
- R1, R1U, R2, R3, R4, RE
- Preannexation Agreements
- Special Use Permit
- Arts and Creativity Overlay District
- Designated Pedestian Streets
- City Wells
- Well Setback Areas

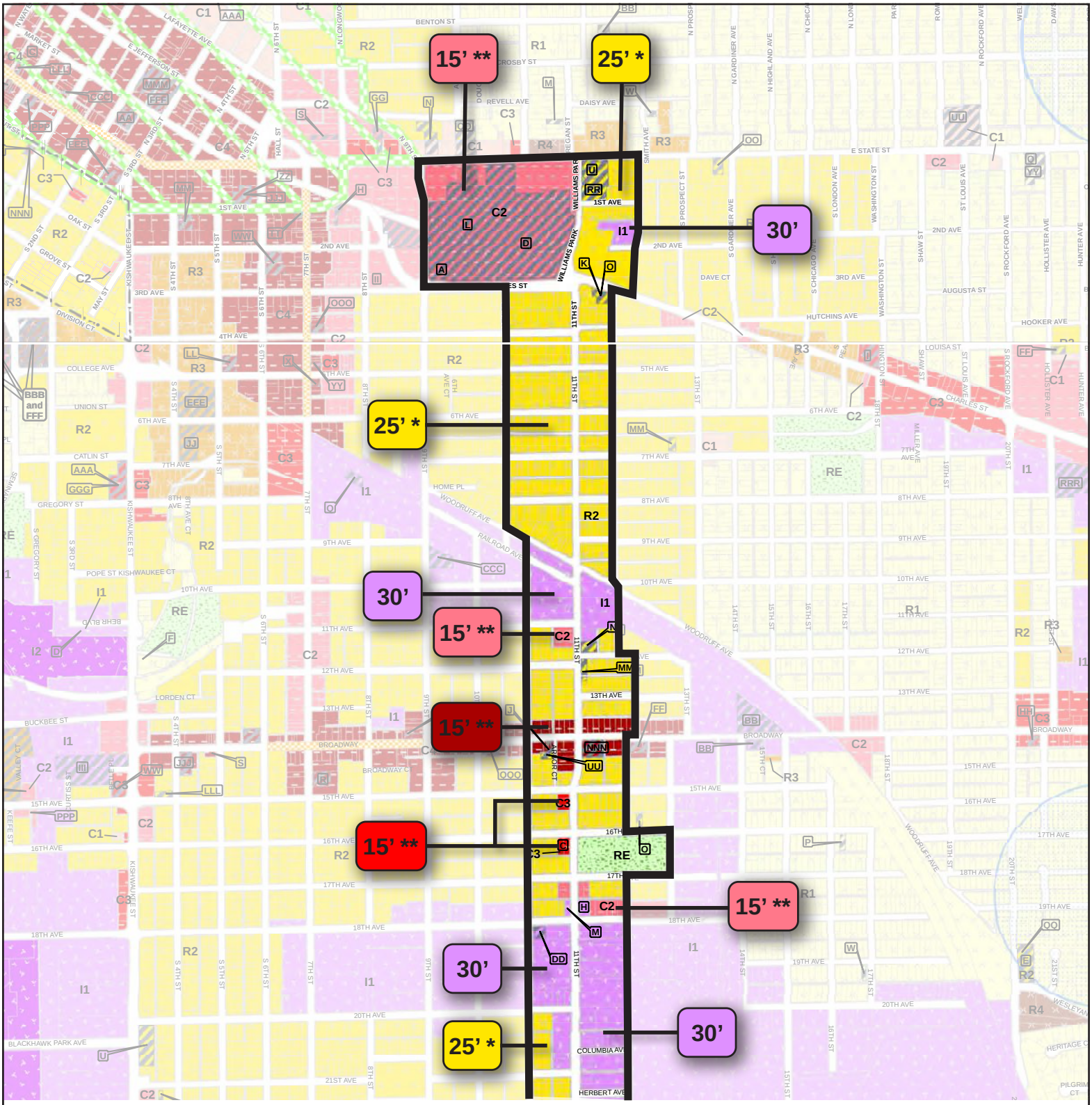
Source: City of Rockford's Zoning Ordinance

Zoning (3 of 3)

Existing Conditions Analysis 11th Street Corridor Plan | October 26, 2020

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Legend

- C1
- C2
- C3
- C4
- I1
- I2
- I3
- R1
- R1U
- R2
- R3
- R4
- RE
- Preannexation Agreements
- Special Use Permit
- Arts and Creativity Overlay District
- Designated Pedestian Streets
- City Wells
- Well Setback Areas

*Buildings and structures in R districts must be set back from the front property line a distance equal to the average front yard depth that exists on the nearest 2 lots on either side of the subject lot...Where no average front setback exists, the front façade of a residential structure must be set back a minimum of 25 feet (20-005-E)

**Parking area and lots must be set back a minimum of 20 feet from the property line adjacent to any public street. (21-005-D)

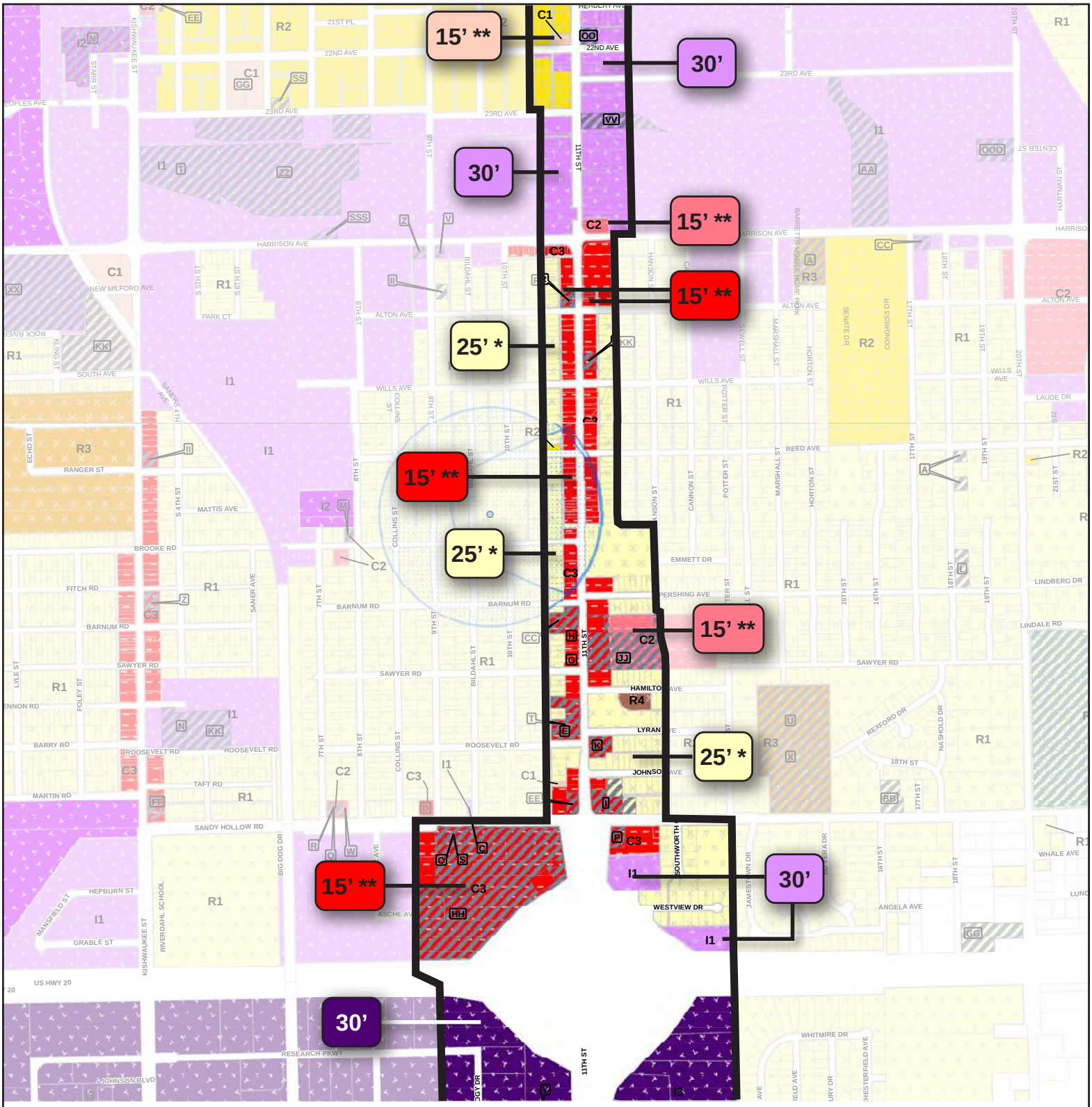
Source: City of Rockford’s Zoning Ordinance

Zoning Front Setback Requirements (1 of 3)

Existing Conditions Analysis 11th Street Corridor Plan | October 26, 2020

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Legend

- C1
- C2
- C3
- C4
- I1
- I2
- I3
- R1
- R1U
- R2
- R3
- R4
- RE
- Preannexation Agreements
- Special Use Permit
- Arts and Creativity Overlay District
- Designated Pedestian Streets
- City Wells
- Well Setback Areas

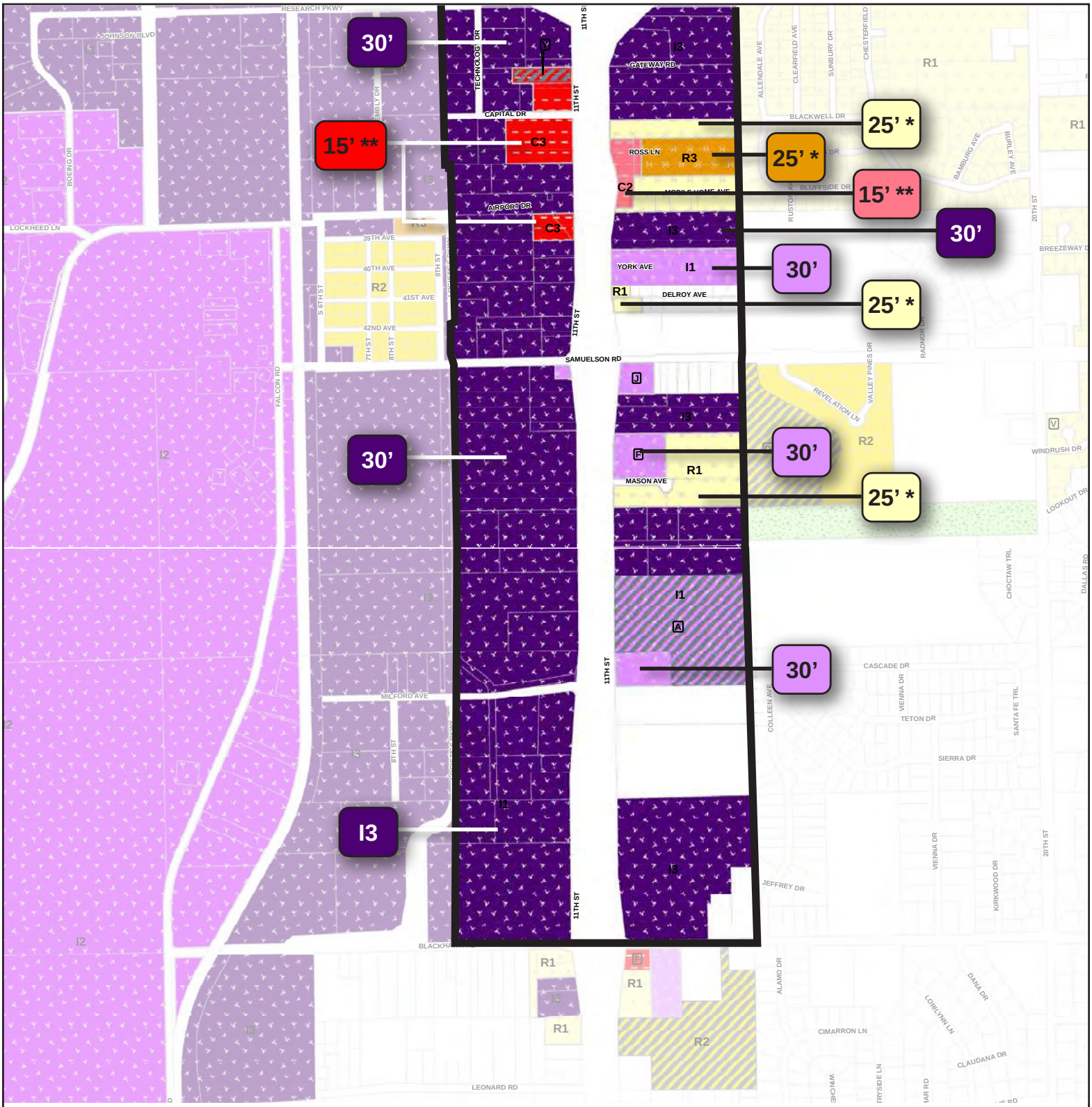
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**Parking area and lots must be set back a minimum of 20 feet from the property line adjacent to any public street. (21-005-D)

Source: City of Rockford’s Zoning Ordinance

Zoning Front Setback Requirements (2 of 3)

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Legend

- C1
- C2
- C3
- C4
- I1
- I2
- I3
- R1
- R1U
- R2
- R3
- R4
- RE
- Preannexation Agreements
- Special Use Permit
- Arts and Creativity Overlay District
- Designated Pedestian Streets
- City Wells
- Well Setback Areas

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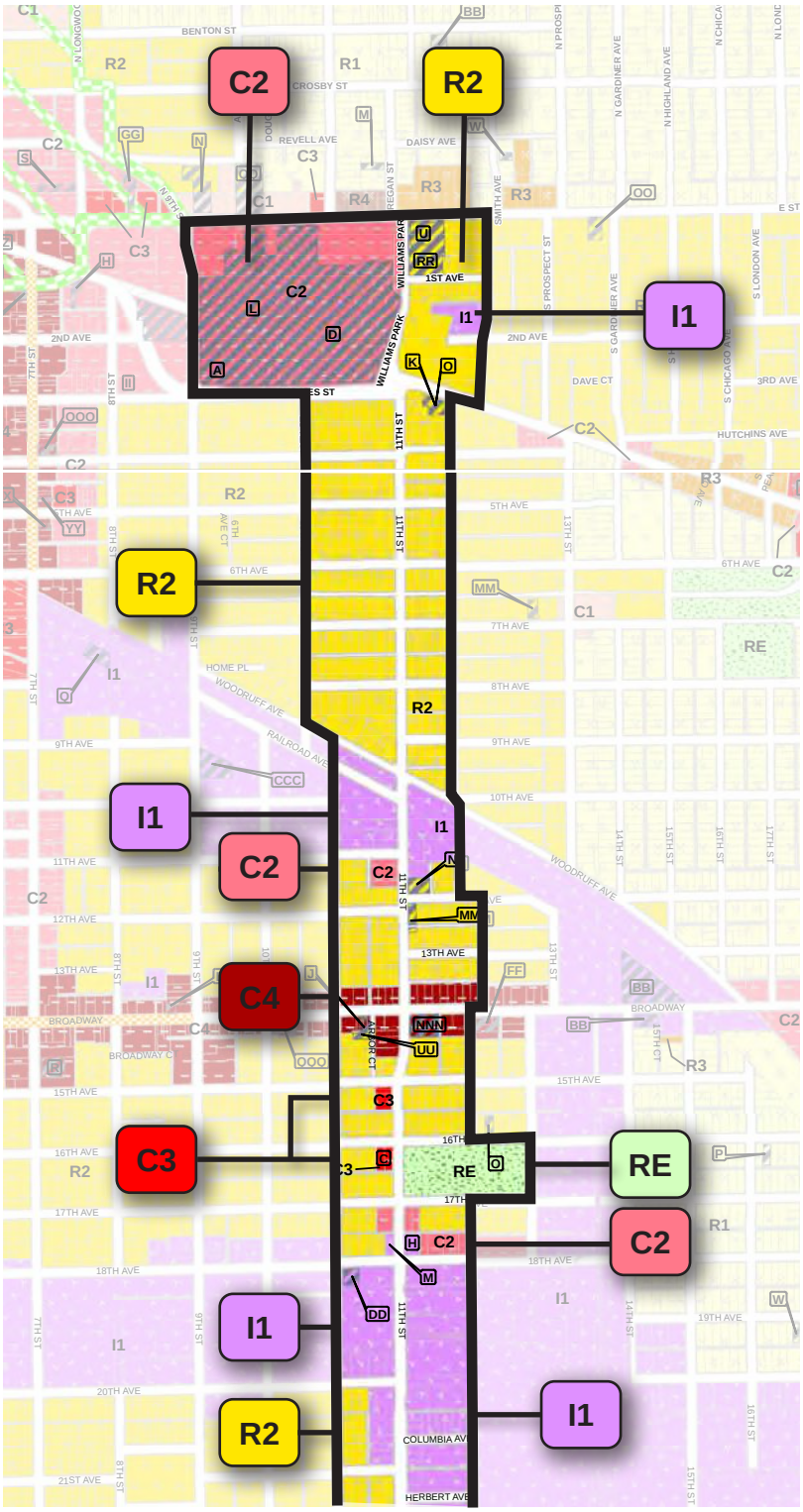
Source: City of Rockford’s Zoning Ordinance

Zoning Front Setback Requirements (3 of 3)

Existing Conditions Analysis 11th Street Corridor Plan | October 26, 2020

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Legend

- C1
- C2
- C3
- C4
- I1
- I2
- I3
- R1
- R1U
- R2
- R3
- R4
- RE
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- Designated Pedestian Streets
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Source: City of Rockford's Zoning Ordinance

Minimum Lot Width at Bldg Setback (Feet)

R2	80’
RE	125’
C2	-
C3	-
C4	-
I1	-

Maximum Building Height (Square Feet)

R2	35’
RE	35’
C2	50’
C3	No height limit; Maximum FAR of 4:1
C4	No height limit; Maximum FAR of 4:1
I1	45’

Front Setbacks (Feet)

R2	25 *
RE	25 *
C2	15**
C3	15**
C4	15**
I1	30’

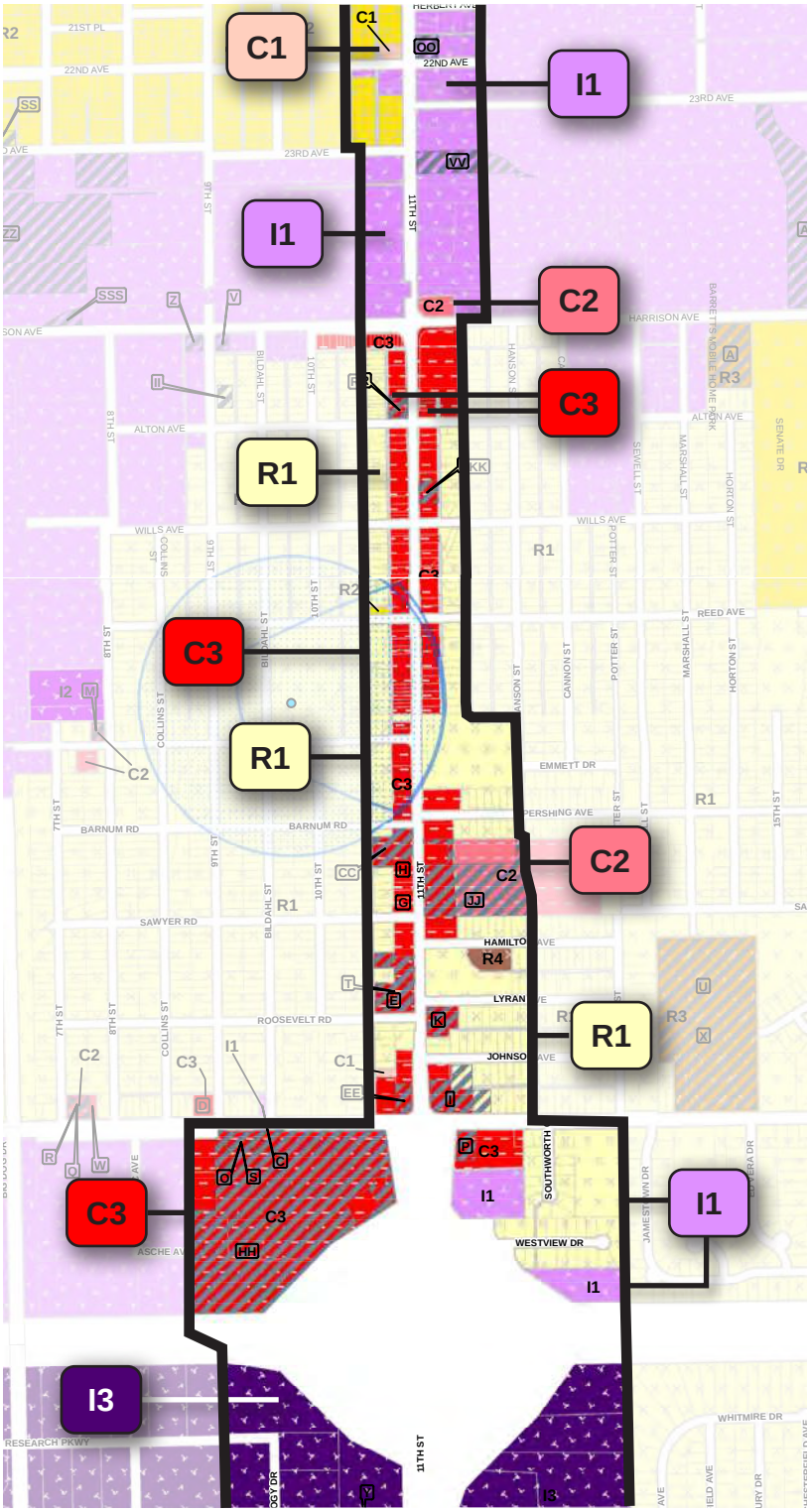
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***Parking area and lots must be set back a minimum of 20 feet from the property line adjacent to any public street. (21-005-D)*

Front Parking Lot Setback (Feet)

R2	See Below
RE	See Below
C2	20’
C3	20’
C4	20’
I1	10’

Off-street parking is prohibited in a front setback for residential uses however a driveway needed to access parking is permitted within the required front yard. Off-street parking for nonresidential uses must be set back a minimum of 20 feet from the property line adjacent to any public street. (50-008-A)



Legend

- C1, C2, C3, C4
- I1, I2, I3, R1
- R1U, R2, R3, R4, RE
- Preannexation Agreements
- Special Use Permit
- Arts and Creativity Overlay District
- Designated Pedestrian Streets
- City Wells
- Well Setback Areas

Source: City of Rockford's Zoning Ordinance

Minimum Lot Width at Bldg Setback (Feet)

R1	70’
C1	-
C2	-
C3	-
I1	-
I3	-

Maximum Building Height (Square Feet)

R1	35’
C1	35’
C2	50’
C3	No height limit; Maximum FAR of 4:1
I1	45’
I1	75’

Front Setbacks (Feet)

R1	25 *
C1	15’ **
C2	15’ **
C3	15’ **
I1	30’
I3	30’

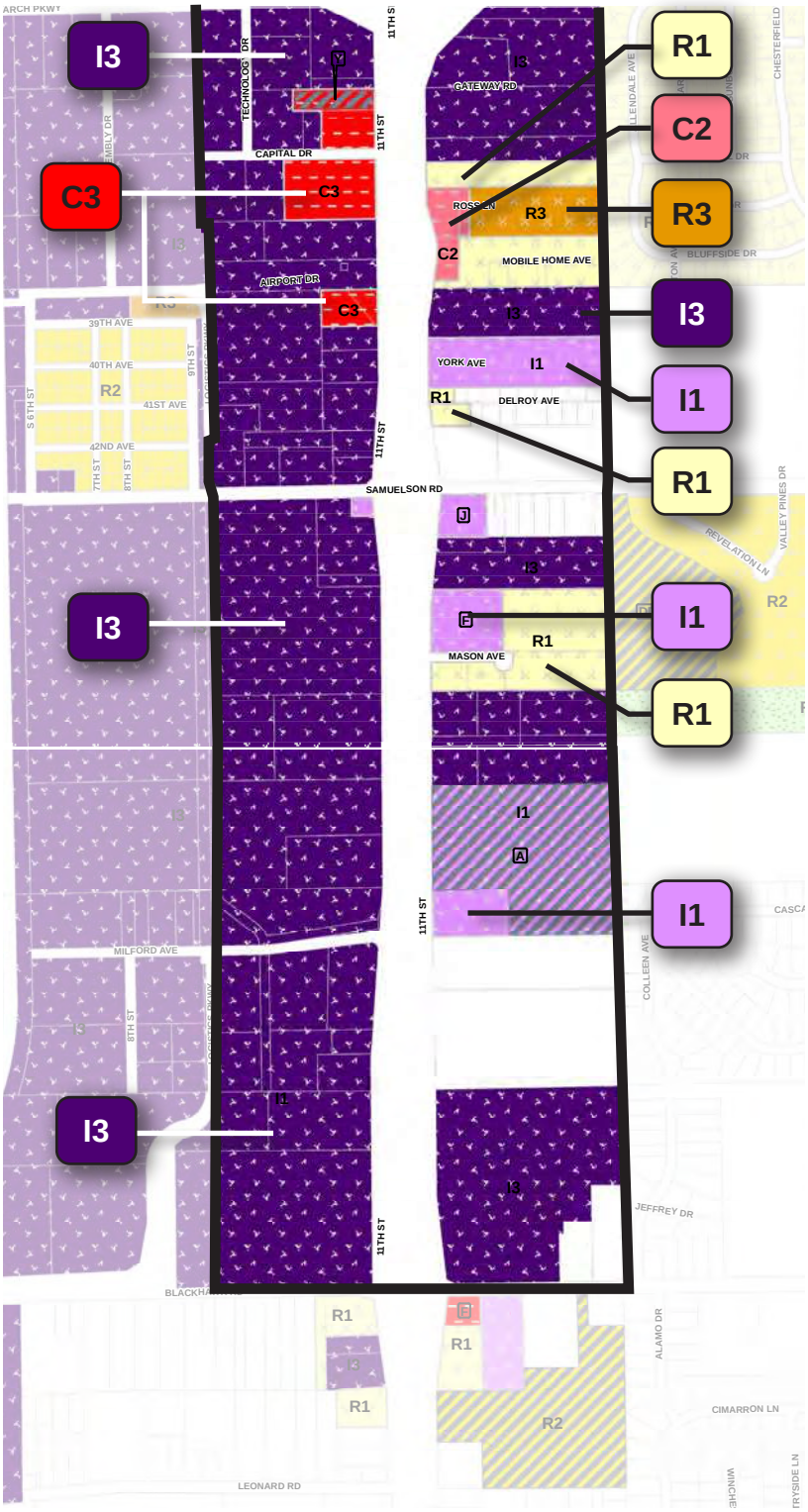
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***Parking area and lots must be set back a minimum of 20 feet from the property line adjacent to any public street. (21-005-D)*

Front Parking Lot Setback (Feet)

R1	See Below
C1	20’
C2	20’
C3	20’
I1	30’
I3	10’

Off-street parking is prohibited in a front setback for residential uses however a driveway needed to access parking is permitted within the required front yard. Off-street parking for nonresidential uses must be set back a minimum of 20 feet from the property line adjacent to any public street. (50-008-A)



Legend

- C1, C2, C3, C4
- I1, I2, I3, R1
- R1U, R2, R3, R4, RE
- Preannexation Agreements
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- Well Setback Areas

Source: City of Rockford's Zoning Ordinance

Minimum Lot Width at Bldg Setback (Feet)

R1	70’
R3	80’
C2	-
C3	-
I1	-
I3	-

Maximum Building Height (Square Feet)

R1	35’
R3	40’
C1	35’
C2	50’
C3	No height limit; Maximum FAR of 4:1
I1	45’
I1	75’

Front Setbacks (Feet)

R1	25 *
R3	25 *
C2	15’ **
C3	15’ **
I1	30’
I3	30’

**Buildings and structures in R districts must be set back from the front property line a distance equal to the average front yard depth that exists on the nearest 2 lots on either side of the subject lot...Where no average front setback exists, the front façade of a residential structure must be set back a minimum of 25 feet (20-005-E)*

***Parking area and lots must be set back a minimum of 20 feet from the property line adjacent to any public street. (21-005-D)*

Front Parking Lot Setback (Feet)

R1	See Below
R3	See Below
C2	20’
C3	20’
I1	30’
I3	10’

Off-street parking is prohibited in a front setback for residential uses however a driveway needed to access parking is permitted within the required front yard. Off-street parking for nonresidential uses must be set back a minimum of 20 feet from the property line adjacent to any public street. (50-008-A)

Landscape Requirements Summary

Source: Rockford Municipal Ordinance

52-001-C. Applicability

General Landscaping Requirements apply to:

- All privately-owned multiple-family residential, commercial, and industrially-zoned properties that have parking areas;
- All open sales lots, outside storage lots, truck storage and equipment yards, terminals, and other vehicular maneuvering areas greater than 2,500 square feet in area; and
- All publicly-owned property (excepting rights-of-way) such as municipal parking lots, public buildings, and public works facilities. Paved areas for recreational uses, such as tennis courts, playgrounds, and basketball courts, are not be subject to these requirements, but may require landscaping as a condition of a special use permit or a variation.
- A landscape buffer will also be required to be placed along the boundaries of the zoning lot that abuts properties in a different zoning district
- Properties that are nonconforming with regard to this Section must be brought into conformity when:
    - A new building or new parking lot or new paved area is proposed;
    - An addition to an existing building, parking lot, or outside storage yard where such addition represents an expansion of 1,000 square feet or a 10% increase in the existing floor area, whichever is greater…
    - An addition to an existing building, parking lot, or outside storage yard within an industrial zoning district where such addition represents 20% increase in the existing floor area or a 30% increase in the land area devoted to parking or outdoor storage;
    - When a zoning application for a special use permit or a variation is filed…
    - When an existing parking lot is reconstructed…

52-002 General Landscape Requirements

- All areas that require landscaping, as per Section 52-001-C, must meet the minimum requirements for “Shade Trees” (Section 52-002-A), “Street Frontage Landscaping” (Section 52-002-B), “Landscape Buffer” (Section 52-002-E) and “Interior Landscaping” (Section 52-002-E.4(f))

52-002-A. Shade Trees

- One shade tree must be planted for every 10 parking spaces, or fraction thereof, or for every 2,500 square feet of paved land area, or fraction thereof…

- 1 shade tree must be planted for every 50 lineal feet of frontage a property has on a street right-of-way…

52-002-B. Frontage/Right-of-Way Landscaping

- Frontage Landscape Strip

    - Any multiple-family residential, commercial, or industrial property that has a parking/storage use that is required to be landscaped, must install street frontage landscape strips…

    - The street front landscaping must be a minimum of 10 feet wide except where a larger setback is required

52-002-E. Landscape Buffers

- Landscape buffers are required for all buildings, structures and uses of land that consist of multiple-family residential, commercial or industrial uses that have a property line that is also a boundary line of a zoning district.

Table 53-002-E Schedule of Buffer Requirements

Subject Property	Zoning or Use of Adjacent Property							
Zoning Classification	**R-E, R-1, R-1U**	**R-2**	**R-3, R-4, C-1**	**C-2, C-4**	**C-3, I-1**	**I-2, I-3**	**I-90 and IL-39 Highway Bypasses & Interchanges**	**Arterial/ Collector Streets***
R-E, R-1, R-1U	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	D	C
R-2	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	D	C
R-3, R-4, C-1	A	A	N.A.	N.A.	N.A.	N.A.	C	C
C-2, C-4	B	B	A	N.A.	N.A.	N.A.	A; n.a for C-4	A; n.a for C-4
C-3, I-1	C	C	B	A	N.A.	N.A.	A	A
I-2, I-3	D	D	C	B	A	N.A.	N.A	N.A.

*Arterial and collector streets as identified in the Rockford Area Transportation Study.

- Description of Buffers

A) The standard Type “A” buffer is 10 feet wide and must consist of 15 landscape units per lineal foot of a zoning district boundary line, with evergreens comprising 50% of the landscape units. The following plant list and quantities represents an example of the plantings required per 100 lineal feet:

Sample Plantings and Values

Planting	Landscape Units
1-Shade Tree	225 LUs
2-Ornamental Trees	300 LUs
15-Deciduous Shrubs	225 LUs
10-Evergreen Shrubs	300 LUs
2-Evergreen Trees	450 LUs
TOTAL:	**1,500 LUs**

B) The standard Type "B" buffer is 15 feet wide and must consist of 20 landscape units per lineal foot of a zoning district boundary line, with evergreens comprising 50% of the landscape units. The following plant list and quantities represents an example of the plantings required per 100 lineal feet:

Sample Plantings and Values

Planting	Landscape Units
2-Shade Trees	450 LUs
3-Ornamental Trees	450 LUs
7-Deciduous Shrubs	150 LUs
11-Evergreen Shrubs	330 LUs
3-Evergreen Trees	675 LUs
TOTAL:	**2,010 LUs**

C) The standard Type "C" buffer is 20 feet wide and must consist of 25 landscape units per lineal foot of a zoning district boundary line, with evergreens comprising 50% of the landscape units. The following plant list and quantities represents an example of the plantings required per 100 lineal feet:

Sample Plantings and Values

Planting	Landscape Units
3-Shade Trees	675 LUs
3-Ornamental Trees	450 LUs
8-Deciduous Shrubs	120 LUs
12-Evergreen Shrubs	360 LUs
2-Evergreen Trees	900 LUs
TOTAL:	**2,505 LUs**

D) The standard Type "D" buffer is 25 feet wide and must consist of 30 landscape units per lineal foot of a zoning district boundary line, with evergreens comprising 50% of the landscape units. The following plant list and quantities represents an example of the plantings required per 100 lineal feet:

Sample Plantings and Values

Planting	Landscape Units
3-Shade Trees	225 LUs
4-Ornamental Trees	600 LUs
14-Deciduous Shrubs	210 LUs
13-Evergreen Shrubs	390 LUs
5-Evergreen Trees	1,125 LUs
TOTAL:	**3,000 LUs**

52-002-E. Landscape Buffers – (g) Interior Landscaping

- The land area devoted to interior landscaping will be a minimum of 5% of the total land area devoted to any use requiring landscaping where the paved area exceeds 3,000 square feet

- If the paved land area exceeds 5,000 square feet but not more than 30,000 square feet, then 8% of the total land area will be devoted to interior landscaping. If the paved land area exceeds 30,000 square feet, then 10% of the total land area will be devoted to interior landscaping.

- No row of parking spaces will exceed 20 spaces before landscaping is used to break up the expanse of paved area. In addition, a portion of the interior landscaping requirement will be used adjacent to the building such that at least 50% of the building base or foundation facing the parking area is planted with shrubs or trees.

Review and Approval Procedures Summary

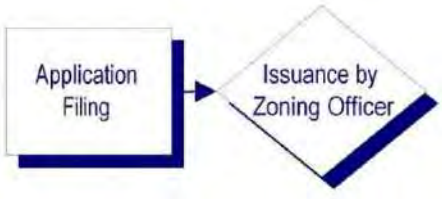
Source: Rockford Municipal Ordinance

60-001 Zoning Clearance, Certificate of Zoning Compliance and Building Permit Review

60-001-A. Purpose

- Any construction or alteration of a building or other structure and any new use of land or a building must be cleared with the Zoning Officer to make certain that it is in compliance with this Ordinance…

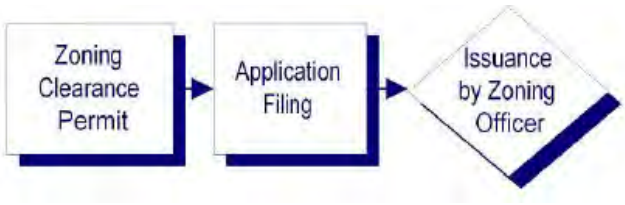
60-001-C. Application and Issuance of a Zoning Clearance



- Application for a zoning clearance shall be made on a form prescribed by the Zoning Officer and shall be accompanied by plans and additional information that is necessary to demonstrate conformity with this Ordinance. The Zoning Officer shall determine the information and plans necessary to demonstrate compliance with the ordinance….

- In the event a proposed development does not comply with the provisions of the Ordinance, a zoning clearance shall not be issued; however, the aspects of the proposed development or use that do not comply shall be specified

60-001-D. Issuance of Construction Permits



- No building permit or other permit pertaining to the construction of new buildings or structures, or to the enlargement or change in use of buildings or structures, or the use of land or buildings shall be issued by an officer, department, or employee of the City of Rockford unless the application for such permit has been examined by the Zoning Officer and has affixed to it a zoning clearance stating that the proposed building or structure and use thereof complies with all the provisions of this Ordinance

61-000 Site Plan Review



61-001 Purpose

- Site plans and elevation drawings are required in some (specified) cases to ensure that proposed development complies with all applicable standards of this Zoning Ordinance and is compatible with the physical character and existing pattern of development in the neighborhood in which it is to be located…

61-002-B. Contents

- Contents of site plan drawings must illustrate
    - Building location,
    - Curb cuts
    - Sidewalks
    - Parking and loading areas
    - Landscaping, lighting, and signs
    - Fencing and outdoor storage areas, and
    - Waste storage and compacting facilities

- In reviewing and making decisions on site plans, the Zoning Officer must consider whether the proposed development complies with all applicable standards of this Zoning Ordinance. The Zoning Officer is required to issue a decision on the site plan application in writing and such decision must thereafter be served upon the applicant

63-000 Special Use Permits



63-001 Purpose

- The formulation and enactment of a comprehensive Zoning Ordinance is based on the division of the entire City into districts, within which are permitted specified uses that are mutually compatible.

- In addition to such permitted, compatible uses, however, it is recognized that there are other uses which may be necessary or desirable to allow in a given district, but which, because of their potential influence upon neighboring uses or public facilities, need to be carefully regulated in terms of location and/or operation for the purposes of protecting the community. Such uses are classified in this ordinance as "special uses" and fall into the following general categories:

    - Uses that have special impacts, unique characteristics, or potentially adverse effects on the neighborhood surrounding the subject site.

    - Uses that because of their unique characteristics benefit from a case-by- case review of their compatibility with both the existing and planned land uses in the area…

    - Uses that have significant visual impacts (e.g. outdoor storage or operations), unique traffic impacts (e.g. drive-through businesses or entertainment facilities), significant environmental impacts (e.g. waste-handling facilities and certain heavy industrial uses) that benefit from an individual assessment of whether the proposed site is suitable for the development and whether the proposed location would have any adverse impacts on adjoining roads or other public services or facilities.

    - It is the presumption of this Ordinance that special uses are not appropriate in a location unless the City determines that all criteria for granting a special use permit have been satisfied either with or without conditions.

64-000 Zoning Variations

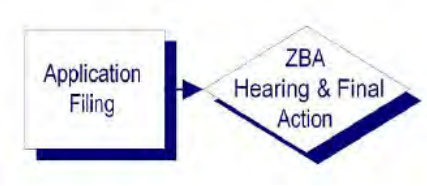


64-001 Purpose

- The Zoning Board of Appeals, with final decision by City Council, shall determine and may vary the regulations of this Ordinance in harmony with its general purpose and intent only in specific instances where the Zoning Board of Appeals makes a finding of fact, based upon the standards prescribed in this Section, that there are practical difficulties in carrying out the strict letter of the regulations of this Ordinance and that the granting of a variation will not merely serve as a convenience to the applicant, but is necessary to alleviate some demonstrable difficulty.

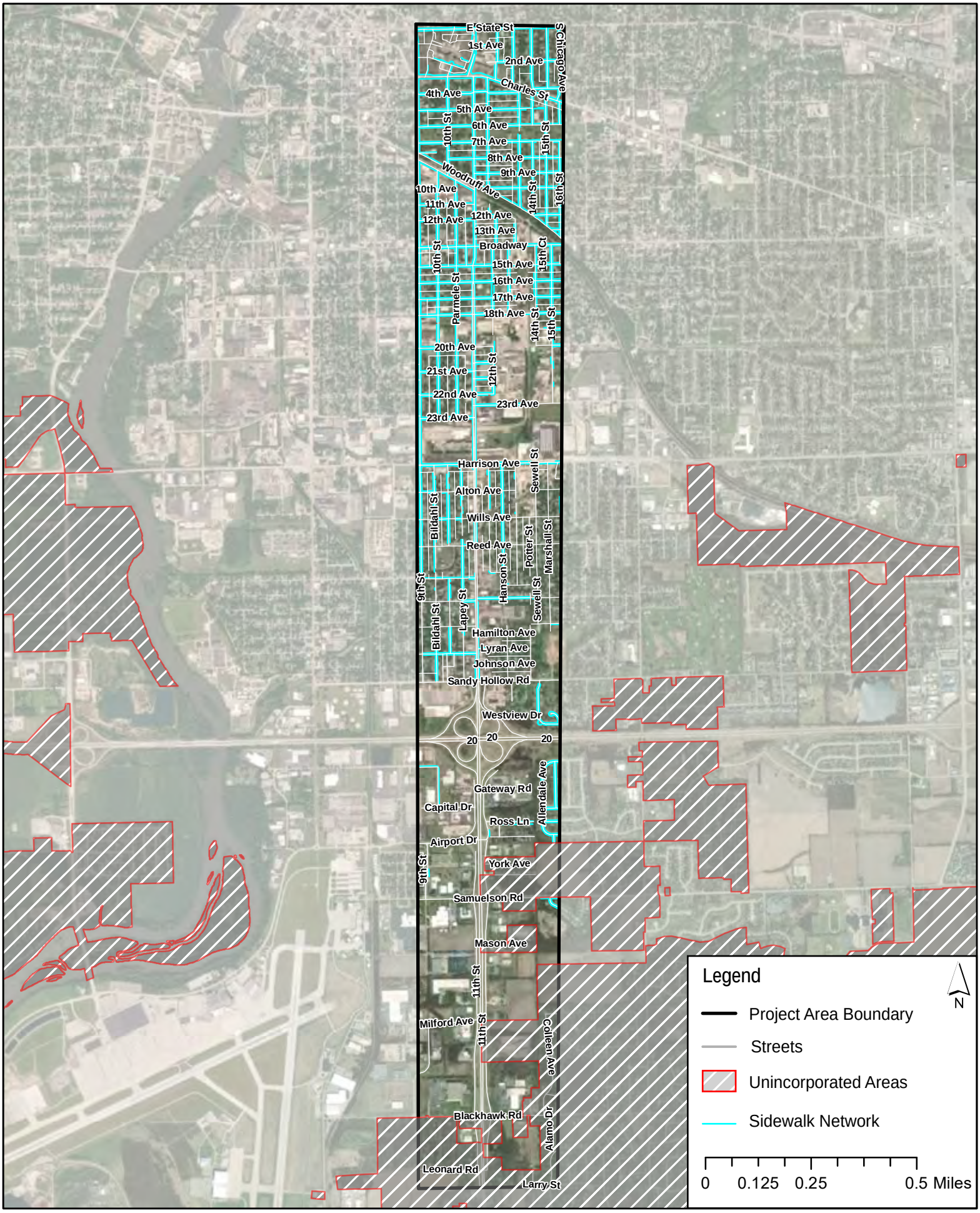
- Nothing in this Section shall be construed in such a manner as to permit a variation to be used in lieu of a special use permit or zoning map amendment, but a variation may be used to complement a special use permit or a zoning map amendment as authorized in various provisions of this Zoning Ordinance.

66-000 Appeals of Administrative Decisions



66-001 Scope of Appeal

- An appeal to the Zoning Board of Appeals may be taken by any person aggrieved or by any officer, department, board or bureau of the City of Rockford. The appeal shall be taken within 45 days of the alleged grievance or judgment in question.
- The appeal shall be filed in the Zoning Office on forms furnished by the Officer. Within 10 days of filing, the Officer shall, forthwith, transmit the appeal to the Zoning Board of Appeals, along with all papers constituting the record upon which the action appealed was taken.

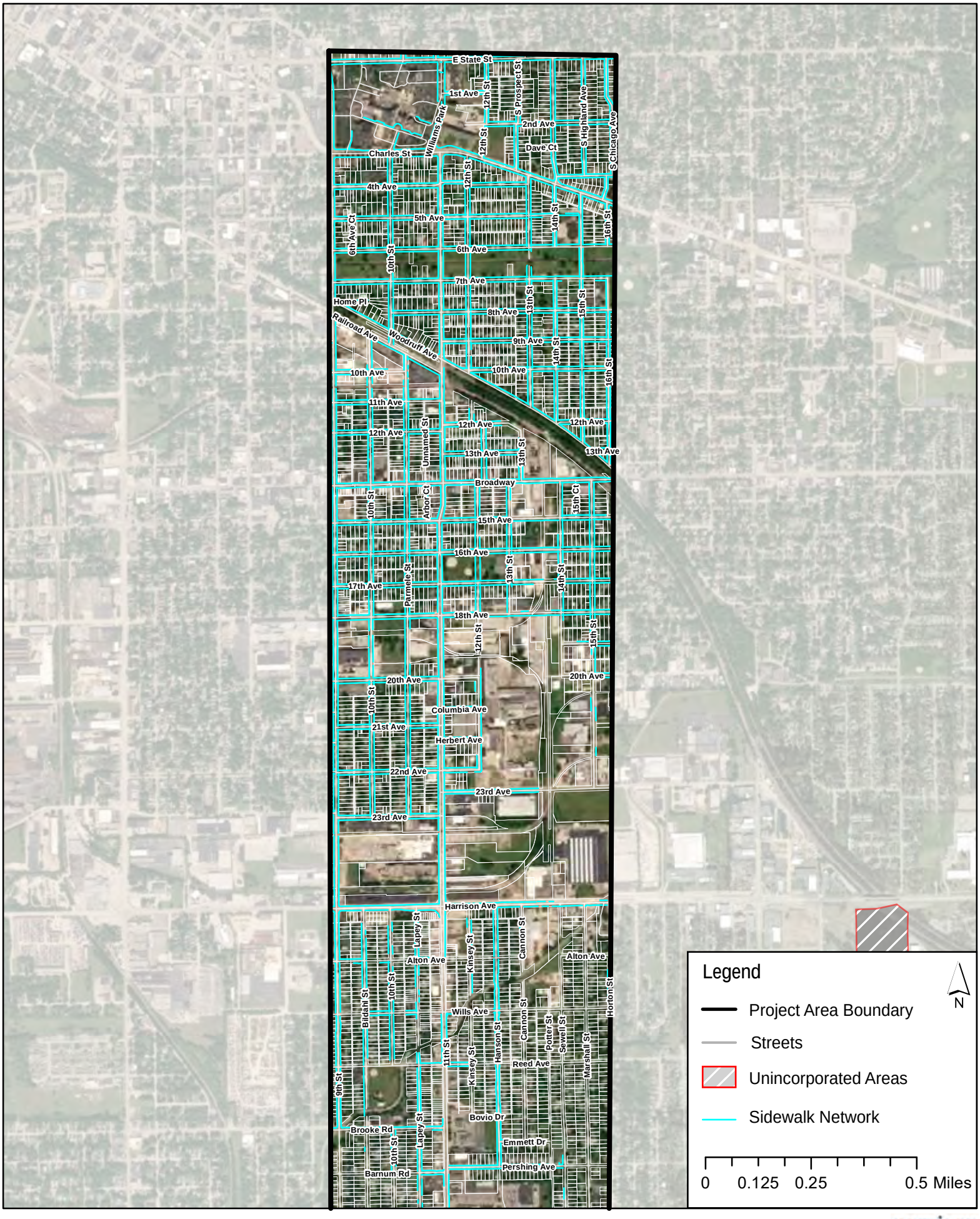


Sidewalk Network

Existing Conditions Analysis 11th Street Corridor Plan | October 26, 2020

camiros

In Partnership with CMT, SB Friedman, American Surveying & Engineering

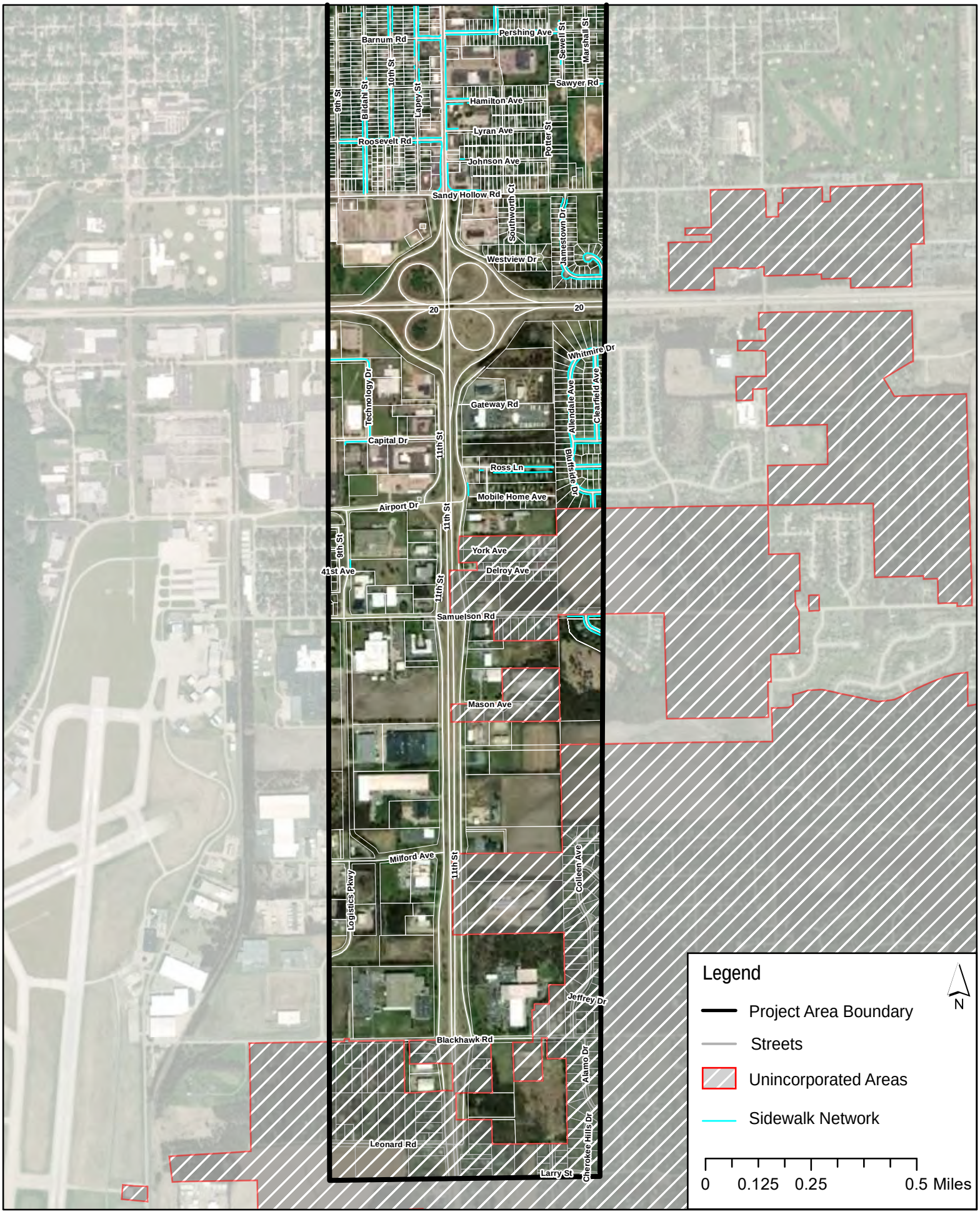


Sidewalk Network - North Half

Existing Conditions Analysis 11th Street Corridor Plan | October 26, 2020

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In Partnership with CMT, SB Friedman, American Surveying & Engineering

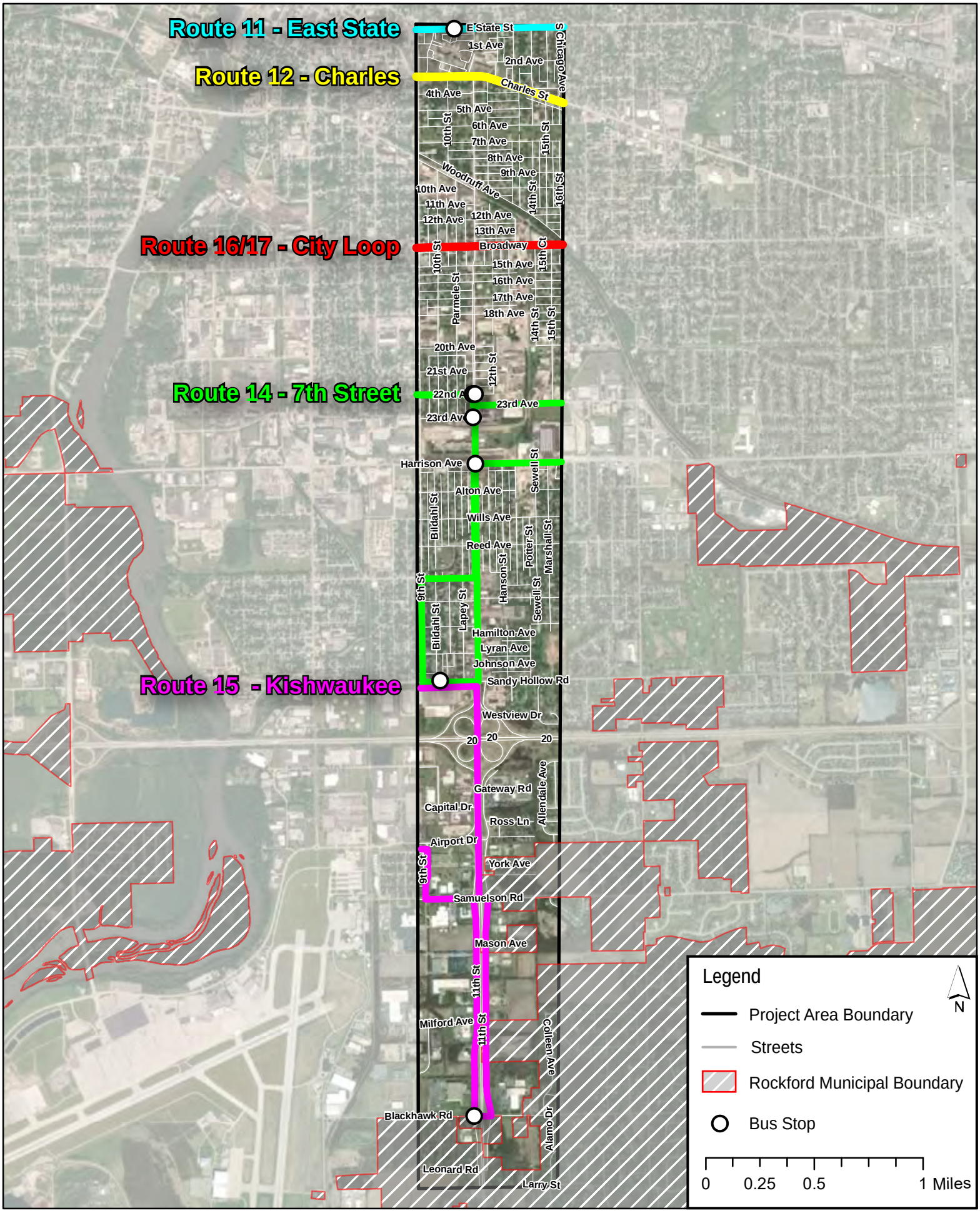


Sidewalk Network - South Half

Existing Conditions Analysis 11th Street Corridor Plan | October 26, 2020

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Rockford Mass Transit District

Existing Conditions Analysis 11th Street Corridor Plan | October 26, 2020

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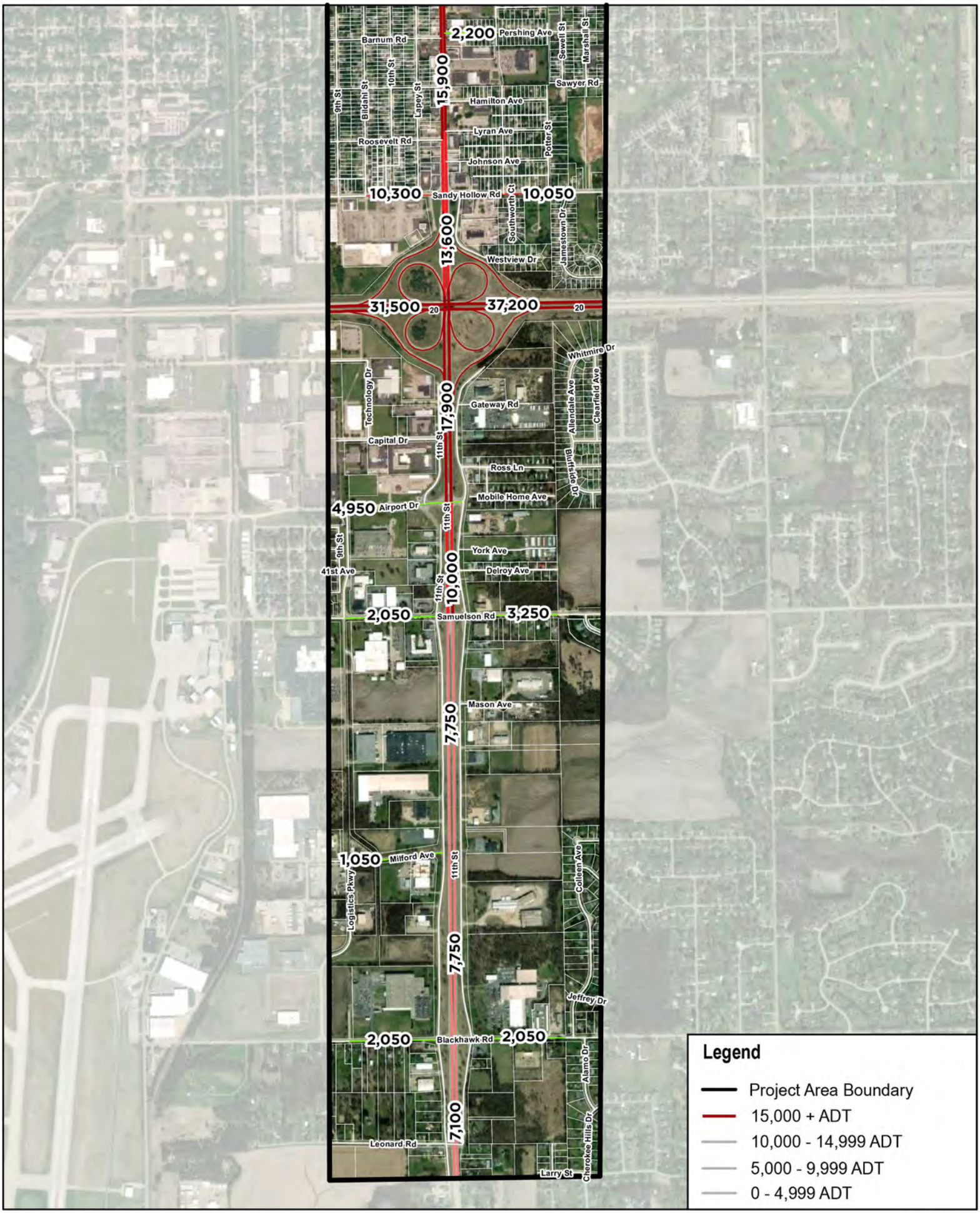


Average Daily Traffic - North

Existing Conditions Analysis 11th Street Corridor Plan | October 26, 2020

camiros

In Partnership with CMT, SB Friedman, American Surveying & Engineering

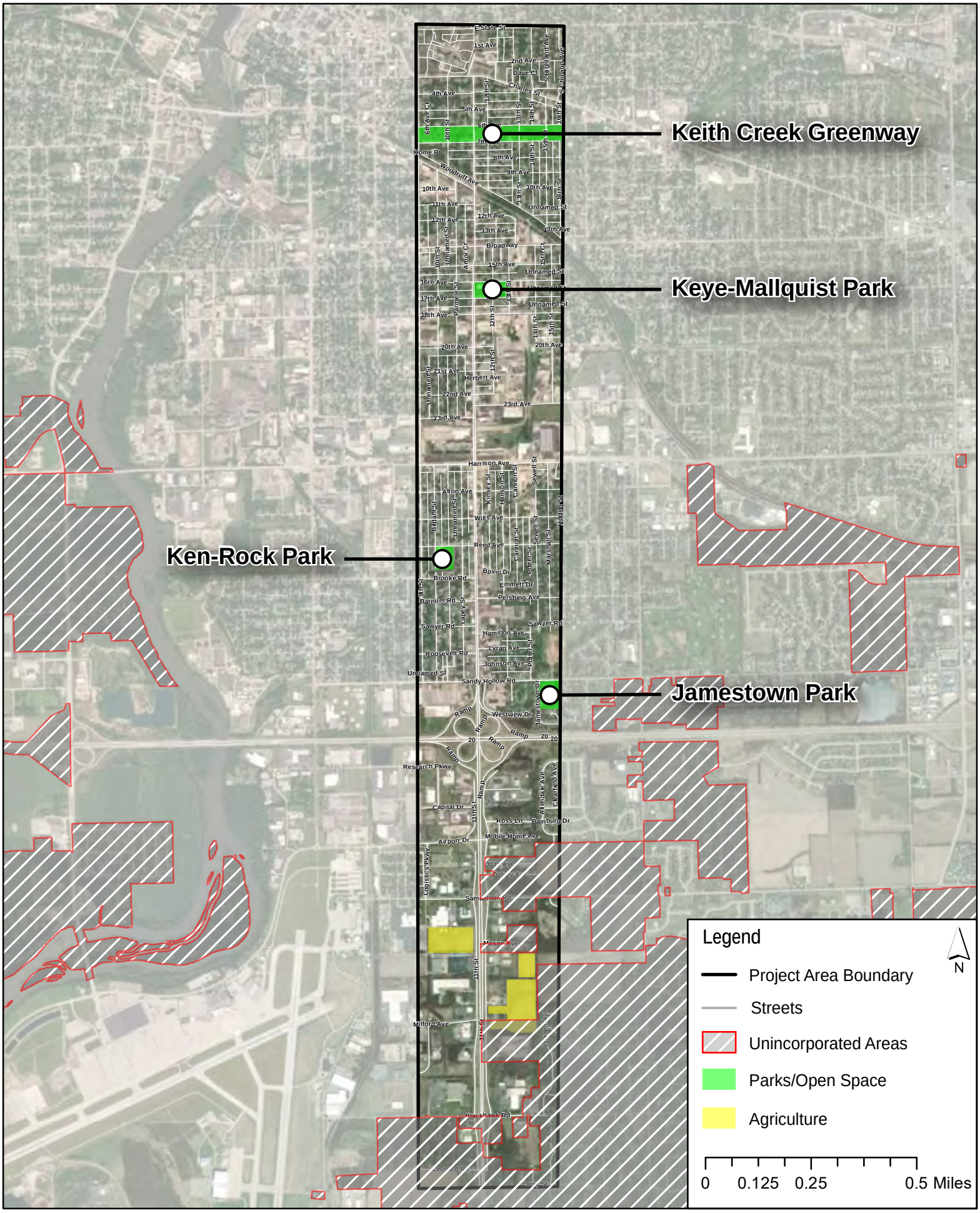


Average Daily Traffic South

Existing Conditions Analysis 11th Street Corridor Plan | October 26, 2020

camiros

In Partnership with CMT, SB Friedman, American Surveying & Engineering

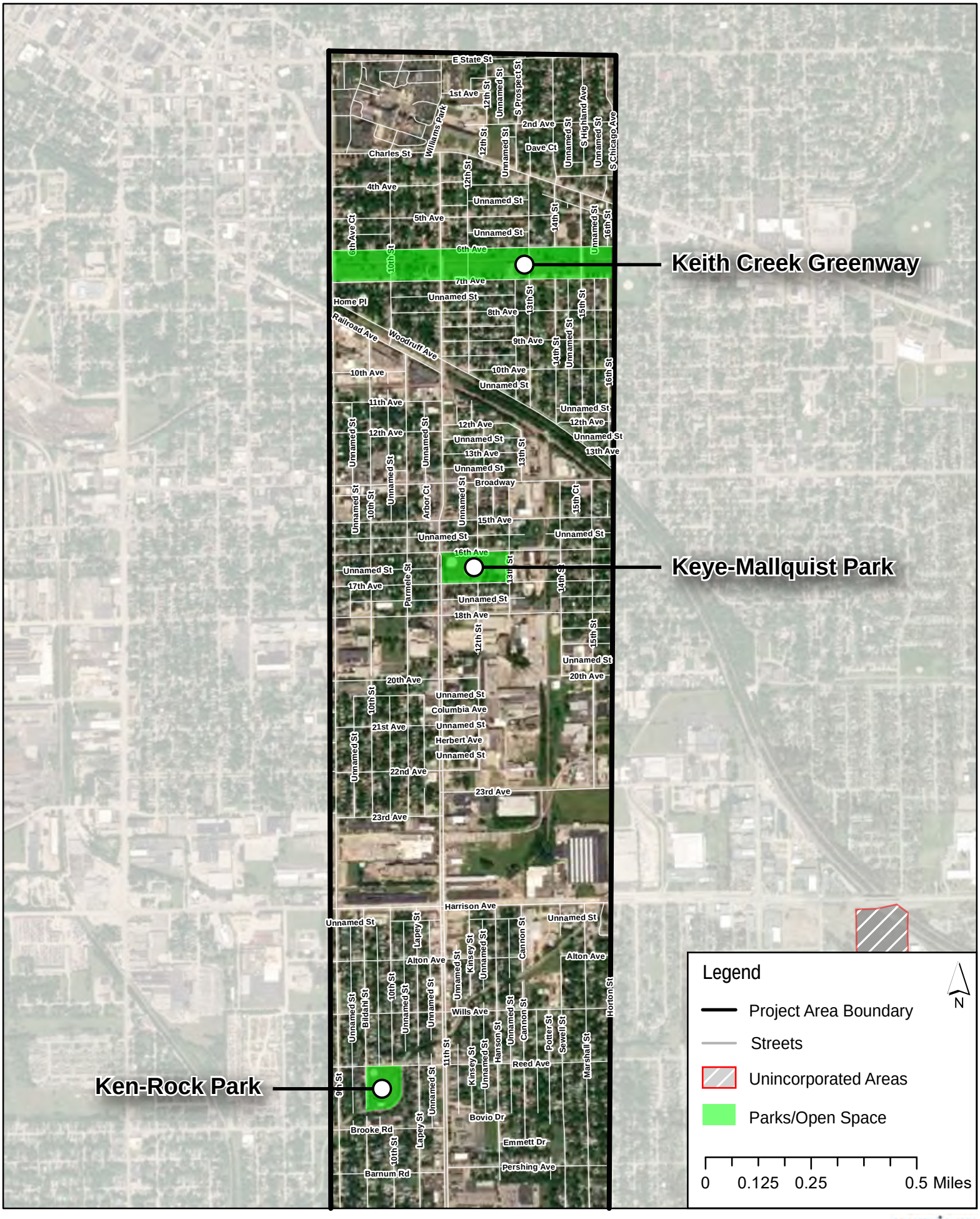


Parks and Open Space

Existing Conditions Analysis 11th Street Corridor Plan | October 26, 2020

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In Partnership with CMT, SB Friedman, American Surveying & Engineering

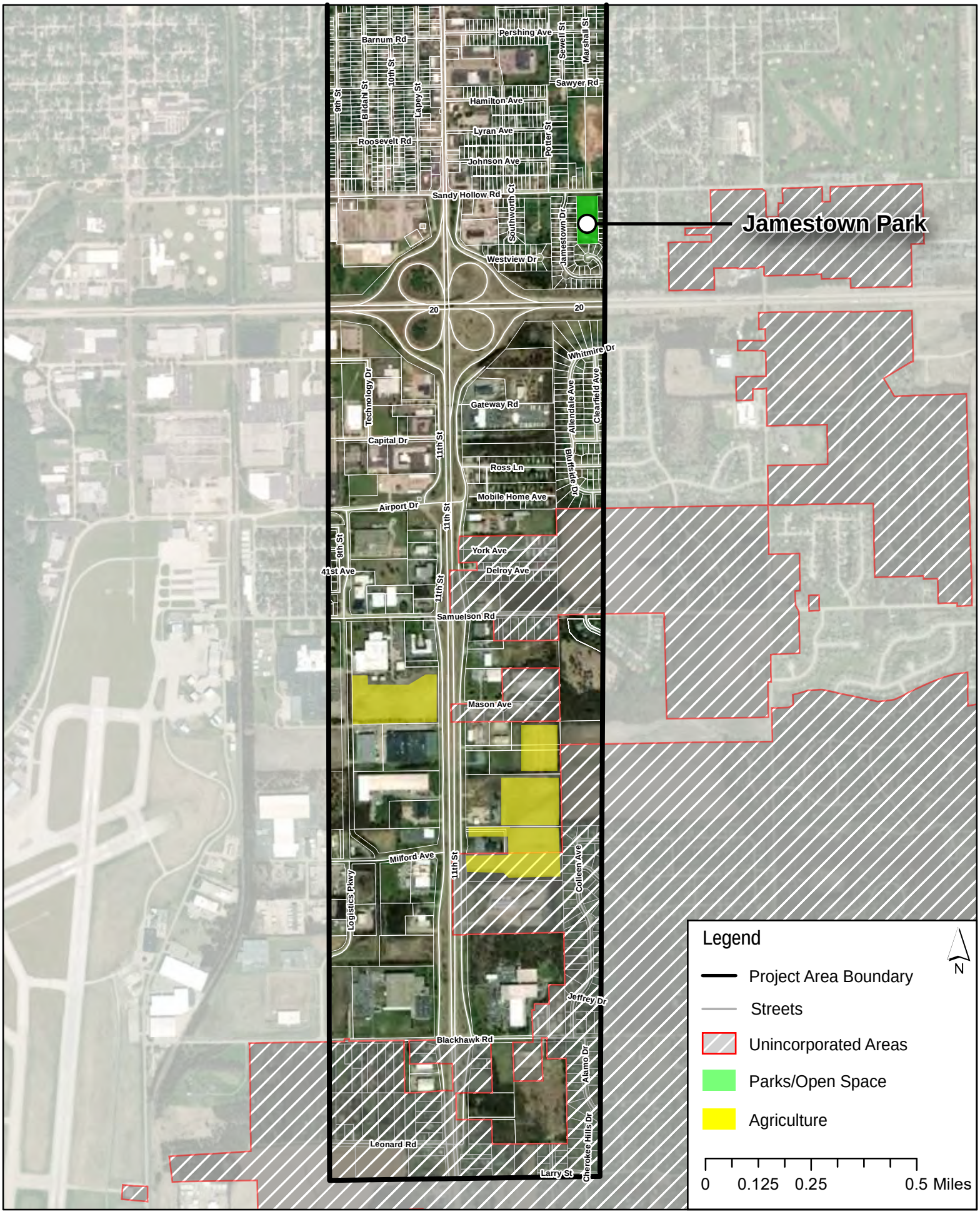


Parks and Open Space - North Half

Existing Conditions Analysis 11th Street Corridor Plan | October 26, 2020

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Parks and Open Space - South Half

Existing Conditions Analysis 11th Street Corridor Plan | October 26, 2020

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Open space with Kieth Creek



Keye-Mallquist Park



Poor quality streetscape



Recently Improved Streetscape



Aging commercial building





Abraham Lincoln School



Vacant Single-Family Home



Dilapidated Industrial Site



Motel in Industrial Area



Vacant Industrial Building

Current Corridor Conditions - North

Existing Conditions Analysis 11th Street Corridor Plan | October 26, 2020

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Vacant Shopping Plaza



Walgreens



Highway Interchange



Sidewalk End



Rockford Motel



Rodeway Inn



The Airport Inn



Highway Conditions

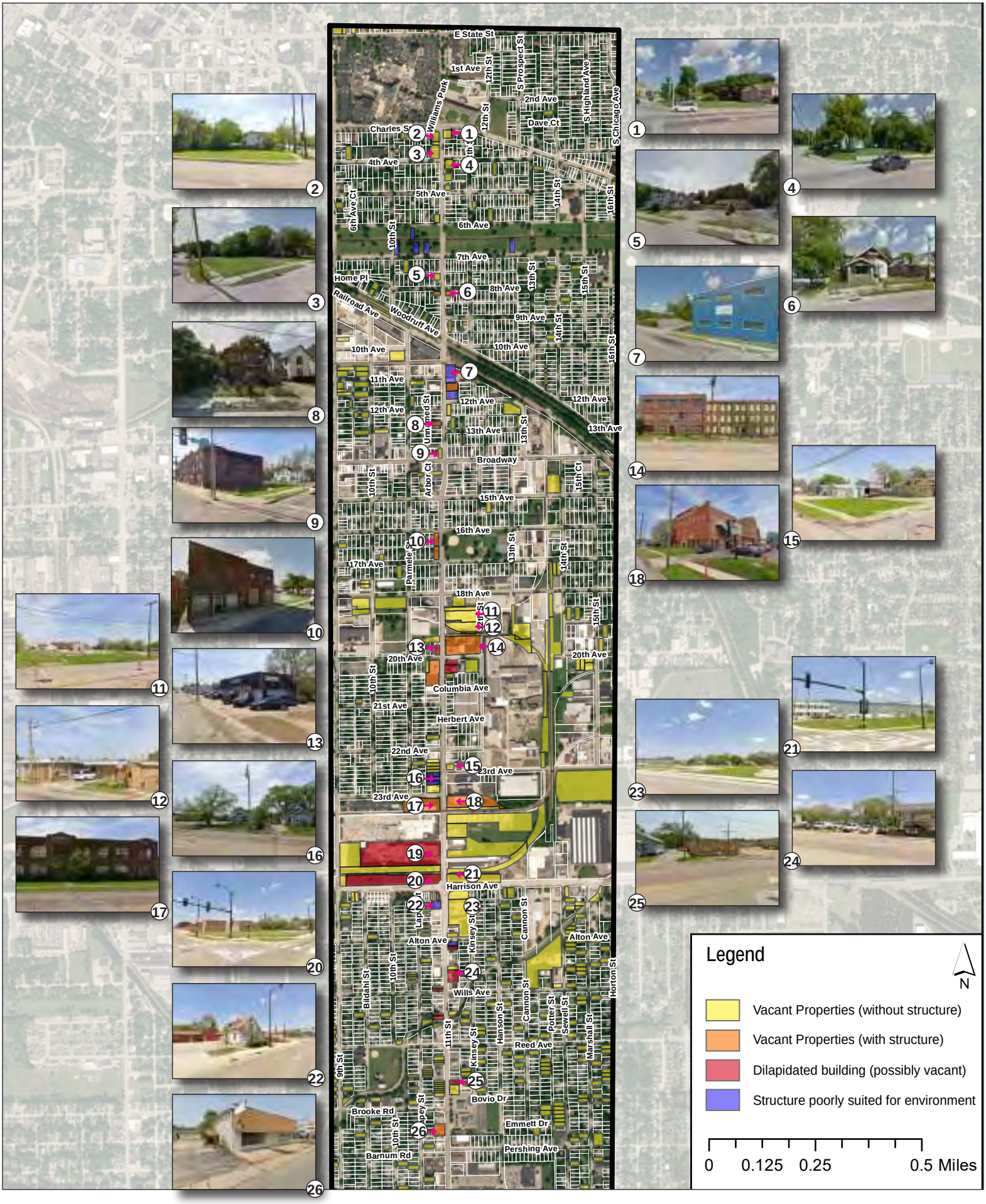


Current Corridor Conditions - North

Existing Conditions Analysis 11th Street Corridor Plan | October 26, 2020

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Properties Subject to Change - North

Existing Conditions Analysis 11th Street Corridor Plan | October 26, 2020

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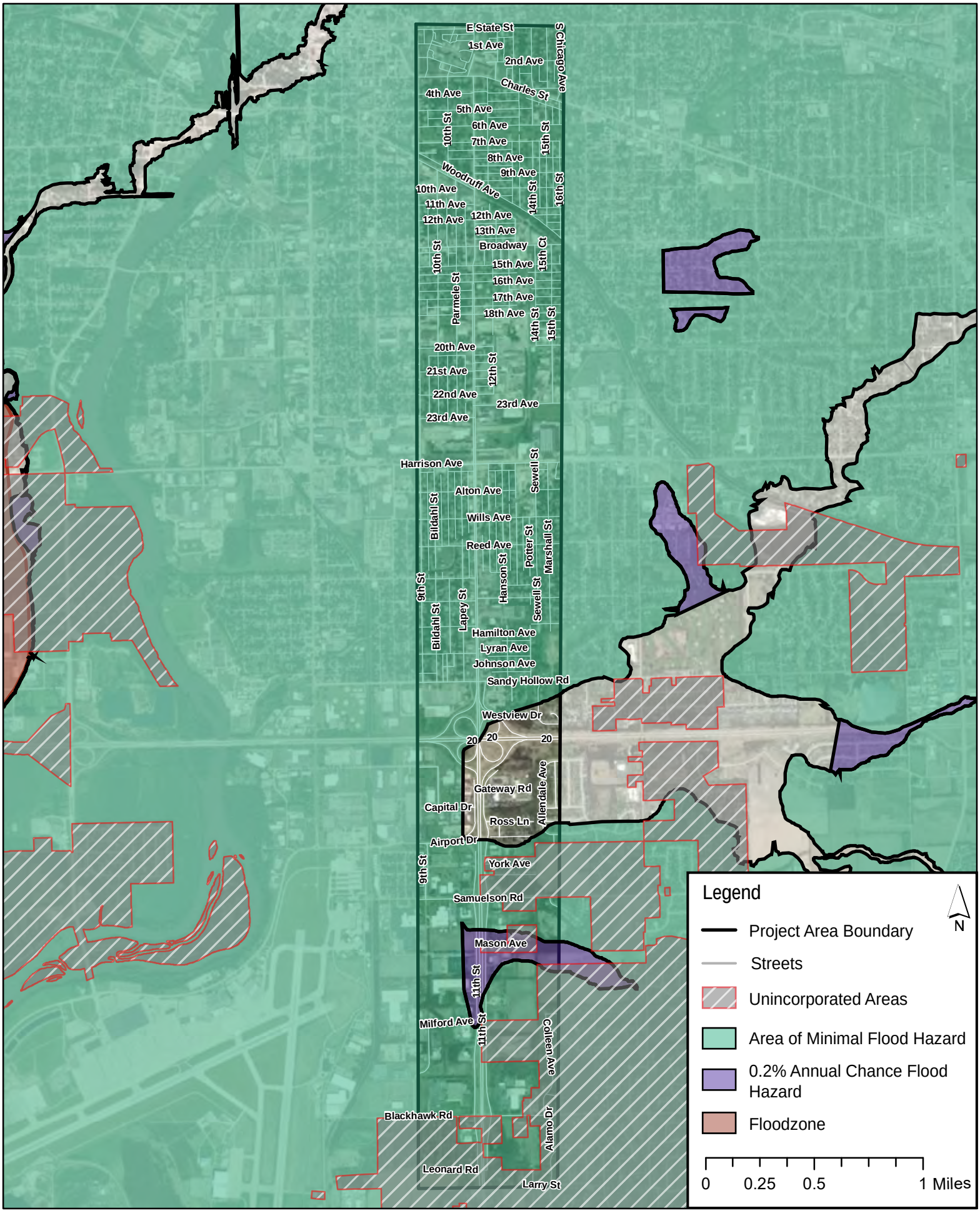


Properties Subject to Change - South

Existing Conditions Analysis 11th Street Corridor Plan | October 26, 2020

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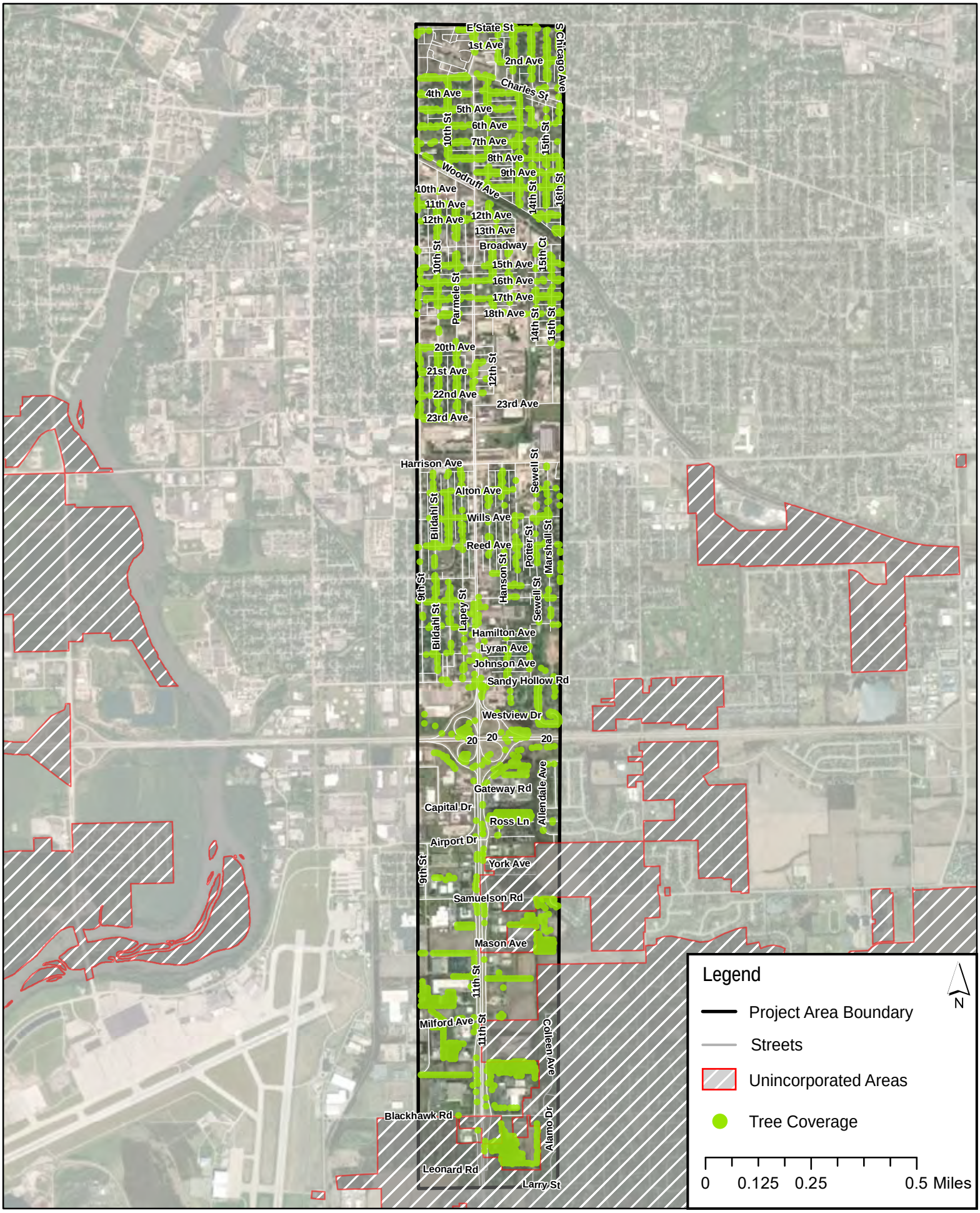


Flood Hazard

Existing Conditions Analysis 11th Street Corridor Plan | October 26, 2020

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Tree Coverage

Existing Conditions Analysis 11th Street Corridor Plan | October 26, 2020

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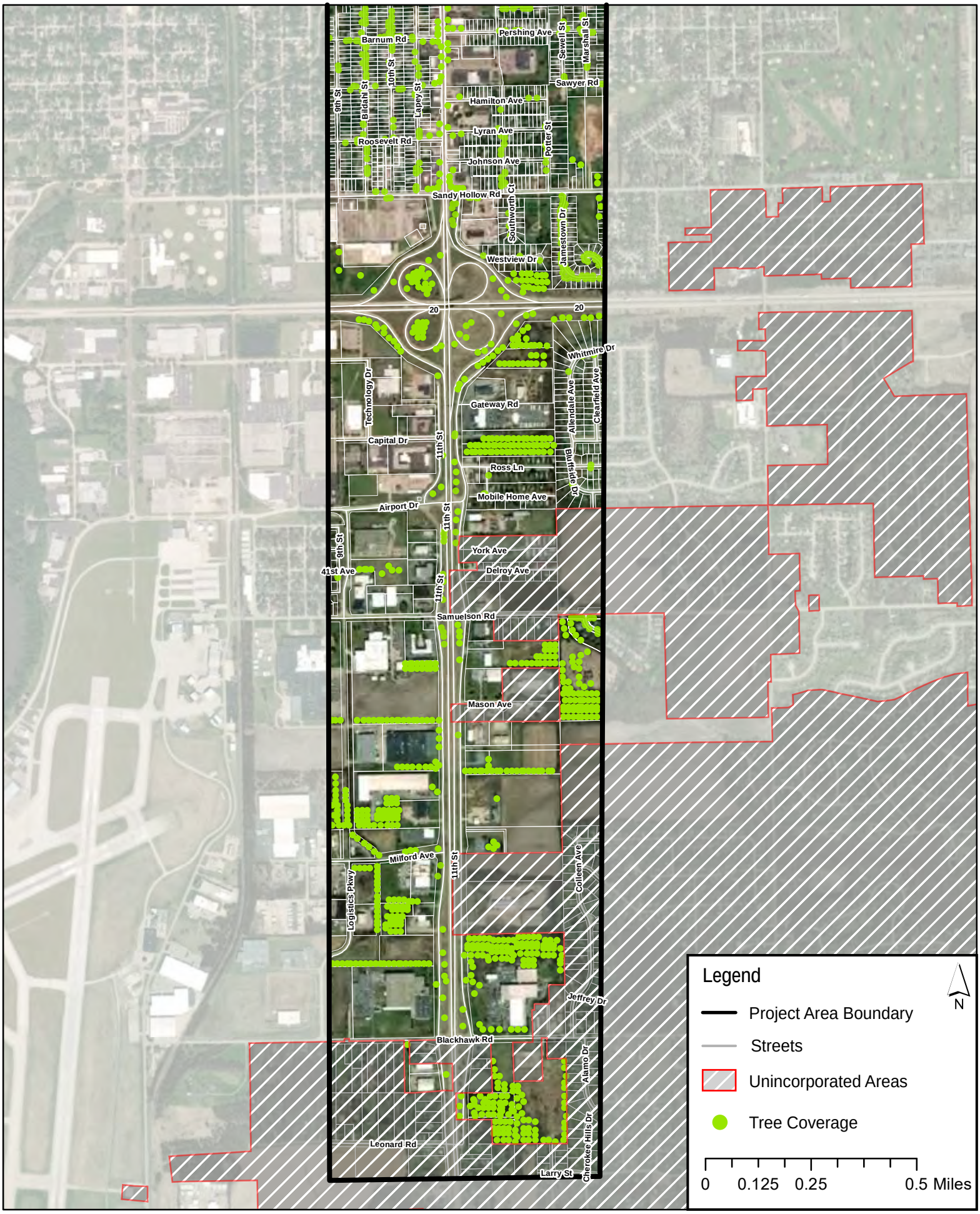


Tree Coverage - North Half

Existing Conditions Analysis 11th Street Corridor Plan | October 26, 2020

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In Partnership with CMT, SB Friedman, American Surveying & Engineering

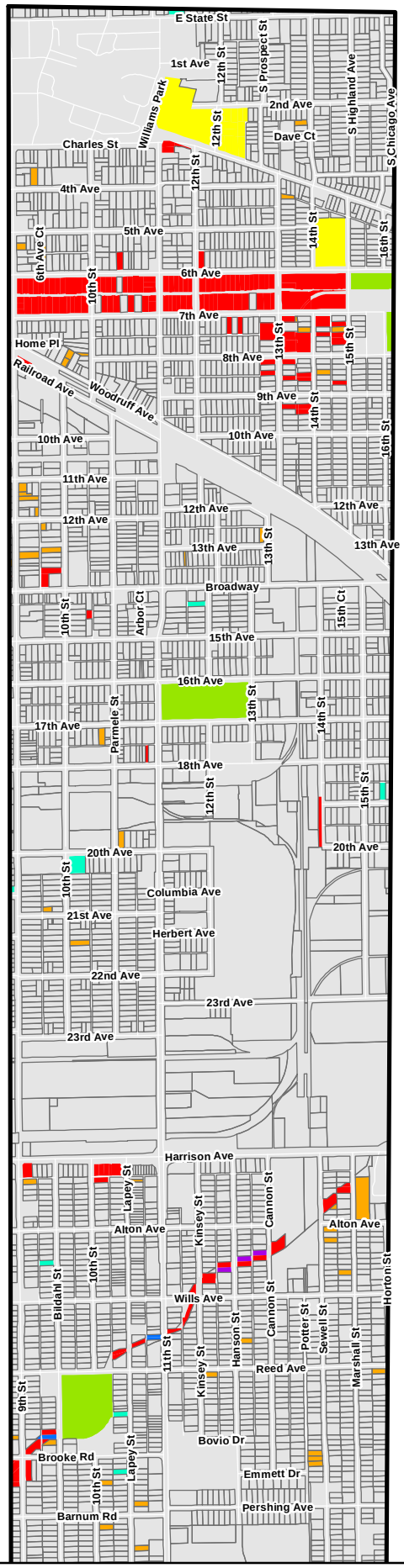


Tree Coverage - South Half

Existing Conditions Analysis 11th Street Corridor Plan | October 26, 2020

camiros

In Partnership with CMT, SB Friedman, American Surveying & Engineering

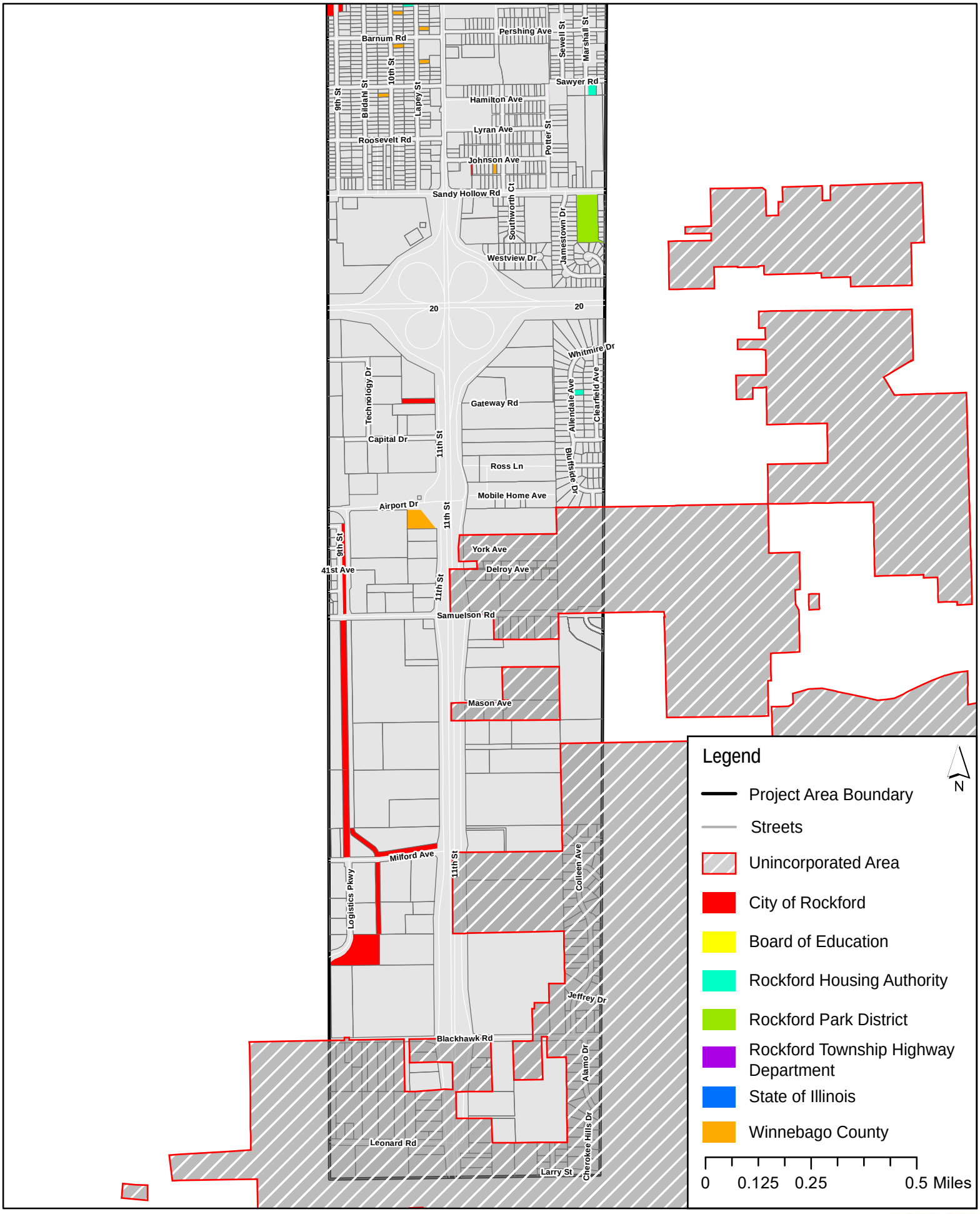


Institutional Ownership - North Half

Existing Conditions Analysis 11th Street Corridor Plan | October 26, 2020

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In Partnership with CMT, SB Friedman, American Surveying & Engineering

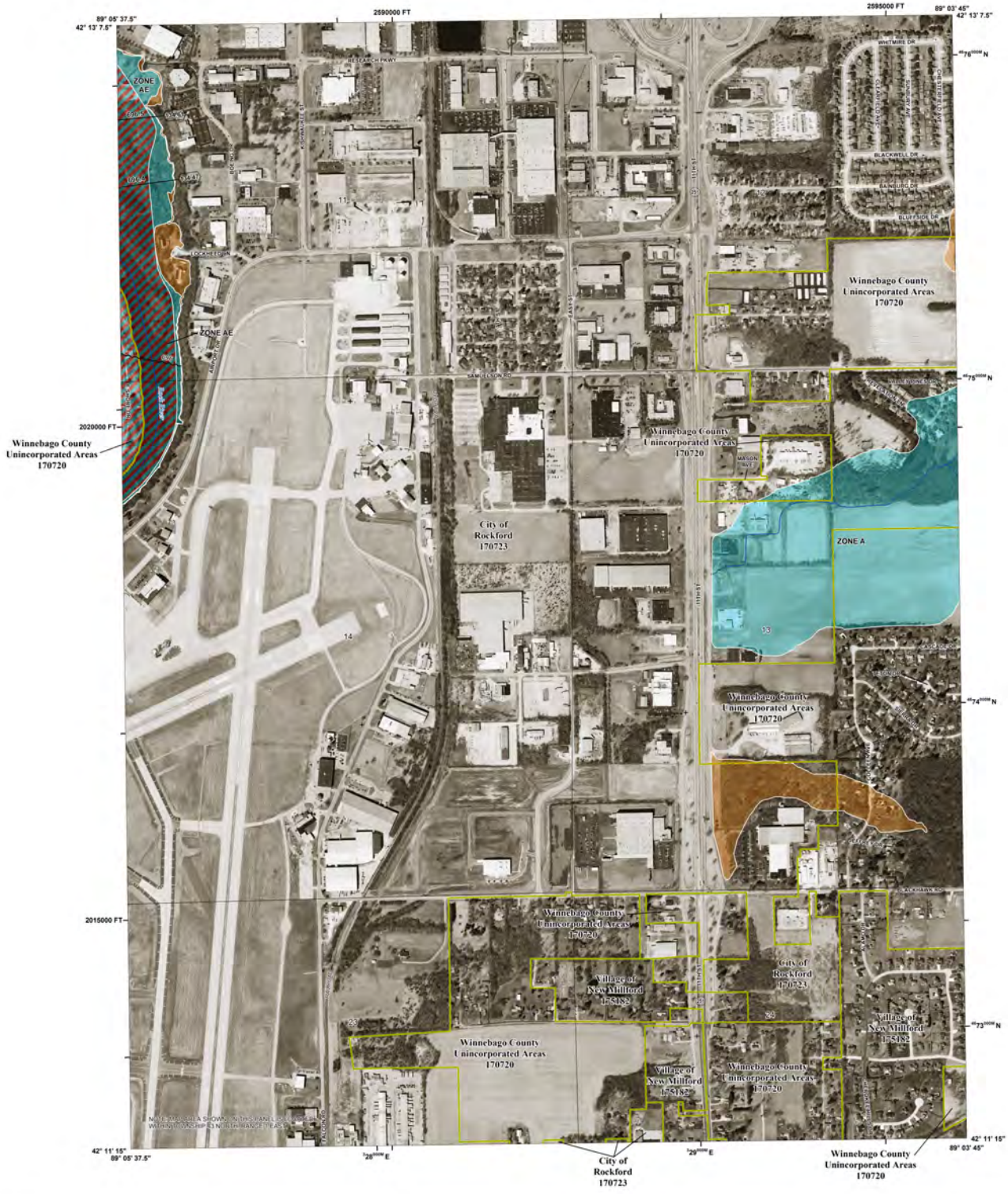


Institutional Ownership - South Half

Existing Conditions Analysis 11th Street Corridor Plan | October 26, 2020

camiros

In Partnership with CMT, SB Friedman, American Surveying & Engineering



FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP

THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT HTTP://MSC.FEMA.GOV

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Protected by Accredited Levee *Zone X*
- Areas Determined to be Outside the 0.2% Annual Chance Floodplain *Zone X*

OTHER AREAS
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Bridge
- Channel, Culvert, or Storm Sewer
- Dam, Jetty, or Weir
- Levee, Dike or Floodwall
- Cross Sections with 1% Annual Chance Water Surface Elevation (BFE)
- Coastal Transect
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature
- Base Flood Elevation Line (BFE)
- River Mile

OTHER FEATURES
- Limit of Study
- Jurisdiction Boundary

NOTES TO USERS

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Base map information shown on this FIRM was provided in digital format by the United States Geological Survey. This information was derived from digital orthoimagery at a spatial resolution of 1 foot from aerial photography dated 2011.

ILLINOIS STATE WATER SURVEY
PRAIRIE RESEARCH INSTITUTE

SCALE

N

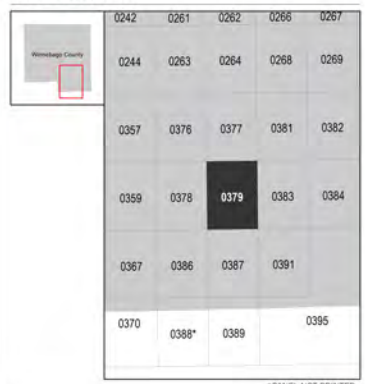
Map Projection:
State Plane Illinois West; FIPS 1202; North American Datum 1983;
Transverse Mercator Projection; Vertical Datum: NAVD88

1 inch = 500 feet 1:6,000

0 500 1,000 2,000 feet

0 125 250 500 meters

PANEL LOCATOR



*PANEL NOT PRINTED

FEMA
National Flood Insurance Program

NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP

WINNEBAGO COUNTY, IL
and Incorporated Areas

PANEL 379 OF 415

FEMA

Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
NEW MILLFORD, VILLAGE OF	175182	0379	E
ROCKFORD, CITY OF	170723	0379	E
WINNEBAGO COUNTY	170720	0379	E

VERSION NUMBER
2.3.1.2

MAP NUMBER
17201C0379E

MAP REVISED
FEBRUARY 17, 2016



FLOOD HAZARD INFORMATION

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- With BFE or Depth *Zone AE, AO, AH, VE, AR*
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OTHER AREAS OF FLOOD HAZARD

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- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Protected by Accredited Levee *Zone X*
- Areas Determined to be Outside the 0.2% Annual Chance Floodplain *Zone X*

OTHER AREAS

- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES

- Bridge
- Channel, Culvert, or Storm Sewer
- Dam, Jetty, or Weir
- Levee, Dike or Floodwall
- 718.7 / 717.5 Cross Sections with 1% Annual Chance Water Surface Elevation (BFE)
- Coastal Transect
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature
- 512 Base Flood Elevation Line (BFE)
- 148 River Mile

OTHER FEATURES

- Limit of Study
- Jurisdiction Boundary

NOTES TO USERS

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ILLINOIS STATE WATER SURVEY
TRADE RESEARCH INSTITUTE

SCALE

N

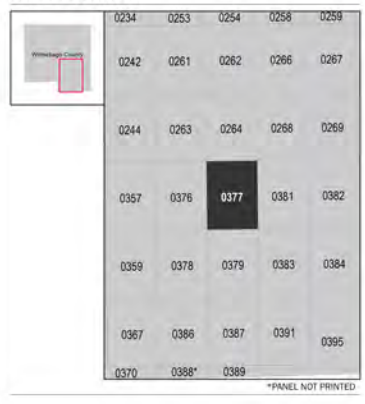
Map Projection:
State Plane Illinois West; FIPS 1202; North American Datum 1983;
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PANEL LOCATOR



*PANEL NOT PRINTED

FEMA

National Flood Insurance Program

NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP

WINNEBAGO COUNTY, IL
and Incorporated Areas

PANEL 377 OF 415

FEMA

Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
ROCKFORD, CITY OF	170723	0377	E

VERSION NUMBER
2.3.1.2

MAP NUMBER
17201C0377E

MAP REVISED
FEBRUARY 17, 2016



FLOOD HAZARD INFORMATION

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- Protected by Accredited Levee *Zone X*

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- NO SCREEN Areas Determined to be Outside the 0.2% Annual Chance Floodplain *Zone X*
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- Limit of Study
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ILLINOIS STATE WATER SURVEY
PRAIRIE RESEARCH INSTITUTE

SCALE

N

Map Projection:
State Plane Illinois West; FIPS 1202; North American Datum 1983;
Transverse Mercator Projection; Vertical Datum: NAVD88

1 inch = 500 feet 1:6,000

0 500 1,000 2,000 feet

0 125 250 500 meters

PANEL LOCATOR



*PANEL NOT PRINTED

FEMA National Flood Insurance Program

NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP

WINNEBAGO COUNTY, IL
and Incorporated Areas

PANEL 264 OF 415

FEMA

Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
ROCKFORD, CITY OF	170723	0264	E

VERSION NUMBER
2.3.1.2

MAP NUMBER
17201C0264E

MAP REVISED
FEBRUARY 17, 2016

U. S. DOT CROSSING INVENTORY FORM

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION

OMB No. 2130-0017

Instructions for the initial reporting of the following types of new or previously unreported crossings: For public highway-rail grade crossings, complete the entire inventory Form. For private highway-rail grade crossings, complete the Header, Parts I and II, and the Submission Information section. For public pathway grade crossings (including pedestrian station grade crossings), complete the Header, Parts I and II, and the Submission Information section. For Private pathway grade crossings, complete the Header, Parts I and II, and the Submission Information section. For grade-separated highway-rail or pathway crossings (including pedestrian station crossings), complete the Header, Part I, and the Submission Information section. For changes to existing data, complete the Header, Part I Items 1-3, and the Submission Information section, in addition to the updated data fields. Note: For private crossings only, Part I Item 20 and Part III Item 2.K. are required unless otherwise noted. An asterisk * denotes an optional field.

A. Revision Date (MM/DD/YYYY)	B. Reporting Agency	C. Reason for Update (Select only one)	D. DOT Crossing Inventory Number
11 / 18 / 2019	☒ Railroad ☐ Transit ☐ State ☐ Other	☒ Change in Data ☐ New Crossing ☐ Closed ☐ No Train Traffic ☐ Quiet Zone Update ☐ Re-Open ☐ Date Change Only ☐ Change in Primary Operating RR ☐ Admin. Correction	174435A

Part I: Location and Classification Information

1. Primary Operating Railroad	2. State	3. County
Union Pacific Railroad Company [UP]	ILLINOIS	WINNEBAGO

4. City / Municipality	5. Street/Road Name & Block Number	6. Highway Type & No.
☒ In ☐ Near ROCKFORD	11th Street (Street/Road Name) | 1000 (* Block Number)	FAU5129

7. Do Other Railroads Operate a Separate Track at Crossing?	8. Do Other Railroads Operate Over Your Track at Crossing?
☐ Yes ☒ No If Yes, Specify RR	☐ Yes ☒ No If Yes, Specify RR

9. Railroad Division or Region	10. Railroad Subdivision or District	11. Branch or Line Name	12. RR Milepost
☐ None Great Lakes	☐ None Rockford Ind Ld	☒ None	(prefix) | 0091.240 (nnnn.nnn) | (suffix)

13. Line Segment *	14. Nearest RR Timetable Station *	15. Parent RR (if applicable)	16. Crossing Owner (if applicable)
		☒ N/A	☐ N/A UP

17. Crossing Type	18. Crossing Purpose	19. Crossing Position	20. Public Access (if Private Crossing)	21. Type of Train	22. Average Passenger Train Count Per Day
☒ Public ☐ Private	☒ Highway ☐ Pathway, Ped. ☐ Station, Ped.	☒ At Grade ☐ RR Under ☐ RR Over	☐ Yes ☐ No	☒ Freight ☐ Intercity Passenger ☐ Commuter ☐ Transit ☐ Shared Use Transit ☐ Tourist/Other	☐ Less Than One Per Day ☐ Number Per Day 0

23. Type of Land Use
☐ Open Space ☐ Farm ☐ Residential ☐ Commercial ☒ Industrial ☐ Institutional ☐ Recreational ☐ RR Yard

24. Is there an Adjacent Crossing with a Separate Number?	25. Quiet Zone (FRA provided)
☐ Yes ☒ No If Yes, Provide Crossing Number	☒ No ☐ 24 Hr ☐ Partial ☐ Chicago Excused Date Established

26. HSR Corridor ID	27. Latitude in decimal degrees	28. Longitude in decimal degrees	29. Lat/Long Source
☒ N/A	(WGS84 std: nn.nnnnnnn) 42.2564360	(WGS84 std: -nnn.nnnnnnn) -89.0719440	☒ Actual ☐ Estimated

30.A. Railroad Use *	31.A. State Use *
30.B. Railroad Use *	31.B. State Use * LAT/LONG PER ICC
30.C. Railroad Use *	31.C. State Use *
30.D. Railroad Use *	31.D. State Use * STATE OF ILLINOIS HWY DATA UPDATE FOR 2019 AS OF
32.A. Narrative (Railroad Use) *	32.B. Narrative (State Use) * IDOT Hwy Data Update for 2017 @ 5/9/2017

33. Emergency Notification Telephone No. (posted)	34. Railroad Contact (Telephone No.)	35. State Contact (Telephone No.)
800-848-8715	402-544-3721	217-785-9026

Part II: Railroad Information

1. Estimated Number of Daily Train Movements

1.A. Total Day Thru Trains (6 AM to 6 PM)	1.B. Total Night Thru Trains (6 PM to 6 AM)	1.C. Total Switching Trains	1.D. Total Transit Trains	1.E. Check if Less Than One Movement Per Day ☐ How many trains per week?
1	0	0	0	

2. Year of Train Count Data (YYYY)	3. Speed of Train at Crossing
2016	3.A. Maximum Timetable Speed (mph) 10 3.B. Typical Speed Range Over Crossing (mph) From 10 to 10

4. Type and Count of Tracks
Main 0 Siding 0 Yard 0 Transit 0 Industry 1

5. Train Detection (Main Track only)
☐ Constant Warning Time ☒ Motion Detection ☐ AFO ☐ PTC ☐ DC ☐ Other ☐ None

6. Is Track Signaled?	7.A. Event Recorder	7.B. Remote Health Monitoring
☐ Yes ☒ No	☒ Yes ☐ No	☒ Yes ☐ No

U. S. DOT CROSSING INVENTORY FORM

A. Revision Date *(MM/DD/YYYY)*	PAGE 2	D. Crossing Inventory Number *(7 char.)*
11/18/2019		174435A

Part III: Highway or Pathway Traffic Control Device Information

1. Are there Signs or Signals? ☒ Yes ☐ No

2. Types of Passive Traffic Control Devices associated with the Crossing

2.A. Crossbuck Assemblies *(count)*	2.B. STOP Signs *(R1-1)* *(count)*	2.C. YIELD Signs *(R1-2)* *(count)*	2.D. Advance Warning Signs *(Check all that apply; include count)* ☒ None
0	0	0	☐ W10-1 _____ ☐ W10-3 _____ ☐ W10-11 _____ ☐ W10-2 _____ ☐ W10-4 _____ ☐ W10-12 _____

2.E. Low Ground Clearance Sign *(W10-5)*	2.F. Pavement Markings	2.G. Channelization Devices/Medians	2.H. EXEMPT Sign *(R15-3)*	2.I. ENS Sign *(I-13)* Displayed
☐ Yes *(count_____)* ☒ No	☒ Stop Lines ☐ Dynamic Envelope ☒ RR Xing Symbols ☐ None	☐ All Approaches ☐ Median ☐ One Approach ☒ None	☐ Yes ☐ No	☒ Yes ☐ No

2.J. Other MUTCD Signs	2.K. Private Crossing Signs *(if private)*	2.L. LED Enhanced Signs *(List types)*
☐ Yes ☒ No Specify Type _____ Count _____ Specify Type _____ Count _____ Specify Type _____ Count _____	☐ Yes ☐ No	

3. Types of Train Activated Warning Devices at the Grade Crossing *(specify count of each device for all that apply)*

3.A. Gate Arms *(count)*	3.B. Gate Configuration	3.C. Cantilevered *(or Bridged)* Flashing Light Structures *(count)*	3.D. Mast Mounted Flashing Lights *(count of masts)* 2	3.E. Total Count of Flashing Light Pairs
Roadway 0 Pedestrian _____	☐ 2 Quad ☐ Full *(Barrier)* Resistance ☐ 3 Quad ☐ 4 Quad ☐ Median Gates	Over Traffic Lane 2 ☐ Incandescent Not Over Traffic Lane 0 ☒ LED	☐ Incandescent ☒ LED ☒ Back Lights Included ☒ Side Lights Included	10

3.F. Installation Date of Current Active Warning Devices: *(MM/YYYY)*	3.G. Wayside Horn	3.H. Highway Traffic Signals Controlling Crossing	3.I. Bells *(count)*
_____/_____ ☒ Not Required	☐ Yes Installed on *(MM/YYYY)* _____/_____ ☒ No	☐ Yes ☒ No	2

3.J. Non-Train Active Warning	3.K. Other Flashing Lights or Warning Devices
☐ Flagging/Flagman ☐ Manually Operated Signals ☐ Watchman ☐ Floodlighting ☐ None	Count 0 Specify type _____

4.A. Does nearby Hwy Intersection have Traffic Signals?	4.B. Hwy Traffic Signal Interconnection	4.C. Hwy Traffic Signal Preemption	5. Highway Traffic Pre-Signals	6. Highway Monitoring Devices *(Check all that apply)*
☐ Yes ☐ No	☐ Not Interconnected ☐ For Traffic Signals ☐ For Warning Signs	☐ Simultaneous ☐ Advance	☐ Yes ☐ No Storage Distance * _____ Stop Line Distance * _____	☐ Yes - Photo/Video Recording ☐ Yes – Vehicle Presence Detection ☐ None

Part IV: Physical Characteristics

1. Traffic Lanes Crossing Railroad	2. Is Roadway/Pathway Paved?	3. Does Track Run Down a Street?	4. Is Crossing Illuminated? *(Street lights within approx. 50 feet from nearest rail)*
☐ One-way Traffic ☒ Two-way Traffic ☐ Divided Traffic Number of Lanes 4	☒ Yes ☐ No	☐ Yes ☒ No	☐ Yes ☒ No

5. Crossing Surface *(on Main Track, multiple types allowed)* Installation Date * *(MM/YYYY)* _____/_____ Width * _____ Length * 48

☐ 1 Timber ☐ 2 Asphalt ☐ 3 Asphalt and Timber ☒ 4 Concrete ☐ 5 Concrete and Rubber ☐ 6 Rubber ☐ 7 Metal
☐ 8 Unconsolidated ☐ 9 Composite ☐ 10 Other *(specify)* _____

6. Intersecting Roadway within 500 feet?	7. Smallest Crossing Angle	8. Is Commercial Power Available? *
☒ Yes ☐ No If Yes, Approximate Distance *(feet)* 75	☐ 0° – 29° ☒ 30° – 59° ☐ 60° - 90°	☒ Yes ☐ No

Part V: Public Highway Information

1. Highway System	2. Functional Classification of Road at Crossing	3. Is Crossing on State Highway System?	4. Highway Speed Limit
☐ (01) Interstate Highway System ☐ (02) Other Nat Hwy System (NHS) ☒ (03) Federal AID, Not NHS ☐ (08) Non-Federal Aid	☐ (0) Rural ☒ (1) Urban ☐ (1) Interstate ☐ (5) Major Collector ☐ (2) Other Freeways and Expressways ☒ (3) Other Principal Arterial ☐ (6) Minor Collector ☐ (4) Minor Arterial ☐ (7) Local	☐ Yes ☒ No	30 MPH ☒ Posted ☐ Statutory

5. Linear Referencing System *(LRS Route ID)* *

6. LRS Milepost *

7. Annual Average Daily Traffic *(AADT)*	8. Estimated Percent Trucks	9. Regularly Used by School Buses?	10. Emergency Services Route
Year 2017 AADT 10000	07 %	☐ Yes ☒ No Average Number per Day 0	☐ Yes ☐ No

Submission Information - *This information is used for administrative purposes and is not available on the public website.*

Submitted by _____ Organization _____ Phone _____ Date _____

Public reporting burden for this information collection is estimated to average 30 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed and completing and reviewing the collection of information. According to the Paperwork Reduction Act of 1995, a federal agency may not conduct or sponsor, and a person is not required to, nor shall a person be subject to a penalty for failure to comply with, a collection of information unless it displays a currently valid OMB control number. The valid OMB control number for information collection is 2130-0017. Send comments regarding this burden estimate or any other aspect of this collection, including for reducing this burden to: Information Collection Officer, Federal Railroad Administration, 1200 New Jersey Ave. SE, MS-25 Washington, DC 20590.

U. S. DOT CROSSING INVENTORY FORM

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION

OMB No. 2130-0017

Instructions for the initial reporting of the following types of new or previously unreported crossings: For public highway-rail grade crossings, complete the entire inventory Form. For private highway-rail grade crossings, complete the Header, Parts I and II, and the Submission Information section. For public pathway grade crossings (including pedestrian station grade crossings), complete the Header, Parts I and II, and the Submission Information section. For Private pathway grade crossings, complete the Header, Parts I and II, and the Submission Information section. For grade-separated highway-rail or pathway crossings (including pedestrian station crossings), complete the Header, Part I, and the Submission Information section. For changes to existing data, complete the Header, Part I Items 1-3, and the Submission Information section, in addition to the updated data fields. Note: For private crossings only, Part I Item 20 and Part III Item 2.K. are required unless otherwise noted. An asterisk * denotes an optional field.

A. Revision Date *(MM/DD/YYYY)*: 05 / 26 / 2020

B. Reporting Agency: ☒ Railroad ☐ Transit ☐ State ☐ Other

C. Reason for Update *(Select only one)*: ☒ Change in Data ☐ New Crossing ☐ Closed ☐ No Train Traffic ☐ Quiet Zone Update ☐ Re-Open ☐ Date Change Only ☐ Change in Primary Operating RR ☐ Admin. Correction

D. DOT Crossing Inventory Number: 290048A

Part I: Location and Classification Information

1. Primary Operating Railroad: Chicago, Central & Pacific Railroad Company [CC]

2. State: ILLINOIS

3. County: WINNEBAGO

4. City / Municipality: ☒ In ☐ Near ROCKFORD

5. Street/Road Name & Block Number: 11TH STREET | *(Street/Road Name)* | *(Block Number)*

6. Highway Type & No.: FAU5129

7. Do Other Railroads Operate a Separate Track at Crossing? ☐ Yes ☒ No
If Yes, Specify RR

8. Do Other Railroads Operate Over Your Track at Crossing? ☐ Yes ☒ No
If Yes, Specify RR

9. Railroad Division or Region: ☐ None IOWA

10. Railroad Subdivision or District: ☐ None FREEPORT

11. Branch or Line Name: ☐ None SOUTH BELT

12. RR Milepost: | 0085.550 | *(prefix)* | *(nnnn.nnn)* | *(suffix)*

13. Line Segment *: SC00028188

14. Nearest RR Timetable Station *: ROCKFORD

15. Parent RR *(if applicable)*: ☐ N/A CN

16. Crossing Owner *(if applicable)*: ☐ N/A CC

17. Crossing Type: ☒ Public ☐ Private

18. Crossing Purpose: ☒ Highway ☐ Pathway, Ped. ☐ Station, Ped.

19. Crossing Position: ☒ At Grade ☐ RR Under ☐ RR Over

20. Public Access *(if Private Crossing)*: ☐ Yes ☐ No

21. Type of Train: ☒ Freight ☐ Intercity Passenger ☐ Commuter ☐ Transit ☐ Shared Use Transit ☐ Tourist/Other

22. Average Passenger Train Count Per Day: ☐ Less Than One Per Day ☐ Number Per Day 0

23. Type of Land Use: ☐ Open Space ☐ Farm ☐ Residential ☐ Commercial ☒ Industrial ☐ Institutional ☐ Recreational ☐ RR Yard

24. Is there an Adjacent Crossing with a Separate Number?: ☐ Yes ☒ No If Yes, Provide Crossing Number

25. Quiet Zone *(FRA provided)*: ☒ No ☐ 24 Hr ☐ Partial ☐ Chicago Excused Date Established

26. HSR Corridor ID: ☒ N/A

27. Latitude in decimal degrees *(WGS84 std: nn.nnnnnnn)*: 42.240450

28. Longitude in decimal degrees *(WGS84 std: -nnn.nnnnnnn)*: -89.072240

29. Lat/Long Source: ☒ Actual ☐ Estimated

30.A. Railroad Use *:

31.A. State Use *:

30.B. Railroad Use *:

31.B. State Use *: LAT/LONG PER ICC-SL

30.C. Railroad Use *:

31.C. State Use *:

30.D. Railroad Use *:

31.D. State Use *: STATE OF ILLINOIS HWY DATA UPDATE FOR 2019 AS OF

32.A. Narrative *(Railroad Use)* *:

32.B. Narrative *(State Use)* *: IDOT Hwy Data Update for 2017 @ 5/9/2017

33. Emergency Notification Telephone No. *(posted)*: 800-465-9239

34. Railroad Contact *(Telephone No.)*: 888-888-5909

35. State Contact *(Telephone No.)*: 217-782-0378

Part II: Railroad Information

1. Estimated Number of Daily Train Movements

1.A. Total Day Thru Trains *(6 AM to 6 PM)*	1.B. Total Night Thru Trains *(6 PM to 6 AM)*	1.C. Total Switching Trains	1.D. Total Transit Trains	1.E. Check if Less Than One Movement Per Day
0	0	0	0	☒ How many trains per week? 2

2. Year of Train Count Data *(YYYY)*: 2016

3. Speed of Train at Crossing
3.A. Maximum Timetable Speed *(mph)*: 10
3.B. Typical Speed Range Over Crossing *(mph)* From 1 to 10

4. Type and Count of Tracks
Main 0 Siding 0 Yard 0 Transit 0 Industry 1

5. Train Detection *(Main Track only)*
☐ Constant Warning Time ☐ Motion Detection ☐AFO ☐ PTC ☐ DC ☐ Other ☒ None

6. Is Track Signaled? ☐ Yes ☒ No

7.A. Event Recorder ☐ Yes ☐ No

7.B. Remote Health Monitoring ☐ Yes ☐ No

U. S. DOT CROSSING INVENTORY FORM

A. Revision Date *(MM/DD/YYYY)*	PAGE 2	D. Crossing Inventory Number *(7 char.)*
05/26/2020		290048A

Part III: Highway or Pathway Traffic Control Device Information

1. Are there Signs or Signals? ☒ Yes ☐ No

2. Types of Passive Traffic Control Devices associated with the Crossing

2.A. Crossbuck Assemblies *(count)*	2.B. STOP Signs *(R1-1)* *(count)*	2.C. YIELD Signs *(R1-2)* *(count)*	2.D. Advance Warning Signs *(Check all that apply; include count)* ☒ None
2	0	2	☐ W10-1 0 ☐ W10-2 0 ☐ W10-3 0 ☐ W10-4 0 ☐ W10-11 0 ☐ W10-12 0

2.E. Low Ground Clearance Sign *(W10-5)*	2.F. Pavement Markings	2.G. Channelization Devices/Medians	2.H. EXEMPT Sign *(R15-3)*	2.I. ENS Sign *(I-13)* Displayed
☐ Yes *(count* 0 *)* ☒ No	☒ Stop Lines ☐ Dynamic Envelope ☒ RR Xing Symbols ☐ None	☐ All Approaches ☐ Median ☐ One Approach ☐ None	☐ Yes ☐ No	☒ Yes ☐ No

2.J. Other MUTCD Signs	2.K. Private Crossing Signs *(if private)*	2.L. LED Enhanced Signs *(List types)*
☐ Yes ☒ No Specify Type _____ Count 0 Specify Type _____ Count 0 Specify Type _____ Count 0	☐ Yes ☐ No	

3. Types of Train Activated Warning Devices at the Grade Crossing *(specify count of each device for all that apply)*

3.A. Gate Arms *(count)*	3.B. Gate Configuration	3.C. Cantilevered *(or Bridged)* Flashing Light Structures *(count)*	3.D. Mast Mounted Flashing Lights *(count of masts)* 0	3.E. Total Count of Flashing Light Pairs
Roadway 0 Pedestrian 0	☐ 2 Quad ☐ 3 Quad ☐ 4 Quad ☐ Full *(Barrier)* Resistance ☐ Median Gates	Over Traffic Lane 0 ☐ Incandescent Not Over Traffic Lane 0 ☐ LED	☐ Incandescent ☐ LED ☐ Back Lights Included ☐ Side Lights Included	0

3.F. Installation Date of Current Active Warning Devices: *(MM/YYYY)*	3.G. Wayside Horn	3.H. Highway Traffic Signals Controlling Crossing	3.I. Bells *(count)*
_____/_____ ☐ Not Required	☐ Yes Installed on *(MM/YYYY)* I_____/_____ ☐ No	☐ Yes ☒ No	0

3.J. Non-Train Active Warning	3.K. Other Flashing Lights or Warning Devices
☐ Flagging/Flagman ☐ Manually Operated Signals ☐ Watchman ☐ Floodlighting ☐ None	Count 0 Specify type _____

4.A. Does nearby Hwy Intersection have Traffic Signals?	4.B. Hwy Traffic Signal Interconnection	4.C. Hwy Traffic Signal Preemption	5. Highway Traffic Pre-Signals	6. Highway Monitoring Devices *(Check all that apply)*
☐ Yes ☐ No	☐ Not Interconnected ☐ For Traffic Signals ☐ For Warning Signs	☐ Simultaneous ☐ Advance	☐ Yes ☐ No Storage Distance * 0 Stop Line Distance * 0	☐ Yes - Photo/Video Recording ☐ Yes – Vehicle Presence Detection ☐ None

Part IV: Physical Characteristics

1. Traffic Lanes Crossing Railroad	2. Is Roadway/Pathway Paved?	3. Does Track Run Down a Street?	4. Is Crossing Illuminated? *(Street lights within approx. 50 feet from nearest rail)*
☐ One-way Traffic ☒ Two-way Traffic ☐ Divided Traffic Number of Lanes 04	☒ Yes ☐ No	☐ Yes ☒ No	☐ Yes ☐ No

5. Crossing Surface *(on Main Track, multiple types allowed)* Installation Date * *(MM/YYYY)* _____/_____ Width * _____ Length * _____

☐ 1 Timber ☒ 2 Asphalt ☐ 3 Asphalt and Timber ☐ 4 Concrete ☐ 5 Concrete and Rubber ☐ 6 Rubber ☐ 7 Metal
☐ 8 Unconsolidated ☐ 9 Composite ☐ 10 Other *(specify)* _____

6. Intersecting Roadway within 500 feet?	7. Smallest Crossing Angle	8. Is Commercial Power Available? *
☐ Yes ☒ No If Yes, Approximate Distance *(feet)* _____	☐ 0° – 29° ☐ 30° – 59° ☒ 60° - 90°	☒ Yes ☐ No

Part V: Public Highway Information

1. Highway System	2. Functional Classification of Road at Crossing	3. Is Crossing on State Highway System?	4. Highway Speed Limit
☐ (01) Interstate Highway System ☐ (02) Other Nat Hwy System (NHS) ☒ (03) Federal AID, Not NHS ☐ (08) Non-Federal Aid	☐ (0) Rural ☒ (1) Urban ☐ (1) Interstate ☐ (5) Major Collector ☐ (2) Other Freeways and Expressways ☒ (3) Other Principal Arterial ☐ (6) Minor Collector ☐ (4) Minor Arterial ☐ (7) Local	☐ Yes ☒ No	30 MPH ☒ Posted ☐ Statutory

5. Linear Referencing System *(LRS Route ID)* * 101 95129 000000

6. LRS Milepost * 1.6

7. Annual Average Daily Traffic *(AADT)*	8. Estimated Percent Trucks	9. Regularly Used by School Buses?	10. Emergency Services Route
Year 2015 AADT 011050	08 %	☐ Yes ☒ No Average Number per Day 0	☐ Yes ☐ No

Submission Information - *This information is used for administrative purposes and is not available on the public website.*

Submitted by _____ Organization _____ Phone _____ Date _____

Public reporting burden for this information collection is estimated to average 30 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed and completing and reviewing the collection of information. According to the Paperwork Reduction Act of 1995, a federal agency may not conduct or sponsor, and a person is not required to, nor shall a person be subject to a penalty for failure to comply with, a collection of information unless it displays a currently valid OMB control number. The valid OMB control number for information collection is 2130-0017. Send comments regarding this burden estimate or any other aspect of this collection, including for reducing this burden to: Information Collection Officer, Federal Railroad Administration, 1200 New Jersey Ave. SE, MS-25 Washington, DC 20590.

U. S. DOT CROSSING INVENTORY FORM

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION

OMB No. 2130-0017

Instructions for the initial reporting of the following types of new or previously unreported crossings: For public highway-rail grade crossings, complete the entire inventory Form. For private highway-rail grade crossings, complete the Header, Parts I and II, and the Submission Information section. For public pathway grade crossings (including pedestrian station grade crossings), complete the Header, Parts I and II, and the Submission Information section. For Private pathway grade crossings, complete the Header, Parts I and II, and the Submission Information section. For grade-separated highway-rail or pathway crossings (including pedestrian station crossings), complete the Header, Part I, and the Submission Information section. For changes to existing data, complete the Header, Part I Items 1-3, and the Submission Information section, in addition to the updated data fields. Note: For private crossings only, Part I Item 20 and Part III Item 2.K. are required unless otherwise noted. An asterisk * denotes an optional field.

A. Revision Date (MM/DD/YYYY)	B. Reporting Agency	C. Reason for Update (Select only one)	D. DOT Crossing Inventory Number
05 / 26 / 2020	☒ Railroad ☐ Transit ☐ State ☐ Other	☒ Change in Data ☐ New Crossing ☐ Closed ☐ No Train Traffic ☐ Quiet Zone Update ☐ Re-Open ☐ Date Change Only ☐ Change in Primary Operating RR ☐ Admin. Correction	290016U

Part I: Location and Classification Information

1. Primary Operating Railroad	2. State	3. County
Chicago, Central & Pacific Railroad Company [CC]	ILLINOIS	WINNEBAGO

4. City / Municipality	5. Street/Road Name & Block Number	6. Highway Type & No.
☒ In ☐ Near ROCKFORD	11TH STREET (Street/Road Name) | 1100 (* Block Number)	FAU5129

7. Do Other Railroads Operate a Separate Track at Crossing?	8. Do Other Railroads Operate Over Your Track at Crossing?
☐ Yes ☒ No If Yes, Specify RR	☐ Yes ☒ No If Yes, Specify RR

9. Railroad Division or Region	10. Railroad Subdivision or District	11. Branch or Line Name	12. RR Milepost
☐ None IOWA	☐ None FREEPORT	☐ None MAIN	(prefix) | 0084.650 (nnnn.nnn) | (suffix)

13. Line Segment *	14. Nearest RR Timetable Station *	15. Parent RR (if applicable)	16. Crossing Owner (if applicable)
SC00028162	ROCKFORD	☐ N/A CN	☐ N/A CC

17. Crossing Type	18. Crossing Purpose	19. Crossing Position	20. Public Access (if Private Crossing)	21. Type of Train	22. Average Passenger Train Count Per Day
☒ Public ☐ Private	☒ Highway ☐ Pathway, Ped. ☐ Station, Ped.	☒ At Grade ☐ RR Under ☐ RR Over	☐ Yes ☐ No	☒ Freight ☐ Intercity Passenger ☐ Commuter ☐ Transit ☐ Shared Use Transit ☐ Tourist/Other	☐ Less Than One Per Day ☐ Number Per Day 0

23. Type of Land Use
☐ Open Space ☐ Farm ☒ Residential ☐ Commercial ☐ Industrial ☐ Institutional ☐ Recreational ☐ RR Yard

24. Is there an Adjacent Crossing with a Separate Number?	25. Quiet Zone (FRA provided)
☐ Yes ☒ No If Yes, Provide Crossing Number	☒ No ☐ 24 Hr ☐ Partial ☐ Chicago Excused Date Established

26. HSR Corridor ID	27. Latitude in decimal degrees	28. Longitude in decimal degrees	29. Lat/Long Source
☒ N/A	(WGS84 std: nn.nnnnnnn) 42.255707	(WGS84 std: -nnn.nnnnnnn) -89.071960	☒ Actual ☐ Estimated

30.A. Railroad Use *	31.A. State Use *
	174435A IS ADJACENT
30.B. Railroad Use *	**31.B. State Use *** LAT/LONG PER ICC-SL
30.C. Railroad Use *	**31.C. State Use ***
30.D. Railroad Use * MAIN	**31.D. State Use *** STATE OF ILLINOIS HWY DATA UPDATE FOR 2019 AS OF
32.A. Narrative (Railroad Use) *	**32.B. Narrative** (State Use) * IDOT Hwy Data Update for 2017 @ 5/9/2017

33. Emergency Notification Telephone No. (posted)	34. Railroad Contact (Telephone No.)	35. State Contact (Telephone No.)
800-465-9239	888-888-5909	217-782-0378

Part II: Railroad Information

1. Estimated Number of Daily Train Movements

1.A. Total Day Thru Trains (6 AM to 6 PM)	1.B. Total Night Thru Trains (6 PM to 6 AM)	1.C. Total Switching Trains	1.D. Total Transit Trains	1.E. Check if Less Than One Movement Per Day ☐ How many trains per week?
7	4	0	0	

2. Year of Train Count Data (YYYY)	3. Speed of Train at Crossing
2016	3.A. Maximum Timetable Speed (mph) 25 3.B. Typical Speed Range Over Crossing (mph) From 1 to 25

4. Type and Count of Tracks
Main 1 Siding 0 Yard 0 Transit 0 Industry 0

5. Train Detection (Main Track only)
☐ Constant Warning Time ☐ Motion Detection ☐AFO ☐ PTC ☐ DC ☒ Other ☐ None

6. Is Track Signaled?	7.A. Event Recorder	7.B. Remote Health Monitoring
☒ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No

U. S. DOT CROSSING INVENTORY FORM

A. Revision Date *(MM/DD/YYYY)*	PAGE 2	D. Crossing Inventory Number *(7 char.)*
05/26/2020		290016U

Part III: Highway or Pathway Traffic Control Device Information

1. Are there Signs or Signals? ☒ Yes ☐ No

2. Types of Passive Traffic Control Devices associated with the Crossing

2.A. Crossbuck Assemblies *(count)*	2.B. STOP Signs *(R1-1)* *(count)*	2.C. YIELD Signs *(R1-2)* *(count)*	2.D. Advance Warning Signs *(Check all that apply; include count)* ☒ None
0	0	0	☐ W10-1 0 ☐ W10-2 0 ☐ W10-3 0 ☐ W10-4 0 ☐ W10-11 0 ☐ W10-12 0

2.E. Low Ground Clearance Sign *(W10-5)*	2.F. Pavement Markings	2.G. Channelization Devices/Medians	2.H. EXEMPT Sign *(R15-3)*	2.I. ENS Sign *(I-13)* Displayed
☐ Yes *(count* 0 *)* ☒ No	☒ Stop Lines ☐ Dynamic Envelope ☒ RR Xing Symbols ☐ None	☐ All Approaches ☐ Median ☐ One Approach ☒ None	☐ Yes ☐ No	☒ Yes ☐ No

2.J. Other MUTCD Signs	2.K. Private Crossing Signs *(if private)*	2.L. LED Enhanced Signs *(List types)*
☐ Yes ☒ No Specify Type _____ Count 0 Specify Type _____ Count 0 Specify Type _____ Count 0	☐ Yes ☐ No	

3. Types of Train Activated Warning Devices at the Grade Crossing *(specify count of each device for all that apply)*

3.A. Gate Arms *(count)*	3.B. Gate Configuration	3.C. Cantilevered *(or Bridged)* Flashing Light Structures *(count)*	3.D. Mast Mounted Flashing Lights *(count of masts)* 2	3.E. Total Count of Flashing Light Pairs
Roadway 2 Pedestrian 0	☒ 2 Quad ☐ Full *(Barrier)* Resistance ☐ 3 Quad ☐ 4 Quad ☐ Median Gates	Over Traffic Lane 2 ☐ Incandescent Not Over Traffic Lane 0 ☐ LED	☐ Incandescent ☐ LED ☐ Back Lights Included ☐ Side Lights Included	6

3.F. Installation Date of Current Active Warning Devices: *(MM/YYYY)*	3.G. Wayside Horn	3.H. Highway Traffic Signals Controlling Crossing	3.I. Bells *(count)*
_____/_____ ☐ Not Required	☐ Yes Installed on *(MM/YYYY)* I_____/_____ ☐ No	☐ Yes ☒ No	2

3.J. Non-Train Active Warning	3.K. Other Flashing Lights or Warning Devices
☐ Flagging/Flagman ☐ Manually Operated Signals ☐ Watchman ☐ Floodlighting ☐ None	Count 0 Specify type _____

4.A. Does nearby Hwy Intersection have Traffic Signals?	4.B. Hwy Traffic Signal Interconnection	4.C. Hwy Traffic Signal Preemption	5. Highway Traffic Pre-Signals	6. Highway Monitoring Devices *(Check all that apply)*
☐ Yes ☒ No	☒ Not Interconnected ☐ For Traffic Signals ☐ For Warning Signs	☐ Simultaneous ☐ Advance	☐ Yes ☐ No Storage Distance * 0 Stop Line Distance * 0	☐ Yes - Photo/Video Recording ☐ Yes – Vehicle Presence Detection ☐ None

Part IV: Physical Characteristics

1. Traffic Lanes Crossing Railroad	2. Is Roadway/Pathway Paved?	3. Does Track Run Down a Street?	4. Is Crossing Illuminated? *(Street lights within approx. 50 feet from nearest rail)*
☐ One-way Traffic ☒ Two-way Traffic ☐ Divided Traffic Number of Lanes 04	☒ Yes ☐ No	☐ Yes ☒ No	☒ Yes ☐ No

5. Crossing Surface *(on Main Track, multiple types allowed)* Installation Date * *(MM/YYYY)* 05 / 2018 Width * 10 Length * 66

☐ 1 Timber ☐ 2 Asphalt ☐ 3 Asphalt and Timber ☐ 4 Concrete ☐ 5 Concrete and Rubber ☒ 6 Rubber ☐ 7 Metal
☐ 8 Unconsolidated ☐ 9 Composite ☐ 10 Other *(specify)* _____

6. Intersecting Roadway within 500 feet?	7. Smallest Crossing Angle	8. Is Commercial Power Available? *
☒ Yes ☐ No If Yes, Approximate Distance *(feet)* 50	☐ 0° – 29° ☐ 30° – 59° ☒ 60° - 90°	☒ Yes ☐ No

Part V: Public Highway Information

1. Highway System	2. Functional Classification of Road at Crossing	3. Is Crossing on State Highway System?	4. Highway Speed Limit
☐ (01) Interstate Highway System ☐ (02) Other Nat Hwy System (NHS) ☒ (03) Federal AID, Not NHS ☐ (08) Non-Federal Aid	☐ (0) Rural ☒ (1) Urban ☐ (1) Interstate ☐ (5) Major Collector ☐ (2) Other Freeways and Expressways ☒ (3) Other Principal Arterial ☐ (6) Minor Collector ☐ (4) Minor Arterial ☐ (7) Local	☐ Yes ☒ No	30 MPH ☒ Posted ☐ Statutory

5. Linear Referencing System *(LRS Route ID)* * 101 95129 000000

6. LRS Milepost * 0.55

7. Annual Average Daily Traffic *(AADT)*	8. Estimated Percent Trucks	9. Regularly Used by School Buses?	10. Emergency Services Route
Year 2017 AADT 009050	09 %	☐ Yes ☒ No Average Number per Day 0	☐ Yes ☐ No

Submission Information - *This information is used for administrative purposes and is not available on the public website.*

Submitted by _____ Organization _____ Phone _____ Date _____

Public reporting burden for this information collection is estimated to average 30 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed and completing and reviewing the collection of information. According to the Paperwork Reduction Act of 1995, a federal agency may not conduct or sponsor, and a person is not required to, nor shall a person be subject to a penalty for failure to comply with, a collection of information unless it displays a currently valid OMB control number. The valid OMB control number for information collection is 2130-0017. Send comments regarding this burden estimate or any other aspect of this collection, including for reducing this burden to: Information Collection Officer, Federal Railroad Administration, 1200 New Jersey Ave. SE, MS-25 Washington, DC 20590.

Crossing Inventory

Crossing Inventory | Collision History | Docket History | Back To Map

Crossing Inventory

DOT/AAR Number:	387338F
Status:	Open
Railroad:	Dakota, Minnesota & Eastern Railroad (CP)
Milepost:	2.23
ICC Line Code:	MG
Crossing Type:	Public
If Private Crossing, Type:	Unk
County Name:	Winnebago
City Name:	ROCKFORD
In Or Near:	In
Street Name:	11TH STREET
Highway Number:	FAU5129
Maximum Warning Devices:	Crossbucks
Railroad Division:	EAST
Railroad Subdivision:	ROCKFORD
Number of Main Tracks:	0
Number of Other Tracks:	1
Crossing Surface Type:	Rubber
Average Number of Daily Trains:	0
Average Number of Daily Passenger Trains:	0

Pictures



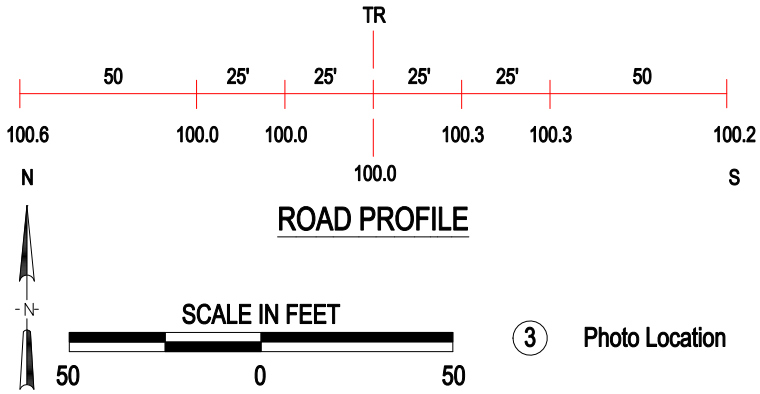






Passenger Train Type:	
Train Speed - Timetable:	10
Train Speed - Minimum Likely:	1
Train Speed - Maximum Likely:	10
AADT:	9900
Traffic Lanes:	4
Truck Percent:	6
Angle of Intersection - Road to Rail:	60° to 90°
FHWA Road Class:	Urban / ArtPri
On State Highway:	No
Pavement Markings:	None
Advanced Warning Signs:	No
Road Intersection Near:	Yes
DOT Structure ID 1:	
FRA Quiet Zone:	0
Latitude:	42.24644700
Longitude:	-89.07218500
LAT LONG Source:	A
ENS Sign:	Yes
EMERGENCY Phone Number:	8007169132
Posted Highway Speed:	30
Narrative Railroad:	
Narrative State 1:	PER IC, XING IS OPEN BUT NOT THEIRS; CLOSED AT FRA AS OF 7/7/2003
Data Last Updated:	06/18/2020



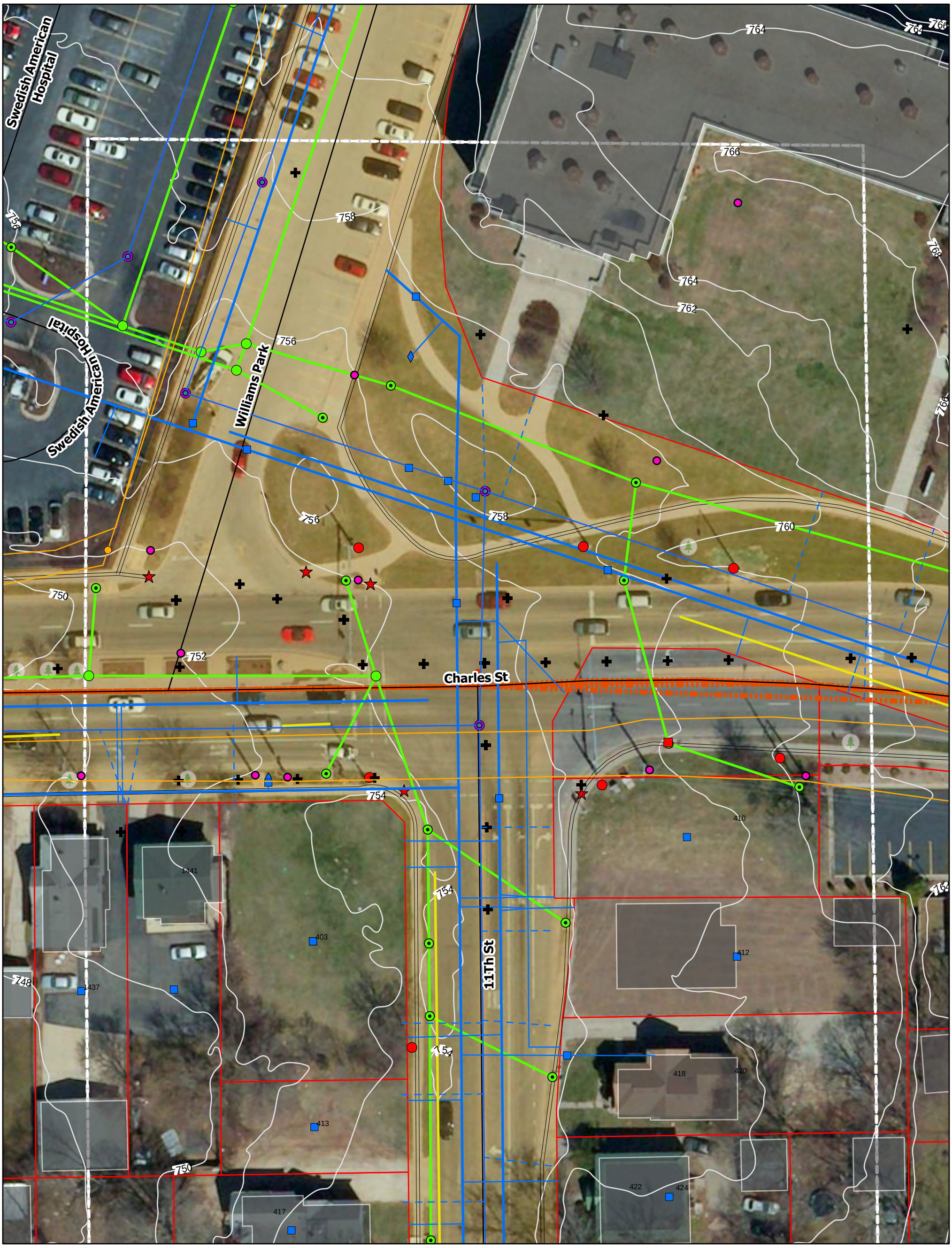


ROAD PROFILE

③ Photo Location

Crossing #:	387338F
Location:	Winnebago Co., City of Rockford (In)
Lat/Long:	42°14'47" / 89°04'19"
Railroad:	CM&G
Street:	11 th Street
Railroad Milepost:	2.23
Crossing Protection:	Sign

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- Fiber Cable
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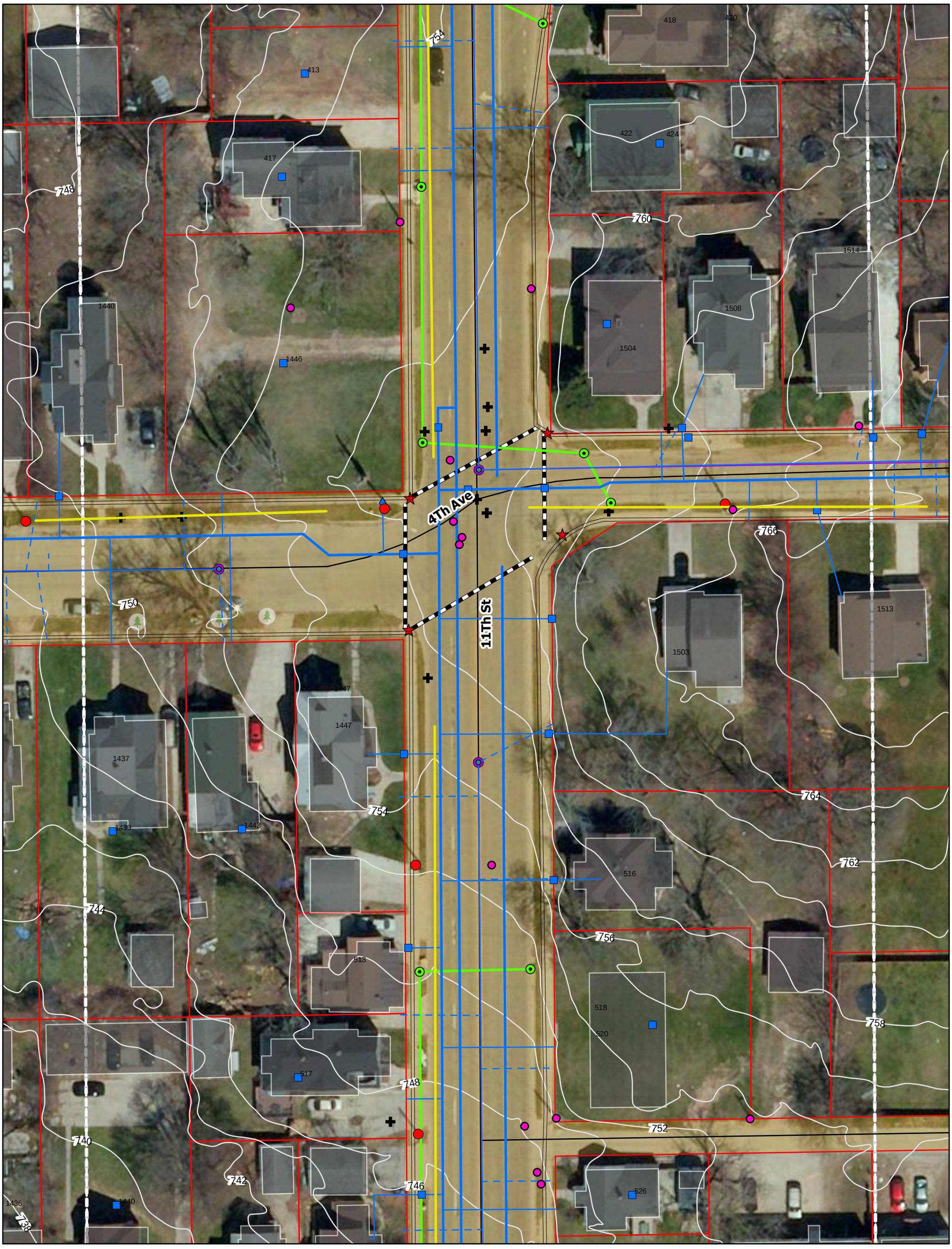
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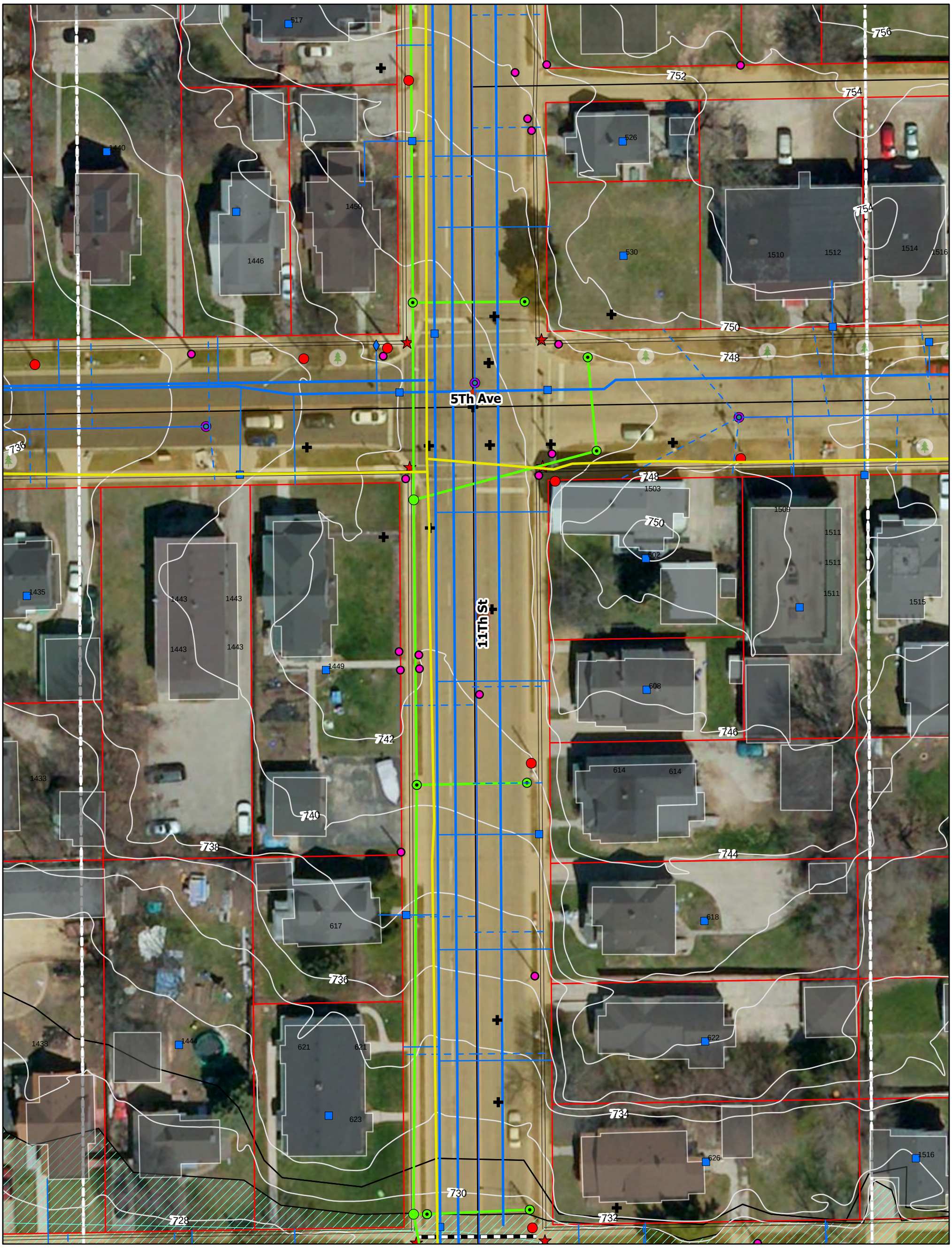
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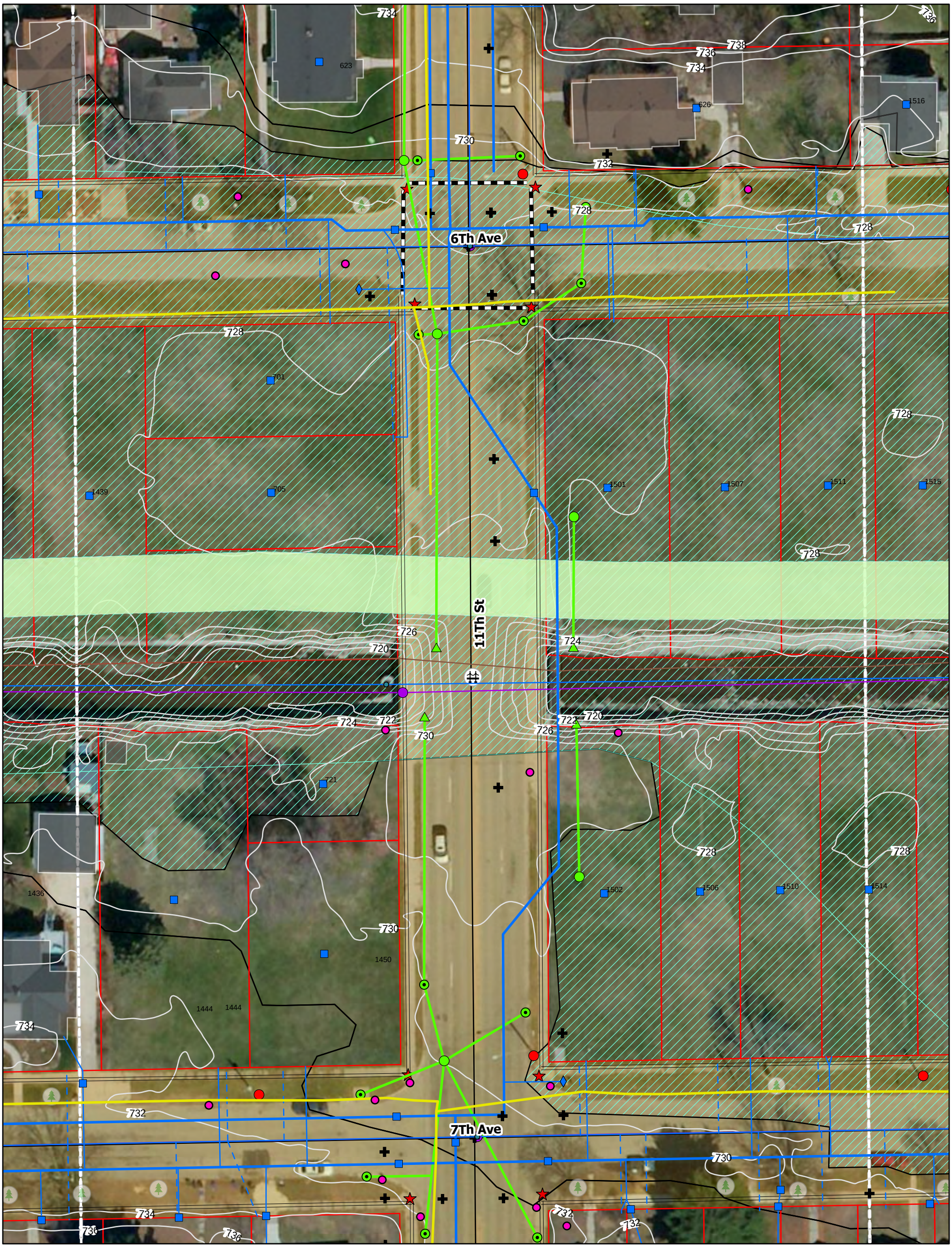
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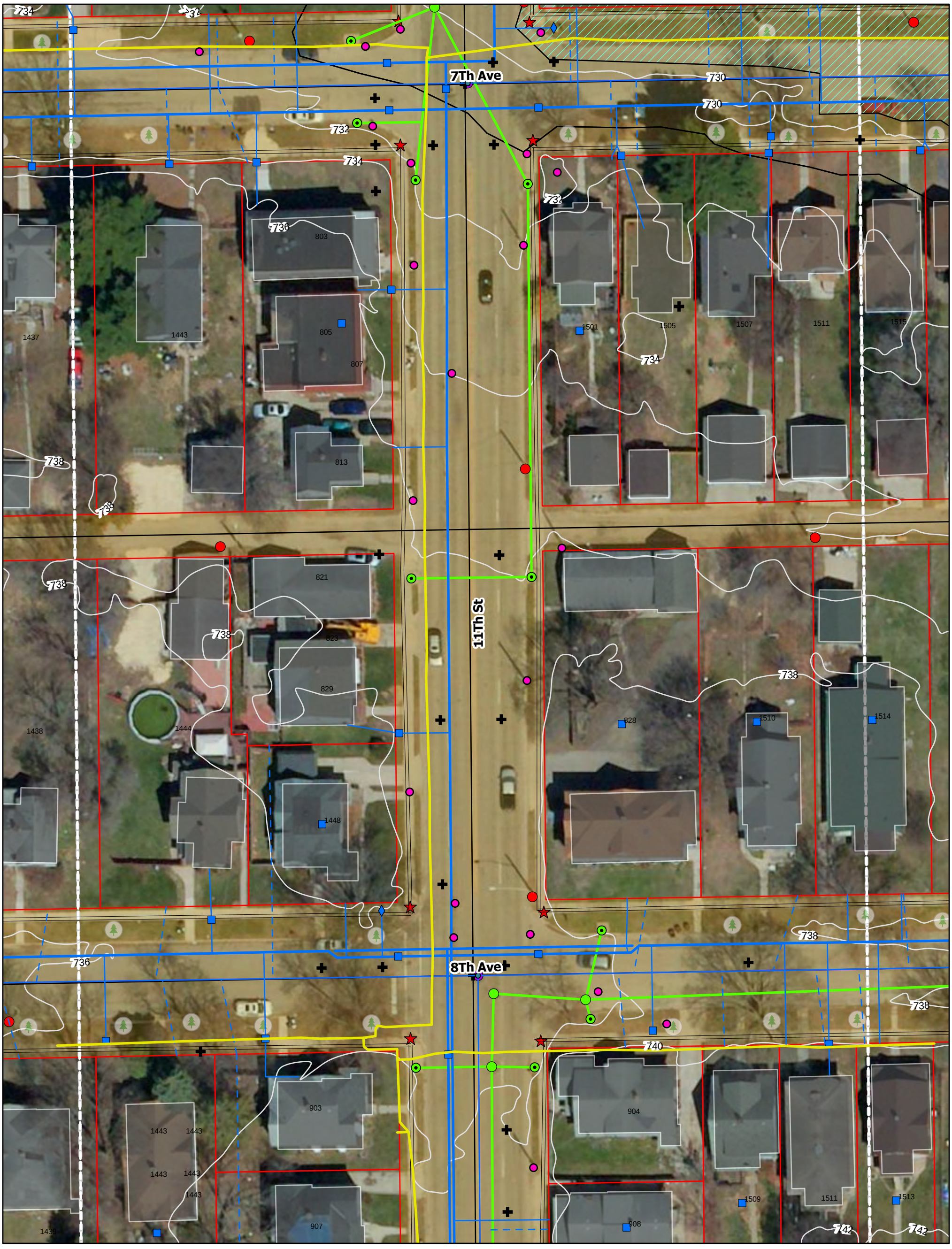
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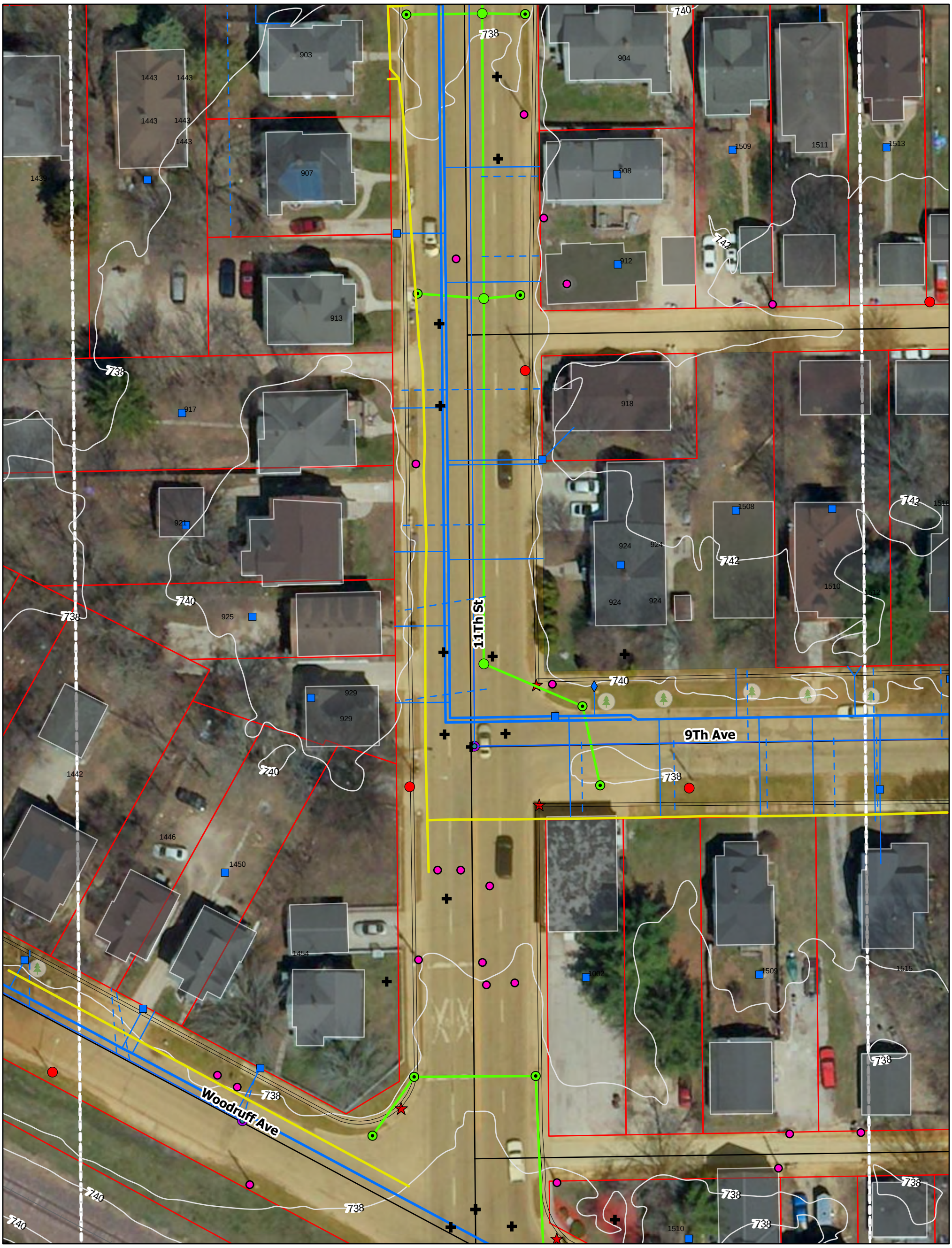
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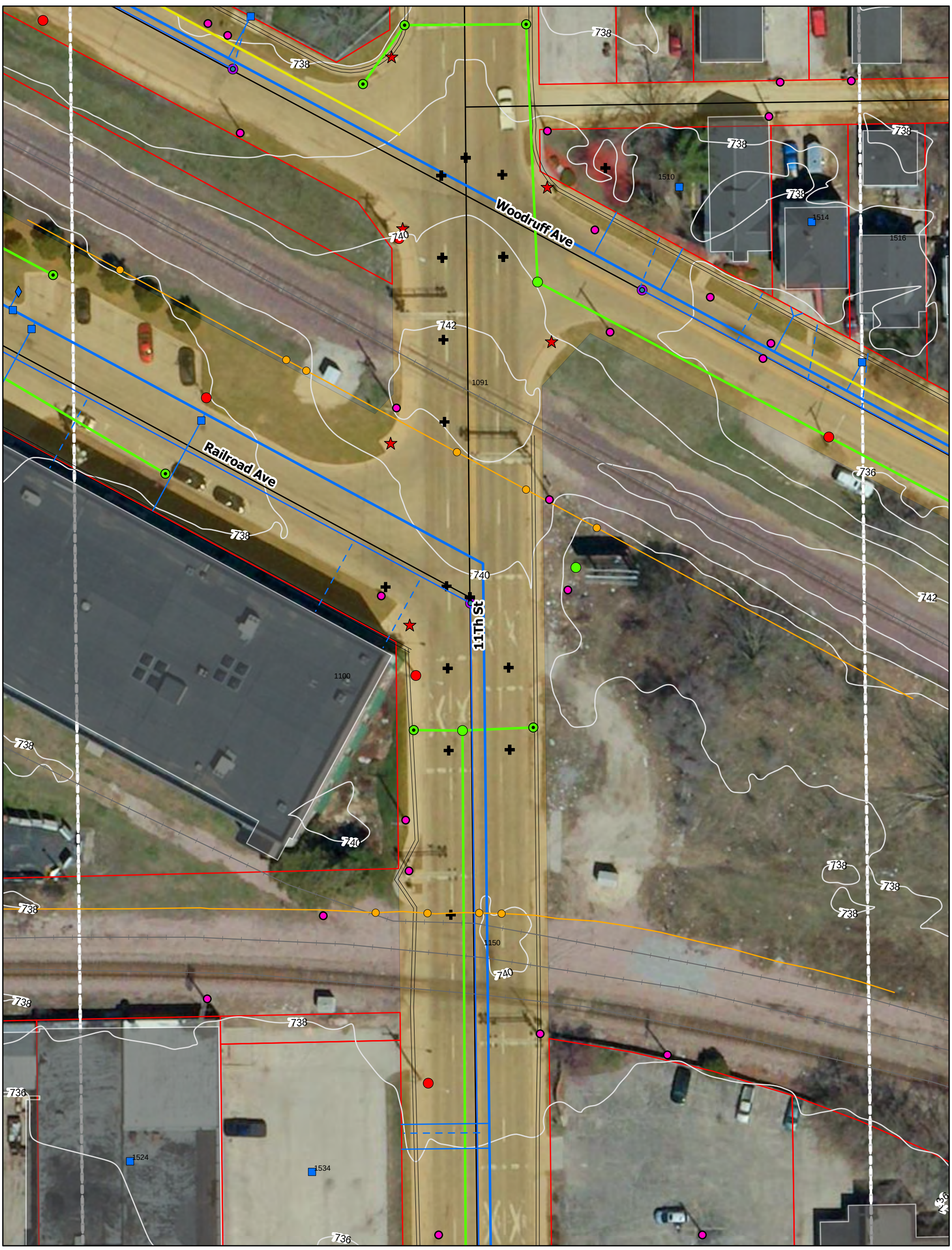
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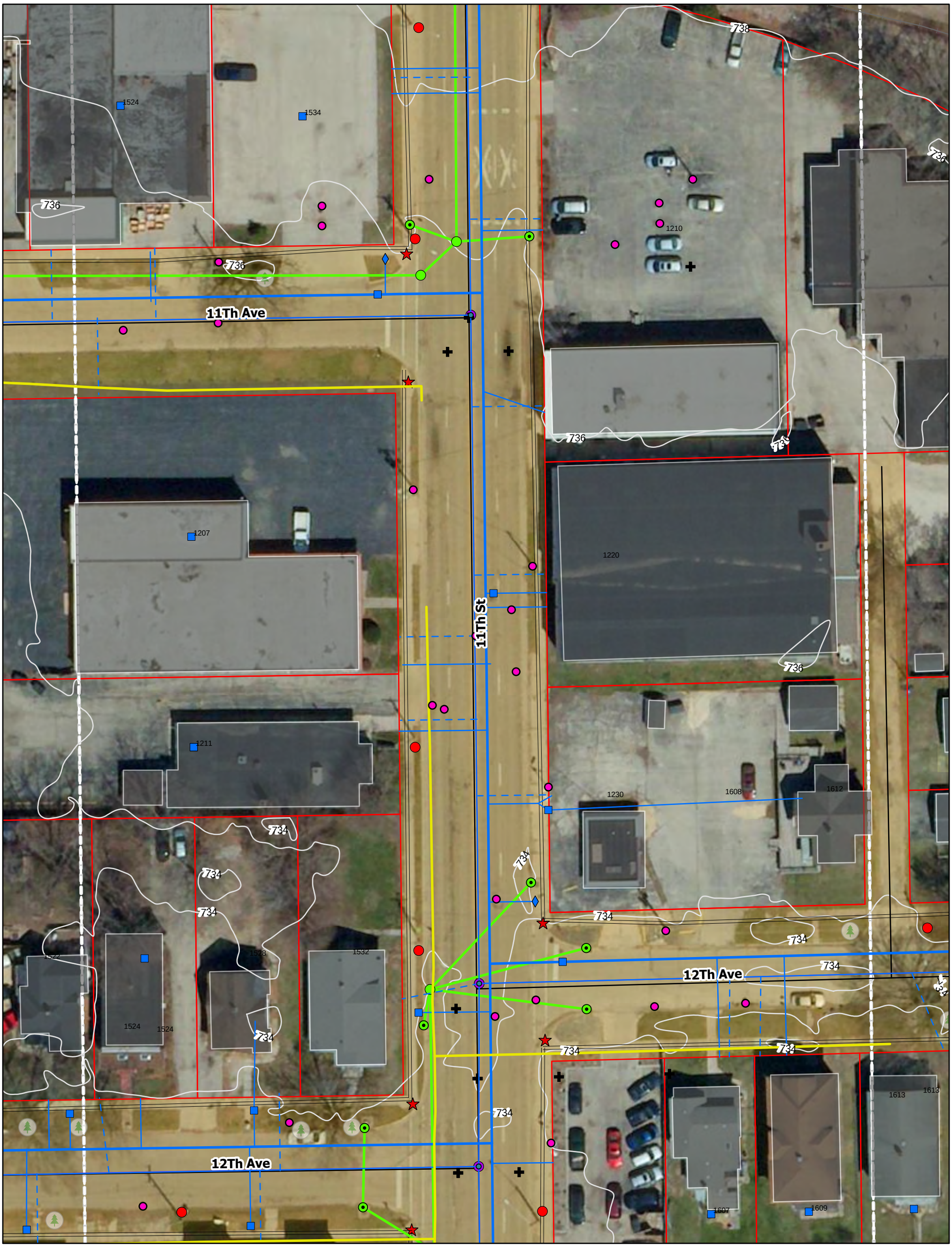
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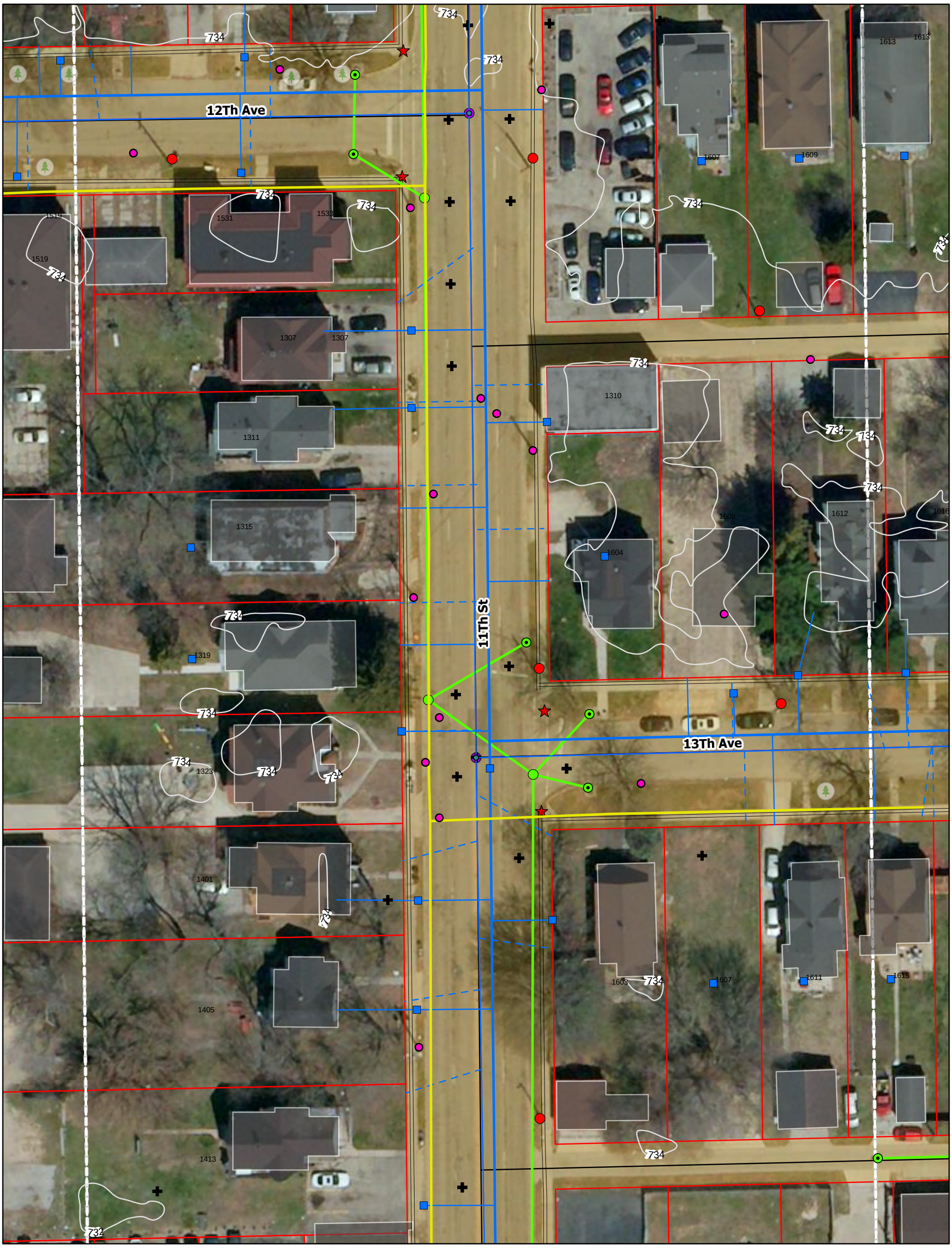
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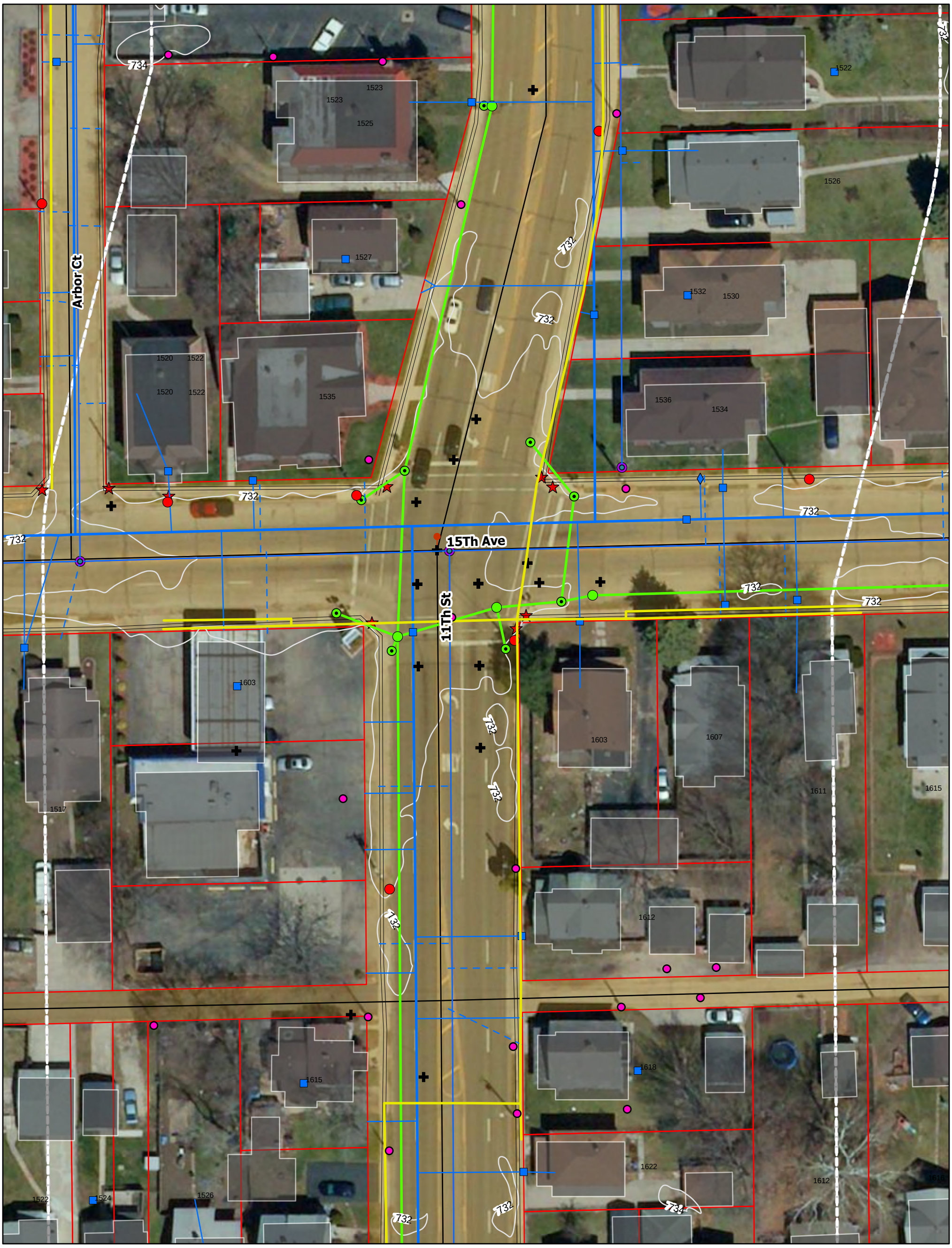
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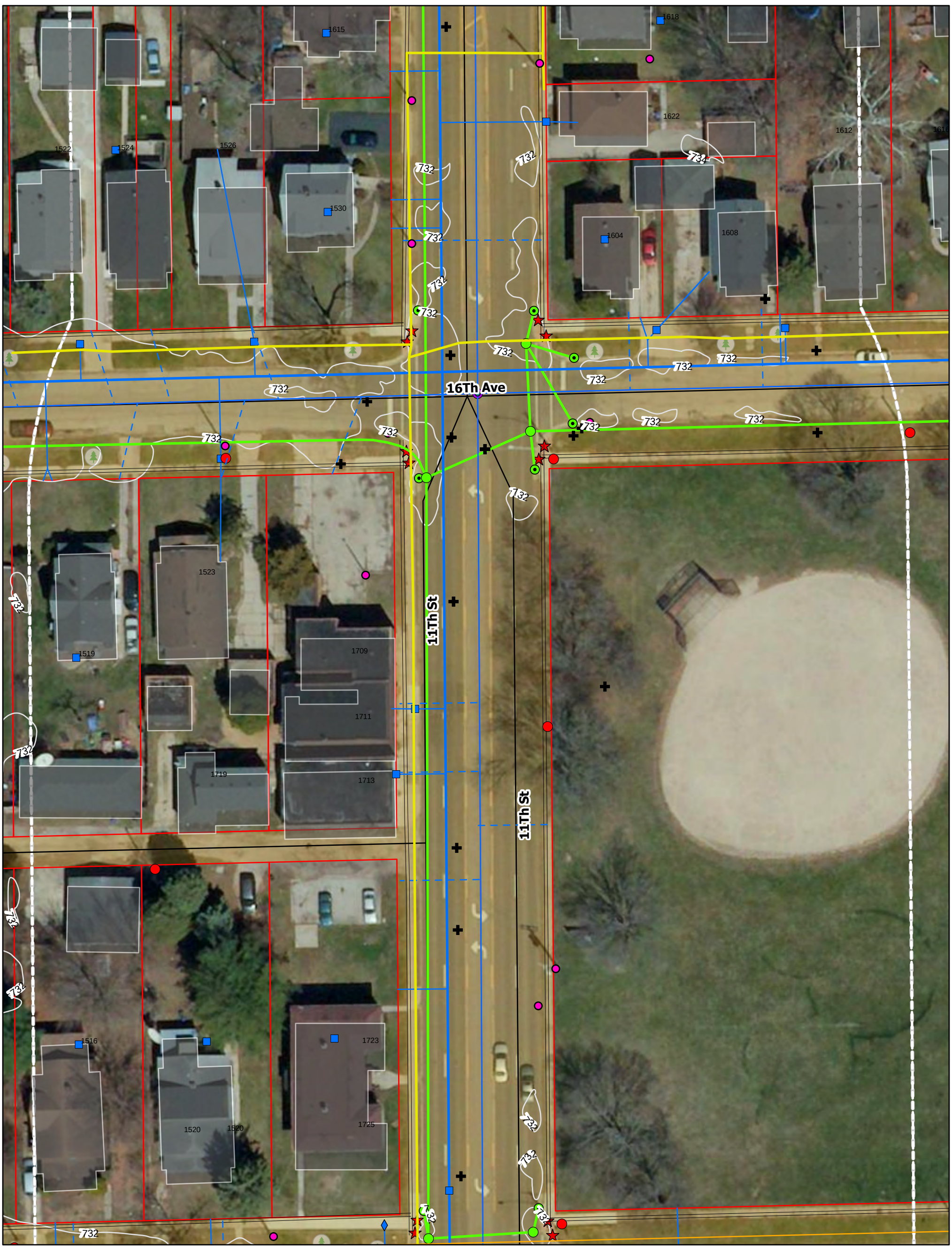
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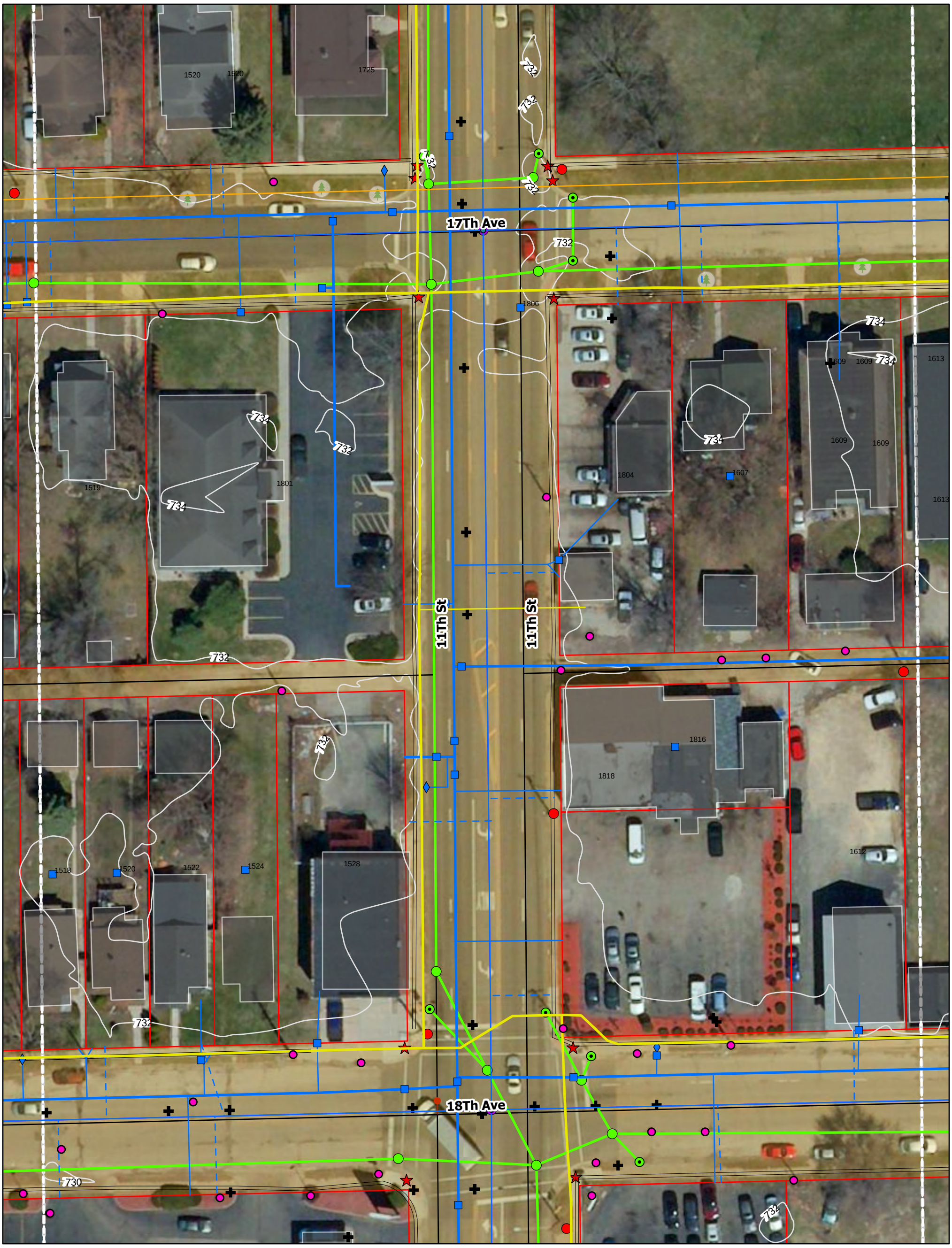
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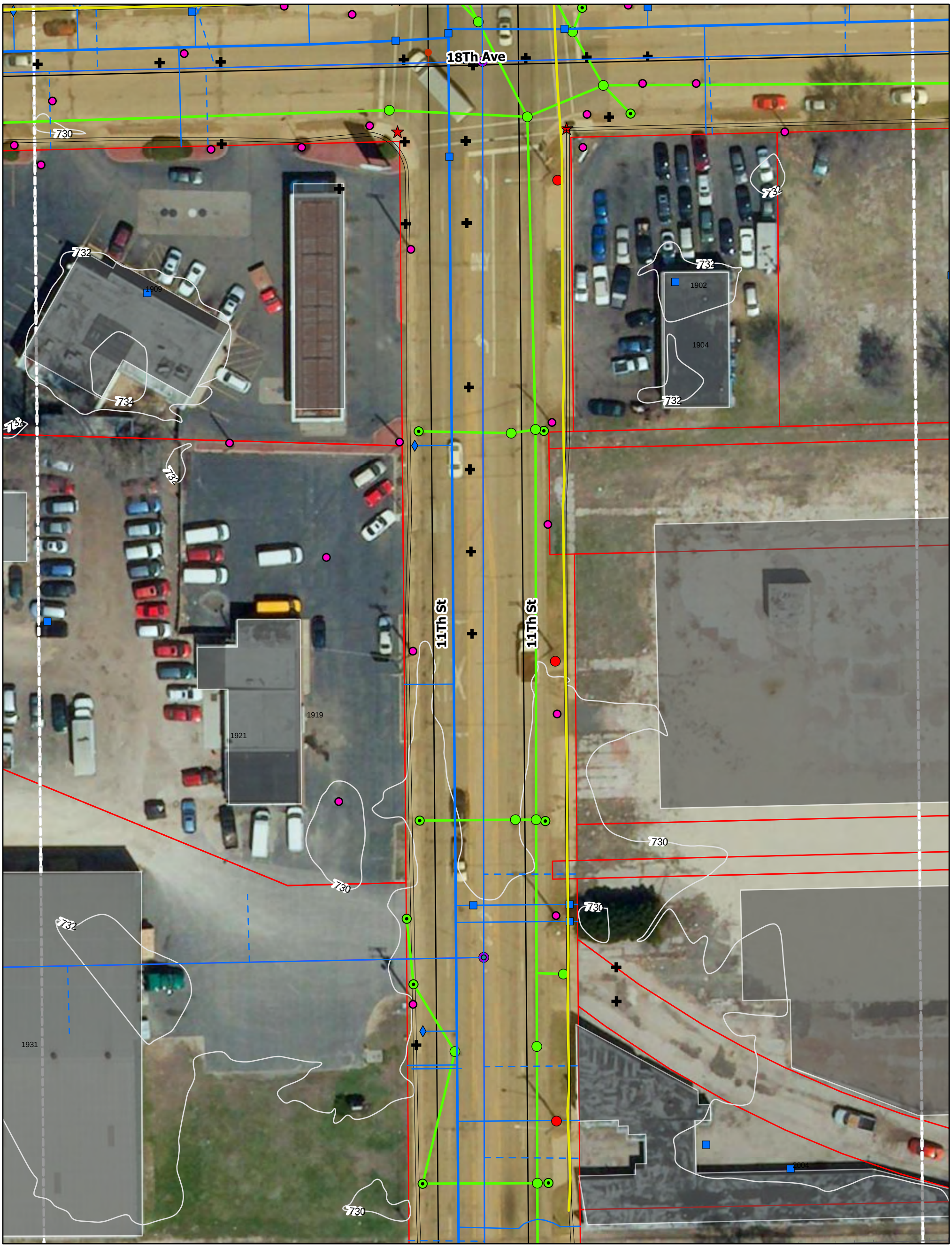
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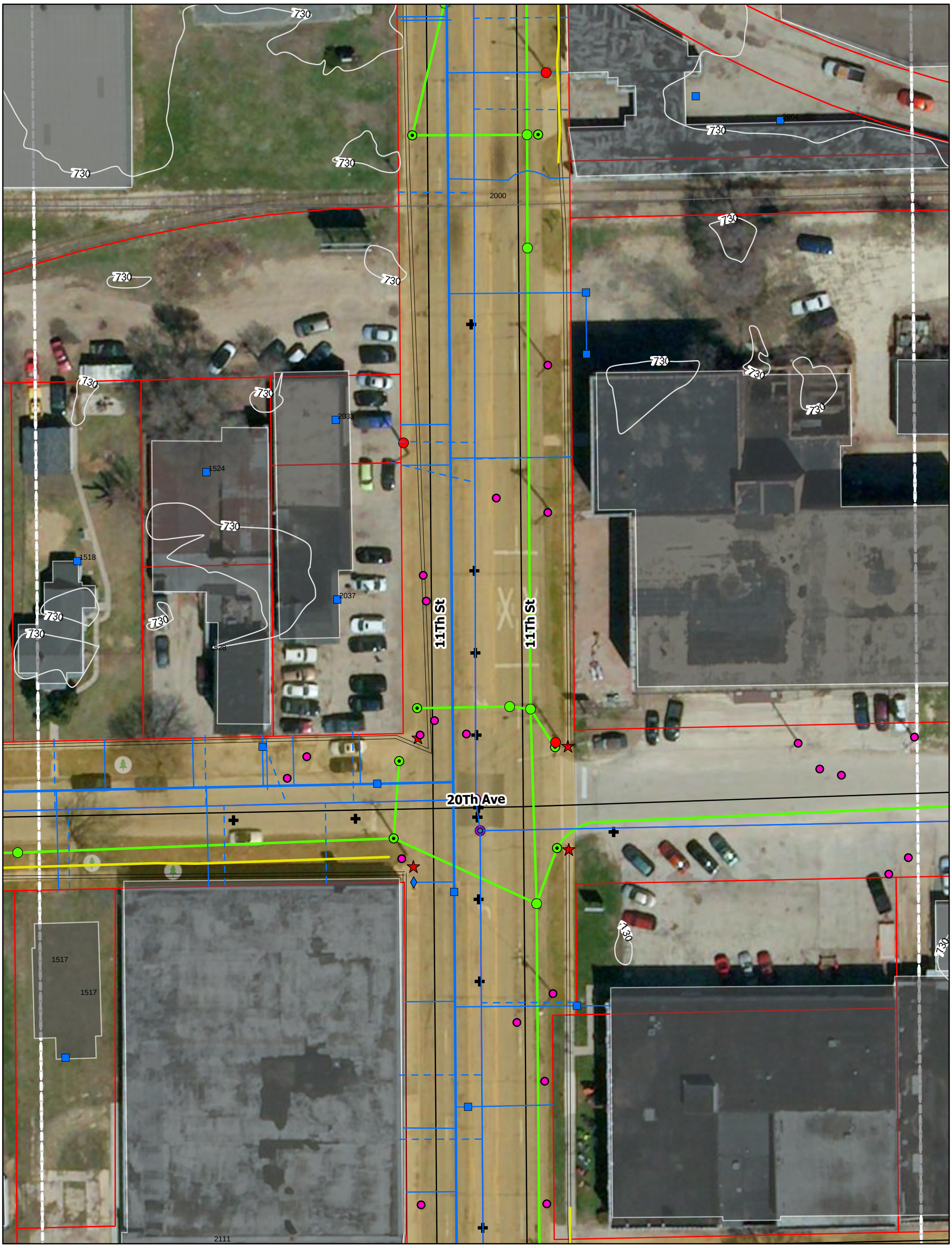
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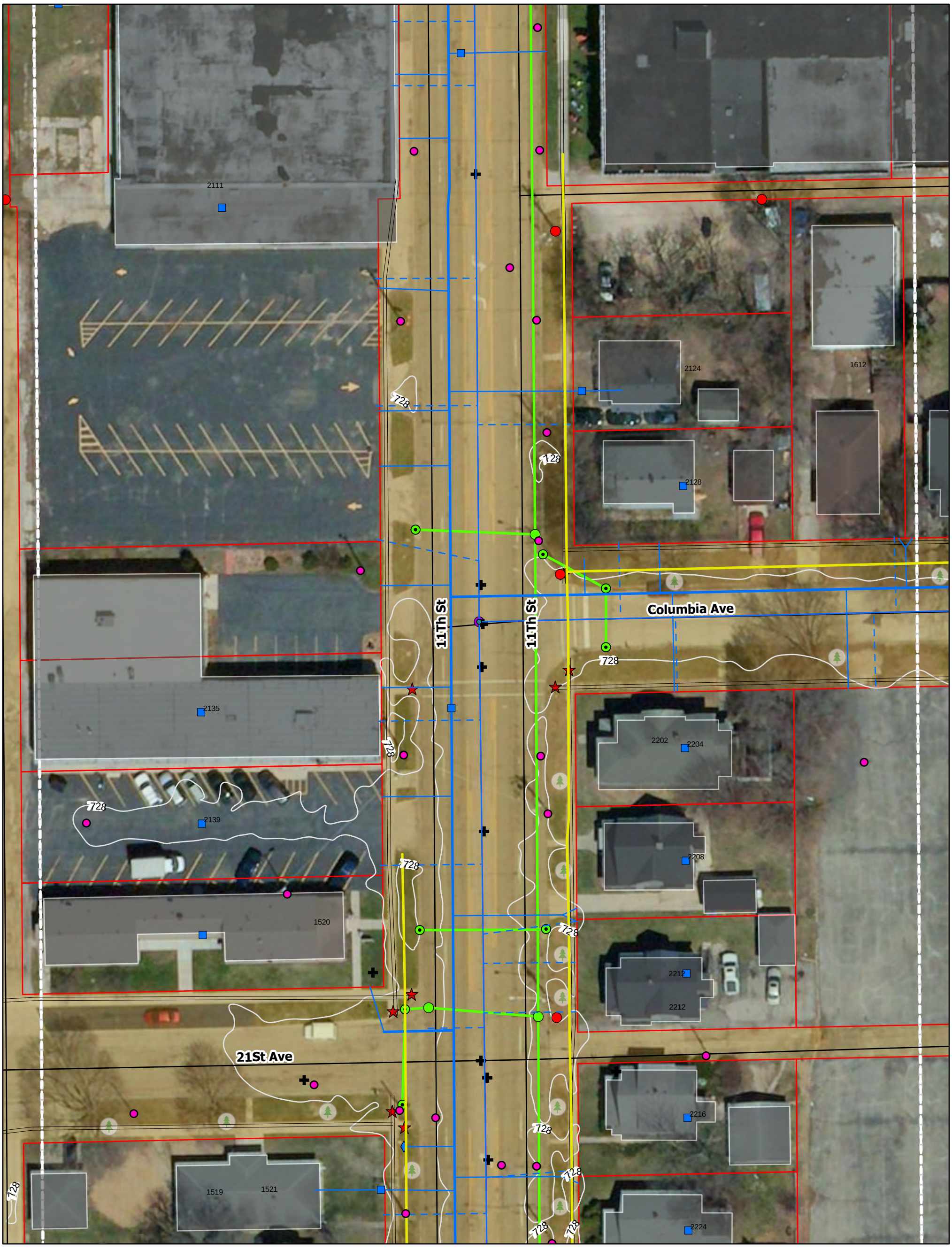
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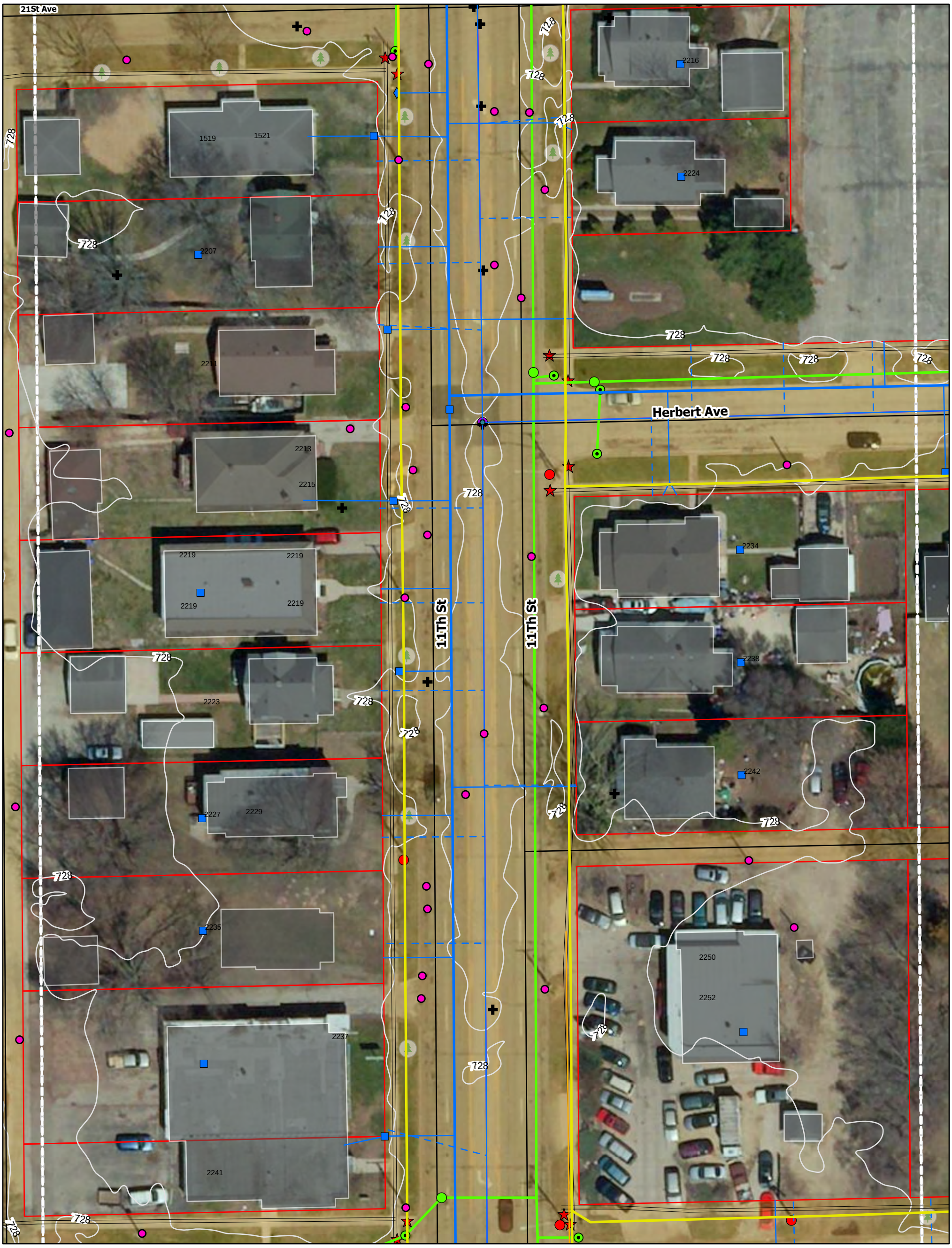
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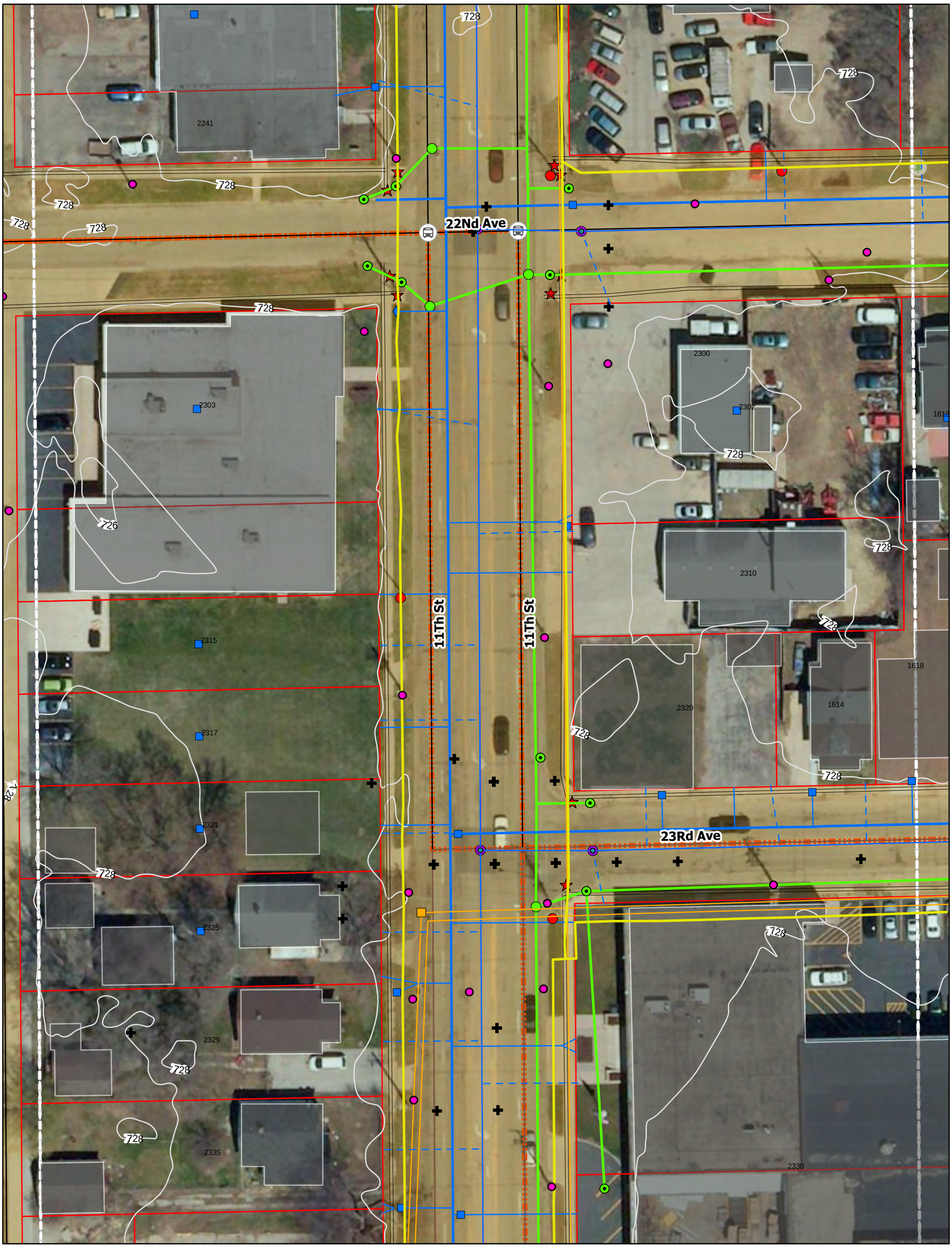
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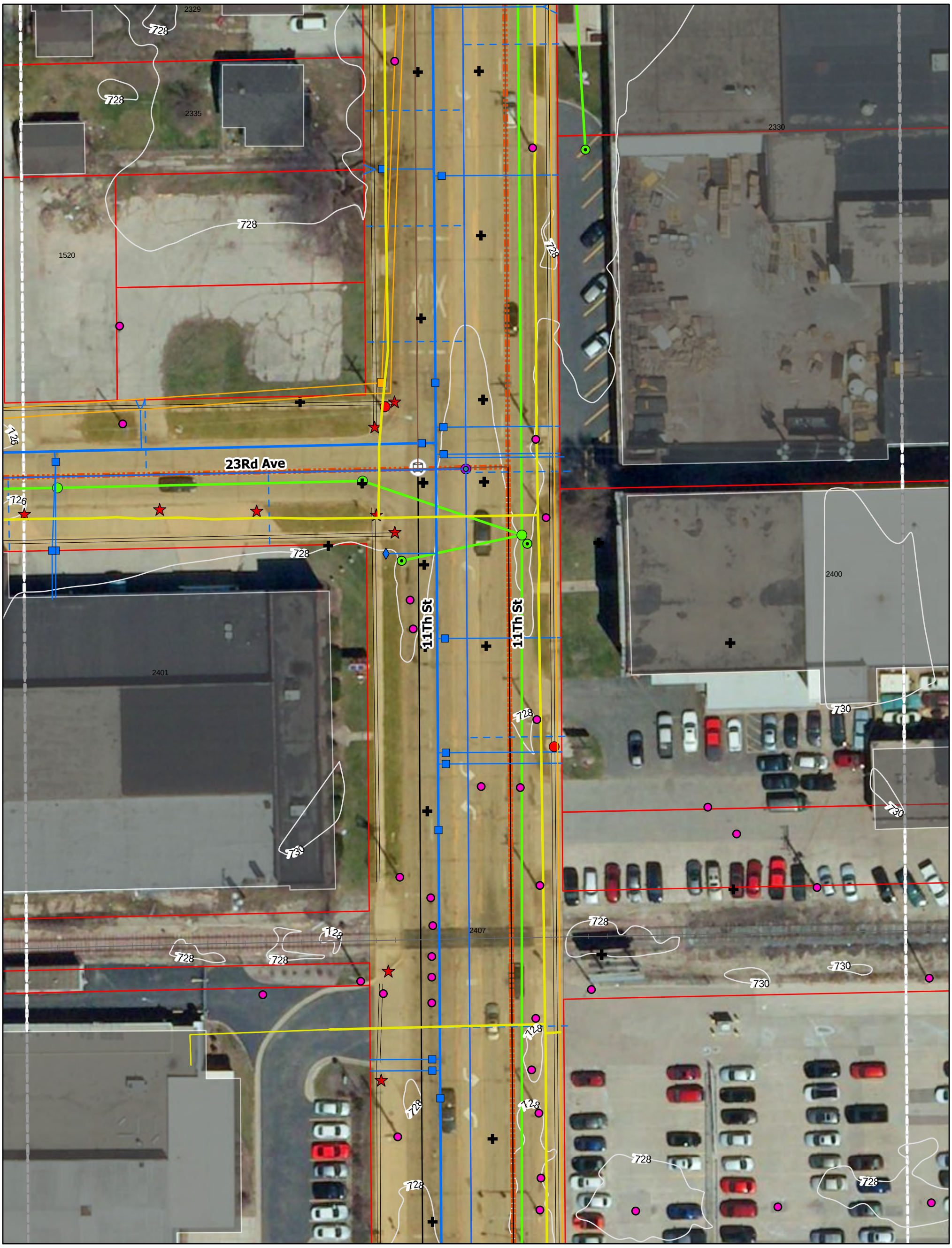
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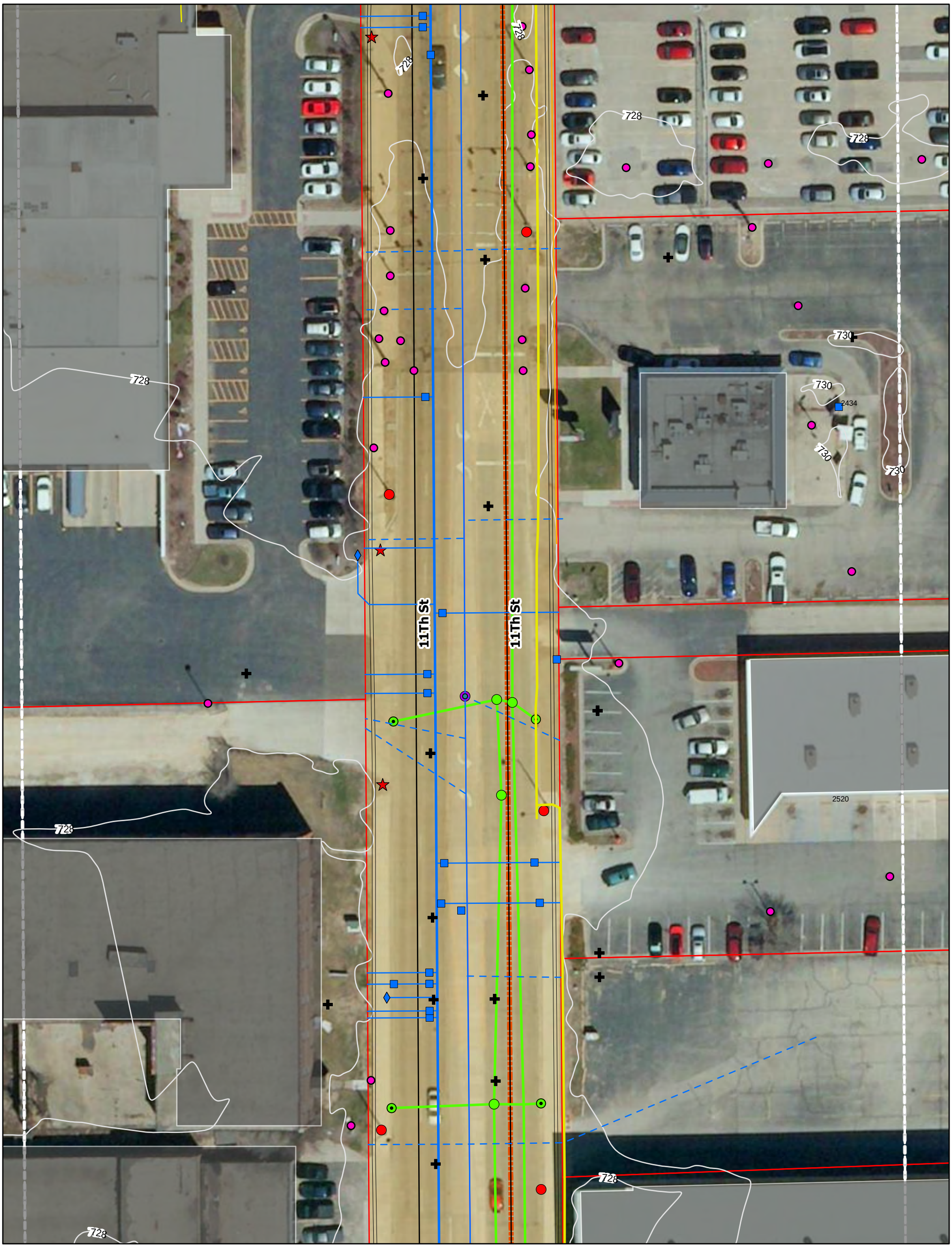
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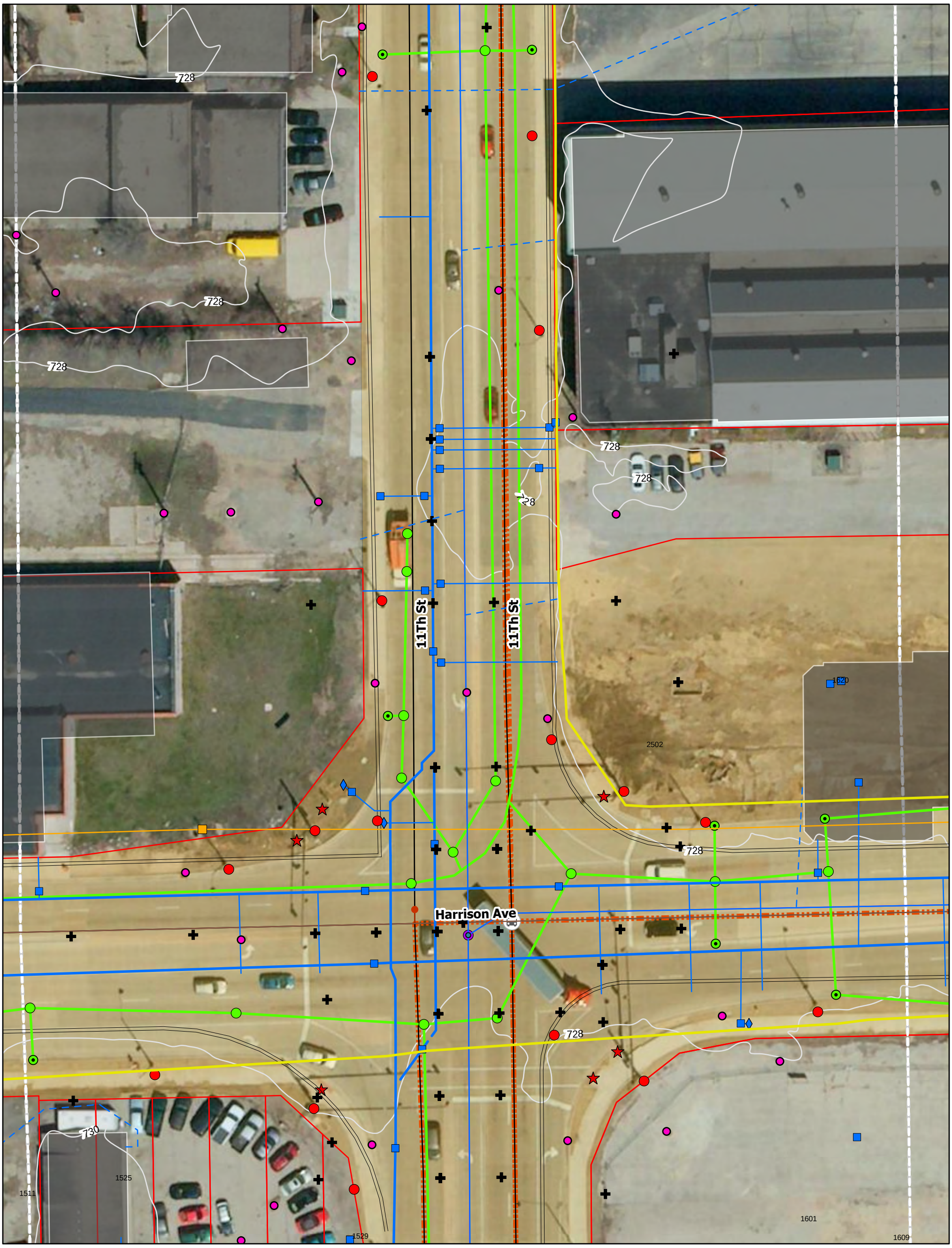
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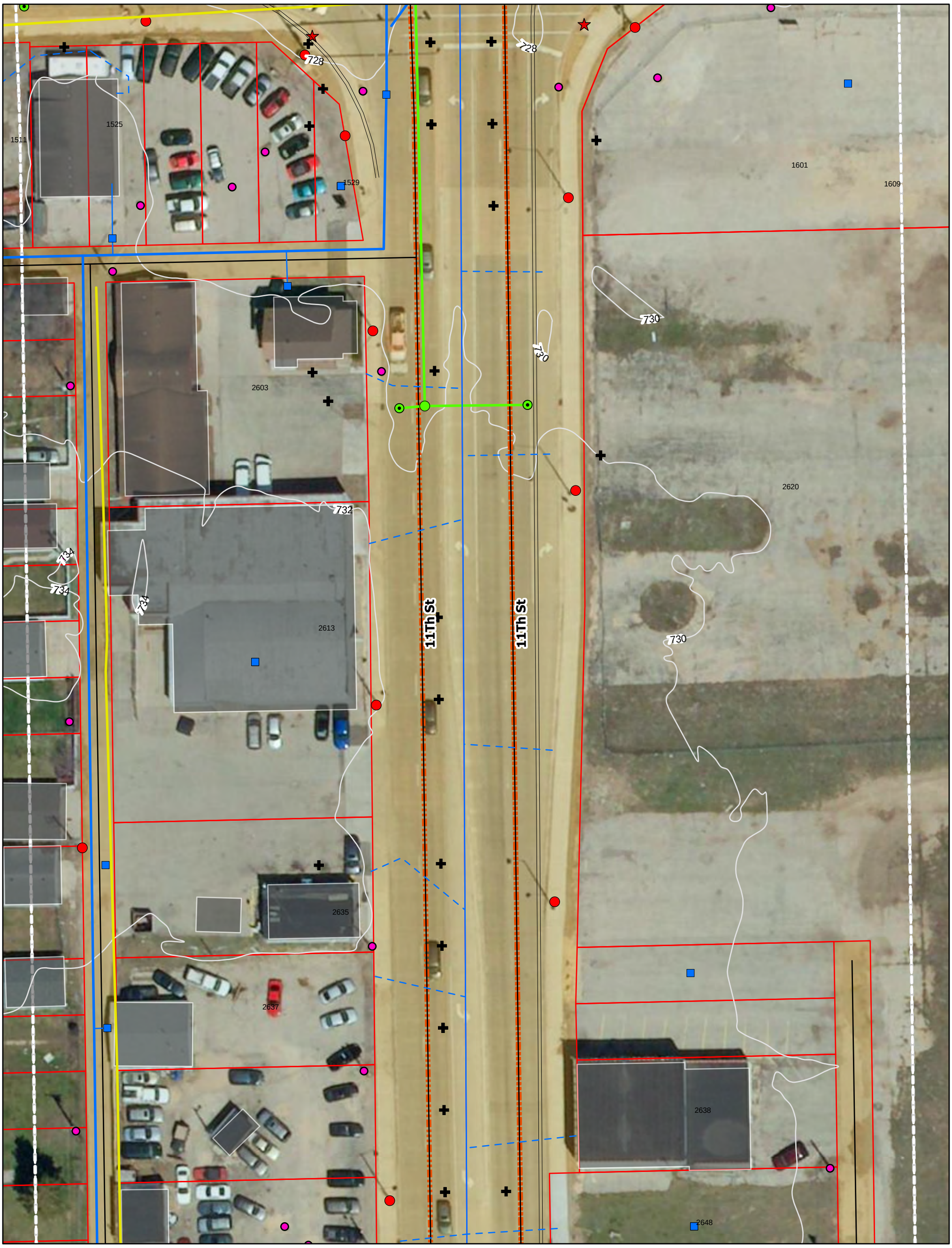
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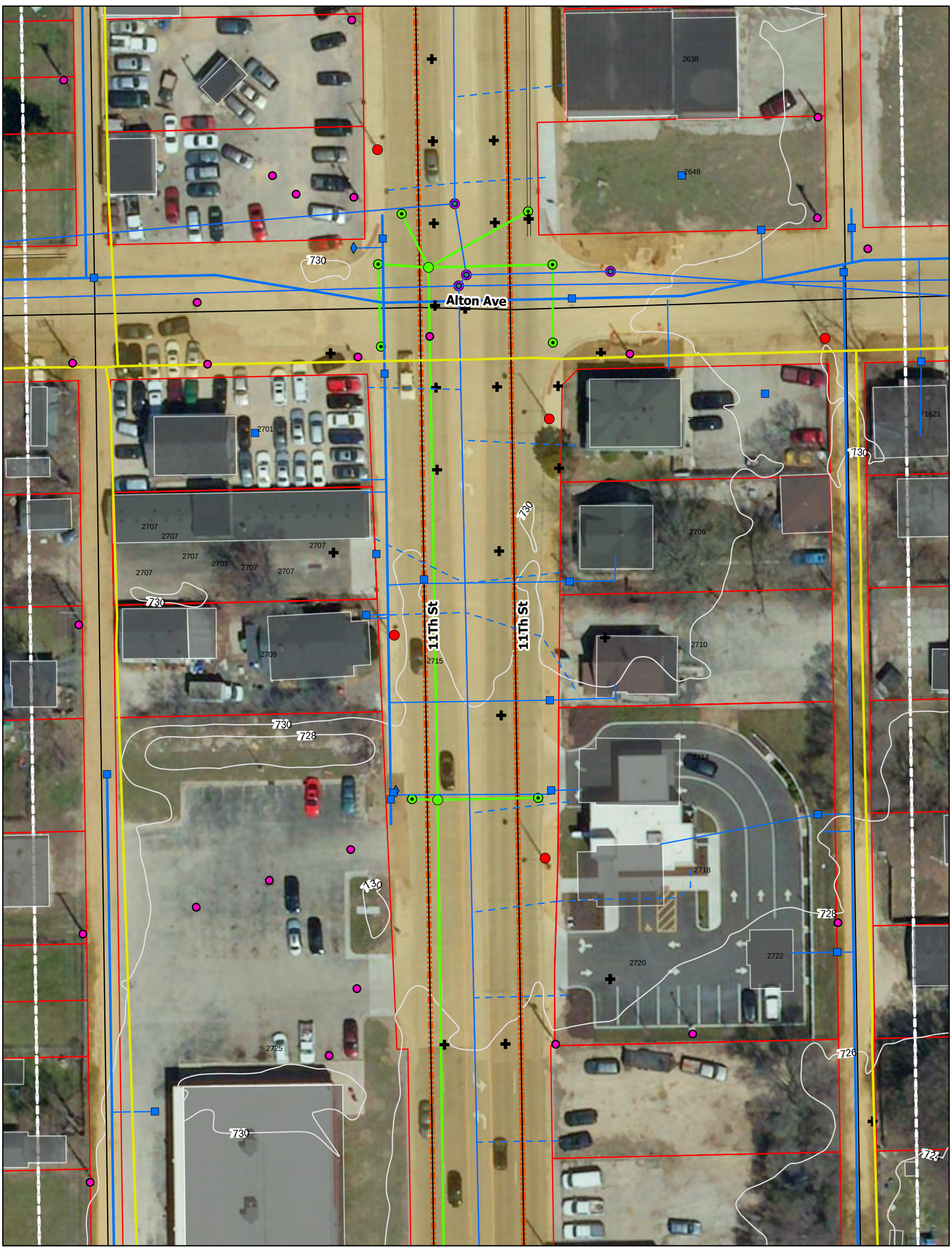
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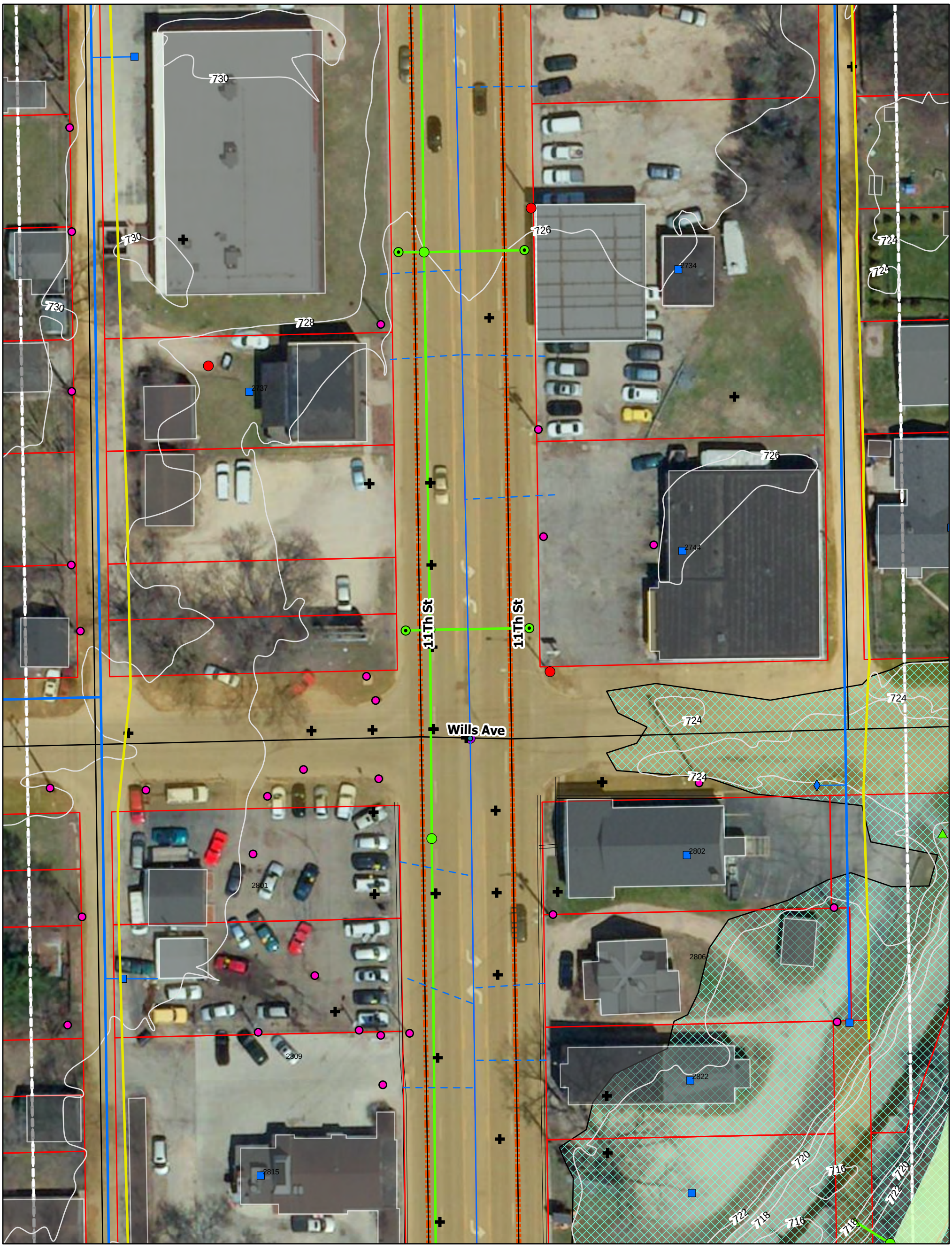
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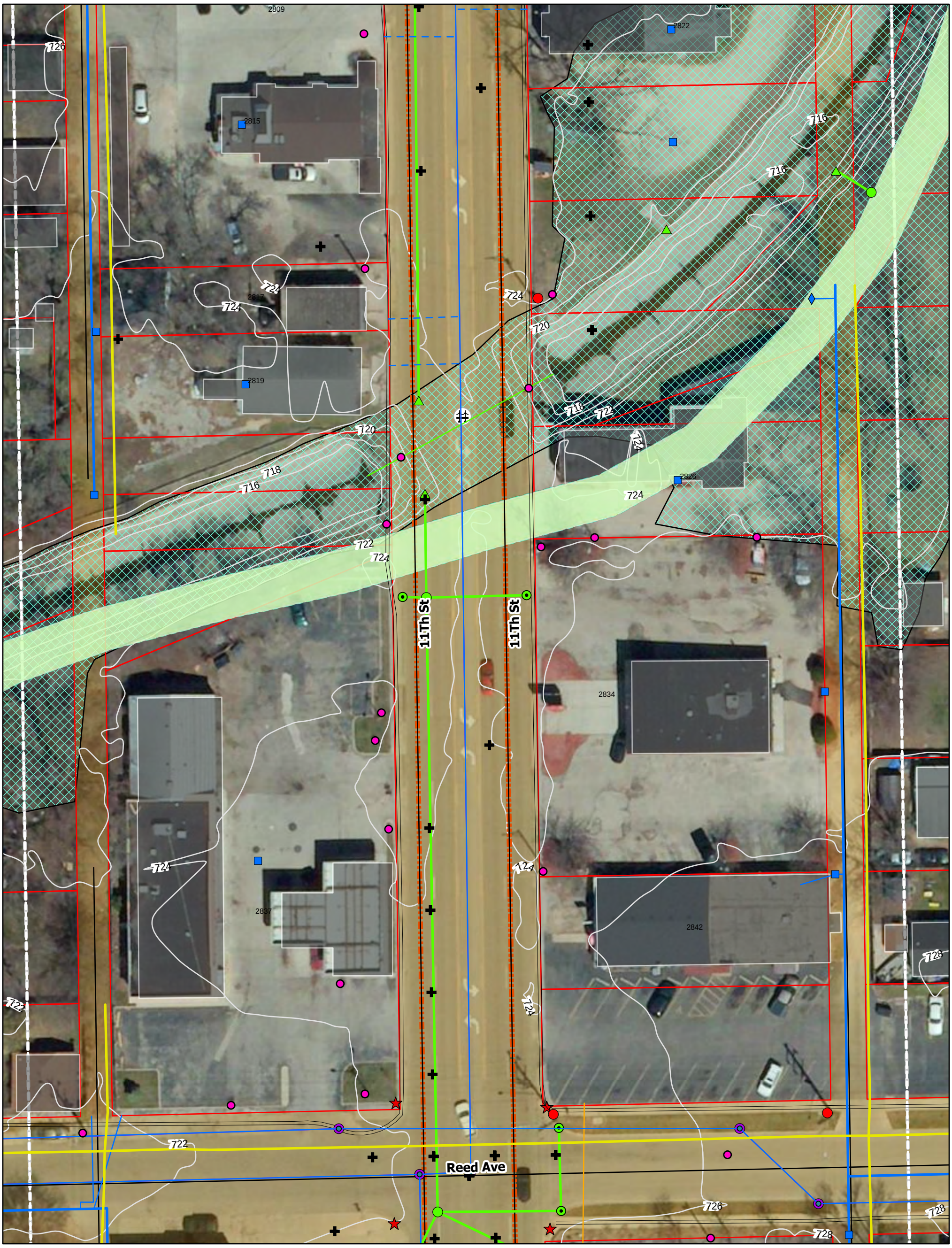
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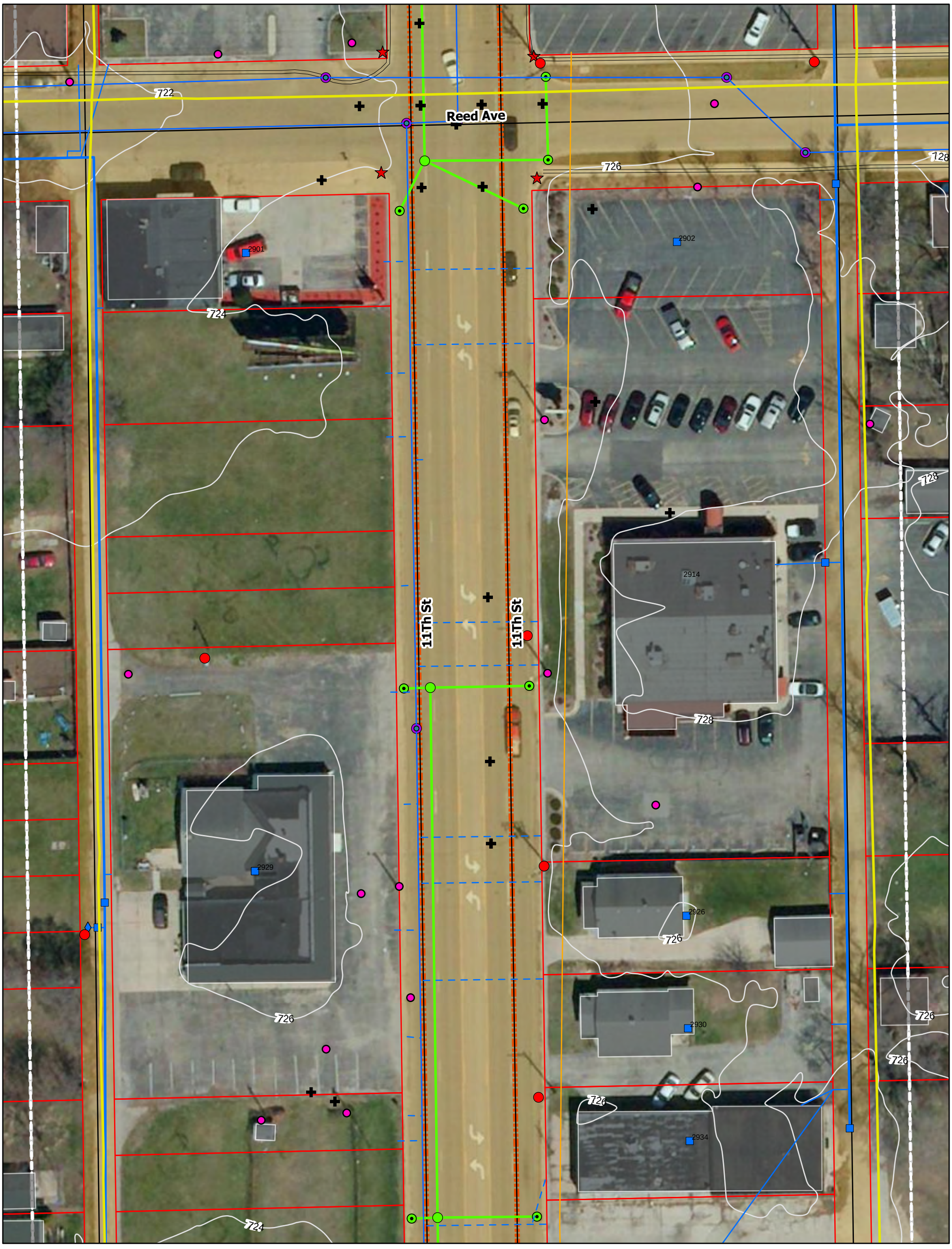
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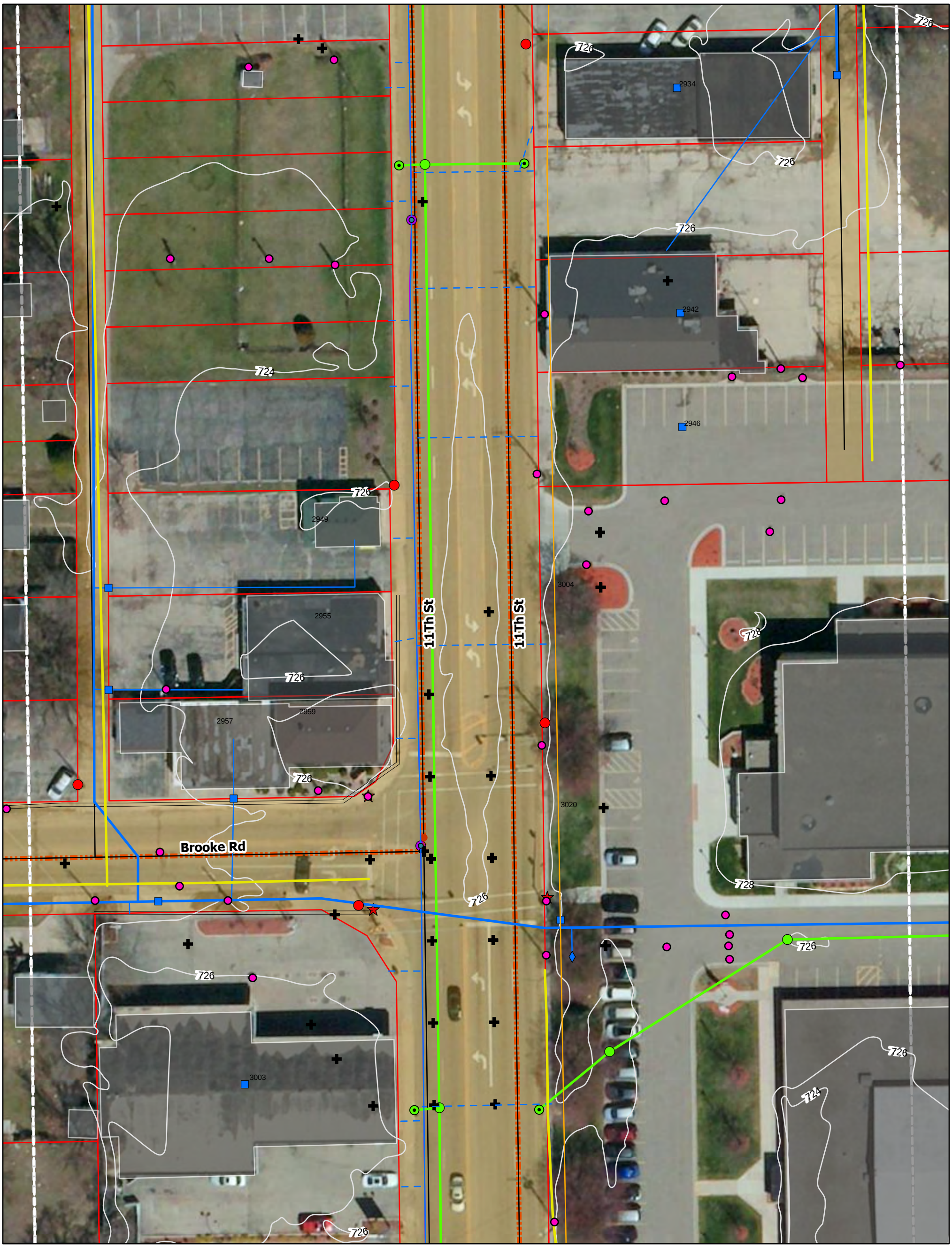
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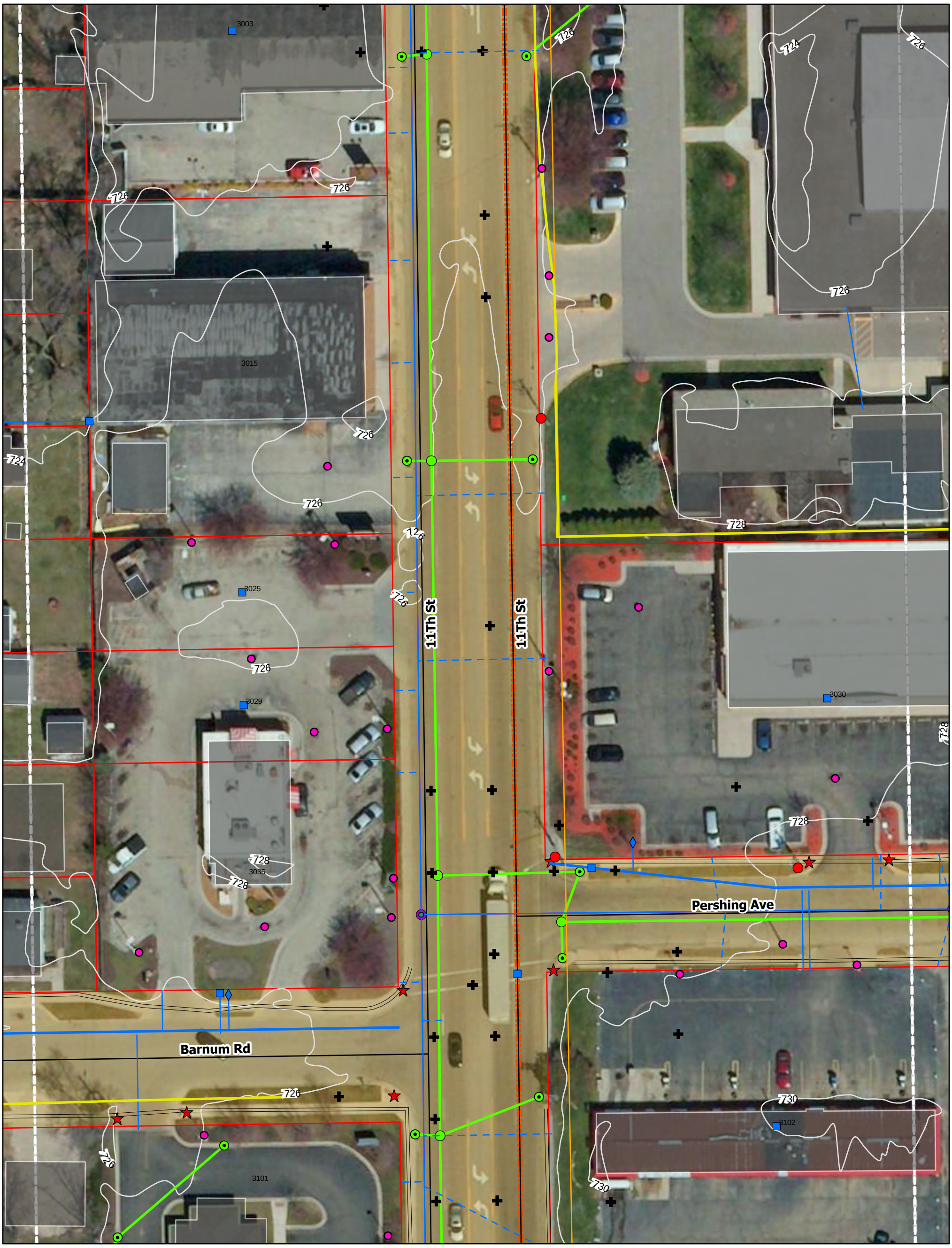
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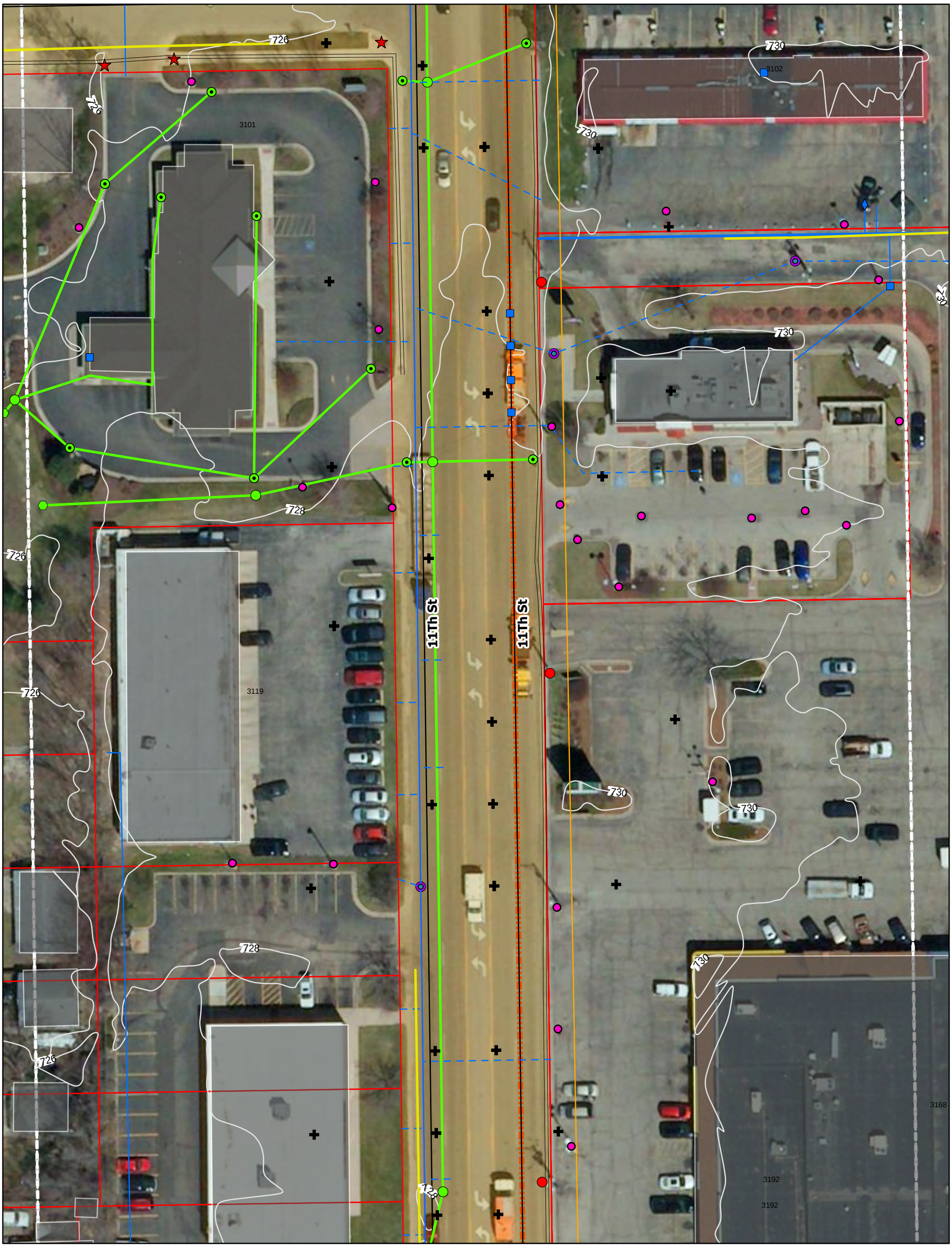
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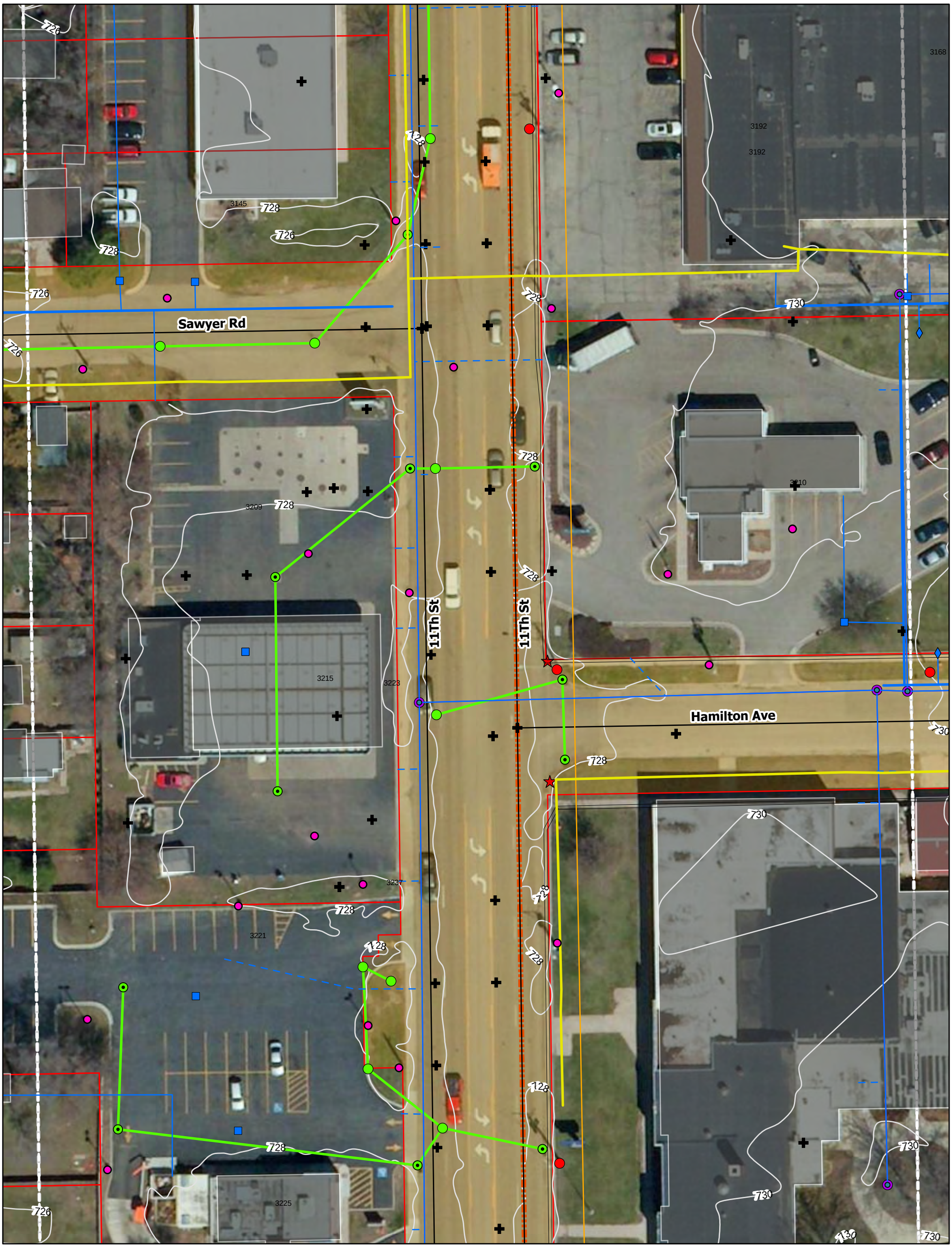
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Rockford 11th Street Corridor
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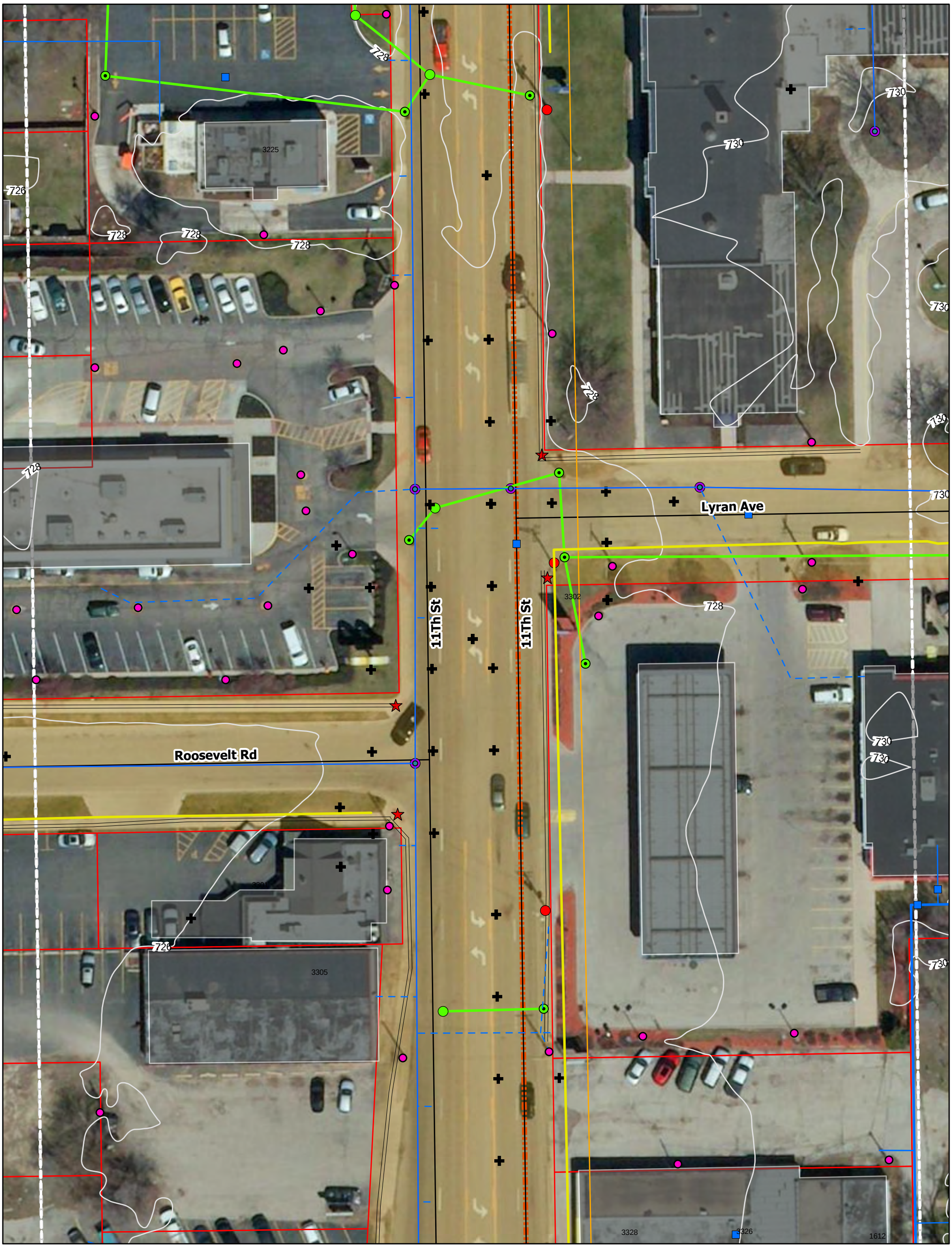
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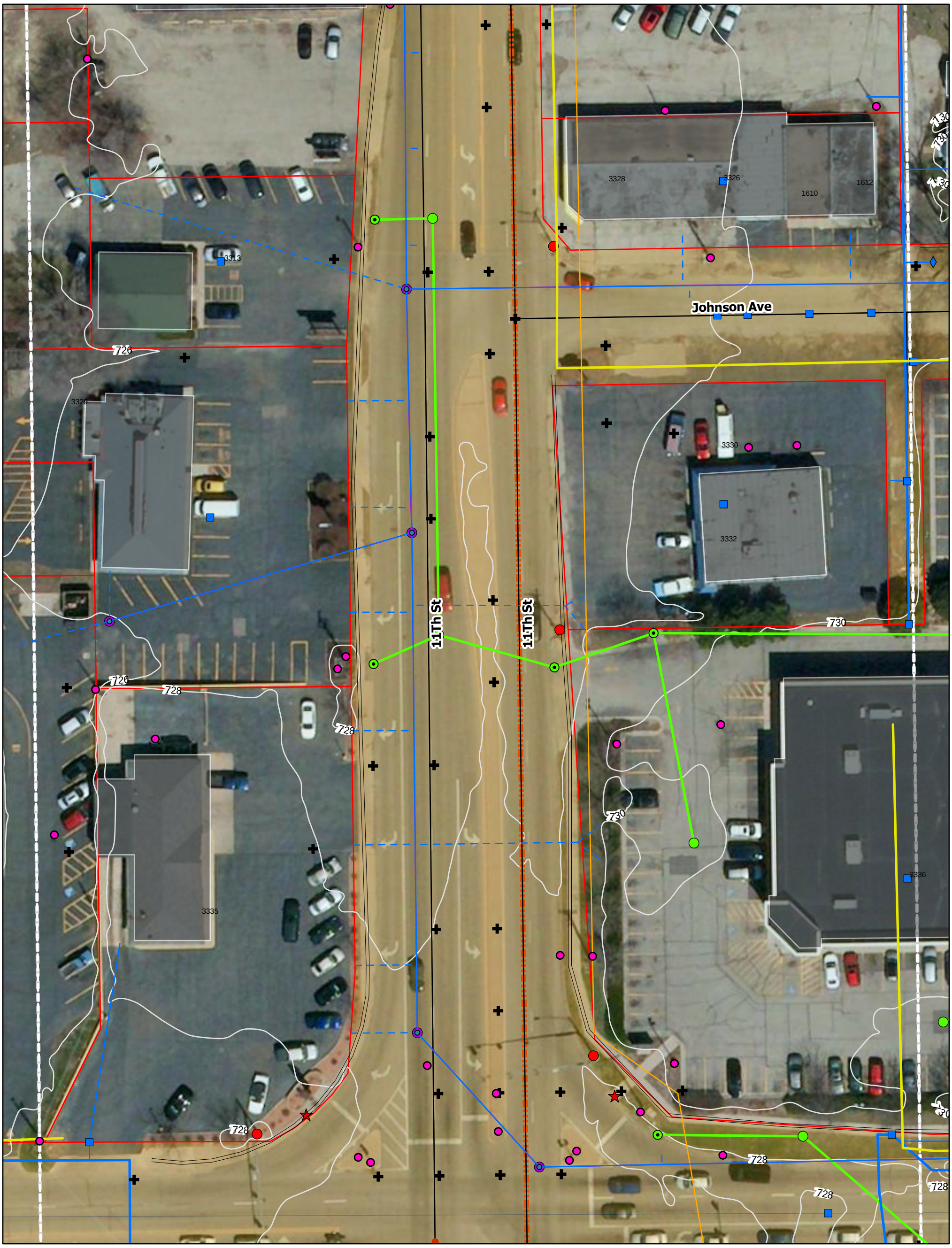
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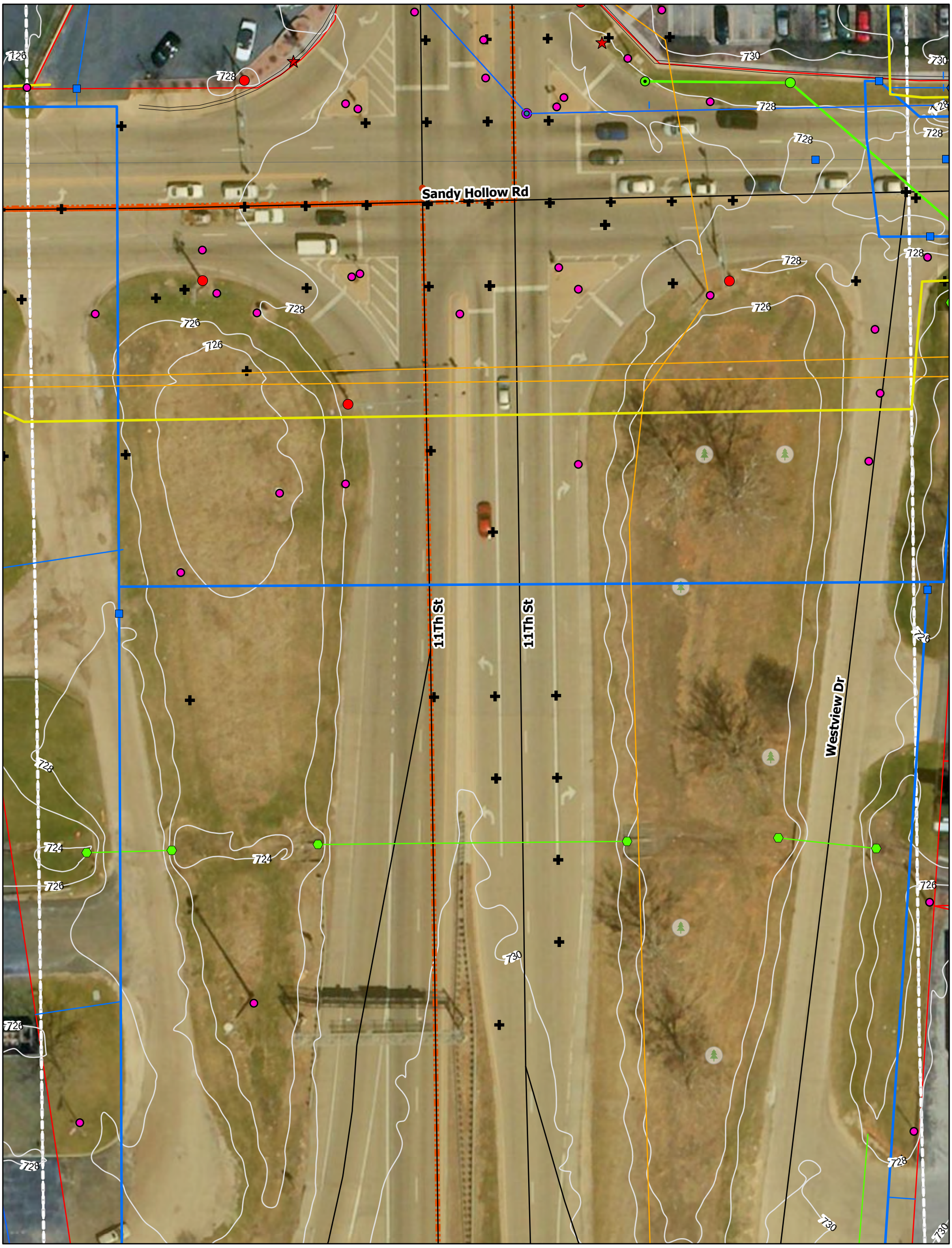
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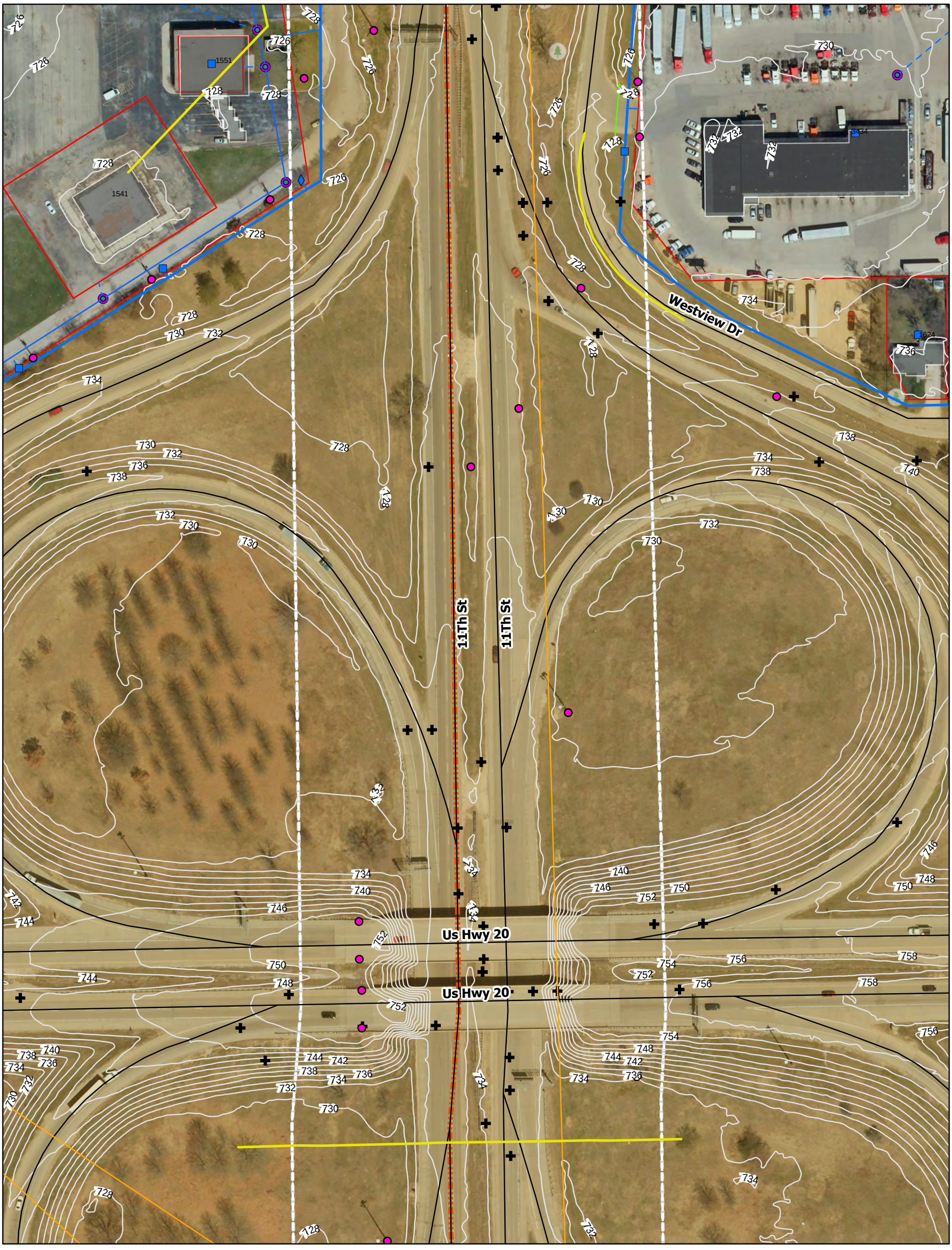
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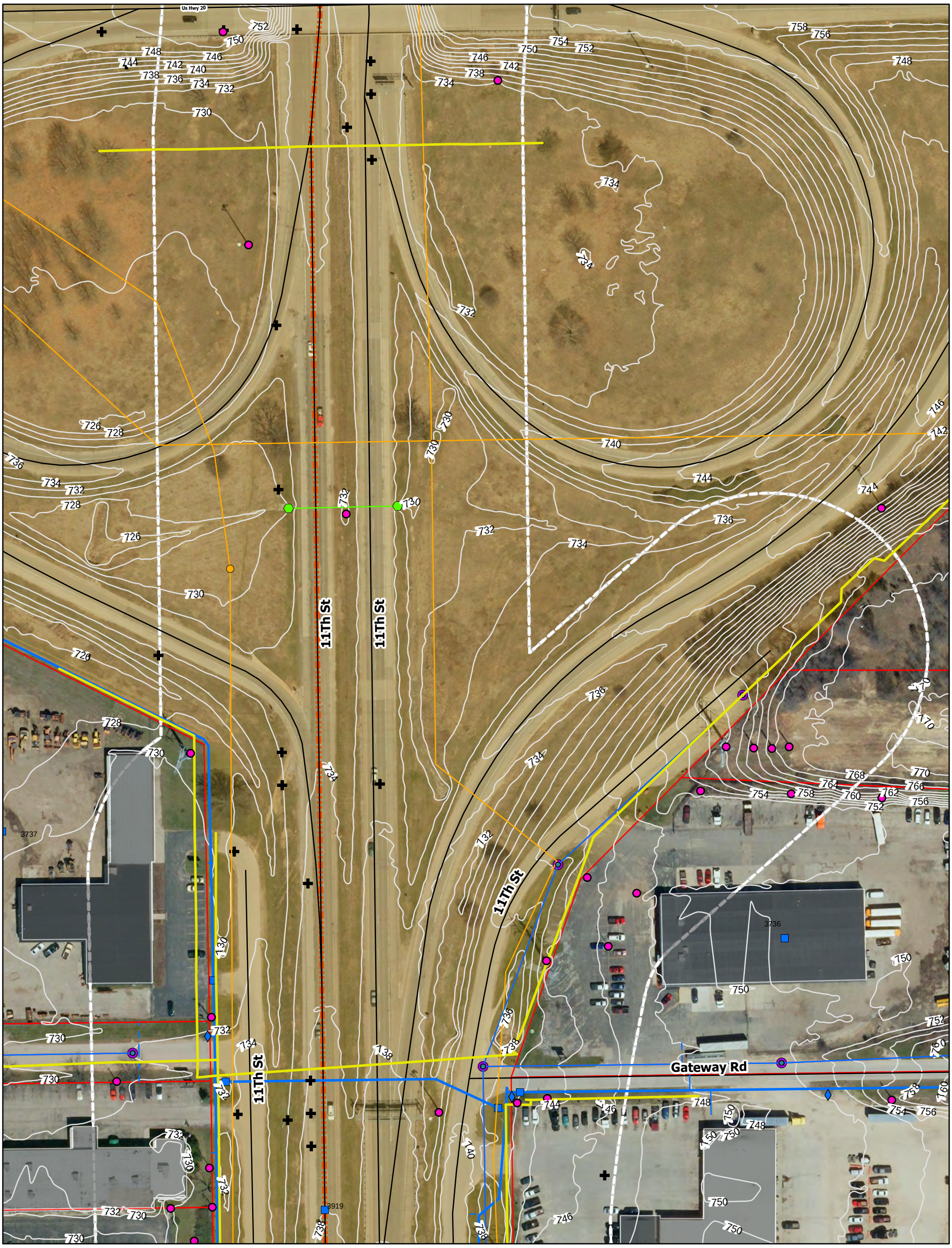
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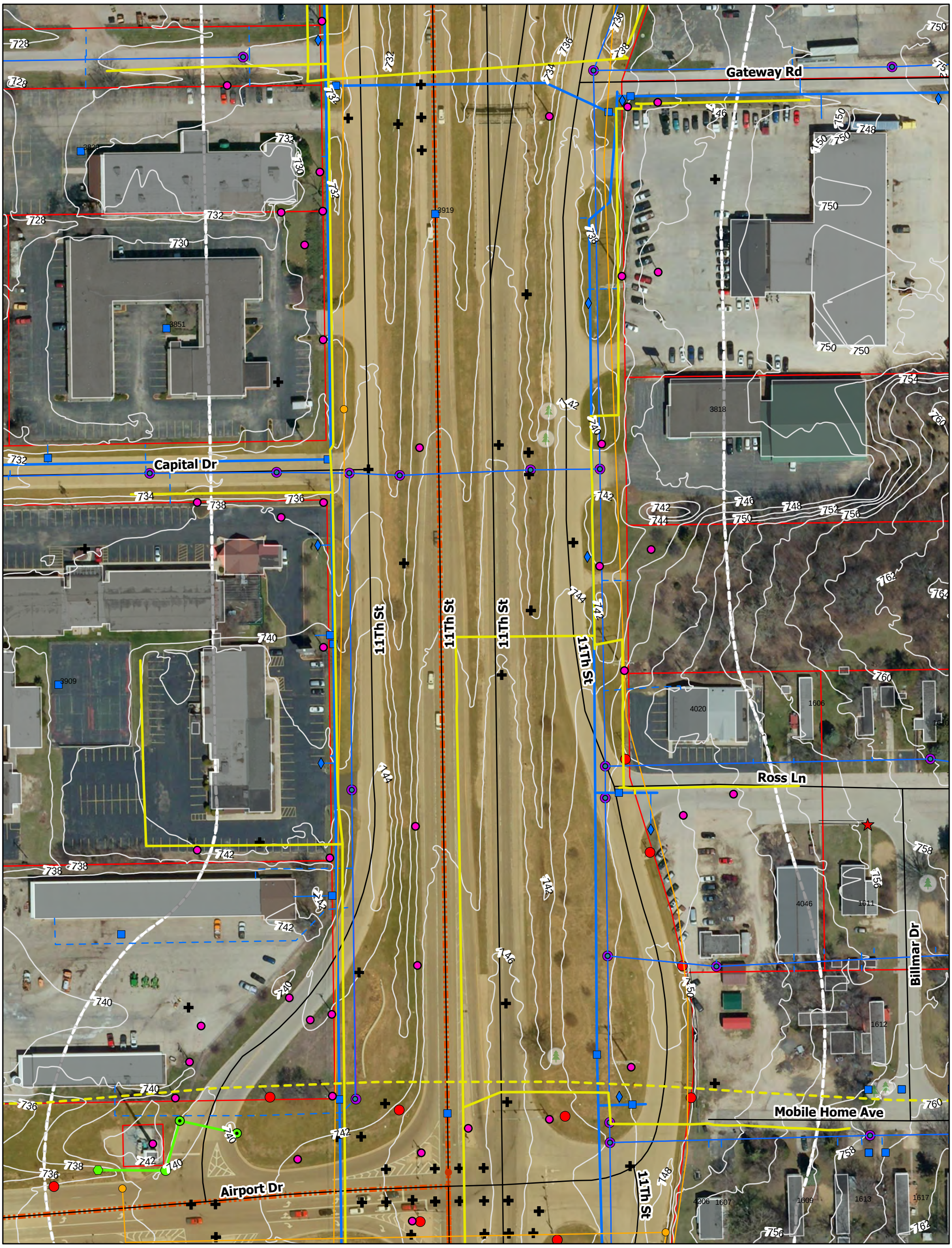
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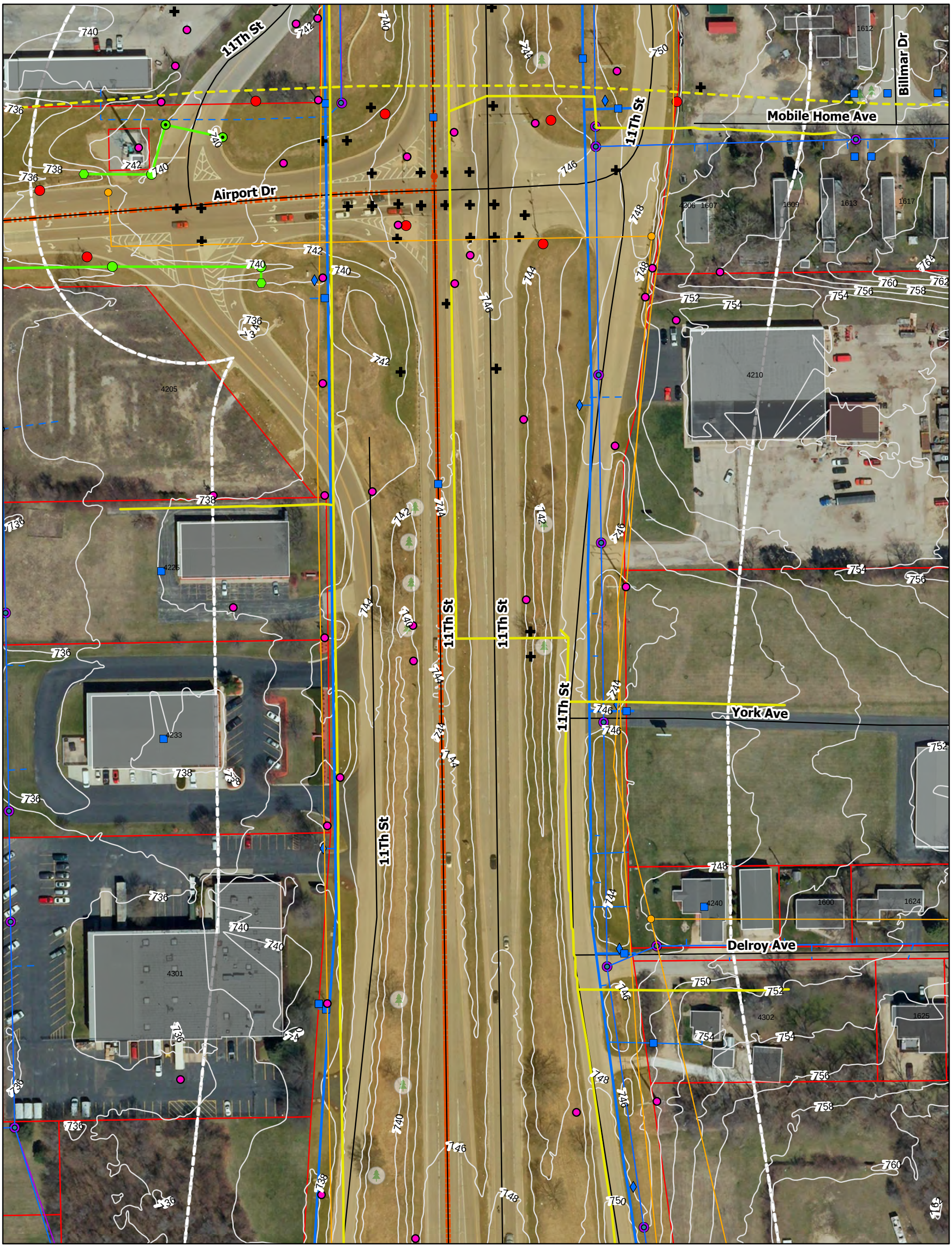
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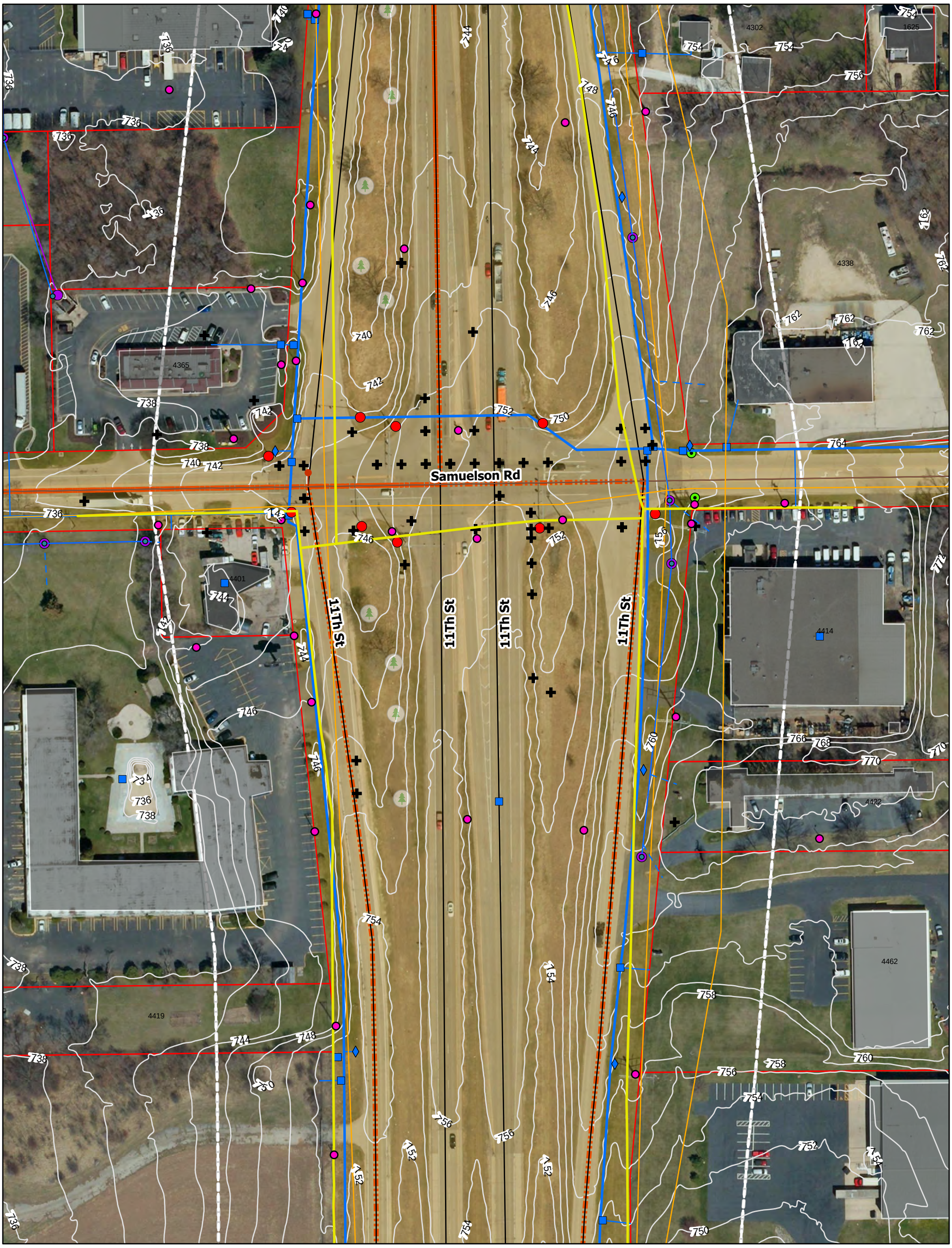
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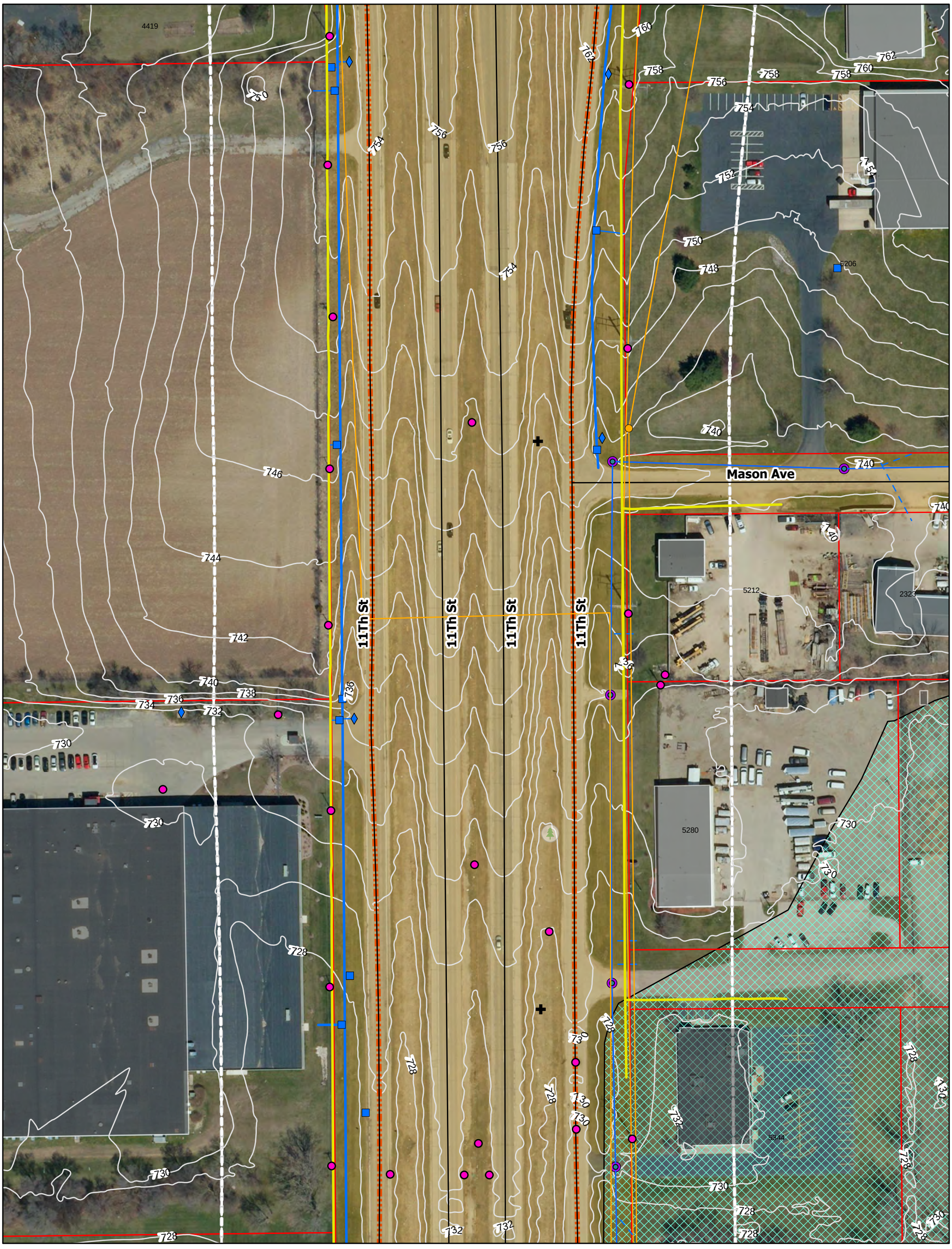
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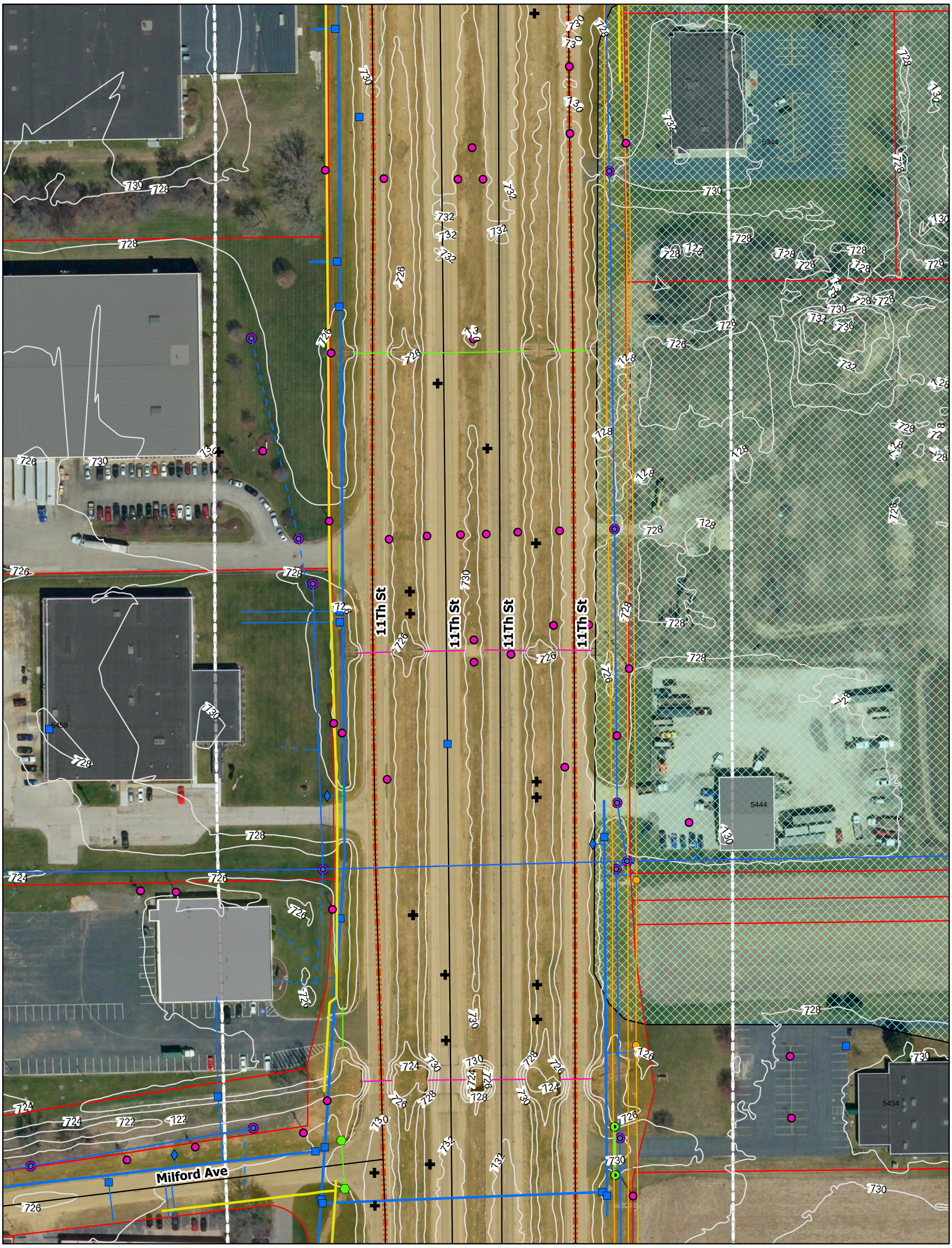
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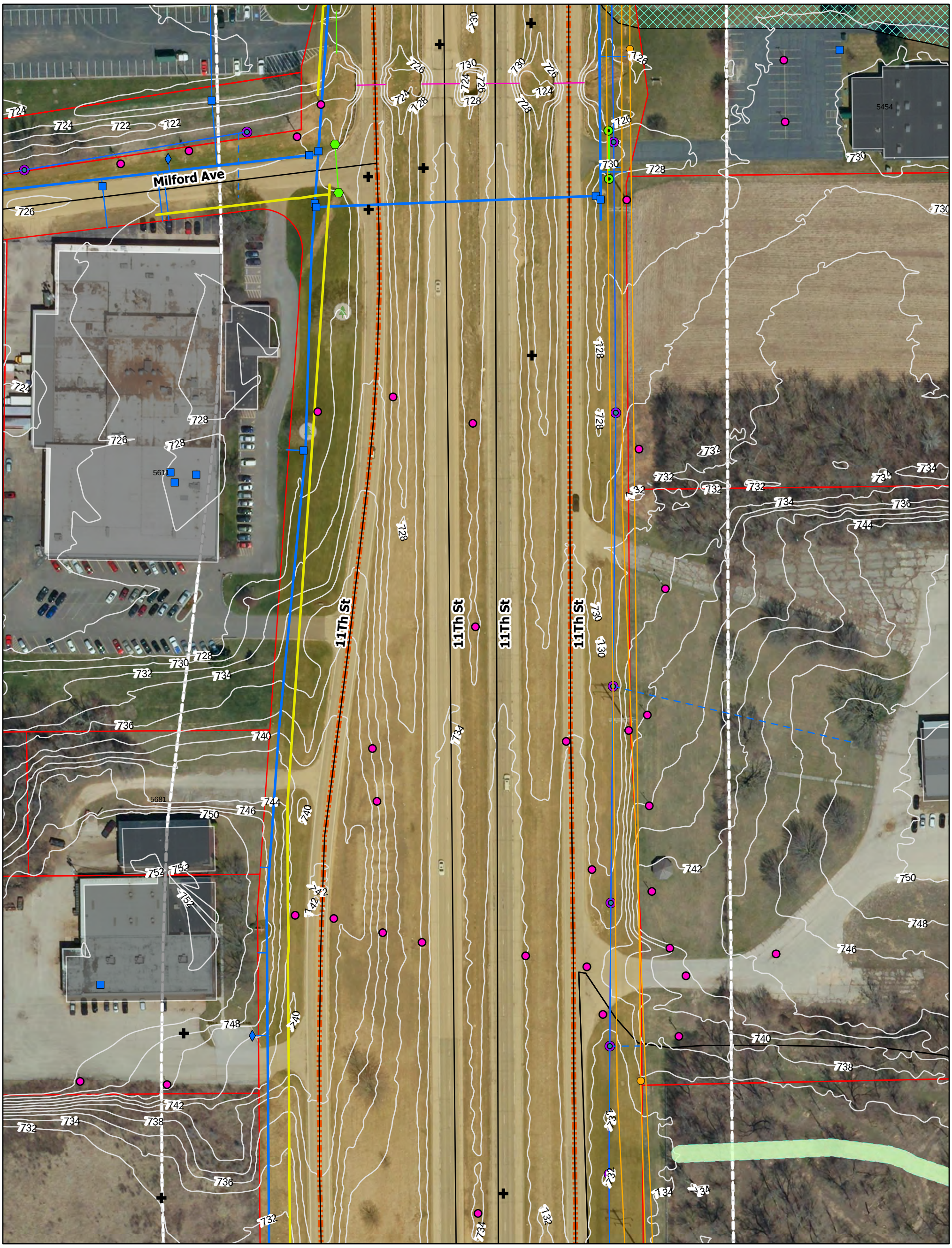
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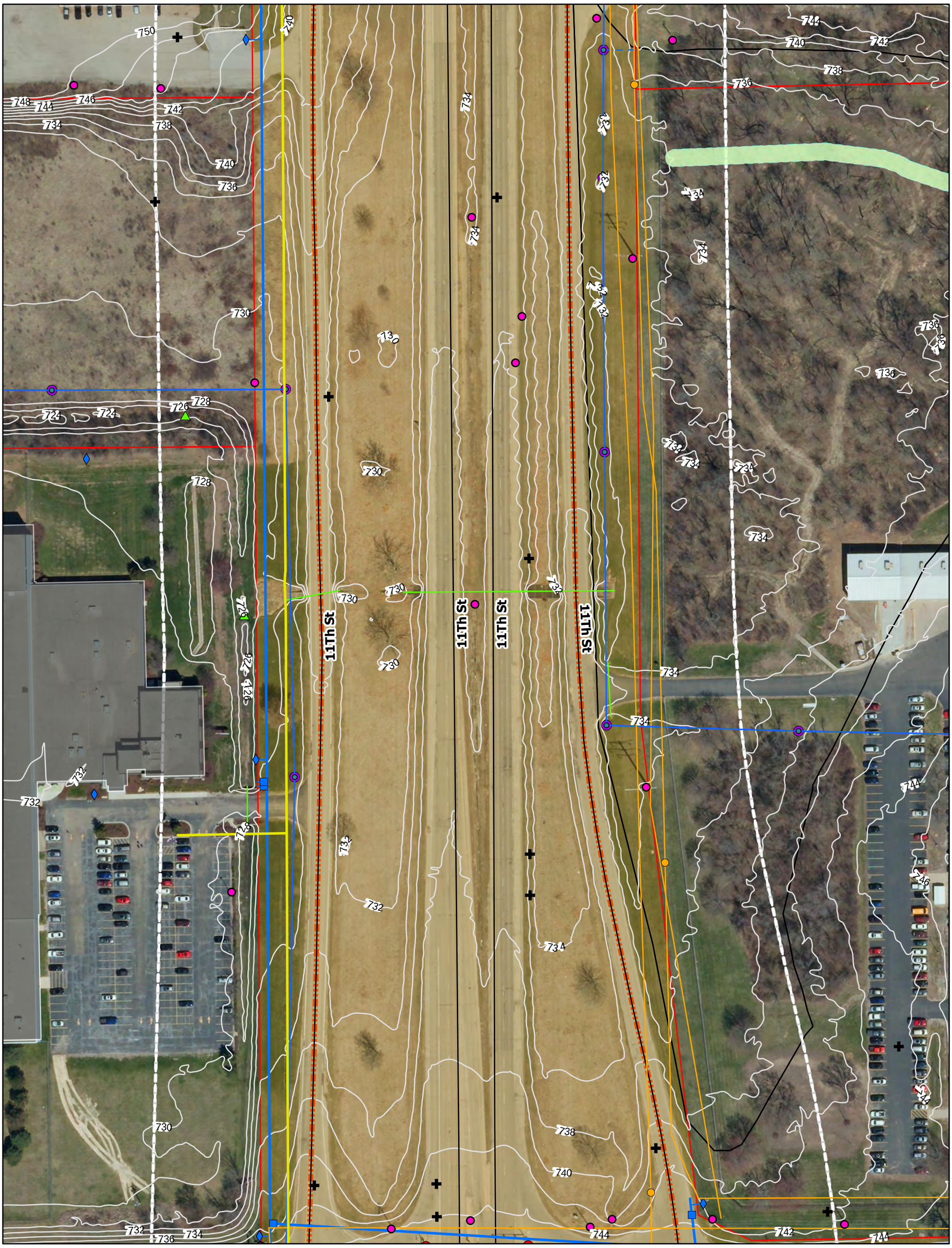
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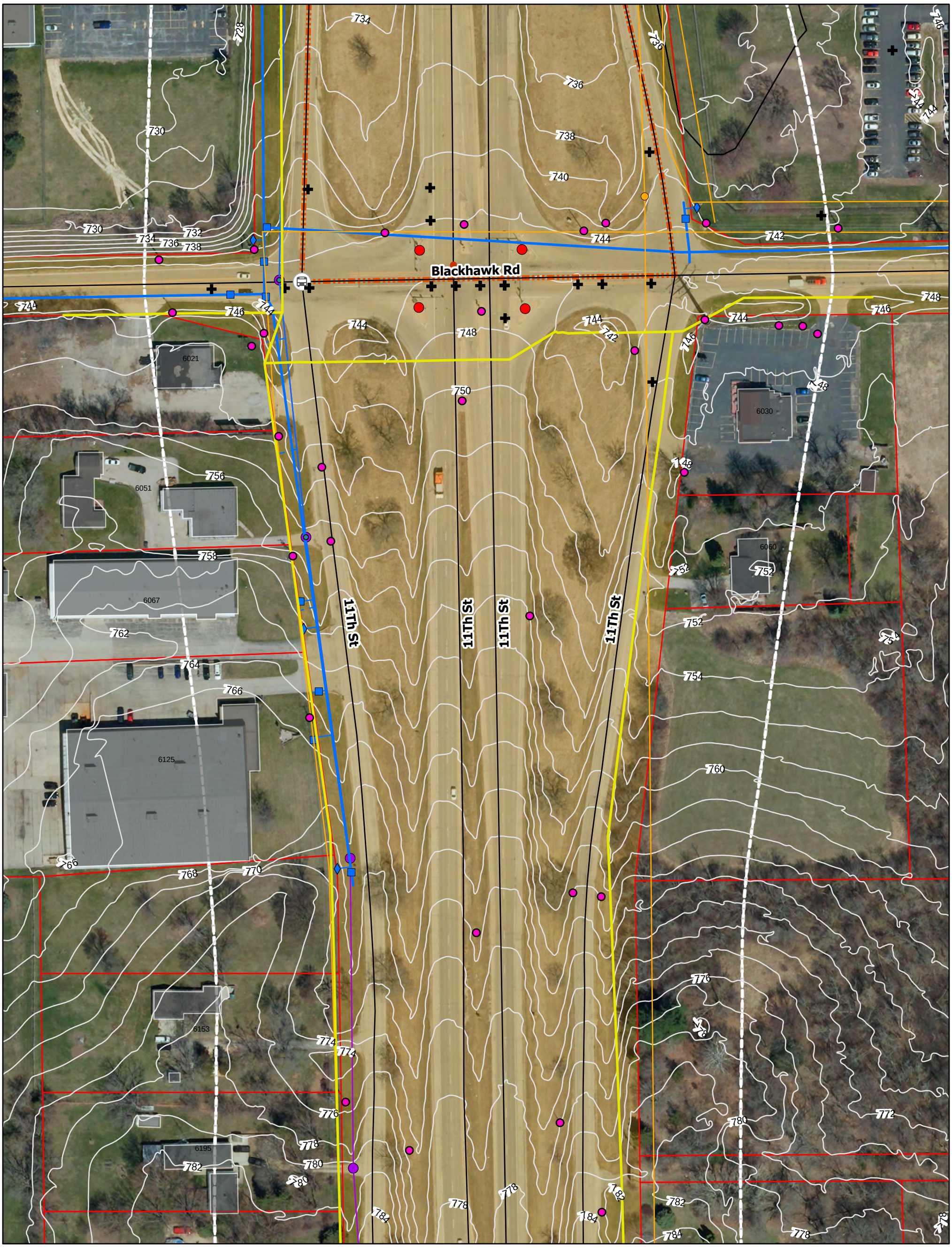
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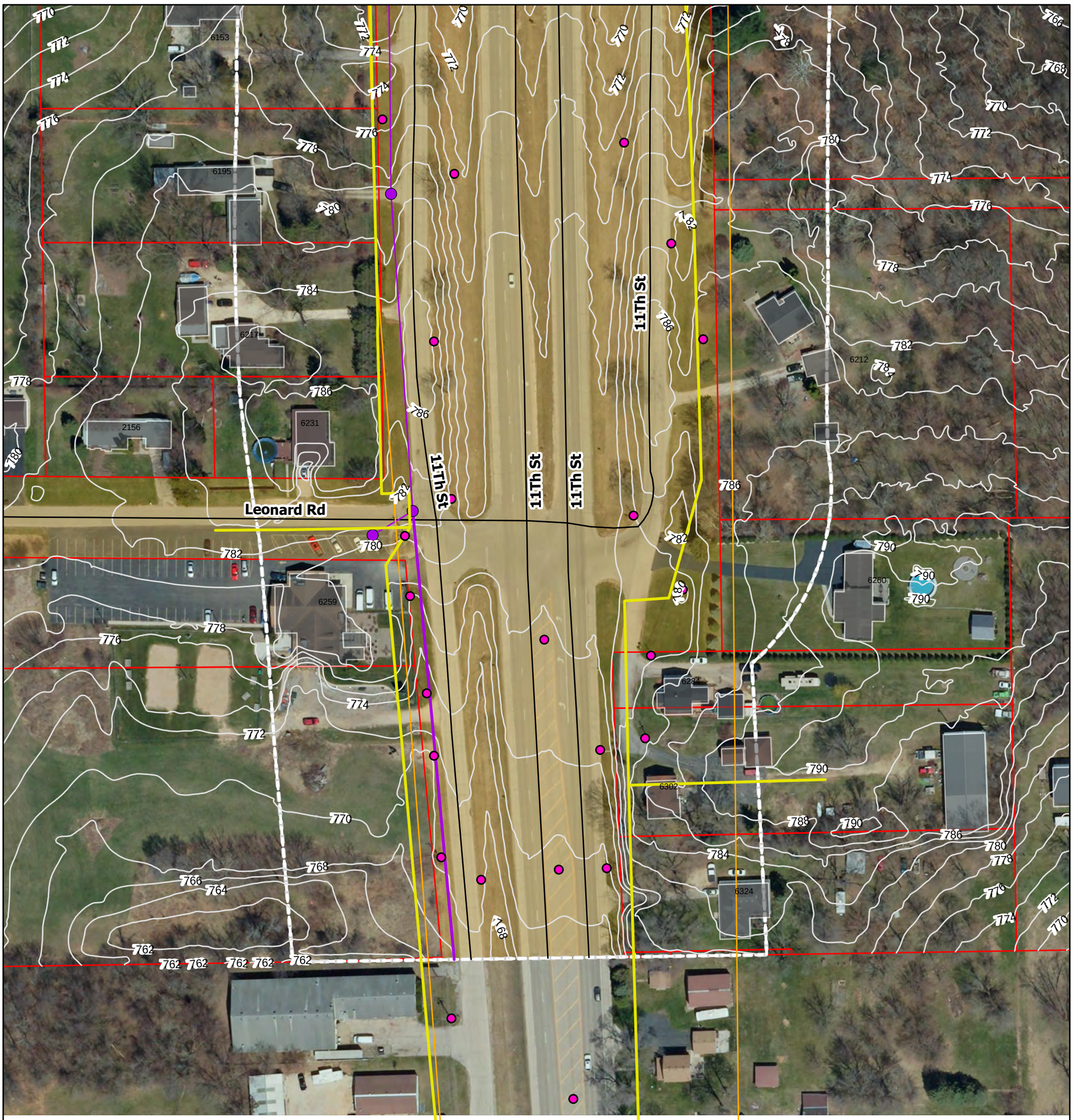
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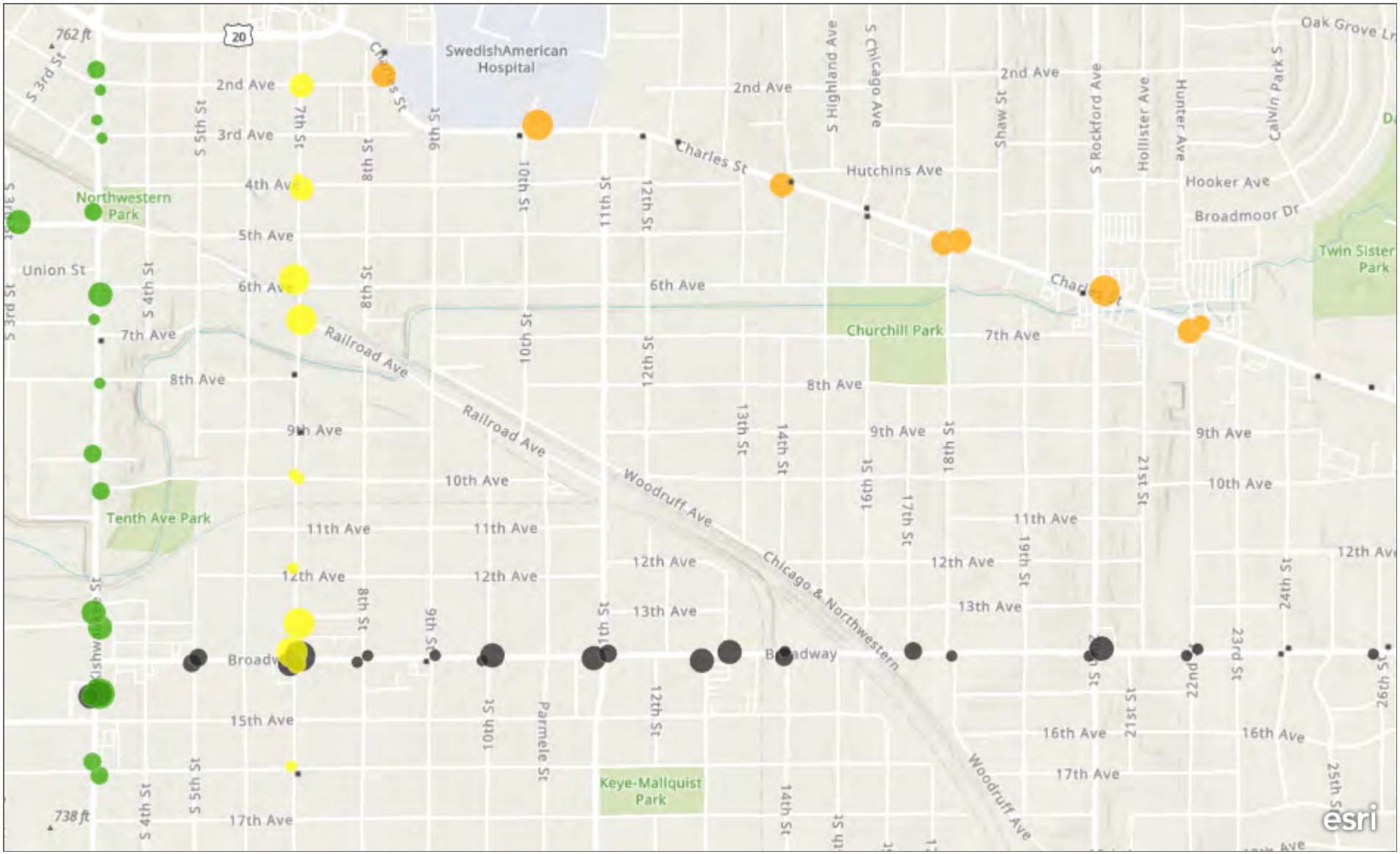
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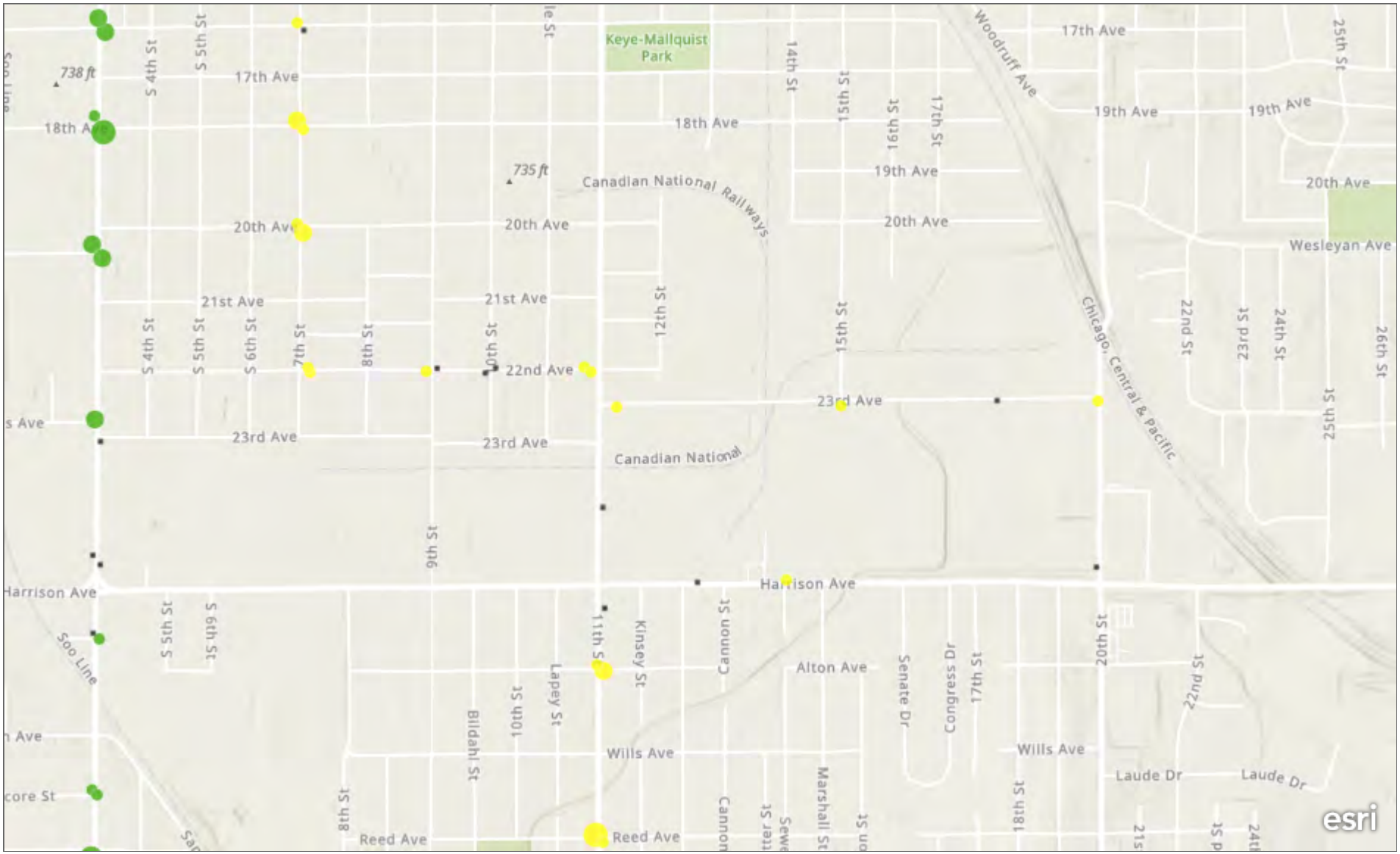
RMTD 2019 Ridership Activity



DRAFT: A summary of estimated activity (boardings + alightings) for each bus route and stop. The estimates provided are a product of ridership sample surveys administered between May and July 2019

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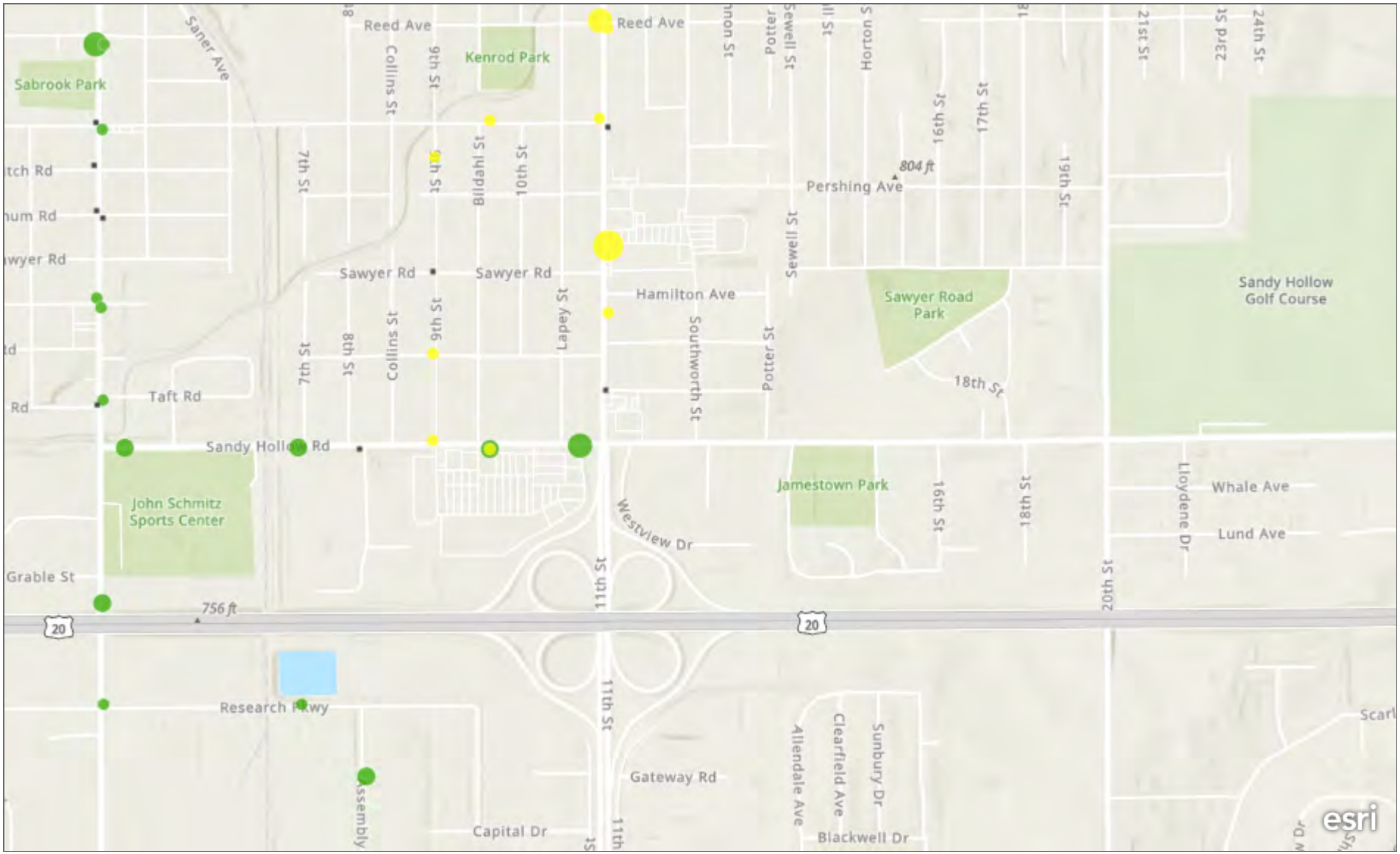
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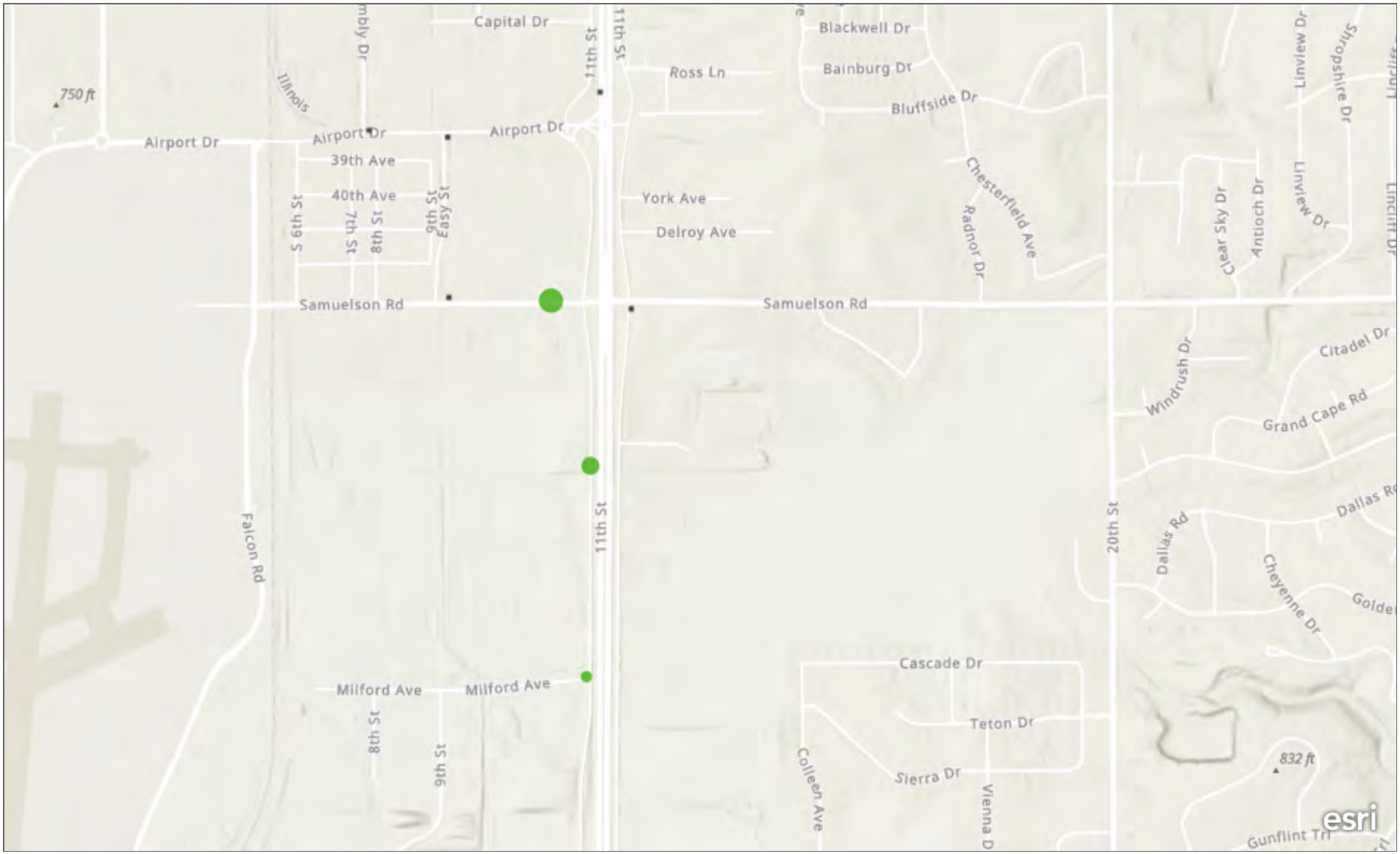


0.2mi

DRAFT: A summary of estimated activity (boardings + alightings) for each bus route and stop. The estimates provided are a product of ridership sample surveys administered between May and July 2019

Esri, NASA, NGA, USGS, FEMA | Esri Community Maps Contributors, Esri, HERE, Garmin, SafeGraph, INCREMENT P, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA

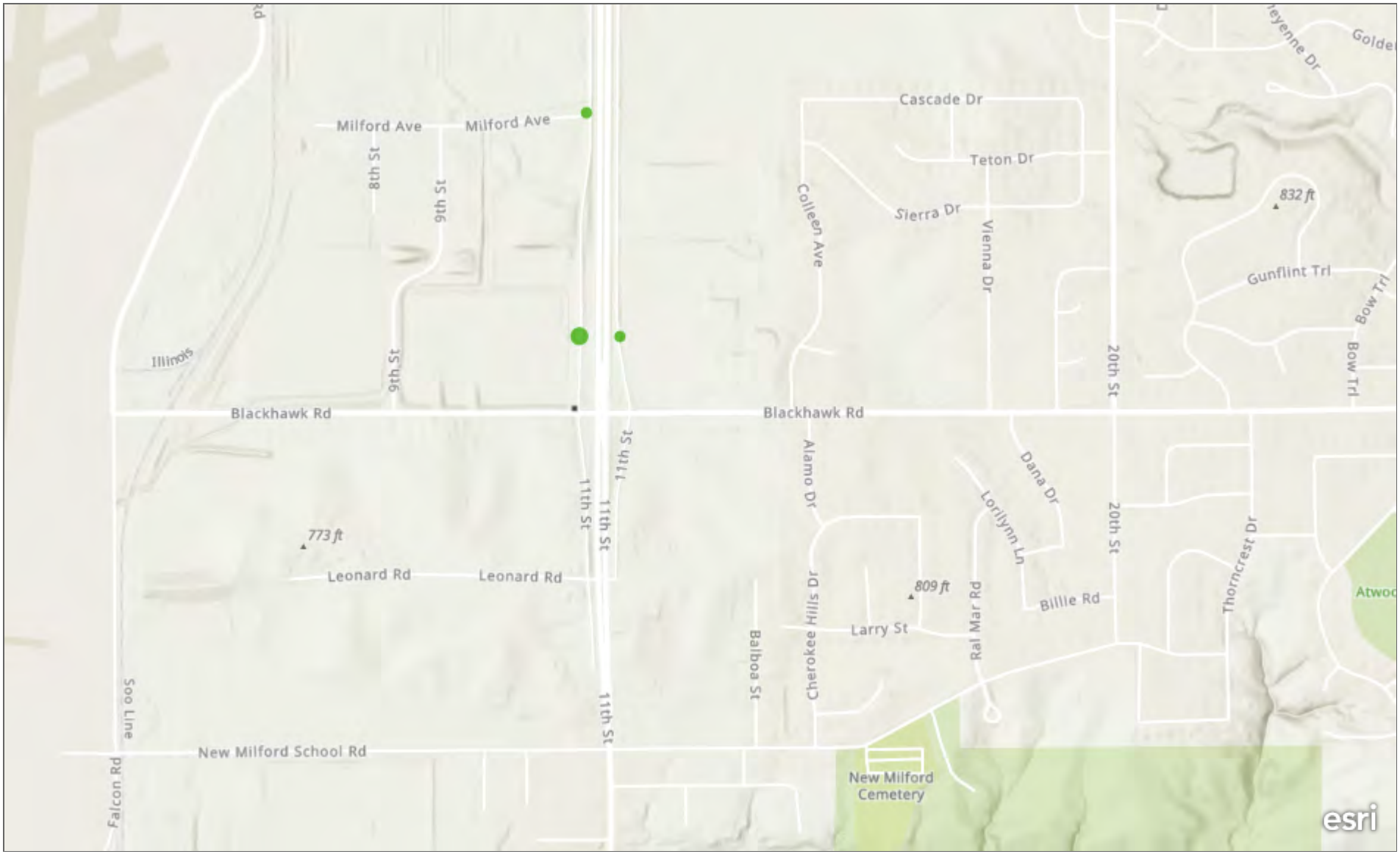
RMTD 2019 Ridership Activity



DRAFT: A summary of estimated activity (boardings + alightings) for each bus route and stop. The estimates provided are a product of ridership sample surveys administered between May and July 2019

Esri, NASA, NGA, USGS, FEMA | Esri Community Maps Contributors, Esri, HERE, Garmin, SafeGraph, INCREMENT P, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA

RMTD 2019 Ridership Activity



DRAFT: A summary of estimated activity (boardings + alightings) for each bus route and stop. The estimates provided are a product of ridership sample surveys administered between May and July 2019

Esri, NASA, NGA, USGS, FEMA | Esri Community Maps Contributors, Esri, HERE, Garmin, SafeGraph, INCREMENT P, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA

APPENDIX 3

Project Goals

- Corridor Study Purpose and Goals

Corridor Study Purpose and Goals

- Focusing on transportation solutions to improve pedestrian safety, reduce pedestrian fatalities, and beautify the corridor
- Inform the community on how to move forward, beyond the study, while achieving the goals of the community
- Focus on improvements within the right of way such as sidewalks and lighting, utilizing a complete streets mentality such that the right of way improvement are conducive to drive economic growth
- Utilize the improvements within the right of way as a catalyst to attract people to the area
- Understand that the corridor should be cohesive, while noting the different characteristics of each section
- Provide a conceptual cost for right of way improvements for future programming

Safe, Connected and Walkable Corridor

Beautification of the Corridor

Focus on Construction Improvements within the Existing ROW

Solutions which Encourage Future Redevelopment

Cohesive Corridor Segment Solutions

Build Consensus on what the community wants with the City's needs

Cost-Effective, Affordable, Implementable, Actionable Solutions

By achieving these goals, the City is improving failing infrastructure throughout the Corridor.

https://projectmeetingonline.com/11th-street-corridor-study/

APPENDIX 4

Operational and Safety Analysis

- IHSDM Outputs
- Crash Study
- Crash Study – Fatality/Injury Crashes
- Crash Study – Pedestrian Crashes
- Crash Modification Factor 1420 Summary
- R1PC 2050 Traffic Projections
- HCS7 Output – US-20 Diamond Interchange North
- HCS7 Output – US-20 Diamond Interchange South

Interactive Highway Safety Design Model

Crash Prediction Evaluation Report

11th Street - Blackhawk Rd to Airport Dr

January 4, 2021

Disclaimer

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Report Overview

Report Generated: Jan 4, 2021 11:23 AM
Report Template: System: Multi-Page [System] (mlcpm2, Dec 21, 2020 5:10 PM)

Evaluation Date: Mon Jan 04 11:23:14 CST 2021
IHSDM Version: v16.0.0 (Sep 30, 2020)
Crash Prediction Module: v11.0.0 (Sep 30, 2020)

User Name: jmetz
Organization Name:
Phone:
E-Mail:

Project Title: 11th Street Corridor Study
Project Comment: Created Tue Dec 15 13:04:45 CST 2020
Project Unit System: U.S. Customary

Highway Title: 11th Street - Blackhawk to Airport
Highway Comment: Created Tue Dec 15 14:15:25 CST 2020
Highway Version: 2

Evaluation Title: 11th St - Blackhawk to Airport
Evaluation Comment: Created Mon Jan 04 11:22:41 CST 2021

Minimum Location: 0.000
Maximum Location: 77+05.000
Policy for Superelevation: AASHTO 2011 U.S. Customary
Calibration: HSM Configuration
Crash Distribution: HSM Configuration
Model/CMF: HSM Configuration
First Year of Analysis: 2014
Last Year of Analysis: 2018
Empirical-Bayes Analysis: None
First Year of Observed Crashes:
Last Year of Observed Crashes:

Disclaimer Regarding Crash Prediction Method

IMPORTANT NOTICE ABOUT COMPARING RESULTS FROM HIGHWAY SAFETY MANUAL FIRST EDITION (2010) MODELS TO RESULTS FROM NEW MODELS DEVELOPED UNDER NCHRP PROJECTS 17-70 AND 17-58

Since the publication of the Highway Safety Manual - First Edition (HSM-1), in 2010 by the American Association of State Highway and Transportation Officials (AASHTO), multiple research efforts have been undertaken through the National Cooperative Highway Research Program (NCHRP) to develop safety performance models for road segment and intersection facility types that were not initially reflected in the HSM-1, in order to expand the breadth and depth of the HSM in the future.

The IHSDM Crash Prediction Module (CPM) is intended as a faithful implementation of HSM Part C predictive methods. As NCHRP projects to develop new predictive methods for the HSM are completed, FHWA works to incorporate the new methods into IHSDM, sometimes in advance of publication in the HSM. The following new crash predictive methods have been accepted by NCHRP project panels and incorporated into IHSDM, while pending AASHTO's approval for incorporation into a future edition of the HSM:

- Roundabouts: completed in 2018 under NCHRP Project 17-70, the new methods will provide improved outcomes for the safety analysis of roundabouts.
- 6+ lane and one-way urban/suburban arterials (including models for segments and intersections): completed under NCHRP Project 17-58.

However, in the absence of local calibration factors (see HSM-1 Part C, Appendix A for guidance on calibration of the predictive models), it is neither appropriate nor advisable to directly compare the results from new models (from NCHRP Projects 17-58 and 17-70) to results from HSM-1 models, as the models were not calibrated to the same base state data sets, and consequently can produce unexpected results. If local calibration factors are available and applied to both new models and HSM-1 models, then it may be appropriate to directly compare the results.*[Note: Work being performed under NCHRP Project 17-72 (Update of Crash Modification Factors for the Highway Safety Manual) is expected to re-calibrate many of the old (HSM-1) and new (e.g., NCHRP 17-70) models to data from a single (or small number of) states, that would allow results from all models to be directly compared.]*

The models produced for NCHRP Project 17-70 have independent value in terms of informing the design of a roundabout and assessing the effects of different design characteristics on the expected safety performance of a roundabout.

The HSM-1 interim method previously included in IHSDM for evaluating roundabouts on urban/suburban arterials (i.e., evaluating an existing intersection and then applying a Crash Modification Factor for replacing the existing intersection with a roundabout) has been deactivated in IHSDM, to minimize any confusion with the new roundabout methodology.

Section Types

Section 1 Evaluation

Section: Section 1
Evaluation Start Location: 0.000
Evaluation End Location: 77+05.000
Area Type: Rural
Functional Class: Arterial
Type of Alignment: Divided, Multilane
Model Category: Rural, Multilane
Calibration Factor: 4D=1.0; 4SG=1.0; 4U=1.0;

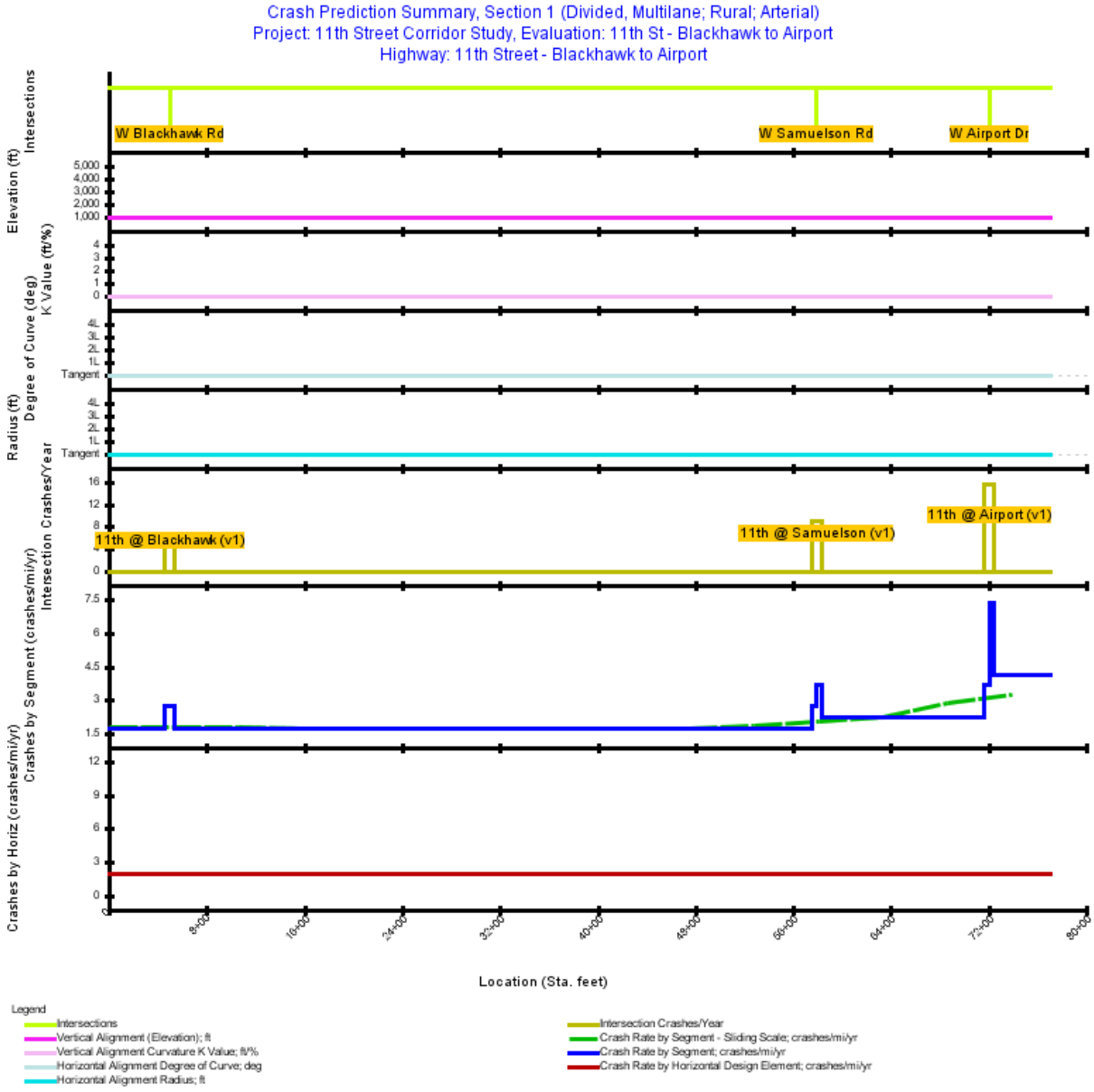


Figure 1. Crash Prediction Summary (Section 1)

Table 1. Evaluation Highway - Homogeneous Segments (Section 1)

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Median Width (ft)	Median Type	Effective Median Width (ft)	Lighting	Automated Speed Enforcement	Left Side Slope	Right Side Slope
1	Rural Multi-Lane Segment Four-lane Divided	0.000	1+00.000	100.00	0.0189	2014-2018: 7,750	12.00	12.00	0.00	0.00	30.00	Non-Traversable Median	30.00	false	false		
2	Rural Multi-Lane Segment Four-lane Divided	1+00.000	1+60.000	60.00	0.0114	2014-2018: 7,750	12.00	12.00	0.00	0.00	30.00	Non-Traversable Median	30.00	false	false		
3	Rural Multi-Lane Segment Four-lane Divided	1+60.000	2+00.000	40.00	0.0076	2014-2018: 7,750	12.00	12.00	0.00	0.00	28.87	Non-Traversable Median	28.87	false	false		
4	Rural Multi-Lane Segment Four-lane Divided	2+00.000	4+60.000	260.00	0.0492	2014-2018: 7,750	12.00	12.00	0.00	0.00	20.37	Non-Traversable Median	32.37	false	false		
5	Rural Multi-Lane Segment Four-lane Undivided	4+60.000	5+00.000	40.00	0.0076	2014-2018: 7,750	12.00	12.00	0.00	0.00	0.00	None	0.00	false	false	0:1	0:1
6	Rural Multi-Lane Segment Four-lane Undivided	5+00.000	5+40.000	40.00	0.0076	2014-2018: 7,750	12.00	12.00	0.00	0.00	0.00	None	0.00	false	false	0:1	0:1
7	Rural Multi-Lane Segment Four-lane Divided	5+40.000	8+00.000	260.00	0.0492	2014-2018: 7,750	12.00	12.00	0.00	0.00	20.37	Non-Traversable Median	32.37	false	false		
8	Rural Multi-Lane Segment Four-lane Divided	8+00.000	8+40.000	40.00	0.0076	2014-2018: 7,750	12.00	12.00	0.00	0.00	28.87	Non-Traversable Median	28.87	false	false		
9	Rural Multi-Lane Segment Four-lane Divided	8+40.000	9+00.000	60.00	0.0114	2014-2018: 7,750	12.00	12.00	0.00	0.00	30.00	Non-Traversable Median	30.00	false	false		
10	Rural Multi-Lane Segment Four-lane Divided	9+00.000	53+93.000	4,493.00	0.8509	2014-2018: 7,750	12.00	12.00	0.00	0.00	30.00	Non-Traversable Median	30.00	false	false		
11	Rural Multi-Lane Segment Four-lane Divided	53+93.000	54+53.000	60.00	0.0114	2014-2018: 7,750	12.00	12.00	0.00	0.00	30.00	Non-Traversable Median	30.00	false	false		
12	Rural Multi-Lane Segment Four-lane Divided	54+53.000	54+93.000	40.00	0.0076	2014-2018: 7,750	12.00	12.00	0.00	0.00	28.87	Non-Traversable Median	28.87	false	false		
13	Rural Multi-Lane Segment Four-lane Divided	54+93.000	57+53.000	260.00	0.0492	2014-2018: 7,750	12.00	12.00	0.00	0.00	20.37	Non-Traversable Median	32.37	false	false		
14	Rural Multi-Lane Segment Four-lane Undivided	57+53.000	57+93.000	40.00	0.0076	2014-2018: 7,750	12.00	12.00	0.00	0.00	0.00	None	0.00	false	false	0:1	0:1
15	Rural Multi-Lane Segment Four-lane Undivided	57+93.000	58+33.000	40.00	0.0076	2014-2018: 10,000	12.00	12.00	0.00	0.00	0.00	None	0.00	false	false	0:1	0:1
16	Rural Multi-Lane Segment Four-lane Divided	58+33.000	60+93.000	260.00	0.0492	2014-2018: 10,000	12.00	12.00	0.00	0.00	20.37	Non-Traversable Median	32.37	false	false		
17	Rural Multi-Lane Segment Four-lane Divided	60+93.000	61+33.000	40.00	0.0076	2014-2018: 10,000	12.00	12.00	0.00	0.00	28.87	Non-Traversable Median	28.87	false	false		
18	Rural Multi-Lane Segment Four-lane Divided	61+33.000	61+93.000	60.00	0.0114	2014-2018: 10,000	12.00	12.00	0.00	0.00	30.00	Non-Traversable Median	30.00	false	false		
19	Rural Multi-Lane Segment Four-lane Divided	61+93.000	68+05.000	612.00	0.1159	2014-2018: 10,000	12.00	12.00	0.00	0.00	30.00	Non-Traversable Median	30.00	false	false		
20	Rural Multi-Lane Segment Four-lane Divided	68+05.000	68+65.000	60.00	0.0114	2014-2018: 10,000	12.00	12.00	0.00	0.00	30.00	Non-Traversable Median	30.00	false	false		
21	Rural Multi-Lane Segment Four-lane Divided	68+65.000	69+05.000	40.00	0.0076	2014-2018: 10,000	12.00	12.00	0.00	0.00	28.87	Non-Traversable Median	28.87	false	false		
22	Rural Multi-Lane Segment Four-lane Divided	69+05.000	71+65.000	260.00	0.0492	2014-2018: 10,000	12.00	12.00	0.00	0.00	20.37	Non-Traversable Median	32.37	false	false		
23	Rural Multi-Lane Segment Four-lane Undivided	71+65.000	72+05.000	40.00	0.0076	2014-2018: 10,000	12.00	12.00	0.00	0.00	0.00	None	0.00	false	false	0:1	0:1
24	Rural Multi-Lane Segment Four-lane Undivided	72+05.000	72+45.000	40.00	0.0076	2014-2018: 17,900	12.00	12.00	0.00	0.00	0.00	None	0.00	false	false	0:1	0:1
25	Rural Multi-Lane Segment Four-lane Divided	72+45.000	75+05.000	260.00	0.0492	2014-2018: 17,900	12.00	12.00	0.00	0.00	20.37	Non-Traversable Median	32.37	false	false		
26	Rural Multi-Lane Segment Four-lane Divided	75+05.000	75+45.000	40.00	0.0076	2014-2018: 17,900	12.00	12.00	0.00	0.00	28.87	Non-Traversable Median	28.87	false	false		
27	Rural Multi-Lane Segment Four-lane Divided	75+45.000	76+05.000	60.00	0.0114	2014-2018: 17,900	12.00	12.00	0.00	0.00	30.00	Non-Traversable Median	30.00	false	false		
28	Rural Multi-Lane Segment Four-lane Divided	76+05.000	77+05.000	100.00	0.0189	2014-2018: 17,900	12.00	12.00	0.00	0.00	30.00	Non-Traversable Median	30.00	false	false		

Table 2. Evaluation Intersection (Section 1)

Inter. No.	Title	Type	Location (Sta. ft)	Major AADT	Minor AADT	Legs	Traffic Control	Major road approaches w/Left Turn Lanes	Major road approaches w/Right Turn Lanes	Skew1	Skew2	Lighted at Night
1	11th @ Blackhawk (v1)	Rural Multi-Lane Intersection Four-Legged Signalized	5+00.000	2014-2018: 7,750	2014-2018: 2,050	4	Signalized	2	2			true
2	11th @ Samuelson (v1)	Rural Multi-Lane Intersection Four-Legged Signalized	57+93.000	2014-2018: 10,000	2014-2018: 3,250	4	Signalized	2	2			true
3	11th @ Airport (v1)	Rural Multi-Lane Intersection Four-Legged Signalized	72+05.000	2014-2018: 17,900	2014-2018: 4,950	4	Signalized	2	2			true

Table 3. Predicted Highway Crash Rates and Frequencies Summary (Section 1)

First Year of Analysis	**2014**
Last Year of Analysis	**2018**
Evaluated Length (mi)	**1.4593**
Average Future Road AADT (vpd)	**8,821**
Predicted Crashes	
Total Crashes	**169.98**
Fatal and Injury Crashes	**73.22**
Fatal and Serious Injury Crashes	**25.96**
Property-Damage-Only Crashes	**96.76**
Percent of Total Predicted Crashes	
Percent Fatal and Injury Crashes (%)	**43**
Percent Fatal and Serious Injury Crashes (%)	**15**
Percent Property-Damage-Only Crashes (%)	**57**
Predicted Crash Rate	
Crash Rate (crashes/mi/yr)	**23.2966**
FI Crash Rate (crashes/mi/yr)	**10.0350**
FI no/C Crash Rate (crashes/mi/yr)	**3.5578**
PDO Crash Rate (crashes/mi/yr)	**13.2616**
Predicted Travel Crash Rate	
Total Travel (million veh-mi)	**23.49**
Travel Crash Rate (crashes/million veh-mi)	**7.24**
Travel FI Crash Rate (crashes/million veh-mi)	**3.12**
Travel FI no/C Crash Rate (crashes/million veh-mi)	**1.10**
Travel PDO Crash Rate (crashes/million veh-mi)	**4.12**

Table 4. Predicted Crash Frequencies and Rates by Highway Segment/Intersection (Section 1)

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Predicted Crashes for Evaluation Period	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted FI no/C Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	Predicted Crash Rate (crashes/mi/yr)	Predicted Travel Crash Rate (crashes/million veh-mi)	Predicted Intersection Travel Crash Rate (crashes/million veh)
1	0.000	1+00.000	0.0189	0.162	0.0323	0.0173	0.0113	0.0151	1.7071	0.60	
2	1+00.000	1+60.000	0.0114	0.097	0.0194	0.0104	0.0068	0.0090	1.7071	0.60	
3	1+60.000	2+00.000	0.0076	0.065	0.0129	0.0069	0.0045	0.0060	1.7071	0.60	
4	2+00.000	4+60.000	0.0492	0.420	0.0841	0.0449	0.0295	0.0392	1.7071	0.60	
5	4+60.000	5+00.000	0.0076	0.103	0.0207	0.0127	0.0072	0.0080	2.7326	0.97	
11th @ Blackhawk (v1)	5+00.000			31.916	6.3831	2.9734	0.7735	3.4097			1.84
6	5+00.000	5+40.000	0.0076	0.103	0.0207	0.0127	0.0072	0.0080	2.7326	0.97	
7	5+40.000	8+00.000	0.0492	0.420	0.0841	0.0449	0.0295	0.0392	1.7071	0.60	
8	8+00.000	8+40.000	0.0076	0.065	0.0129	0.0069	0.0045	0.0060	1.7071	0.60	
9	8+40.000	9+00.000	0.0114	0.097	0.0194	0.0104	0.0068	0.0090	1.7071	0.60	
10	9+00.000	53+93.000	0.8509	7.263	1.4526	0.7760	0.5098	0.6766	1.7071	0.60	
11	53+93.000	54+53.000	0.0114	0.097	0.0194	0.0104	0.0068	0.0090	1.7071	0.60	
12	54+53.000	54+93.000	0.0076	0.065	0.0129	0.0069	0.0045	0.0060	1.7071	0.60	
13	54+93.000	57+53.000	0.0492	0.420	0.0841	0.0449	0.0295	0.0392	1.7071	0.60	
14	57+53.000	57+93.000	0.0076	0.103	0.0207	0.0127	0.0072	0.0080	2.7326	0.97	
11th @ Samuelson (v1)	57+93.000			44.810	8.9619	3.8933	1.1376	5.0687			2.13
15	57+93.000	58+33.000	0.0076	0.140	0.0279	0.0167	0.0092	0.0112	3.6877	1.01	
16	58+33.000	60+93.000	0.0492	0.549	0.1098	0.0573	0.0369	0.0525	2.2304	0.61	
17	60+93.000	61+33.000	0.0076	0.085	0.0169	0.0088	0.0057	0.0081	2.2304	0.61	
18	61+33.000	61+93.000	0.0114	0.127	0.0253	0.0132	0.0085	0.0121	2.2304	0.61	
19	61+93.000	68+05.000	0.1159	1.293	0.2585	0.1349	0.0868	0.1236	2.2304	0.61	
20	68+05.000	68+65.000	0.0114	0.127	0.0253	0.0132	0.0085	0.0121	2.2304	0.61	
21	68+65.000	69+05.000	0.0076	0.085	0.0169	0.0088	0.0057	0.0081	2.2304	0.61	
22	69+05.000	71+65.000	0.0492	0.549	0.1098	0.0573	0.0369	0.0525	2.2304	0.61	
23	71+65.000	72+05.000	0.0076	0.140	0.0279	0.0167	0.0092	0.0112	3.6877	1.01	
11th @ Airport (v1)	72+05.000			78.616	15.7231	6.2233	2.2840	9.4998			2.28
24	72+05.000	72+45.000	0.0076	0.277	0.0554	0.0316	0.0158	0.0238	7.3132	1.12	

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Predicted Crashes for Evaluation Period	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted FI no/C Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	Predicted Crash Rate (crashes/mi/yr)	Predicted Travel Crash Rate (crashes/million veh-mi)	Predicted Intersection Travel Crash Rate (crashes/million veh)
25	72+45.000	75+05.000	0.0492	1.011	0.2023	0.1001	0.0613	0.1021	4.1079	0.63	
26	75+05.000	75+45.000	0.0076	0.156	0.0311	0.0154	0.0094	0.0157	4.1079	0.63	
27	75+45.000	76+05.000	0.0114	0.233	0.0467	0.0231	0.0141	0.0236	4.1079	0.63	
28	76+05.000	77+05.000	0.0189	0.389	0.0778	0.0385	0.0236	0.0393	4.1079	0.63	
All Segments			1.4593	14.640	2.9281	1.5538	0.9967	1.3742	2.0065	0.62	
All Intersections				155.341	31.0682	13.0900	4.1952	17.9782			2.13
Total			1.4593	169.981	33.9962	14.6438	5.1918	19.3524	23.2966		

Table 5. Predicted Crash Frequencies and Rates by Horizontal Design Element (Section 1)

Title	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Predicted Crashes for Evaluation Period	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted FI no/C Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	Predicted Crash Rate (crashes/mi/yr)	Predicted Travel Crash Rate (crashes/million veh-mi)
Tangent	0.000	77+05.000	1.4593	14.640	2.9281	1.5538	0.9967	1.3742	2.0065	0.62

Table 6. Predicted Crash Frequencies by Year (Section 1)

Year	Total Crashes	FI Crashes	Percent FI (%)	FI/no C Crashes	Percent FI/no C (%)	PDO Crashes	Percent PDO (%)
2014	34.00	14.64	43.075	5.19	15.272	19.35	56.925
2015	34.00	14.64	43.075	5.19	15.272	19.35	56.925
2016	34.00	14.64	43.075	5.19	15.272	19.35	56.925
2017	34.00	14.64	43.075	5.19	15.272	19.35	56.925
2018	34.00	14.64	43.075	5.19	15.272	19.35	56.925
Total	169.98	73.22	43.075	25.96	15.272	96.76	56.925
Average	34.00	14.64	43.075	5.19	15.272	19.35	56.925

Note: *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

Table 7. Predicted Crash Type Distribution (Section 1)

Element Type	Crash Type	Fatal and Injury		Fatal and Serious Injury		Property Damage Only		Total	
		Crashes	Crashes (%)	Crashes	Crashes (%)	Crashes	Crashes (%)	Crashes	Crashes (%)
Highway Segment	Single	5.40	3.2	3.75	2.2	5.25	3.1	10.78	6.3
Highway Segment	Total Single Vehicle Crashes	5.40	3.2	3.75	2.2	5.25	3.1	10.78	6.3
Highway Segment	Angle Collision	0.53	0.3	0.31	0.2	0.39	0.2	0.90	0.5
Highway Segment	Head-on Collision	0.11	0.1	0.10	0.1	0.01	0.0	0.09	0.1
Highway Segment	Rear-end Collision	1.34	0.8	0.60	0.4	0.65	0.4	1.81	1.1
Highway Segment	Sideswipe	0.22	0.1	0.12	0.1	0.39	0.2	0.68	0.4
Highway Segment	Total Multiple Vehicle Crashes	2.20	1.3	1.12	0.7	1.45	0.8	3.48	2.0
Highway Segment	Total Highway Segment Crashes	7.77	4.6	4.98	2.9	6.87	4.0	14.64	8.6
Highway Segment	Other Collision	0.17	0.1	0.12	0.1	0.18	0.1	0.38	0.2
Intersection	Single	2.68	1.6	1.64	1.0	6.92	4.1	9.63	5.7
Intersection	Total Single Vehicle Crashes	2.68	1.6	1.64	1.0	6.92	4.1	9.63	5.7
Intersection	Angle Collision	20.62	12.1	8.54	5.0	19.33	11.4	39.77	23.4
Intersection	Head-on Collision	5.43	3.2	1.95	1.1	3.06	1.8	8.39	4.9
Intersection	Rear-end Collision	30.89	18.2	6.59	3.9	45.40	26.7	76.43	45.0
Intersection	Sideswipe	3.08	1.8	0.82	0.5	13.21	7.8	16.47	9.7
Intersection	Total Multiple Vehicle Crashes	60.02	35.3	17.89	10.5	80.99	47.6	141.05	83.0
Intersection	Total Intersection Crashes	65.39	38.5	20.98	12.3	89.98	52.9	155.34	91.4
Intersection	Other Collision	2.68	1.6	1.45	0.9	2.07	1.2	4.66	2.7
	Total Crashes	73.15	43.0	25.96	15.3	96.85	57.0	169.98	100.0

Note: *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

Table 8. Evaluation Message

Start Location (Sta. ft)	End Location (Sta. ft)	Message
4+60.000	5+00.000	for segment #5 (4+60.000 to 5+00.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
4+60.000	5+00.000	for segment #5 (4+60.000 to 5+00.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
5+00.000	5+40.000	for segment #6 (5+00.000 to 5+40.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
5+00.000	5+40.000	for segment #6 (5+00.000 to 5+40.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
57+53.000	57+93.000	for segment #14 (57+53.000 to 57+93.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
57+53.000	57+93.000	for segment #14 (57+53.000 to 57+93.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
57+93.000	58+33.000	for segment #15 (57+93.000 to 58+33.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
57+93.000	58+33.000	for segment #15 (57+93.000 to 58+33.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
71+65.000	72+05.000	for segment #23 (71+65.000 to 72+05.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
71+65.000	72+05.000	for segment #23 (71+65.000 to 72+05.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
72+05.000	72+45.000	for segment #24 (72+05.000 to 72+45.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
72+05.000	72+45.000	for segment #24 (72+05.000 to 72+45.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0

Interactive Highway Safety Design Model

Crash Prediction Evaluation Report

11th Street - Airport Dr to Sandy Hollow Rd

January 4, 2021

Disclaimer

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Report Overview

Report Generated: Jan 4, 2021 11:27 AM
Report Template: System: Multi-Page [System] (mlcpm2, Dec 21, 2020 5:10 PM)

Evaluation Date: Mon Jan 04 11:27:13 CST 2021
IHSDM Version: v16.0.0 (Sep 30, 2020)
Crash Prediction Module: v11.0.0 (Sep 30, 2020)

User Name: jmetz
Organization Name:
Phone:
E-Mail:

Project Title: 11th Street Corridor Study
Project Comment: Created Tue Dec 15 13:04:45 CST 2020
Project Unit System: U.S. Customary

Highway Title: 11th Street - Airport to Sandy Hollow
Highway Comment: Created Mon Jan 04 08:31:58 CST 2021
Highway Version: 1

Evaluation Title: 11th St - Airport to Sandy Hollow
Evaluation Comment: Created Mon Jan 04 11:26:51 CST 2021

Minimum Location: 77+05.000
Maximum Location: 110+65.000
Policy for Superelevation: AASHTO 2011 U.S. Customary
Calibration: HSM Configuration
Crash Distribution: HSM Configuration
Model/CMF: HSM Configuration
First Year of Analysis: 2014
Last Year of Analysis: 2018
Empirical-Bayes Analysis: None
First Year of Observed Crashes:
Last Year of Observed Crashes:

Disclaimer Regarding Crash Prediction Method

IMPORTANT NOTICE ABOUT COMPARING RESULTS FROM HIGHWAY SAFETY MANUAL FIRST EDITION (2010) MODELS TO RESULTS FROM NEW MODELS DEVELOPED UNDER NCHRP PROJECTS 17-70 AND 17-58

Since the publication of the Highway Safety Manual - First Edition (HSM-1), in 2010 by the American Association of State Highway and Transportation Officials (AASHTO), multiple research efforts have been undertaken through the National Cooperative Highway Research Program (NCHRP) to develop safety performance models for road segment and intersection facility types that were not initially reflected in the HSM-1, in order to expand the breadth and depth of the HSM in the future.

The IHSDM Crash Prediction Module (CPM) is intended as a faithful implementation of HSM Part C predictive methods. As NCHRP projects to develop new predictive methods for the HSM are completed, FHWA works to incorporate the new methods into IHSDM, sometimes in advance of publication in the HSM. The following new crash predictive methods have been accepted by NCHRP project panels and incorporated into IHSDM, while pending AASHTO's approval for incorporation into a future edition of the HSM:

- Roundabouts: completed in 2018 under NCHRP Project 17-70, the new methods will provide improved outcomes for the safety analysis of roundabouts.
- 6+ lane and one-way urban/suburban arterials (including models for segments and intersections): completed under NCHRP Project 17-58.

However, in the absence of local calibration factors (see HSM-1 Part C, Appendix A for guidance on calibration of the predictive models), it is neither appropriate nor advisable to directly compare the results from new models (from NCHRP Projects 17-58 and 17-70) to results from HSM-1 models, as the models were not calibrated to the same base state data sets, and consequently can produce unexpected results. If local calibration factors are available and applied to both new models and HSM-1 models, then it may be appropriate to directly compare the results.*[Note: Work being performed under NCHRP Project 17-72 (Update of Crash Modification Factors for the Highway Safety Manual) is expected to re-calibrate many of the old (HSM-1) and new (e.g., NCHRP 17-70) models to data from a single (or small number of) states, that would allow results from all models to be directly compared.]*

The models produced for NCHRP Project 17-70 have independent value in terms of informing the design of a roundabout and assessing the effects of different design characteristics on the expected safety performance of a roundabout.

The HSM-1 interim method previously included in IHSDM for evaluating roundabouts on urban/suburban arterials (i.e., evaluating an existing intersection and then applying a Crash Modification Factor for replacing the existing intersection with a roundabout) has been deactivated in IHSDM, to minimize any confusion with the new roundabout methodology.

Section Types

Section 1 Evaluation

Section: Section 1
Evaluation Start Location: 77+05.000
Evaluation End Location: 110+65.000
Area Type: Urban
Functional Class: Arterial
Type of Alignment: Divided, Multilane
Model Category: Urban/Suburban Arterial
Calibration Factor: 4D=1.0;

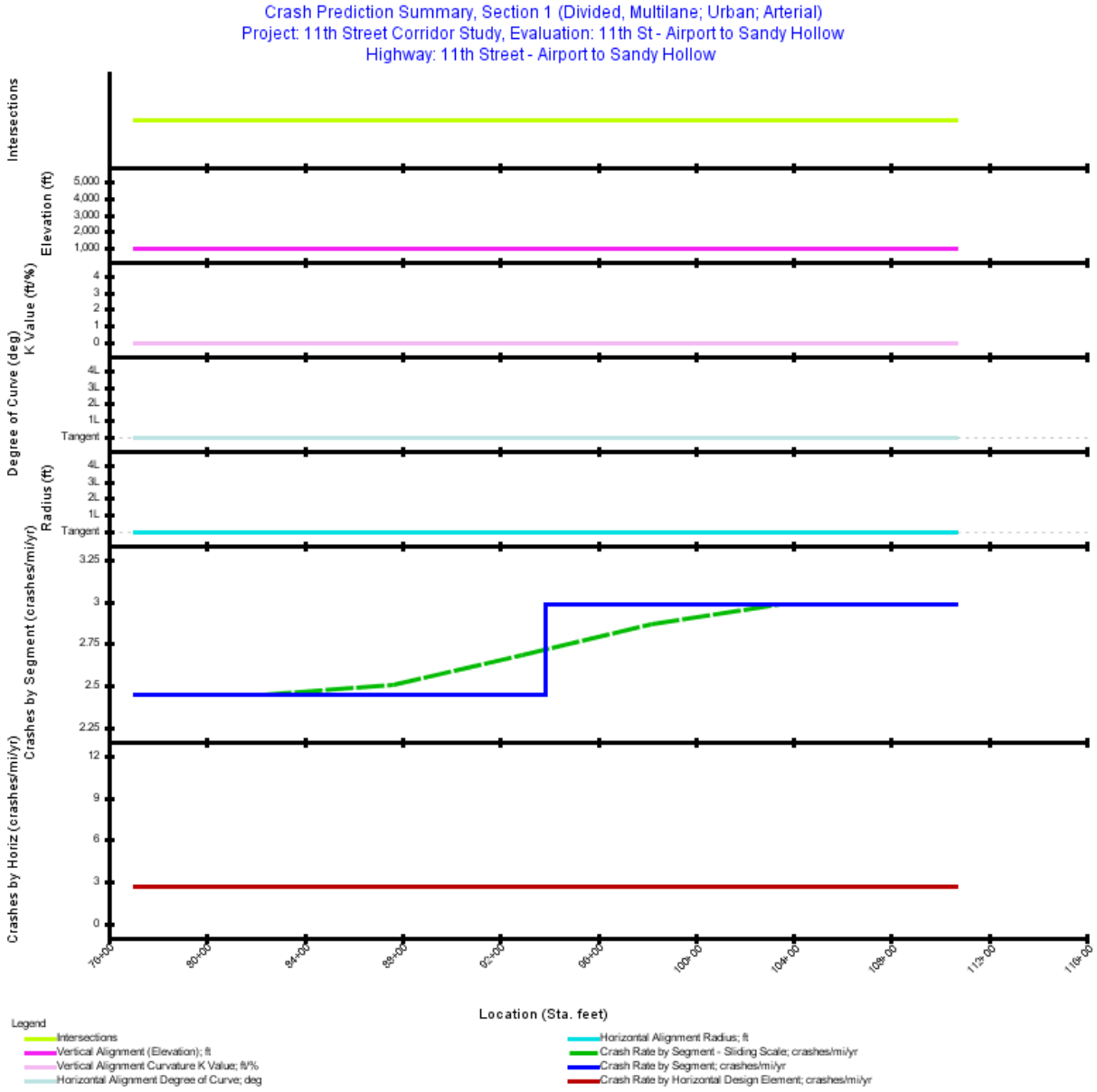


Figure 1. Crash Prediction Summary (Section 1)

Table 1. Evaluation Highway - Homogeneous Segments (Section 1)

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Number Major Commercial Driveways	Number Minor Commercial Driveways	Number Major Industial/Institutional	Number Minor Industial/Institutional	Number Major Residential Driveways	Number Minor Residential Driveways	Number Other Driveways	Lighting	Automated Speed Enforcement	Density (fixed objects/mi)	Median Width (ft)	Type	Effective Median Width (ft)	Speed Level	Number Rail Highway Crossings	Average Shoulder Width (ft)	Average Lane Width (ft)
1	Urban/Suburban Arterial Segment Four-lane Divided	77+05.000	93+85.000	1,680.00	0.3182	2014-2018: 13,600	0	0	0	0	0	0	0	false	false	0.0	32.00	Non-Traversable Median	32.00	Intermediate/ High	0	0.00	12.00
2	Urban/Suburban Arterial Segment Four-lane Divided	93+85.000	110+65.000	1,680.00	0.3182	2014-2018: 16,133	0	0	0	0	0	0	0	false	false	0.0	32.00	Non-Traversable Median	32.00	Intermediate/ High	0	0.00	12.00

Table 2. Predicted Highway Crash Rates and Frequencies Summary (Section 1)

First Year of Analysis	**2014**
Last Year of Analysis	**2018**
Evaluated Length (mi)	**0.6364**
Average Future Road AADT (vpd)	**14,867**
Predicted Crashes	
Total Crashes	**8.65**
Fatal and Injury Crashes	**2.39**
Property-Damage-Only Crashes	**6.26**
Percent of Total Predicted Crashes	
Percent Fatal and Injury Crashes (%)	**28**
Percent Property-Damage-Only Crashes (%)	**72**
Predicted Crash Rate	
Crash Rate (crashes/mi/yr)	**2.7181**
FI Crash Rate (crashes/mi/yr)	**0.7511**
PDO Crash Rate (crashes/mi/yr)	**1.9670**
Predicted Travel Crash Rate	
Total Travel (million veh-mi)	**17.27**
Travel Crash Rate (crashes/million veh-mi)	**0.50**
Travel FI Crash Rate (crashes/million veh-mi)	**0.14**
Travel PDO Crash Rate (crashes/million veh-mi)	**0.36**

Table 3. Predicted Crash Frequencies and Rates by Highway Segment/Intersection (Section 1)

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Predicted Crashes for Evaluation Period	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	Predicted Crash Rate (crashes/mi/yr)	Predicted Travel Crash Rate (crashes/million veh-mi)
1	77+05.000	93+85.000	0.3182	3.896	0.7792	0.2146	0.5646	2.4491	0.49
2	93+85.000	110+65.000	0.3182	4.752	0.9504	0.2633	0.6871	2.9871	0.51
Total			0.6364	8.648	1.7297	0.4780	1.2517	2.7181	

Table 4. Predicted Crash Frequencies and Rates by Horizontal Design Element (Section 1)

Title	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Predicted Crashes for Evaluation Period	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	Predicted Crash Rate (crashes/mi/yr)	Predicted Travel Crash Rate (crashes/million veh-mi)
Tangent	77+05.000	110+65.000	0.6364	8.648	1.7297	0.4780	1.2517	2.7181	0.50

Table 5. Predicted Crash Frequencies by Year (Section 1)

Year	Total Crashes	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)
2014	1.73	0.48	27.633	1.25	72.367
2015	1.73	0.48	27.633	1.25	72.367
2016	1.73	0.48	27.633	1.25	72.367
2017	1.73	0.48	27.633	1.25	72.367
2018	1.73	0.48	27.633	1.25	72.367
Total	8.65	2.39	27.633	6.26	72.367
Average	1.73	0.48	27.633	1.25	72.367

Note: *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

Table 6. Predicted Five Lane or Fewer Crash Type Distribution (Section 1)

Element Type	Crash Type	Fatal and Injury		Property Damage Only		Total	
		Crashes	Crashes (%)	Crashes	Crashes (%)	Crashes	Crashes (%)
Highway Segment	Collision with Animal	0.00	0.0	0.10	1.1	0.10	1.1
Highway Segment	Collision with Bicycle	0.04	0.5	0.00	0.0	0.04	0.5
Highway Segment	Collision with Fixed Object	0.15	1.7	1.27	14.7	1.42	16.4
Highway Segment	Collision with Other Object	0.01	0.1	0.03	0.3	0.03	0.4
Highway Segment	Other Single-vehicle Collision	0.14	1.6	0.17	2.0	0.31	3.6
Highway Segment	Collision with Pedestrian	0.16	1.9	0.00	0.0	0.16	1.9
Highway Segment	Total Single Vehicle Crashes	0.50	5.8	1.56	18.1	2.06	23.9
Highway Segment	Angle Collision	0.08	0.9	0.17	2.0	0.24	2.8
Highway Segment	Driveway-related Collision	0.00	0.0	0.00	0.0	0.00	0.0
Highway Segment	Head-on Collision	0.04	0.4	0.03	0.4	0.07	0.8
Highway Segment	Other Multi-vehicle Collision	0.09	1.0	0.33	3.9	0.42	4.9
Highway Segment	Rear-end Collision	1.57	18.2	3.11	35.9	4.68	54.1
Highway Segment	Sideswipe, Opposite Direction Collision	0.02	0.2	0.01	0.1	0.02	0.3
Highway Segment	Sideswipe, Same Direction Collision	0.09	1.1	1.05	12.1	1.14	13.2
Highway Segment	Total Multiple Vehicle Crashes	1.89	21.8	4.70	54.3	6.58	76.1
Highway Segment	Total Highway Segment Crashes	2.39	27.6	6.26	72.4	8.65	100.0
	Total Crashes	2.39	27.6	6.26	72.4	8.65	100.0

Note: *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

Interactive Highway Safety Design Model

Crash Prediction Evaluation Report

11th Street - Sandy Hollow Rd to Harrison Ave

January 4, 2021

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Report Overview

Report Generated: Jan 4, 2021 11:29 AM
Report Template: System: Multi-Page [System] (mlcpm2, Dec 21, 2020 5:10 PM)

Evaluation Date: Mon Jan 04 11:29:24 CST 2021
IHSDM Version: v16.0.0 (Sep 30, 2020)
Crash Prediction Module: v11.0.0 (Sep 30, 2020)

User Name: jmetz
Organization Name:
Phone:
E-Mail:

Project Title: 11th Street Corridor Study
Project Comment: Created Tue Dec 15 13:04:45 CST 2020
Project Unit System: U.S. Customary

Highway Title: 11th Street - Sandy Hollow to Harrison
Highway Comment: Created Wed Dec 16 12:42:00 CST 2020
Highway Version: 1

Evaluation Title: 11th St - Sandy Hollow to Harrison
Evaluation Comment: Created Mon Jan 04 11:28:58 CST 2021

Minimum Location: 0.000
Maximum Location: 62+79.000
Policy for Superelevation: AASHTO 2011 U.S. Customary
Calibration: HSM Configuration
Crash Distribution: HSM Configuration
Model/CMF: HSM Configuration
First Year of Analysis: 2014
Last Year of Analysis: 2018
Empirical-Bayes Analysis: None
First Year of Observed Crashes:
Last Year of Observed Crashes:

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Section Types

Section 1 Evaluation

Section: Section 1
Evaluation Start Location: 0.000
Evaluation End Location: 62+79.000
Area Type: Urban
Functional Class: Arterial
Type of Alignment: Undivided, Multilane
Model Category: Urban/Suburban Arterial
Calibration Factor: 3SG=1.0; 4D=1.0; 4SG=1.0; 4U=1.0; 5T=1.0;

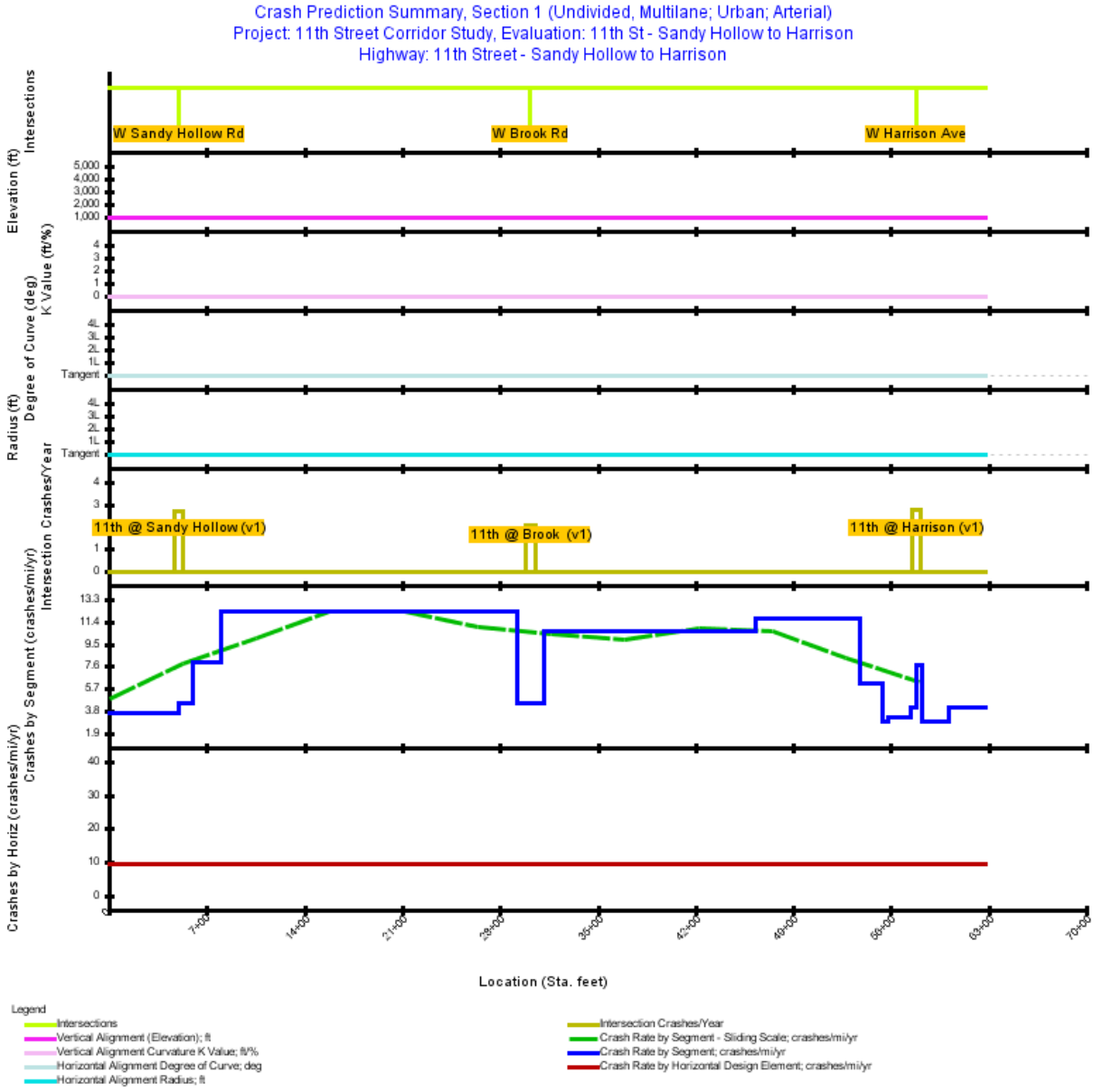


Figure 1. Crash Prediction Summary (Section 1)

Table 1. Evaluation Highway - Homogeneous Segments (Section 1)

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Number Major Commercial Driveways	Number Minor Commercial Driveways	Number Major Industial/Institutional	Number Minor Industial/Institutional	Number Major Residential Driveways	Number Minor Residential Driveways	Number Other Driveways	Lighting	Automated Speed Enforcement	Density (fixed objects/mi)	Median Width (ft)	Type	Effective Median Width (ft)	Speed Level	Number Rail Highway Crossings	Average Shoulder Width (ft)	Average Lane Width (ft)
1	Urban/Suburban Arterial Segment Four-lane Undivided	0.000	3+00.000	300.00	0.0568	2014-2018: 13,600	0	0	0	0	0	0	0	false	false	0.0	0.00	None	0.00	Low	0	0.00	12.00
2	Urban/Suburban Arterial Segment Four-lane Undivided	3+00.000	5+00.000	200.00	0.0379	2014-2018: 13,600	0	0	0	0	0	0	0	false	false	0.0	0.00	None	0.00	Low	0	0.00	12.00
3	Urban/Suburban Arterial Segment Four-lane Undivided	5+00.000	6+00.000	100.00	0.0189	2014-2018: 16,133	0	0	0	0	0	0	0	false	false	0.0	0.00	None	0.00	Low	0	0.00	12.00
4	Urban/Suburban Arterial Segment Four-lane Undivided	6+00.000	8+00.000	200.00	0.0379	2014-2018: 16,133	0	2	0	0	0	0	0	false	false	0.0	0.00	None	0.00	Low	0	0.00	12.00
5	Urban/Suburban Arterial Segment Five-lane including center TWLTL	8+00.000	29+20.000	2,120.00	0.4015	2014-2018: 16,133	1	15	1	0	7	0	0	false	false	0.0	0.00	None	0.00	Low	0	0.00	12.00
6	Urban/Suburban Arterial Segment Four-lane Undivided	29+20.000	30+20.000	100.00	0.0189	2014-2018: 16,133	0	0	0	0	0	0	0	false	false	0.0	0.00	None	0.00	Low	0	0.00	12.00
7	Urban/Suburban Arterial Segment Four-lane Undivided	30+20.000	31+20.000	100.00	0.0189	2014-2018: 16,133	0	0	0	0	0	0	0	false	false	0.0	0.00	None	0.00	Low	0	0.00	12.00
8	Urban/Suburban Arterial Segment Five-lane including center TWLTL	31+20.000	46+33.000	1,513.00	0.2866	2014-2018: 16,133	0	8	0	1	4	2	0	false	false	0.0	0.00	None	0.00	Low	0	0.00	12.00
9	Urban/Suburban Arterial Segment Five-lane including center TWLTL	46+33.000	53+79.000	746.00	0.1413	2014-2018: 16,133	0	8	0	0	2	2	0	true	false	0.0	0.00	None	0.00	Low	0	0.00	12.00
10	Urban/Suburban Arterial Segment Four-lane Undivided	53+79.000	55+39.000	160.00	0.0303	2014-2018: 16,133	0	1	0	0	0	0	0	true	false	0.0	0.00	None	0.00	Low	0	0.00	12.00
11	Urban/Suburban Arterial Segment Four-lane Divided	55+39.000	55+79.000	40.00	0.0076	2014-2018: 16,133	0	0	0	0	0	0	0	true	false	0.0	4.00	Non-Traversable Median	4.00	Low	0	0.00	12.00
12	Urban/Suburban Arterial Segment Four-lane Divided	55+79.000	57+39.000	160.00	0.0303	2014-2018: 16,133	0	1	0	0	0	0	0	true	false	0.0	4.00	Non-Traversable Median	16.00	Low	0	0.00	12.00
13	Urban/Suburban Arterial Segment Four-lane Undivided	57+39.000	57+79.000	40.00	0.0076	2014-2018: 16,133	0	0	0	0	0	0	0	true	false	0.0	0.00	None	0.00	Low	0	0.00	12.00
14	Urban/Suburban Arterial Segment Four-lane Undivided	57+79.000	58+19.000	40.00	0.0076	2014-2018: 16,133	0	0	0	1	0	0	0	true	false	0.0	0.00	None	0.00	Low	0	0.00	12.00
15	Urban/Suburban Arterial Segment Four-lane Divided	58+19.000	59+79.000	160.00	0.0303	2014-2018: 16,133	0	0	0	0	0	0	0	true	false	0.0	4.00	Non-Traversable Median	16.00	Low	0	0.00	12.00
16	Urban/Suburban Arterial Segment Four-lane Divided	59+79.000	60+19.000	40.00	0.0076	2014-2018: 16,133	0	0	0	0	0	0	0	true	false	0.0	4.00	Non-Traversable Median	4.00	Low	0	0.00	12.00
17	Urban/Suburban Arterial Segment Four-lane Undivided	60+19.000	62+79.000	260.00	0.0492	2014-2018: 16,133	0	0	0	0	0	0	0	true	false	0.0	0.00	None	0.00	Low	0	0.00	12.00

Table 2. Evaluation Intersection (Section 1)

Inter. No.	Title	Type	Location (Sta. ft)	Major AADT	Minor AADT	Legs	Traffic Control	Approaches w/Left Turn Lanes	Approaches w/Right Turn Lanes	Approaches w/o Right Turn on Red	Pedestrian Volume (crossings/day)	Lighted at Night	Red Light Camera	School Nearby	Number of Bus Stops	Number of Alcohol Sales Establishments	Max Lanes Crossed
1	11th @ Brook (v1)	Urban/Suburban Arterial Intersection Three-Legged Signalized	30+20.000	2014-2018: 16,133	2014-2018: 4,800	3	Signalized	2	1	0	15	false	false	false	0	0	5
2	11th @ Sandy Hollow (v1)	Urban/Suburban Arterial Intersection Four-Legged Signalized	5+00.000	2014-2018: 16,133	2014-2018: 10,300	4	Signalized	4	2	0	20	true	false	false	0	0	6
3	11th @ Harrison (v1)	Urban/Suburban Arterial Intersection Four-Legged Signalized	57+79.000	2014-2018: 16,133	2014-2018: 13,300	4	Signalized	4	3	0	20	true	false	false	0	0	6

Table 3. Predicted Highway Crash Rates and Frequencies Summary (Section 1)

First Year of Analysis	**2014**
Last Year of Analysis	**2018**
Evaluated Length (mi)	**1.1892**
Average Future Road AADT (vpd)	**15,931**
Predicted Crashes	
Total Crashes	**94.07**
Fatal and Injury Crashes	**30.93**
Property-Damage-Only Crashes	**63.13**
Percent of Total Predicted Crashes	
Percent Fatal and Injury Crashes (%)	**33**
Percent Property-Damage-Only Crashes (%)	**67**
Predicted Crash Rate	
Crash Rate (crashes/mi/yr)	**15.8201**
FI Crash Rate (crashes/mi/yr)	**5.2027**
PDO Crash Rate (crashes/mi/yr)	**10.6174**
Predicted Travel Crash Rate	
Total Travel (million veh-mi)	**34.58**
Travel Crash Rate (crashes/million veh-mi)	**2.72**
Travel FI Crash Rate (crashes/million veh-mi)	**0.89**
Travel PDO Crash Rate (crashes/million veh-mi)	**1.83**

Table 4. Predicted Crash Frequencies and Rates by Highway Segment/Intersection (Section 1)

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Predicted Crashes for Evaluation Period	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	Predicted Crash Rate (crashes/mi/yr)	Predicted Travel Crash Rate (crashes/million veh-mi)	Predicted Intersection Travel Crash Rate (crashes/million veh)
1	0.000	3+00.000	0.0568	1.043	0.2085	0.0674	0.1411	3.6700	0.74	
2	3+00.000	5+00.000	0.0379	0.695	0.1390	0.0449	0.0941	3.6700	0.74	
11th @ Sandy Hollow (v1)	5+00.000			13.605	2.7209	0.9033	1.8176			0.30
3	5+00.000	6+00.000	0.0189	0.428	0.0857	0.0273	0.0583	4.5228	0.77	
4	6+00.000	8+00.000	0.0379	1.509	0.3018	0.1020	0.1998	7.9681	1.35	
5	8+00.000	29+20.000	0.4015	24.694	4.9389	1.5884	3.3505	12.3005	2.09	
6	29+20.000	30+20.000	0.0189	0.428	0.0857	0.0273	0.0583	4.5228	0.77	
11th @ Brook (v1)	30+20.000			10.471	2.0941	0.7490	1.3452			0.31
7	30+20.000	31+20.000	0.0189	0.428	0.0857	0.0273	0.0583	4.5228	0.77	
8	31+20.000	46+33.000	0.2866	15.148	3.0296	0.9736	2.0561	10.5727	1.79	
9	46+33.000	53+79.000	0.1413	8.250	1.6500	0.5307	1.1194	11.6786	1.98	
10	53+79.000	55+39.000	0.0303	0.928	0.1856	0.0618	0.1237	6.1233	1.04	
11	55+39.000	55+79.000	0.0076	0.109	0.0218	0.0069	0.0150	2.8791	0.49	
12	55+79.000	57+39.000	0.0303	0.495	0.0990	0.0314	0.0676	3.2675	0.56	
13	57+39.000	57+79.000	0.0076	0.157	0.0314	0.0100	0.0214	4.1483	0.70	
11th @ Harrison (v1)	57+79.000			13.820	2.7640	0.9164	1.8476			0.26
14	57+79.000	58+19.000	0.0076	0.291	0.0583	0.0198	0.0385	7.6896	1.31	
15	58+19.000	59+79.000	0.0303	0.436	0.0872	0.0274	0.0598	2.8791	0.49	
16	59+79.000	60+19.000	0.0076	0.109	0.0218	0.0069	0.0150	2.8791	0.49	
17	60+19.000	62+79.000	0.0492	1.021	0.2043	0.0652	0.1391	4.1483	0.70	
All Segments			1.1892	56.171	11.2343	3.6184	7.6159	9.4469	1.62	
All Intersections				37.895	7.5791	2.5687	5.0104			0.29
Total			1.1892	94.067	18.8133	6.1870	12.6263	15.8201		

Table 5. Predicted Crash Frequencies and Rates by Horizontal Design Element (Section 1)

Title	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Predicted Crashes for Evaluation Period	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	Predicted Crash Rate (crashes/mi/yr)	Predicted Travel Crash Rate (crashes/million veh-mi)
Tangent	0.000	62+79.000	1.1892	56.171	11.2343	3.6184	7.6159	9.4469	1.61

Table 6. Predicted Crash Frequencies by Year (Section 1)

Year	Total Crashes	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)
2014	18.81	6.19	32.886	12.63	67.114
2015	18.81	6.19	32.886	12.63	67.114
2016	18.81	6.19	32.886	12.63	67.114
2017	18.81	6.19	32.886	12.63	67.114
2018	18.81	6.19	32.886	12.63	67.114
Total	94.07	30.93	32.886	63.13	67.114
Average	18.81	6.19	32.886	12.63	67.114

Note: *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

Table 7. Predicted Five Lane or Fewer Crash Type Distribution (Section 1)

Element Type	Crash Type	Fatal and Injury		Property Damage Only		Total	
		Crashes	Crashes (%)	Crashes	Crashes (%)	Crashes	Crashes (%)
Highway Segment	Collision with Animal	0.03	0.0	0.24	0.3	0.27	0.3
Highway Segment	Collision with Bicycle	2.31	2.5	0.00	0.0	2.31	2.5
Highway Segment	Collision with Fixed Object	0.80	0.9	4.42	4.7	5.22	5.6
Highway Segment	Collision with Other Object	0.01	0.0	0.31	0.3	0.33	0.3
Highway Segment	Other Single-vehicle Collision	1.01	1.1	0.73	0.8	1.74	1.8
Highway Segment	Collision with Pedestrian	1.55	1.7	0.00	0.0	1.55	1.7
Highway Segment	Total Single Vehicle Crashes	5.72	6.1	5.70	6.1	11.42	12.1
Highway Segment	Angle Collision	0.55	0.6	1.33	1.4	1.88	2.0
Highway Segment	Driveway-related Collision	5.02	5.3	13.35	14.2	18.37	19.5
Highway Segment	Head-on Collision	0.23	0.2	0.08	0.1	0.31	0.3
Highway Segment	Other Multi-vehicle Collision	0.19	0.2	0.73	0.8	0.93	1.0
Highway Segment	Rear-end Collision	5.75	6.1	11.94	12.7	17.69	18.8
Highway Segment	Sideswipe, Opposite Direction Collision	0.14	0.1	0.23	0.2	0.38	0.4
Highway Segment	Sideswipe, Same Direction Collision	0.49	0.5	4.71	5.0	5.20	5.5
Highway Segment	Total Multiple Vehicle Crashes	12.37	13.2	32.38	34.4	44.75	47.6
Highway Segment	Total Highway Segment Crashes	18.09	19.2	38.08	40.5	56.17	59.7
Intersection	Collision with Animal	0.00	0.0	0.00	0.0	0.01	0.0
Intersection	Collision with Bicycle	0.52	0.5	0.00	0.0	0.52	0.5
Intersection	Collision with Fixed Object	0.55	0.6	1.68	1.8	2.23	2.4
Intersection	Non-Collision	0.12	0.1	0.05	0.1	0.18	0.2
Intersection	Collision with Other Object	0.06	0.1	0.13	0.1	0.19	0.2
Intersection	Other Single-vehicle Collision	0.03	0.0	0.04	0.0	0.07	0.1
Intersection	Collision with Parked Vehicle	0.00	0.0	0.00	0.0	0.00	0.0
Intersection	Collision with Pedestrian	0.24	0.3	0.00	0.0	0.24	0.3
Intersection	Total Intersection Single Vehicle Crashes	1.52	1.6	1.91	2.0	3.43	3.6
Intersection	Angle Collision	3.71	3.9	5.40	5.7	9.11	9.7
Intersection	Head-on Collision	0.52	0.6	0.63	0.7	1.15	1.2
Intersection	Other Multi-vehicle Collision	0.63	0.7	4.80	5.1	5.43	5.8
Intersection	Rear-end Collision	5.43	5.8	11.56	12.3	16.99	18.1
Intersection	Sideswipe	1.04	1.1	0.74	0.8	1.78	1.9
Intersection	Total Intersection Multiple Vehicle Crashes	11.32	12.0	23.14	24.6	34.46	36.6
Intersection	Total Intersection Crashes	12.84	13.7	25.05	26.6	37.90	40.3
	Total Crashes	30.93	32.9	63.13	67.1	94.07	100.0

Note: *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

Interactive Highway Safety Design Model

Crash Prediction Evaluation Report

11th Street - Harrison Ave to Broadway St

January 4, 2021

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Report Overview

Report Generated: Jan 4, 2021 11:31 AM
Report Template: System: Multi-Page [System] (mlcpm2, Dec 21, 2020 5:10 PM)

Evaluation Date: Mon Jan 04 11:31:23 CST 2021
IHSDM Version: v16.0.0 (Sep 30, 2020)
Crash Prediction Module: v11.0.0 (Sep 30, 2020)

User Name: jmetz
Organization Name:
Phone:
E-Mail:

Project Title: 11th Street Corridor Study
Project Comment: Created Tue Dec 15 13:04:45 CST 2020
Project Unit System: U.S. Customary

Highway Title: 11th Street - Harrison to Broadway
Highway Comment: Created Thu Dec 17 13:47:12 CST 2020
Highway Version: 1

Evaluation Title: 11th St - Harrison to Broadway
Evaluation Comment: Created Mon Jan 04 11:30:51 CST 2021

Minimum Location: 0.000
Maximum Location: 53+08.000
Policy for Superelevation: AASHTO 2011 U.S. Customary
Calibration: HSM Configuration
Crash Distribution: HSM Configuration
Model/CMF: HSM Configuration
First Year of Analysis: 2014
Last Year of Analysis: 2018
Empirical-Bayes Analysis: None
First Year of Observed Crashes:
Last Year of Observed Crashes:

Disclaimer Regarding Crash Prediction Method

IMPORTANT NOTICE ABOUT COMPARING RESULTS FROM HIGHWAY SAFETY MANUAL FIRST EDITION (2010) MODELS TO RESULTS FROM NEW MODELS DEVELOPED UNDER NCHRP PROJECTS 17-70 AND 17-58

Since the publication of the Highway Safety Manual - First Edition (HSM-1), in 2010 by the American Association of State Highway and Transportation Officials (AASHTO), multiple research efforts have been undertaken through the National Cooperative Highway Research Program (NCHRP) to develop safety performance models for road segment and intersection facility types that were not initially reflected in the HSM-1, in order to expand the breadth and depth of the HSM in the future.

The IHSDM Crash Prediction Module (CPM) is intended as a faithful implementation of HSM Part C predictive methods. As NCHRP projects to develop new predictive methods for the HSM are completed, FHWA works to incorporate the new methods into IHSDM, sometimes in advance of publication in the HSM. The following new crash predictive methods have been accepted by NCHRP project panels and incorporated into IHSDM, while pending AASHTO's approval for incorporation into a future edition of the HSM:

- Roundabouts: completed in 2018 under NCHRP Project 17-70, the new methods will provide improved outcomes for the safety analysis of roundabouts.
- 6+ lane and one-way urban/suburban arterials (including models for segments and intersections): completed under NCHRP Project 17-58.

However, in the absence of local calibration factors (see HSM-1 Part C, Appendix A for guidance on calibration of the predictive models), it is neither appropriate nor advisable to directly compare the results from new models (from NCHRP Projects 17-58 and 17-70) to results from HSM-1 models, as the models were not calibrated to the same base state data sets, and consequently can produce unexpected results. If local calibration factors are available and applied to both new models and HSM-1 models, then it may be appropriate to directly compare the results.*[Note: Work being performed under NCHRP Project 17-72 (Update of Crash Modification Factors for the Highway Safety Manual) is expected to re-calibrate many of the old (HSM-1) and new (e.g., NCHRP 17-70) models to data from a single (or small number of) states, that would allow results from all models to be directly compared.]*

The models produced for NCHRP Project 17-70 have independent value in terms of informing the design of a roundabout and assessing the effects of different design characteristics on the expected safety performance of a roundabout.

The HSM-1 interim method previously included in IHSDM for evaluating roundabouts on urban/suburban arterials (i.e., evaluating an existing intersection and then applying a Crash Modification Factor for replacing the existing intersection with a roundabout) has been deactivated in IHSDM, to minimize any confusion with the new roundabout methodology.

Section Types

Section 1 Evaluation

Section: Section 1
Evaluation Start Location: 0.000
Evaluation End Location: 53+08.000
Area Type: Urban
Functional Class: Arterial
Type of Alignment: Undivided, Multilane
Model Category: Urban/Suburban Arterial
Calibration Factor: 3ST=1.0; 4SG=1.0; 4U=1.0; 5T=1.0;

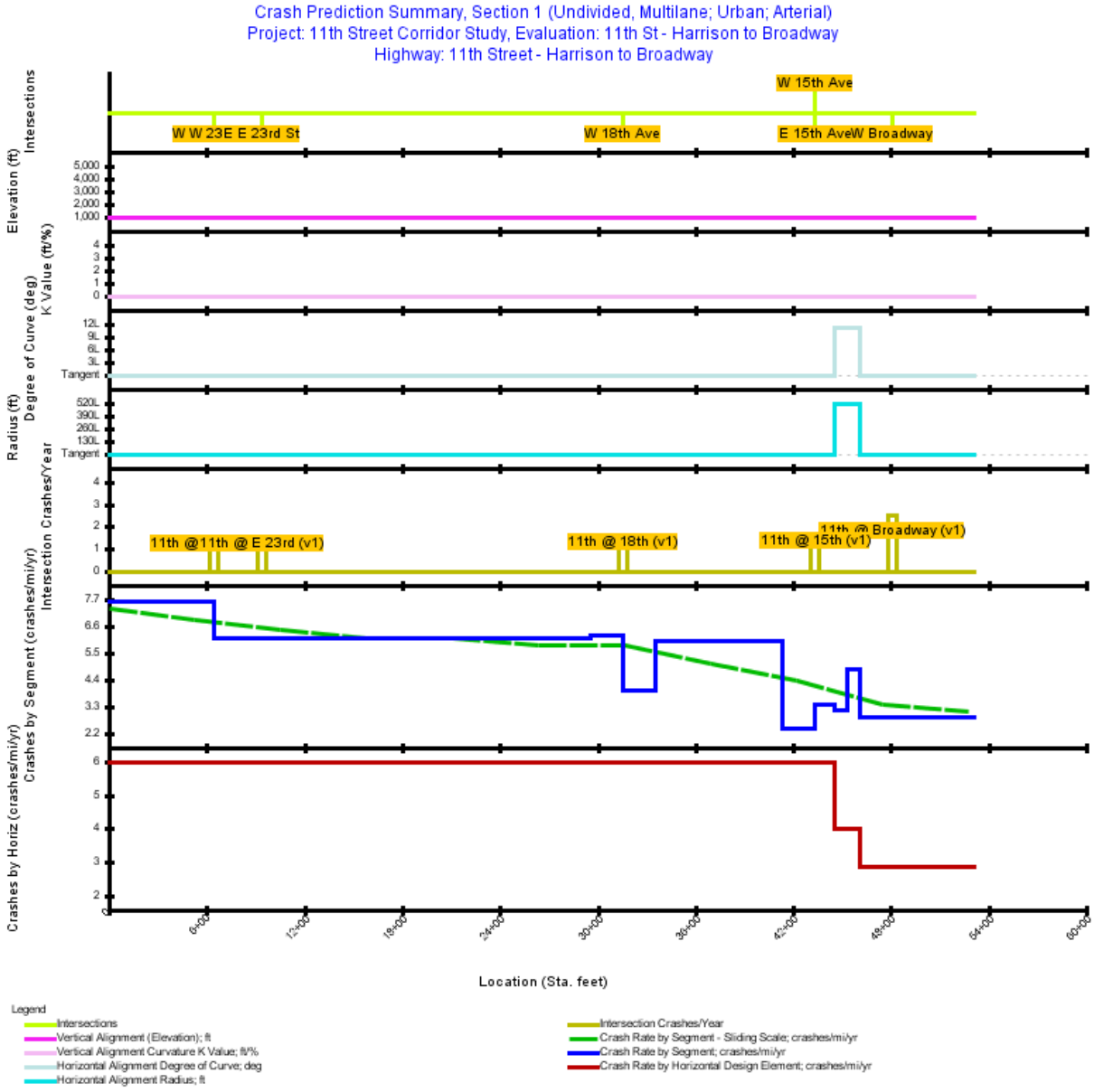


Figure 1. Crash Prediction Summary (Section 1)

Table 1. Evaluation Highway - Homogeneous Segments (Section 1)

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Number Major Commerical Driveways	Number Minor Commerical Driveways	Number Major Industial/Institutional	Number Minor Industial/Institutional	Number Major Residential Driveways	Number Minor Residential Driveways	Number Other Driveways	Lighting	Automated Speed Enforcement	Density (fixed objects /mi)	Median Width (ft)	Type	Effective Median Width (ft)	Speed Level	Number Rail Highway Crossings	Average Shoulder Width (ft)	Average Lane Width (ft)
1	Urban/Suburban Arterial Segment Five-lane including center TWLTL	0.000	6+42.000	642.00	0.1216	2014-2018: 12,800	0	5	0	0	0	0	0	false	false	0.0	0.00	None	0.00	Low	1	0.00	12.00
2	Urban/Suburban Arterial Segment Five-lane including center TWLTL	6+42.000	29+53.000	2,311.00	0.4377	2014-2018: 9,667	0	8	0	0	7	12	0	false	false	0.0	0.00	None	0.00	Low	1	0.00	12.00
3	Urban/Suburban Arterial Segment Four-lane Undivided	29+53.000	31+53.000	200.00	0.0379	2014-2018: 9,667	0	4	0	0	0	0	0	false	false	0.0	0.00	None	0.00	Low	0	0.00	12.00
4	Urban/Suburban Arterial Segment Four-lane Undivided	31+53.000	33+53.000	200.00	0.0379	2014-2018: 9,667	0	1	0	0	0	2	0	false	false	0.0	0.00	None	0.00	Low	0	0.00	12.00
5	Urban/Suburban Arterial Segment Five-lane including center TWLTL	33+53.000	41+35.000	782.00	0.1481	2014-2018: 9,667	0	0	0	0	4	3	0	false	false	0.0	0.00	None	0.00	Low	0	0.00	12.00
6	Urban/Suburban Arterial Segment Four-lane Undivided	41+35.000	43+35.000	200.00	0.0379	2014-2018: 9,667	0	0	0	0	0	0	0	false	false	0.0	0.00	None	0.00	Low	0	0.00	12.00
7	Urban/Suburban Arterial Segment Four-lane Undivided	43+35.000	44+55.870	120.87	0.0229	2014-2018: 9,667	0	0	0	0	0	2	0	false	false	0.0	0.00	None	0.00	Low	0	0.00	12.00
8	Urban/Suburban Arterial Segment Four-lane Undivided	44+55.870	45+35.000	79.13	0.0150	2014-2018: 9,667	0	0	0	0	0	1	0	false	false	0.0	0.00	None	0.00	Low	0	0.00	12.00
9	Urban/Suburban Arterial Segment Four-lane Undivided	45+35.000	46+12.870	77.87	0.0147	2014-2018: 9,667	0	1	0	0	0	0	0	false	false	0.0	0.00	None	0.00	Low	0	0.00	12.00
10	Urban/Suburban Arterial Segment Four-lane Undivided	46+12.870	53+08.000	695.13	0.1317	2014-2018: 9,667	0	1	0	0	0	2	0	false	false	0.0	0.00	None	0.00	Low	0	0.00	12.00

Table 2. Evaluation Intersection (Section 1)

Inter. No.	Title	Type	Location (Sta. ft)	Major AADT	Minor AADT	Legs	Traffic Control	Approaches w/Left Turn Lanes	Approaches w/Right Turn Lanes	Approaches w/o Right Turn on Red	Pedestrian Volume (crossings/day)	Lighted at Night	Red Light Camera	School Nearby	Number of Bus Stops	Number of Alcohol Sales Establishments	Max Lanes Crossed
1	11th @ W 23rd (v1)	Urban/Suburban Arterial Intersection Three-Legged w/STOP control	6+42.000	2014-2018: 12,800	2014-2018: 1,600	3	Stop-Controlled	0	0			true					
2	11th @ 18th (v1)	Urban/Suburban Arterial Intersection Four-Legged Signalized	31+53.000	2014-2018: 9,667	2014-2018: 2,350	4	Signalized	2	0	0	20	true	false	false	0	0	5
3	11th @ Broadway (v1)	Urban/Suburban Arterial Intersection Four-Legged Signalized	48+08.000	2014-2018: 9,667	2014-2018: 8,600	4	Signalized	0	0	0	20	true	false	false	0	0	4
4	11th @ E 23rd (v1)	Urban/Suburban Arterial Intersection Three-Legged w/STOP control	9+36.000	2014-2018: 9,667	2014-2018: 2,650	3	Stop-Controlled	0	0			false					
5	11th @ 15th (v1)	Urban/Suburban Arterial Intersection Four-Legged Signalized	43+35.000	2014-2018: 9,667	2014-2018: 3,500	4	Signalized	2	0	0	20	true	false	false	0	0	5

Table 3. Predicted Highway Crash Rates and Frequencies Summary (Section 1)

First Year of Analysis	**2014**
Last Year of Analysis	**2018**
Evaluated Length (mi)	**1.0053**
Average Future Road AADT (vpd)	**10,046**
Predicted Crashes	
Total Crashes	**69.52**
Fatal and Injury Crashes	**23.22**
Property-Damage-Only Crashes	**46.31**
Percent of Total Predicted Crashes	
Percent Fatal and Injury Crashes (%)	**33**
Percent Property-Damage-Only Crashes (%)	**67**
Predicted Crash Rate	
Crash Rate (crashes/mi/yr)	**13.8314**
FI Crash Rate (crashes/mi/yr)	**4.6191**
PDO Crash Rate (crashes/mi/yr)	**9.2123**
Predicted Travel Crash Rate	
Total Travel (million veh-mi)	**18.43**
Travel Crash Rate (crashes/million veh-mi)	**3.77**
Travel FI Crash Rate (crashes/million veh-mi)	**1.26**
Travel PDO Crash Rate (crashes/million veh-mi)	**2.51**

Table 4. Predicted Crash Frequencies and Rates by Highway Segment/Intersection (Section 1)

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Predicted Crashes for Evaluation Period	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	Predicted Crash Rate (crashes/mi/yr)	Predicted Travel Crash Rate (crashes/million veh-mi)	Predicted Intersection Travel Crash Rate (crashes/million veh)
1	0.000	6+42.000	0.1216	4.634	0.9268	0.3002	0.6266	7.6220	1.63	
11th @ W 23rd (v1)	6+42.000			6.564	1.3129	0.4986	0.8143			0.30
2	6+42.000	29+53.000	0.4377	13.322	2.6644	0.8724	1.7921	6.0875	1.73	
11th @ E 23rd (v1)	9+36.000			6.875	1.3750	0.4967	0.8784			0.34
3	29+53.000	31+53.000	0.0379	1.176	0.2351	0.0825	0.1526	6.2078	1.76	
11th @ 18th (v1)	31+53.000			7.544	1.5087	0.4877	1.0210			0.35
4	31+53.000	33+53.000	0.0379	0.750	0.1500	0.0516	0.0983	3.9589	1.12	
5	33+53.000	41+35.000	0.1481	4.448	0.8896	0.2913	0.5983	6.0068	1.70	
6	41+35.000	43+35.000	0.0379	0.460	0.0919	0.0305	0.0614	2.4270	0.69	
11th @ 15th (v1)	43+35.000			8.280	1.6561	0.5336	1.1225			0.37
7	43+35.000	44+55.870	0.0229	0.389	0.0778	0.0265	0.0513	3.3978	0.96	
8	44+55.870	45+35.000	0.0150	0.237	0.0475	0.0161	0.0314	3.1684	0.90	
9	45+35.000	46+12.870	0.0147	0.358	0.0716	0.0249	0.0467	4.8546	1.38	
10	46+12.870	53+08.000	0.1317	1.888	0.3776	0.1272	0.2503	2.8678	0.81	
11th @ Broadway (v1)	48+08.000			12.598	2.5197	0.8037	1.7160			0.39
All Segments			1.0053	27.662	5.5323	1.8234	3.7089	5.5031	1.50	
All Intersections				41.862	8.3724	2.8202	5.5522			0.35
Total			1.0053	69.524	13.9047	4.6436	9.2612	13.8314		

Table 5. Predicted Crash Frequencies and Rates by Horizontal Design Element (Section 1)

Title	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Predicted Crashes for Evaluation Period	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	Predicted Crash Rate (crashes/mi/yr)	Predicted Travel Crash Rate (crashes/million veh-mi)
Tangent	0.000	44+55.870	0.8439	25.178	5.0357	1.6551	3.3806	5.9670	1.61
Simple Curve 1	44+55.870	46+12.870	0.0297	0.595	0.1191	0.0410	0.0781	4.0048	1.14
Tangent	46+12.870	53+08.000	0.1317	1.888	0.3776	0.1272	0.2503	2.8678	0.81

Table 6. Predicted Crash Frequencies by Year (Section 1)

Year	Total Crashes	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)
2014	13.90	4.64	33.396	9.26	66.604
2015	13.90	4.64	33.396	9.26	66.604
2016	13.90	4.64	33.396	9.26	66.604
2017	13.90	4.64	33.396	9.26	66.604
2018	13.90	4.64	33.396	9.26	66.604
Total	69.52	23.22	33.396	46.31	66.604
Average	13.90	4.64	33.396	9.26	66.604

Note: *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

Table 7. Predicted Five Lane or Fewer Crash Type Distribution (Section 1)

Element Type	Crash Type	Fatal and Injury		Property Damage Only		Total	
		Crashes	Crashes (%)	Crashes	Crashes (%)	Crashes	Crashes (%)
Highway Segment	Collision with Animal	0.02	0.0	0.15	0.2	0.17	0.2
Highway Segment	Collision with Bicycle	1.09	1.6	0.00	0.0	1.09	1.6
Highway Segment	Collision with Fixed Object	0.59	0.8	2.84	4.1	3.43	4.9
Highway Segment	Collision with Other Object	0.01	0.0	0.20	0.3	0.21	0.3
Highway Segment	Other Single-vehicle Collision	0.74	1.1	0.47	0.7	1.21	1.7
Highway Segment	Collision with Pedestrian	0.73	1.1	0.00	0.0	0.73	1.1
Highway Segment	Total Single Vehicle Crashes	3.18	4.6	3.66	5.3	6.84	9.8
Highway Segment	Angle Collision	0.30	0.4	0.69	1.0	0.99	1.4
Highway Segment	Driveway-related Collision	2.14	3.1	5.39	7.8	7.53	10.8
Highway Segment	Head-on Collision	0.13	0.2	0.04	0.1	0.17	0.2
Highway Segment	Other Multi-vehicle Collision	0.10	0.1	0.37	0.5	0.47	0.7
Highway Segment	Rear-end Collision	2.92	4.2	5.92	8.5	8.84	12.7
Highway Segment	Sideswipe, Opposite Direction Collision	0.08	0.1	0.12	0.2	0.21	0.3
Highway Segment	Sideswipe, Same Direction Collision	0.26	0.4	2.35	3.4	2.61	3.8
Highway Segment	Total Multiple Vehicle Crashes	5.94	8.5	14.88	21.4	20.82	29.9
Highway Segment	Total Highway Segment Crashes	9.12	13.1	18.55	26.7	27.66	39.8
Intersection	Collision with Animal	0.00	0.0	0.03	0.0	0.04	0.1
Intersection	Collision with Bicycle	0.62	0.9	0.00	0.0	0.62	0.9
Intersection	Collision with Fixed Object	1.07	1.5	2.62	3.8	3.69	5.3
Intersection	Non-Collision	0.17	0.2	0.10	0.1	0.27	0.4
Intersection	Collision with Other Object	0.12	0.2	0.25	0.4	0.37	0.5
Intersection	Other Single-vehicle Collision	0.06	0.1	0.07	0.1	0.13	0.2
Intersection	Collision with Parked Vehicle	0.00	0.0	0.01	0.0	0.01	0.0
Intersection	Collision with Pedestrian	0.46	0.7	0.00	0.0	0.46	0.7
Intersection	Total Intersection Single Vehicle Crashes	2.51	3.6	3.08	4.4	5.59	8.0
Intersection	Angle Collision	4.01	5.8	6.15	8.8	10.15	14.6
Intersection	Head-on Collision	0.55	0.8	0.69	1.0	1.25	1.8
Intersection	Other Multi-vehicle Collision	0.68	1.0	5.37	7.7	6.05	8.7
Intersection	Rear-end Collision	5.11	7.3	11.62	16.7	16.73	24.1
Intersection	Sideswipe	1.25	1.8	0.84	1.2	2.09	3.0
Intersection	Total Intersection Multiple Vehicle Crashes	11.59	16.7	24.68	35.5	36.27	52.2
Intersection	Total Intersection Crashes	14.10	20.3	27.76	39.9	41.86	60.2
	Total Crashes	23.22	33.4	46.31	66.6	69.52	100.0

Note: *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

Interactive Highway Safety Design Model

Crash Prediction Evaluation Report

11th Street - Broadway St to Charles St

January 4, 2021

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Report Overview

Report Generated: Jan 4, 2021 11:32 AM
Report Template: System: Multi-Page [System] (mlcpm2, Dec 21, 2020 5:10 PM)

Evaluation Date: Mon Jan 04 11:32:27 CST 2021
IHSDM Version: v16.0.0 (Sep 30, 2020)
Crash Prediction Module: v11.0.0 (Sep 30, 2020)

User Name: jmetz
Organization Name:
Phone:
E-Mail:

Project Title: 11th Street Corridor Study
Project Comment: Created Tue Dec 15 13:04:45 CST 2020
Project Unit System: U.S. Customary

Highway Title: 11th Street - Broadway to Charles
Highway Comment: Created Fri Dec 18 13:43:19 CST 2020
Highway Version: 1

Evaluation Title: 11th St - Broadway to Charles
Evaluation Comment: Created Mon Jan 04 11:32:10 CST 2021

Minimum Location: 0.000
Maximum Location: 36+52.000
Policy for Superelevation: AASHTO 2011 U.S. Customary
Calibration: HSM Configuration
Crash Distribution: HSM Configuration
Model/CMF: HSM Configuration
First Year of Analysis: 2014
Last Year of Analysis: 2018
Empirical-Bayes Analysis: None
First Year of Observed Crashes:
Last Year of Observed Crashes:

Disclaimer Regarding Crash Prediction Method

IMPORTANT NOTICE ABOUT COMPARING RESULTS FROM HIGHWAY SAFETY MANUAL FIRST EDITION (2010) MODELS TO RESULTS FROM NEW MODELS DEVELOPED UNDER NCHRP PROJECTS 17-70 AND 17-58

Since the publication of the Highway Safety Manual - First Edition (HSM-1), in 2010 by the American Association of State Highway and Transportation Officials (AASHTO), multiple research efforts have been undertaken through the National Cooperative Highway Research Program (NCHRP) to develop safety performance models for road segment and intersection facility types that were not initially reflected in the HSM-1, in order to expand the breadth and depth of the HSM in the future.

The IHSDM Crash Prediction Module (CPM) is intended as a faithful implementation of HSM Part C predictive methods. As NCHRP projects to develop new predictive methods for the HSM are completed, FHWA works to incorporate the new methods into IHSDM, sometimes in advance of publication in the HSM. The following new crash predictive methods have been accepted by NCHRP project panels and incorporated into IHSDM, while pending AASHTO's approval for incorporation into a future edition of the HSM:

- Roundabouts: completed in 2018 under NCHRP Project 17-70, the new methods will provide improved outcomes for the safety analysis of roundabouts.
- 6+ lane and one-way urban/suburban arterials (including models for segments and intersections): completed under NCHRP Project 17-58.

However, in the absence of local calibration factors (see HSM-1 Part C, Appendix A for guidance on calibration of the predictive models), it is neither appropriate nor advisable to directly compare the results from new models (from NCHRP Projects 17-58 and 17-70) to results from HSM-1 models, as the models were not calibrated to the same base state data sets, and consequently can produce unexpected results. If local calibration factors are available and applied to both new models and HSM-1 models, then it may be appropriate to directly compare the results.*[Note: Work being performed under NCHRP Project 17-72 (Update of Crash Modification Factors for the Highway Safety Manual) is expected to re-calibrate many of the old (HSM-1) and new (e.g., NCHRP 17-70) models to data from a single (or small number of) states, that would allow results from all models to be directly compared.]*

The models produced for NCHRP Project 17-70 have independent value in terms of informing the design of a roundabout and assessing the effects of different design characteristics on the expected safety performance of a roundabout.

The HSM-1 interim method previously included in IHSDM for evaluating roundabouts on urban/suburban arterials (i.e., evaluating an existing intersection and then applying a Crash Modification Factor for replacing the existing intersection with a roundabout) has been deactivated in IHSDM, to minimize any confusion with the new roundabout methodology.

Section Types

Section 1 Evaluation

Section: Section 1
Evaluation Start Location: 0.000
Evaluation End Location: 34+52.000
Area Type: Urban
Functional Class: Arterial
Type of Alignment: Undivided, Multilane
Model Category: Urban/Suburban Arterial
Calibration Factor: 4SG=1.0; 4ST=1.0; 4U=1.0;

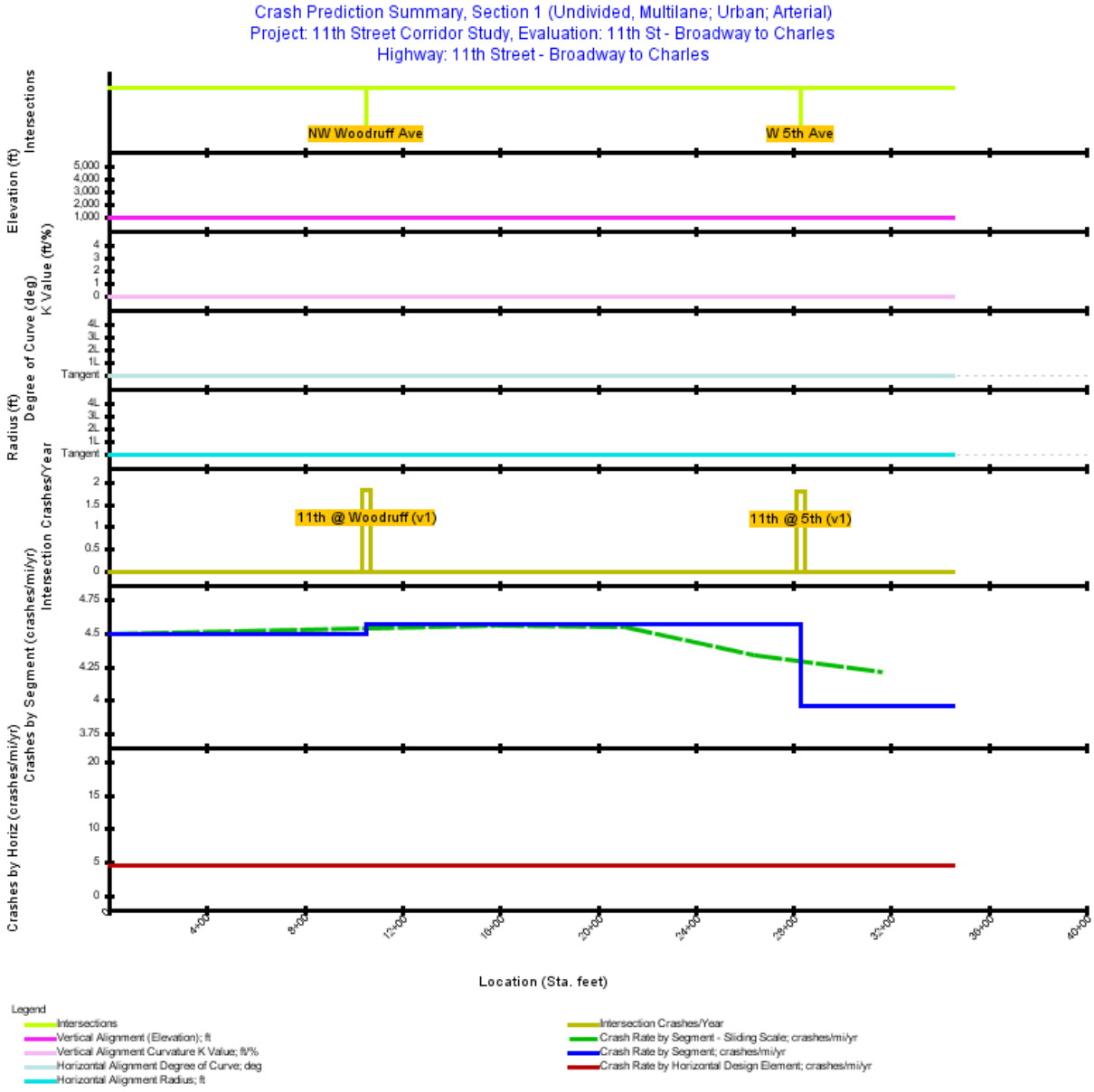


Figure 1. Crash Prediction Summary (Section 1)

Table 1. Evaluation Highway - Homogeneous Segments (Section 1)

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Number Major Commericial Driveways	Number Minor Commericial Driveways	Number Major Industial/Institutional	Number Minor Industial/Institutional	Number Major Residential Driveways	Number Minor Residential Driveways	Number Other Driveways	Lighting	Automated Speed Enforcement	Density (fixed objects /mi)	Median Width (ft)	Type	Effective Median Width (ft)	Speed Level	Number Rail Highway Crossings	Average Shoulder Width (ft)	Average Lane Width (ft)
1	Urban/Suburban Arterial Segment Four-lane Undivided	0.000	10+51.000	1,051.00	0.1991	2014-2018: 9,288	1	4	0	0	3	2	0	false	false	0.0	0.00	None	0.00	Low	2	0.00	12.00
2	Urban/Suburban Arterial Segment Four-lane Undivided	10+51.000	28+31.000	1,780.00	0.3371	2014-2018: 10,000	0	1	0	0	7	19	0	false	false	0.0	0.00	None	0.00	Low	0	0.00	12.00
3	Urban/Suburban Arterial Segment Four-lane Undivided	28+31.000	34+52.000	621.00	0.1176	2014-2018: 9,200	0	0	0	0	2	8	0	false	false	0.0	0.00	None	0.00	Low	0	0.00	12.00

Table 2. Evaluation Intersection (Section 1)

Inter. No.	Title	Type	Location (Sta. ft)	Major AADT	Minor AADT	Legs	Traffic Control	Approaches w/Left Turn Lanes	Approaches w/Right Turn Lanes	Approaches w/o Right Turn on Red	Pedestrian Volume (crossings/day)	Lighted at Night	Red Light Camera	School Nearby	Number of Bus Stops	Number of Alcohol Sales Establishments	Max Lanes Crossed
1	11th @ Woodruff (v1)	Urban/Suburban Arterial Intersection Four-Legged w/STOP control	10+51.000	2014-2018: 10,000	2014-2018: 1,750	4	Stop-Controlled	0	0			true					
2	11th @ 5th (v1)	Urban/Suburban Arterial Intersection Four-Legged Signalized	28+31.000	2014-2018: 10,000	2014-2018: 1,700	4	Signalized	0	0	0	20	true	false	false	0	0	4

Table 3. Predicted Highway Crash Rates and Frequencies Summary (Section 1)

First Year of Analysis	**2014**
Last Year of Analysis	**2018**
Evaluated Length (mi)	**0.6538**
Average Future Road AADT (vpd)	**9,639**
Predicted Crashes	
Total Crashes	**32.59**
Fatal and Injury Crashes	**11.44**
Property-Damage-Only Crashes	**21.15**
Percent of Total Predicted Crashes	
Percent Fatal and Injury Crashes (%)	**35**
Percent Property-Damage-Only Crashes (%)	**65**
Predicted Crash Rate	
Crash Rate (crashes/mi/yr)	**9.9696**
FI Crash Rate (crashes/mi/yr)	**3.4983**
PDO Crash Rate (crashes/mi/yr)	**6.4713**
Predicted Travel Crash Rate	
Total Travel (million veh-mi)	**11.50**
Travel Crash Rate (crashes/million veh-mi)	**2.83**
Travel FI Crash Rate (crashes/million veh-mi)	**0.99**
Travel PDO Crash Rate (crashes/million veh-mi)	**1.84**

Table 4. Predicted Crash Frequencies and Rates by Highway Segment/Intersection (Section 1)

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Predicted Crashes for Evaluation Period	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	Predicted Crash Rate (crashes/mi/yr)	Predicted Travel Crash Rate (crashes/million veh-mi)	Predicted Intersection Travel Crash Rate (crashes/million veh)
1	0.000	10+51.000	0.1991	4.476	0.8951	0.3113	0.5838	4.4969	1.33	
11th @ Woodruff (v1)	10+51.000			9.157	1.8314	0.7041	1.1273			0.44
2	10+51.000	28+31.000	0.3371	7.704	1.5408	0.5324	1.0084	4.5704	1.25	
11th @ 5th (v1)	28+31.000			8.930	1.7860	0.5786	1.2074			0.43
3	28+31.000	34+52.000	0.1176	2.323	0.4647	0.1608	0.3039	3.9508	1.18	
All Segments			0.6538	14.503	2.9006	1.0045	1.8961	4.4366	1.26	
All Intersections				18.087	3.6174	1.2827	2.3347			0.44
Total			0.6538	32.590	6.5180	2.2871	4.2308	9.9696		

Table 5. Predicted Crash Frequencies and Rates by Horizontal Design Element (Section 1)

Title	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Predicted Crashes for Evaluation Period	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	Predicted Crash Rate (crashes/mi/yr)	Predicted Travel Crash Rate (crashes/million veh-mi)
Tangent	0.000	34+52.000	0.6538	14.503	2.9006	1.0045	1.8961	4.4366	1.26

Table 6. Predicted Crash Frequencies by Year (Section 1)

Year	Total Crashes	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)
2014	6.52	2.29	35.090	4.23	64.910
2015	6.52	2.29	35.090	4.23	64.910
2016	6.52	2.29	35.090	4.23	64.910
2017	6.52	2.29	35.090	4.23	64.910
2018	6.52	2.29	35.090	4.23	64.910
Total	32.59	11.44	35.090	21.15	64.910
Average	6.52	2.29	35.090	4.23	64.910

Note: *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

Table 7. Predicted Five Lane or Fewer Crash Type Distribution (Section 1)

Element Type	Crash Type	Fatal and Injury		Property Damage Only		Total	
		Crashes	Crashes (%)	Crashes	Crashes (%)	Crashes	Crashes (%)
Highway Segment	Collision with Animal	0.00	0.0	0.00	0.0	0.00	0.0
Highway Segment	Collision with Bicycle	0.15	0.5	0.00	0.0	0.15	0.5
Highway Segment	Collision with Fixed Object	0.31	1.0	1.10	3.4	1.41	4.3
Highway Segment	Collision with Other Object	0.01	0.0	0.04	0.1	0.05	0.2
Highway Segment	Other Single-vehicle Collision	0.19	0.6	0.22	0.7	0.41	1.2
Highway Segment	Collision with Pedestrian	0.31	0.9	0.00	0.0	0.31	0.9
Highway Segment	Total Single Vehicle Crashes	0.97	3.0	1.36	4.2	2.33	7.2
Highway Segment	Angle Collision	0.34	1.0	0.51	1.6	0.85	2.6
Highway Segment	Driveway-related Collision	2.18	6.7	4.20	12.9	6.38	19.6
Highway Segment	Head-on Collision	0.14	0.4	0.02	0.0	0.16	0.5
Highway Segment	Other Multi-vehicle Collision	0.10	0.3	0.31	1.0	0.42	1.3
Highway Segment	Rear-end Collision	0.95	2.9	1.98	6.1	2.94	9.0
Highway Segment	Sideswipe, Opposite Direction Collision	0.15	0.5	0.12	0.4	0.28	0.8
Highway Segment	Sideswipe, Same Direction Collision	0.17	0.5	0.98	3.0	1.15	3.5
Highway Segment	Total Multiple Vehicle Crashes	4.05	12.4	8.12	24.9	12.17	37.3
Highway Segment	Total Highway Segment Crashes	5.02	15.4	9.48	29.1	14.50	44.5
Intersection	Collision with Animal	0.00	0.0	0.02	0.1	0.02	0.1
Intersection	Collision with Bicycle	0.29	0.9	0.00	0.0	0.29	0.9
Intersection	Collision with Fixed Object	0.38	1.2	1.06	3.3	1.45	4.4
Intersection	Non-Collision	0.09	0.3	0.05	0.2	0.14	0.4
Intersection	Collision with Other Object	0.04	0.1	0.09	0.3	0.13	0.4
Intersection	Other Single-vehicle Collision	0.03	0.1	0.02	0.0	0.04	0.1
Intersection	Collision with Parked Vehicle	0.00	0.0	0.00	0.0	0.00	0.0
Intersection	Collision with Pedestrian	0.24	0.7	0.00	0.0	0.24	0.7
Intersection	Total Intersection Single Vehicle Crashes	1.07	3.3	1.24	3.8	2.31	7.1
Intersection	Angle Collision	2.12	6.5	2.99	9.2	5.10	15.7
Intersection	Head-on Collision	0.24	0.7	0.31	1.0	0.55	1.7
Intersection	Other Multi-vehicle Collision	0.31	0.9	2.23	6.8	2.54	7.8
Intersection	Rear-end Collision	2.09	6.4	4.51	13.8	6.60	20.2
Intersection	Sideswipe	0.59	1.8	0.39	1.2	0.98	3.0
Intersection	Total Intersection Multiple Vehicle Crashes	5.34	16.4	10.43	32.0	15.77	48.4
Intersection	Total Intersection Crashes	6.41	19.7	11.67	35.8	18.09	55.5
	Total Crashes	11.44	35.1	21.15	64.9	32.59	100.0

Note: *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

Section 2 Evaluation

Section: Section 2
Evaluation Start Location: 34+52.000
Evaluation End Location: 36+52.000
Area Type: Urban
Functional Class: Arterial
Type of Alignment: One Direction
Model Category: Urban/Suburban Arterial
Calibration Factor: 2O=1.0; 3SG=1.0;

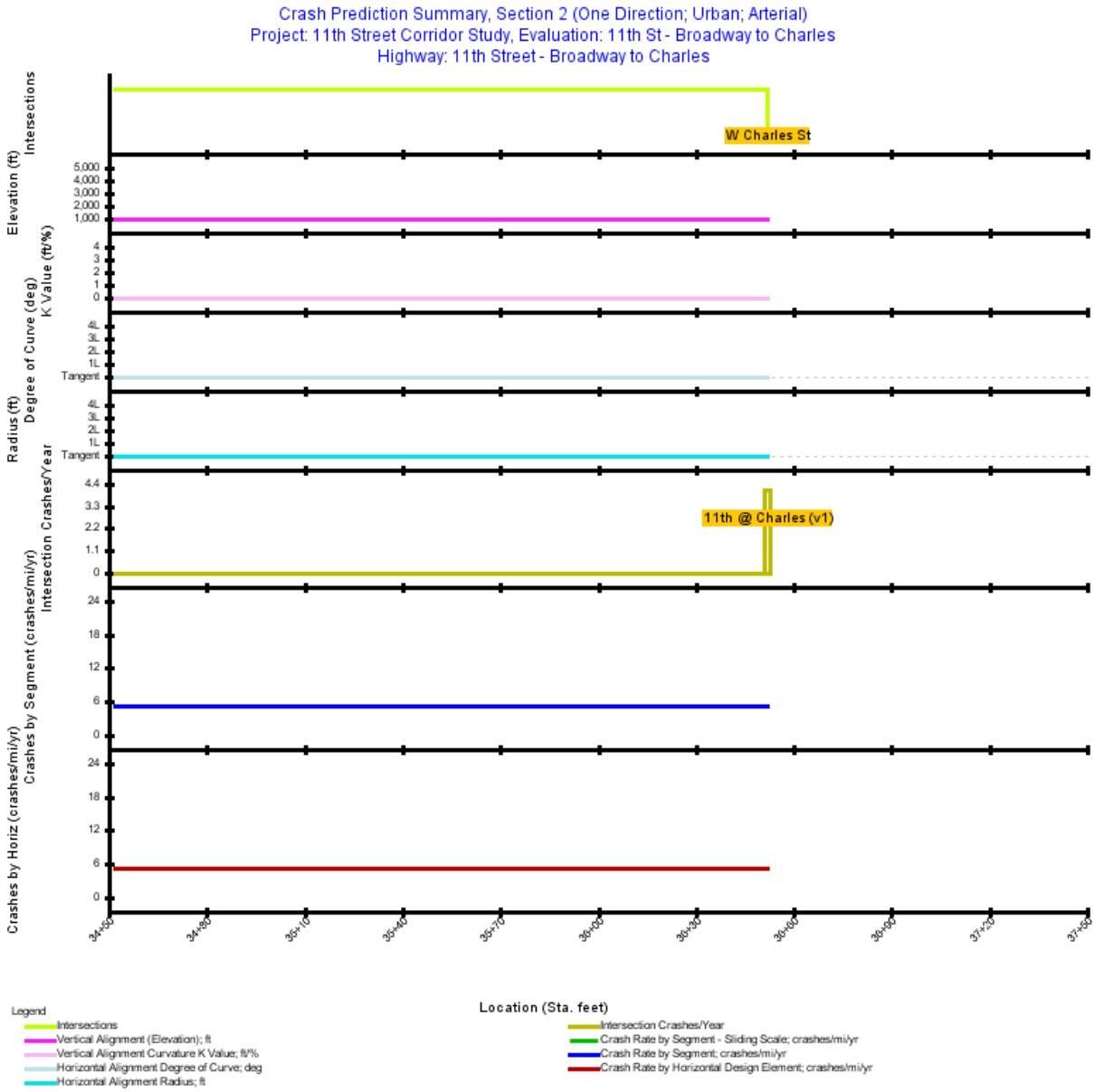


Figure 2. Crash Prediction Summary (Section 2)

Table 8. Evaluation Highway - Homogeneous Segments (Section 2)

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Number Major Commericial Driveways	Number Minor Commericial Driveways	Number Major Industial/Institutional	Number Minor Industial/Institutional	Number Major Residential Driveways	Number Minor Residential Driveways	Number Other Driveways	Lighting	Automated Speed Enforcement	Has Bike Facility	Density (fixed objects/mi)	Median Width (ft)	Type	Effective Median Width (ft)	Speed Level	Number Rail Highway Crossings	Average Shoulder Width (ft)	Average Lane Width (ft)
4	Urban/Suburban Arterial Segment Two-lane One-way Arterial	34+52.000	36+52.000	200.00	0.0379	2014-2018: 9,200	0	0	0	0	0	1	0	false	false	false	0.0	0.00	None	0.00	Low	0	0.00	12.00

Table 9. Evaluation Intersection (Section 2)

Inter. No.	Title	Type	Location (Sta. ft)	Major AADT	Minor AADT	Legs	Traffic Control	Approaches w/Left Turn Lanes	Approaches w/Right Turn Lanes	Approaches w/o Right Turn on Red	Pedestrian Volume (crossings/day)	Lighted at Night	Red Light Camera	School Nearby	Number of Bus Stops	Number of Alcohol Sales Establishments	Max Lanes Crossed
3	11th @ Charles (v1)	Urban/Suburban Arterial Intersection Three-Legged Signalized	36+51.997	2014-2018: 9,200	2014-2018: 19,500	3	Signalized	2	2	0	15	true	false	true	0	0	5

Table 10. Predicted Highway Crash Rates and Frequencies Summary (Section 2)

First Year of Analysis	**2014**
Last Year of Analysis	**2018**
Evaluated Length (mi)	**0.0379**
Average Future Road AADT (vpd)	**9,200**
Predicted Crashes	
Total Crashes	**21.52**
Fatal and Injury Crashes	**5.51**
Property-Damage-Only Crashes	**16.01**
Percent of Total Predicted Crashes	
Percent Fatal and Injury Crashes (%)	**26**
Percent Property-Damage-Only Crashes (%)	**74**
Predicted Crash Rate	
Crash Rate (crashes/mi/yr)	**113.6070**
FI Crash Rate (crashes/mi/yr)	**29.0770**
PDO Crash Rate (crashes/mi/yr)	**84.5299**
Predicted Travel Crash Rate	
Total Travel (million veh-mi)	**0.64**
Travel Crash Rate (crashes/million veh-mi)	**33.83**
Travel FI Crash Rate (crashes/million veh-mi)	**8.66**
Travel PDO Crash Rate (crashes/million veh-mi)	**25.17**

Table 11. Predicted Crash Frequencies and Rates by Highway Segment/Intersection (Section 2)

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Predicted Crashes for Evaluation Period	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	Predicted Crash Rate (crashes/mi/yr)	Predicted Travel Crash Rate (crashes/million veh-mi)	Predicted Intersection Travel Crash Rate (crashes/million veh)
4	34+52.000	36+52.000	0.0379	0.995	0.1990	0.0583	0.1408	5.2548	1.56	
11th @ Charles (v1)	36+51.997			20.521	4.1042	1.0431	3.0611			0.48
All Segments			0.0379	0.995	0.1990	0.0583	0.1408	5.2548	1.56	
All Intersections				20.521	4.1042	1.0431	3.0611			0.48
Total			0.0379	21.517	4.3033	1.1014	3.2019	113.6070		

Table 12. Predicted Crash Frequencies and Rates by Horizontal Design Element (Section 2)

Title	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Predicted Crashes for Evaluation Period	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	Predicted Crash Rate (crashes/mi/yr)	Predicted Travel Crash Rate (crashes/million veh-mi)
Tangent	34+52.000	36+52.000	0.0379	0.995	0.1990	0.0583	0.1408	5.2548	1.56

Table 13. Predicted Crash Frequencies by Year (Section 2)

Year	Total Crashes	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)
2014	4.30	1.10	25.594	3.20	74.406
2015	4.30	1.10	25.594	3.20	74.406
2016	4.30	1.10	25.594	3.20	74.406
2017	4.30	1.10	25.594	3.20	74.406
2018	4.30	1.10	25.594	3.20	74.406
Total	21.52	5.51	25.594	16.01	74.406
Average	4.30	1.10	25.594	3.20	74.406

Note: *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

Table 14. Predicted Crash Severity by Urban Arterial (Section 2)

Seg. No.	Type	Fatal (K) Crashes (crashes)	Incapacitating Injury (A) Crashes (crashes)	Non-Incapacitating Injury (B) Crashes (crashes)	Possible Injury (C) Crashes (crashes)	No Injury (O) Crashes (crashes)
4	USASegment	0.0031	0.0286	0.1054	0.1543	0.7038
3	USAIntersection	0.0110	0.2285	1.2474	3.7286	15.3057
All Segments		0.0031	0.0286	0.1054	0.1543	0.7038
All Intersections		0.0110	0.2285	1.2474	3.7286	15.3057
Total		0.0142	0.2571	1.3528	3.8829	16.0095

Table 15. Predicted One-way Arterial Crash Type Distribution (Section 2)

Element Type	Crash Type	Fatal and Injury		Property Damage Only		Total	
		Crashes	Crashes (%)	Crashes	Crashes (%)	Crashes	Crashes (%)
Highway Segment	Collision with Animal	0.02	0.1	0.02	0.1	0.04	0.2
Highway Segment	Collision with Bicycle	0.01	0.1	0.00	0.0	0.01	0.1
Highway Segment	Collision with Fixed Object	0.01	0.0	0.04	0.2	0.04	0.2
Highway Segment	Collision with Other Object	0.00	0.0	0.01	0.1	0.01	0.1
Highway Segment	Other Single-vehicle Collision	0.02	0.1	0.02	0.1	0.04	0.2
Highway Segment	Collision with Pedestrian	0.02	0.1	0.00	0.0	0.02	0.1
Highway Segment	Total Segment Single Vehicle Crashes	0.07	0.3	0.09	0.4	0.17	0.8
Highway Segment	Angle Collision	0.03	0.1	0.05	0.2	0.07	0.3
Highway Segment	Head-on Collision	0.01	0.0	0.01	0.0	0.01	0.1
Highway Segment	Other Multi-vehicle Collision	0.01	0.0	0.05	0.2	0.06	0.3
Highway Segment	Rear-end Collision	0.13	0.6	0.27	1.3	0.41	1.9
Highway Segment	Sideswipe, Opposite Direction Collision	0.01	0.0	0.03	0.1	0.04	0.2
Highway Segment	Sideswipe, Same Direction Collision	0.04	0.2	0.20	1.0	0.24	1.1
Highway Segment	Total Segment Multiple Vehicle Crashes	0.22	1.0	0.61	2.8	0.83	3.9
Highway Segment	Total Highway Segment Crashes	0.29	1.4	0.70	3.3	0.99	4.6
Intersection	Angle Collision	4.30	20.0	8.74	40.6	13.04	60.6
Intersection	Collision with Bicycle	0.32	1.5	0.00	0.0	0.32	1.5
Intersection	Head-on Collision	0.00	0.0	0.00	0.0	0.00	0.0
Intersection	Other Multi-vehicle Collision	0.00	0.0	1.09	5.1	1.09	5.1
Intersection	Other Single-vehicle Collision	0.00	0.0	0.00	0.0	0.00	0.0
Intersection	Collision with Pedestrian	0.06	0.3	0.00	0.0	0.06	0.3
Intersection	Rear-end Collision	0.54	2.5	2.19	10.2	2.73	12.7
Intersection	Sideswipe	0.00	0.0	3.27	15.2	3.27	15.2
Intersection	Total Intersection Total Vehicle Crashes	5.22	24.3	15.29	71.1	20.51	95.4
Intersection	Total Intersection Crashes	5.22	24.3	15.29	71.1	20.51	95.4
	Total Crashes	5.51	25.6	15.99	74.4	21.50	100.0

Note: *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

Interactive Highway Safety Design Model

Crash Prediction Evaluation Report

11th Street - Charles St at 11th St Intersection

January 4, 2021

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Report Overview

Report Generated: Jan 4, 2021 1:51 PM
Report Template: System: Multi-Page [System] (mlcpm2, Dec 21, 2020 5:10 PM)

Evaluation Date: Mon Jan 04 13:51:39 CST 2021
IHSDM Version: v16.0.0 (Sep 30, 2020)
Crash Prediction Module: v11.0.0 (Sep 30, 2020)

User Name: jmetz
Organization Name:
Phone:
E-Mail:

Project Title: 11th Street Corridor Study
Project Comment: Created Tue Dec 15 13:04:45 CST 2020
Project Unit System: U.S. Customary

Highway Title: Charles St
Highway Comment: Created Fri Dec 18 14:46:33 CST 2020
Highway Version: 1

Evaluation Title: INTX Evaluation
Evaluation Comment: Created Mon Jan 04 13:51:25 CST 2021

Minimum Location: 0.000
Maximum Location: 10+00.000
Policy for Superelevation: AASHTO 2011 U.S. Customary
Calibration: HSM Configuration
Crash Distribution: HSM Configuration
Model/CMF: HSM Configuration
First Year of Analysis: 2014
Last Year of Analysis: 2018
Empirical-Bayes Analysis: None
First Year of Observed Crashes:
Last Year of Observed Crashes:

Disclaimer Regarding Crash Prediction Method

IMPORTANT NOTICE ABOUT COMPARING RESULTS FROM HIGHWAY SAFETY MANUAL FIRST EDITION (2010) MODELS TO RESULTS FROM NEW MODELS DEVELOPED UNDER NCHRP PROJECTS 17-70 AND 17-58

Since the publication of the Highway Safety Manual - First Edition (HSM-1), in 2010 by the American Association of State Highway and Transportation Officials (AASHTO), multiple research efforts have been undertaken through the National Cooperative Highway Research Program (NCHRP) to develop safety performance models for road segment and intersection facility types that were not initially reflected in the HSM-1, in order to expand the breadth and depth of the HSM in the future.

The IHSDM Crash Prediction Module (CPM) is intended as a faithful implementation of HSM Part C predictive methods. As NCHRP projects to develop new predictive methods for the HSM are completed, FHWA works to incorporate the new methods into IHSDM, sometimes in advance of publication in the HSM. The following new crash predictive methods have been accepted by NCHRP project panels and incorporated into IHSDM, while pending AASHTO's approval for incorporation into a future edition of the HSM:

- Roundabouts: completed in 2018 under NCHRP Project 17-70, the new methods will provide improved outcomes for the safety analysis of roundabouts.
- 6+ lane and one-way urban/suburban arterials (including models for segments and intersections): completed under NCHRP Project 17-58.

However, in the absence of local calibration factors (see HSM-1 Part C, Appendix A for guidance on calibration of the predictive models), it is neither appropriate nor advisable to directly compare the results from new models (from NCHRP Projects 17-58 and 17-70) to results from HSM-1 models, as the models were not calibrated to the same base state data sets, and consequently can produce unexpected results. If local calibration factors are available and applied to both new models and HSM-1 models, then it may be appropriate to directly compare the results.*[Note: Work being performed under NCHRP Project 17-72 (Update of Crash Modification Factors for the Highway Safety Manual) is expected to re-calibrate many of the old (HSM-1) and new (e.g., NCHRP 17-70) models to data from a single (or small number of) states, that would allow results from all models to be directly compared.]*

The models produced for NCHRP Project 17-70 have independent value in terms of informing the design of a roundabout and assessing the effects of different design characteristics on the expected safety performance of a roundabout.

The HSM-1 interim method previously included in IHSDM for evaluating roundabouts on urban/suburban arterials (i.e., evaluating an existing intersection and then applying a Crash Modification Factor for replacing the existing intersection with a roundabout) has been deactivated in IHSDM, to minimize any confusion with the new roundabout methodology.

Section Types

Section 1 Evaluation

Section: Section 1
Evaluation Start Location: 0.000
Evaluation End Location: 10+00.000
Area Type: Urban
Functional Class: Arterial
Type of Alignment: Divided, Multilane
Model Category: Urban/Suburban Arterial
Calibration Factor: 3SG=1.0; 4D=1.0; 4U=1.0;

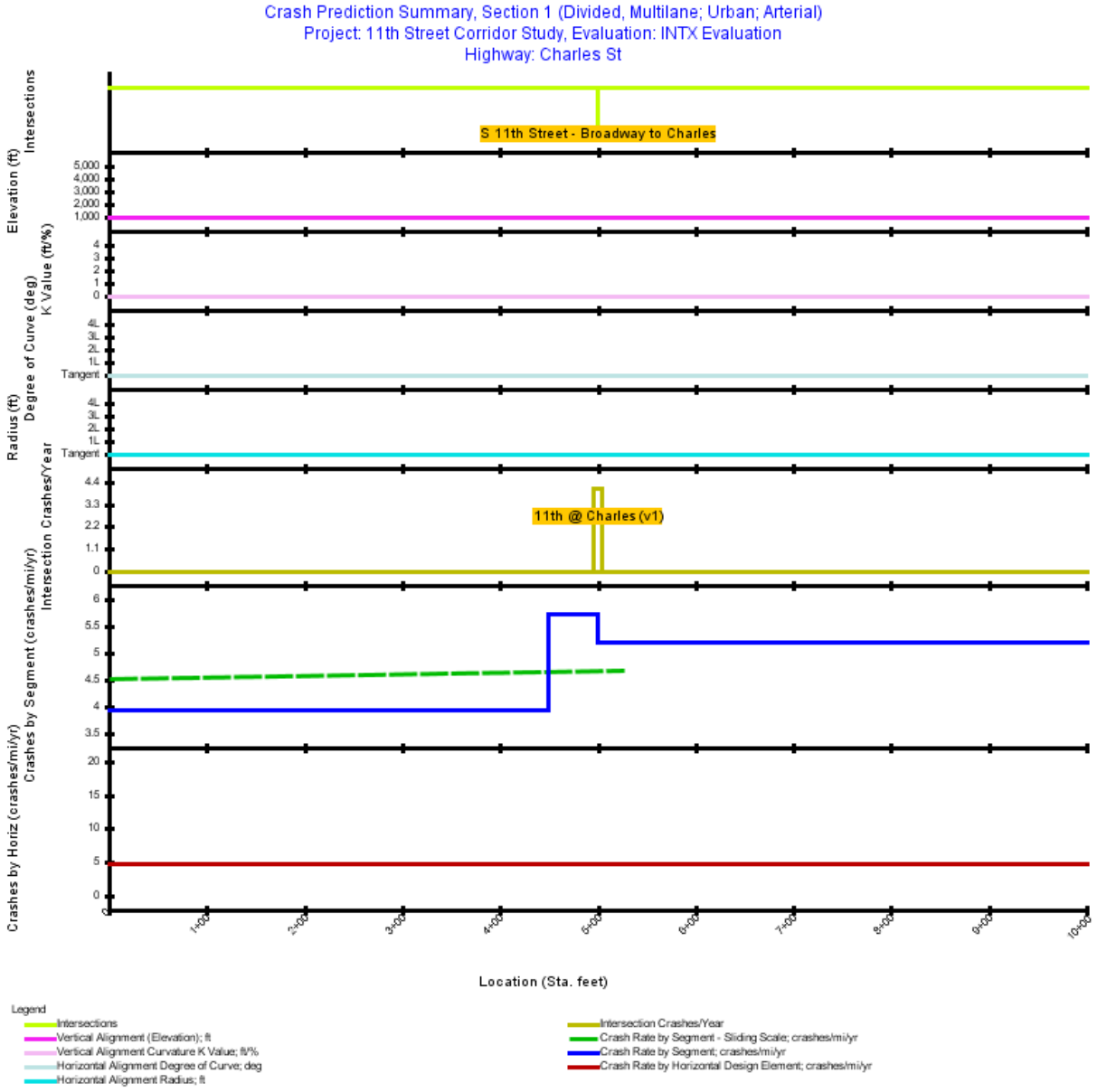


Figure 1. Crash Prediction Summary (Section 1)

Table 1. Evaluation Highway - Homogeneous Segments (Section 1)

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Number Major Commerical Driveways	Number Minor Commerical Driveways	Number Major Industial/Institutional	Number Minor Industial/Institutional	Number Major Residential Driveways	Number Minor Residential Driveways	Number Other Driveways	Lighting	Automated Speed Enforcement	Density (fixed objects/mi)	Median Width (ft)	Type	Effective Median Width (ft)	Speed Level	Number Rail Highway Crossings	Average Shoulder Width (ft)	Average Lane Width (ft)
1	Urban/Suburban Arterial Segment Four-lane Divided	0.000	4+50.000	450.00	0.0852	2014-2018: 19,500	0	0	0	0	0	0	0	false	false	0.0	16.00	Non-Traversable Median	16.00	Low	0	0.00	12.00
2	Urban/Suburban Arterial Segment Four-lane Undivided	4+50.000	5+00.000	50.00	0.0095	2014-2018: 19,500	0	0	0	0	0	0	0	false	false	0.0	0.00	None	0.00	Low	0	0.00	12.00
3	Urban/Suburban Arterial Segment Four-lane Undivided	5+00.000	7+00.000	200.00	0.0379	2014-2018: 18,100	0	0	0	0	0	0	0	false	false	0.0	0.00	None	0.00	Low	0	0.00	12.00
4	Urban/Suburban Arterial Segment Four-lane Undivided	7+00.000	10+0.000	300.00	0.0568	2014-2018: 18,100	0	0	0	0	0	0	0	false	false	0.0	0.00	None	0.00	Low	0	0.00	12.00

Table 2. Evaluation Intersection (Section 1)

Inter. No.	Title	Type	Location (Sta. ft)	Major AADT	Minor AADT	Legs	Traffic Control	Approaches w/Left Turn Lanes	Approaches w/Right Turn Lanes	Approaches w/o Right Turn on Red	Pedestrian Volume (crossings/day)	Lighted at Night	Red Light Camera	School Nearby	Number of Bus Stops	Number of Alcohol Sales Establishments	Max Lanes Crossed
1	11th @ Charles (v1)	Urban/Suburban Arterial Intersection Three-Legged Signalized	5+00.000	2014-2018: 9,200	2014-2018: 19,500	3	Signalized	2	2	0	15	true	false	true	0	0	5

Table 3. Predicted Highway Crash Rates and Frequencies Summary (Section 1)

First Year of Analysis	**2014**
Last Year of Analysis	**2018**
Evaluated Length (mi)	**0.1894**
Average Future Road AADT (vpd)	**18,800**
Predicted Crashes	
Total Crashes	**24.94**
Fatal and Injury Crashes	**6.61**
Property-Damage-Only Crashes	**18.33**
Percent of Total Predicted Crashes	
Percent Fatal and Injury Crashes (%)	**27**
Percent Property-Damage-Only Crashes (%)	**73**
Predicted Crash Rate	
Crash Rate (crashes/mi/yr)	**26.3361**
FI Crash Rate (crashes/mi/yr)	**6.9810**
PDO Crash Rate (crashes/mi/yr)	**19.3551**
Predicted Travel Crash Rate	
Total Travel (million veh-mi)	**6.50**
Travel Crash Rate (crashes/million veh-mi)	**3.84**
Travel FI Crash Rate (crashes/million veh-mi)	**1.02**
Travel PDO Crash Rate (crashes/million veh-mi)	**2.82**

Table 4. Predicted Crash Frequencies and Rates by Highway Segment/Intersection (Section 1)

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Predicted Crashes for Evaluation Period	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	Predicted Crash Rate (crashes/mi/yr)	Predicted Travel Crash Rate (crashes/million veh-mi)	Predicted Intersection Travel Crash Rate (crashes/million veh)
1	0.000	4+50.000	0.0852	1.681	0.3362	0.1061	0.2301	3.9448	0.55	
2	4+50.000	5+00.000	0.0095	0.270	0.0541	0.0170	0.0371	5.7114	0.80	
11th @ Charles (v1)	5+00.000			20.521	4.1042	1.0431	3.0611			0.48
3	5+00.000	7+00.000	0.0379	0.987	0.1973	0.0624	0.1350	5.2099	0.79	
4	7+00.000	10+00.000	0.0568	1.480	0.2960	0.0936	0.2024	5.2099	0.79	
All Segments			0.1894	4.418	0.8837	0.2790	0.6046	4.6657	0.68	
All Intersections				20.521	4.1042	1.0431	3.0611			0.48
Total			0.1894	24.939	4.9879	1.3222	3.6657	26.3361		

Table 5. Predicted Crash Frequencies and Rates by Horizontal Design Element (Section 1)

Title	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Predicted Crashes for Evaluation Period	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	Predicted Crash Rate (crashes/mi/yr)	Predicted Travel Crash Rate (crashes/million veh-mi)
Tangent	0.000	10+00.000	0.1894	4.418	0.8837	0.2790	0.6046	4.6657	0.68

Table 6. Predicted Crash Frequencies by Year (Section 1)

Year	Total Crashes	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)
2014	4.99	1.32	26.507	3.67	73.493
2015	4.99	1.32	26.507	3.67	73.493
2016	4.99	1.32	26.507	3.67	73.493
2017	4.99	1.32	26.507	3.67	73.493
2018	4.99	1.32	26.507	3.67	73.493
Total	24.94	6.61	26.507	18.33	73.493
Average	4.99	1.32	26.507	3.67	73.493

Note: *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

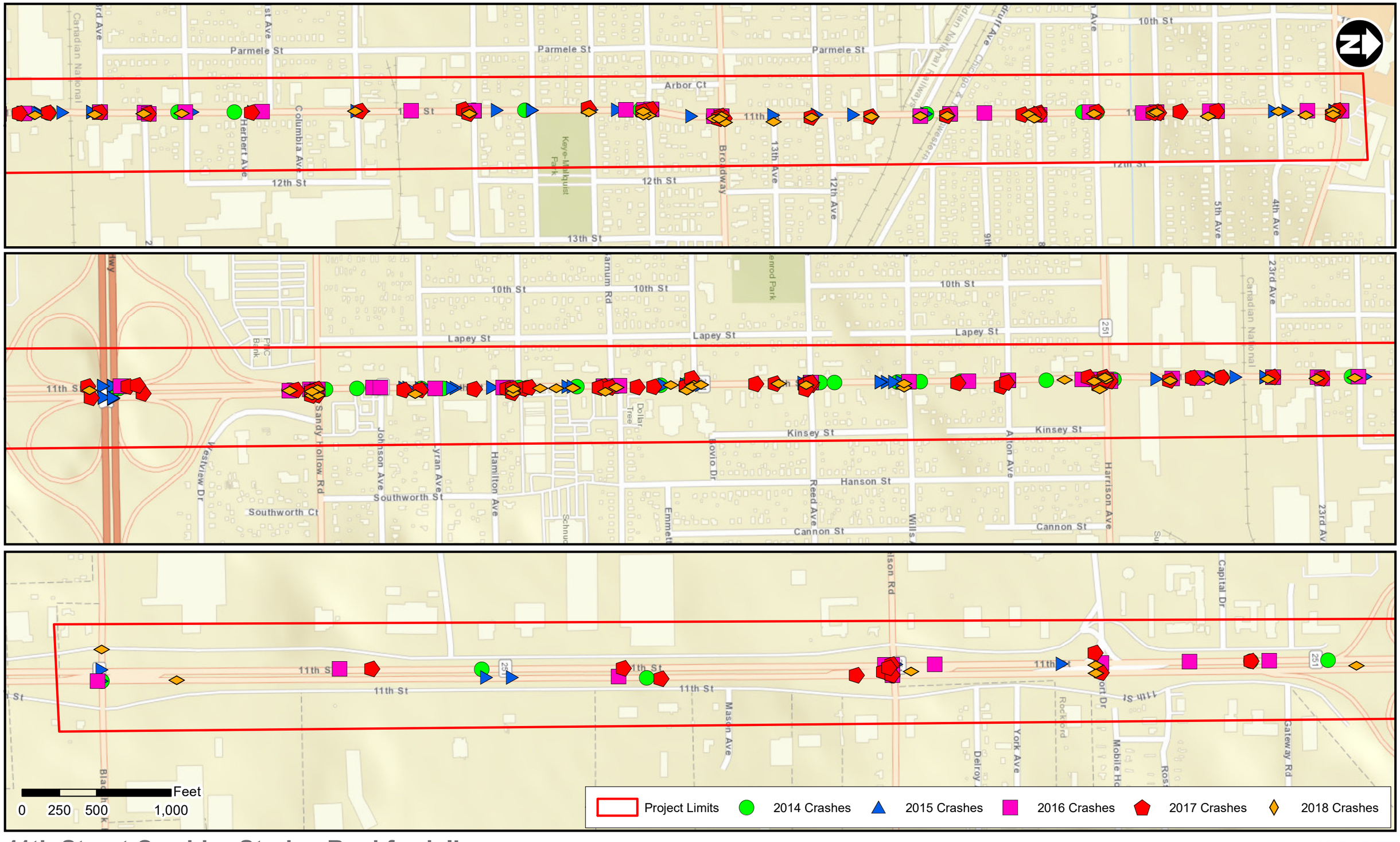
Table 7. Predicted Crash Severity by Urban Arterial (Section 1)

Seg. No.	Type	Fatal (K) Crashes (crashes)	Incapacitating Injury (A) Crashes (crashes)	Non-Incapacitating Injury (B) Crashes (crashes)	Possible Injury (C) Crashes (crashes)	No Injury (O) Crashes (crashes)
1	USAIntersection	0.0110	0.2285	1.2474	3.7286	15.3057

Table 8. Predicted Five Lane or Fewer Crash Type Distribution (Section 1)

Element Type	Crash Type	Fatal and Injury		Property Damage Only		Total	
		Crashes	Crashes (%)	Crashes	Crashes (%)	Crashes	Crashes (%)
Highway Segment	Collision with Animal	0.00	0.0	0.01	0.3	0.01	0.3
Highway Segment	Collision with Bicycle	0.05	1.1	0.00	0.0	0.05	1.1
Highway Segment	Collision with Fixed Object	0.10	2.2	0.50	11.2	0.59	13.5
Highway Segment	Collision with Other Object	0.00	0.1	0.01	0.3	0.02	0.4
Highway Segment	Other Single-vehicle Collision	0.07	1.5	0.09	1.9	0.15	3.5
Highway Segment	Collision with Pedestrian	0.16	3.7	0.00	0.0	0.16	3.7
Highway Segment	Total Single Vehicle Crashes	0.38	8.6	0.61	13.9	0.99	22.5
Highway Segment	Angle Collision	0.13	3.0	0.23	5.1	0.36	8.2
Highway Segment	Driveway-related Collision	0.00	0.0	0.00	0.0	0.00	0.0
Highway Segment	Head-on Collision	0.06	1.3	0.01	0.3	0.07	1.6
Highway Segment	Other Multi-vehicle Collision	0.05	1.2	0.18	4.2	0.24	5.4
Highway Segment	Rear-end Collision	0.63	14.3	1.36	30.8	2.00	45.2
Highway Segment	Sideswipe, Opposite Direction Collision	0.06	1.3	0.05	1.1	0.10	2.4
Highway Segment	Sideswipe, Same Direction Collision	0.08	1.8	0.58	13.0	0.66	14.8
Highway Segment	Total Multiple Vehicle Crashes	1.01	22.9	2.41	54.6	3.42	77.5
Highway Segment	Total Highway Segment Crashes	1.40	31.6	3.02	68.4	4.42	100.0
	Total Crashes	1.40	31.6	3.02	68.4	4.42	100.0

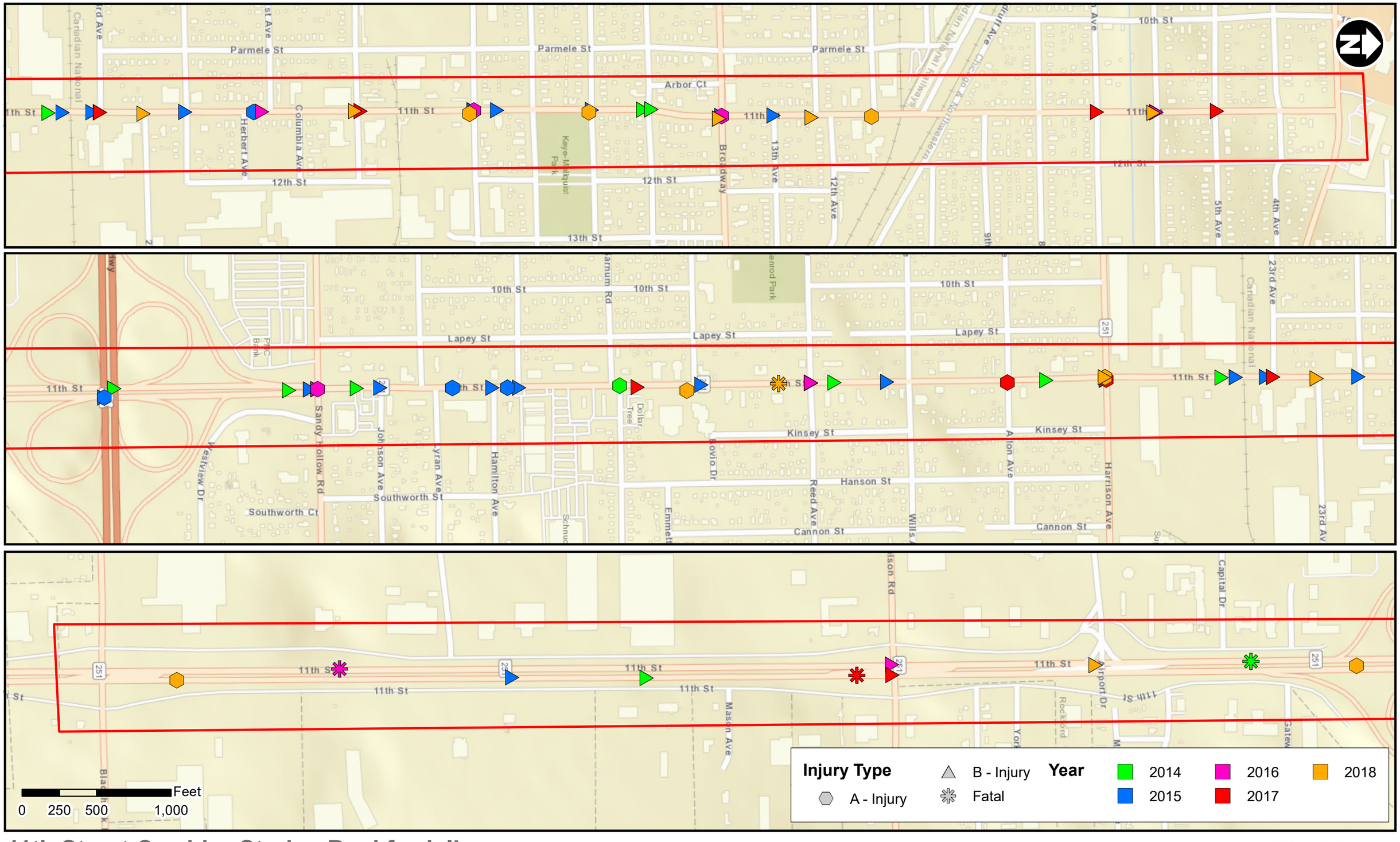
Note: *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.



11th Street Corridor Study - Rockford, IL

Crash Study

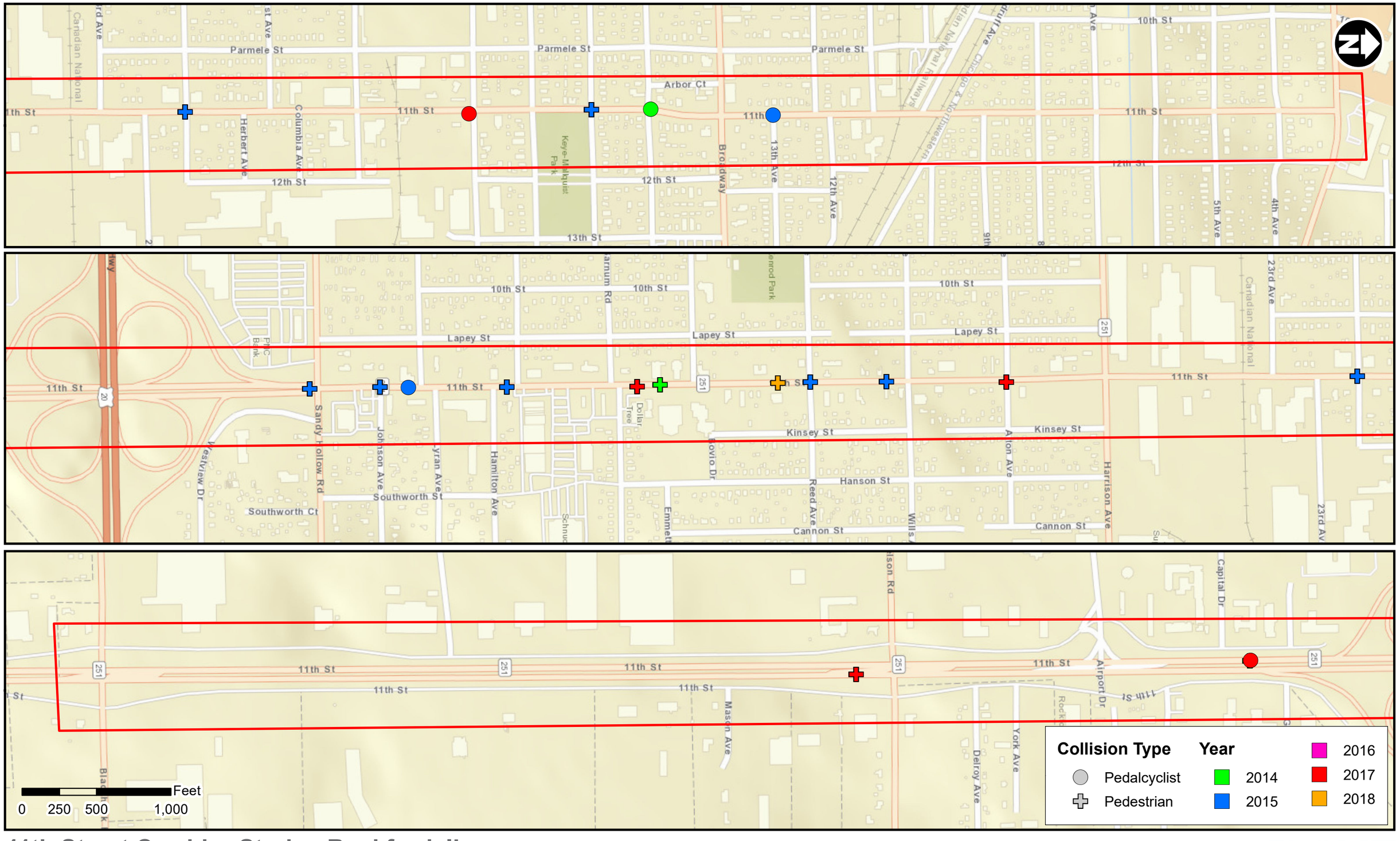
CMT
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11th Street Corridor Study - Rockford, IL

Crash Study - Fatality/Injury Crashes

CMT
Crawford, Murphy & Tilly



11th Street Corridor Study - Rockford, IL

Crash Study - Pedestrian Crashes

CMT
Crawford, Murphy & Tilly

CMF / CRF Details

CMF ID: 1420

Convert signal from pedestal-mounted to mast arm

Description:

Prior Condition: Existing pedestals were removed and replaced with mast arm signals

Category: Intersection traffic control

Study: *Signalized Intersections: Informational Guide*, Rodegerdts et al., 2004

Star Quality Rating:	★★★☆☆ [View score details]

Crash Modification Factor (CMF)	
Value:	0.51
Adjusted Standard Error:	
Unadjusted Standard Error:	0.031

Crash Reduction Factor (CRF)	
Value:	49 *(This value indicates a **decrease** in crashes)*
Adjusted Standard Error:	

Unadjusted Standard Error:	3.1

Applicability

Crash Type:	All
Crash Severity:	All
Roadway Types:	Not specified
Number of Lanes:	
Road Division Type:	
Speed Limit:	
Area Type:	
Traffic Volume:	
Time of Day:	All

If countermeasure is intersection-based

Intersection Type:	Roadway/roadway (not interchange related)
Intersection Geometry:	
Traffic Control:	Signalized
Major Road Traffic Volume:	
Minor Road Traffic Volume:	

Development Details

Date Range of Data Used:	
Municipality:	
State:	KS

Country:	usa
Type of Methodology Used:	Simple before/after
Sample Size Used:	Crashes
Before Sample Size Used:	809 Crashes
After Sample Size Used:	412 Crashes

Other Details

Included in Highway Safety Manual?	No
Date Added to Clearinghouse:	Dec-01-2009
Comments:	

This site is funded by the U.S. Department of Transportation Federal Highway Administration and maintained by the University of North Carolina Highway Safety Research Center

The information contained in the Crash Modification Factors (CMF) Clearinghouse is disseminated under the sponsorship of the U.S. Department of Transportation in the interest of information exchange. The U.S. Government assumes no liability for the use of the information contained in the CMF Clearinghouse. The information contained in the CMF Clearinghouse does not constitute a standard, specification, or regulation, nor is it a substitute for sound engineering judgment.

COLLABORATIVE PLANNING FOR NORTHERN ILLINOIS

Date: October 22nd, 2020

To: Jeremy Metz; Crawford, Murphy and Tilly, Inc.

From: Brandon Geber, Region 1 Planning Council MPO

Re: October 9th, 2020 11th St Corridor Study - 2050 ADT Projection Request

---

Mr. Metz:

Please find the requested 2050 traffic projections for the No-Build and Build scenarios of the 11th Street Corridor project on the following page.

The RPC MPO Travel Demand Model (TDM) is calibrated to Illinois Department of Transportation (IDOT) 2015 traffic counts and has a horizon year of 2040. Raw model outputs from the 2040 Planned Network forecast were processed in accordance with methods outlined in *NCHRP 765*, adjusted to the most recent IDOT traffic count, and interpolated from 2040 to 2050. The Illinois State Highway System is counted bi-annually and many non-state highway roadways are counted on a 4- to 5-year cycle.

The RPC MPO TDM does not include network links for the 11th Street Frontage roads, Woodruff Avenue both East and West of 11th Street, and 5th Avenue East of 11th St. In the instance where a pre-existing count was available, the general annual growth rate (AGR) of the parent zone was applied to the count. Where a pre-existing count was not available to base an estimate, the zonal AGR is provided to aid in your future work.

Lastly, the historic truck volumes have been updated to reflect all truck classifications to match our model input. IDOT breaks truck volume estimates into two groups, single-units (FHWA vehicle classification categories 4-7) and multi-units (FHWA vehicle classification categories 8-15). Some data sources, such a those displayed in IDOT's Getting Around Illinois webpage, only display the count of multi-units. In order to correct this omission, IDOT's Illinois Roadway Information System spatial datasets from 2009 – 2019 were researched. If a count was not able to be verified within the date range, the modeled volume was utilized. Unfortunately, a truck volume was not able to be estimated for links without a recent count or modeled volume.

Thank you for contacting us for this local traffic projection. We are available to respond to any questions regarding this report.

Jon Paul Diipla
JPDiipla@r1planning.org
(815) 319-4183

Brandon Geber
BGeber@r1planning.org
(815) 319-4457

	IDOT-Count					Interpolation			
	2012	2017		2019		2050 No Build		2050 Build	
	Total	Total	Truck	Total	Truck	Total	Truck	Total	Truck
11th St: Blackhawk Rd & Samuelson Rd	-	7750	575	-	-	8879	1197	8829	1188
11th St: Samuelson Rd & Airport Dr	-	-	-	10000	1100	10493	1395	10749	1410
11th St: Airport Dr & US 20	-	-	-	17900	1875	18379	2210	18605	2218
11th St: US 20 & Sandy Hallow Rd	-	-	-	13600	1425	15362	1714	15284	1702
11th St: Sandy Hallow Rd & Harrison Ave	-	-	-	16133	1282	17733	1495	16880	1446
11th St: Harrison Ave & 23rd Ave	-	12800	-	-	-	14076	970	11825	843
11th St: 23rd Ave & Broadway Ave	-	9667	-	-	-	10506	697	6980	503
11th St: Broadway Ave & Woodruff Ave	-	9288	-	-	-	10893	804	7543	550
11th St: Woodruff Ave & 5th Ave	-	10000	-	-	-	11590	815	8197	561
11th St: 5th Ave & Charles St	-	9200	-	-	-	8544	458	5386	245
Blackhawk Rd (West of 11th St)	-	1500	-	-	-	1665	96	1634	95
Blackhawk Rd (East of 11th St)	-	2050	-	-	-	1122	39	2277	48
Samuelson Rd (West of 11th St)	-	2050	-	-	-	1958	127	1952	127
Samuelson Rd (East of 11th St)	-	3250	-	-	-	3237	53	2996	51
Airport Dr (West of 11th St)	-	4950	-	-	-	5153	410	5159	410
US 20 (West of 11th St)	-	-	-	31500	3700	41494	4492	41635	4506
US 20 (East of 11th St)	-	-	-	37200	5000	51208	6233	51011	6223
Sandy Hallow Rd (West of 11th St)	-	10300	-	-	-	10728	565	10676	563
Sandy Hallow Rd (East of 11th St)	-	10050	-	-	-	9060	12	9524	12
Harrison Ave (West of 11th St)	-	-	-	13300	1300	14293	1394	15015	1477
Harrison Ave (East of 11th St)	12900	-	-	-	-	13022	789	13314	795
23rd Ave (West of 11th St)	-	1600	-	-	-	1737	47	2060	79
23rd Ave (East of 11th St)	-	2650	-	-	-	2469	37	2620	48
Broadway Ave (West of 11th St)	-	7700	-	-	-	6837	76	7649	84
Broadway Ave (East of 11th St)	-	8600	-	-	-	5167	51	5772	36
5th Ave (West of 11th St)	-	1700	-	-	-	3884	174	2782	151
Charles St (West of 11th St)	-	19500	-	-	-	18421	1308	16835	1067
Charles St (East of 11th St)	-	18100	-	-	-	18163	757	18044	752
US 20 WB from NB IL 251	-	1100	-	-	-	999	36	1070	38
US 20 WB from SB IL 251	-	1600	-	-	-	1448	38	1462	38
US 20 EB from NB IL 251	-	2500	-	-	-	3214	474	3223	475
US 20 EB from SB IL 251	-	2200	-	-	-	3282	204	3160	204
US 20 WB to NB IL 251	-	2300	-	-	-	3734	295	3599	292
US 20 WB to SB IL 251	-	1800	-	-	-	1999	375	2003	375
US 20 EB to NB IL 251	-	1150	-	-	-	1090	21	1098	21
US 20 EB to SB IL 251	-	1250	-	-	-	1186	49	1200	49
W Front. (Blackhawk Rd & Milford Ave)	850	-	-	-	-	915	-	915	-
W Front. (Milford Ave & Samuelson Rd)	2050	-	-	-	-	2206	-	2206	-
W Front. (Samuelson Rd & Airport Dr)	450	-	-	-	-	442	-	442	-
W Front. (Airport Dr & Dead End)	350	-	-	-	-	344	-	344	-
E Front. (Blackhawk Rd & Samuelson Rd)	-	1050	-	-	-	1126	-	1126	-
E Front. (Samuelson Rd & Airport Dr)	-	1050	-	-	-	1072	-	1072	-
E Front. (Airport Dr & Dead End)	-	1050	-	-	-	1072	-	1072	-
Woodruff (East of 11th St)	-	1750	-	-	-	1852	-	1852	-
Woodruff (West of 11th St)	-	-	-	-	-	Zone AGR:			0.23%
5th Ave (East of 11th St)	-	-	-	-	-	Zone AGR:			0.17%

Mr. Jeremy Metz
Crawford, Murphy, and Tilly
39 Airport Dr
Rockford, IL 61109

Re: Region 1 Planning Council 11th Street Corridor 2050 ADT

Dear Mr. Metz,

Please find attached the requested traffic projections detailing 2050 ADT on Rockford's 11th Street, as well as parallel facilities of interest: Kishwaukee Street, 6th Street, 7th Street, 9th Street, and 20th Street from 23rd Avenue north to Charles Street.

The table provided below details 2050 ADT for the routes of interest. The 'Build' scenario includes the proposed configuration of 11th St with a three (3) lane cross section comprised of one lane per direction and a two-way left turn lane from 23rd Avenue north to Charles Street. Please note that currently, 6th Street is one-way southbound and 9th Street is one-way northbound. While these two (2) facilities have been discussed as being a part of a two-way conversion project, this conversion has not been included in the 'Build' scenario.

			2050 ADT	
Route	2017	2019	No-build	Build
11th St - 23rd Avenue to Charles St (AVG ADT)	9,500		11,807	9,075
20th St - 23rd Avenue to Charles St (AVG ADT)	7,113		6,803	7,250
9th St - 23rd Avenue to Charles St (AVG ADT)	3,130		2,844	3,587
7th St - 23rd Avenue to Charles St (AVG ADT)	2,682		2,155	2,287
6th St - 23rd Avenue to 1st Avenue (AVG ADT)	3,617		4,857	4,647
Kishwaukee St. - 23rd Avenue to 1st Avenue (AVG ADT)	15,500	15,533	11,099	11,981

The RPC MPO Travel Demand Model (TDM) is calibrated to Illinois Department of Transportation (IDOT) 2015 traffic counts and has a horizon year of 2040. Raw model outputs from the 2040 Planned Network as well as the 2015 Existing Network were processed in accordance with methods outlined in *NCHRP 765*, adjusted to the most recent IDOT traffic count within the travel demand model, and projected from 2040 to 2050 with a linear annual growth rate (AGR).

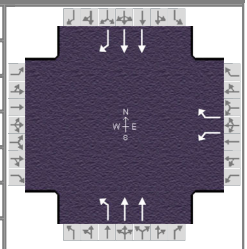
This data is to be used for the outlined project only. It may not be distributed to other agencies without Region 1 Planning Council's written approval.

If you have any questions regarding this data fulfillment, please do not hesitate to call or email me at MMmiller@r1planning.org

Sincerely,
Matthew G. Miller

HCS7 Signalized Intersection Input Data

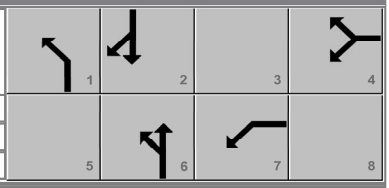
General Information				Intersection Information	
Agency				Duration, h	0.250
Analyst		Analysis Date	1/12/2021	Area Type	Other
Jurisdiction		Time Period		PHF	0.92
Urban Street	11th St	Analysis Year	2021	Analysis Period	1> 7:00
Intersection	US 20 at 11th St (North)	File Name	HCS - Diamond - North INTX.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h				200		360	107	501			618	146

Signal Information			
Cycle, s	75.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	5.5	33.9	21.2	0.0	0.0	0.0						
Yellow	3.5	3.5	3.5	0.0	0.0	0.0						
Red	0.0	2.0	2.0	0.0	0.0	0.0						



Traffic Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h				200		360	107	501			618	146
Initial Queue (Q_b), veh/h				0		0	0	0			0	0
Base Saturation Flow Rate (s_o), veh/h				1900		1900	1900	2000			2000	1900
Parking (N_m), man/h					None			None			None	
Heavy Vehicles (P_{HV}), %				0		0	0	0			0	0
Ped / Bike / RTOR, /h	0	0		0	0		0	0		0	0	0
Buses (N_b), buses/h				0	0	0	0	0	0	0	0	0
Arrival Type (*AT*)				3		3	3	3			3	3
Upstream Filtering (*I*)				1.00		1.00	1.00	1.00			1.00	1.00
Lane Width (*W*), ft				12.0		12.0	12.0	12.0			12.0	12.0
Turn Bay Length, ft				0		0	0	0			0	0
Grade (*Pg*), %		0			0			0			0	
Speed Limit, mi/h				35		35	35	35			35	35

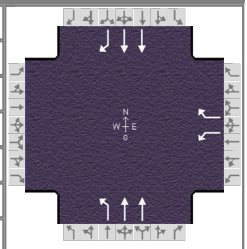
Phase Information	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Maximum Green (G_{max}) or Phase Split, s			25.0	35.0	30.0	40.0		10.0
Yellow Change Interval (*Y*), s			3.5	3.5	3.5	3.5		3.5
Red Clearance Interval (R_c), s			0.0	2.0	0.0	2.0		2.0
Minimum Green (G_{min}), s			15	20	6	6		3
Start-Up Lost Time (*l1*), s			2.0		2.0	2.0		2.0
Extension of Effective Green (*e*), s			2.0		2.0	2.0		2.0
Passage (*PT*), s			3.0	3.0	3.0	2.0		2.0
Recall Mode			Off	Off	Off	Min		Min
Dual Entry			No	Yes	No	Yes		Yes
Walk (*Walk*), s		0.0		0.0		0.0		
Pedestrian Clearance Time (*PC*), s		0.0		0.0		0.0		

Multimodal Information	EB			WB			NB			SB		
85th % Speed / Rest in Walk / Corner Radius	0	No	25	0	No	25	0	No	25			
Walkway / Crosswalk Width / Length, ft	9.0	12	0	9.0	12	0	9.0	12	0			
Street Width / Island / Curb		0		0	0	No	0	0	No	0		No
Width Outside / Bike Lane / Shoulder, ft				12	5.0	2.0	12	5.0	2.0	12	5.0	2.0
Pedestrian Signal / Occupied Parking	No			No		0.50	No		0.50			0.50

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HCS7 Signalized Intersection Results Summary

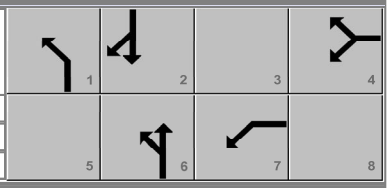
General Information				Intersection Information	
Agency				Duration, h	0.250
Analyst		Analysis Date	1/12/2021	Area Type	Other
Jurisdiction		Time Period		PHF	0.92
Urban Street	11th St	Analysis Year	2021	Analysis Period	1> 7:00
Intersection	US 20 at 11th St (North)	File Name	HCS - Diamond - North INTX.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h				200		360	107	501			618	146

Signal Information			
Cycle, s	75.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	5.5	33.9	21.2	0.0	0.0	0.0
Yellow	3.5	3.5	3.5	0.0	0.0	0.0
Red	0.0	2.0	2.0	0.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase				4	1	6		2
Case Number				9.0	1.0	4.0		7.3
Phase Duration, s				26.7	9.0	48.3		39.4
Change Period, (*Y+R c*), s				5.5	3.5	5.5		5.5
Max Allow Headway (*MAH*), s				4.3	4.1	0.0		0.0
Queue Clearance Time (*g s*), s				19.3	4.3			
Green Extension Time (*g e*), s				1.9	0.4	0.0		0.0
Phase Call Probability				1.00	0.91			
Max Out Probability				0.16	0.00			

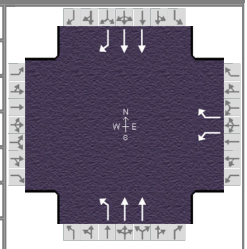
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement				7		14	1	6			2	12
Adjusted Flow Rate (*v*), veh/h				217		391	116	545			672	159
Adjusted Saturation Flow Rate (*s*), veh/h/ln				1810		1610	1810	1904			1904	1610
Queue Service Time (*g s*), s				7.4		17.3	2.3	5.4			8.8	4.5
Cycle Queue Clearance Time (*g c*), s				7.4		17.3	2.3	5.4			8.8	4.5
Green Ratio (*g/C*)				0.28		0.28	0.55	0.57			0.45	0.45
Capacity (*c*), veh/h				511		454	488	2175			1719	727
Volume-to-Capacity Ratio (*X*)				0.426		0.861	0.238	0.250			0.391	0.218
Back of Queue (*Q*), ft/ln (50 th percentile)				75.2		180.5	20.1	48.4			88.9	40.1
Back of Queue (*Q*), veh/ln (50 th percentile)				3.0		7.2	0.8	1.9			3.6	1.6
Queue Storage Ratio (*RQ*) (50 th percentile)				0.00		0.00	0.00	0.00			0.00	0.00
Uniform Delay (*d 1*), s/veh				22.0		25.5	9.0	8.1			13.7	12.5
Incremental Delay (*d 2*), s/veh				0.6		8.6	0.2	0.3			0.7	0.7
Initial Queue Delay (*d 3*), s/veh				0.0		0.0	0.0	0.0			0.0	0.0
Control Delay (*d*), s/veh				22.5		34.2	9.2	8.3			14.4	13.2
Level of Service (LOS)				C		C	A	A			B	B
Approach Delay, s/veh / LOS	0.0			30.0		C	8.5		A	14.1		B
Intersection Delay, s/veh / LOS	17.0						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.31	B	2.31	B	1.65	B	1.38	A
Bicycle LOS Score / LOS				F	1.03	A	1.17	A

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HCS7 Signalized Intersection Intermediate Values

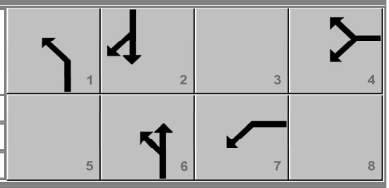
General Information				Intersection Information	
Agency				Duration, h	0.250
Analyst		Analysis Date	1/12/2021	Area Type	Other
Jurisdiction		Time Period		PHF	0.92
Urban Street	11th St	Analysis Year	2021	Analysis Period	1> 7:00
Intersection	US 20 at 11th St (North)	File Name	HCS - Diamond - North INTX.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h				200		360	107	501			618	146

Signal Information			
Cycle, s	75.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	5.5	33.9	21.2	0.0	0.0	0.0						
Yellow	3.5	3.5	3.5	0.0	0.0	0.0						
Red	0.0	2.0	2.0	0.0	0.0	0.0						



Saturation Flow / Delay	L	T	R	L	T	R	L	T	R	L	T	R
Lane Width Adjustment Factor (f_w)				1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles and Grade Factor (f_{HVg})				1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Parking Activity Adjustment Factor (f_p)	0.000	0.000	0.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Bus Blockage Adjustment Factor (f_{bb})	0.000	0.000	0.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Area Type Adjustment Factor (f_a)				1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Lane Utilization Adjustment Factor (f_{LU})	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.952	1.000	1.000	0.952	1.000
Left-Turn Adjustment Factor (f_{LT})				0.952	0.000		0.952	0.000		1.000	1.000	
Right-Turn Adjustment Factor (f_{RT})					0.000	0.847		1.000	1.000		0.000	0.847
Left-Turn Pedestrian Adjustment Factor (f_{Lpb})				1.000			1.000			1.000		
Right-Turn Ped-Bike Adjustment Factor (f_{Rpb})						1.000			1.000			1.000
Work Zone Adjustment Factor (f_{wz})				1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
DDI Factor (f_{DDI})				1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Movement Saturation Flow Rate (s), veh/h				1810	0	1610	1810	3904	0	0	3904	1610
Proportion of Vehicles Arriving on Green (P)	0.00	0.00	0.00	0.28	0.00	0.28	0.07	0.57	0.00	0.00	0.45	0.45
Incremental Delay Factor (k)				0.11		0.20	0.11	0.50			0.50	0.50

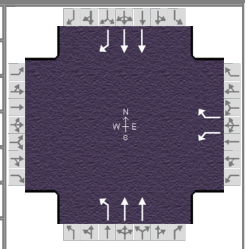
Signal Timing / Movement Groups	EBL	EBT/R	WBL	WBT/R	NBL	NBT/R	SBL	SBT/R
Lost Time (t_L)				4.0	3.5	5.5		5.5
Green Ratio (g/C)				0.28	0.55	0.57		0.45
Permitted Saturation Flow Rate (s_p), veh/h/ln				1810	778	778		876
Shared Saturation Flow Rate (s_{sh}), veh/h/ln								0
Permitted Effective Green Time (g_p), s				0.0	35.9	69.5		0.0
Permitted Service Time (g_u), s				0.0	25.0	0.0		0.0
Permitted Queue Service Time (g_{ps}), s					1.9			
Time to First Blockage (g_f), s				0.0	0.0	0.0		33.9
Queue Service Time Before Blockage (g_{fs}), s								
Protected Right Saturation Flow (s_R), veh/h/ln				0				0
Protected Right Effective Green Time (g_R), s				0.0				0.0

Multimodal	EB		WB		NB		SB	
Pedestrian F_w / F_v	1.557	0.000	1.557	0.000	0.972	0.000	0.681	0.000
Pedestrian F_s / F_{delay}	0.000	0.151	0.000	0.152	0.000	0.077	0.000	0.097
Pedestrian M_{corner} / M_{cw}								
Bicycle c_b / d_b		42.67		44.28	1142.16	6.90	902.99	11.28
Bicycle F_w / F_v	-3.64		-3.64		-3.64	0.55	-3.64	0.69

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HCS7 Signalized Intersection Results Graphical Summary

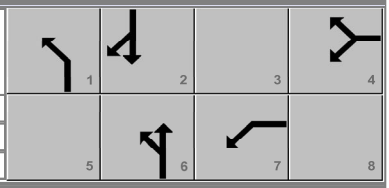
General Information				Intersection Information	
Agency				Duration, h	0.250
Analyst		Analysis Date	1/12/2021	Area Type	Other
Jurisdiction		Time Period		PHF	0.92
Urban Street	11th St	Analysis Year	2021	Analysis Period	1> 7:00
Intersection	US 20 at 11th St (North)	File Name	HCS - Diamond - North INTX.xus		
Project Description					



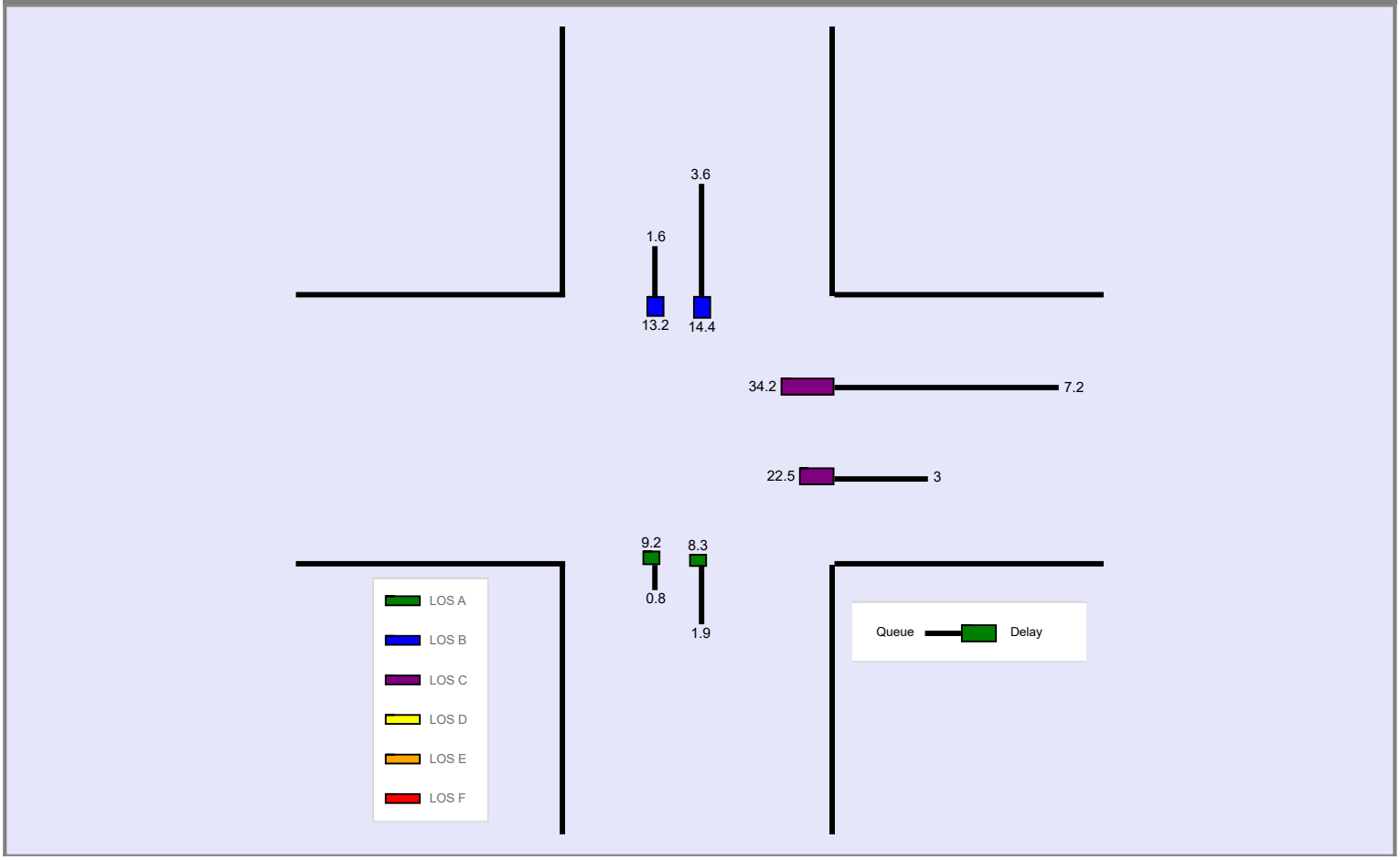
Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h				200		360	107	501			618	146

Signal Information			
Cycle, s	75.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	5.5	33.9	21.2	0.0	0.0	0.0	
Yellow	3.5	3.5	3.5	0.0	0.0	0.0	
Red	0.0	2.0	2.0	0.0	0.0	0.0	



Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Back of Queue (*Q*), ft/ln (50 th percentile)				75.2		180.5	20.1	48.4			88.9	40.1
Back of Queue (*Q*), veh/ln (50 th percentile)				3.0		7.2	0.8	1.9			3.6	1.6
Queue Storage Ratio (*RQ*) (50 th percentile)				0.00		0.00	0.00	0.00			0.00	0.00
Control Delay (*d*), s/veh				22.5		34.2	9.2	8.3			14.4	13.2
Level of Service (LOS)				C		C	A	A			B	B
Approach Delay, s/veh / LOS	0.0			30.0		C	8.5		A	14.1		B
Intersection Delay, s/veh / LOS	17.0						B					



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--- Messages ---

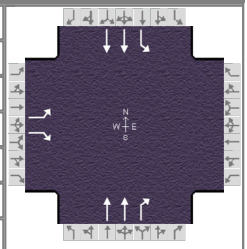
No errors or warnings exist.

--- Comments ---

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HCS7 Signalized Intersection Input Data

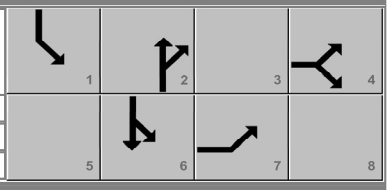
General Information				Intersection Information	
Agency				Duration, h	0.250
Analyst		Analysis Date	1/12/2021	Area Type	Other
Jurisdiction		Time Period		PHF	0.92
Urban Street	11th St	Analysis Year	2021	Analysis Period	1> 7:00
Intersection	US 20 at 11th St (South)	File Name	HCS - Diamond - South INTX.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	110		120					608	322	316	302	

Signal Information			
Cycle, s	75.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	8.5	42.1	9.9	0.0	0.0	0.0	
Yellow	3.5	3.5	3.5	0.0	0.0	0.0	
Red	0.0	2.0	2.0	0.0	0.0	0.0	



Traffic Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	110		120					608	322	316	302	
Initial Queue (Q_b), veh/h	0		0					0	0	0	0	
Base Saturation Flow Rate (s_o), veh/h	1900		1900					2000	1900	1900	2000	
Parking (N_m), man/h		None						None			None	
Heavy Vehicles (P_{HV}), %	0		0					0	0	0	0	
Ped / Bike / RTOR, /h	0	0		0	0		0	0	0	0	0	
Buses (N_b), buses/h	0	0	0				0	0	0	0	0	0
Arrival Type (*AT*)	3		3					3	3	3	3	
Upstream Filtering (*I*)	1.00		1.00					1.00	1.00	1.00	1.00	
Lane Width (*W*), ft	12.0		12.0					12.0	12.0	12.0	12.0	
Turn Bay Length, ft	150		150					0	0	150	0	
Grade (*Pg*), %		0			0			0			0	
Speed Limit, mi/h	35		35					35	35	35	35	

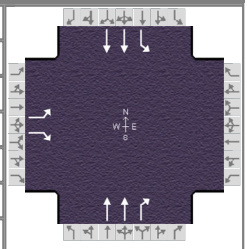
Phase Information	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Maximum Green (G_{max}) or Phase Split, s	20.0	30.0				25.0	20.0	45.0
Yellow Change Interval (*Y*), s	3.5	3.5				3.5	3.5	3.5
Red Clearance Interval (R_c), s	0.0	2.0				2.0	0.0	0.0
Minimum Green (G_{min}), s	6	10				6	6	6
Start-Up Lost Time (*l*t), s	2.0					2.0	2.0	2.0
Extension of Effective Green (*e*), s	2.0					2.0	2.0	2.0
Passage (*PT*), s	3.0	3.0				2.0	3.0	2.0
Recall Mode	Off	Off				Min	Off	Min
Dual Entry	No	Yes				Yes	No	Yes
Walk (*Walk*), s		0.0		0.0				0.0
Pedestrian Clearance Time (*PC*), s		0.0		0.0				0.0

Multimodal Information	EB			WB			NB			SB		
85th % Speed / Rest in Walk / Corner Radius	0	No	25	0	No	25				0	No	25
Walkway / Crosswalk Width / Length, ft	9.0	12	0	9.0	12	0				9.0	12	0
Street Width / Island / Curb	0	0	No		0		0		No	0	0	No
Width Outside / Bike Lane / Shoulder, ft	12	5.0	2.0				12	5.0	2.0	12	5.0	2.0
Pedestrian Signal / Occupied Parking	No	0.50		No				0.50		No	0.50	

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HCS7 Signalized Intersection Results Summary

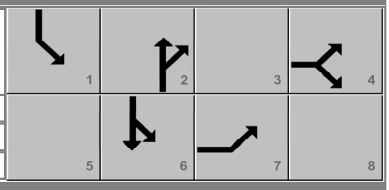
General Information				Intersection Information	
Agency				Duration, h	0.250
Analyst		Analysis Date	1/12/2021	Area Type	Other
Jurisdiction		Time Period		PHF	0.92
Urban Street	11th St	Analysis Year	2021	Analysis Period	1> 7:00
Intersection	US 20 at 11th St (South)	File Name	HCS - Diamond - South INTX.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	110		120					608	322	316	302	

Signal Information			
Cycle, s	75.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	8.5	42.1	9.9	0.0	0.0	0.0	
Yellow	3.5	3.5	3.5	0.0	0.0	0.0	
Red	0.0	2.0	2.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		4				2	1	6
Case Number		9.0				7.3	1.0	4.0
Phase Duration, s		15.4				47.6	12.0	59.6
Change Period, (*Y+R c*), s		5.5				5.5	3.5	5.5
Max Allow Headway (*MAH*), s		4.3				0.0	4.1	0.0
Queue Clearance Time (*g s*), s		7.7					7.3	
Green Extension Time (*g e*), s		0.8				0.0	1.2	0.0
Phase Call Probability		0.99					1.00	
Max Out Probability		0.00					0.00	

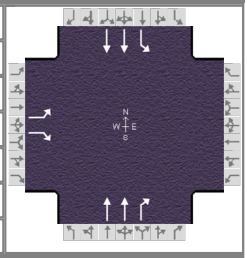
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	7		14					2	12	1	6	
Adjusted Flow Rate (*v*), veh/h	120		130					661	350	343	328	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1810		1610					1904	1610	1810	1904	
Queue Service Time (*g s*), s	4.6		5.7					6.9	9.1	5.3	2.0	
Cycle Queue Clearance Time (*g c*), s	4.6		5.7					6.9	9.1	5.3	2.0	
Green Ratio (*g/C*)	0.13		0.13					0.56	0.56	0.70	0.72	
Capacity (*c*), veh/h	240		214					2135	903	669	2744	
Volume-to-Capacity Ratio (*X*)	0.498		0.611					0.309	0.388	0.513	0.120	
Back of Queue (*Q*), ft/ln (50 th percentile)	50.6		57.3					63.1	75.4	35.8	13	
Back of Queue (*Q*), veh/ln (50 th percentile)	2.0		2.3					2.5	3.0	1.4	0.5	
Queue Storage Ratio (*RQ*) (50 th percentile)	0.34		0.38					0.00	0.00	0.24	0.00	
Uniform Delay (*d 1*), s/veh	30.2		30.7					8.8	9.2	5.1	3.2	
Incremental Delay (*d 2*), s/veh	1.6		2.8					0.4	1.3	0.6	0.1	
Initial Queue Delay (*d 3*), s/veh	0.0		0.0					0.0	0.0	0.0	0.0	
Control Delay (*d*), s/veh	31.8		33.5					9.1	10.5	5.7	3.3	
Level of Service (LOS)	C		C					A	B	A	A	
Approach Delay, s/veh / LOS	32.7		C	0.0			9.6		A	4.5		A
Intersection Delay, s/veh / LOS	10.8						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.31	B	2.31	B	1.36	A	1.61	B
Bicycle LOS Score / LOS		F			1.32	A	1.04	A

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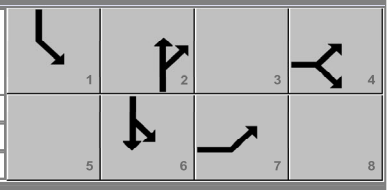
HCS7 Signalized Intersection Intermediate Values

General Information				Intersection Information	
Agency				Duration, h	0.250
Analyst		Analysis Date	1/12/2021	Area Type	Other
Jurisdiction		Time Period		PHF	0.92
Urban Street	11th St	Analysis Year	2021	Analysis Period	1> 7:00
Intersection	US 20 at 11th St (South)	File Name	HCS - Diamond - South INTX.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	110		120					608	322	316	302	

Signal Information												
Cycle, s	75.0	Reference Phase	2									
Offset, s	0	Reference Point	End									
Uncoordinated	No	Simult. Gap E/W	On	Green	8.5	42.1	9.9	0.0	0.0	0.0		
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	3.5	3.5	3.5	0.0	0.0	0.0		
				Red	0.0	2.0	2.0	0.0	0.0	0.0		



Saturation Flow / Delay	L	T	R	L	T	R	L	T	R	L	T	R
Lane Width Adjustment Factor (f_w)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles and Grade Factor (f_{HVg})	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Parking Activity Adjustment Factor (f_p)	1.000	1.000	1.000	0.000	0.000	0.000	1.000	1.000	1.000	1.000	1.000	1.000
Bus Blockage Adjustment Factor (f_{bb})	1.000	1.000	1.000	0.000	0.000	0.000	1.000	1.000	1.000	1.000	1.000	1.000
Area Type Adjustment Factor (f_a)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Lane Utilization Adjustment Factor (f_{LU})	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.952	1.000	1.000	0.952	1.000
Left-Turn Adjustment Factor (f_{LT})	0.952	0.000					1.000	1.000		0.952	0.000	
Right-Turn Adjustment Factor (f_{RT})		0.000	0.847					0.000	0.847		1.000	1.000
Left-Turn Pedestrian Adjustment Factor (f_{Lpb})	1.000						1.000			1.000		
Right-Turn Ped-Bike Adjustment Factor (f_{Rpb})			1.000						1.000			1.000
Work Zone Adjustment Factor (f_{wz})	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
DDI Factor (f_{DDI})	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Movement Saturation Flow Rate (s), veh/h	1810	0	1610				0	3904	1610	1810	3904	0
Proportion of Vehicles Arriving on Green (P)	0.13	0.00	0.13	0.00	0.00	0.00	0.00	0.56	0.56	0.11	0.72	0.00
Incremental Delay Factor (k)	0.11		0.11					0.50	0.50	0.11	0.50	

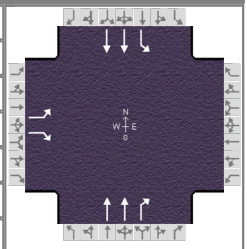
Signal Timing / Movement Groups	EBL	EBT/R	WBL	WBT/R	NBL	NBT/R	SBL	SBT/R
Lost Time (t_L)		4.0				5.5	3.5	5.5
Green Ratio (g/C)		0.13				0.56	0.70	0.72
Permitted Saturation Flow Rate (s_p), veh/h/ln		1810				1068	786	786
Shared Saturation Flow Rate (s_{sh}), veh/h/ln						0		
Permitted Effective Green Time (g_p), s		26.0				0.0	44.1	41.0
Permitted Service Time (g_u), s		0.0				0.0	35.1	0.0
Permitted Queue Service Time (g_{ps}), s							6.9	
Time to First Blockage (g_f), s		0.0				42.1	0.0	0.0
Queue Service Time Before Blockage (g_{fs}), s								
Protected Right Saturation Flow (s_R), veh/h/ln		0				0		
Protected Right Effective Green Time (g_R), s		0.0				0.0		

Multimodal	EB		WB		NB		SB	
Pedestrian F_w / F_v	1.557	0.000	1.557	0.000	0.681	0.000	0.972	0.000
Pedestrian F_s / F_{delay}	0.000	0.152	0.000	0.151	0.000	0.079	0.000	0.035
Pedestrian M_{corner} / M_{cw}								
Bicycle c_b / d_b		44.28		42.67	1121.60	7.23	1494.78	2.39
Bicycle F_w / F_v	-3.64		-3.64		-3.64	0.83	-3.64	0.55

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HCS7 Signalized Intersection Results Graphical Summary

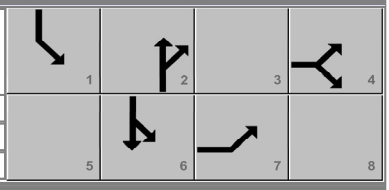
General Information				Intersection Information	
Agency				Duration, h	0.250
Analyst		Analysis Date	1/12/2021	Area Type	Other
Jurisdiction		Time Period		PHF	0.92
Urban Street	11th St	Analysis Year	2021	Analysis Period	1> 7:00
Intersection	US 20 at 11th St (South)	File Name	HCS - Diamond - South INTX.xus		
Project Description					



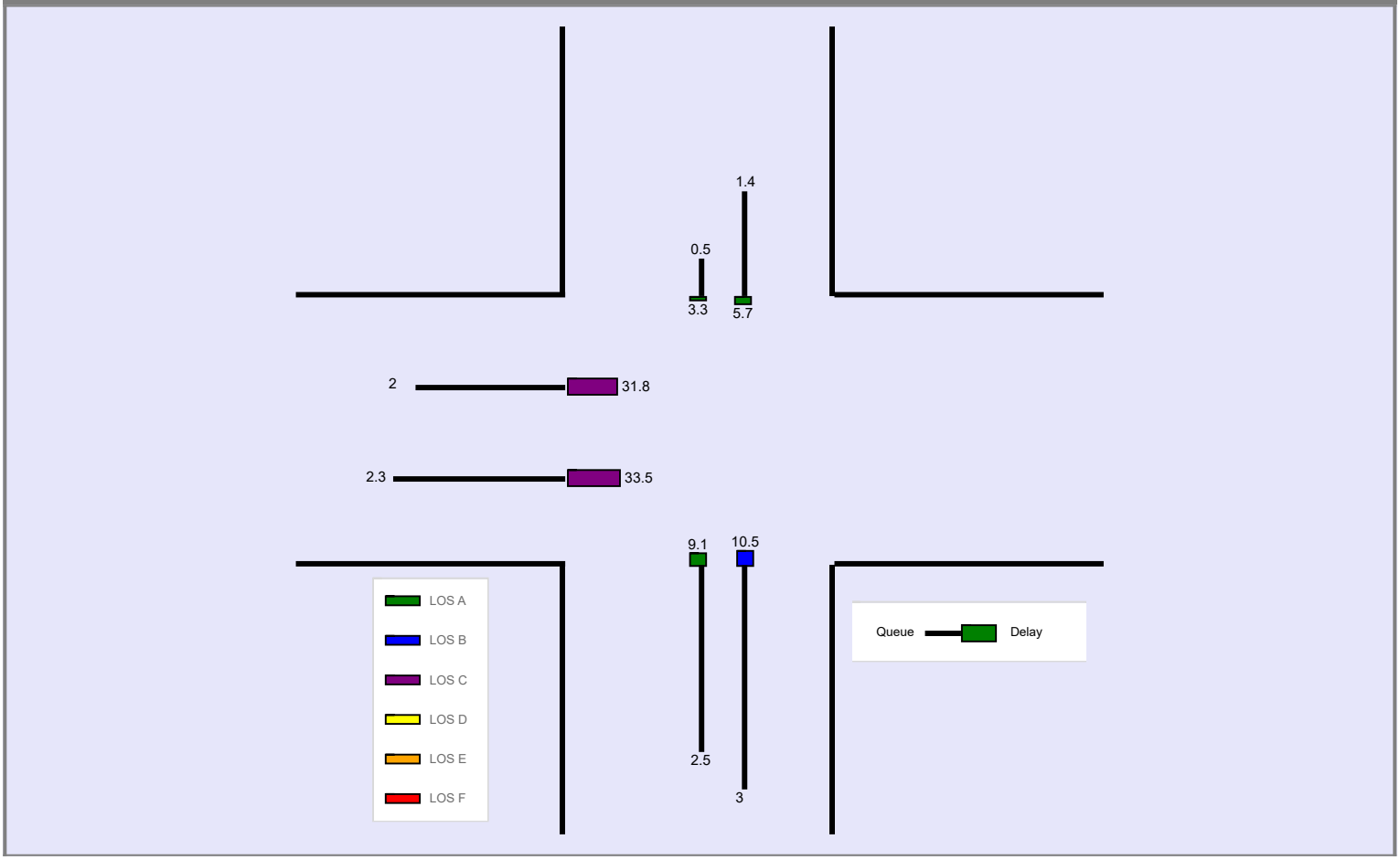
Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	110		120					608	322	316	302	

Signal Information			
Cycle, s	75.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	8.5	42.1	9.9	0.0	0.0	0.0	
Yellow	3.5	3.5	3.5	0.0	0.0	0.0	
Red	0.0	2.0	2.0	0.0	0.0	0.0	



Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Back of Queue (*Q*), ft/ln (50 th percentile)	50.6		57.3					63.1	75.4	35.8	13	
Back of Queue (*Q*), veh/ln (50 th percentile)	2.0		2.3					2.5	3.0	1.4	0.5	
Queue Storage Ratio (*RQ*) (50 th percentile)	0.34		0.38					0.00	0.00	0.24	0.00	
Control Delay (*d*), s/veh	31.8		33.5					9.1	10.5	5.7	3.3	
Level of Service (LOS)	C		C					A	B	A	A	
Approach Delay, s/veh / LOS	32.7		C	0.0			9.6		A	4.5		A
Intersection Delay, s/veh / LOS	10.8						B					



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--- Messages ---

No errors or warnings exist.

--- Comments ---

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APPENDIX 5

Market Study

- Market Analysis and Economic Development Strategies



ROCKFORD – 11TH STREET CORRIDOR

Market Analysis and Economic Development Strategies

January 26, 2021

SBFRIEDMAN

VISION
ECONOMICS
STRATEGY
FINANCE
IMPLEMENTATION

PURPOSE OF MARKET STUDY

A study designed to uncover the real estate market dynamics along the 11th Street Corridor



The purpose of the market study is to identify the market-feasible development potential and strategies for redevelopment along the 11th Street Corridor (the "Study Area"). Analysis steps to uncover this potential include an assessment of:

- The Study Area's attributes in terms of access, visibility and unique local market context;
- The existing supply and performance of retail, medical office and industrial space in the Study Area; and
- Existing and new economic development strategies to support redevelopment within the Study Area.

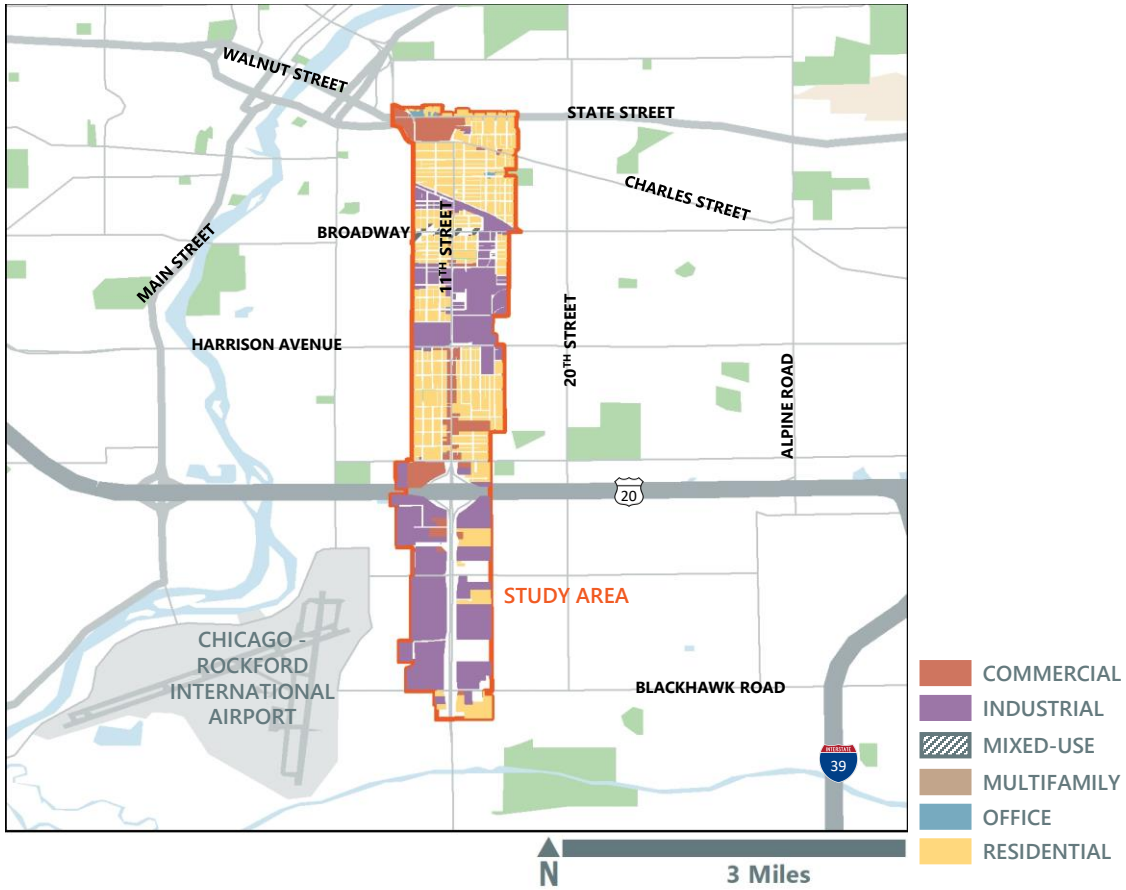
This market-driven approach ensures the transportation improvements being recommended within the public right-of-way are complementary to the dynamics and goals for redevelopment of the Study Area.

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STUDY AREA OVERVIEW

The Study Area spans from Downtown Rockford to the edge of the City along the 11th Street Corridor

STUDY AREA EXISTING ZONING

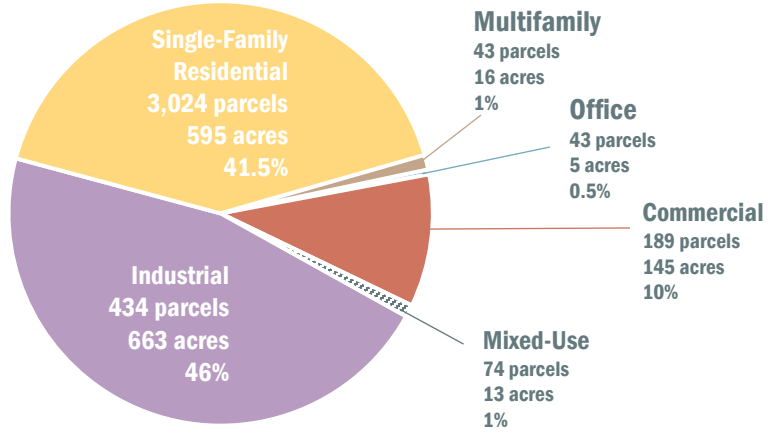


Source: City of Rockford, Esri, SB Friedman

The Study Area encompasses parcels adjacent to 11th Street and extends from State Street to just south of Blackhawk Road, a 4.75-mile corridor. Within the Study Area, the prevailing land uses include industrial and residential, with some supportive commercial.

Industrial land uses within the Study Area are concentrated south of US-20 and surrounding Harrison Avenue. Single-family residential land uses are clustered between US-20 and Harrison Avenue, as well as north of Broadway. Commercial land uses are predominately located along 11th Street between US-20 and Harrison Avenue, in addition to Broadway and State Street.

Study Area Acreage by Zoning

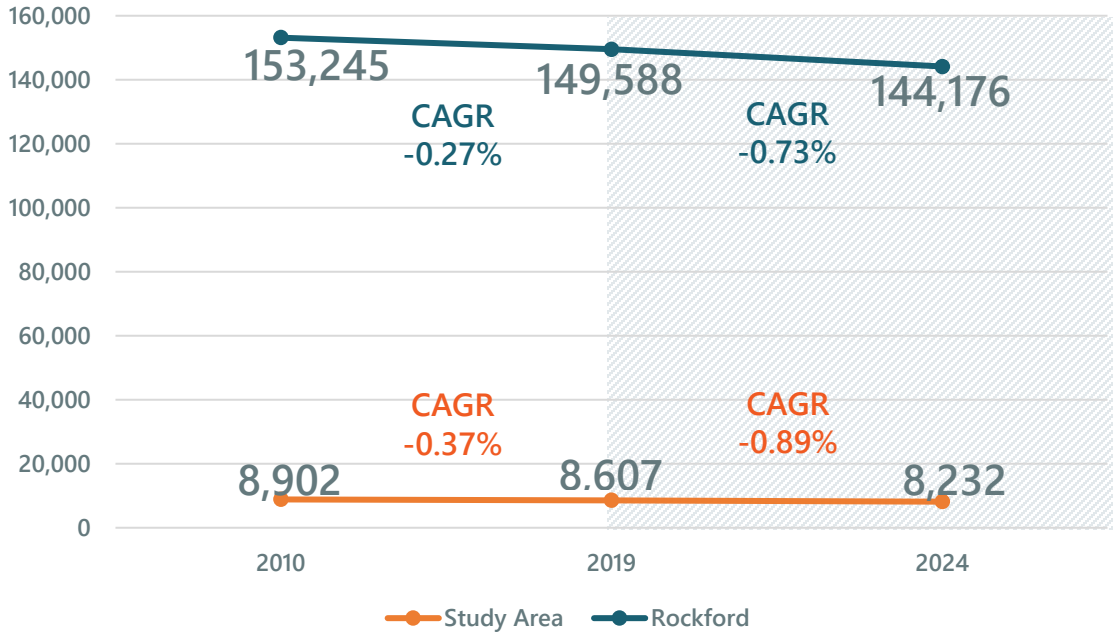


Source: City of Rockford, SB Friedman

DEMOGRAPHICS

Residents within the Study Area have lower household incomes on average than the rest of the City

HISTORIC AND PROJECTED POPULATION COUNTS



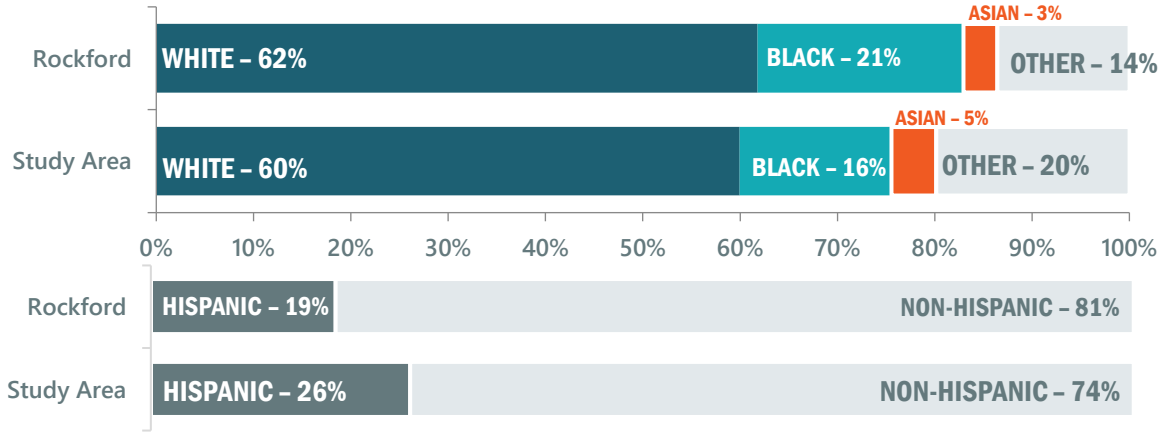


Source: Esri, SB Friedman

The Study Area currently has a population of approximately 8,600 residents. Population growth within the Study Area has declined gradually since 2010 and is projected to decline over the next five years. This trend is comparable to the historic and projected population growth trends of the City of Rockford.

The median household income for households in the Study Area is nearly $10,000 less than that of households throughout the City. Residents within the Study Area are comprised of diverse racial and ethnic backgrounds. Over 25% of residents within the Study Area identify as Hispanic.

POPULATION BY RACE AND ETHNICITY



RETAIL

RETAIL – TYPOLOGIES

Retail market analysis focuses on the potential for regional and neighborhood retail centers

REGIONAL RETAIL



REGIONAL OR SUPER-REGIONAL MALL

- Anchored by 2+ full-line department stores

~500,000-1,000,000+ SF



MASTER-PLANNED LIFESTYLE CENTER

- Upscale national-chain specialty stores
- Dining and entertainment focused

~250,000-500,000 SF



POWER CENTER

- 2+ category-dominant freestanding anchors of ~100,000+ SF
- General merchandise, home improvement

~250,000-750,00 SF

NEIGHBORHOOD / STRIP RETAIL



COMMUNITY CENTER

- 1+ category-dominant freestanding anchors of ~100,000+ SF

OR

- 1+ grocer anchors of ~50,000+ SF and additional category dominant retailers

~100,000-250,000 SF



NEIGHBORHOOD CENTER

- 1+ grocer anchors of ~50,000 SF +
- Additional supporting retail

~75,000- 150,000 SF



FREESTANDING/ STRIP RETAIL

- Small convenience center with goods and services
- Limited trade area

~5,000- 150,000 SF

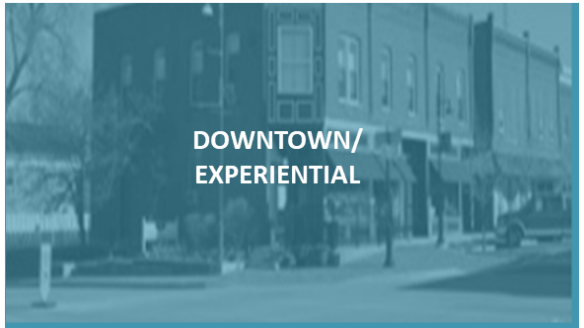


GROUND FLOOR RETAIL

- Restaurants, food & beverage and small-scale services
- Upper floor office or residential

~3,000- 50,000 SF

DOWNTOWN/ MAIN STREET



DOWNTOWN/ EXPERIENTIAL

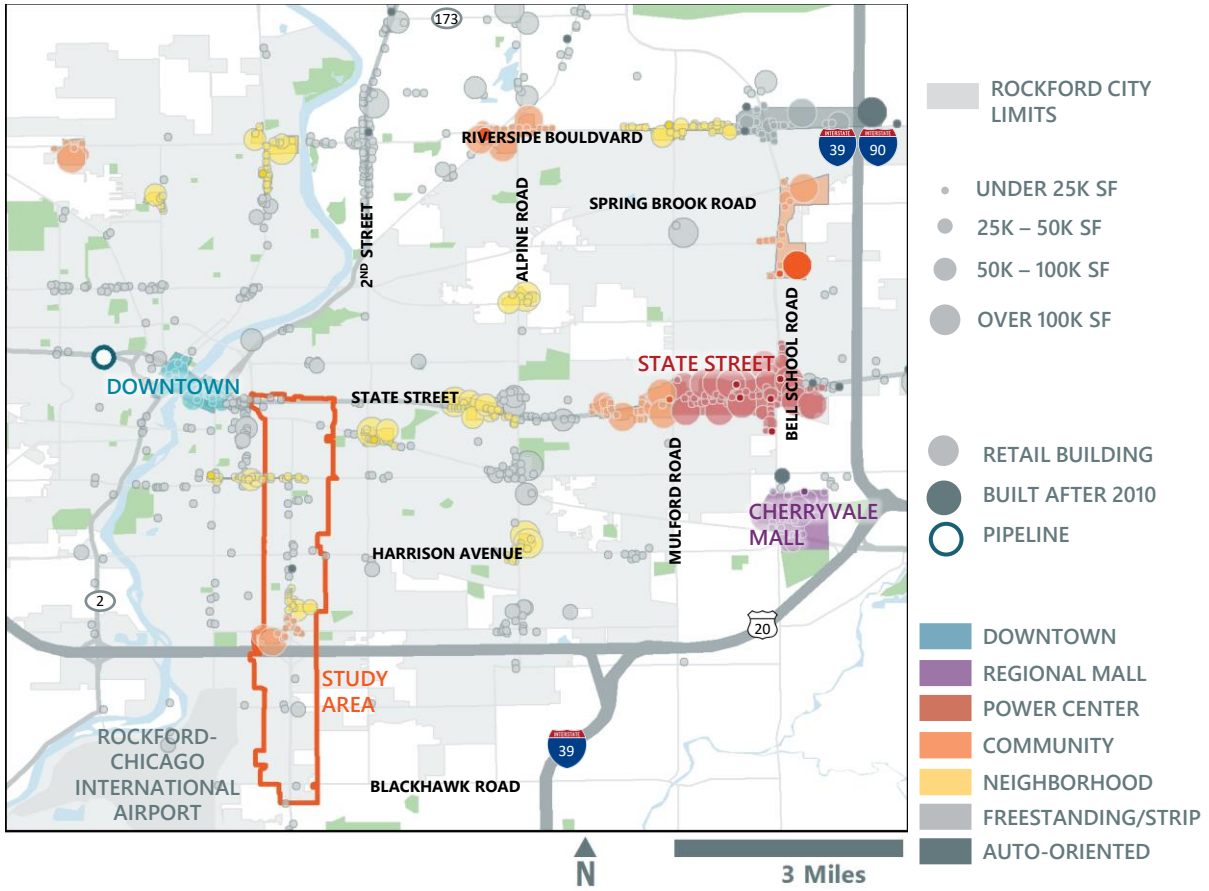
- Restaurants, food & beverage and small-scale services
- Walkable pedestrian environment

SIZE VARIES

RETAIL – COMPETITIVE CLUSTERS

Rockford retail clusters are comprised of regional power centers and local-serving retail centers

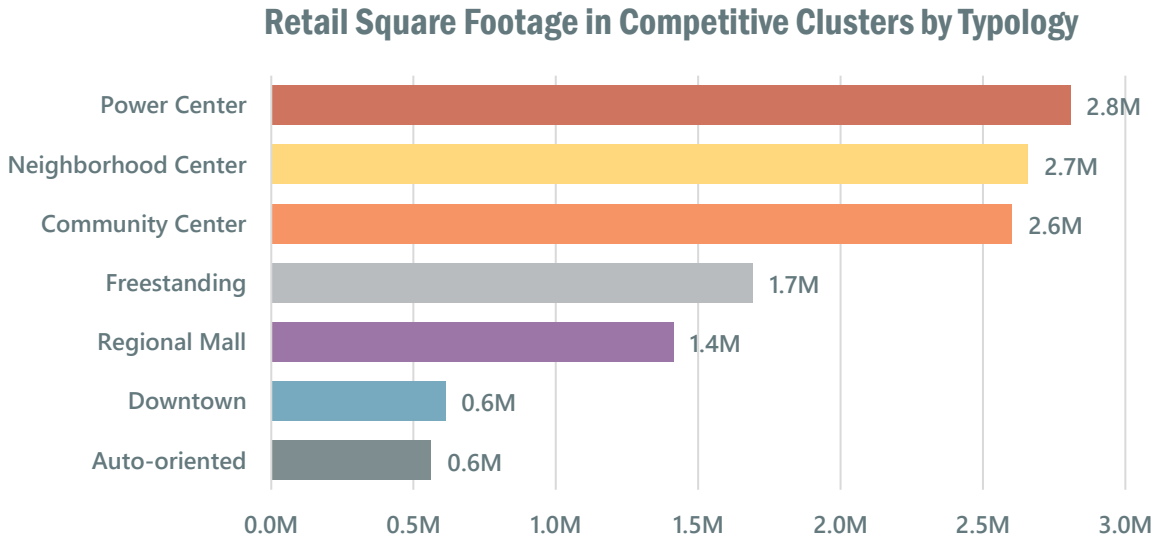
WINNEBAGO COUNTY RETAIL SUPPLY



Source: CoStar, Esri, SB Friedman

Retail in nearby competitive clusters, as shown on the map, is roughly split between power centers, neighborhood centers and community centers. The power center located along State Street is the largest competitive retail cluster near the Study Area, with over 2.8 million square feet of retail space.

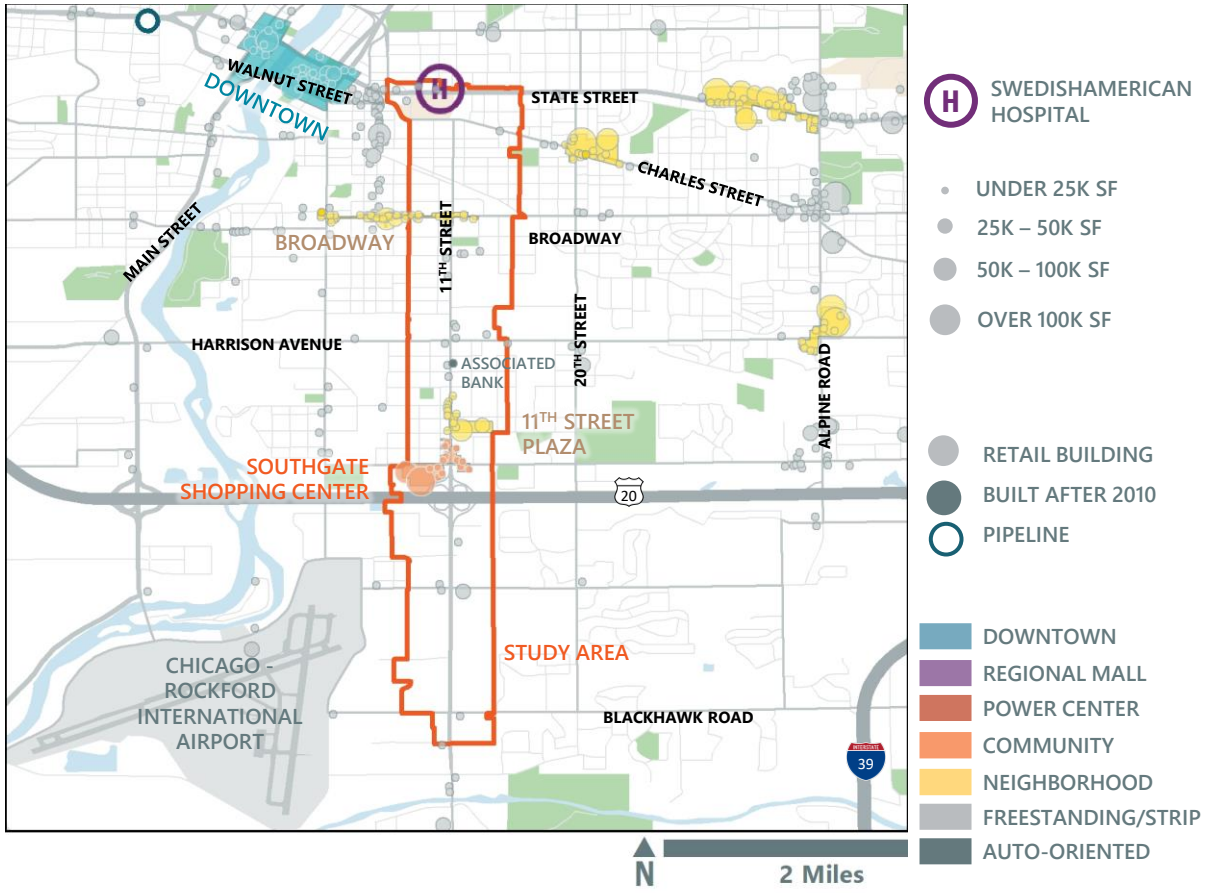
Additionally, the CherryVale Mall, located east of the Study Area along Harrison Avenue, contains approximately 1.4 million square feet of retail space.



RETAIL – LOCAL RETAIL CHARACTERISTICS

The Study Area comprises older, local-serving retail space

STUDY AREA RETAIL SUPPLY



Source: CoStar, Esri, SB Friedman

The Study Area contains approximately 610,000 square feet of retail space. Most of the retail spaces within the Study Area is comprised of freestanding, single-occupant retail spaces constructed prior to 2010. The Study Area is flanked by downtown Rockford to its northwest and various neighborhood centers to the east. These retail clusters contain convenience, restaurant and local-serving retail offerings which cater to the nearby residential population and industrial employees.

There are three smaller retail clusters located within the Study Area: Southgate Shopping Center, 11th Street Plaza and Broadway. The 11th Street Plaza is the primary full-service grocery-anchored center serving the Study Area with tenants such as Schnucks, Family Dollar, and CVS.

According to CoStar, there has only been one new retail delivery within the Study Area since 2010. This building, the 1,100 square-foot Associated Bank building, was delivered in 2017.



SOUTHGATE SHOPPING CENTER



11TH STREET PLAZA

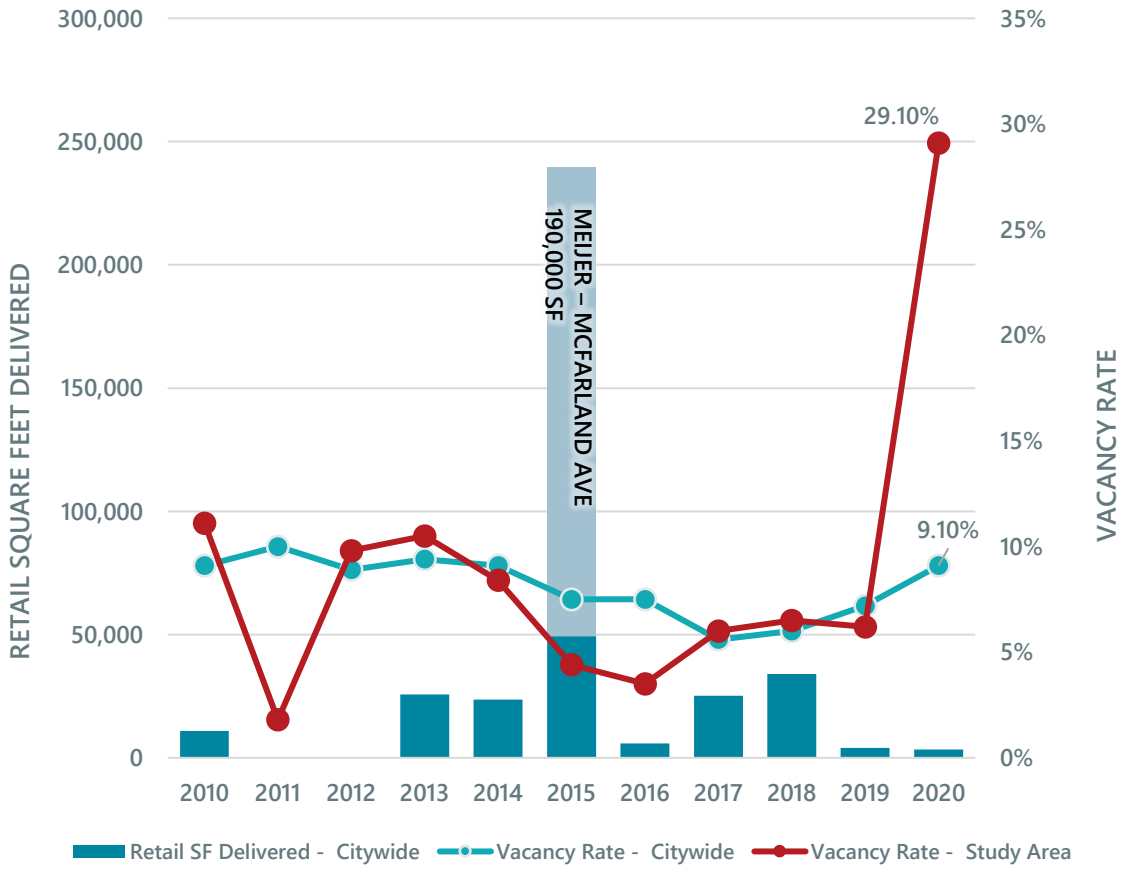

BROADWAY CORRIDOR

Image Source: Matthews, Realtor.com

RETAIL – CITYWIDE PERFORMANCE

There has been limited new retail development throughout the City

STUDY AREA AND ROCKFORD RETAIL VACANCY & ABSORPTION



Source: CoStar, SB Friedman

Since 2010, there has been 372,000 square feet of retail space delivered within the City of Rockford, or an annual average of 41,000 square feet of new retail space. New retail development throughout the City has predominately located near Interstate-90/39. The new Meijer development represents 51% of new deliveries in the City, while over one-third of new deliveries comprise of outlot developments in established retail clusters such as State Street and the CherryVale Mall. The Study Area has fared worse than the City, losing an average of 10,600 square feet of retail space per year.

In the last ten years, retail vacancy rates were generally below 10% for both the Study Area and the City as a whole. However, the Study Area has recently experienced a significant increase in vacancy due to the closure of the 142,000 square foot Kmart, located in the Southgate Shopping Center. There is a proposal to transition the former Kmart building into storage space. Additionally, retail spaces in the 11th Street Plaza have recently experienced higher tenant turnover. The 11th Street Plaza currently has a retail vacancy rate of nearly 57%.

Retail rents are lower within the Study Area than throughout the City as a whole. On average, retail spaces within the Study Area command triple-net (NNN) rents of approximately $8 per square foot. The average citywide retail rent per square foot is slightly higher, approximately $10 per square foot (NNN), while newer retail space throughout the City achieves rents of nearly $26 per square foot (NNN).

Overall retail performance in the Study Area has been weaker than retail throughout the City as a whole.

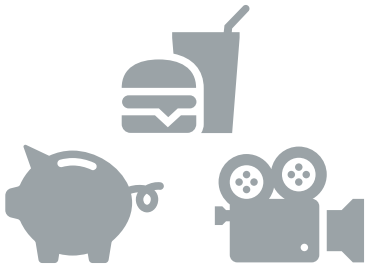
RETAIL – NATIONAL TRENDS

The COVID-19 pandemic has accelerated ongoing retail trends towards an increase in e-commerce



E-COMMERCE & OMNI-CHANNEL GROWTH

E-commerce as a share of retail sales has been steadily growing and has more than doubled in the last ten years as a percent of total sales. Faster delivery services are expected to drive continued growth of these channels. While e-commerce as a share of total revenue varies by retailer category, brand and price point, e-commerce is expected to continue to grow, especially as improved logistics and distribution networks make shipping quicker than ever.



SHIFT TO CONVENIENCE, VALUE & EXPERIENCE

The Study Area comprises various local-serving convenience and value retailers, which have driven retail activity within the City. The Study Area contains several value-oriented retailers, ranging from national retailers (Dollar Tree) to local retailers (pawn shops, secondary sale stores). Stores in the value-oriented category outperform others during recessions. As a result of the COVID-19 pandemic, unemployment has increased. A prolonged economic downturn could further push consumers to value retailers.



BRICK & MORTAR REPOSITIONING

Demand may shift permanently from standard brick-and-mortar stores (especially in traditional retail shopping centers) towards more e-commerce and omni-channel shopping. Many retailers, especially small businesses, without successful adaptations to trends could fail.



COVID-19 IMPACTS

COVID-19 will accelerate ongoing retail trends. Declining brick-and-mortar retail demand and acceleration of e-commerce could lead to rise in vacancies.

RETAIL – KEY TAKEAWAYS



LIMITED NEAR-TERM RETAIL POTENTIAL

Over the past 10 years, there has been limited new retail development within the Study Area. There is likely to be limited potential for new retail development in the future, given recent market performance in the Study Area, the growth of e-commerce & omni-channel retailing, and impacts from COVID-19.



SUPPORT LOCAL-SERVING RETAIL

Local-serving retail is prevalent throughout the Study Area. If additional retail were to locate within the Study Area, it would likely continue to serve the residential population within the Study Area.

Continued efforts should be made to consolidate retailers within existing neighborhood centers in the Study Area to reduce vacancies. Small business financial support programs, such as the City of Rockford's Microenterprise Loan Program and Community Development Block Grants (CDBG), may also be necessary to assist small businesses during COVID-19.



PUBLIC REALM IMPROVEMENTS

Interviews indicated that many residents rely on transit and pedestrian facilities to access goods and services along the corridor. Most of the Study Area has an auto-oriented character with large and frequent curb cuts, expansive areas of paving, and an overall lack of landscaping or parking lot buffering along the 11th Street frontage that inhibit the pedestrian experience.

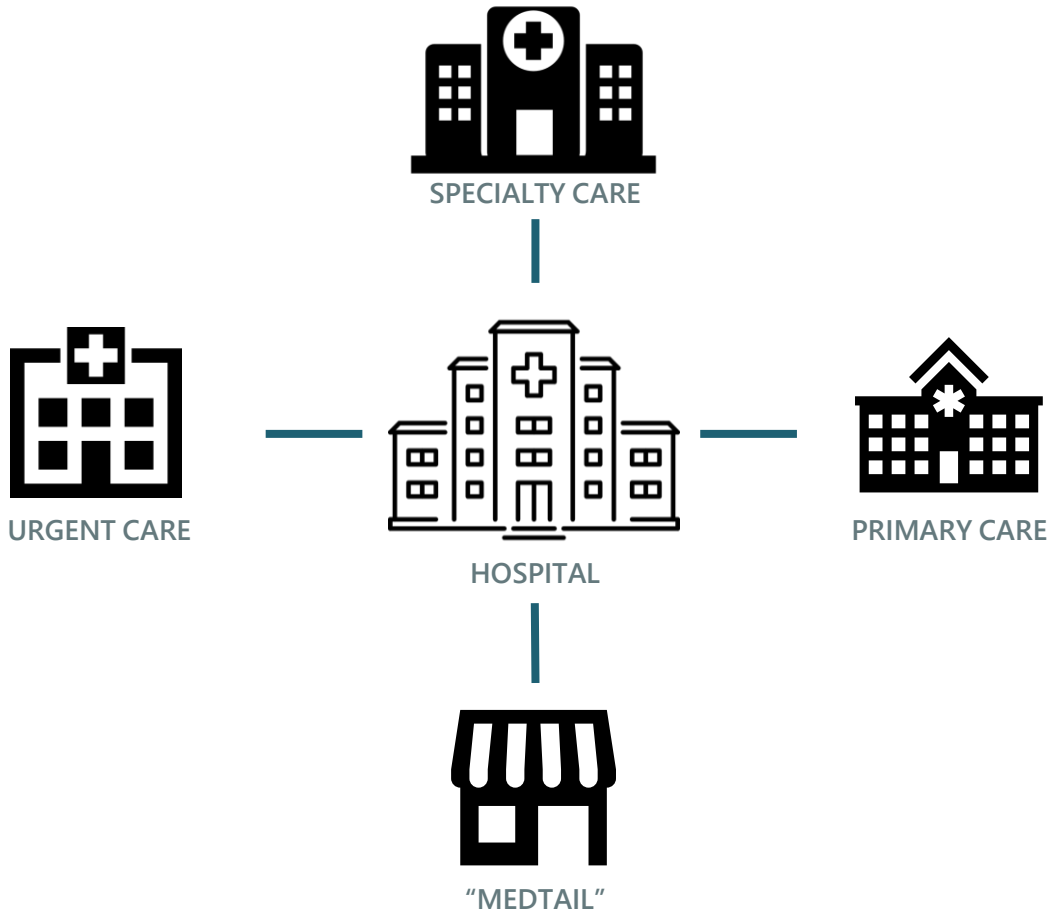
Public realm improvements to enhance safety and walkability could support retail accessibility. Additionally, there is an opportunity to enhance gateway, streetscape features, and amenities at key commercial nodes including Broadway and the area around the 11th Street Plaza.

MEDICAL OFFICE

MEDICAL OFFICE – HUB AND SPOKE MODEL

Healthcare providers have incorporated outpatient facilities to complement hospitals

HUB AND SPOKE MODEL



Nationally, healthcare providers have shifted from traditional hospital-only settings towards a "hub and spoke model" that incorporate satellite facilities in non-hospital settings.

Rather than prioritizing a single large, expensive hospital facility, healthcare systems are expanding into multiple smaller facilities to offer more services and lower their costs. While hospitals still deliver complex and emergency care as needed, the goal is to reduce the need for these services through preventative measures and follow-up care delivered in an outpatient setting. These outpatient facilities are often classified as one of the following three medical office typologies:

- **Primary Care** - provides day-to-day healthcare services; serves as 'gatekeepers' to healthcare system
- **Specialty Care** - provides acute healthcare services after referrals from primary care physicians
  - Examples include cardiology, pulmonary, orthopedics, OB/GYN
- **Urgent Care** - provides medical care for minor illnesses and injuries in an ambulatory medical facility outside of traditional hospital or emergency room

Some healthcare providers and services, such as dental offices and other specialty medical services, are also locating in what would otherwise be traditional retail space, a phenomenon known as "medtail".

MEDICAL OFFICE – NATIONAL TRENDS

Employer preferences are shifting as the healthcare landscape embraces wellness and technology

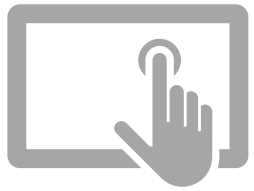
MEDICAL OFFICE & "MEDTAIL" LOCATION CRITERIA



PROXIMITY TO HOSPITALS AND MEDICAL CLUSTERS



PROXIMITY TO POPULATION



OPEN, FLEXIBLE, INNOVATIVE, SPACES



COLOCATION WITH RETAIL TENANTS



TRANSPORTATION ACCESS

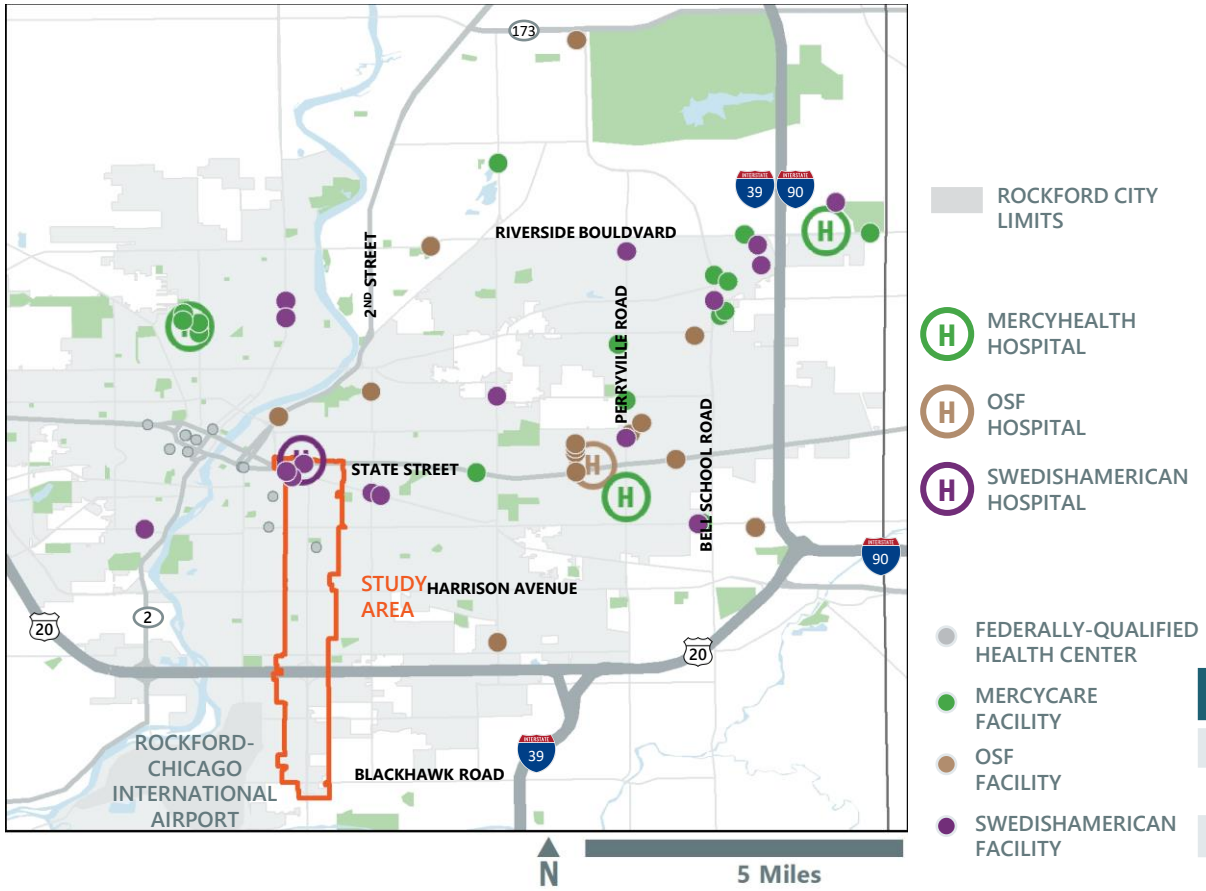
Shifts toward outpatient facilities, along with technological advances and altered consumer preferences due to the pandemic, are impacting the location and format of real estate for health care.

- **Building requirements -** Outpatient facilities are typically Class-A, multi-story medical office buildings with high accessibility and co-tenancies with other medical offices and/or pharmacies
- **Geographic cluster & proximity to hospitals -** Outpatient facilities typically concentrate close to where patients live, enabling the hospital to are for a whole population
- **"Retailization" of healthcare -** Following location preferences of typical retailers, these "medtail" users typically desire easily accessible, convenient multi-tenant buildings near the populations they serve
  - These "medtail" users typically provide non-hospital healthcare services such as dentistry and physical therapy offices
  - Depending on the services provided, space requirements could vary from 2,000 square feet to over 8,000 square feet

MEDICAL OFFICE – REGIONAL SUPPLY

Medical office developments within the County are located near hospitals and major roadways

WINNEBAGO COUNTY MEDICAL OFFICE SUPPLY



Source: Esri, MercyHealth, OCF Healthcare, SB Friedman, SwedishAmerican

Within the Rockford MSA, there are three healthcare providers which employ the hub-and-spoke model: MercyHealth, OSF HealthCare, and SwedishAmerican. The hospitals for healthcare network are located along highly trafficked arterials, such as State Street and Riverside Boulevard. Additionally, the outpatient facilities in these networks have either located near the hospital or clustered with other medical office buildings.

In 2018, the Javon Bea – Riverside hospital was constructed, with an official opening in January 2019. Subsequently, MercyHealth has consolidated hospital healthcare services and facilities at the Javon Bea – Rockton location.

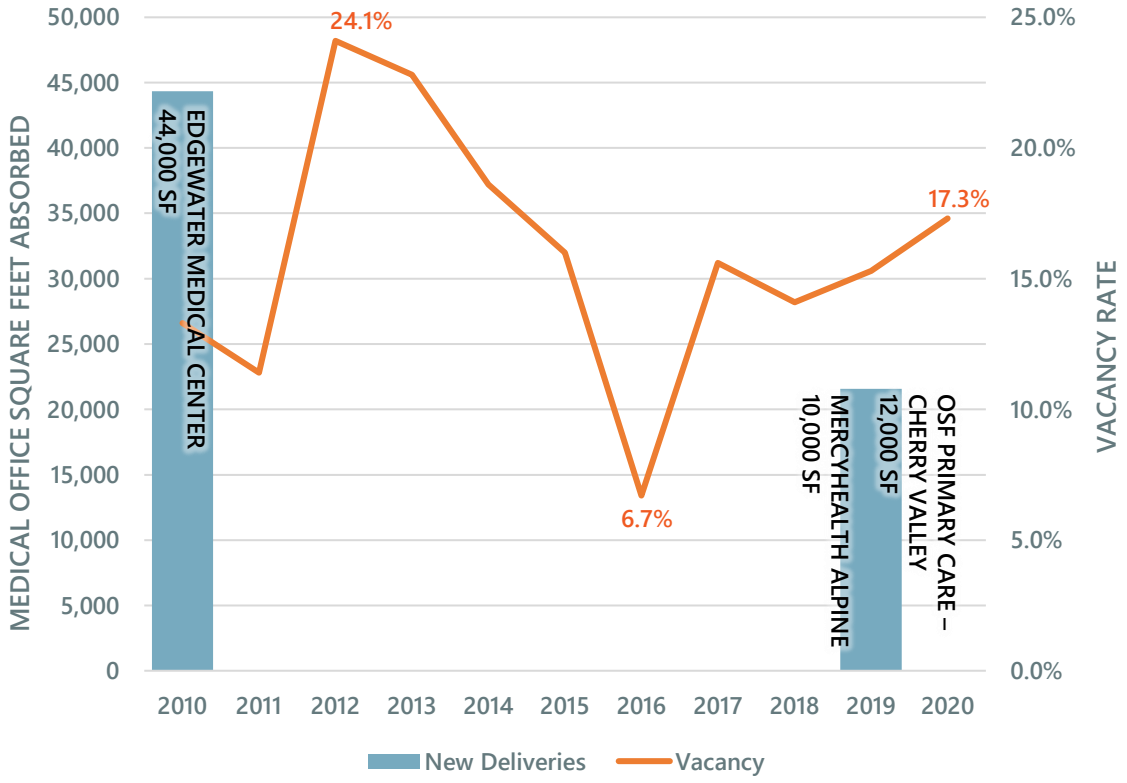
The SwedishAmerican hospital underwent a $130-million expansion in 2017, which included the new construction of a four-story women's and children's hospital tower, as well as additional renovations to the main hospital campus. The new tower opened in early 2020.

	MercyHealth	OSF Healthcare	SwedishAmerican
Hospitals	3 hospitals	1 hospital	1 hospital
Primary Care	7 facilities	6 facilities	8 facilities
Specialty Care	10 facilities	6 facilities	8 facilities
Urgent Care	1 facility	3 facilities	1 facility
Total Facilities	**21 facilities**	**16 facilities**	**18 facilities**

MEDICAL OFFICE – REGIONAL PERFORMANCE

Three outpatient medical office developments have been delivered in County within the past decade

WINNEBAGO COUNTY MEDICAL OFFICE VACANCY & ABSORPTION



Source: CoStar, SB Friedman

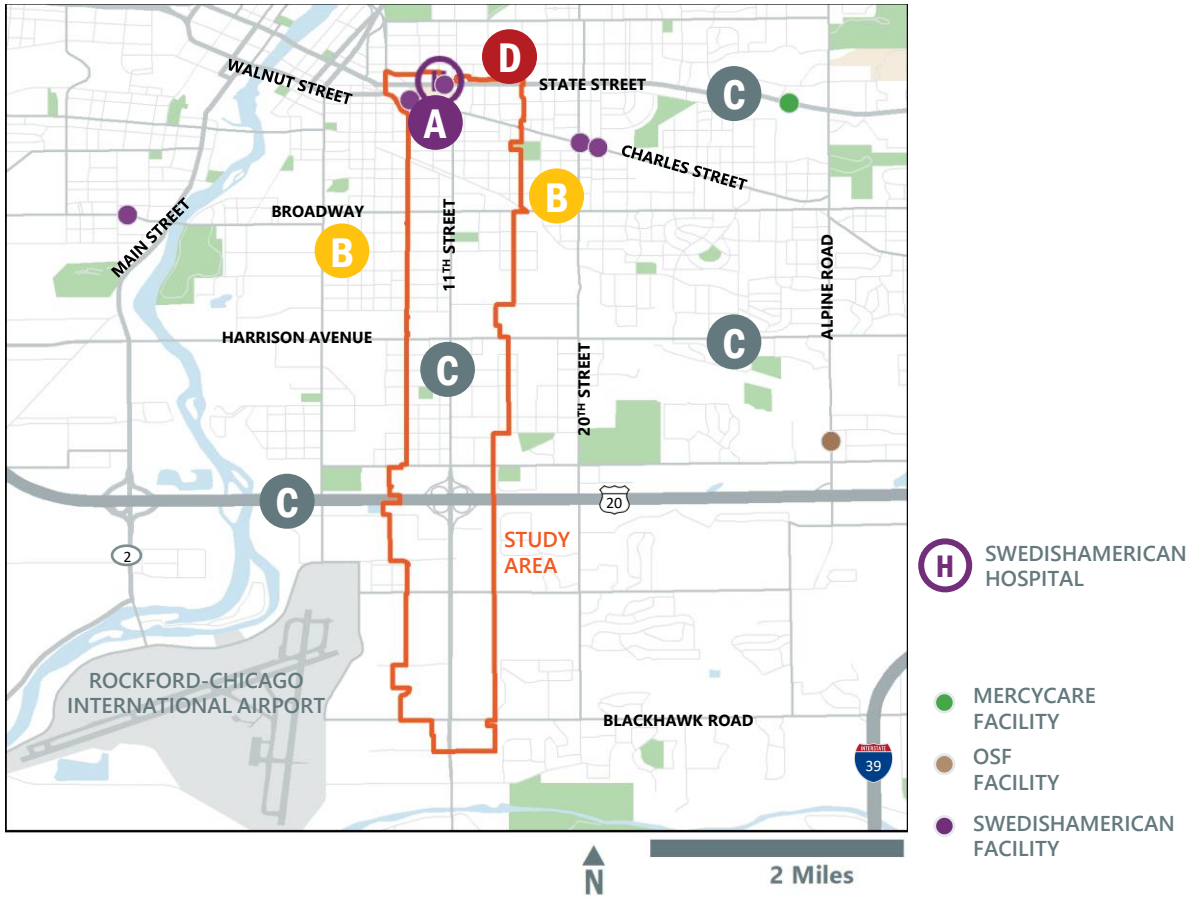
Since 2010, there have been approximately 60,000 square feet of new medical office space delivered countywide in three buildings. These medical office buildings have located within existing medical clusters, either adjacent to existing hospitals or along highly trafficked roadways with high visibility.

Despite limited new deliveries and high medical office vacancy rates, existing healthcare providers within the County may choose to expand services in new medical office facilities. Future expansion would likely be dependent on the healthcare needs of patients within the healthcare networks' service area and the existing capacity to serve those patients.

MEDICAL OFFICE – STUDY AREA CONTEXT

The Study Area contains several advantages favorable to medical office tenants

STUDY AREA CONTEXT



Source: Esri, Illinois Department of Transportation (IDOT), MercyHealth, OSF Healthcare, SB Friedman, SwedishAmerican

A GEOGRAPHIC CLUSTERING

The presence of SwedishAmerican Hospital in the northern portion of the Study Area and surrounding outpatient centers along Charles and State Streets provide an opportunity to further establish a medical district.

B SURROUNDING POPULATION

The Study Area is located on the southern periphery of the City of Rockford. Over 8,600 residents live within the Study Area boundaries, many of which are located between State Street and Harrison Avenue in the northern portion of the Study Area. The southern portion of the Study Area (south of Harrison Avenue) is primarily commercial and industrial users.

C TRANSPORTATION ACCESS

Three major east-west throughways bisect the Study Area; State Street (19,500 annual average daily traffic [AADT]), Harrison Avenue (15,800 AADT), and US-20 (37,200 AADT). Additionally, 11th Street experiences approximately 16,300 AADT.

D COLOCATED WITH RETAIL TENANTS

Medtail users typically prefer co-locating in higher performing retail centers. While the primary neighborhood-serving retail centers in the Study Area are unlikely to attract medtail users, the commercial frontage along Charles or Harrison may be attractive due to adjacencies to the SwedishAmerican Hospital campus.

MEDICAL OFFICE – KEY TAKEAWAYS



EXPANSION POTENTIAL

Future medical office development within the Study Area would likely depend on SwedishAmerican's expansion plans. Within the Study Area, locations along Charles and State Streets near the SwedishAmerican Hospital could be attractive due to access and visibility.

Depending on the scale of new development, SwedishAmerican may consider densification of existing surface parking lots within the existing hospital campus.



MEDICAL DISTRICT BRANDING

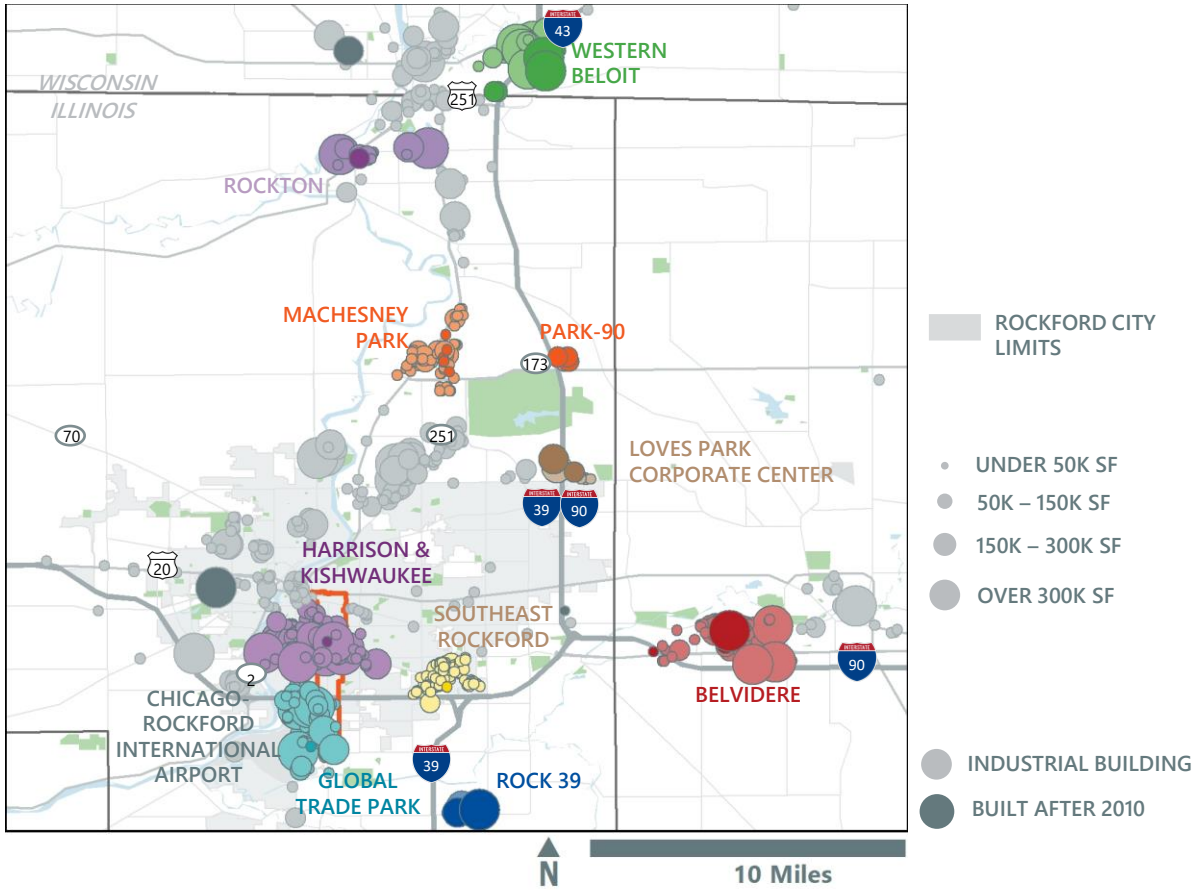
The presence of the SwedishAmerican hospital and adjacent outpatient facilities creates an opportunity to establish a medical district brand in the northern portion of the Study Area along the commercial frontage of Charles and State Streets. Due to the residential nature of the northern portion of the Study Area along 11th Street, medical district branding along the entirety of 11th Street may not be appropriate.

INDUSTRIAL

INDUSTRIAL – REGIONAL INDUSTRIAL CLUSTERS

Newer industrial buildings within the region have located near major interstates and roadways

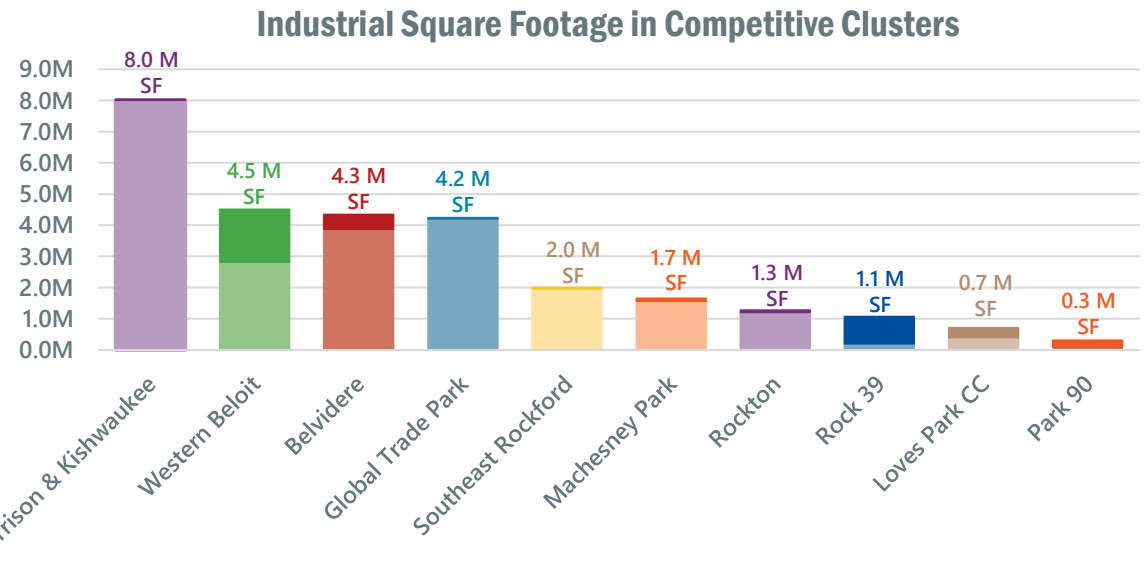
REGIONAL INDUSTRIAL SUPPLY



Source: CoStar, Esri, SB Friedman, WMTV NBC-15

Within the City of Rockford, there are over 22 million square feet of existing industrial space. Industrial buildings within Winnebago County and the surrounding area have historically located in key industrial clusters within Rockford such as Harrison & Kishwaukee, the Global Trade Park, and Southeast Rockford.

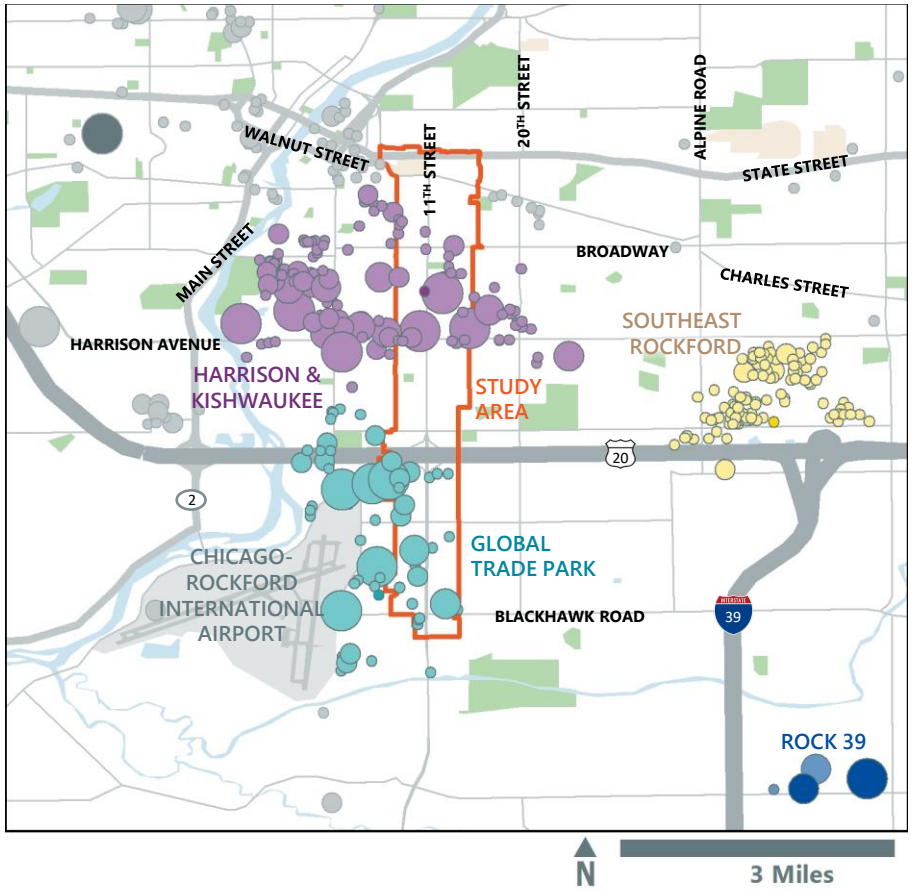
Since 2010, approximately 2.7 million square feet of new industrial development have been delivered in Rockford and surrounding competitive clusters. Newer industrial development has emerged outside of legacy industrial clusters in greenfield sites at interstate locations, such as I-39 and I-90. The largest recent development in the region is a 1.1 million square foot Amazon distribution center in the Western Beloit industrial cluster, which officially opened in August 2020.



INDUSTRIAL – LOCAL INDUSTRIAL CLUSTERS

Two industrial clusters are located within the Study Area

LOCAL INDUSTRIAL SUPPLY



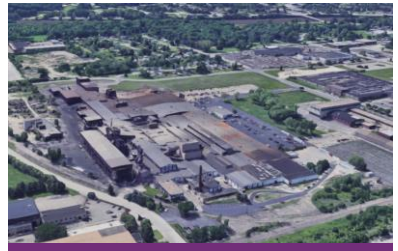
The Study Area contains two of the region's historic industrial clusters; Harrison & Kishwaukee and the Global Trade Park. While both industrial clusters have a combined 12.2 million square feet of industrial space, only 60,000 square feet of industrial development has been constructed in both clusters since 2010. These new deliveries do not include the recent expansion efforts of the Chicago-Rockford International Airport cargo facility.

Industrial buildings within the Study Area clusters have historically comprised manufacturing space. However, the past decade has seen a shift towards newer, larger warehouse and distribution buildings, as seen in the Rock 39 development. Development is more likely to locate in greenfield spaces near interstate locations.



GLOBAL TRADE PARK

AVERAGE BUILDING SF: 72,000 SF
AVERAGE BUILDING AGE: 40 YEARS



HARRISON & KISHWAUKEE

AVERAGE BUILDING SF: 59,000 SF
AVERAGE BUILDING AGE: 70 YEARS



ROCK 39

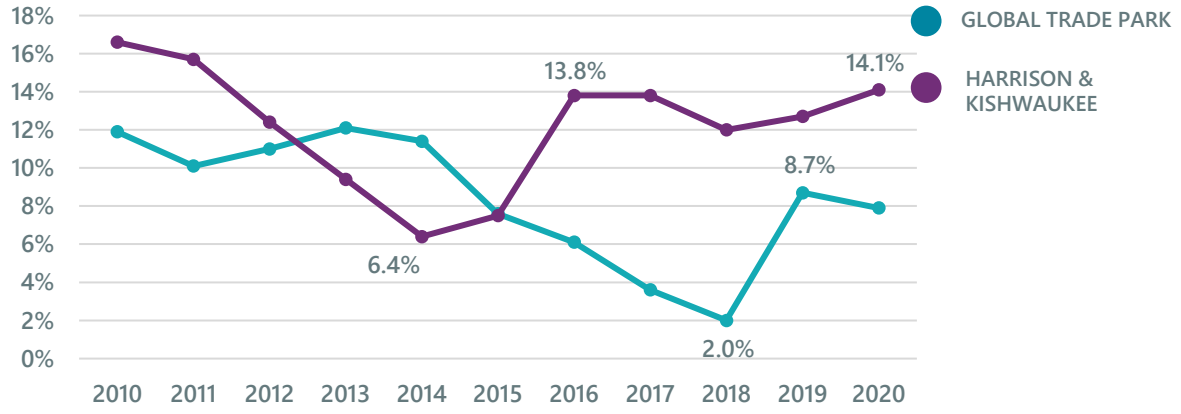
AVERAGE BUILDING SF: 266,000 SF
AVERAGE BUILDING AGE: 5 YEARS

Source: CoStar, Esri, SB Friedman

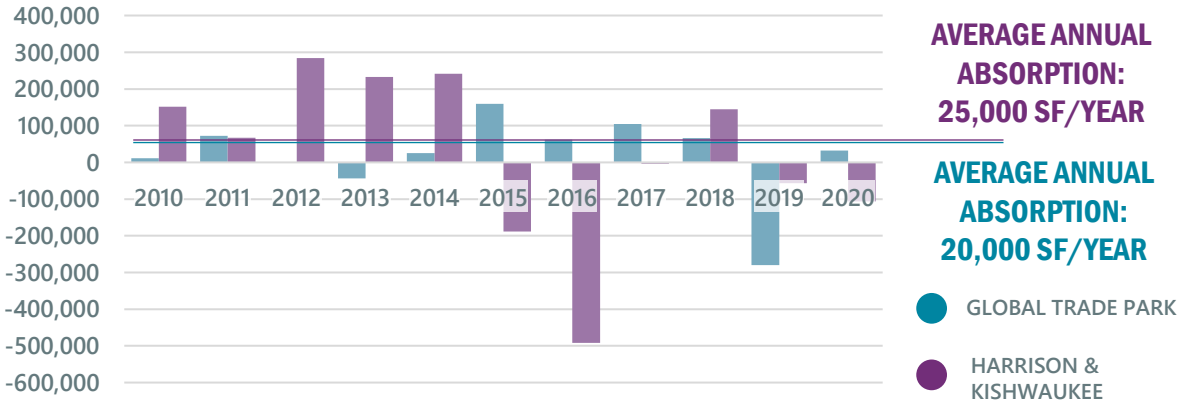
INDUSTRIAL – STUDY AREA MARKET PERFORMANCE

There has been limited absorption of industrial space within the Study Area

VACANCY RATES OF INDUSTRIAL SPACES



INDUSTRIAL SQUARE FEET ABSORBED



Source: CoStar, SB Friedman

Despite the 2.1 million square feet of new industrial development in the County, there has been limited new industrial development within the Study Area. Recent market performance in the Study Area is weaker than the countywide industrial market.

- Vacancy rates for both clusters in the Study Area have fluctuated over the past decade, most recently increasing to approximately 14% for the Harrison & Kishwaukee cluster and 8% for the Global Trade Park clusters. Vacancy rate increases within these clusters have been driven by the closure of the Rockford Products plant (581,000 square feet) in the Harrison & Kishwaukee cluster and Titan's Personnel's building (305,000 square feet) in the Global Trade Park cluster. The vacancy of other smaller industrial spaces within the Study Area indicate a shift away from the City's traditional manufacturing sectors towards logistics and distribution centered along the interstate system.
- Within the Study Area, industrial absorption for both the Harrison & Kishwaukee and Global Trade Park clusters have averaged 25,000 square feet per year and 20,000 square feet per year, respectively.
- Average rent for industrial and flex space for both clusters range from approximately $2.50 to $3.00 per square foot (NNN) while newer buildings within Winnebago County command higher average rents of approximately $8 per square foot (NNN). Lower rents within the Study Area likely reflect the presence of older space, therefore it is likely that newer construction could achieve higher rents per square foot.

INDUSTRIAL – SITE CONSIDERATIONS



ACCESS TO TRANSPORTATION NETWORKS

Access to the regional transportation network is a major competitive advantage in terms of attracting industrial users, particularly those seeking access to the regional supply chain and distribution networks.

The region's continued prominence as a major distribution and logistics hub is expected to continue, and growth in e-commerce will present new opportunities for growth in warehousing, transportation and distribution. This growth is likely to occur along major transportation networks such as interstate and railroad systems.

The Study Area's proximity to the Rockford-Chicago International Airport and US-20 provide a major advantage for potential warehousing and distribution industrial development. Additionally, several sites within the Study Area are directly serviced by the Union-Pacific railroad.



ACCESS TO THE SUPPLY CHAIN

Industrial real estate location decisions are often driven by clusters of similar companies or strategic locations within the broader supply chain. For manufacturing businesses, proximity to supporting industries in the supply chain can lower the cost of business by reducing transportation costs and optimizing logistics. Established clusters also typically result in specialized skillsets within the labor force which may be attractive to new industrial users.

The Study Area is historically comprised of manufacturing uses, including transportation equipment and metals manufacturing users. Industrial users that desire proximity to existing companies may be attracted to sites within the Study Area.

INDUSTRIAL – SITE CONSIDERATIONS



BUILDING AVAILABILITY

Desired building specifications for industrial tenants has shifted over the last decade. Such considerations include ceiling heights, number of loading docks, column spacing, and construction materials. Newer distribution and logistics developments, for example, are trending towards higher ceilings and more loading docks.

While the Study Area has a presence of available industrial space for prospective tenants, these buildings are at least 40 years old on average and may be considered obsolete for modern industrial users.



SHOVEL-READY SITES

At the site level, decisions are often made based on the size of the property, cost per acre, opportunity for expansion, zoning and entitlements, and the availability and cost of utilities. Many employers prefer shovel-ready sites which are fully served with all utilities (water, sewer, electric, natural gas, etc.) and have adequate excess capacities to meet the potential demand of the user. Benefits to shovel-ready sites include reduced risk and uncertainty in the site selection process and reduced time required to bring a project to completion.

There appear to be several greenfield sites available for industrial development within the Study Area. The Study Area is fully serviced with utilities although there may be capacity challenges. Available industrial parcels in the Study Area will compete to attract new industrial tenants with available land in nearby industrial parks. For example, in addition to existing industrial parks, there are 320 acres of land available for greenfield industrial development within the proposed Cornerstone at Global Trade Park, located at the intersection of US-20 and IL-2.

INDUSTRIAL – KEY TAKEAWAYS



MARKET POTENTIAL

Winnebago County is anticipated to continue to expand its industrial presence. The County has seen new logistics, distribution and warehouse industrial developments. However, recent trends of industrial clusters within the Study Area indicate weaker performance.

Larger-scale distribution tenants typically prefer greenfield sites with interstate access. However, prospective industrial tenants may find the Global Trade Park industrial cluster attractive due to its access to the Chicago-Rockford International Airport, US-20, and multiple railroad networks. There are also shovel-ready pads available within the Global Trade Park.



REPURPOSING OF OBSOLETE BUILDINGS

Industrial buildings within the Study Area are typically older and may be considered obsolete for modern industrial users. The repurposing of industrial buildings for newer industrial users may deter prospective tenants who would prefer cheaper greenfield development with interstate access that can be built to specification.

The City has taken proactive measures to support the repurposing of obsolete industrial buildings. As vacancies continue to rise, there should be continued efforts to reposition obsolete industrial buildings to accommodate alternative uses. For example, buildings could be adapted to provide space for breweries, industrial incubator spaces, and makerspaces, among other uses. However, the repurposing of obsolete industrial buildings within the Study Area may require environmental remediation due to potential contamination from legacy manufacturing users.

MARKET POTENTIAL AND LOCAL ECONOMIC DEVELOPMENT TOOLS

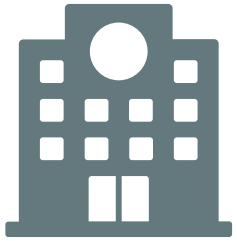
11th STREET CORRIDOR MARKET POTENTIAL SUMMARY



RETAIL

Local and national trends in retail development indicate limited potential for new retail development within the Study Area.

The preservation of the existing local, neighborhood-serving retail stores in the Study Area should be prioritized. Additionally, the repurposing of vacant big-box retail spaces for alternative uses should be considered.



MEDICAL OFFICE

New medical office development within the Study Area will likely be dependent on expansion plans of SwedishAmerican. Additional outpatient facilities and 'medtail' spaces would likely locate along Charles and State Streets.

The existing cluster of the SwedishAmerican hospital and supportive outpatient facilities in the northern portion of the Study Area may have the potential to be marketed as a 'medical district'.



INDUSTRIAL

The industrial market within the County has seen a shift towards logistics, distribution, and warehouse developments which have primarily located on greenfield sites near the interstate system.

While most industrial buildings within the Study Area are older manufacturing buildings, the Global Trade Park has the potential to attract industrial tenants by leveraging its access to various transportation networks. Additionally, obsolete industrial buildings within the Study Area could be repurposed for alternative uses.

LOCAL ECONOMIC DEVELOPMENT TOOLS

Existing and new local economic development tools could be used to catalyze Study Area redevelopment

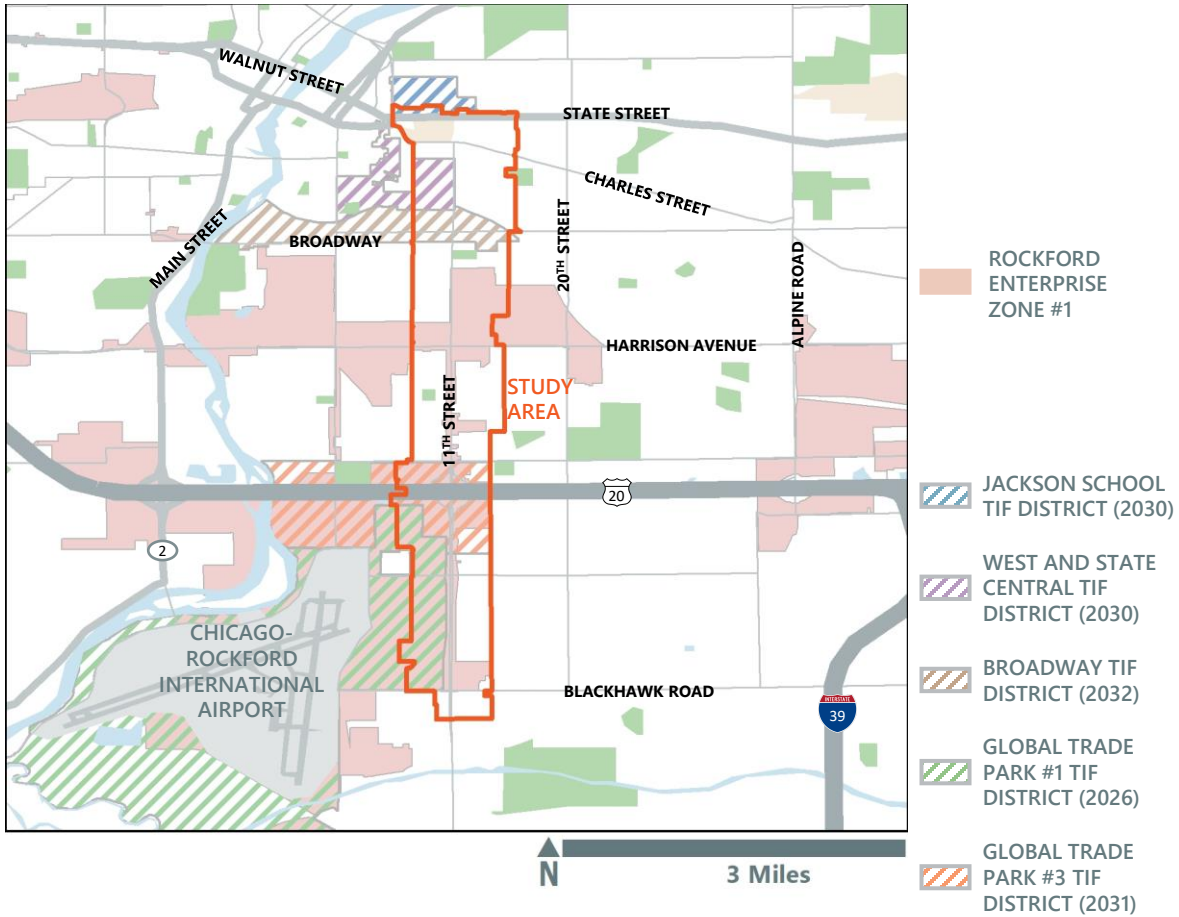
	Tax Increment Financing (TIF) Districts	Business Districts (BD)	Special Service Areas (SSA)
DESCRIPTION	• TIF is a program that allocates future increases in property taxes from a designated area, or TIF district, to pay for improvements within that area	• A Business District is a legally defined contiguous area of a municipality that has the power to impose a sales and/or hotel tax (up to 1% by 0.25% increments)	• An SSA is a property-taxing mechanism that can be used to fund a wide range of special or additional services and/or physical improvements in a defined geographic area
BENEFITS	• Allows City to make targeted investments to spur economic development • TIF is not an increase in taxes; It is only a re-allocation of how they are used • TIF revenues could be utilized to offset extraordinary development costs, such as site remediation and public improvements in the TIF district which may be a financial hindrance for prospective developers • TIF is a tool already being used by the City; the Study Area intersects 5 TIF districts, the newest of which is set to expire in 2032	• Business district revenues can be expended on site preparation costs, public infrastructure costs, hard construction costs, and/or relocation costs, among others • Designation process is often quicker and simpler than TIF District • Funds available sooner than TIF revenues; disbursed on monthly basis	• SSA revenues can be used for support programs such as marketing, special events, and transportation • Infrastructure improvements can also be funded through SSA revenues, including streetscaping, sidewalk paving, and street improvements • Revenues can also support redevelopment and storefront improvement costs
CHALLENGES	• Existing TIF obligations to previous projects may limit revenue available for new projects • New TIF district designation or TIF district extensions/expansions may face opposition	• Currently there are no business districts within City of Rockford; would require time and financial resources to designate • Sales tax increases may face opposition	• SSAs are typically used to support central business districts and downtown areas instead of neighborhood retail centers • Requires support from property owners and taxpayers within district

Source: City of Rockford, The Institute for Illinois' Financial Sustainability at the Civic Federation, SB Friedman, US Department of Housing and Urban Development

LOCAL ECONOMIC DEVELOPMENT TOOLS

State and federal-level incentives could supplement local tools to encourage Study Area redevelopment

LOCAL AND STATE ECONOMIC DEVELOPMENT DISTRICTS



Source: City of Rockford, Esri, SB Friedman

The Study Area intersects several local, state and federal economic development districts. These districts offer various tax incentives to attract commercial and industrial tenants and reduce real estate-related costs. Incentives from these programs could be coupled with City-led economic development incentives such as TIF, BD and SSA.

Additionally, where for properties located outside of existing incentive districts, the City could consider a local property tax abatement on a project-by-project basis.

LIMITATIONS OF OUR ENGAGEMENT

Our briefing book is based on estimates, assumptions and other information developed from research of the market, knowledge of the industry, and meetings with the client during which we obtained certain information. The sources of information and bases of the estimates and assumptions are stated in the briefing book. Some assumptions inevitably will not materialize, and unanticipated events and circumstances may occur; therefore, actual results achieved during the period covered by our analysis will necessarily vary from those described in our briefing book, and the variations may be material.

The terms of this engagement are such that we have no obligation to revise the briefing book or to reflect events or conditions that occur subsequent to the date of the briefing book. These events or conditions include, without limitation, economic growth trends, governmental actions, additional competitive developments, interest rates and other market factors. However, we are available to discuss the necessity for revision in view of changes in the economic or market factors affecting the Study Area.

Further, we neither evaluated management's effectiveness, nor are we responsible for future marketing efforts and other management actions upon which actual results will depend.

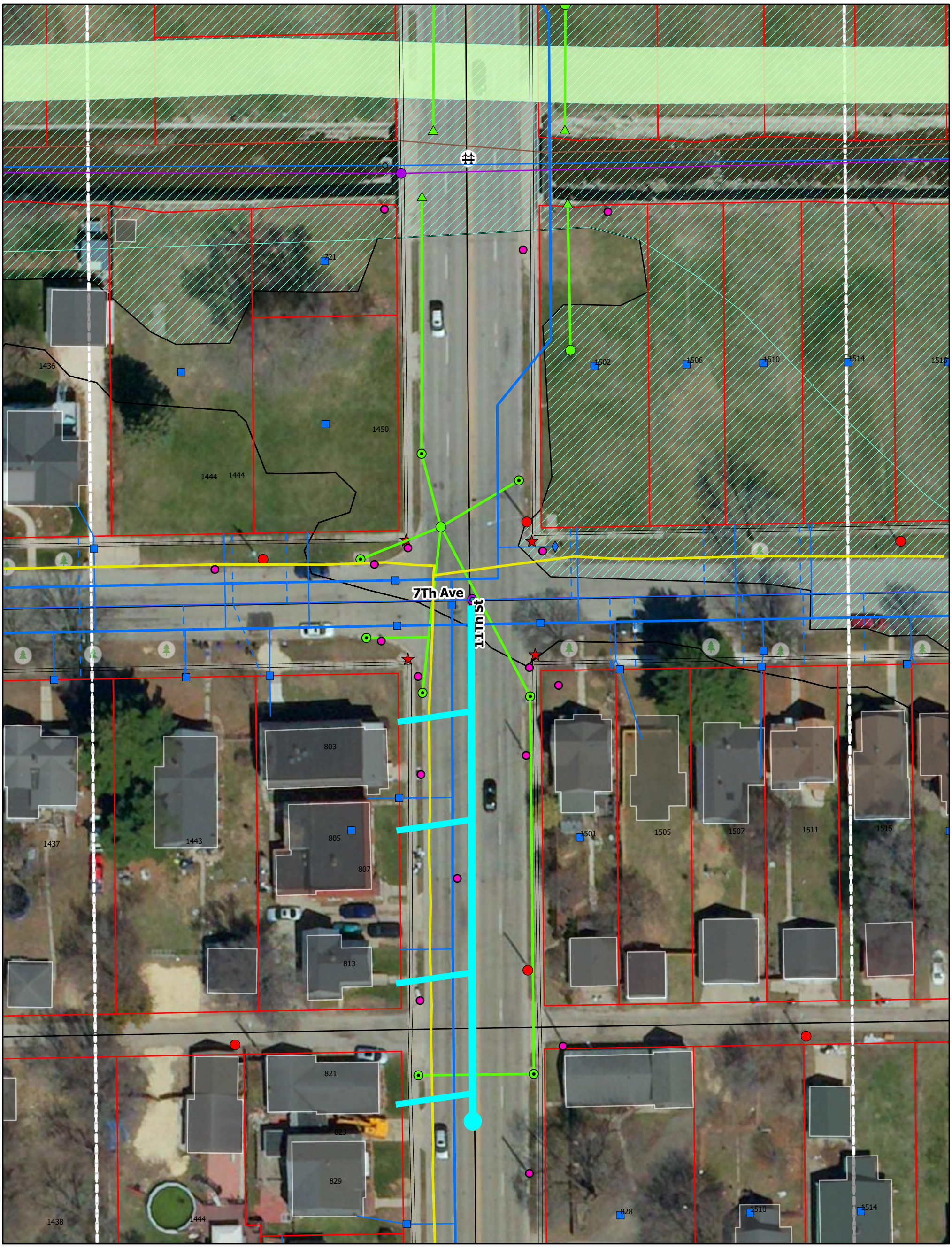
Our briefing book is intended solely for your information and for submission to partners and should not be relied upon by any other person, firm or corporation or for any other purposes. Neither the briefing book nor its contents, nor any reference to our Firm, may be included or quoted in any offering circular or registration statement, appraisal, sales brochure, prospectus, loan, or other agreement or any document intended for use in obtaining funds from individual investors.

We acknowledge that our briefing book may become a public document within the meaning of the freedom of information acts of the various governmental entities. Nothing in these terms and conditions is intended to block the appropriate dissemination of the document for public information purposes.

APPENDIX 6

Planned Infrastructure Projects

- Sanitary District added infrastructure mapping
- Sandy Hollow Road reconstruction flier
- Water Department Proposed Water Main Improvements



Legend

- Unconfirmed Utility Point
- Unconfirmed Utility Line
- Gas High Pressure Main
- Gas MOP Main
- Gas Service Line
- Oil
- Fiber Handhole
- Fiber Cable
- Traffic Signal Inventory
- Street Light
- Street Light Handhole
- Hydrant
- Water Valve
- Water Manhole
- Water Main
- Water Service
- Water Lateral Line
- Storm Special Feature
- Storm Outfall
- Storm Manhole
- Storm Inlet
- Storm Basin Point
- Culvert
- Storm Pipe
- Sanitary Manhole
- Sanitary Inverted Siphon
- Sanitary Main
- Railroad
- Sidewalk
- BikePath
- Bridge
- RMTD Bus Stop
- Rockford ADA
- Rockford Tree Data
- Cross Walk
- Road
- Wetland
- RMTD Bus Route
- Building Footprints
- Parcel Ownership
- Flood Zone A
- Flood Zone AE
- Fllod Zone X
- 11th St. Corridor

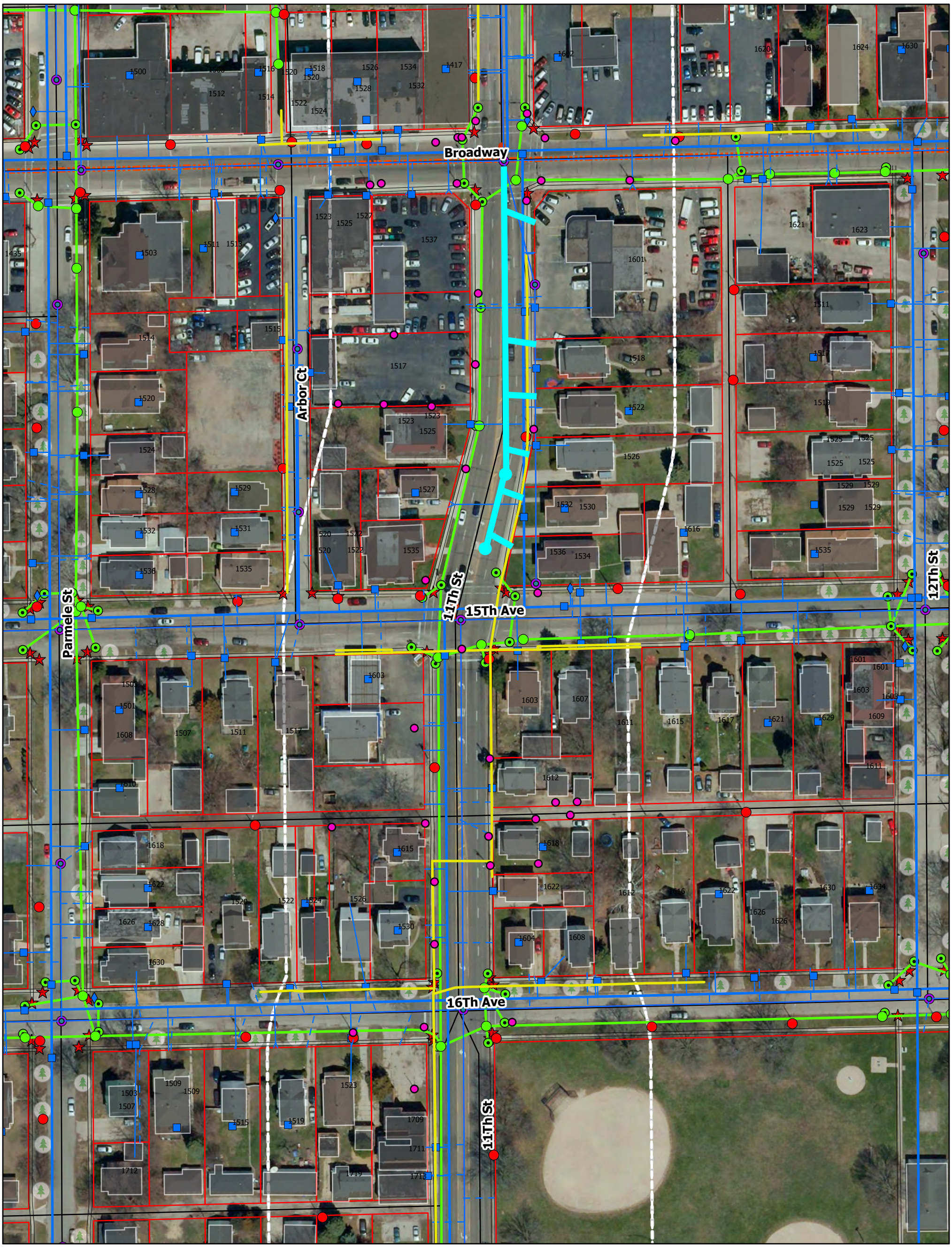
AMERICAN SURVEYING & ENGINEERING

N W E S

1 in = 42ft

Rockford 11th Street Corridor
Utility Facilities

11/16/2020
Draft and Confidential



Legend

- Unconfirmed Utility Point
- Unconfirmed Utility Line
- Gas High Pressure Main
- Gas MOP Main
- Gas Service Line
- Oil
- Fiber Handhole
- Fiber Cable
- Traffic Signal Inventory
- Street Light
- Street Light Handhole
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- Water Valve
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- Flood Zone AE
- Fllod Zone X
- 11th St. Corridor

AMERICAN SURVEYING & ENGINEERING

N W E S

1 in = 92ft

Rockford 11th Street Corridor
Utility Facilities

11/16/2020
Draft and Confidential



SANDY HOLLOW ROAD RECONSTRUCTION

Per the City's *2015 Pavement Condition Report* and the *Long-Range Arterial & Collector Street Plan*, this concrete pavement section of Sandy Hollow Road is one of the poorest conditioned arterial streets in the City. Improvements will build upon the repair work on intersecting Kishwaukee Street performed in 2018, and will include reconstructing the roadway to a thinner, three-lane section with sidewalk and a multi-use path. The City is also working with the Illinois Railway Railroad to improve the railroad crossing surface in coordination with the project. These improvements are estimated to add safety, add pedestrian and bicycle accommodations around the neighboring school, and provide a brand new roadway facility.

	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	Total
City	-	$2,500,000	-	-	-	**$2,500,000**

PROJECT DETAILS

PROJECT LIMITS

Kishwaukee Street to 9th Street

PROGRAM CHAPTER

Capital Roadway Improvement Program

⇒ Arterial & Collector Street Resurfacing Program

CURRENT PROJECT PHASE

Design Engineering

LEAD AGENCY

City of Rockford

CONSTRUCTION LETTING DATE

Spring, 2022

ESTIMATED PROJECT COST

$2,500,000

PROGRAMMED IN FY 2021-2025

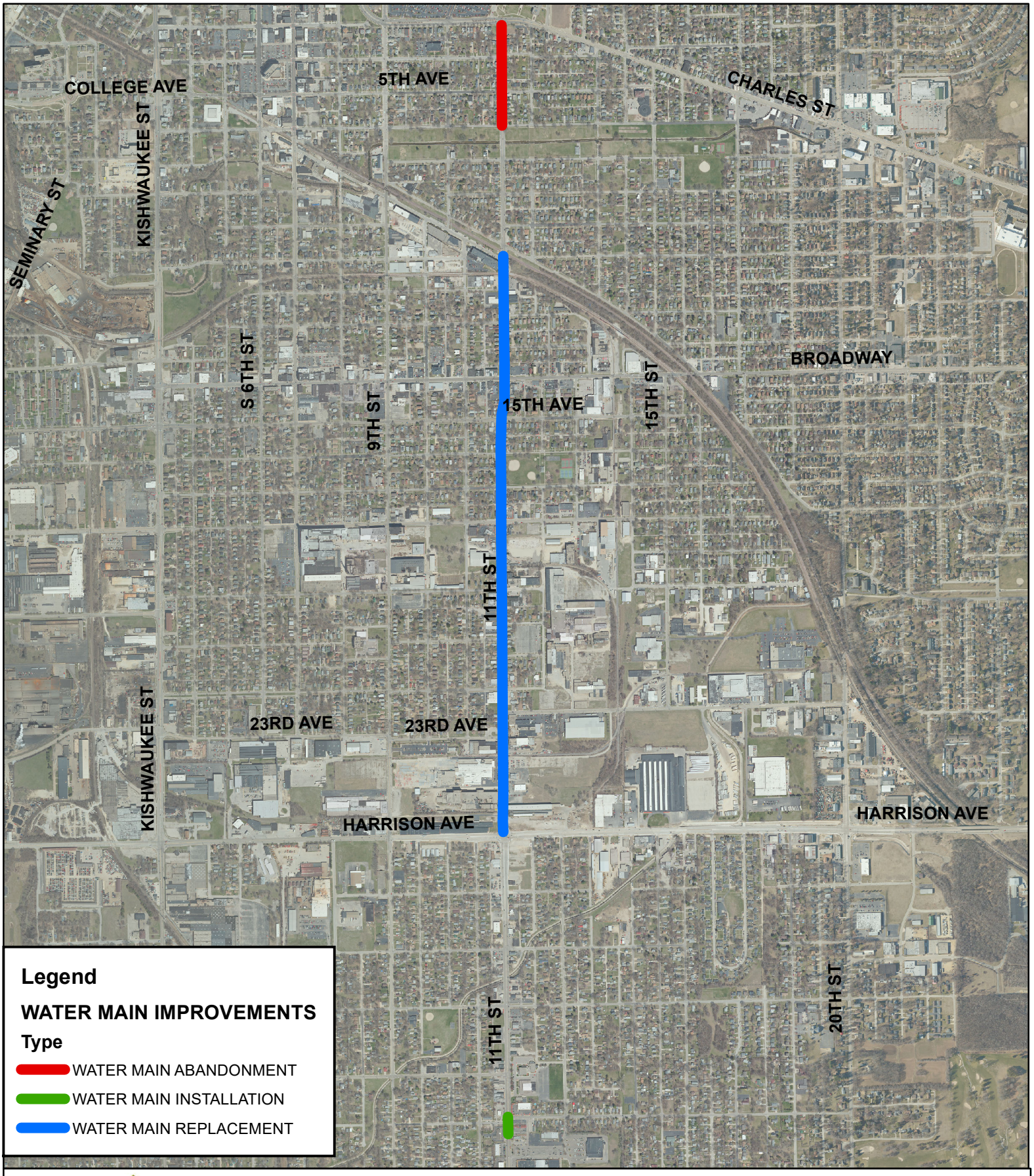
Construction/Engineering

City

Sales Tax- $2,500,000

PROJECT COMPLETION DATE

Fall 2022



11TH ST CORRIDOR PROPOSED WATER MAIN IMPROVEMENTS

THE CITY OF ROCKFORD ILLINOIS, USA

City of Rockford
Public Works
Engineering Division

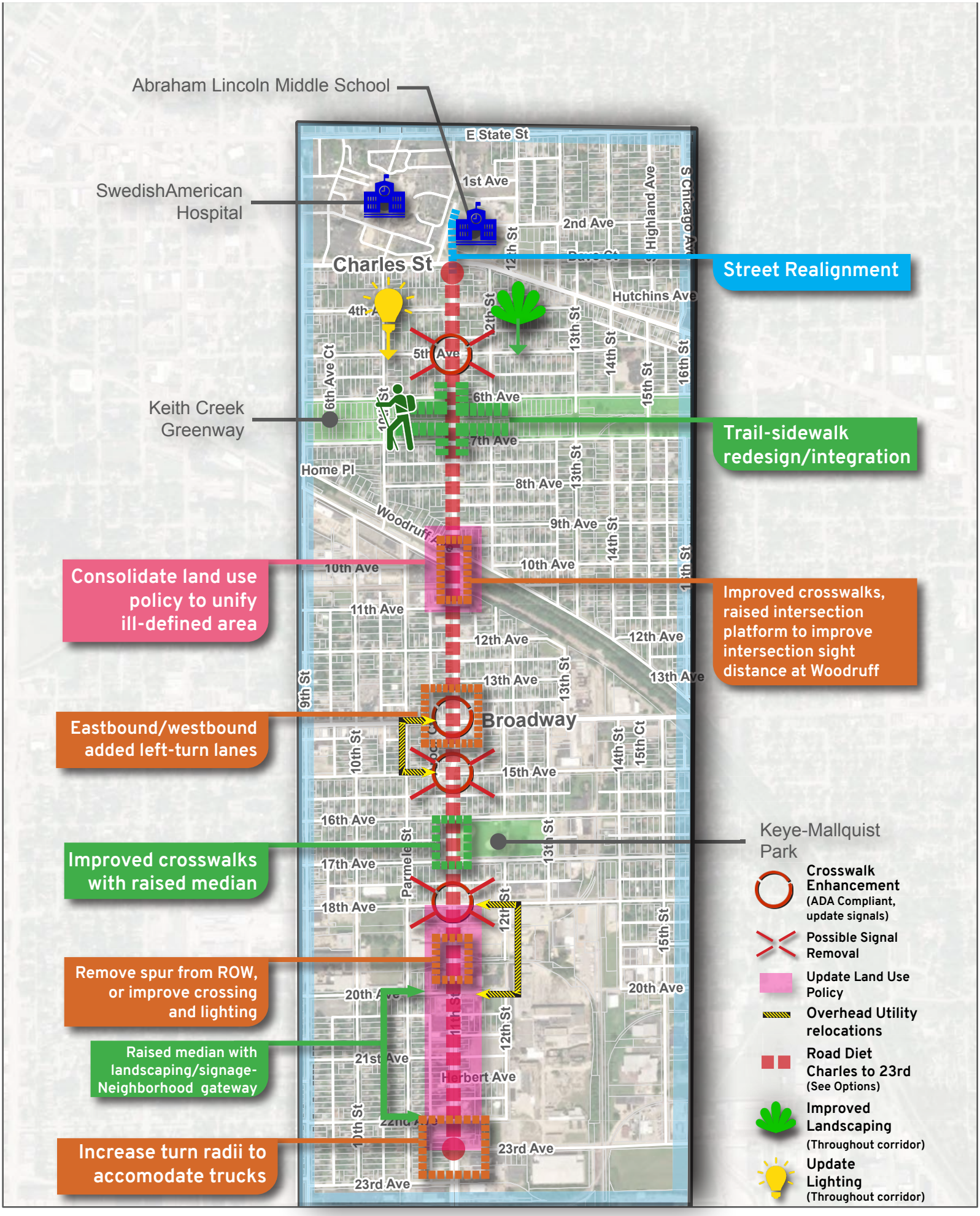
0 750 1,500 3,000 4,500 Feet

This document is neither a legally recorded map nor survey and is not intended to be used as such. Although this map has been reviewed to ensure data accuracy, the City of Rockford provides this map "as is" and makes no guarantee or warranty concerning the accuracy of information contained within the map. This map should be used as reference only.

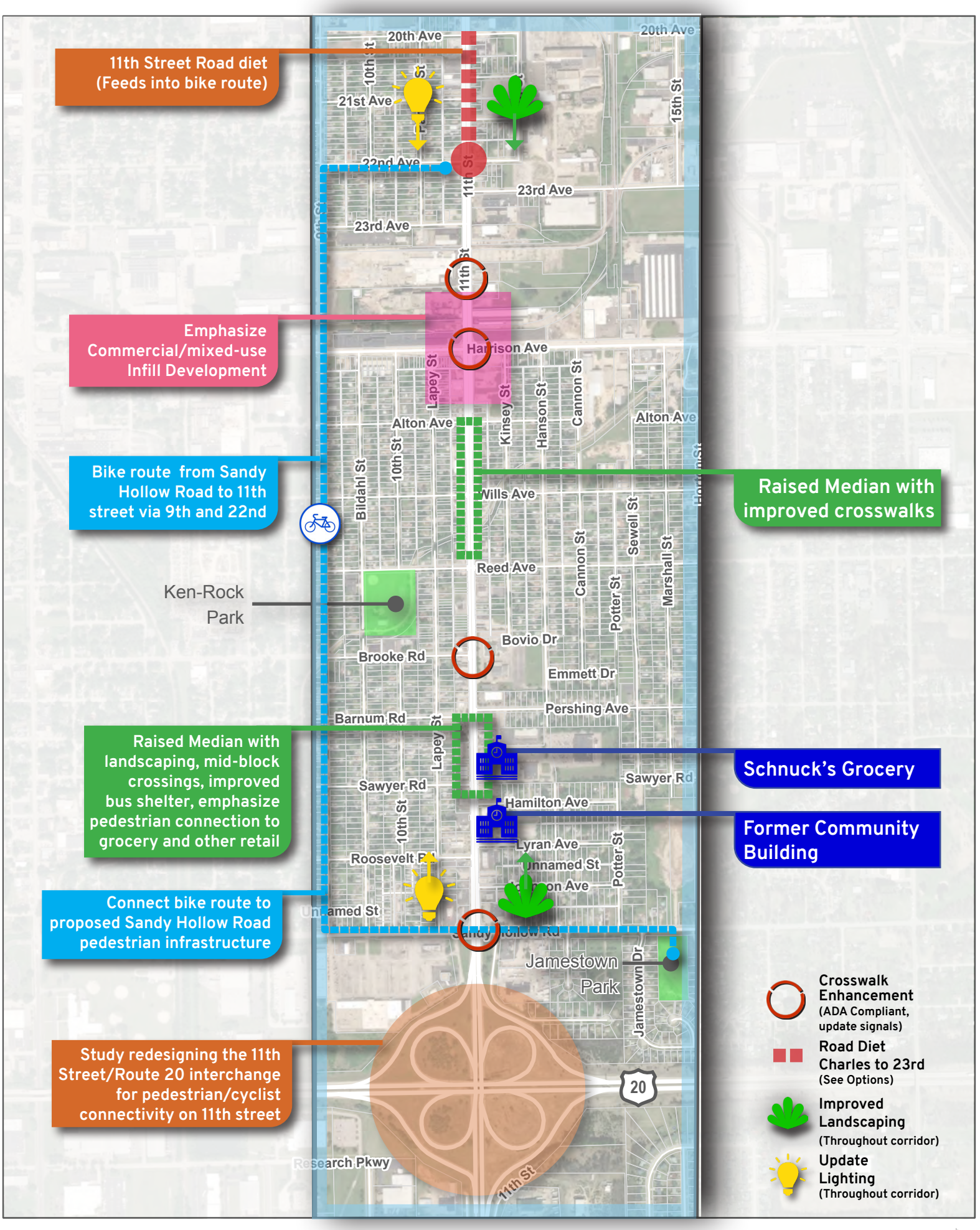
APPENDIX 7

Concept Map of Improvements

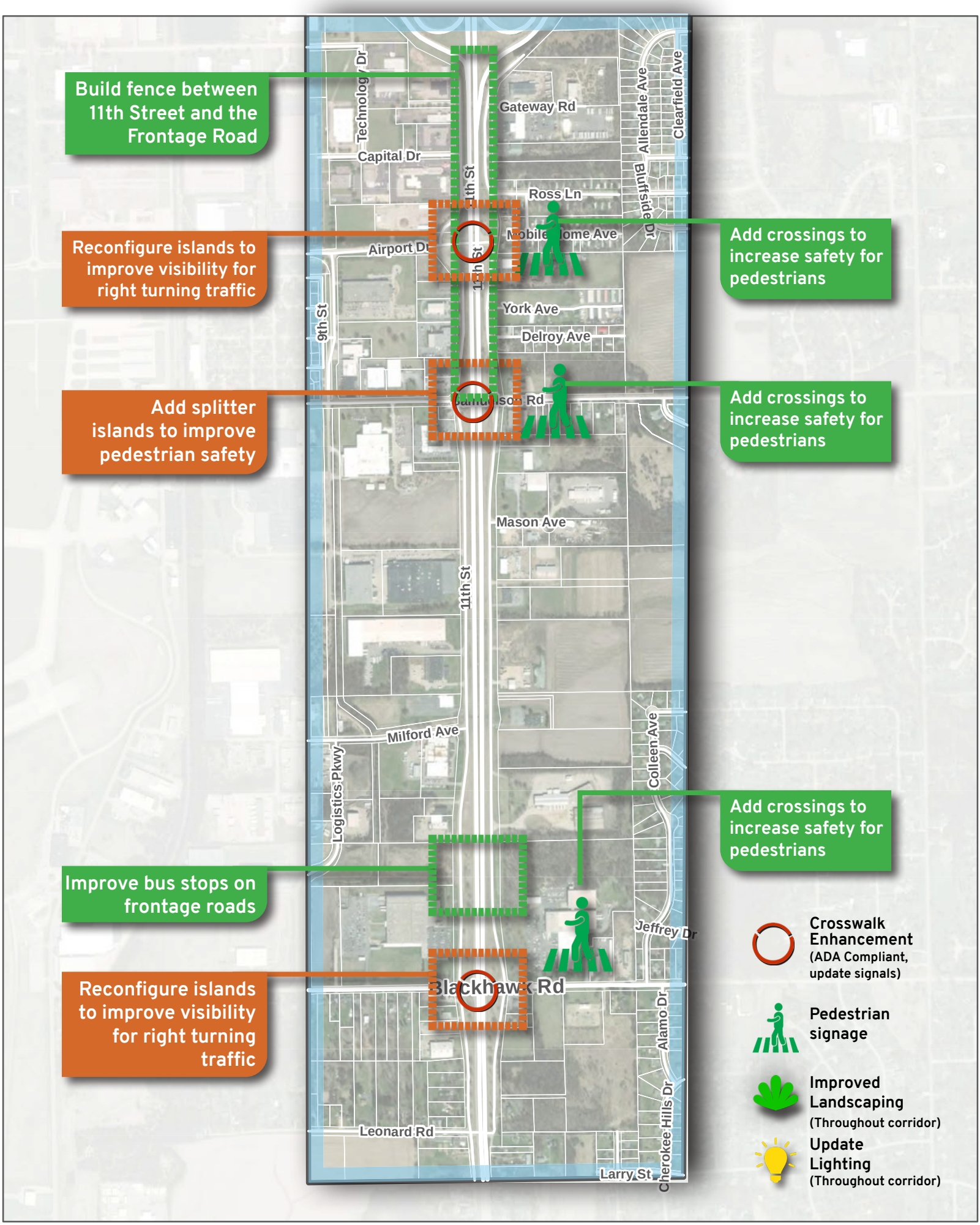
- Concept Map



Charles Street to 23rd Street
Segment 1



23rd Street to Route 20
Segment 2



Route 20 to Blackhawk Road
Segment 3

0 0.125 0.25 Miles

N

APPENDIX 8

Proposed Conceptual Improvements

- Proposed StreetMix Typicals
- US 20 Interchange Pedestrian Crossings
- US 20 Interchange Reconfiguration
- Pedestrian Paths South of US 20
- Median Pedestrian Refuge
- Intersection Layout of 11th Street and Broadway
- Intersection Layout of Barnum Avenue and Pershing Avenue
- Intersection Layout of 11th Street and Charles Avenue

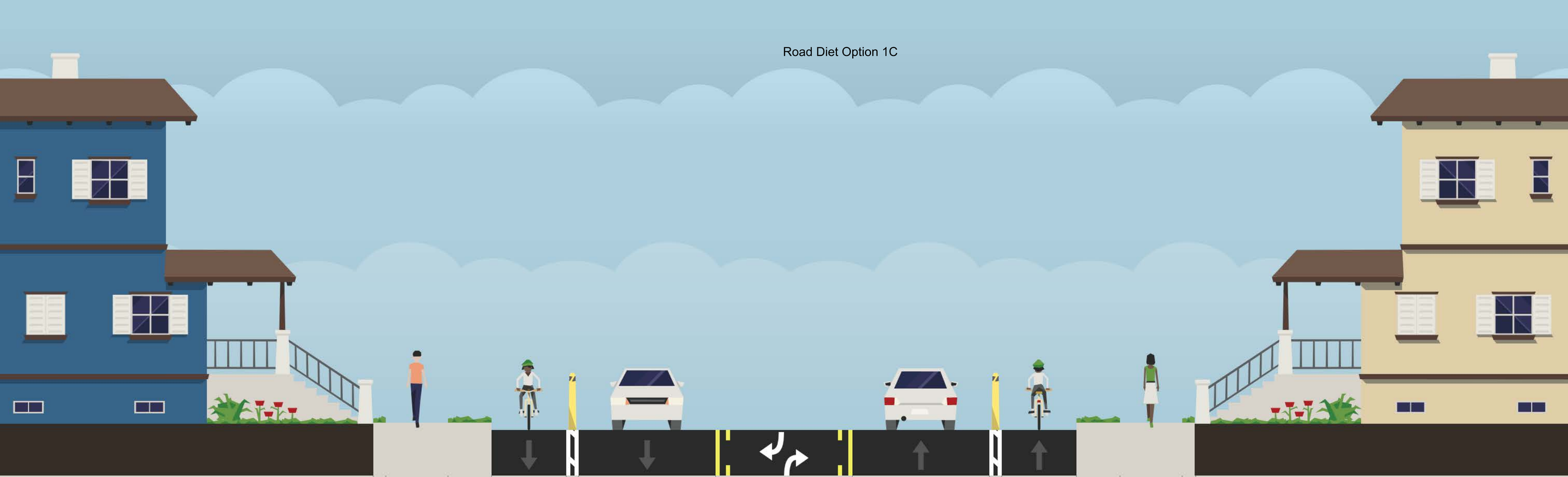
Road Diet Option 1B



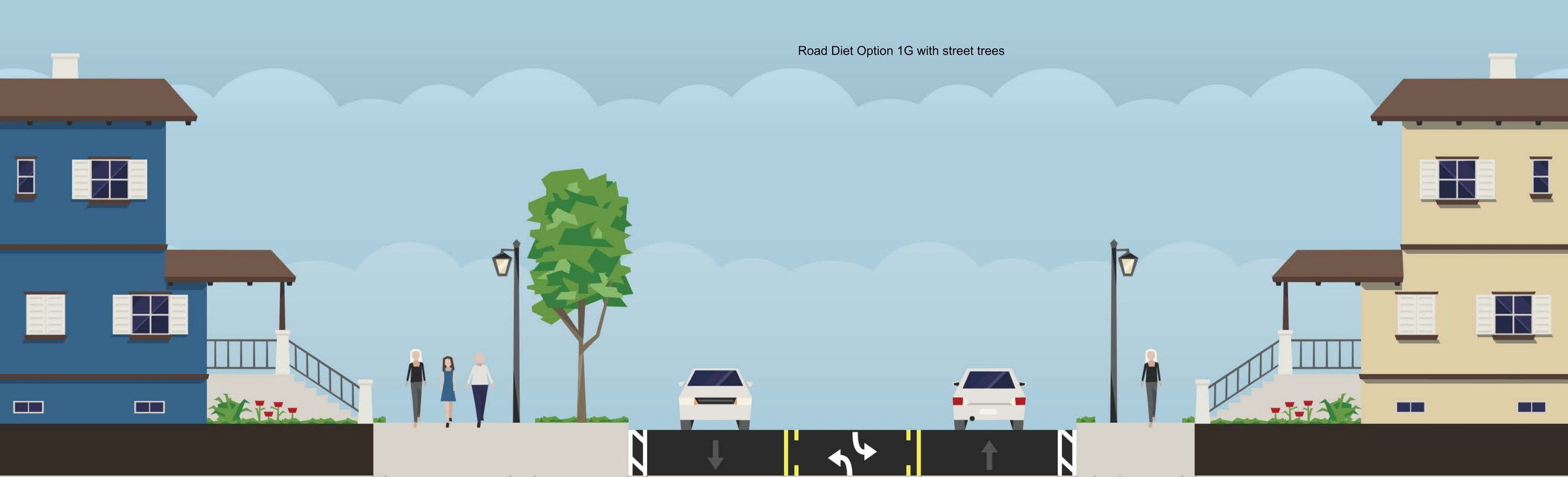
1′	10′ Sidewalk	2′	7½′ Planting strip	6′ Bike lane	12′ Drive lane	12′ Drive lane	6′ Bike lane	1½′	2′	5′ Sidewalk	1′

Made with Streetmix

Road Diet Option 1C

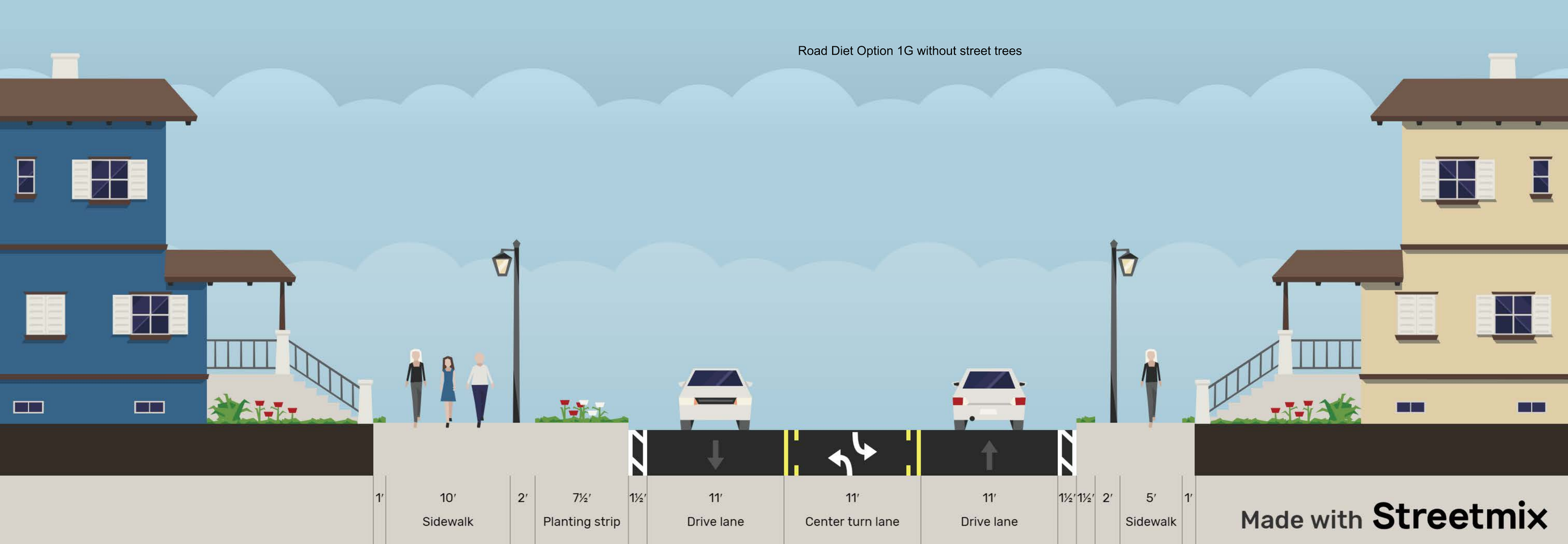


Road Diet Option 1G with street trees

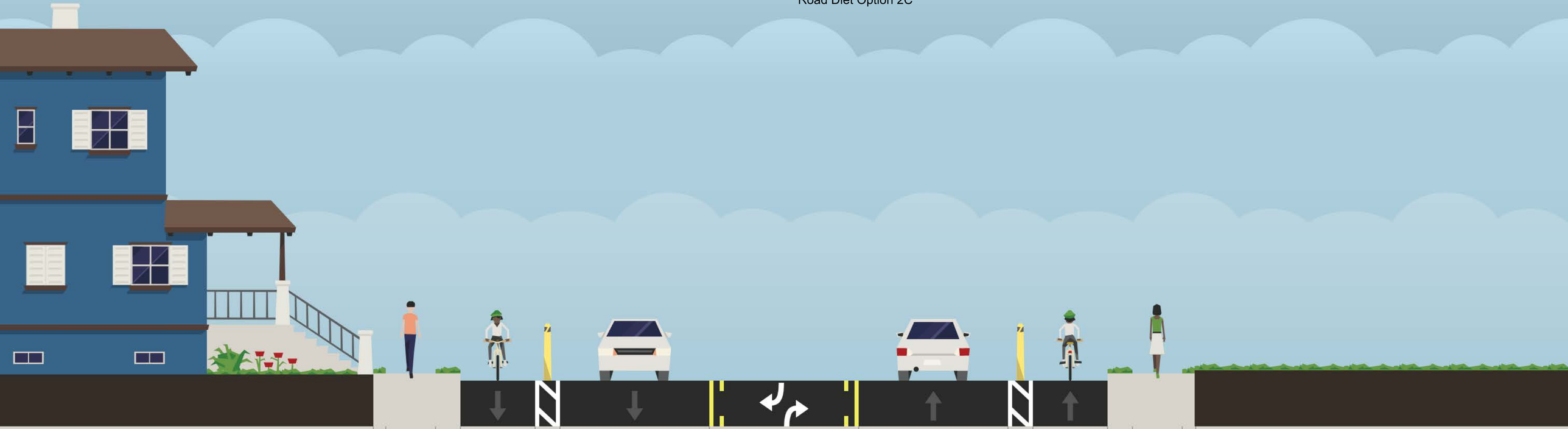


Made with Streetmix

Road Diet Option 1G without street trees

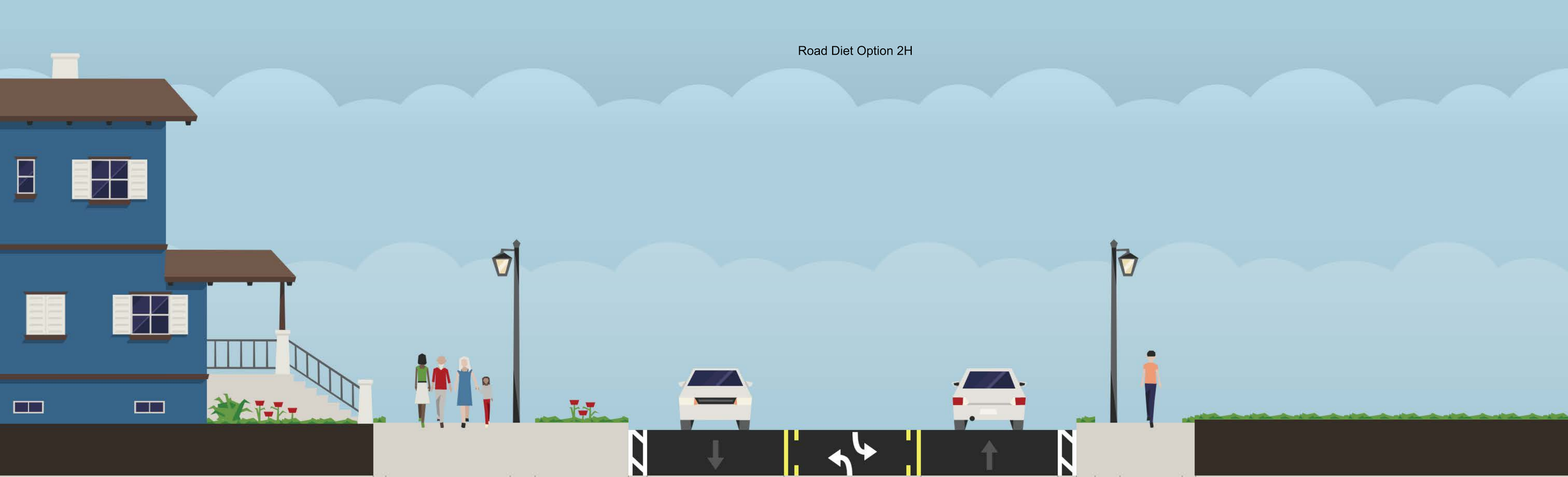


Road Diet Option 2C

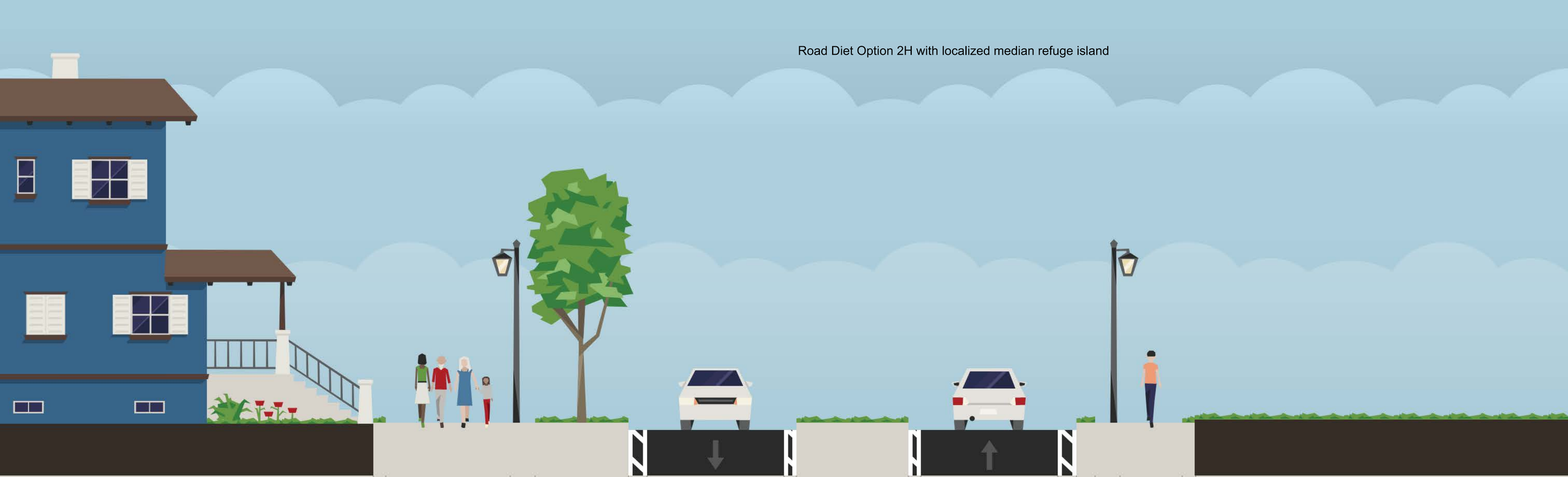


Made with Streetmix

Road Diet Option 2H

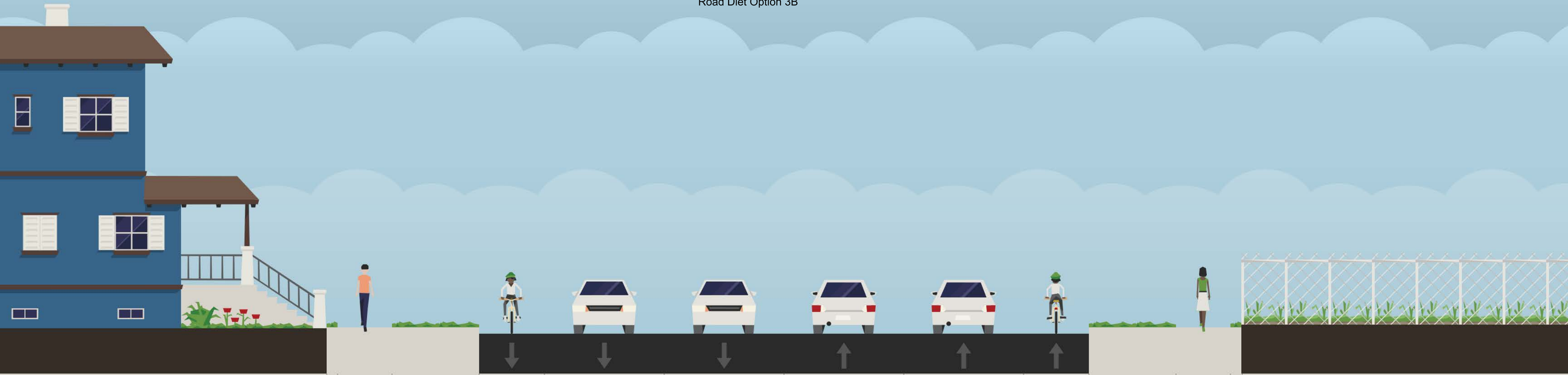


Road Diet Option 2H with localized median refuge island



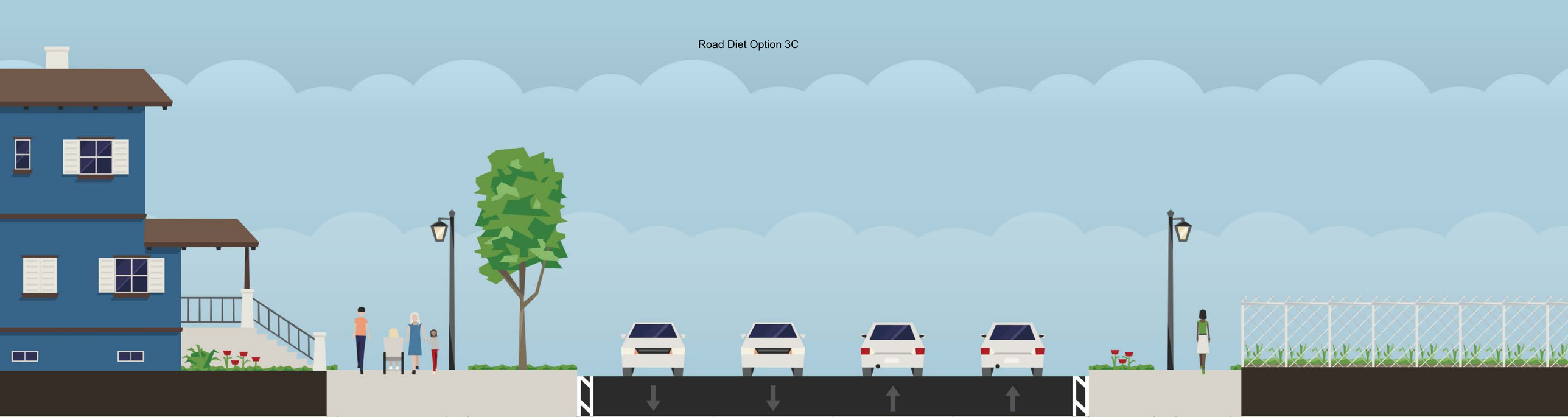
Made with Streetmix

Road Diet Option 3B

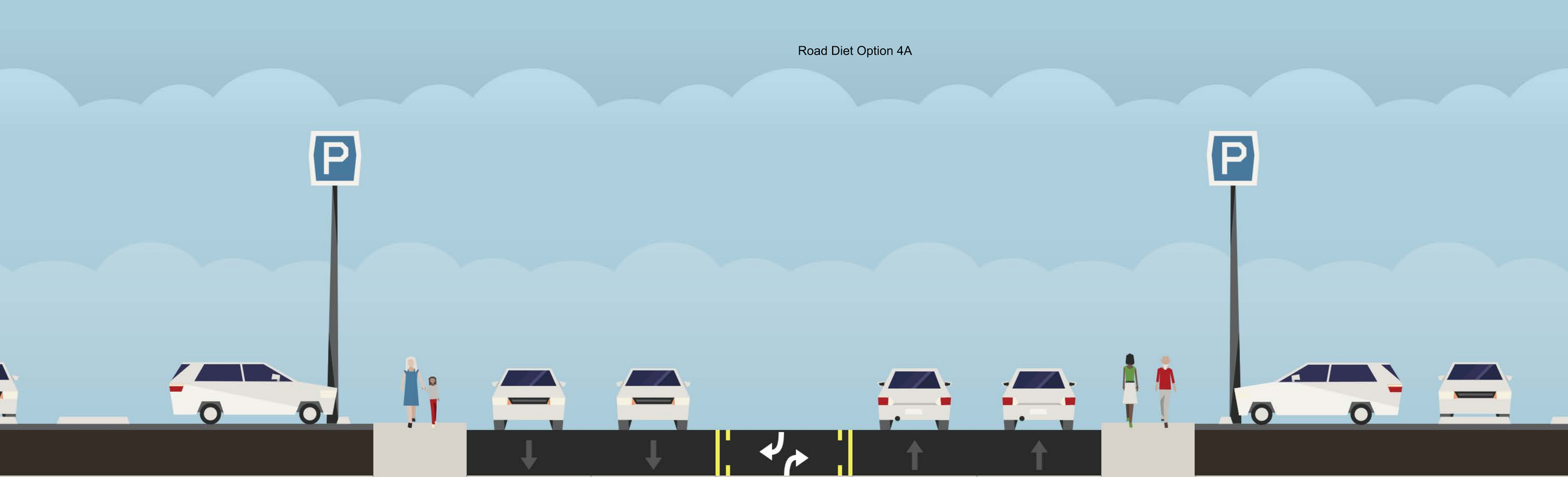


Made with Streetmix

Road Diet Option 3C



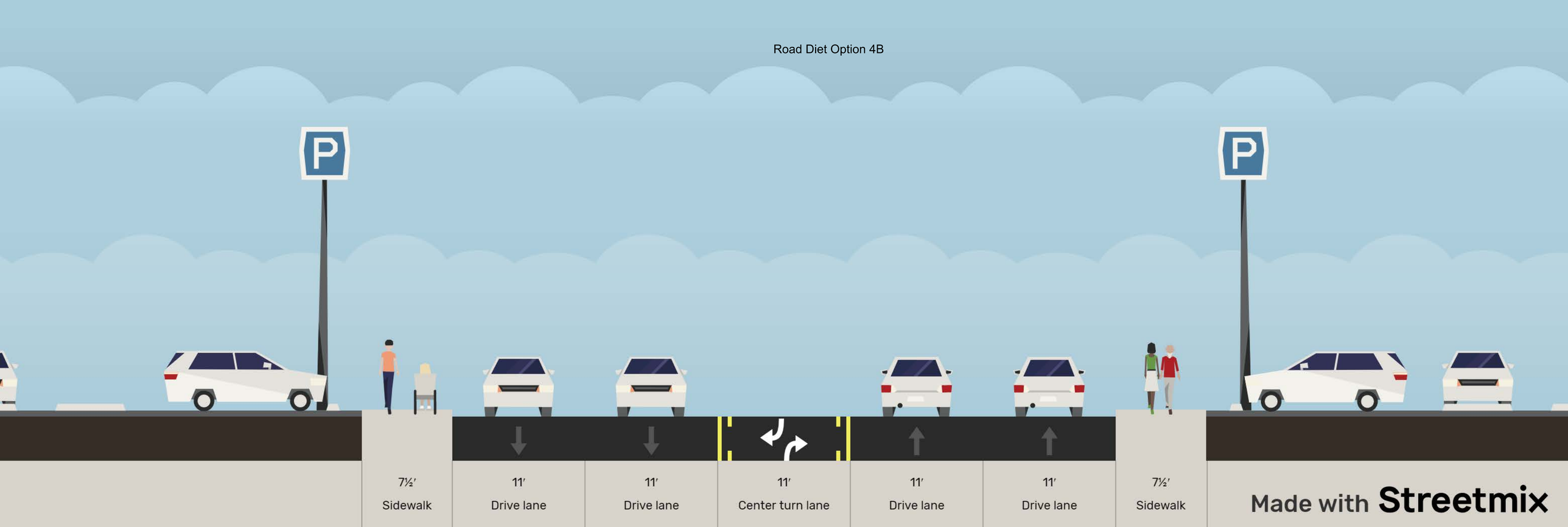
Road Diet Option 4A



7½′	10′	10′	11′	10′	10′	7½′
Sidewalk	Drive lane	Drive lane	Center turn lane	Drive lane	Drive lane	Sidewalk

Made with Streetmix

Road Diet Option 4B



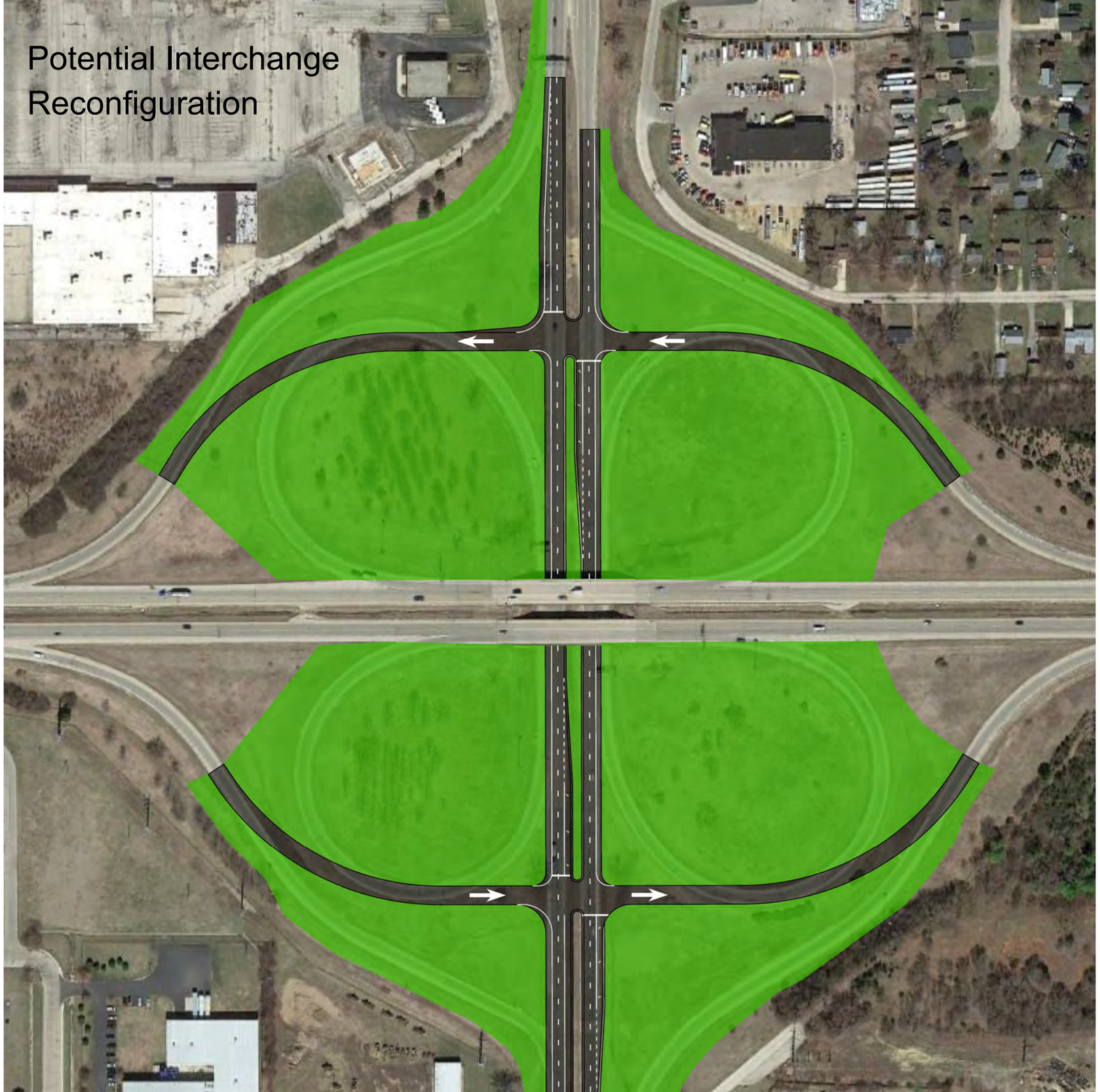
US 20 Interchange Pedestrian Path - Ramp Crosswalk with RRFB



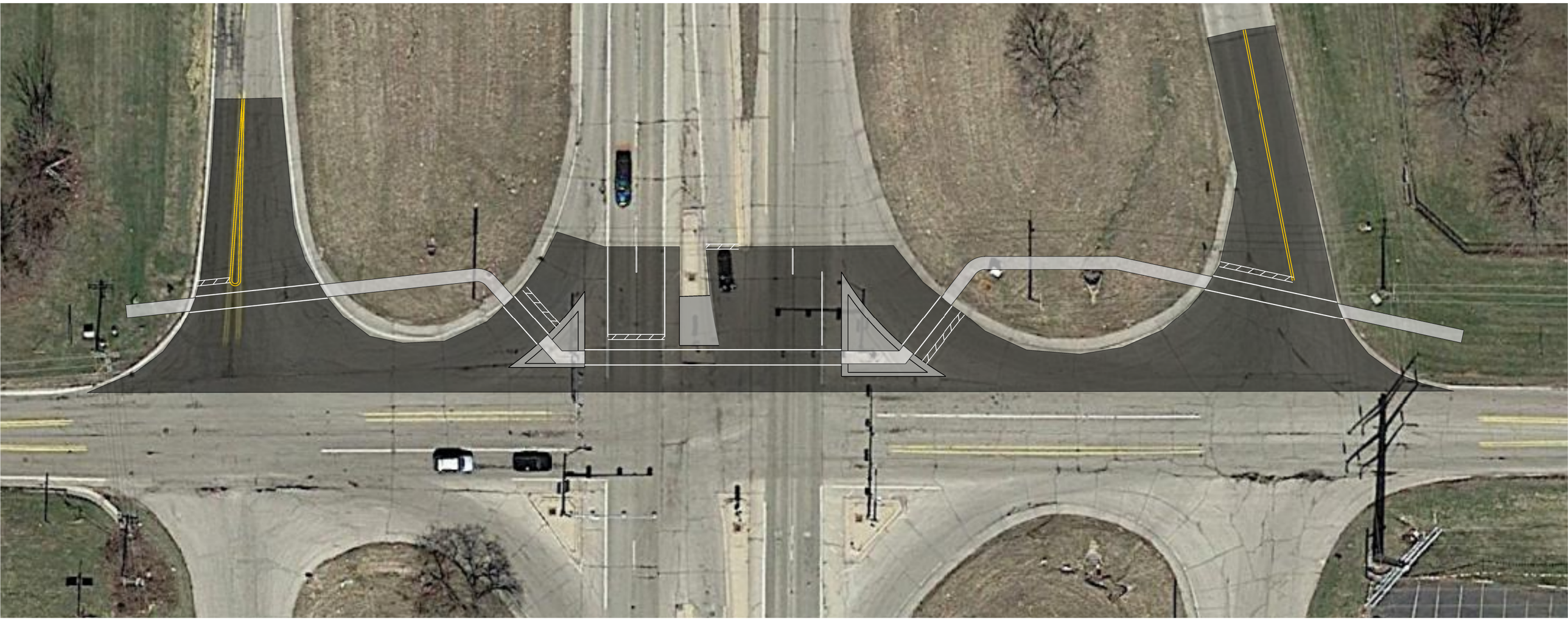
US 20 Interchange Pedestrian Path - Ramp
Crosswalk with RRFB and advance flashers



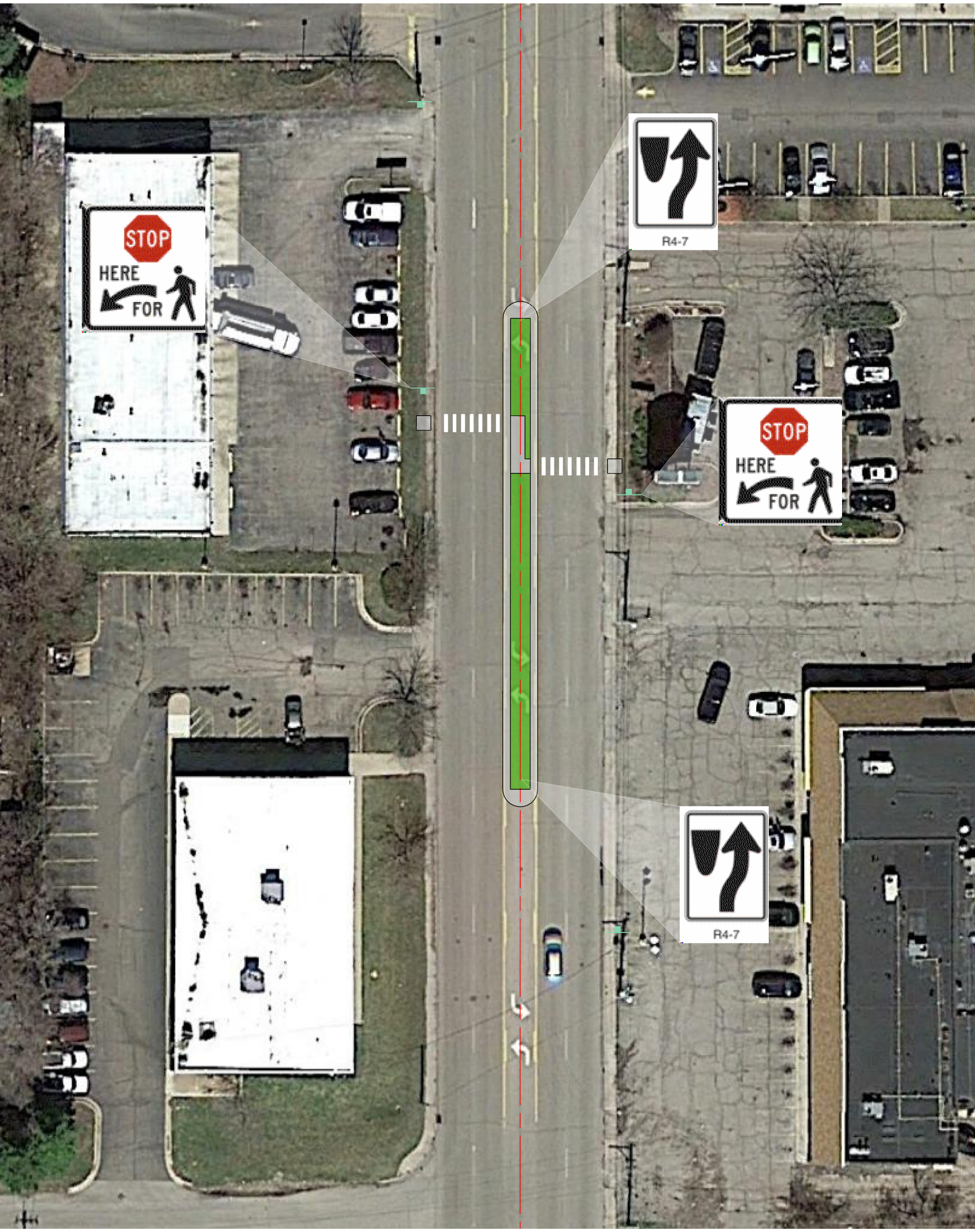



Potential Interchange
Reconfiguration

Pedestrian Crossing South of US 20



Improved Unsignalized Mid-Block Pedestrian Crossing



Left Turn Lanes at Broadway

N

PERSHING AVE/BARNUM RD REALIGNMENT

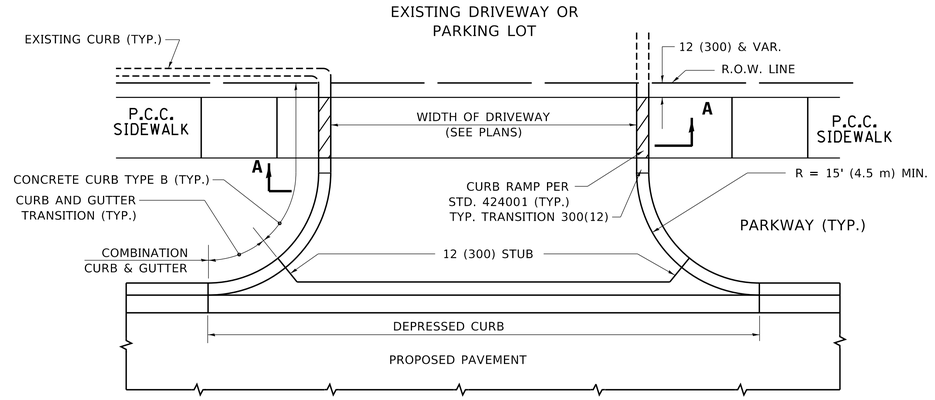



Charles Street
Realignment

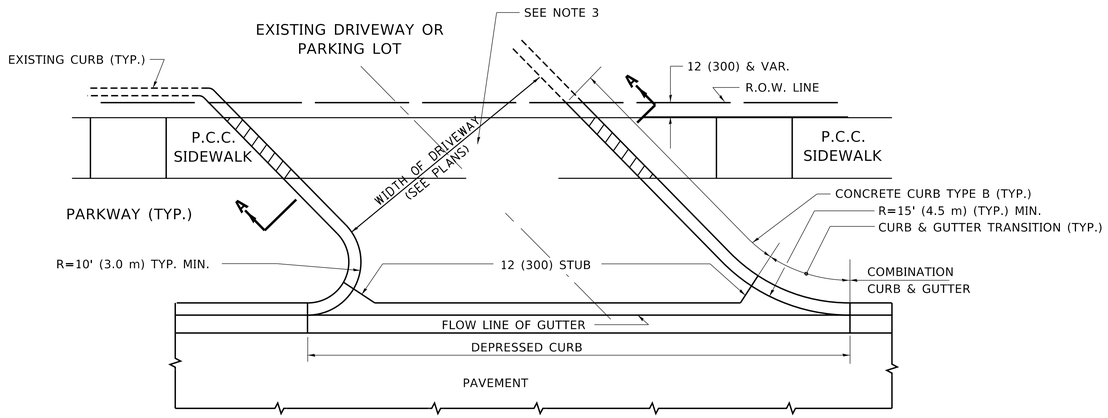
APPENDIX 9

IDOT Standard Drawings for Driveways

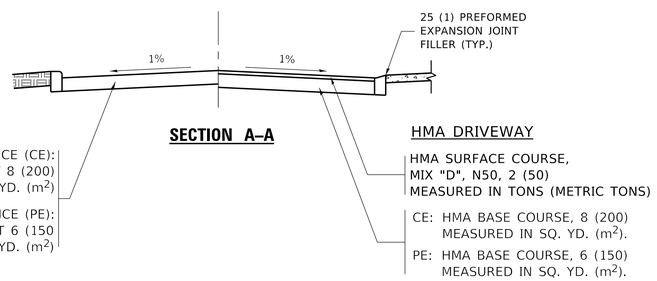
- Driveway Details – Distance Between ROW and Face of Curb & Edge of Shoulder ≥ 15′
- Driveway Details – Distance Between ROW and Face of Curb < 15′

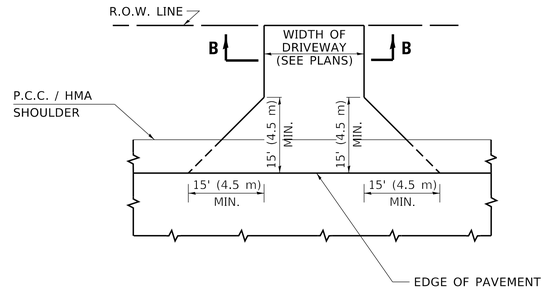


WITH CONCRETE CURB, TYPE B

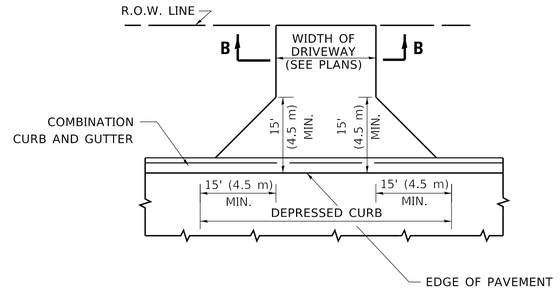


WITH CONCRETE CURB, TYPE B

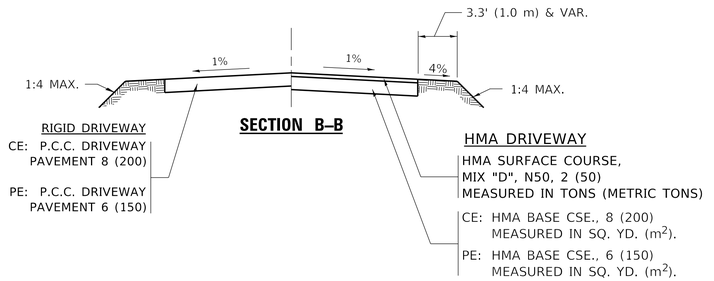




ADJACENT TO P.C.C./HMA SHOULDER



ADJACENT TO CURB AND GUTTER



GENERAL NOTES:

DRIVEWAY SLOPES, LOCATIONS, & GEOMETRIC LAYOUT SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE "HANDBOOK FOR POLICY ON PERMITS FOR ACCESS DRIVEWAYS TO STATE HIGHWAYS". FOR FURTHER LAYOUT REQUIREMENTS, REFER TO ILLUSTRATIONS IN THE PERMIT HANDBOOK. DRIVEWAYS SHALL BE REPLACED IN KIND, UNLESS OTHERWISE NOTED ON THE PLANS.

COMMERCIAL DRIVEWAYS SHALL BE CONSTRUCTED WITH CONCRETE CURB, TYPE B RETURNS EXCEPT WHEN THE SIDEWALK EDGE IS 4 FEET (1.2 METERS) OR LESS FROM THE BACK OF CURB, CONSTRUCT A FLARE DRIVEWAY WITHOUT CURB.

THE RESIDENT ENGINEER SHALL CONTACT THE TRAFFIC PERMIT OFFICE AT 847/ 705-4131 FOR ANY QUESTIONS ON DRIVEWAYS SHOWN IN THE PLANS; SPECIFICALLY IN REFERENCE TO ADDITIONAL AND/OR RELOCATION/REMOVAL OF A DRIVEWAY.

COMBINATION CONCRETE CURB & GUTTER SHALL BE MEASURED STRAIGHT ACROSS THE DRIVEWAY. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR THE CURB & GUTTER TRANSITION.
1 (25) PREFORMED EXPANSION JOINT FILLER WILL NOT BE PAID SEPARATELY, BUT SHALL BE CONSIDERED INCLUDED IN THE COST OF THE P.C.C. DRIVEWAY PAVEMENT OR P.C.C. SIDEWALK.
WHEN THE P.C.C. SIDEWALK EXTENDS THROUGH THE DRIVEWAY, THE THICKNESS OF THE SIDEWALK IN THE DRIVEWAY AREA SHALL BE THE SAME AS THE DRIVEWAY THICKNESS. SIDEWALK WILL BE PAID FOR AS P.C.C. SIDEWALK OF THE THICKNESS SPECIFIED. SIDEWALK CROSS SLOPE THRU DRIVEWAY AREA TO BE A MAXIMUM OF 1:50.

RURAL FIELD ENTRANCE (FE)

HMA SURFACE COURSE,
MIX "D", N50, 2 (50)
MEASURED IN TONS (METRIC TONS)

AGGREGATE BASE CSE., TYPE B, 8 (200)
MEASURED IN SQ. YD. (m^2).

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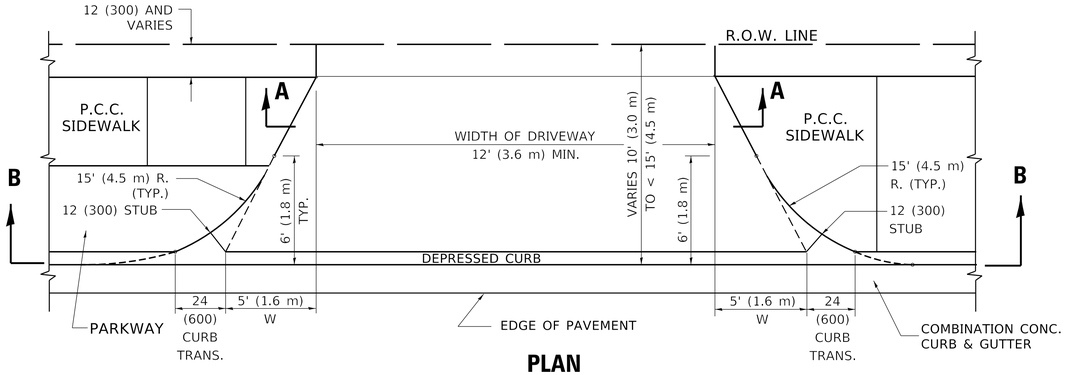
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DRIVEWAY DETAILS – DISTANCE BETWEEN R.O.W. AND FACE OF CURB & EDGE OF SHOULDER ≥15'(4.5m)

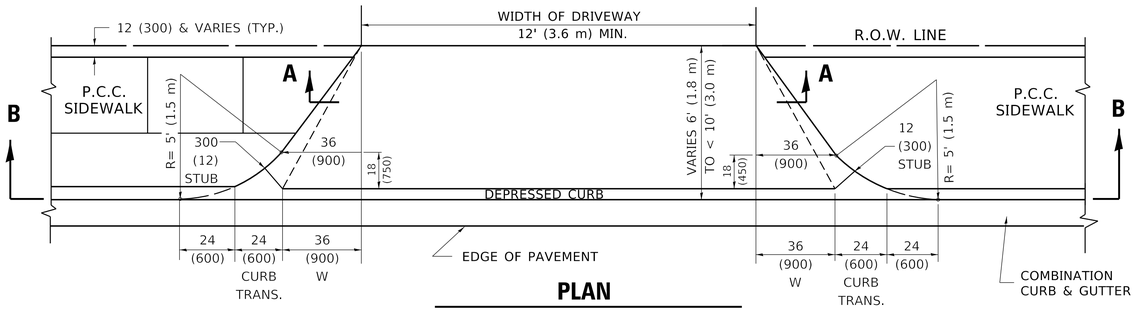
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		ILLINOIS	FED. AID PROJECT	

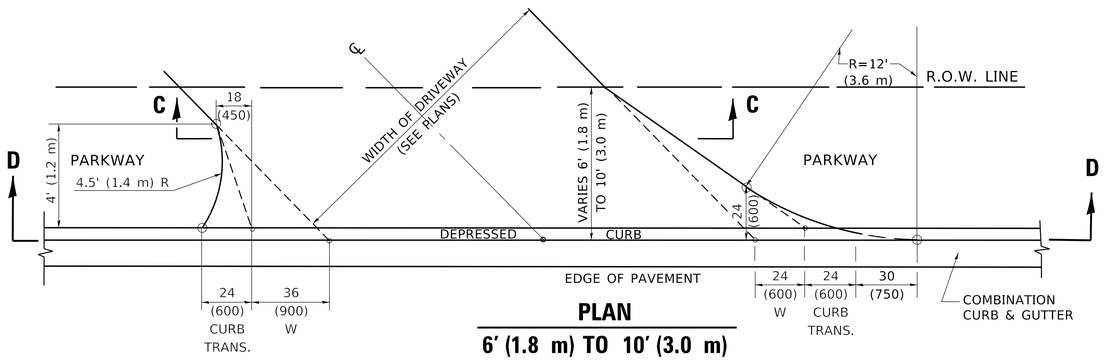
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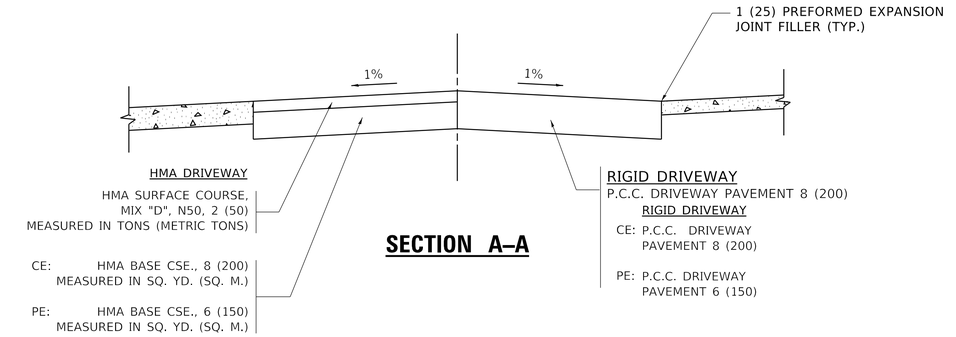
PLAN
10' (3.0 m) TO < 15' (4.5 m)



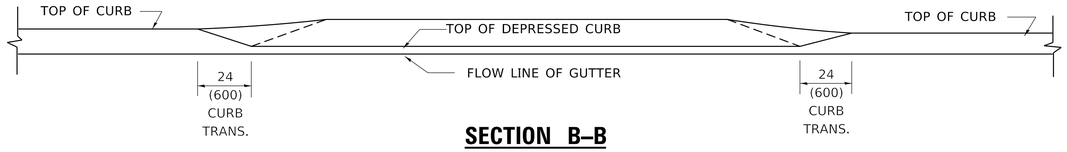
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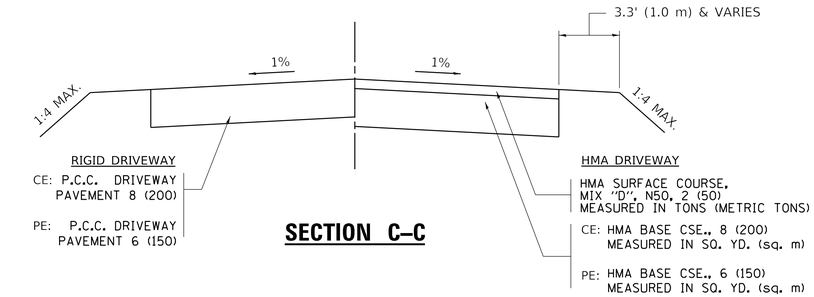
PLAN
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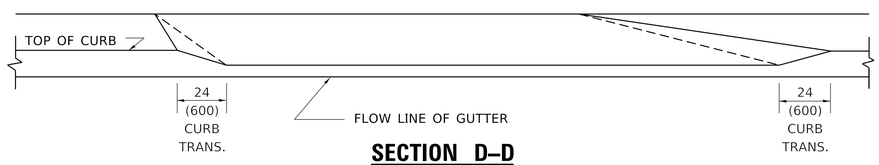
SECTION A–A



SECTION B–B



SECTION C–C



SECTION D–D

GENERAL NOTES

DRIVEWAY SLOPES, LOCATIONS, & GEOMETRIC LAYOUT SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE "HANDBOOK FOR POLICY ON PERMITS FOR ACCESS DRIVEWAYS TO STATE HIGHWAYS". FOR FURTHER LAYOUT REQUIREMENTS, REFER TO ILLUSTRATION 10 IN THE PERMIT HANDBOOK. WHERE SIDEWALKS EXIST, DRIVEWAYS SHALL BE REPLACED WITH RIGID PAVEMENT. WHERE NO SIDEWALKS EXIST, DRIVEWAYS SHALL BE REPLACED IN KIND. SIDEWALK CROSS SLOPE THRU DRIVEWAY AREA TO BE A MAXIMUM OF 1:50.

WHEN THE DISTANCE BETWEEN R.O.W. AND THE BACK OF CURB IS EQUAL TO OR LESS THAN 8' (2.4 m), THE P.C.C. SIDEWALK SHALL EXTEND TO THE BACK OF CURB.

THE RESIDENT ENGINEER SHALL CONTACT THE TRAFFIC PERMIT OFFICE AT 847/ 705-4131 FOR ANY QUESTIONS ON DRIVEWAYS SHOWN IN THE PLANS; SPECIFICALLY IN REFERENCE TO ADDITIONAL AND/OR RELOCATION/REMOVAL OF A DRIVEWAY.

COMBINATION CONCRETE CURB & GUTTER SHALL BE MEASURED STRAIGHT ACROSS THE DRIVEWAY. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR THE CURB & GUTTER TRANSITION.

THE 1 (25) PREFORMED EXPANSION JOINT FILLER WILL NOT BE PAID SEPARATELY, BUT SHALL BE CONSIDERED INCLUDED IN THE COST OF THE P.C.C. DRIVEWAY PAVEMENT OR P.C.C. SIDEWALK.

"W" VARIES FROM 36 (900) TO 5' (1.5 m) PROPORTIONAL TO THE LENGTH (L), FROM 6' (1.8 m) TO 10' (3 m).

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE NOTED.

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DRIVEWAY DETAILS
DISTANCE BETWEEN ROW AND FACE OF CURB < 15' (4.5m)

SCALE: NONE | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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	ILLINOIS FED. AID PROJECT			

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APPENDIX 10

Conceptual Cost Estimates

Improvement	Description	Opinion of Probable Cost
1	Street Realignment at Charles Street	$ 833,000
2	Trail-Sidewalk Redesign/Integration at Keith Creek	*To Be Determined*
3	Woodruff Avenue Intersection Improvements	$ 582,000
4	11th Street at Broadway Turn Lanes	$ 131,000
5	Replace Pedestal Mounted Signal Heads	$ 1,330,000
6	Placemaking Elements	*To Be Determined*
7	Rail Spur Crossing Removal	$ 74,000
8	Pershing and Barnum Intersection Realignment	$ 1,747,000
9	Guardrail at Rock Fork South Drainage Ditch	$ 13,000
10	Sidewalk Connections Off-Corridor	$ 261,000
11	Bicycle System Expansion	$ 9,000
12	Right of Way Fence South of US 20	$ 209,000
13	US 20 Interchange Pedestrian Path	$ 1,129,000
14	US 20 Interchange Reconfiguration	$ 8,710,000
15	Rebuild Splitter Islands	$ 1,167,000
16	Add Splitter Islands at Samuelson Road	$ 572,000
17	Pedestrian Paths Across 11th Street South of US 20	$ 725,000
18	Road Diet - 1C	$ 193,000
	Road Diet - 1G	$ 9,277,000
	Road Diet - 2C	$ 75,000
	Road Diet - 2H	$ 4,000,000
	Road Diet - 3B	$ 109,000
	Road Diet - 3C	$ 8,219,000
	Road Diet - 4B	$ 8,838,000
19	Resurface 11th Street from Harrison Avenue to Charles Street	$ 2,829,300
20	Improved Unsignalized Pedestrian Crossings	$ 459,000
21	ADA upgrades at signalized and unsignalized intersections	$ 1,616,000
	Improved crosswalk markings	$ 24,000
22	Sidewalk Infill and Replacement	$ 1,347,000
23	Transit Improvements South of US 20	$ 628,000
	Transit Improvements North of US 20	$ 341,000
24	Leading Pedestrian Interval at Signalized Intersections	N/A
25	Single-Property Multiple Drives	$ 171,000
	Excessive Drive Widths	$ 238,000
26	Pedestrian Scale Lighting	$ 8,571,000
	Intersection Lighting	$ 3,175,000
27	Undergrounding of ComEd Power Lines	$ 3,000,000
28	Landscaping	*To Be Determined*
29	Land-Use Plan Changes	N/A
30	Zoning Enhancements	N/A
31	Economic Development Initiatives	N/A
32	Future Policy Strategies for the Corridor	N/A
33	Yearly Maintenance Costs	$ 150,000

Pedestrian safety enhancements south of US 20 that should be implemented concurrently
Public drive access upgrades that should be implemented concurrently
Corridor lighting upgrades that should be implemented concurrently
ADA upgrades that should be implemented concurrently
Transit upgrades that should be implemented concurrently

11th Street Corridor Study; Street Realignment at Charles Street Conceptual 2021 Cost - Excludes Utility Relocation and Right of Way					
Description	**Quantity**	**UNIT**	**UNIT COST**	**TOTAL COST**	**REMARKS**
Charles Street Realignment					
Excavation	350	CYS	$ 30.00	$ 10,500.00	
Pavement	510	SYS	$ 62.00	$ 31,620.00	
Subgrade Treatment	-	SYS	$ 20.00	$ -	
Curb and Gutter, Concrete	1,350	LFT	$ 40.00	$ 54,000.00	
Sidewalk, Concrete	100	SYS	$ 100.00	$ 10,000.00	
Sodding	430	SYS	$ 25.00	$ 10,750.00	
Concrete, Raised Median	260	SYS	$ 10.00	$ 2,600.00	
ADA Curb Ramp with APS	6	EACH	$ 8,000.00	$ 48,000.00	
Pavement Marking - Solid White	1,430	LFT	$ 2.00	$ 2,860.00	
Pavement Marking - Broken White	260	LFT	$ 2.00	$ 520.00	
Pavement Marking - Solid Yellow	1,360	LFT	$ 2.00	$ 2,720.00	
Pavement Marking - Stop Line	120	LFT	$ 6.00	$ 720.00	
Pavement Marking - Crosswalk	620	LFT	$ 2.00	$ 1,240.00	
Pavement Marking - Lane Indication Arrow	9	EACH	$ 250.00	$ 2,250.00	
Signal Pole Reinstallation	4	EACH	$ 75,000.00	$ 300,000.00	
Itemized Subtotal				$ 477,780.00	
Preliminary Engineering	**10%**			**$ 47,800.00**	
Construction Engineering	**6%**			**$ 28,700.00**	
Construction Layout	**3%**			**$ 14,300.00**	
Clearing Right of Way	**2%**			**$ 9,600.00**	
Mobilization and Demobilization	**5%**			**$ 23,900.00**	
Erosion Control	**3%**			**$ 14,300.00**	
Maintenance of Traffic	**5%**			**$ 23,900.00**	
Subtotal				**$ 640,280.00**	
Contingency (%)	**30%**			**$ 192,100.00**	
GRAND TOTAL					**$ 832,380.00**

Note: Costs are based on existing available information in 2021. Actual costs may vary due to timing of construction, changed conditions, labor and market changes, or other factors beyond the control of CMT.

Quantities for improvements were based on conceptual drawings provided in Appendix 8.

11th Street Corridor Study; Woodruff Avenue Intersection Improvements					
Conceptual 2021 Cost - Excludes Utility Relocation and Right of Way					
Description	**Quantity**	**UNIT**	**UNIT COST**	**TOTAL COST**	**REMARKS**
Charles Street Realignment					
Excavation	1,670	CYS	$ 30.00	$ 50,100.00	
Pavement	2,500	SYS	$ 62.00	$ 155,000.00	
Subgrade Treatment	2,500	SYS	$ 20.00	$ 50,000.00	
Curb and Gutter, Concrete	900	LFT	$ 40.00	$ 36,000.00	
Sidewalk, Concrete	310	SYS	$ 100.00	$ 31,000.00	
Sodding	145	SYS	$ 25.00	$ 3,625.00	
ADA Curb Ramp	4	EACH	$ 1,200.00	$ 4,800.00	
Pavement Marking - Broken White	70	LFT	$ 2.00	$ 140.00	
Pavement Marking - Solid Yellow	240	LFT	$ 2.00	$ 480.00	
Pavement Marking - Crosswalk	310	LFT	$ 2.00	$ 620.00	
Pavement Marking - Railroad Crossing	1	EACH	$ 250.00	$ 250.00	
PCCP for Approaches	15	SYS	$ 125.00	$ 1,875.00	
Itemized Subtotal				$ 333,890.00	
Preliminary Engineering	**10%**			**$ 33,400.00**	
Construction Engineering	**6%**			**$ 20,000.00**	
Construction Layout	**3%**			**$ 10,000.00**	
Clearing Right of Way	**2%**			**$ 6,700.00**	
Mobilization and Demobilization	**5%**			**$ 16,700.00**	
Erosion Control	**3%**			**$ 10,000.00**	
Maintenance of Traffic	**5%**			**$ 16,700.00**	
Subtotal				**$ 447,390.00**	
Contingency (%)	**30%**			**$ 134,200.00**	
GRAND TOTAL					**$ 581,590.00**

Note: Costs are based on existing available information in 2021. Actual costs may vary due to timing of construction, changed conditions, labor and market changes, or other factors beyond the control of CMT.

Quantities for improvements were based on conceptual drawings similar to those provided in Appendix 8.

11th Street Corridor Study; 11th Street at Broadway Left Turn Lanes					
Conceptual 2021 Cost - Excludes Utility Relocation and Right of Way					
Description	**Quantity**	**UNIT**	**UNIT COST**	**TOTAL COST**	**REMARKS**
Westbound Left-Turn Lane					
Signal Upgrades (SB Signal)	1	LS	$ 10,000.00	$ 10,000.00	
Signal Upgrades (WB Signal)	1	LS	$ 10,000.00	$ 10,000.00	
Pavement Markings - Stop Bar (WB)	24	LFT	$ 6.00	$ 144.00	
Pavement Markings - Crosswalk (WB)	100	LFT	$ 2.00	$ 200.00	
Pavement Markings - Broken White (WB)	50	LFT	$ 2.00	$ 100.00	
Pavement Markings - Solid White (WB)	100	LFT	$ 2.00	$ 200.00	
Pavement Markings - Solid Yellow (WB)	400	LFT	$ 2.00	$ 800.00	
ADA Curb Ramps with APS (SE Corner)	1	LS	$ 8,000.00	$ 8,000.00	
ADA Curb Ramps with APS (NE Corner)	1	LS	$ 8,000.00	$ 8,000.00	
Eastbound Left-Turn Lane					
Signal Upgrades (NB Signal)	1	LS	$ 10,000.00	$ 10,000.00	
Signal Upgrades (EB Signal)	1	LS	$ 10,000.00	$ 10,000.00	
Pavement Markings - Stop Bar (EB)	24	LFT	$ 6.00	$ 144.00	
Pavement Markings - Crosswalk (EB)	110	LFT	$ 2.00	$ 220.00	
Pavement Markings - Broken White (EB)	50	LFT	$ 2.00	$ 100.00	
Pavement Markings - Solid White (EB)	100	LFT	$ 2.00	$ 200.00	
Pavement Markings - Solid Yellow (EB)	400	LFT	$ 2.00	$ 800.00	
ADA Curb Ramps with APS (SW Corner)	1	LS	$ 8,000.00	$ 8,000.00	
ADA Curb Ramps with APS (NW Corner)	1	LS	$ 8,000.00	$ 8,000.00	
Itemized Subtotal				$ 74,908.00	
Preliminary Engineering	**10%**			**$ 7,500.00**	
Construction Engineering	**6%**			**$ 4,500.00**	
Construction Layout	**3%**			**$ 2,200.00**	
Clearing Right of Way	**2%**			**$ 1,500.00**	
Mobilization and Demobilization	**5%**			**$ 3,700.00**	
Erosion Control	**3%**			**$ 2,200.00**	
Maintenance of Traffic	**5%**			**$ 3,700.00**	
Subtotal				**$ 100,208.00**	
Contingency (%)	**30%**			**$ 30,100.00**	
GRAND TOTAL					**$ 130,308.00**

Note: Costs are based on existing available information in 2021. Actual costs may vary due to timing of construction, changed conditions, labor and market changes, or other factors beyond the control of CMT.

Quantities for improvements were based on conceptual drawings provided in Appendix 8.

11th Street Corridor Study; Replace Pedestal Mounted Signal Heads Conceptual 2021 Cost - Excludes Utility Relocation and Right of Way					
Description	**Quantity**	**UNIT**	**UNIT COST**	**TOTAL COST**	**TOTAL CONTINGENT COST**
Barrier Removal - Sandy Hollow to Alton					
Pedestal Pole Removal - Northbound	1	EACH	$ 10,000.00	$ 10,000.00	
Pedestal Pole Removal - Southbound	1	EACH	$ 10,000.00	$ 10,000.00	
Sidewalk, Concrete	20	SYS	$ 100.00	$ 2,000.00	
Signal Pole Installation - Northbound	1	LS	$ 75,000.00	$ 75,000.00	
Signal Pole Installation - Southbound	1	LS	$ 75,000.00	$ 75,000.00	
Barrier Removal - 23rd Ave to 18th Ave					
Pedestal Pole Removal - Northbound	1	EACH	$ 10,000.00	$ 10,000.00	
Pedestal Pole Removal - Southbound	2	EACH	$ 10,000.00	$ 20,000.00	
Sidewalk, Concrete	30	SYS	$ 100.00	$ 3,000.00	
Signal Pole Installation - Northbound	1	LS	$ 75,000.00	$ 75,000.00	
Signal Pole Installation - Southbound	1	LS	$ 75,000.00	$ 75,000.00	
Barrier Removal - 18th Ave to Broadway					
Pedestal Pole Removal - Northbound	5	EACH	$ 10,000.00	$ 50,000.00	
Pedestal Pole Removal - Southbound	3	EACH	$ 10,000.00	$ 30,000.00	
Sidewalk, Concrete	70	SYS	$ 100.00	$ 7,000.00	
Signal Pole Installation - Northbound	1	LS	$ 75,000.00	$ 75,000.00	
Signal Pole Installation - Southbound	1	LS	$ 75,000.00	$ 75,000.00	
Barrier Removal - Broadway to Charles St					
Pedestal Pole Removal - Northbound	1	EACH	$ 10,000.00	$ 10,000.00	
Pedestal Pole Removal - Southbound	1	EACH	$ 10,000.00	$ 10,000.00	
Sidewalk, Concrete	10	SYS	$ 100.00	$ 1,000.00	
Signal Pole Installation - Northbound	1	LS	$ 75,000.00	$ 75,000.00	
Signal Pole Installation - Southbound	1	LS	$ 75,000.00	$ 75,000.00	
Itemized Subtotal				$ 763,000.00	
Preliminary Engineering	**10%**			**$ 76,300.00**	
Construction Engineering	**6%**			**$ 45,800.00**	
Construction Layout	**3%**			**$ 22,900.00**	
Clearing Right of Way	**2%**			**$ 15,300.00**	
Mobilization and Demobilization	**5%**			**$ 38,200.00**	
Erosion Control	**3%**			**$ 22,900.00**	
Maintenance of Traffic	**5%**			**$ 38,200.00**	
Subtotal				**$ 1,022,600.00**	
Contingency (%)	**30%**			**$ 306,800.00**	
GRAND TOTAL					**$ 1,329,400.00**

Note: Costs are based on existing available information in 2021. Actual costs may vary due to timing of construction, changed conditions, labor and market changes, or other factors beyond the control of CMT.

It was assumed that 10 ft of sidewalk panel replacement would be required for each pedestal mounted signal removed.

11th Street Corridor Study; Rail Spur Crossing Removal					
Conceptual 2021 Cost - Excludes Utility Relocation and Right of Way					
Description	**Quantity**	**UNIT**	**UNIT COST**	**TOTAL COST**	**REMARKS**
Removal of Rail Spur					
Sign Removal	1	LS	$ 5,000.00	$ 5,000.00	
Track Removal	200	LFT	$ 50.00	$ 10,000.00	
Excavation - concrete removal	150	CYS	$ 30.00	$ 4,500.00	
New HMA Pavement	215	SYS	$ 62.00	$ 13,330.00	
Aggregate Base - for new pavement	215	SYS	$ 20.00	$ 4,300.00	
Sidewalk, Concrete	51	SYS	$ 100.00	$ 5,100.00	
Itemized Subtotal				$ 42,230.00	
Preliminary Engineering	**10%**			**$ 4,200.00**	
Construction Engineering	**6%**			**$ 2,500.00**	
Construction Layout	**3%**			**$ 1,300.00**	
Clearing Right of Way	**2%**			**$ 800.00**	
Mobilization and Demobilization	**5%**			**$ 2,100.00**	
Erosion Control	**3%**			**$ 1,300.00**	
Maintenance of Traffic	**5%**			**$ 2,100.00**	
Subtotal				**$ 56,530.00**	
Contingency (%)	**30%**			**$ 17,000.00**	
GRAND TOTAL					**$ 73,530.00**

Note: Costs are based on existing available information in 2021. Actual costs may vary due to timing of construction, changed conditions, labor and market changes, or other factors beyond the control of CMT.

11th Street Corridor Study; Pershing and Barnum Intersection Realignment					
Conceptual 2021 Cost - Excludes Utility Relocation and Right of Way					
Description	**Quantity**	**UNIT**	**UNIT COST**	**TOTAL COST**	**TOTAL CONTINGENT COST**
Charles Street Realignment					
Excavation	4,570	CYS	$ 30.00	$ 137,100.00	
Pavement	6,850	SYS	$ 62.00	$ 424,700.00	
Subgrade Treatment	6,850	SYS	$ 20.00	$ 137,000.00	
Curb and Gutter, Concrete	2,520	LFT	$ 40.00	$ 100,800.00	
Sidewalk, Concrete	1,225	SYS	$ 100.00	$ 122,500.00	
Sodding	990	SYS	$ 25.00	$ 24,750.00	
ADA Curb Ramp	4	EACH	$ 1,200.00	$ 4,800.00	
Pavement Marking - Broken Yellow	370	LFT	$ 2.00	$ 740.00	
Pavement Marking - Solid White	1,480	LFT	$ 2.00	$ 2,960.00	
Pavement Marking - Solid Yellow	1,480	LFT	$ 2.00	$ 2,960.00	
Pavement Marking - Crosswalk	355	LFT	$ 2.00	$ 710.00	
Pavement Marking - Lane Indication Arrow	12	EACH	$ 250.00	$ 3,000.00	
PCCP for Approaches	325	SYS	$ 125.00	$ 40,625.00	
Itemized Subtotal				$ 1,002,645.00	
Preliminary Engineering	**10%**			**$ 100,300.00**	
Construction Engineering	**6%**			**$ 60,200.00**	
Construction Layout	**3%**			**$ 30,100.00**	
Clearing Right of Way	**2%**			**$ 20,100.00**	
Mobilization and Demobilization	**5%**			**$ 50,100.00**	
Erosion Control	**3%**			**$ 30,100.00**	
Maintenance of Traffic	**5%**			**$ 50,100.00**	
Subtotal				**$ 1,343,645.00**	
Contingency (%)	**30%**			**$ 403,100.00**	
GRAND TOTAL					**$ 1,746,745.00**

Note: Costs are based on existing available information in 2021. Actual costs may vary due to timing of construction, changed conditions, labor and market changes, or other factors beyond the control of CMT.

Quantities for improvements were based on conceptual drawings provided in Appendix 8.

11th Street Corridor Study; Guardrail at Rock Fork South Drainage Ditch					
Conceptual 2021 Cost - Excludes Utility Relocation and Right of Way					
Description	**Quantity**	**UNIT**	**UNIT COST**	**TOTAL COST**	**TOTAL CONTINGENT COST**
South Rock Fork Drainage Ditch					
Guardrail - removal	1	LS	$ 1,000.00	$ 1,000.00	
New Guardrail	60	LFT	$ 100.00	$ 6,000.00	
Itemized Subtotal				$ 7,000.00	
Preliminary Engineering	**10%**			**$ 700.00**	
Construction Engineering	**6%**			**$ 400.00**	
Construction Layout	**3%**			**$ 200.00**	
Clearing Right of Way	**2%**			**$ 100.00**	
Mobilization and Demobilization	**5%**			**$ 400.00**	
Erosion Control	**3%**			**$ 200.00**	
Maintenance of Traffic	**5%**			**$ 400.00**	
Subtotal				**$ 9,400.00**	
Contingency (%)	**30%**			**$ 2,800.00**	
GRAND TOTAL					**$ 12,200.00**

Note: Costs are based on existing available information in 2021. Actual costs may vary due to timing of construction, changed conditions, labor and market changes, or other factors beyond the control of CMT.

11th Street Corridor Study; Sidewalk Connections Off-Corridor to Improve Access to Transit Conceptual 2021 Cost - Excludes Utility Relocation and Right of Way					
Description	**Quantity**	**UNIT**	**UNIT COST**	**TOTAL COST**	**REMARKS**
Wills Avenue - 11th St to Lapey St (West Leg)					
Excavation	70	CYS	$ 30.00	$ 2,100.00	
Sidewalk, Concrete	200	SYS	$ 100.00	$ 20,000.00	
ADA curb ramps (on SB 11th St)	2	EACH	$ 1,200.00	$ 2,400.00	
ADA curb ramps (at Lapey St)	4	EACH	$ 1,200.00	$ 4,800.00	
ADA curb ramps (at Alley)	4	EACH	$ 1,200.00	$ 4,800.00	
Wills Avenue - 11th St to Kinsey St (East Leg)					
Excavation	70	CYS	$ 30.00	$ 2,100.00	
Sidewalk, Concrete	200	SYS	$ 100.00	$ 20,000.00	
ADA curb ramps (on NB 11th St)	2	EACH	$ 1,200.00	$ 2,400.00	
ADA curb ramps (at Kinsey St)	4	EACH	$ 1,200.00	$ 4,800.00	
Sawyer Road - 11th St to Lapey St (West Leg)					
Excavation	70	CYS	$ 30.00	$ 2,100.00	
Sidewalk, Concrete	200	SYS	$ 100.00	$ 20,000.00	
ADA curb ramps (on SB 11th St)	2	EACH	$ 1,200.00	$ 2,400.00	
ADA curb ramps (at Lapey St)	4	EACH	$ 1,200.00	$ 4,800.00	
Sawyer Road - 11th St to Southworth St (East Leg)					
Excavation	160	CYS	$ 30.00	$ 4,800.00	
Sidewalk, Concrete	470	SYS	$ 100.00	$ 47,000.00	
ADA curb ramps (on NB 11th St)	2	EACH	$ 1,200.00	$ 2,400.00	
ADA curb ramps (at Southworth St)	2	EACH	$ 1,200.00	$ 2,400.00	
Itemized Subtotal				$ 149,300.00	
Preliminary Engineering	**10%**			**$ 14,900.00**	
Construction Engineering	**6%**			**$ 9,000.00**	
Construction Layout	**3%**			**$ 4,500.00**	
Clearing Right of Way	**2%**			**$ 3,000.00**	
Mobilization and Demobilization	**5%**			**$ 7,500.00**	
Erosion Control	**3%**			**$ 4,500.00**	
Maintenance of Traffic	**5%**			**$ 7,500.00**	
Subtotal				**$ 200,200.00**	
Contingency (%)	**30%**			**$ 60,100.00**	
GRAND TOTAL					**$ 260,300.00**

Note: Costs are based on existing available information in 2021. Actual costs may vary due to timing of construction, changed conditions, labor and market changes, or other factors beyond the control of CMT.

These improvements assume a proposed sidewalk width of 6 ft.

11th Street Corridor Study; US 20 Interchange Pedestrian Path					
Conceptual 2021 Cost - Excludes Utility Relocation and Right of Way					
Description	**Quantity**	**UNIT**	**UNIT COST**	**TOTAL COST**	**REMARKS**
New Sidewalk - Airport to US 20					
Excavation - for new sidewalk	930	CYS	$ 30.00	$ 27,900.00	
Sidewalk, Concrete	2,780	SYS	$ 100.00	$ 278,000.00	
ADA Curb Ramps (2 corner locations at Frontage Rd)	2	EACH	$ 1,200.00	$ 2,400.00	
New Sidewalk - US 20 to Sandy Hollow					
Excavation - for new sidewalk	560	CYS	$ 30.00	$ 16,800.00	
Sidewalk, Concrete	1,670	SYS	$ 100.00	$ 167,000.00	
ADA Curb Ramps (6 locations at US-20)	6	EACH	$ 1,200.00	$ 7,200.00	
ADA Curb Ramps (2 corner locations at Sandy Hollow)	2	EACH	$ 1,200.00	$ 2,400.00	
Rectangular Rapid Flash Beacons	2	EACH	$ 20,000.00	$ 40,000.00	
Realign west loop ramps					
Remove Pavement	1,200	SYS	$ 15.00	$ 18,000.00	
New Pavement	800	SYS	$ 110.00	$ 88,000.00	include agg. base
Itemized Subtotal				$ 647,700.00	
Preliminary Engineering	**10%**			**$ 64,800.00**	
Construction Engineering	**6%**			**$ 38,900.00**	
Construction Layout	**3%**			**$ 19,400.00**	
Clearing Right of Way	**2%**			**$ 13,000.00**	
Mobilization and Demobilization	**5%**			**$ 32,400.00**	
Erosion Control	**3%**			**$ 19,400.00**	
Maintenance of Traffic	**5%**			**$ 32,400.00**	
Subtotal				**$ 868,000.00**	
Contingency (%)	**30%**			**$ 260,400.00**	
GRAND TOTAL					**$ 1,128,400.00**

Note: Costs are based on existing available information in 2021. Actual costs may vary due to timing of construction, changed conditions, labor and market changes, or other factors beyond the control of CMT.

Quantities for improvements were based on conceptual drawings provided in Appendix 8. A sidewalk width of 10 ft was also assumed.

11th Street Corridor Study; Bicycle System Expansion					
Conceptual 2021 Cost - Excludes Utility Relocation and Right of Way					
Description	**Quantity**	**UNIT**	**UNIT COST**	**TOTAL COST**	**TOTAL CONTINGENT COST**
Jamestown Park to 11th Street					
Pavement Markings - Bike route	3	EACH	$ 250.00	$ 750.00	
Signage - Bike route	3	EACH	$ 275.00	$ 825.00	
11th Street to 9th Street					
Pavement Markings - Bike route	3	EACH	$ 250.00	$ 750.00	
Signage - Bike route	3	EACH	$ 275.00	$ 825.00	
9th Street to 11th Street					
Pavement Markings - Bike route	3	EACH	$ 250.00	$ 750.00	
Signage - Bike route	3	EACH	$ 275.00	$ 825.00	
Itemized Subtotal				$ 4,725.00	
Preliminary Engineering	**10%**			**$ 500.00**	
Construction Engineering	**6%**			**$ 300.00**	
Construction Layout	**3%**			**$ 100.00**	
Clearing Right of Way	**2%**			**$ 100.00**	
Mobilization and Demobilization	**5%**			**$ 200.00**	
Erosion Control	**3%**			**$ 100.00**	
Maintenance of Traffic	**5%**			**$ 200.00**	
Subtotal				**$ 6,225.00**	
Contingency (%)	**30%**			**$ 1,900.00**	
GRAND TOTAL					**$ 8,125.00**

Note: Costs are based on existing available information in 2021. Actual costs may vary due to timing of construction, changed conditions, labor and market changes, or other factors beyond the control of CMT.

These improvements assume one pavement marking and one bike path sign at each major intersection along the listed segments.

11th Street Corridor Study; Right of Way Fence South of US 20					
Conceptual 2021 Cost - Excludes Utility Relocation and Right of Way					
Description	**Quantity**	**UNIT**	**UNIT COST**	**TOTAL COST**	**REMARKS**
Fence from US 20 to Samuelson Road					
6ft Chain Link Fence - Northbound	3,000	LFT	$ 20.00	$ 60,000.00	
6ft Chain Link Fence - Southbound	3,000	LFT	$ 20.00	$ 60,000.00	
Itemized Subtotal				$ 120,000.00	
Preliminary Engineering	**10%**			**$ 12,000.00**	
Construction Engineering	**6%**			**$ 7,200.00**	
Construction Layout	**3%**			**$ 3,600.00**	
Clearing Right of Way	**2%**			**$ 2,400.00**	
Mobilization and Demobilization	**5%**			**$ 6,000.00**	
Erosion Control	**3%**			**$ 3,600.00**	
Maintenance of Traffic	**5%**			**$ 6,000.00**	
Subtotal				**$ 160,800.00**	
Contingency (%)	**30%**			**$ 48,200.00**	
GRAND TOTAL					**$ 209,000.00**

Note: Costs are based on existing available information in 2021. Actual costs may vary due to timing of construction, changed conditions, labor and market changes, or other factors beyond the control of CMT.

These improvements assume the fence runs parallel to 11th Street on both sides, starting at the bypass and ending at Samuelson Roa

11th Street Corridor Study; US 20 Interchange Reconfiguration					
Conceptual 2021 Cost - Excludes Utility Relocation and Right of Way					
Description	**Quantity**	**UNIT**	**UNIT COST**	**TOTAL COST**	**REMARKS**
US 20 Interchange					
Reconfiguration to Diamond	1	LS	$ 5,000,000.00	$ 5,000,000.00	
Itemized Subtotal				$ 5,000,000.00	
Preliminary Engineering	**10%**			**$ 500,000.00**	
Construction Engineering	**6%**			**$ 300,000.00**	
Construction Layout	**3%**			**$ 150,000.00**	
Clearing Right of Way	**2%**			**$ 100,000.00**	
Mobilization and Demobilization	**5%**			**$ 250,000.00**	
Erosion Control	**3%**			**$ 150,000.00**	
Maintenance of Traffic	**5%**			**$ 250,000.00**	
Subtotal				**$ 6,700,000.00**	
Contingency (%)	**30%**			**$ 2,010,000.00**	
GRAND TOTAL					**$ 8,710,000.00**

Note: Costs are based on existing available information in 2021. Actual costs may vary due to timing of construction, changed conditions, labor and market changes, or other factors beyond the control of CMT.

11th Street Corridor Study; Rebuild Splitter Islands at Airport Drive and Blackhawk Road					
Conceptual 2021 Cost - Excludes Utility Relocation and Right of Way					
Description	**Quantity**	**UNIT**	**UNIT COST**	**TOTAL COST**	**REMARKS**
11th St & Airport Dr					
Excavation - island removal	250	SYS	$ 30.00	$ 7,500.00	
Curb - for island	910	LFT	$ 40.00	$ 36,400.00	
New Island - concrete	730	SYS	$ 10.00	$ 7,300.00	
Pavement Removal - for new island location	730	SYS	$ 30.00	$ 21,900.00	
New Pavement - right turn/patch exist island	1	LS	$ 200,000.00	$ 200,000.00	
Pavement Markings - White	2150	LFT	$ 2.00	$ 4,300.00	
Pavement Markings - Yield Line	80	LFT	$ 6.00	$ 480.00	
Pavement Markings - Crosswalks	160	LFT	$ 2.00	$ 320.00	
Signage	12	EACH	$ 275.00	$ 3,300.00	
Sidewalk, Concrete	672	SYS	$ 100.00	$ 67,200.00	
11th St & Blackhawk Rd					
Excavation - island removal	120	SYS	$ 30.00	$ 3,600.00	
Curb - for island	680	LFT	$ 40.00	$ 27,200.00	
New Island - concrete	370	SYS	$ 10.00	$ 3,700.00	
Pavement Removal - for new island location	370	SYS	$ 30.00	$ 11,100.00	
New Pavement - right turn/patch exist island	1	LS	$ 200,000.00	$ 200,000.00	
Pavement Markings - White	1810	LFT	$ 2.00	$ 3,620.00	
Pavement Markings - Yield Line	80	LFT	$ 6.00	$ 480.00	
Pavement Markings - Crosswalks	160	LFT	$ 2.00	$ 320.00	
Signage	12	EACH	$ 275.00	$ 3,300.00	
Sidewalk, Concrete	672	SYS	$ 100.00	$ 67,200.00	
Itemized Subtotal				$ 669,220.00	
Preliminary Engineering	**10%**			**$ 66,900.00**	
Construction Engineering	**6%**			**$ 40,200.00**	
Construction Layout	**3%**			**$ 20,100.00**	
Clearing Right of Way	**2%**			**$ 13,400.00**	
Mobilization and Demobilization	**5%**			**$ 33,500.00**	
Erosion Control	**3%**			**$ 20,100.00**	
Maintenance of Traffic	**5%**			**$ 33,500.00**	
Subtotal				**$ 896,920.00**	
Contingency (%)	**30%**	**%**		**$ 269,100.00**	
GRAND TOTAL					**$ 1,166,020.00**

Note: Costs are based on existing available information in 2021. Actual costs may vary due to timing of construction, changed conditions, labor and market changes, or other factors beyond the control of CMT.

11th Street Corridor Study; Add Splitter Islands at Samuelson Road					
Conceptual 2021 Cost - Excludes Utility Relocation and Right of Way					
Description	**Quantity**	**UNIT**	**UNIT COST**	**TOTAL COST**	**REMARKS**
Curb - for island	680	LFT	$ 40.00	$ 27,200.00	
New Island - concrete	370	SYS	$ 10.00	$ 3,700.00	
Pavement Removal - for new island location	370	SYS	$ 30.00	$ 11,100.00	
New Pavement	3500	SYS	$ 62.00	$ 217,000.00	right turn lanes
Pavement Markings - White	1810	LFT	$ 2.00	$ 3,620.00	
Pavement Markings - Yield Line	80	LFT	$ 6.00	$ 480.00	
Pavement Markings - Crosswalks	160	LFT	$ 2.00	$ 320.00	
Signage	12	EACH	$ 275.00	$ 3,300.00	
Sidewalk, Concrete	616	SYS	$ 100.00	$ 61,600.00	
Itemized Subtotal				$ 328,320.00	
Preliminary Engineering	**10%**			**$ 32,800.00**	
Construction Engineering	**6%**			**$ 19,700.00**	
Construction Layout	**3%**			**$ 9,800.00**	
Clearing Right of Way	**2%**			**$ 6,600.00**	
Mobilization and Demobilization	**5%**			**$ 16,400.00**	
Erosion Control	**3%**			**$ 9,800.00**	
Maintenance of Traffic	**5%**			**$ 16,400.00**	
Subtotal				**$ 439,820.00**	
Contingency (%)	**30%**			**$ 131,900.00**	
GRAND TOTAL					**$ 571,720.00**

Note: Costs are based on existing available information in 2021. Actual costs may vary due to timing of construction, changed conditions, labor and market changes, or other factors beyond the control of CMT.

11th Street Corridor Study; Pedestrian Paths Across 11th Street South of US 20 Conceptual 2021 Cost - Excludes Utility Relocation and Right of Way					
Description	**Quantity**	**UNIT**	**UNIT COST**	**TOTAL COST**	**REMARKS**
11th Street & Blackhawk Road					
Excavation - existing island	30	SYS	$ 30.00	$ 900.00	
Curb - for island	160	LFT	$ 40.00	$ 6,400.00	
New Island - concrete	65	SYS	$ 10.00	$ 650.00	
Pavement Removal - for new island location	40	SYS	$ 30.00	$ 1,200.00	
Pavement Markings - Crosswalks	470	LFT	$ 2.00	$ 940.00	
Signage	4	EACH	$ 275.00	$ 1,100.00	
ADA Curb Ramps with APS	6	EACH	$ 8,000.00	$ 48,000.00	
ADA Curb Ramps	6	EACH	$ 1,200.00	$ 7,200.00	
Sidewalk, Concrete	370	SYS	$ 100.00	$ 37,000.00	
Signal Modification	2	EACH	$ 15,000.00	$ 30,000.00	
11th Street & Samuelson Road					
Excavation - existing island	0	SYS	$ 30.00	$ -	
Curb - for island	200	LFT	$ 40.00	$ 8,000.00	
New Island - concrete	90	SYS	$ 10.00	$ 900.00	
Pavement Removal - for new island location	90	SYS	$ 30.00	$ 2,700.00	
Pavement Markings - Crosswalks	500	LFT	$ 2.00	$ 1,000.00	
Signage	4	EACH	$ 275.00	$ 1,100.00	
ADA Curb Ramps with APS	8	EACH	$ 8,000.00	$ 64,000.00	
ADA Curb Ramps	4	EACH	$ 1,200.00	$ 4,800.00	
Sidewalk, Concrete	335	SYS	$ 100.00	$ 33,500.00	
Signal Reinstallation	2	EACH	$ 15,000.00	$ 30,000.00	
11th Street & Airport Road					
Excavation - existing island	30	SYS	$ 30.00	$ 900.00	
Curb - for island	325	LFT	$ 40.00	$ 13,000.00	
New Island - concrete	230	SYS	$ 10.00	$ 2,300.00	
Pavement Removal - for new island location	200	SYS	$ 30.00	$ 6,000.00	
Pavement Markings - Crosswalks	490	LFT	$ 2.00	$ 980.00	
Signage	4	EACH	$ 275.00	$ 1,100.00	
ADA Curb Ramps with APS	6	EACH	$ 8,000.00	$ 48,000.00	
ADA Curb Ramps	6	EACH	$ 1,200.00	$ 7,200.00	
Sidewalk, Concrete	420	SYS	$ 100.00	$ 42,000.00	
Signal Reinstallation	1	EACH	$ 15,000.00	$ 15,000.00	
Itemized Subtotal				$ 415,870.00	
Preliminary Engineering	**10%**			**$ 41,600.00**	
Construction Engineering	**6%**			**$ 25,000.00**	
Construction Layout	**3%**			**$ 12,500.00**	
Clearing Right of Way	**2%**			**$ 8,300.00**	
Mobilization and Demobilization	**5%**			**$ 20,800.00**	
Erosion Control	**3%**			**$ 12,500.00**	
Maintenance of Traffic	**5%**			**$ 20,800.00**	
Subtotal				**$ 557,370.00**	
Contingency (%)	**30%**			**$ 167,200.00**	
GRAND TOTAL					**$ 724,570.00**

Note: Costs are based on existing available information in 2021. Actual costs may vary due to timing of construction, changed conditions, labor and market changes, or other factors beyond the control of CMT.

Quantities for improvements were based on conceptual drawings provided in Appendix 8.

11th Street Corridor Study; Road Diet Option 1C - No Change in Curb Lines, Reappropriate Right of Way Conceptual 2021 Cost - Excludes Utility Relocation and Right of Way					
Description	**Quantity**	**UNIT**	**UNIT COST**	**TOTAL COST**	**REMARKS**
Reappropriate Right of Way from 23rd Ave to 18th Ave					
Striping Removal	25,200	LFT	$ 1.50	$ 37,800.00	
Pavement Marking - Solid White	16,800	LFT	$ 2.00	$ 33,600.00	
Pavement Marking - Solid Yellow	8,400	LFT	$ 2.00	$ 16,800.00	
Pavement Marking - Broken Yellow	2,100	LFT	$ 2.00	$ 4,200.00	
Pavement Marking - Crosshatch White	840	LFT	$ 2.00	$ 1,680.00	
Pavement Marking - Lane Indication Arrow	20	EACH	$ 200.00	$ 4,000.00	
Lane Bollards	170	EACH	$ 75.00	$ 12,750.00	
Itemized Subtotal				$ 110,830.00	
Preliminary Engineering	**10%**			**$ 11,100.00**	
Construction Engineering	**6%**			**$ 6,600.00**	
Construction Layout	**3%**			**$ 3,300.00**	
Clearing Right of Way	**2%**			**$ 2,200.00**	
Mobilization and Demobilization	**5%**			**$ 5,500.00**	
Erosion Control	**3%**			**$ 3,300.00**	
Maintenance of Traffic	**5%**			**$ 5,500.00**	
Subtotal				**$ 148,330.00**	
Contingency (%)	**30%**			**$ 44,500.00**	
GRAND TOTAL					**$ 192,830.00**

Note: Costs are based on existing available information in 2021. Actual costs may vary due to timing of construction, changed conditions, labor and market changes, or other factors beyond the control of CMT.

Quantities for improvements were based on conceptual drawings provided in Appendix 8.

11th Street Corridor Study; Road Diet Option 1G - Multi-Use Path on West Side Conceptual 2021 Cost - Excludes Utility Relocation and Right of Way					
Description	**Quantity**	**UNIT**	**UNIT COST**	**TOTAL COST**	**REMARKS**
Median Planting Strip from 18th Ave to Broadway					
Pavement Removal - for planting strips and/or median	2,800	SYS	$ 15.00	$ 42,000.00	
Existing Sidewalk/Planting Strip Removal	79,800	SFT	$ 2.00	$ 159,600.00	
Striping Removal	25,200	LFT	$ 1.50	$ 37,800.00	
Curb and Gutter, Concrete	8,400	LFT	$ 40.00	$ 336,000.00	
Sodding - for outer planting strips	3,270	SYS	$ 25.00	$ 81,750.00	
Casting, Adjust to Grade	16	EACH	$ 2,000.00	$ 32,000.00	
Sidewalk, Concrete	7,000	SYS	$ 100.00	$ 700,000.00	
ADA Curb Ramps	32	EACH	$ 1,200.00	$ 38,400.00	
ADA Curb Ramps with APS	4	EACH	$ 8,000.00	$ 32,000.00	includes push buttons
Milling, Asphalt, 4"	16,800	SYS	$ 10.00	$ 168,000.00	
HMA Surface, 4"	4,000	TON	$ 120.00	$ 480,000.00	
Intersection Lighting	1	LS	$ 1,620,000.00	$ 1,620,000.00	
Pedestrian Scale Lighting	1	LS	$ 1,415,000.00	$ 1,415,000.00	
Signal Reconstruction	1	LS	$ 50,000.00	$ 50,000.00	Charles Street - Partial
Pavement Marking - Solid White	8,400	LFT	$ 2.00	$ 16,800.00	
Pavement Marking - Solid Yellow	8,400	LFT	$ 2.00	$ 16,800.00	
Pavement Marking - Lane Indication Arrow	10	EACH	$ 200.00	$ 2,000.00	
Landscaping	1	LS	$ 20,000.00	$ 20,000.00	
Itemized Subtotal				$ 5,248,150.00	
Preliminary Engineering	**10%**			**$ 524,800.00**	
Construction Engineering	**6%**			**$ 314,900.00**	
Construction Layout	**3%**			**$ 157,400.00**	
Clearing Right of Way	**2%**			**$ 105,000.00**	
Mobilization and Demobilization	**5%**			**$ 262,400.00**	
Erosion Control	**3%**			**$ 157,400.00**	
Maintenance of Traffic	**5%**			**$ 262,400.00**	
Subtotal				**$ 7,032,450.00**	
Contingency (%)	**30%**			**$ 1,574,400.00**	
GRAND TOTAL					**$ 8,606,850.00**

Note: Costs are based on existing available information in 2021. Actual costs may vary due to timing of construction, changed conditions, labor and market changes, or other factors beyond the control of CMT.

Quantities for improvements were based on conceptual drawings provided in Appendix 8.

11th Street Corridor Study; Road Diet Option 2C - No Change in Curb Lines, Reappropriate Right of Way Conceptual 2021 Cost - Excludes Utility Relocation and Right of Way					
Description	**Quantity**	**UNIT**	**UNIT COST**	**TOTAL COST**	**REMARKS**
Reappropriate Right of Way from 23rd Ave to 18th Ave					
Striping Removal	10,200	LFT	$ 1.50	$ 15,300.00	
Pavement Marking - Solid White	6,800	LFT	$ 2.00	$ 13,600.00	
Pavement Marking - Solid Yellow	3,400	LFT	$ 2.00	$ 6,800.00	
Pavement Marking - Broken Yellow	850	LFT	$ 2.00	$ 1,700.00	
Pavement Marking - Crosshatch White	510	LFT	$ 2.00	$ 1,020.00	
Pavement Marking - Lane Indication Arrow	10	EACH	$ 200.00	$ 2,000.00	
Lane Bollards	70	EACH	$ 75.00	$ 5,250.00	
Itemized Subtotal				$ 45,670.00	
Preliminary Engineering	**10%**			**$ 4,600.00**	
Construction Engineering	**6%**			**$ 2,700.00**	
Construction Layout	**3%**			**$ 1,400.00**	
Clearing Right of Way	**2%**			**$ 900.00**	
Mobilization and Demobilization	**5%**			**$ 2,300.00**	
Erosion Control	**3%**			**$ 1,400.00**	
Maintenance of Traffic	**5%**			**$ 2,300.00**	
Subtotal				**$ 61,270.00**	
Contingency (%)	**30%**			**$ 13,700.00**	
GRAND TOTAL					**$ 74,970.00**

Note: Costs are based on existing available information in 2021. Actual costs may vary due to timing of construction, changed conditions, labor and market changes, or other factors beyond the control of CMT.

Quantities for improvements were based on conceptual drawings provided in Appendix 8.

11th Street Corridor Study; Road Diet Option 2H - Multi-Use Path on West Side Conceptual 2021 Cost - Excludes Utility Relocation and Right of Way					
Description	**Quantity**	**UNIT**	**UNIT COST**	**TOTAL COST**	**REMARKS**
18th Ave to Broadway					
Pavement Removal - for planting strips and/or median	1,700	SYS	$ 15.00	$ 25,500.00	
Existing Sidewalk/Planting Strip Removal	23,800	SFT	$ 2.00	$ 47,600.00	
Striping Removal	10,200	LFT	$ 1.50	$ 15,300.00	
Curb and Gutter, Concrete	3,400	LFT	$ 40.00	$ 136,000.00	
Curb, Concrete - for median	2,550	LFT	$ 40.00	$ 102,000.00	
Sodding - for outer planting strips	1,330	SYS	$ 25.00	$ 33,250.00	
Casting, Adjust to Grade	16	EACH	$ 2,000.00	$ 32,000.00	
Sidewalk, Concrete	2,840	SYS	$ 100.00	$ 284,000.00	
ADA Curb Ramps	8	EACH	$ 1,200.00	$ 9,600.00	
ADA Curb Ramps with APS	8	EACH	$ 8,000.00	$ 64,000.00	includes push buttons
Milling, Asphalt, 4"	6,800	SYS	$ 10.00	$ 68,000.00	
HMA Surface, 4"	1,600	TON	$ 120.00	$ 192,000.00	
Intersection Lighting	1	LS	$ 405,000.00	$ 405,000.00	
Pedestrian Scale Lighting	1	LS	$ 570,000.00	$ 570,000.00	
Unsignalized Ped Crossings	1	EACH	$ 92,612.00	$ 92,612.00	
Signal Reconstruction	1	EACH	$ 200,000.00	$ 200,000.00	15th & 18th Signals removed, Broad
Pavement Marking - Solid White	3,400	LFT	$ 2.00	$ 6,800.00	
Pavement Marking - Solid Yellow	3,400	LFT	$ 2.00	$ 6,800.00	
Pavement Marking - Lane Indication Arrow	10	EACH	$ 200.00	$ 2,000.00	
Landscaping	1	LS	$ 20,000.00	$ 20,000.00	
Itemized Subtotal				$ 1,627,212.00	
Preliminary Engineering	**10%**			**$ 162,700.00**	
Construction Engineering	**6%**			**$ 97,600.00**	
Construction Layout	**3%**			**$ 48,800.00**	
Clearing Right of Way	**2%**			**$ 32,500.00**	
Mobilization and Demobilization	**5%**			**$ 81,400.00**	
Erosion Control	**3%**			**$ 48,800.00**	
Maintenance of Traffic	**5%**			**$ 81,400.00**	
Subtotal				**$ 2,865,662.00**	
Contingency (%)	**30%**			**$ 859,700.00**	
GRAND TOTAL					**$ 3,725,362.00**

Note: Costs are based on existing available information in 2021. Actual costs may vary due to timing of construction, changed conditions, labor and market changes, or other factors beyond the control of CMT.

Quantities for improvements were based on conceptual drawings provided in Appendix 8.

11th Street Corridor Study; Road Diet Option 3B - No Change in Curb Lines, Reappropriate Right of Way Conceptual 2021 Cost - Excludes Utility Relocation and Right of Way					
Description	**Quantity**	**UNIT**	**UNIT COST**	**TOTAL COST**	**REMARKS**
Reappropriate Right of Way from 23rd Ave to 18th Ave					
Striping Removal	15,600	LFT	$ 1.50	$ 23,400.00	
Pavement Marking - Solid White	10,400	LFT	$ 2.00	$ 20,800.00	
Pavement Marking - Solid Yellow	5,200	LFT	$ 2.00	$ 10,400.00	
Pavement Marking - Broken Yellow	1,300	LFT	$ 2.00	$ 2,600.00	
Pavement Marking - Crosshatch White	780	LFT	$ 2.00	$ 1,560.00	
Pavement Marking - Lane Indication Arrow	17	EACH	$ 200.00	$ 3,400.00	
Itemized Subtotal				$ 62,160.00	
Preliminary Engineering	**10%**			**$ 6,200.00**	
Construction Engineering	**6%**			**$ 3,700.00**	
Construction Layout	**3%**			**$ 1,900.00**	
Clearing Right of Way	**2%**			**$ 1,200.00**	
Mobilization and Demobilization	**5%**			**$ 3,100.00**	
Erosion Control	**3%**			**$ 1,900.00**	
Maintenance of Traffic	**5%**			**$ 3,100.00**	
Subtotal				**$ 83,260.00**	
Contingency (%)	**30%**			**$ 25,000.00**	
GRAND TOTAL					**$ 108,260.00**

Note: Costs are based on existing available information in 2021. Actual costs may vary due to timing of construction, changed conditions, labor and market changes, or other factors beyond the control of CMT.

Quantities for improvements were based on conceptual drawings provided in Appendix 8.

11th Street Corridor Study; Road Diet Option 3C - Multi-Use Path on West Side, 4 Lanes Conceptual 2021 Cost - Excludes Utility Relocation and Right of Way					
Description	**Quantity**	**UNIT**	**UNIT COST**	**TOTAL COST**	**REMARKS**
Reappropriate Right of Way from 23rd Ave to 18th Ave					
Existing Sidewalk/Planting Strip Removal	72,800	SFT	$ 2.00	$ 145,600.00	
Pavement Removal - for planting strips and/or median	2,600	SYS	$ 15.00	$ 39,000.00	
Striping Removal	15,600	LFT	$ 1.50	$ 23,400.00	
Curb and Gutter, Concrete	5,200	LFT	$ 40.00	$ 208,000.00	
Sodding - for outer planting strips	6,360	SYS	$ 25.00	$ 159,000.00	
Casting, Adjust to Grade	15	EACH	$ 2,000.00	$ 30,000.00	
Sidewalk, Concrete	4,340	SYS	$ 100.00	$ 434,000.00	
Intersection Lighting	1	LS	$ 303,750.00	$ 303,750.00	
Pedestrian Scale Lighting	1	LS	$ 1,230,000.00	$ 1,230,000.00	
ADA Curb Ramps	22	EACH	$ 1,200.00	$ 26,400.00	
Milling, Asphalt, 1.25"	13,580	SYS	$ 5.00	$ 67,900.00	
HMA Surface, 1.25"	1,000	TON	$ 120.00	$ 120,000.00	
Intersection Lighting	1	LS	$ 202,500.00	$ 202,500.00	
Pedestrian Scale Lighting	1	LS	$ 1,230,000.00	$ 1,230,000.00	
Pavement Marking - Solid White	10,400	LFT	$ 2.00	$ 20,800.00	
Pavement Marking - Solid Yellow	5,200	LFT	$ 2.00	$ 10,400.00	
Landscaping	1	LS	$ 20,000.00	$ 20,000.00	
Itemized Subtotal				$ 4,270,750.00	
Preliminary Engineering	**10%**			**$ 427,100.00**	
Construction Engineering	**6%**			**$ 256,200.00**	
Construction Layout	**3%**			**$ 128,100.00**	
Clearing Right of Way	**2%**			**$ 85,400.00**	
Mobilization and Demobilization	**5%**			**$ 213,500.00**	
Erosion Control	**3%**			**$ 128,100.00**	
Maintenance of Traffic	**5%**			**$ 213,500.00**	
Subtotal				**$ 5,722,650.00**	
Contingency (%)	**30%**			**$ 1,716,800.00**	
GRAND TOTAL					**$ 7,439,450.00**

Note: Costs are based on existing available information in 2021. Actual costs may vary due to timing of construction, changed conditions, labor and market changes, or other factors beyond the control of CMT.

Right of Way acquisition for widened sidewalk is NOT included in Total Contingent Cost.

Quantities for improvements were based on conceptual drawings provided in Appendix 8.

11th Street Corridor Study; Road Diet Option 4B - Right of Way Acquisition to Widen Sidewalk					
Conceptual 2021 Cost - Excludes Utility Relocation and Right of Way					
Description	**Quantity**	**UNIT**	**UNIT COST**	**TOTAL COST**	**REMARKS**
ROW Acquisition on 11th Street from Alton Ave to Sandy Hollow Rd					
Excavation - additional 2' outside each sidewalk	1,300	CYS	$ 30.00	$ 39,000.00	
Existing Sidewalk Removal	46,500	SFT	$ 2.00	$ 93,000.00	
Striping Removal	27,900	LFT	$ 1.50	$ 41,850.00	
Curb and Gutter, Concrete	9,300	LFT	$ 40.00	$ 372,000.00	
Casting, Adjust to Grade	40	EACH	$ 2,000.00	$ 80,000.00	
Sidewalk, Concrete	7,750	SYS	$ 100.00	$ 775,000.00	
ADA Curb Ramps	26	EACH	$ 1,200.00	$ 31,200.00	
ADA Curb Ramps with APS	14	EACH	$ 8,000.00	$ 112,000.00	includes push buttons
Milling, Asphalt, 4"	28,420	SYS	$ 10.00	$ 284,200.00	
HMA Surface, 4"	6,688	TON	$ 120.00	$ 802,560.00	
Intersection Lighting	1	LS	$ 607,500.00	$ 607,500.00	
Pedestrian Scale Lighting	1	LS	$ 1,705,000.00	$ 1,705,000.00	
Unsignalized Ped Crossings	2	EACH	$ 92,612.00	$ 185,224.00	
Pavement Marking - Broken White	2,330	LFT	$ 2.00	$ 4,660.00	
Pavement Marking - Solid Yellow	9,300	LFT	$ 2.00	$ 18,600.00	
Pavement Marking - Broken Yellow	2,330	LFT	$ 2.00	$ 4,660.00	
Pavement Marking - Lane Indication Arrow	63	EACH	$ 200.00	$ 12,600.00	
Itemized Subtotal				$ 5,169,054.00	
Preliminary Engineering	**10%**			**$ 516,900.00**	
Construction Engineering	**6%**			**$ 310,100.00**	
Construction Layout	**3%**			**$ 155,100.00**	
Clearing Right of Way	**2%**			**$ 103,400.00**	
Mobilization and Demobilization	**5%**			**$ 258,500.00**	
Erosion Control	**3%**			**$ 155,100.00**	
Maintenance of Traffic	**5%**			**$ 258,500.00**	
Subtotal				**$ 6,926,654.00**	
Contingency (%)	**30%**			**$ 2,078,000.00**	
GRAND TOTAL					**$ 9,004,654.00**

Note: Costs are based on existing available information in 2021. Actual costs may vary due to timing of construction, changed conditions, labor and market changes, or other factors beyond the control of CMT.

Right of Way acquisition for widened sidewalk is NOT included in Total Contingent Cost.

Quantities for improvements were based on conceptual drawings provided in Appendix 8.

11th Street Corridor Study; Improved Unsignalized Pedestrian Crossings					
Conceptual 2021 Cost - Excludes Utility Relocation and Right of Way					
Description	**Quantity**	**UNIT**	**UNIT COST**	**TOTAL COST**	**REMARKS**
***per Crossing**					
Pavement Markings - Crosswalk	56	LFT	$ 2.00	$ 112.00	
ADA Curb Ramps	4	EACH	$ 1,200.00	$ 4,800.00	
Rectangular Rapidly Flashing Beacons	2	EACH	$ 20,000.00	$ 40,000.00	
Signage	4	EACH	$ 275.00	$ 1,100.00	
Pavement Removal - for raised median	215	SYS	$ 30.00	$ 6,450.00	
Raised Median - concrete	215	SYS	$ 10.00	$ 2,150.00	
Curb, Concrete - for raised median	360	LFT	$ 50.00	$ 18,000.00	
Landscaping	1	LS	$ 20,000.00	$ 20,000.00	
Itemized Subtotal				$ 92,612.00	
Preliminary Engineering	**10%**			**$ 9,300.00**	
Construction Engineering	**6%**			**$ 5,600.00**	
Construction Layout	**3%**			**$ 2,800.00**	
Clearing Right of Way	**2%**			**$ 1,900.00**	
Mobilization and Demobilization	**5%**			**$ 4,600.00**	
Erosion Control	**3%**			**$ 2,800.00**	
Maintenance of Traffic	**5%**			**$ 4,600.00**	
Subtotal				**$ 124,212.00**	
Contingency (%)	**30%**			**$ 37,300.00**	
GRAND TOTAL PER CROSSING					**$ 161,512.00**
GRAND TOTAL					**$ 484,536.00**

* Costs are applicable to all locations with suggested unsignalized pedestrian crossing improvements, assuming that two-stage crossings with raised medians are implemented at the indicated locations.

Note: Costs are based on existing available information in 2021. Actual costs may vary due to timing of construction, changed conditions, labor and market changes, or other factors beyond the control of CMT.

Pedestrian Crossing Locations Considered

1.) Schnucks
2.) Wills Avenue
3.) 16th & 17th Avenues at Keye-Mallquist Park

Quantities for improvements were based on conceptual drawings provided in Appendix 8.

11th Street Corridor Study; ADA Upgrades Conceptual 2021 Cost - Excludes Utility Relocation and Right of Way					
Description	**Quantity**	**UNIT**	**UNIT COST**	**TOTAL COST**	**TOTAL CONTINGENT COST**
AVERAGE COST TO UPGRADE UNSIGNALIZED INTERSECTION					**$ 39,300.00**
AVERAGE COST TO UPGRADE SIGNALIZED INTERSECTION					**$ 58,400.00**
Sandy Hollow Rd - Signalized - E-W				**$ 44,823.00**	**$ 58,270.00**
Excavation - Sidewalk removal	20	SFT	$ 30.00	$ 600.00	
ADA curb ramps with APS	4	EACH	$ 8,000.00	$ 32,000.00	
Pavement Markings - Crosswalks	425	LFT	$ 2.00	$ 850.00	
Johnson Ave - Unsignalized - N-S				**$ 22,084.00**	**$ 28,710.00**
Excavation - Sidewalk removal	10	SFT	$ 30.00	$ 300.00	
ADA curb ramps	2	EACH	$ 8,000.00	$ 16,000.00	
Pavement Markings - Crosswalks	90	LFT	$ 2.00	$ 180.00	
Roosevelt Rd - Unsignalized - N-S				**$ 22,057.00**	**$ 28,675.00**
Excavation - Sidewalk removal	10	SFT	$ 30.00	$ 300.00	
ADA curb ramps	2	EACH	$ 8,000.00	$ 16,000.00	
Pavement Markings - Crosswalks	80	LFT	$ 2.00	$ 160.00	
Lyran Ave - Unsignalized - N-S				**$ 22,110.00**	**$ 28,743.00**
Excavation - Sidewalk removal	10	SFT	$ 30.00	$ 300.00	
ADA curb ramps	2	EACH	$ 8,000.00	$ 16,000.00	
Pavement Markings - Crosswalks	100	LFT	$ 2.00	$ 200.00	
Hamilton Ave - Unsignalized - N-S				**$ 22,137.00**	**$ 28,779.00**
Excavation - Sidewalk removal	10	SFT	$ 30.00	$ 300.00	
ADA curb ramps	2	EACH	$ 8,000.00	$ 16,000.00	
Pavement Markings - Crosswalks	110	LFT	$ 2.00	$ 220.00	
Sawyer Rd - Unsignalized - N-S				**$ 22,084.00**	**$ 28,710.00**
Excavation - Sidewalk removal	10	SFT	$ 30.00	$ 300.00	
ADA curb ramps	2	EACH	$ 8,000.00	$ 16,000.00	
Pavement Markings - Crosswalks	90	LFT	$ 2.00	$ 180.00	
Barnum Rd - Unsignalized - N-S				**$ 22,057.00**	**$ 28,675.00**
Excavation - Sidewalk removal	10	SFT	$ 30.00	$ 300.00	
ADA curb ramps	2	EACH	$ 8,000.00	$ 16,000.00	
Pavement Markings - Crosswalks	80	LFT	$ 2.00	$ 160.00	
Pershing Ave - Unsignalized - N-S				**$ 22,030.00**	**$ 28,639.00**
Excavation - Sidewalk removal	10	SFT	$ 30.00	$ 300.00	
ADA curb ramps	2	EACH	$ 8,000.00	$ 16,000.00	
Pavement Markings - Crosswalks	70	LFT	$ 2.00	$ 140.00	
Construction Engineering	**6**	**%**			**Included in Total Cost**
Construction Layout	**3**	**%**			**Included in Total Cost**
Clearing Right of Way	**2**	**%**			**Included in Total Cost**
Mobilization and Demobilization	**5**	**%**			**Included in Total Cost**
Erosion Control	**3**	**%**			**Included in Total Cost**
Maintenance of Traffic	**5**	**%**			**Included in Total Cost**
Contingency (%)	**30**	**%**			**Included in Total Contingent Cost**

Note: Costs are based on existing available information in 2021. Actual costs may vary due to timing of construction, changed conditions, labor and market changes, or other factors beyond the control of CMT.

11th Street Corridor Study; ADA Upgrades Conceptual 2021 Cost - Excludes Utility Relocation and Right of Way					
Description	**Quantity**	**UNIT**	**UNIT COST**	**TOTAL COST**	**TOTAL CONTINGENT COST**
Barnum Rd/Pershing Ave - Unsignalized - E-W				**$ 22,191.00**	**$ 28,849.00**
Excavation - Sidewalk removal	10	SFT	$ 30.00	$ 300.00	
ADA curb ramps	2	EACH	$ 8,000.00	$ 16,000.00	
Pavement Markings - Crosswalks	130	LFT	$ 2.00	$ 260.00	
Brooke Rd - Signalized - E-W, N-S				**$ 44,756.00**	**$ 58,183.00**
Excavation - Sidewalk removal	20	SFT	$ 30.00	$ 600.00	
ADA curb ramps with APS	4	EACH	$ 8,000.00	$ 32,000.00	
Pavement Markings - Crosswalks	400	LFT	$ 2.00	$ 800.00	
Reed Ave - Unsignalized - E-W, N-S				**$ 44,864.00**	**$ 58,324.00**
Excavation - Sidewalk removal	20	SFT	$ 30.00	$ 600.00	
ADA curb ramps	4	EACH	$ 8,000.00	$ 32,000.00	
Pavement Markings - Crosswalks	440	LFT	$ 2.00	$ 880.00	
Wills Ave - Unsignalized - N-S				**$ 44,274.00**	**$ 57,557.00**
Excavation - Sidewalk removal	20	SFT	$ 30.00	$ 600.00	
ADA curb ramps	4	EACH	$ 8,000.00	$ 32,000.00	
Pavement Markings - Crosswalks	220	LFT	$ 2.00	$ 440.00	
23rd Ave (South Leg) - Unsignalized - N-S				**$ 22,030.00**	**$ 28,639.00**
Excavation - Sidewalk removal	10	SFT	$ 30.00	$ 300.00	
ADA curb ramps	2	EACH	$ 8,000.00	$ 16,000.00	
Pavement Markings - Crosswalks	70	LFT	$ 2.00	$ 140.00	
23rd Ave (North Leg) - Unsignalized - N-S				**$ 22,084.00**	**$ 28,710.00**
Excavation - Sidewalk removal	10	SFT	$ 30.00	$ 300.00	
ADA curb ramps	2	EACH	$ 8,000.00	$ 16,000.00	
Pavement Markings - Crosswalks	90	LFT	$ 2.00	$ 180.00	
22nd Ave - Unsignalized - N-S				**$ 44,060.00**	**$ 57,278.00**
Excavation - Sidewalk removal	20	SFT	$ 30.00	$ 600.00	
ADA curb ramps	4	EACH	$ 8,000.00	$ 32,000.00	
Pavement Markings - Crosswalks	140	LFT	$ 2.00	$ 280.00	
Herbert Ave - Unsignalized - N-S				**$ 22,030.00**	**$ 28,639.00**
Excavation - Sidewalk removal	10	SFT	$ 30.00	$ 300.00	
ADA curb ramps	2	EACH	$ 8,000.00	$ 16,000.00	
Pavement Markings - Crosswalks	70	LFT	$ 2.00	$ 140.00	
21st Ave - Unsignalized - N-S				**$ 22,030.00**	**$ 28,639.00**
Excavation - Sidewalk removal	10	SFT	$ 30.00	$ 300.00	
ADA curb ramps	2	EACH	$ 8,000.00	$ 16,000.00	
Pavement Markings - Crosswalks	70	LFT	$ 2.00	$ 140.00	
Columbia Ave - Unsignalized - N-S				**$ 22,030.00**	**$ 28,639.00**
Excavation - Sidewalk removal	10	SFT	$ 30.00	$ 300.00	
ADA curb ramps	2	EACH	$ 8,000.00	$ 16,000.00	
Pavement Markings - Crosswalks	70	LFT	$ 2.00	$ 140.00	
Preliminary Engineering	**10**	**%**			**Included in Total Cost**
Construction Engineering	**6**	**%**			**Included in Total Cost**
Construction Layout	**3**	**%**			**Included in Total Cost**
Clearing Right of Way	**2**	**%**			**Included in Total Cost**
Mobilization and Demobilization	**5**	**%**			**Included in Total Cost**
Erosion Control	**3**	**%**			**Included in Total Cost**
Maintenance of Traffic	**5**	**%**			**Included in Total Cost**
Contingency (%)	**30**	**%**			**Included in Total Contingent Cost**

Note: Costs are based on existing available information in 2021. Actual costs may vary due to timing of construction, changed conditions, labor and market changes, or other factors beyond the control of CMT.

11th Street Corridor Study; ADA Upgrades Conceptual 2021 Cost - Excludes Utility Relocation and Right of Way					
Description	**Quantity**	**UNIT**	**UNIT COST**	**TOTAL COST**	**TOTAL CONTINGENT COST**
Columbia Ave - Unsignalized - E-W				**$ 22,164.00**	**$ 28,814.00**
Excavation - Sidewalk removal	10	SFT	$ 30.00	$ 300.00	
ADA curb ramps	2	EACH	$ 8,000.00	$ 16,000.00	
Pavement Markings - Crosswalks	120	LFT	$ 2.00	$ 240.00	
20th Ave - Unsignalized - N-S				**$ 44,060.00**	**$ 57,278.00**
Excavation - Sidewalk removal	20	SFT	$ 30.00	$ 600.00	
ADA curb ramps	4	EACH	$ 8,000.00	$ 32,000.00	
Pavement Markings - Crosswalks	140	LFT	$ 2.00	$ 280.00	
18th Ave - Signalized - E-W, N-S				**$ 44,971.00**	**$ 58,463.00**
Excavation - Sidewalk removal	20	SFT	$ 30.00	$ 600.00	
ADA curb ramps with APS	4	EACH	$ 8,000.00	$ 32,000.00	
Pavement Markings - Crosswalks	480	LFT	$ 2.00	$ 960.00	
17th Ave - Unsignalized - N-S				**$ 44,113.00**	**$ 57,347.00**
Excavation - Sidewalk removal	20	SFT	$ 30.00	$ 600.00	
ADA curb ramps	4	EACH	$ 8,000.00	$ 32,000.00	
Pavement Markings - Crosswalks	160	LFT	$ 2.00	$ 320.00	
16th Ave - Unsignalized - N-S				**$ 44,113.00**	**$ 57,347.00**
Excavation - Sidewalk removal	20	SFT	$ 30.00	$ 600.00	
ADA curb ramps	4	EACH	$ 8,000.00	$ 32,000.00	
Pavement Markings - Crosswalks	160	LFT	$ 2.00	$ 320.00	
15th Ave - Signalized - E-W, N-S				**$ 44,971.00**	**$ 58,463.00**
Excavation - Sidewalk removal	20	SFT	$ 30.00	$ 600.00	
ADA curb ramps with APS	4	EACH	$ 8,000.00	$ 32,000.00	
Pavement Markings - Crosswalks	480	LFT	$ 2.00	$ 960.00	
Broadway - Signalized - E-W, N-S				**$ 44,917.00**	**$ 58,393.00**
Excavation - Sidewalk removal	20	SFT	$ 30.00	$ 600.00	
ADA curb ramps with APS	4	EACH	$ 8,000.00	$ 32,000.00	
Pavement Markings - Crosswalks	460	LFT	$ 2.00	$ 920.00	
13th Ave - Unsignalized - N-S				**$ 22,030.00**	**$ 28,639.00**
Excavation - Sidewalk removal	10	SFT	$ 30.00	$ 300.00	
ADA curb ramps	2	EACH	$ 8,000.00	$ 16,000.00	
Pavement Markings - Crosswalks	70	LFT	$ 2.00	$ 140.00	
12th Ave (South Leg) - Unsignalized - N-S				**$ 22,084.00**	**$ 28,710.00**
Excavation - Sidewalk removal	10	SFT	$ 30.00	$ 300.00	
ADA curb ramps	2	EACH	$ 8,000.00	$ 16,000.00	
Pavement Markings - Crosswalks	90	LFT	$ 2.00	$ 180.00	
12th Ave (North Leg) - Unsignalized - N-S				**$ 22,057.00**	**$ 28,675.00**
Excavation - Sidewalk removal	10	SFT	$ 30.00	$ 300.00	
ADA curb ramps	2	EACH	$ 8,000.00	$ 16,000.00	
Pavement Markings - Crosswalks	80	LFT	$ 2.00	$ 160.00	
Preliminary Engineering	**10**	**%**			**Included in Total Cost**
Construction Engineering	**6**	**%**			**Included in Total Cost**
Construction Layout	**3**	**%**			**Included in Total Cost**
Clearing Right of Way	**2**	**%**			**Included in Total Cost**
Mobilization and Demobilization	**5**	**%**			**Included in Total Cost**
Erosion Control	**3**	**%**			**Included in Total Cost**
Maintenance of Traffic	**5**	**%**			**Included in Total Cost**
Contingency (%)	**30**	**%**			**Included in Total Contingent Cost**

Note: Costs are based on existing available information in 2021. Actual costs may vary due to timing of construction, changed conditions, labor and market changes, or other factors beyond the control of CMT.

11th Street Corridor Study; ADA Upgrades Conceptual 2021 Cost - Excludes Utility Relocation and Right of Way					
Description	**Quantity**	**UNIT**	**UNIT COST**	**TOTAL COST**	**TOTAL CONTINGENT COST**
11th Ave - Unsignalized - N-S				**$ 22,084.00**	**$ 28,710.00**
Excavation - Sidewalk removal	10	SFT	$ 30.00	$ 300.00	
ADA curb ramps	2	EACH	$ 8,000.00	$ 16,000.00	
Pavement Markings - Crosswalks	90	LFT	$ 2.00	$ 180.00	
Railroad Ave - Unsignalized - N-S				**$ 22,244.00**	**$ 28,918.00**
Excavation - Sidewalk removal	10	SFT	$ 30.00	$ 300.00	
ADA curb ramps	2	EACH	$ 8,000.00	$ 16,000.00	
Pavement Markings - Crosswalks	150	LFT	$ 2.00	$ 300.00	
Woodruff Ave - Unsignalized - N-S				**$ 44,381.00**	**$ 57,696.00**
Excavation - Sidewalk removal	20	SFT	$ 30.00	$ 600.00	
ADA curb ramps	4	EACH	$ 8,000.00	$ 32,000.00	
Pavement Markings - Crosswalks	260	LFT	$ 2.00	$ 520.00	
9th Ave - Unsignalized - N-S				**$ 22,084.00**	**$ 28,710.00**
Excavation - Sidewalk removal	10	SFT	$ 30.00	$ 300.00	
ADA curb ramps	2	EACH	$ 8,000.00	$ 16,000.00	
Pavement Markings - Crosswalks	90	LFT	$ 2.00	$ 180.00	
8th Ave - Unsignalized - N-S				**$ 44,274.00**	**$ 57,557.00**
Excavation - Sidewalk removal	20	SFT	$ 30.00	$ 600.00	
ADA curb ramps	4	EACH	$ 8,000.00	$ 32,000.00	
Pavement Markings - Crosswalks	220	LFT	$ 2.00	$ 440.00	
7th Ave - Unsignalized - N-S				**$ 44,274.00**	**$ 57,557.00**
Excavation - Sidewalk removal	20	SFT	$ 30.00	$ 600.00	
ADA curb ramps	4	EACH	$ 8,000.00	$ 32,000.00	
Pavement Markings - Crosswalks	220	LFT	$ 2.00	$ 440.00	
6th Ave - Unsignalized - N-S				**$ 44,167.00**	**$ 57,418.00**
Excavation - Sidewalk removal	20	SFT	$ 30.00	$ 600.00	
ADA curb ramps	4	EACH	$ 8,000.00	$ 32,000.00	
Pavement Markings - Crosswalks	180	LFT	$ 2.00	$ 360.00	
5th Ave - Signalized - E-W, N-S				**$ 44,917.00**	**$ 58,393.00**
Excavation - Sidewalk removal	20	SFT	$ 30.00	$ 600.00	
ADA curb ramps with APS	4	EACH	$ 8,000.00	$ 32,000.00	
Pavement Markings - Crosswalks	460	LFT	$ 2.00	$ 920.00	
4th Ave - Unsignalized - N-S				**$ 44,167.00**	**$ 57,418.00**
Excavation - Sidewalk removal	20	SFT	$ 30.00	$ 600.00	
ADA curb ramps	4	EACH	$ 8,000.00	$ 32,000.00	
Pavement Markings - Crosswalks	180	LFT	$ 2.00	$ 360.00	
Charles St - Signalized - E-W, N-S				**$ 44,622.00**	**$ 58,009.00**
Excavation - Sidewalk removal	20	SFT	$ 30.00	$ 600.00	
ADA curb ramps with APS	4	EACH	$ 8,000.00	$ 32,000.00	
Pavement Markings - Crosswalks	350	LFT	$ 2.00	$ 700.00	
Preliminary Engineering	**10**	**%**			**Included in Total Cost**
Construction Engineering	**6**	**%**			**Included in Total Cost**
Construction Layout	**3**	**%**			**Included in Total Cost**
Clearing Right of Way	**2**	**%**			**Included in Total Cost**
Mobilization and Demobilization	**5**	**%**			**Included in Total Cost**
Erosion Control	**3**	**%**			**Included in Total Cost**
Maintenance of Traffic	**5**	**%**			**Included in Total Cost**
Contingency (%)	**30**	**%**			**Included in Total Contingent Cost**
GRAND TOTAL					**$ 1,615,173.00**

Note: Costs are based on existing available information in 2021. Actual costs may vary due to timing of construction, changed conditions, labor and market changes, or other factors beyond the control of CMT.

11th Street Corridor Study; Crosswalk Pavement Marking Improvements Conceptual 2021 Cost - Excludes Utility Relocation and Right of Way					
Description	**Quantity**	**UNIT**	**UNIT COST**	**TOTAL COST**	**TOTAL CONTINGENT COST**
AVERAGE COST OF UPGRADE UNSIGNALIZED INTERSECTION					**$ 650.00**
AVERAGE COST TO UPGRADE SIGNALIZED INTERSECTION					**$ 2,700.00**
Barnum Rd/Pershing Ave - Unsignalized - E-W				**$ 610.00**	**$ 793.00**
Striping Removal	130	LFT	$ 1.50	$ 195.00	
Pavement Markings - Crosswalks	130	LFT	$ 2.00	$ 260.00	
Brooke Rd - Signalized - E-W, N-S				**$ 1,736.00**	**$ 2,257.00**
Striping Removal	370	LFT	$ 1.50	$ 555.00	
Pavement Markings - Crosswalks	370	LFT	$ 2.00	$ 740.00	
Columbia Ave - Unsignalized - N-S				**$ 329.00**	**$ 428.00**
Striping Removal	70	LFT	$ 1.50	$ 105.00	
Pavement Markings - Crosswalks	70	LFT	$ 2.00	$ 140.00	
Columbia Ave - Unsignalized - E-W				**$ 563.00**	**$ 732.00**
Striping Removal	120	LFT	$ 1.50	$ 180.00	
Pavement Markings - Crosswalks	120	LFT	$ 2.00	$ 240.00	
20th Ave (East Leg) - Unsignalized - E-W				**$ 329.00**	**$ 428.00**
Striping Removal	70	LFT	$ 1.50	$ 105.00	
Pavement Markings - Crosswalks	70	LFT	$ 2.00	$ 140.00	
18th Ave - Signalized - E-W, N-S				**$ 2,345.00**	**$ 3,049.00**
Striping Removal	500	LFT	$ 1.50	$ 750.00	
Pavement Markings - Crosswalks	500	LFT	$ 2.00	$ 1,000.00	
17th Ave - Unsignalized - N-S				**$ 751.00**	**$ 977.00**
Striping Removal	160	LFT	$ 1.50	$ 240.00	
Pavement Markings - Crosswalks	160	LFT	$ 2.00	$ 320.00	
16th Ave - Unsignalized - N-S				**$ 751.00**	**$ 977.00**
Striping Removal	160	LFT	$ 1.50	$ 240.00	
Pavement Markings - Crosswalks	160	LFT	$ 2.00	$ 320.00	
15th Ave - Signalized - E-W, N-S				**$ 2,345.00**	**$ 3,049.00**
Striping Removal	500	LFT	$ 1.50	$ 750.00	
Pavement Markings - Crosswalks	500	LFT	$ 2.00	$ 1,000.00	
Broadway - Signalized - E-W, N-S				**$ 2,158.00**	**$ 2,806.00**
Striping Removal	460	LFT	$ 1.50	$ 690.00	
Pavement Markings - Crosswalks	460	LFT	$ 2.00	$ 920.00	
Preliminary Engineering	**10**	**%**			**Included in Total Cost**
Construction Engineering	**6**	**%**			**Included in Total Cost**
Construction Layout	**3**	**%**			**Included in Total Cost**
Clearing Right of Way	**2**	**%**			**Included in Total Cost**
Mobilization and Demobilization	**5**	**%**			**Included in Total Cost**
Erosion Control	**3**	**%**			**Included in Total Cost**
Maintenance of Traffic	**5**	**%**			**Included in Total Cost**
Contingency (%)	**30**	**%**			**Included in Total Contingent Cost**

Note: Costs are based on existing available information in 2021. Actual costs may vary due to timing of construction, changed conditions, labor and market changes, or other factors beyond the control of CMT.

11th Street Corridor Study; Crosswalk Pavement Marking Improvements Conceptual 2021 Cost - Excludes Utility Relocation and Right of Way					
Description	**Quantity**	**UNIT**	**UNIT COST**	**TOTAL COST**	**TOTAL CONTINGENT COST**
13th Ave - Unsignalized - N-S				**$ 329.00**	**$ 428.00**
Striping Removal	70	LFT	$ 1.50	$ 105.00	
Pavement Markings - Crosswalks	70	LFT	$ 2.00	$ 140.00	
12th Ave (South Leg) - Unsignalized - N-S				**$ 423.00**	**$ 550.00**
Striping Removal	90	LFT	$ 1.50	$ 135.00	
Pavement Markings - Crosswalks	90	LFT	$ 2.00	$ 180.00	
12th Ave (North Leg) - Unsignalized - N-S				**$ 376.00**	**$ 489.00**
Striping Removal	80	LFT	$ 1.50	$ 120.00	
Pavement Markings - Crosswalks	80	LFT	$ 2.00	$ 160.00	
11th Ave - Unsignalized - N-S				**$ 423.00**	**$ 550.00**
Striping Removal	90	LFT	$ 1.50	$ 135.00	
Pavement Markings - Crosswalks	90	LFT	$ 2.00	$ 180.00	
8th Ave - Unsignalized - N-S				**$ 516.00**	**$ 671.00**
Striping Removal	110	LFT	$ 1.50	$ 165.00	
Pavement Markings - Crosswalks	110	LFT	$ 2.00	$ 220.00	
5th Ave - Signalized - E-W, N-S				**$ 2,158.00**	**$ 2,806.00**
Striping Removal	460	LFT	$ 1.50	$ 690.00	
Pavement Markings - Crosswalks	460	LFT	$ 2.00	$ 920.00	
Charles St - Signalized - E-W, N-S				**$ 1,642.00**	**$ 2,135.00**
Striping Removal	350	LFT	$ 1.50	$ 525.00	
Pavement Markings - Crosswalks	350	LFT	$ 2.00	$ 700.00	
Preliminary Engineering	**10**	**%**			**Included in Total Cost**
Construction Engineering	**6**	**%**			**Included in Total Cost**
Construction Layout	**3**	**%**			**Included in Total Cost**
Clearing Right of Way	**2**	**%**			**Included in Total Cost**
Mobilization and Demobilization	**5**	**%**			**Included in Total Cost**
Erosion Control	**3**	**%**			**Included in Total Cost**
Maintenance of Traffic	**5**	**%**			**Included in Total Cost**
Contingency (%)	**30**	**%**			**Included in Total Contingent Cost**
GRAND TOTAL					**$ 23,125.00**

Note: Costs are based on existing available information in 2021. Actual costs may vary due to timing of construction, changed conditions, labor and market changes, or other factors beyond the control of CMT.

11th Street Corridor Study; Sidewalk Infill, Obstacle Removal, and Sidewalk Replacement Conceptual 2021 Cost - Excludes Utility Relocation and Right of Way					
Description	**Quantity**	**UNIT**	**UNIT COST**	**TOTAL COST**	**REMARKS**
Sidewalk Replacement - Sandy Hollow to Alton (Northbound)					
Sidewalk Removal	3,125	SFT	$ 10.00	$ 31,250.00	
Sidewalk, Concrete	370	SYS	$ 100.00	$ 37,000.00	
Casting, Reset	1	EACH	$ 2,000.00	$ 2,000.00	
Sidewalk Replacement - Sandy Hollow to Alton (Southbound)					
Sidewalk Removal	6,900	SFT	$ 10.00	$ 69,000.00	
Sidewalk, Concrete	800	SYS	$ 100.00	$ 80,000.00	
Casting, Reset	8	EACH	$ 2,000.00	$ 16,000.00	
Sidewalk Replacement - 23rd Ave to 18th Ave (Northbound)					
Sidewalk Removal	10,100	SFT	$ 10.00	$ 101,000.00	
Sidewalk, Concrete	1,130	SYS	$ 100.00	$ 113,000.00	
Casting, Reset	-	EACH	$ 2,000.00	$ -	
Sidewalk Replacement - 23rd Ave to 18th Ave (Southbound)					
Sidewalk Removal	9,600	SFT	$ 10.00	$ 96,000.00	
Sidewalk, Concrete	1,075	SYS	$ 100.00	$ 107,500.00	
Casting, Reset	5	EACH	$ 2,000.00	$ 10,000.00	
Sidewalk Replacement - 18th Ave to Broadway (Northbound)					
Sidewalk Removal	4,025	SFT	$ 10.00	$ 40,250.00	
Sidewalk, Concrete	465	SYS	$ 100.00	$ 46,500.00	
Casting, Reset	-	EACH	$ 2,000.00	$ -	
Sidewalk Replacement - 18th Ave to Broadway (Southbound)					
Sidewalk Removal	650	SFT	$ 10.00	$ 6,500.00	
Sidewalk, Concrete	80	SYS	$ 100.00	$ 8,000.00	
Casting, Reset	-	EACH	$ 2,000.00	$ -	
Sidewalk Replacement - Broadway to Charles (Northbound)					
Sidewalk Removal	5,475	SFT	$ 10.00	$ 54,750.00	
Sidewalk, Concrete	655	SYS	$ 100.00	$ 65,500.00	
Casting, Reset	8	EACH	$ 2,000.00	$ 16,000.00	
Sidewalk Replacement - Broadway to Charles (Southbound)					
Sidewalk Removal	3,125	SFT	$ 10.00	$ 31,250.00	
Sidewalk, Concrete	395	SYS	$ 100.00	$ 39,500.00	
Casting, Reset	6	EACH	$ 2,000.00	$ 12,000.00	
Itemized Subtotal				$ 983,000.00	
Preliminary Engineering	**10%**			**$ 98,300.00**	
Construction Engineering	**6%**			**$ 59,000.00**	
Construction Layout	**3%**			**$ 29,500.00**	
Clearing Right of Way	**2%**			**$ 19,700.00**	
Mobilization and Demobilization	**5%**			**$ 49,200.00**	
Erosion Control	**3%**			**$ 29,500.00**	
Maintenance of Traffic	**5%**			**$ 49,200.00**	
Subtotal				**$ 567,900.00**	
Contingency (%)	**30%**			**$ 28,800.00**	
GRAND TOTAL					**$ 1,346,200.00**

Note: Costs are based on existing available information in 2021. Actual costs may vary due to timing of construction, changed conditions, labor and market changes, or other factors beyond the control of CMT.

Assumptions:
Existing sidewalk in disrepair shown as replaced

11th Street Corridor Study; Transit Improvements South of US 20					
Conceptual 2021 Cost - Excludes Utility Relocation and Right of Way					
Description	Quantity	UNIT	UNIT COST	TOTAL COST	REMARKS
*per Intersection					
Bus Shelters/Benches	1	EACH	$ 8,000.00	$ 8,000.00	
Lighting	1	LS	$ 5,000.00	$ 5,000.00	
Bus Pad	1	EACH	$ 15,000.00	$ 15,000.00	
ADA compliant concrete pads	1	EACH	$ 2,000.00	$ 2,000.00	
Itemized Subtotal				$ 30,000.00	
Preliminary Engineering	**10%**			**$ 3,000.00**	
Construction Engineering	**6%**			**$ 1,800.00**	
Construction Layout	**3%**			**$ 900.00**	
Clearing Right of Way	**2%**			**$ 600.00**	
Mobilization and Demobilization	**5%**			**$ 1,500.00**	
Erosion Control	**3%**			**$ 900.00**	
Maintenance of Traffic	**5%**			**$ 1,500.00**	
Subtotal				**$ 40,200.00**	
Contingency (%)	**30%**			**$ 12,100.00**	
GRAND TOTAL per intersection					**$ 52,300.00**
GRAND TOTAL (reflects updates to all transit stops south of US 20 interchange listed bel					**$ 627,600.00**

* Costs are applicable to transit stops south of the US 20 interchange listed below

Note: Costs are based on existing available information in 2021. Actual costs may vary due to timing of construction, changed conditions, labor and market changes, or other factors beyond the control of CMT.

Transit Stops Considered

1.) 11th & Airport
2.) Service & Rocknel
3.) Service & Milford
4.) Service & SPX
5.) Service & Blackhawk
6.) Service & Bergstrom
7.) Service & Samuelson
8.) Samuelson @ McDonalds
9.) Samuelson & Logistics
10.) Logistics & Airport
11.) Assembly & Airport
12.) Pyramid Plastics

11th Street Corridor Study; Transit Improvements South of US 20					
Conceptual 2021 Cost - Excludes Utility Relocation and Right of Way					
Description	**Quantity**	**UNIT**	**UNIT COST**	**TOTAL COST**	**REMARKS**
***Intersection**					
Bus Benches	1	EACH	$ 2,500.00	$ 2,500.00	
Lighting	1	LS	$ 5,000.00	$ 5,000.00	
Bus Pad	1	EACH	$ 15,000.00	$ 15,000.00	
ADA compliant concrete pads	1	EACH	$ 2,000.00	$ 2,000.00	
Itemized Subtotal				$ 24,500.00	
Preliminary Engineering	**10%**			**$ 2,500.00**	
Construction Engineering	**6%**			**$ 1,500.00**	
Construction Layout	**3%**			**$ 700.00**	
Clearing Right of Way	**2%**			**$ 500.00**	
Mobilization and Demobilization	**5%**			**$ 1,200.00**	
Erosion Control	**3%**			**$ 700.00**	
Maintenance of Traffic	**5%**			**$ 1,200.00**	
Subtotal				**$ 32,800.00**	
Contingency (%)	**30%**			**$ 9,800.00**	
GRAND TOTAL PER INTERSECTION					**$ 42,600.00**
GRAND TOTAL (reflects updates to all transit stops north of US 20 listed below)					**$ 340,800.00**

* Costs are applicable to transit stops north of the US 20 interchange listed below

Note: Costs are based on existing available information in 2021. Actual costs may vary due to timing of construction, changed conditions, labor and market changes, or other factors beyond the control of CMT.

Transit Stops Considered

1.) 11th & 22nd Avenue
2.) 11th & 23rd Avenue
3.) 11th & Harrison Avenue
4.) Sandy Hollow Road at old Kmart
5.) 11th & Broadway
6.) 11th & Barnum Road (at Schnucks)
7.) 11th & Reed Avenue
8.) 11th & Alton Avenue

11th Street Corridor Study; Driveway Access Standards - Removing Single-Property Multiple Drive Entrances					
Conceptual 2021 Cost - Excludes Utility Relocation and Right of Way					
Description	**Quantity**	**UNIT**	**UNIT COST**	**TOTAL COST**	**REMARKS**
Multiple Drive Entrances					
Sidewalk Removal	2,080	SFT	$ 10.00	$ 20,800.00	
Sidewalk, Concrete	260	SYS	$ 100.00	$ 26,000.00	
Curb & Gutter, Concrete	460	LFT	$ 40.00	$ 18,400.00	
Pavement Removal	440	SYS	$ 50.00	$ 22,000.00	
Sodding	440	SYS	$ 25.00	$ 11,000.00	
Itemized Subtotal				$ 98,200.00	
Preliminary Engineering	**10%**			**$ 9,800.00**	
Construction Engineering	**6%**			**$ 5,900.00**	
Construction Layout	**3%**			**$ 2,900.00**	
Clearing Right of Way	**2%**			**$ 2,000.00**	
Mobilization and Demobilization	**5%**			**$ 4,900.00**	
Erosion Control	**3%**			**$ 2,900.00**	
Maintenance of Traffic	**5%**			**$ 4,900.00**	
Subtotal				**$ 131,500.00**	
Contingency (%)	**30%**			**$ 39,500.00**	
GRAND TOTAL					**$ 171,000.00**

Note: Costs are based on existing available information in 2021. Actual costs may vary due to timing of construction, changed conditions, labor and market changes, or other factors beyond the control of CMT.

Assumptions:

locations considered satisfy one or more of the following criteria:

1. Property has Excessive number of Drives but only really needs one
2. Property has excessive drive entrance width and needs to be reconstructed to a smaller width
3. Drive grade is too steep

Driveways Included in quantity:

<u>Northbound</u>

US Bank
John's Restaurant and Pizza
Professional Tax Service
A & M Auto Repair
Tony's Auto Repair
Campos Construction
across from Benson Stone

<u>Southbound</u>

Pizza Hut
Dunkin' Donuts
Ritschel's Market
Firehawk Auto
Happy Wok
11th St Express Printing
Morgan's Sales & Rentals
Gns Gas Center

11th Street Corridor Study; Driveway Access Standards - Excessive Drive Widths					
Conceptual 2021 Cost - Excludes Utility Relocation and Right of Way					
Description	**Quantity**	**UNIT**	**UNIT COST**	**TOTAL COST**	**REMARKS**
Excessive Drive Widths*					
Pavement Removal	835	SYS	$ 50.00	$ 41,750.00	
Sidewalk, Concrete	255	SYS	$ 100.00	$ 25,500.00	
Curb & Gutter, Concrete	435	LFT	$ 40.00	$ 17,400.00	
Sodding	245	SYS	$ 25.00	$ 6,125.00	
PCCP for Approaches	365	SYS	$ 125.00	$ 45,625.00	
Itemized Subtotal				$ 136,400.00	
Preliminary Engineering	**10%**			**$ 13,600.00**	
Construction Engineering	**6%**			**$ 8,200.00**	
Construction Layout	**3%**			**$ 4,100.00**	
Clearing Right of Way	**2%**			**$ 2,700.00**	
Mobilization and Demobilization	**5%**			**$ 6,800.00**	
Erosion Control	**3%**			**$ 4,100.00**	
Maintenance of Traffic	**5%**			**$ 6,800.00**	
Subtotal				**$ 182,700.00**	
Contingency (%)	**30%**			**$ 54,800.00**	
GRAND TOTAL					**$ 237,500.00**

Note: Costs are based on existing available information in 2021. Actual costs may vary due to timing of construction, changed conditions, labor and market changes, or other factors beyond the control of CMT.

Assumptions:

locations considered satisfy one or more of the following criteria:

1. Property has Excessive number of Drives but only really needs one
2. Property has excessive drive entrance width and needs to be reconstructed to a smaller width
3. Drive grade is too steep

Driveways Included in quantity:

Northbound

Doughboys Donuts
Sreenan Insurance
BJ's Place
S&H Tobacco
Clark's Transmissions
Affordable Alignments & Tires
H&T Auto Services

Southbound

Hassle Free Financing
Rockford Automotive
Mobil

11th Street Corridor Study; Pedestrian Scale Lighting Conceptual 2021 Cost - Excludes Utility Relocation and Right of Way					
Description	**Quantity**	**UNIT**	**UNIT COST**	**TOTAL COST**	**REMARKS**
Sandy Hollow Road to Reed Avenue					
Pedestrian Scale Lighting (poles & fixtures)	110	EACH	$ 8,000.00	$ 880,000.00	
Conduit	6,600	LFT	$ 25.00	$ 165,000.00	
Reed Avenue to Harrison Avenue					
Pedestrian Scale Lighting (poles & fixtures)	70	EACH	$ 8,000.00	$ 560,000.00	
Conduit	4,000	LFT	$ 25.00	$ 100,000.00	
Harrison Avenue to 23rd Avenue					
Pedestrian Scale Lighting (poles & fixtures)	50	EACH	$ 8,000.00	$ 400,000.00	
Conduit	3,000	LFT	$ 25.00	$ 75,000.00	
23rd Avenue to 18th Avenue					
Pedestrian Scale Lighting (poles & fixtures)	80	EACH	$ 8,000.00	$ 640,000.00	
Conduit	4,600	LFT	$ 25.00	$ 115,000.00	
18th Avenue to Broadway					
Pedestrian Scale Lighting (poles & fixtures)	60	EACH	$ 8,000.00	$ 480,000.00	
Conduit	3,600	LFT	$ 25.00	$ 90,000.00	
Broadway to Woodruff Avenue					
Pedestrian Scale Lighting (poles & fixtures)	60	EACH	$ 8,000.00	$ 480,000.00	
Conduit	3,200	LFT	$ 25.00	$ 80,000.00	
Woodruff Avenue to Keith Creek					
Pedestrian Scale Lighting (poles & fixtures)	40	EACH	$ 8,000.00	$ 320,000.00	
Conduit	2,400	LFT	$ 25.00	$ 60,000.00	
Keith Creek to Charles Street					
Pedestrian Scale Lighting (poles & fixtures)	50	EACH	$ 8,000.00	$ 400,000.00	
Conduit	3,000	LFT	$ 25.00	$ 75,000.00	
Itemized Subtotal				$ 4,920,000.00	
Preliminary Engineering	**10%**			**$ 492,000.00**	
Construction Engineering	**6%**			**$ 295,200.00**	
Construction Layout	**3%**			**$ 147,600.00**	
Clearing Right of Way	**2%**			**$ 98,400.00**	
Mobilization and Demobilization	**5%**			**$ 246,000.00**	
Erosion Control	**3%**			**$ 147,600.00**	
Maintenance of Traffic	**5%**			**$ 246,000.00**	
Subtotal				**$ 6,592,800.00**	
Contingency (%)	**30%**			**$ 1,977,800.00**	
GRAND TOTAL					**$ 8,570,600.00**

Note: Costs are based on existing available information in 2021. Actual costs may vary due to timing of construction, changed conditions, labor and market changes, or other factors beyond the control of CMT.

ASSUMPTIONS

Lighting placed every 60ft on one side of roadway
results in 30' between lights on opposide sides of roac

11th Street Corridor Study; Intersection Lighting					
Conceptual 2021 Cost - Excludes Utility Relocation and Right of Way					
Description	**Quantity**	**UNIT**	**UNIT COST**	**TOTAL COST**	**REMARKS**
***Intersection**					
Intersection Lighting (poles & fixtures)	3.00	EACH	$ 25,000.00	$ 75,000.00	base, luminaire, pole, no new service
Conduit	1,050	LFT	$ 25.00	$ 26,250.00	pushed and trenched conduit and wire
Itemized Subtotal				$ 101,250.00	
Preliminary Engineering	**10%**			**$ 10,100.00**	
Construction Engineering	**6%**			**$ 6,100.00**	
Construction Layout	**3%**			**$ 3,000.00**	
Clearing Right of Way	**2%**			**$ 2,000.00**	
Mobilization and Demobilization	**5%**			**$ 5,100.00**	
Erosion Control	**3%**			**$ 3,000.00**	
Maintenance of Traffic	**5%**			**$ 5,100.00**	
Subtotal				**$ 135,650.00**	
Contingency	**30%**			**$ 40,700.00**	
GRAND TOTAL per Intersection					**$ 176,350.00**
GRAND TOTAL (reflects intersection lighting installation at the 18 intersections listed below)					**$ 3,174,300.00**

* Costs are applicable to each intersection listed below

Note: Costs are based on existing available information in 2021. Actual costs may vary due to timing of construction, changed conditions, labor and market changes, or other factors beyond the control of CMT.

Intersections Considered	**Lights assumed per intersection**
1.) 11th & Sandy Hollow Road	8
2.) 11th & Sawyer Road	2
3.) 11th & Pershing Avenue/Barnum Road	2
4.) 11th & Brooke Road	2
5.) 11th & Reed Avenue	2
6.) 11th & Wills Avenue	2
7.) 11th & 22nd Avenue	2
8.) 11th & 20th Avenue	2
9.) 11th & 18th Avenue	2
10.) 11th & 16th Avenue	2
11.) 11th & 15th Avenue	2
12.) 11th & Broadway	4
13.) 11th & 12th Avenue	2
14.) 11th & Woodruff Avenue	2
15.) 11th & 8th Avenue	2
16.) 11th & 7th Avenue	2
17.) 11th & 5th Avenue	2
18.) 11th & Charles Street	6

11th Street Corridor Study; Corridor Maintenance Costs				
Conceptual 2021 Cost - Excludes Utility Relocation and Right of Way				
Description	**Quantity**	**UNIT**	**UNIT COST**	**TOTAL COST**
***Corridor Maintenance**				**$ 150,000.00**
Yearly Maintenance Cost	1	LS	$ 150,000.00	$ 150,000.00
GRAND TOTAL				**$ 150,000.00**

Note: Costs are based on existing available information in 2021. Actual costs may vary due to timing of construction, changed conditions, labor and market changes, or other factors

* Opinion of probable corridor maintenance costs consider maintenance such as landscaping maintenance, trash removal, light bulb replacement, snow plowing of multi-use path, and anything in addition to current City maintenance efforts. Not included in the opinion of probable maintenance costs are maintenance of flexible delineators, vacuuming/sweeping of curbs/gutters, restriping, milling/resurfacing, and snow plowing of vehicle lanes.

It should be noted that maintenance costs will increase yearly due to inflation.

APPENDIX 11

Design Criteria

- BLRS – BDE Design Criteria
- Left Turn Lane Warrants

Design Element			Manual Section	Design Volume (DHV)		
				Two-Way DHV < 1400 (1)	**Two-Way DHV 1400 - 2400** (1)	**Two-Way DHV 2400 - 3400** (1)
Design Controls	Highway Type		---	TWS-2	TWS-4	TWS-6
	Design Forecast Year		27-6.02	Current		
	Design Speed *		27-5.02	30 mph – 40 mph		
	Level of Service (LOS) *		27-6.04	D		
Cross Section Elements	Surface Width *	Number of Travel Lanes	31-1.02	2	4	6
		Travel Lane	31-1.01	Desired 11' Minimum 10'		
		Travel Lane (Shared with Bicycles)	42-3.03	See Section 42-3.02		
		Parking Lane (2)	31-1.04	8'		
		Auxiliary Lane (2)	31-1.03	Single Left & Right – Desired 11' / Minimum 10' Dual Lefts & Rights – Desired 22' / Minimum 20'		
	Cross Slope	Travel Lane (Minimum) *	31-1.08	1.5% - 2.0%	1.5% - 2.0% (3a)	
		Auxiliary Lanes		2.0% (3b)	(3b)	
	Outside Curb and Gutter Type		31-1.07	B-6.12, B-6.18, or B-6.24 CC&G (4)		
	Median Width	Flush	31-1.06	N/A	Existing	
		Flush (TWLTL) (5)		11'		
		Traversable		N/A	Existing	
		Raised Curb		N/A	Existing	
	Sidewalk Width (6)		31-2.02	Desired 5' / Minimum 4'		
	Obstruction Free Zone * (7)		35-2	1.5'		
Roadway Slopes	Side Slope (8) (Maximum)	Cut Section (Curbed)	31-2.03	---		
		Rock Cut		---		
		Fill Section (Curbed)		---		
	Median Slope	Concrete Surface / Traversable	31-1.06	N/A	1.5%	
		Flush / TWLTL Surface		1.5%		
		Grass/ Landscape Surface		N/A	5% (Towards C&G)	

* Controlling design criteria (see Section 27-7).

DHV = Design Hourly Volume / TWS = Two-Way Street

GEOMETRIC DESIGN CRITERIA FOR URBAN TWO-WAY ARTERIALS AND COLLECTORS (3R Projects)

Figure 33-3D (US Customary)

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Footnotes:

(1) Traffic Volumes. The design hourly volumes (DHV) are calculated using a peak hour factor = 1.0; adjust these values using local peak-hour factors. For more information, see the *Highway Capacity Manual (HCM)*.

(2) Parking Lane Width and Auxiliary Lane Width. The minimum width lane may include the gutter width.

(3) Cross Slope.

a. Use 2% minimum cross slopes for travel lanes not adjacent to the crown.

b. Curbed left-turn lanes may be sloped at 1.5% to 2% away from the median. TWLTL and flush left-turn lanes are sloped at the same rate as the adjacent traveled way. Cross slopes for outside auxiliary lanes will be at least 2% and desirably should be 0.5% greater than the adjacent travel lane.

(4) Gutter Width. Under restricted conditions, the gutter width adjacent to the edge of the turn lane may be considered part of the 10 ft (3.0 m) turn lane.

(5) TWLTL Width. For resurfacing projects on collectors, the width of a TWLTL may be 10 ft (3.0 m).

(6) Sidewalk Width. Include a 2 ft to 3 ft (600 mm to 1.0 m) buffer strip between the curb and sidewalk. For sidewalks without a buffer strip, a minimum 6 ft (1.8 m) sidewalk width behind the curb must be provided.

(7) Obstruction-Free Zone. Distance is measured from the face of the curb. Hazards behind curbs should be located outside of the clear zone shown for uncurbed roadways as discussed in Section 35-2.02(f).

(8) Side Slopes. For rural cross sections, possible side slopes flattening will be determined on a case-by-case basis considering roadside development and ROW restrictions.

GEOMETRIC DESIGN CRITERIA FOR URBAN TWO-WAY ARTERIALS AND COLLECTORS (3R Projects)

Footnotes for Figure 33-3D

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Design Element			Manual Section	Design Volume (DHV)		
				Two-Way DHV < 1250 (1)	**Two-Way DHV 1250 - 2050** (1)	**Two-Way DHV 2050 - 2900** (1)
Design Controls	Highway Type		---	TWS-2	TWS-4	TWS-6
	Design Forecast Year		27-6.02	20 Years		
	Design Speed *		27-5.02	30 mph – 40 mph		
	Level of Service (LOS) * (2)		27-6.04	C		
Cross Section Elements	Surface Width *	Number of Travel Lanes	31-1.02	2	4	6
		Travel Lane	31-1.01	Desired 12’ Minimum 11’ (3)	Desired 12’ Minimum 11’	
		Travel Lane (Shared with Bicycles)	42-3.02	See Section 42-3.02		
		Parking Lane (4)	31-1.04	Desired 10’ Minimum 8’		
		Auxiliary Lane	31-1.03	Single Left & Right – Desired 12’ / Minimum 11’ Dual Lefts & Rights – Desired 24’ / Minimum 22’		
	Cross Slope	Travel Lane (Minimum) *	31-1.08	1.5% - 2.0%	1.5% - 2.0% (5a)	
		Auxiliary Lanes		2.0% (5b)	(5b)	
	Outside Curb and Gutter Type		31-1.07	B-6.12, B-6.18, or B-6.24 CC&G (6)		
	Median Width	Flush	31-1.05	N/A	Range 4’ to 14’	
		Flush (TWLTL)		Desired 12’ Range 10’ to 14’		
		Traversable		N/A	16’	
		Raised Curb		N/A	18’	
	Sidewalk Width (7)		31-2.02	Desired 5’ / Minimum 4’		
	Obstruction Free Zone * (8)		35-2	1.5’		
Roadway Slopes	Side Slope (9) (Maximum)	Cut Section (Curbed)	31-2.03	---		
		Rock Cut		---		
		Fill Section (Curbed)		---		
	Median Slope	Concrete Surface / Traversable	31-1.05	N/A	1.5%	
		Flush / TWLTL Surface		1.5%		
		Grass/ Landscape Surface		N/A	5% (Towards C&G)	

* Controlling design criteria (see Section 27-7).

DHV = Design Hourly Volume / TWS = Two-Way Street

GEOMETRIC DESIGN CRITERIA FOR URBAN TWO-WAY ARTERIALS
(New Construction/Reconstruction)

Figure 32-2E (US Customary)

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Footnotes:

(1) Traffic Volumes. The design hourly volumes (DHV) are calculated using a PHF = 1.0; these values may be adjusted using local peak-hour factors. For more information, see the *Highway Capacity Manual*.

(2) Level of Service (LOS). A LOS D may be used in heavily developed sections of metropolitan areas.

(3) Surface Width. The minimum surface width is 30 ft (9.0 m) face-of-curb to face-of-curb.

(4) Parking Lane Width. The desirable width of the parking lane is 10 ft (3.0 m) and includes the gutter width. If the parking lane may be used as future travel lane, the 10 ft (3.0 m) width should be in addition to the gutter width. An 8 ft (2.4 m) width may be used where it is unlikely the parking lane will be used as through or turning lane in the future.

(5) Cross Slope.

a. Use 2.0% minimum cross slopes for travel lanes not adjacent to the crown.

b. Curbed left-turn lanes may be sloped at 1.5% to 2.0% away from the median. Two Way Left Turn Lane (TWLTL) and flush left-turn lanes are sloped at the same rate as the adjacent traveled way. Cross slopes for outside auxiliary lanes will be at least 2.0% and desirably should be 0.5% greater than the adjacent travel lane.

(6) Gutter Width. Under restricted conditions, the gutter width adjacent to the edge of a 12 ft (3.6 m) turn lane may be eliminated.

(7) Sidewalk Width. Include a 2 ft to 3 ft (600 mm to 1.0 m) buffer strip between the curb and sidewalk. For sidewalks without a buffer strip, a minimum 6 ft (1.8 m) sidewalk width behind the curb must be provided.

(8) Obstruction-Free Zone. Distance is measured from the face of the curb. Hazards behind curbs should be located outside of the clear zone shown for uncurbed roadways as discussed in Section 35-2.02(f).

(9) Side Slopes. Side slopes to be determined on a case-by-case basis considering roadside development and right-of-way restrictions.

GEOMETRIC DESIGN CRITERIA FOR URBAN TWO-WAY ARTERIALS
(New Construction/Reconstruction)

Footnotes for Figure 32-2E

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Design Element			Manual Section	Two-Way DHV 2900-2050 (1)	Two-Way DHV 2050-1250 (1)	Two-Way DHV < 1250 (1)
Design Controls	Highway Type		—	TWS-6	TWS-4	TWS-2
	Design Forecast Year		31-4.02	20 Years	20 Years	20 Years
	* Design Speed (**2a**)		48-2.01	30 mph – 45 mph	30 mph – 50 mph (**2b**)	30 mph – 40 mph
	Access Control		35-1	Consider Managed Access	Consider Managed Access	Consider Managed Access
	Level of Service (**3**)		31-4.04	C	C	C
	On-Street Parking (**4**)		48-2.05	Not Recommended	Not Recommended	Not Recommended
Cross Section Elements	* Surface Width	Without Parking	34-2.01	2 @ 38′ e-f	2 @ 26′ e-f	30′ f-f
		With Parking - 1 Side (**5**)		1 @38′ e-f 1 @46′ e-f	1 @ 26′ e-f 1 @ 34′ e-f	36′ f-f
		With Parking - 2 Sides (**5**)		2 @ 46′ e-f	2 @ 34′ e-f	44′ f-f
	Auxiliary Lanes	Lane Width	34-2.03	Single Left & Right: 12′, Min.: 11′ Dual Lefts: 24′, Min.: 22′		
		Curb Type and Width		B-6.12 or B-6.24 CC&G (**6**)		
	Shared Lane (Bicycle & Motor vehicles) (**7**)		Chp. 17	Min.: 14′	Min.: 14′	Min.: 14′
	Cross Slope	*Travel Lanes	34-2.01	1/4″/ft for Two Lanes Adjacent to Median (**8a**)	1/4″/ft for Two Lanes Adjacent to Median	1/4″/ft for Lanes Adjacent to Crown (**8b**)
		Auxiliary Lanes		—	—	—
	Outside Curb Type & Width		34-2.04	B-6.24 CC&G	B-6.24 CC&G	B-6.24 CC&G
	Median Width	Flush/TWLTL	34-3	12′ - 14′ (**9**)		
		Traversable TWLTL		16′		N/A
		Raised-Curb		18′, 22′, 30′		N/A
		Depressed		—	44′ - 50′	—
	Sidewalk Width		48-2.04	5′ with Buffer Strip Behind Curb	5′ with Buffer Strip Behind Curb	5′ with Buffer Strip Behind Curb
	Clear Zone		38-3	(**10**)	(**10**)	(**10**)
Roadway Slopes	Side Slopes	Cut Section (Curbed)	34-4.04	—	—	—
		Rock Cut	34-4.05	—	—	—
		Fill Section (Curbed)	34-4.02	—		
	Median Slopes	Concrete Surface/Traversable	34-3	3/16″/ft	3/16″/ft	N/A
		Flush/TWLTL Surface		1/4″/ft	1/4″/ft	N/A
		Grass Surface		5/8″/ft (Towards C&G)	5/8″/ft (Towards C&G)	N/A

TWS = Two-Way Street, e-f = edge of median to face of curb, f-f = face of curb to face of curb

* Controlling design criteria (see Section 31-8).

GEOMETRIC DESIGN CRITERIA FOR SUBURBAN/URBAN TWO-WAY ARTERIALS
(New Construction/Reconstruction)
(US Customary)

Figure 48-6.A
(1 of 4)

Design Element			Manual Section	Two-Way DHV 2900-2050	Two-Way DHV 2050-1250	Two-Way DHV < 1250
Bridges	Highway Type		—	TWS-6	TWS-4	TWS-2
	New and Reconstructed Bridges	*Structural Capacity	N/A	HS-20	HS-20	HS-20
		*Clear Roadway Width (**11**)	39-6	76′ plus Median Width	52′ plus Median Width	30′
	Existing Bridges to Remain in Place	*Structural Capacity	N/A	HS-20	HS-20	HS-20
		*Clear Roadway Width (**12**)	39-6	70′ plus Median Width	48′ plus Median Width	28′
	*Vertical Clearance (Arterial Under) (**13a**)	New and Replaced Overpassing Bridges	39-4	14′-9″ (**13b**)		
		Existing Overpassing Bridges		14′-0″ (**13c**)		
		Overhead Signs/ Pedestrian Bridges	33-5	New: 17′-3″ (**13b**)		
	*Vertical Clearance (Arterial over Railroad)		39-4.06	23′-0″		

* Controlling design criteria (see Section 31-8).

GEOMETRIC DESIGN CRITERIA FOR SUBURBAN/URBAN TWO-WAY ARTERIALS
(New Construction/Reconstruction)
(US Customary)
FIGURE 48-6.A
(2 of 4)

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(1) Traffic Volumes. The design hourly volumes (DHV) are calculated using a PHF = 1.0; adjust these values using local peak-hour factors.

(2) Design Speed.

a. Consider using a minimum 40 mph (60 km/hr) design speed in relatively undeveloped areas where economics, environmental conditions, and signal spacing permit. The statutory speed limits in urbanized areas is 30 mph. Before the posted speed limit can be increased, complete an engineering study (Phase I report) and a speed study.

b. Only consider the 50 mph (80 km/hr) design speed in open-suburban areas. Do not place curb and gutter adjacent to the edges of the traveled way.

(3) Level of Service. In major urban areas, a level of service D may be considered with study and justification.

(4) Minimum Street Width. The minimum width of a two-way, two-lane street is set at 30 ft (9.2 m) f-f which allows two-way traffic to pass a stalled vehicle.

(5) Parking Lane Width. The desirable width of the parking lane is 10 ft (3.0 m) and includes the 2 ft (600 mm) gutter width. The minimum width is 8 ft (2.4 m) e-f.

(6) Gutter Width. Under restricted conditions, the gutter width adjacent to the edge of the turn lane may be narrowed or eliminated adjacent to a 12 ft (3.6 m) lane and narrowed adjacent to a 11 ft (3.3 m) lane.

(7) Shared Lane Width. Width of a shared lane for motor vehicle and bicyclist use shall be 14 ft (4.3 m) minimum to allow for vehicle passing of bicycles while staying within the lane.

(8) Cross Slope.

a. For the third lane away from the median, increase the cross slope by 1/16″/ft (0.5%).
b. For reconstruction projects, an existing 3/16″/ft (1.5%) cross slope may remain-in-place.

(9) TWLTL Median Width. Use a minimum 13 ft (4.0 m) wide median width if there are a significant number of trucks making left turns.

(10) Clear Zone. For curbed facilities, the minimum horizontal clearance to an obstruction is 1.5 ft (500 mm), measured from the face of curb.

GEOMETRIC DESIGN CRITERIA FOR SUBURBAN/URBAN TWO-WAY ARTERIALS
(New Construction/Reconstruction)

Footnotes for Figure 48-6.A
(3 of 4**)**

(11) New and Reconstructed Bridge Widths. Clear roadway bridge widths are measured from face to face of outside curbs or parapet walls. Urban bridge widths are defined as the sum of the approach traveled way widths, the width of the gutters, and the width of the median. A sidewalk or bikeway will result in additional bridge width. For proposed sidewalks on a bridge, add 5 ft (1.5 m) to each side of the bridge. Parking is prohibited on bridges.

(12) Existing Bridge Widths to Remain in Place. Clear roadway bridge widths are measured from face to face of outside curbs or parapet walls. At least one sidewalk must be carried across the bridge. Add a minimum 5 ft (1.5 m) for the sidewalk width.

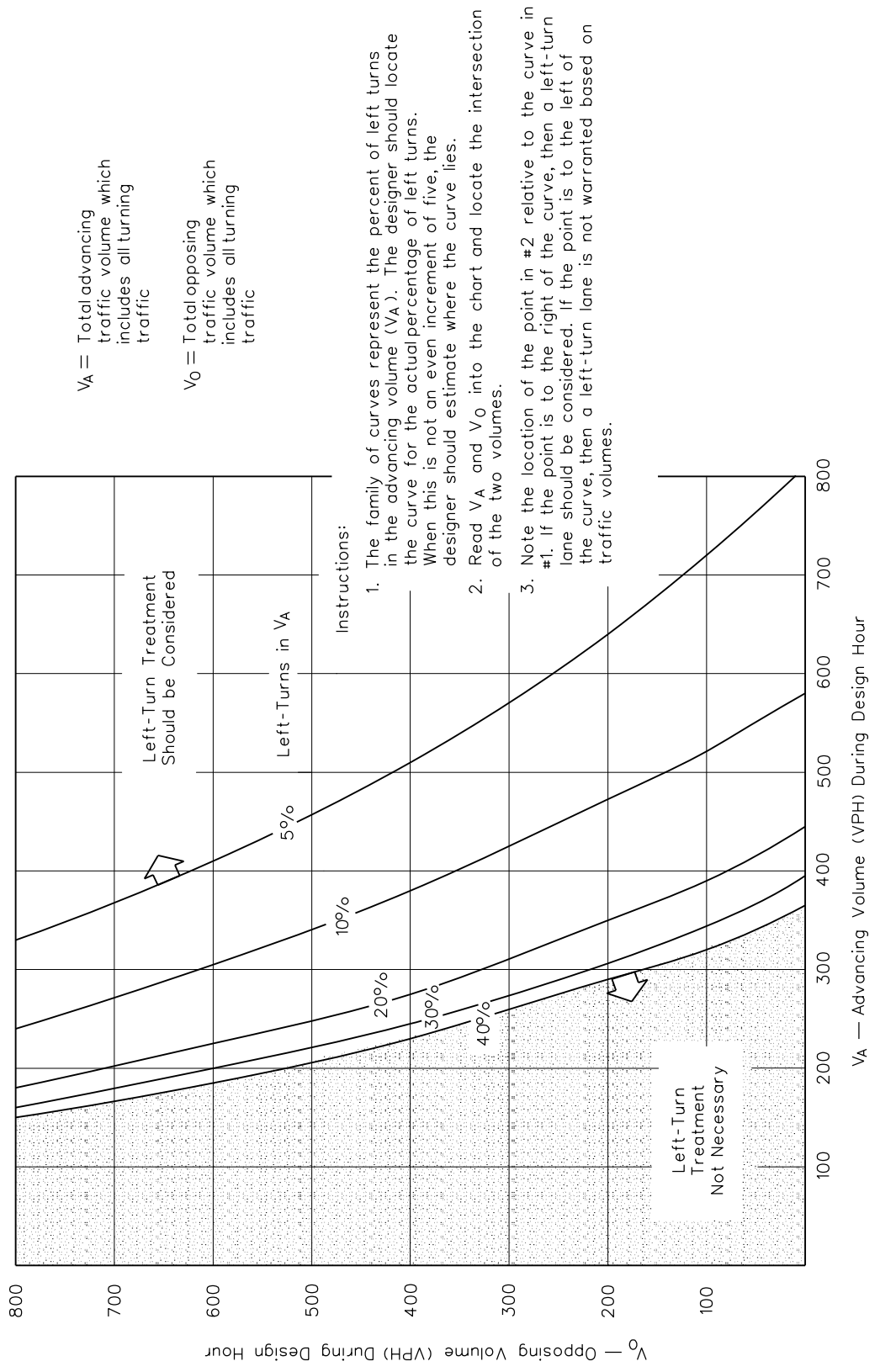
(13) Vertical Clearance (Arterial Under).

a. The clearance must be available over the traveled way and flush or traversable median.
b. Table value includes allowance for future overlays.
c. A 14 ft 0 in (4.3 m) clearance may be allowed to remain in place with consideration for reconstruction to a clearance of 14 ft 9 in (4.5 m).

GEOMETRIC DESIGN CRITERIA FOR SUBURBAN/URBAN TWO-WAY ARTERIALS
(New Construction/Reconstruction)

Footnotes for Figure 48-6.A
(4 of 4**)**

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VOLUME GUIDELINES FOR LEFT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON TWO-LANE HIGHWAYS (40 mph Design Speed)

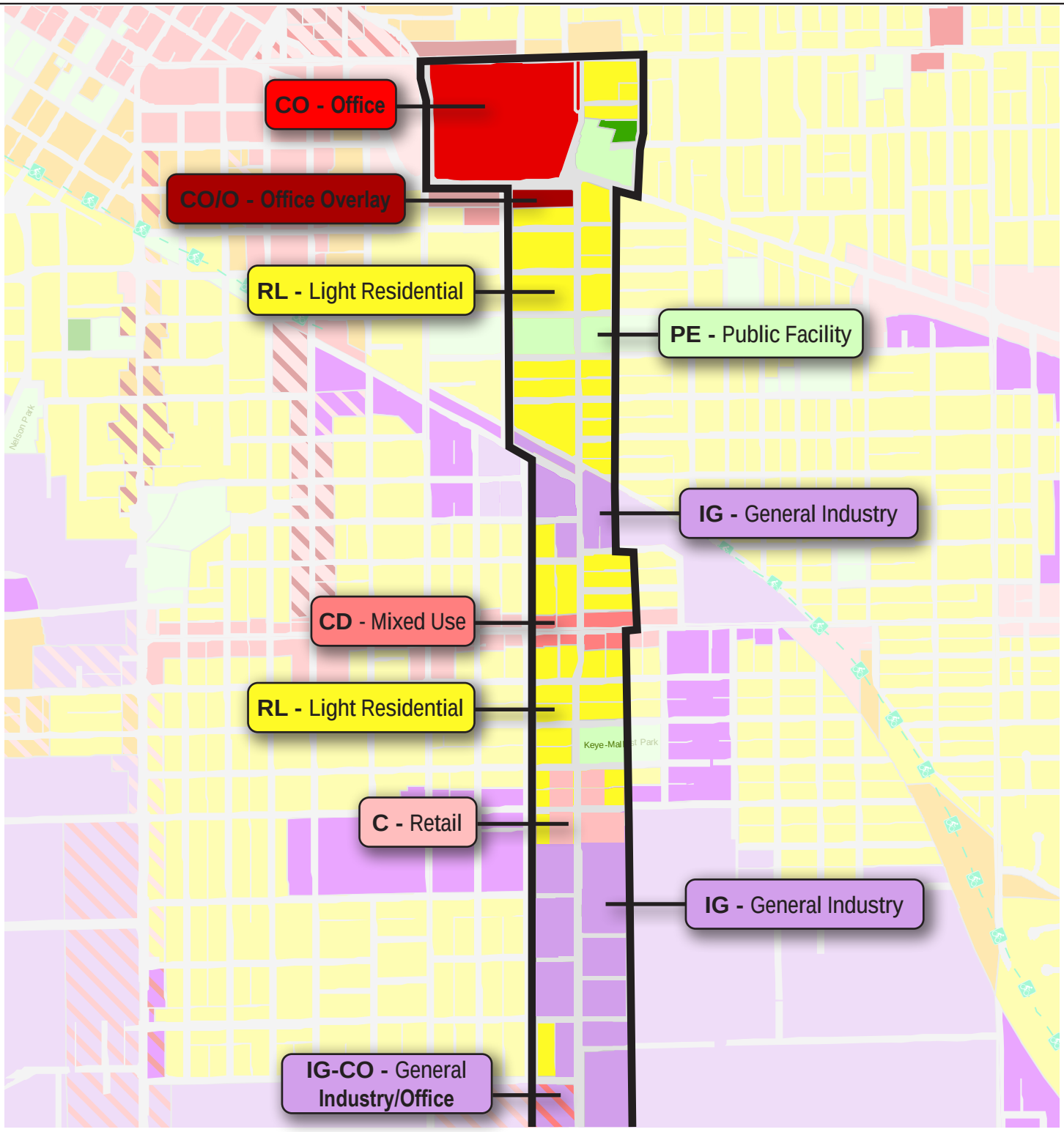
Figure 36-3.G

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APPENDIX 12

Future Land Use Map

- 11th Street Corridor Plan Future Land Use



Legend

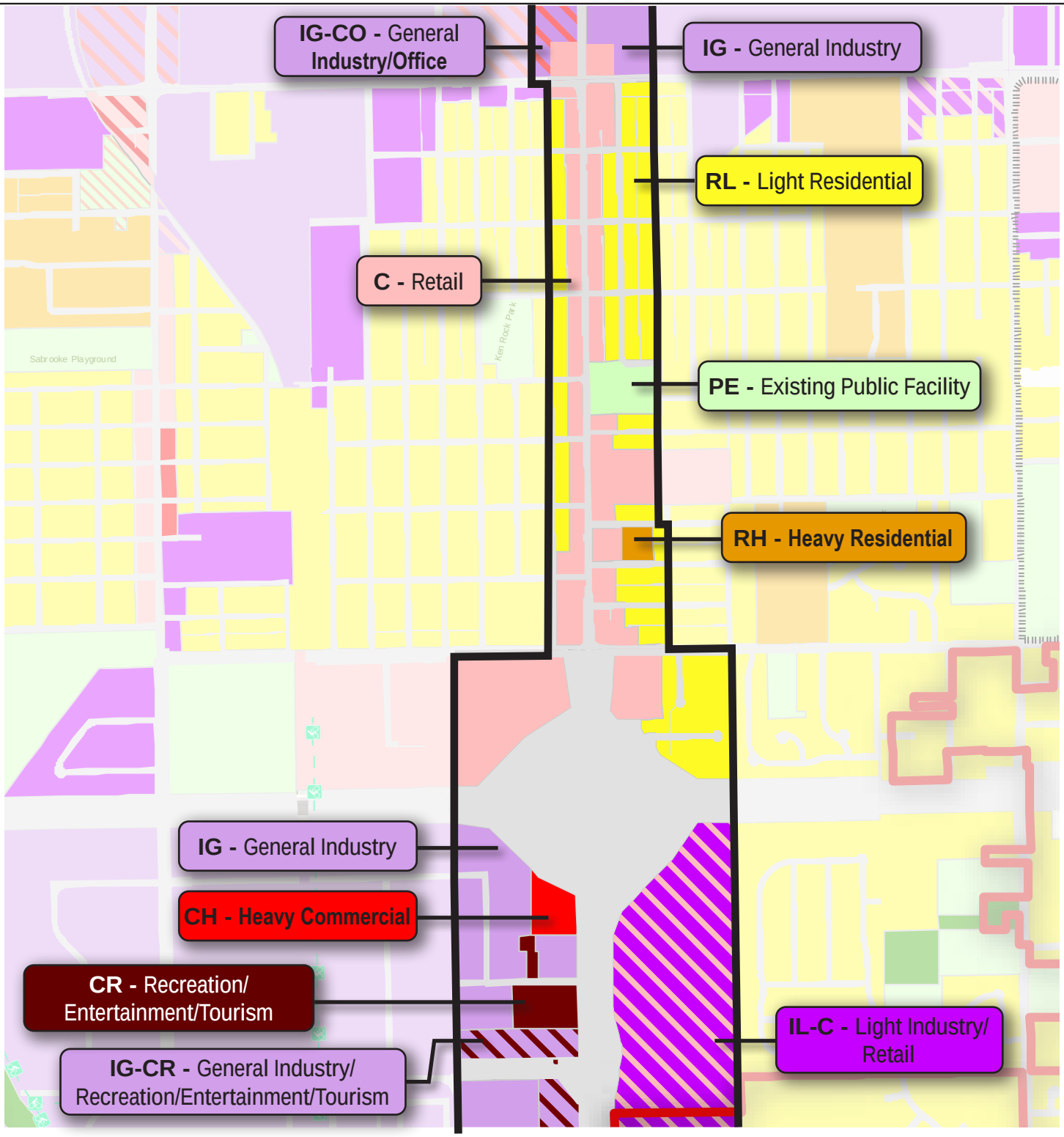
- C- Retail
- CD- Mixed Use
- CH- Heavy Commercial
- CO- Office
- CO/O- Office Overlay
- CR- Recreation/Entertainment/Tourism
- PA- Priority Park Acquisition
- PE- Existing (Quasi-) Public Facility
- U- Area Unsuitable for Development
- IG- General Industry
- IL- Light Industry
- IH- Heavy Industry
- T- Tech Industry
- RL- Light Residential
- RM- Medium Residential
- RH- Heavy Residential
- FUD- Future Urban Development
- SRA- Subdivision Review Area
- RH-CBD- Central Business District Overlay
- Multiple Designation Areas
- C-CO
- C-CO/O
- C-CR
- CH-IL
- CH-RL
- CO-CR
- U-PA
- IG-C
- IG-CD
- IG-CR
- PE-CD
- IL-C
- IL-CO
- T-IG
- T-IL
- T-CO
- T-C-IL
- T-C-CO
- RL-C
- RM-C
- RM-CO
- RH-CO
- RL-CO/O
- RM-CO/O
- RH-CO/O
- LandUse2020Streets
- Proposed Interchanges
- Proposed Roundabout
- Rockford City Limits
- Infill Areas
- Existing Parks
- Right Of Ways

Source: City of Rockford's 2020 Comprehensive Plan Map, Amended 2011

11th Street Corridor Plan Future Land Use (1 of 3)

camiros

In Partnership with CMT, SB Friedman, American Surveying & Engineering



Legend

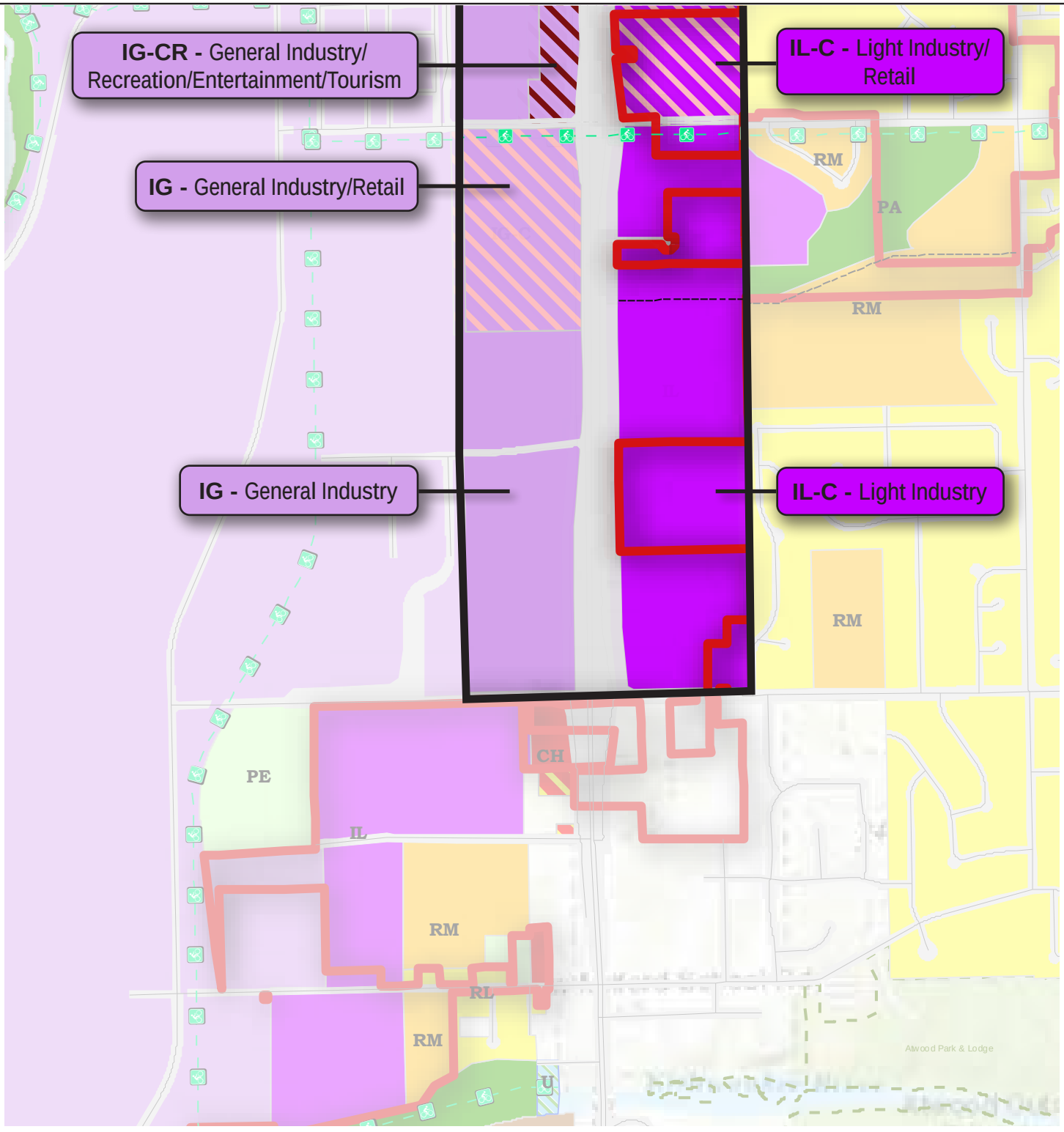
- C- Retail
- CD- Mixed Use
- CH- Heavy Commercial
- CO- Office
- CO/O- Office Overlay
- CR- Recreation/Entertainment/Tourism
- PA- Priority Park Acquisition
- PE- Existing (Quasi-) Public Facility
- U- Area Unsuitable for Development
- IG- General Industry
- IL- Light Industry
- IH- Heavy Industry
- T- Tech Industry
- RL- Light Residential
- RM- Medium Residential
- RH- Heavy Residential
- FUD- Future Urban Development
- SRA- Subdivision Review Area
- RH-CBD- Central Business District Overlay
- Multiple Designation Areas
- C-CO
- C-CO/O
- C-CR
- CH-IL
- CH-RL
- CO-CR
- U-PA
- IG-C
- IG-CD
- IG-CR
- PE-CD
- IL-C
- IL-CO
- T-IG
- T-IL
- T-CO
- T-C-IL
- T-C-CO
- RL-C
- RM-C
- RM-CO
- RH-CO
- RL-CO/O
- RM-CO/O
- RH-CO/O
- LandUse2020Streets
- Proposed Interchanges
- Proposed Roundabout
- Rockford City Limits
- Infill Areas
- Existing Parks
- Right Of Ways

Source: City of Rockford's 2020 Comprehensive Plan Map, Amended 2011

11th Street Corridor Plan Future Land Use (2 of 3)

camiros

In Partnership with CMT, SB Friedman, American Surveying & Engineering



Legend

- C- Retail
- CD- Mixed Use
- CH- Heavy Commercial
- CO- Office
- CO/O- Office Overlay
- CR- Recreation/Entertainment/Tourism
- PA- Priority Park Acquisition
- PE- Existing (Quasi-) Public Facility
- U- Area Unsuitable for Development
- IG- General Industry
- IL- Light Industry
- IH- Heavy Industry
- T- Tech Industry
- RL- Light Residential
- RM- Medium Residential
- RH- Heavy Residential
- FUD- Future Urban Development
- SRA- Subdivision Review Area
- RH-CBD- Central Business District Overlay
- Multiple Designation Areas
- C-CO
- C-CO/O
- C-CR
- CH-IL
- CH-RL
- CO-CR
- U-PA
- IG-C
- IG-CD
- IG-CR
- PE-CD
- IL-C
- IL-CO
- T-IG
- T-IL
- T-CO
- T-C-IL
- T-C-CO
- RL-C
- RM-C
- RM-CO
- RH-CO
- RL-CO/O
- RM-CO/O
- RH-CO/O
- LandUse2020Streets
- Proposed Interchanges
- Proposed Roundabout
- Rockford City Limits
- Infill Areas
- Existing Parks
- Right Of Ways

Source: City of Rockford's 2020 Comprehensive Plan Map, Amended 2011

11th Street Corridor Plan Future Land Use (3 of 3)

camiros

In Partnership with CMT, SB Friedman, American Surveying & Engineering

APPENDIX 13

2050 Metropolitan Transportation Plan

- 2050 Metropolitan Transportation Plan for the Rockford Region

2050 Metropolitan Transportation Plan

for the Rockford Region









RPC / REGION 1 PLANNING COUNCIL / R1

Final Report

July 31, 2020

2050 Metropolitan Transportation Plan

for the Rockford Region

Final Report

Adopted July 31, 2020

This document has been prepared by the Region 1 Planning Council in collaboration with its member agencies, partnership organizations, and local stakeholders.

This report was prepared in cooperation with the following:

U.S. Department of Transportation
Federal Highway Administration
Federal Transit Administration
Illinois Department of Transportation

The contents, views, policies, and conclusions expressed in this report are not necessarily those of the above agencies.

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Organization of Document

Part 1: Introduction

The first chapter of the Metropolitan Transportation Plan (MTP) sets the stage of the document by explaining the purpose and intent of the metropolitan transportation plan. Additionally, it describes the role of the Region 1 Planning Council (RPC) Metropolitan Planning Organization and the region it serves. This chapter goes on to outline the federal and state metropolitan planning requirements and demonstrates the consistency of the plan with these requirements. It is concluded with a brief description on the public engagement process, scenario planning process, and modeling undertaken during the development of the plan.

Part 2: Planning Framework

The Planning Framework presents the vision for the 2050 MTP and introduces the goals and strategies needed to reach it. The chapter also lists the performance measures that will be utilized to track the region's process in achieving the adopted vision, including the federal performance measures. The chapter concludes by outlining the proposed livable communities' initiative, a continuation of the Regional Plan for Sustainable Development for the Rockford Region.

Part 3: Regional Context

This chapter contains three sections detailing the key factors necessary in understanding the characteristics of the Rockford Region. The first section provides demographic and socioeconomic trends and forecasts for the region, as well as commuting trends. The second section discusses the strong link between the region's transportation system and its land use. The third and final section details short- and long-term environmental considerations included in the development of the 2050 MTP and the larger planning efforts undertaken by the MPO.

Part 4: Regional Transportation System

Part Four of the MTP documents the current and projected conditions of the region's transportation system, as well as identifies the gaps and needs in the existing system. This chapter also highlights the emerging trends that may impact the region in the future. The Regional Transportation System has been broken into three sections. The first section provides overview of the roadway network, including the safety, security, resiliency, and the management and operations in place. The second section highlights alternative transportation modes in the region, including bicycling and walking, public transportation, and proposed passenger rail. It also describes the innovation mobility services that are becoming more prevalent within the region, such as ride sharing. The chapter is concluded with a focus on the freight and goods movement within the region, as well as a discussion of the Rockford MPA's role in the broader Midwest Chicago Megaregion.

Part 5: The Financial Plan

The Financial Plan of the 2050 MTP is comprised of five sections. Beginning with Funding & Financing Opportunities, the financial plan identifies funding that is received and/or allocated to the region, both historically and currently. The second section of the Financial Plan provides the fiscally-constrained project list grouped by the anticipated timeframe for completion. The third section contains a list of illustrative projects that have been identified as having regional significance, but cannot be completed within the anticipated levels of funding. The final two sections of the Financial Plan highlight additional elements that will be needed to meet the goals of the MTP, including additional studies needed and potential funding opportunities that could supplement existing financing.

Part 6: Action Plan

This chapter identifies the key next steps that must be taken to ensure the plan transitions to implementation and the critical strategies that need to be pursued in the near future to meet the established performance measures. Progress in meeting the targets will be captured in the System Performance Report. The Action Plan concludes with an overview of how the performance measures within the MTP will be captured in future updates of the Transportation Improvement Program (TIP) and other MPO planning documents.

Appendices

Appendix A: Glossary of Terms is included to aid in understanding and becoming familiar with transportation terms and acronyms.

Appendix B: Required Elements provides a full list of the federal and state requirements for metropolitan planning and the locations within this document where each component is discussed.

Appendix C: MTP and Planning Document Connections lists the planning documents that were consulted during the development process of the 2050 MTP and how particular elements have been incorporated.

Technical Memoranda

To supplement the 2050 MTP, more detailed information on specific elements of the 2050 MTP is provided in the following technical memoranda and reports. These documents are can be accessed at http://www.r1planning.org/mtp.

Technical Memorandum #1: Public Engagement Process

This document provides detailed information on the public engagement process undertaken for the development and adoption of the MTP and the results of each round of engagement.

Technical Memorandum #2: Scenario Planning Process

Technical Memorandum #2 outlines the scenario planning process undertaken by the MPO during the development of the 2050 MTP, provides detailed information on each of the alternative scenarios developed, and describes the Preferred Scenario adopted by the Region.

Technical Memorandum #3: Modeling Framework

This document summarizes the anticipated growth and future demand on the transportation system and land use development based upon the outputs of the forecasting models used in the planning process.

Technical Memorandum #4: Financial Analysis and Funding Resources

This memo describes the key funding programs received and/or allocated in the region, as well as details potential funding opportunities that could be utilized in the future. This is not a comprehensive list of all federal, state, and local financing programs, but includes the most commonly used in the region for transportation related infrastructure and amenities.

Technical Memorandum #5: Evaluation Methodology

Technical Memorandum #5 details the methodology used to evaluate candidate projects for the fiscally-constrained project list, including how evaluation criteria aligns with the region's needs, goals, and investment priorities.

Technical Memorandum #6: Detailed Project List

This document provides a listing of the fiscally-constrained projects with detailed descriptions and proposed funding sources. A listing of the illustrative projects, with full descriptions, is also provided.

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Part 1
Introduction

Planning for transportation needs is essential in ensuring that the Rockford Region has a balanced multi-modal transportation system that safely and efficiently moves people and goods. Transportation planning has been an on-going process performed by the federally-designated Metropolitan Planning Organization (MPO) since 1964. The accumulation of historic work, current conditions of the existing system, and future transportation needs is reflected within this document, known as the Metropolitan Transportation Plan (MTP). This plan addresses the transportation system in the Rockford Metropolitan Planning Area (MPA), consisting of the urbanized portions of Boone, Ogle, and Winnebago Counties, providing an innovative and sustainable framework for the region's transportation network over the next twenty to thirty years.

The primary elements of the MTP pertain to the transportation network. It addresses all modes of transportation and stresses the integration and connectivity of current and projected transportation facilities (including major roadways, public transportation facilities, rail, multimodal and intermodal facilities, and active transportation facilities). This document goes beyond just the current and forecasted transportation system by incorporating additional elements that are vital to understanding the overall system and how it works, such as land use, the environment, the economy, and other emerging trends.

The purpose of this document is to plan an effective transportation system within the Rockford Region through a continuing, comprehensive, and cooperative (3-C) planning process. The intent is to provide a multi-modal transportation system that minimizes costs and impacts to the taxpayer, society, and the environment. The plan is a cooperative venture of the MPO, the area's local governments, public transit providers, the Illinois Department of Transportation (IDOT), Federal Highway Administration (FHWA), Federal Transit Administration (FTA), and the public. The plan seeks not only to satisfy existing federal requirements for MPOs, but to look at forthcoming trends and issues to better prepare the regional landscape for challenges and needs of the future.

During the development of the MTP, there are often unforeseen events and factors occurring that makes it necessary to update the MTP every five years; thus this plan is an ongoing process of revision and refinement.

MPO Overview

By federal law, all urbanized areas over 50,000 persons are required to have an organization that plans and coordinates decisions regarding the area's surface transportation system, known as a Metropolitan Planning Organization (MPO). The MPO is required to conduct a 3-C transportation planning process.

The five core functions of the MPO are to:

- Establish a fair and impartial setting for effective regional transportation decision making in the metropolitan area;
- Evaluate transportation alternatives, scaled to the size and complexity of the region;
- Maintain a long-range transportation plan covering a 20-year planning horizon;
- Develop a four-year Transportation Improvement Program (TIP) and prioritize projects; and
- Involve the public.

There are three key documents produced by the MPO, including the Unified Work Program (UWP), the Transportation Improvement Program (TIP), and the Metropolitan Transportation Plan (MTP). The UWP is an annual statement of work identifying the transportation planning priorities and activities to be carried out by the MPO within a metropolitan planning area (MPA). Updated annually, it includes a description of the planning work and resulting products, who will perform the work, time frames for completing the work, cost of the work, and source(s) of funding. The TIP is an annual program of projects covering a period of four years that is developed and formally adopted by an MPO and is required for projects to be eligible for federal funding under 23 U.S.C and 49 U.S.C Chapter 53, as well as state funding through the Illinois Department of Transportation (IDOT). The MTP is the official multimodal transportation plan addressing no less than a 20-year planning horizon that the MPO develops, adopts, and updates through the metropolitan transportation planning process. The MTP is updated every five years.

Due to the size of the Rockford urbanized area, the Rockford MPO has an additional designation, known as a Transportation Management Area (TMA). A TMA is an urbanized area with a

Metropolitan Planning Organization (MPO)

A regional policy body, required in urbanized areas with populations over 50,000, and designated by local officials and the governor of the state to carry out the metropolitan transportation requirements of federal highway and transit legislation.

Source: Federal Highway Adminstration

population of over 200,000 individuals, as defined by the U.S. Census Bureau. MPOs with this designation have additional roles and responsibilities to the core functions identified above, including the development of a congestion management process (CMP) and project selection for the sub-allocation of Surface Transportation Block Grant (STBG) funds, including the Transportation Alternative (TA) Set-Aside program.

In the Rockford Region, the MPO transportation planning function is housed within Region 1 Planning Council (RPC)[1]. The RPC is a special-purpose, regional government agency designated to coordinate intergovernmental collaboration. This regional model provides an efficient means to promoting a well-informed, comprehensive dialogue that holistically addresses regional issues by fulfilling the needs of government entities for long-range planning, securing funding, and analyzing and providing data in support of regional projects and initiatives. Essential to fulfilling its purpose as a planning commission, the RPC is a designated metropolitan planning organization (MPO), economic development district (EDD), geographic information system (GIS), and land bank authority (LBA).

Structure

The MPO is empowered by a cooperative agreement developed and mutually adopted by the cities of Belvidere, Loves Park, and Rockford; the Counties of Boone and Winnebago, the Village of Machesney Park; Rockford Mass Transit District (RMTD); and the State of Illinois, acting through the Illinois Department of Transportation (IDOT).

The activities of the MPO are directed by a Policy Committee that consists of the top elected officials from the above entities plus the Deputy Director from IDOT Region 2 and the Chairman of the RMTD Board of Trustees. The Policy Committee receives technical recommendations and assistance from a 20-member Technical Committee comprised of planners and/or engineers from the above entities along with other local entities, such as the Chicago-Rockford International Airport, and the Rock River Water Reclamation District.

In 2018, the Alternative Transportation Committee (ATC) was created to act in an advisory capacity to the MPO Technical Committee on alternative transportation policy, planning, and implementation activities.

Much of the day-to-day operations and technical work of the MPO is accomplished by a professional staff under the management of the Director of the MPO, in close coordination with the RPC Executive Director.

The planning process and activities are funded by annual planning grants from the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA), with 20 percent matching funds from IDOT through the State Planning Fund (SPF) and through local contributions from the six government agencies which comprise its Policy Committee membership.

Study Area

The planning jurisdiction of the MPO is known as the Metropolitan Planning Area (MPA). The MPA boundary is based upon the Urbanized Area (UZA), as determined by the U.S. Census Bureau, the adjusted Urbanized Area, as determined by the MPO and its partner agencies, plus any other contiguous area anticipated to be urbanized in the next twenty years.

The MPA boundary is developed in partnership with local jurisdictions, local stakeholders, the state, and the MPO Policy Committee. The last updates to the MPA boundary occurred after the 2010 Decennial Census, at which point the northeastern portion of Ogle County was included.

Figure 1-1 depicts the MPA boundary for the MPO planning area, along with the U.S. Census defined Urbanized Area.

As shown in Figure 1-1, the Rockford MPA is smaller than the boundaries of Boone, Ogle, and Winnebago Counties and covers approximately 440 square miles. However, to a limited extent, the MPO coordinates transportation planning and improvement activities throughout those counties. This occurs voluntarily via communication and cooperation of Boone, Ogle, and Winnebago County officials serving on the MPO Policy, Technical, and Alternative Transportation Committees.

Urbanized Areas

Determined by the US Census Bureau every ten years in conjunction with the decennial census and defines an area with a population of 50,000 or more that is considered currently urban in character

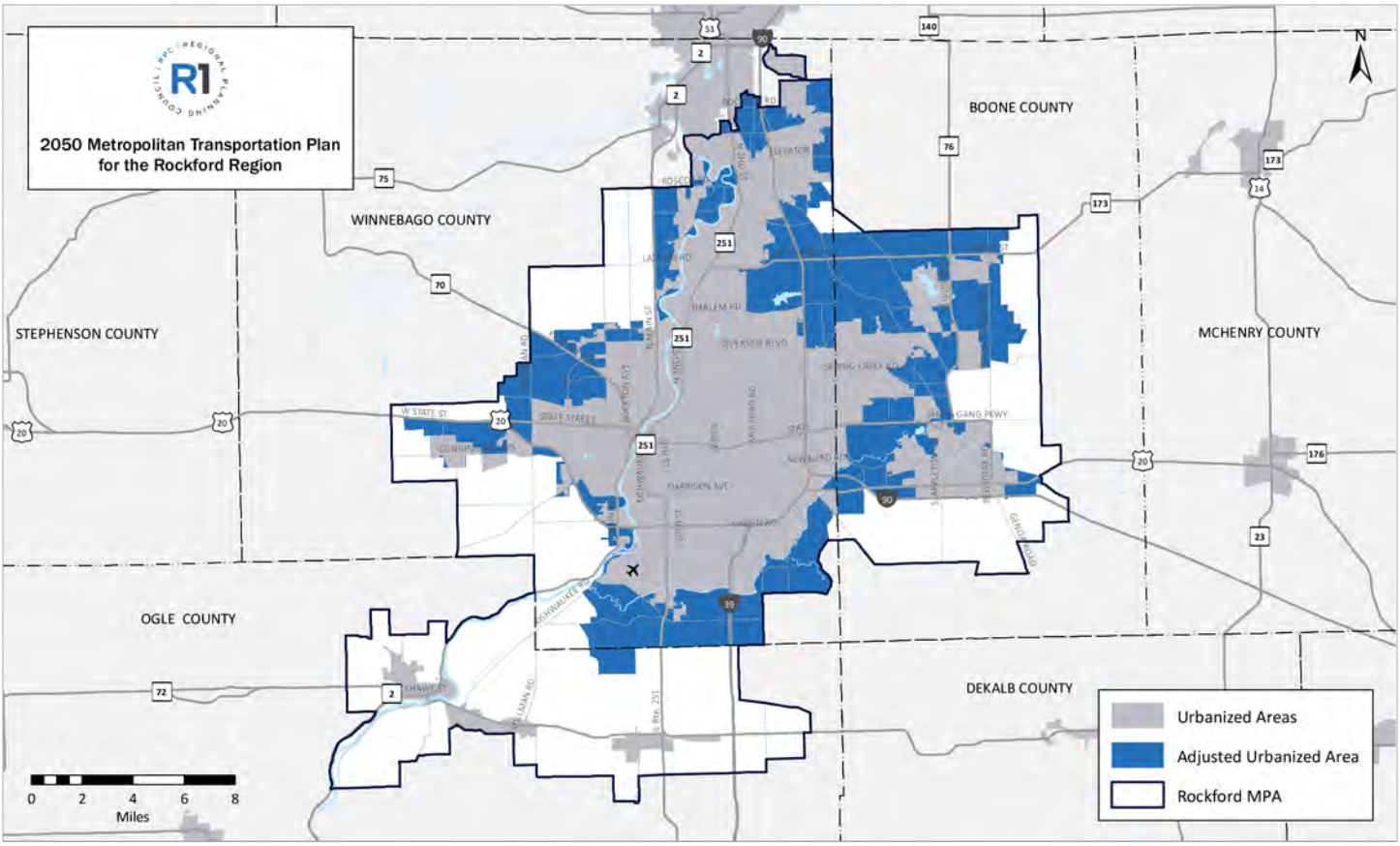
Source: US Census Bureau



RPC Offices. Rockford, IL

1 Prior to the formation of Region 1 Planning Council in 2018, the MPO for the Rockford MPA was called the Rockford Metropolitan Agency for Planning (RMAP). In some instances within this document RMAP may be used when referring to the MPO.

Figure 1-1. Rockford MPA



Data sources: Region 1 Planning Council, WinGIS

Guiding the Plan

As previously mentioned, the Metropolitan Transportation Plan (MTP) is a federally-required and fiscally constrained document that is developed on a five-year update cycle and provides highlights of the entire transportation network for the Rockford Metropolitan Planning Area (MPA). The development for the 2050 MTP follows both federal and state guidance as outlined below.

Federal Guidance

Federal requirements for the metropolitan transportation planning process are prescribed through the most recent federal transportation authorization legislation, as well as several final rulemakings issued by the U.S. Department of Transportation (acting through the Federal Highway Administration and Federal Transit Administration). This update has been developed using the 3-C planning process, in accordance with 23 U.S.C and 49 U.S.C. Chapter 53.

A checklist detailing all of the requirements for the development of the MTP, as outlined in 23 CFR Part 450, and how those requirements have been addressed in this document can be found in Appendix B.

Fixing America's Surface Transportation (FAST Act)

Fixing America's Surface Transportation (FAST) Act, signed into law on December 4, 2015, is the most recent, comprehensive federal legislation addressing surface transportation infrastructure planning and investment. The FAST Act authorizes $305 billion for the following types of projects: highway improvements, highway and motor vehicle safety, public transportation, motor carrier safety, hazardous materials safety, rail, research, technology, and statistics. It continues the previous federal focus on safety, keeps intact the established structure of various highway-related programs the MPO manages, continues efforts to streamline project delivery and, for the first time, provides a dedicated source of Federal dollars for freight projects.

The Planning Factors

FAST Act requirements are very similar to the previous transportation authorization, Moving Ahead for Progress in the 21st Century (MAP-21), including addressing planning factors, evaluating future conditions of the transportation network, analyzing air quality, and developing a fiscally-constrained financial plan. The transportation planning factors are identified in Figure 1-2.

Figure 1-2. Transportation Planning Factors



Source: Federal Highway Adminstration

Performance-Based Planning & Performance Measures

In 2012, the Moving Ahead for Progress in the 21st Century (MAP-21) transportation law instituted a national performance measure system for highway and transit programs, which continued under the FAST Act. As a result, MPOs are now required to incorporate a performance-based approach to address challenges facing the national transportation system, such as infrastructure/asset condition, safety, and system performance. To ensure these challenges are addressed at the state and regional levels, federal performance measures have been established in 23 CFR 490 and 49 CFR 625 and 630.

On May 3, 2018, the MPO Policy Committee adopted the "Intergovernmental Agreement between IDOT, Region 1 Planning Council (MPO), Rockford Mass Transit District (RMTD), and Boone County". The intergovernmental agreement establishes that the four identified agencies will coordinate and develop a performance-based approach to planning in order to address the transportation performance measures, as required in 23 CFR 450.314(h). This agreement defines the rights and obligations of each agency in terms of developing and sharing data related to transportation performance management and transit asset management, performance target setting, reporting of performance targets, and tracking progress towards attaining set performance targets.

As part of the MTP development process, the MPO developed performance measures that not only address the federal performance measures but also additional performance measures directly related to the MTP goals and strategies. These performance measures (found in Part 2: Planning Framework) will be used to evaluate the condition and performance of the transportation system moving forward.

Consistency with Planning Documents

During the development of the MTP, the MPO conducted a comprehensive screening of major planning documents, including statewide and local planning documents, to ensure it reflects the planning efforts established in those plans.

Noted in the previously adopted MTP, over the past five years the MPO has been committed to modernizing and improving the quality and content of not only the MTP itself, but the entire library of documents and initiatives. These updates have helped drive the direction of the 2050 MTP update process and have been incorporated. Elements discussed in the MTP are consistent with currently adopted documents produced by the MPO, including:

Federal Performance Measures

- Highway Safety Performance Measures (PM1);
- Pavement and Bridge Performance Measures (PM2);
- System Performance Measures and CMAQ (PM3);
- Transit Asset Management (TAM); and
- Public Transportation Agency Safety Plan (PTASP)

Source: US Department of Transportation

- Rockford Region Vital Signs: Regional Plan for Sustainable Development (completed in 2014);
- Greenways: A Green Infrastructure Plan for Boone and Winnebago Counties (adopted March 24, 2016);
- Coordinated Public Transit- Human Services Transportation Plan (adopted July 20th, 2017);
- Bicycle & Pedestrian Plan for the Rockford Metropolitan Area (adopted September 27, 2017);
- Public Participation Plan for the Rockford Metropolitan Planning Area (adopted May 3rd, 2018);
- Title VI and Environmental Justice Report (adopted February 28, 2019); and
- Transportation Improvement Program (adopted August 26, 2019).

A summary of the connections between the MTP and the other planning documents developed by the MPO can be found in Appendix C.

In addition to the MPO's library of regional planning documents, state-wide transportation planning documents have played a large role in guiding the update of the MTP. Over the past five years, IDOT has released a suite of plans in conjunction with the update to the statewide Long-Range Transportation Plan. Throughout 2019 and 2020, IDOT released chapters of the Illinois Long-Range Transportation Plan. The plan provides the strategic direction for the development of the Illinois transportation system, including the state operated and maintained roads within the Rockford MPA. The MPO consulted the Illinois Long-Range Transportation Plan throughout the development of this plan for technical analysis as well as consistency between statewide and regional initiatives. All of the statewide documents consulted in the development of the 2050 MTP for the Rockford Region can be found in Figure 1-3.

Local and regional reports, documents, and other studies relevant to transportation, land use, and economic development in the region have also contributed to the development of the 2050 MTP. These documents include, but are not limited to the following: comprehensive plans, land use plans, economic development plans, corridor studies, conservation plans, historic preservation plans, and emergency preparedness/evacuation plans.

A list of some of the local and regional plans consulted in the development of the MTP can be found in Appendix C.

Coordination with Partner Agencies

During the development process of this document, the MPO coordinated with numerous infrastructure and capital implementation partners.

The MPO coordinates with various departments within the Illinois Department of Transportation (IDOT) in the transportation planning process as well as the development of this document. IDOT has responsibility for planning, construction, and maintenance of its extensive transportation network. As such IDOT has the following roles in the Rockford Region:

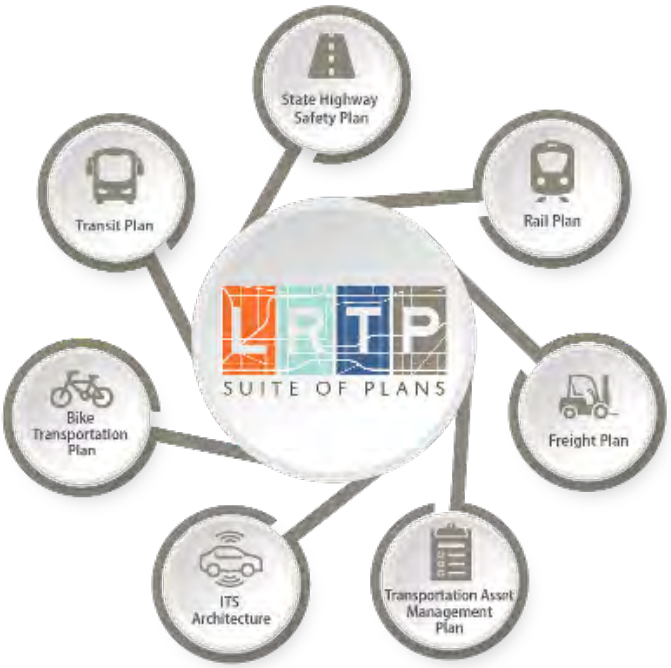
- Voting member on both the MPO's Technical and Policy Committees;
- Reviews and comments on planning documents prepared by the MPO;
- Actively involved in funding transportation projects in the MPA;
- Responsible for the operation and maintenance of state facilities within the Rockford MPA; and
- Establishes uniform policies and procedures for the location, design, and environmental evaluation of highway construction and reconstruction projects on the state highway network through the IDOT Bureau of Design and Environmental Manual.

In addition to the various departments within IDOT, the MPO has an ongoing partnership with municipalities and counties in the MPA to ensure regionally significant projects are identified within the MTP. These agencies are responsible for the design, engineering, construction, operation, and maintenance of the roadways within their jurisdictions. County staff often assist townships with programming and managing project implementation in the TIP. In total, the MPA consists of three counties, fifteen municipalities, and sixteen townships.

Four public transit agencies operate within the MPA. The MPO works with agencies that originate public transit services within the MPA to coordinate on a variety of mid- to long-range planning documents, such as the Transportation Improvement Program (TIP) and the Coordinated Public Transit – Human Services Transportation Plan (HSTP).

In addition to the governments and public transportation agencies, the MPO also regularly collaborates with the following agencies in the transportation planning process. These agencies include Boone County Conservation District (BCCD), Chicago Rockford International Airport, Forest Preserves of Winnebago County, Illinois State Toll Highway Authority (ISTHA), and the Rockford Park District (RPD). Due to its adjacency, the RPC also regularly

Figure 1-3. Illinois Suite of Plans



Source: Illinois Department of Transportation

coordinates with the State Line Area Transportation Study (SLATS) on the development of planning documents.

Fiscally-Constrained

Under the federal transportation planning requirements, the MTP must be based on reasonable financial commitments and constrained to the reasonably-anticipated public funding projected to be available. In order to fulfill this, the MPO has taken the following steps:

- Projected funding sources that are expected to be available for transportation uses;
- Estimated the cost of constructing, maintaining, and operating the existing and planned transportation network over the plan's life span;
- Evaluated projects for their alignment with the MTP; and
- Identified projects that can meet the financial requirement of the fiscally constrained element of the plan.

More information on the financial planning process and the fiscally-constrained project list of the MTP can be found in Part 5: The Financial Plan.

Title VI & Environmental Justice

A significant goal of the MPO is to ensure the delivery of transportation investments are equitably distributed across the region, including to areas with high minority populations or areas with a high proportion of individuals with low-incomes. To assure this goal, the MPO conducts a burdens and benefits analysis for Title VI and Environmental Justice (EJ) in relation to the projects listed within the MTP's fiscally-constrained and illustrative project lists.

As a recipient of federal funds from FHWA and FTA, the RPC complies with Title VI of the Civil Rights Act and Environmental Justice Executive Order 12989. The 2020 Certification Review of the MPO completed by FHWA and FTA found the agency to be in compliance with the civil rights requirements. The Title VI and Environmental Justice program is updated every three years and was last adopted on February 28, 2019.

The MPO performs an annual self-assessment in support of the federally-required self-certification. This self-certification includes a formal way of tracking compliance with these requirements, as well as tracking progress towards meeting planning and public engagement goals.

TMA Planning Certification Review

Every four years, the Secretary of the US Department of Transportation (DOT) must certify that each MPO serving a transportation management area (TMA) is carrying out the metropolitan planning process in adherence with federal statutes and regulations. FHWA and FTA conducts a review of each TMA and jointly issue this certification on behalf of the DOT Secretary.[i]

The 2019-2020 TMA Planning Certification Review process included an on-site Certification Review conducted on October 23 – 24, 2019. The 2020 final report was recieved in June 2020 and the MPO has taken the recommendations from this Certification Review into consideration and to the best extent possible, incorporated these elements into the MTP. Efforts to further integrate the recommended elements will continue to be incorporated within the MPO's transportation planning process.

A summary of the recommendations from the 2015 and 2020 Certification Reviews and how those requirements have been addressed in this document can be found in Appendix B.

Fiscal Constraint

Ensures that a given program or project can reasonably expect to receive funding within the time allotted for its implementation.

Source: Federal Highway Adminstration



RPC Enviromental Committee. Rockford, IL

State Guidance

In addition to the Federal guidance detailed above, the MPO incorporates the state requirements applicable to its transportation planning process. IDOT has developed the Metropolitan Planning Organization Cooperative Operations Manual to formally detail the relationship between IDOT and the various MPOs throughout the state as well as provide MPOs with the information needed to operate efficiency and effectively within the Federal and State of Illinois' transportation planning process.

Appendix B includes a table detailing the state's requirements for the MTP, as outlined in the Cooperative Operations Manual, and how those requirements have been addressed in this document.

Planning Process

The 2050 Metropolitan Transportation Plan for the Rockford Region was developed over a three-year period between 2017 and 2020 using a phased process, as shown in Figure 1-4.

The process began with defining the baseline conditions of the transportation network, as well as demographic, economic, and land use trends. This baseline condition and analysis laid the groundwork for the MTP. The types of data collected to establish the baseline included, but not limited to, US Census demographic data, transportation-specific funding sources, facility congestion and capacity levels, crash-specific data, etc. In addition to the current conditions analysis, MPO staff also conducted research related to emerging trends happening nationwide, such as autonomous and connected vehicles, transportation network resiliency, and security concerns.

The second phase focused on identifying the transportation needs and priorities of the Rockford Region. Identification of these transportation needs and priorities was collected in a variety of ways. Internally, MPO staff, utilizing several forecasting models, estimated how many people will live, work, and travel in the Rockford Region over the next 30 years. Based on those forecasts, sub-areas were identified where transportation system needs could arise in the future. Needs and priorities for the transportation system were also collected through the first phase of public engagement. Public engagement activities undertaken during this phase included stakeholder meetings, a public survey, and a series of pop-up events and workshops throughout the planning area. Further information on the full public engagement process and the modeling efforts can be found in sequential sections below.

The third phase in the development process was the creation of scenarios. Scenarios were created to present five alternative futures the region may experience. Scenario assumptions are based upon key local factors; macro factors (e.g. autonomous vehicles, climate change, and aging populations); model projections; internal and external subject-matter experts; and federal, state, and local policies.

Once scenarios were created, the MPO undertook a second round of public engagement in order to create the Preferred Scenario for the Rockford Region in 2050. The preferred scenario is a combination of elements and/or components from multiple scenarios presented into one preferred vision. The preferred scenario guides the direction of the MTP's goals and strategies, project prioritization, and future performance-based planning. Information on scenario planning is further detailed in this section and in Technical Memorandum #2: Scenario Planning Process.

Next, the MPO began drafting the document. This phase in the process was broken into several components including the development of the plan's goals and objectives; defining the investment and policy strategies based on the preferred scenario, and creating a fiscally-constrained project list.

Figure 1-4. MTP Development Process



PHASE 1

Baseline Condition & Analysis

Collection of transportation and demographic data to develop past trends and current conditions; create projections out to 2050 based upon data collected.



PHASE 2

Identifying Trends, Needs, & Priorities

Initial public engagement round to learn how the current network works and where investments should be prioritized.



PHASE 3

Scenario Creation & Assessment

Developing several scenarios focusing on development, transportation needs, and investment priorities; present scenarios to the public and receive feedback.



PHASE 4

Preferred Scenario Selection

Compiling stakeholder and public feedback on each of the scenarios; analyze how the preferred scenario aligns with the regional goals and effects transportation needs.



PHASE 5

Drafting the Plan

Includes development of the vision and goals; defining the investment and policy strategies; create a fiscally-constrained project list; and write the plan.



PHASE 6

Presentation of Draft Plan

Release the draft document for public comment; gather feedback on the drafted goals, the preferred scenario, and the fiscally-constrained project list.



PHASE 7

Plan Adoption

Incorporate comments; present the document to the MPO Technical and Policy Committees for recommendation and adoption, respectively.

Stars indicate where rounds of public engagement occured in the process.

This portion of the development process occurred in close coordination with implementation partner agencies that make up the MPO Technical and Policy committees.

Finally, the MPO released a draft document for public comment. Due to unforeseen circumstances surrounding the COVID-19 pandemic, the third and final round of public engagement was conducted exclusively online. The goal of this round of engagement was to present the draft document to the public and stakeholders to gather feedback on the drafted goals, the preferred scenario, and the fiscally-constrained project list. After comments from the public and stakeholders were incorporated, the MPO presented the document to the MPO Technical and Policy Committees for recommendation and adoption, respectively.

Public Engagement

Public engagement is an integral part of the transportation planning process. Securing input from the public is an important means of obtaining feedback on the existing and anticipated transportation system. The MPO followed the four key strategies outlined in the Public Participation Plan (PPP), adopted May 3, 2018, to ensure that sufficient opportunities for public participation was afforded in the MTP development process.

For the 2050 MTP update, it was identified early on that it was particularly important to be proactive in engaging stakeholders and the public. The input collected throughout the development process, particularly during the first two rounds of public engagement, guided the direction of the plan.

The initial round of public engagement was especially key in not only identifying transportation needs and priorities but also educating the public on the transportation planning process, the current conditions of the transportation network, and building a foundation for future public and stakeholder support of the final plan.

The second round of public engagement focused on presenting the public and stakeholders the alternative scenarios developed by the MPO and asking the public which elements of the scenarios should be utilized to create the preferred scenario for the Rockford MPA in the year 2050.

The final round of public engagement was conducted in conjunction with the release of the draft 2050 MTP.

More detailed information on the public engagement process undertaken and the results can be found in Technical Memorandum #1: Public Engagement Process.

The four key strategies of the Public Participation Plan are:

1. Engage the public in the transportation planning process;
2. Inform the public of transportation-related activities;
3. Promote participation in the transportation planning process; and
4. Improve public participation methods and techniques.



2050 MTP Pop-Up Event at the 2019 National Night Out. Rockford, IL

Scenario Planning

The current transportation legislation, FAST Act, emphasizes the use of performance-based methods for transportation planning and decision-making. Scenario planning methods are used to support and advance these practices and programs. In transportation planning, scenarios are stories about the future that help planners, local governments, and the public prepare for possible challenges and opportunities. Scenario planning helps transportation agencies establish a vision and strategic plan for success in uncertain times. They may also initiate critical thinking about future trends that could affect a region's economy, environment, and quality of life. This process includes both qualitative and quantitative analyses that illustrate the tradeoffs between different futures and their relative impacts on different community goals.

To develop alternative scenarios, the MPO began by assessing current conditions, examining previous planning work, and identifying stakeholders. As part of this process, transportation priorities were collected from the public and stakeholders to guide future steps of the scenario planning process. Five alternative scenarios were developed by the MPO through the collection of data. Then, the MPO presented an overview and key elements of each scenario to the public in the second round of engagement. These scenarios were meant to encourage discussion and show various outcomes that could impact future transportation policies and priorities in the region. After the second round of engagement, a preferred scenario was developed from the resulting feedback and current best practices. The preferred scenario is used as a guide for future policies and planning efforts.

More information on the scenario planning process undertaken by the MPO for this update can be found in Technical Memorandum #2: Scenario Planning Process.

Modeling & Forecasting

The RPC maintains two computer simulation models, which are the Regional Economic Models Inc. (REMI) and the Travel Demand Model (TDM). REMI consists of two programs, TranSight which develops large area forecast results, and Metro PI that provides data at a more granular level. REMI is a dynamic input-output economic and demographic impact analysis model with the ability to evaluate changes to the region's transportation network over time. The RPC uses PTV's VISUM software for the Travel Demand Model (TDM). The TDM is built off the traditional 4-step modeling process that includes trip generation, trip distribution, mode choice, and trip assignment. The TDM utilizes Illinois Department of Employment Securities (IDES) employment data, detailed roadway geometrics, and vehicle counts to estimate the effects to the transportation system based on changes to the model inputs.

Both REMI and the TDM software are utilized to produce economic, demographic, land-use analysis, and traffic projections. This data can be applied to studies estimating the benefits of transportation infrastructure projects, land-use decisions, economic policy, changes to industry workforce, and population distribution. Both programs are funded by IDOT's Statewide Planning & Research (SPR) grant funding through June 2023.

By utilizing these programs, the region can better assess the relationship of how current and future infrastructure, development initiatives, and transportation system improvements impact one another. These tools assist planners in identifying potential corridors and sub-areas where resource allocation is recommended to achieve overall user benefit. This method of analysis works towards identifying potential issues and developing a planning methodology to alleviate issues so as to reduce traffic delay for both passenger vehicles, transit, and freight.

Detailed information the modeling framework and the modeling software can be found in Technical Memorandum #3: Modeling Framework.







Part 2
Planning Framework

The Moving Ahead for Progress in the 21st Century (MAP-21) Act and the Fixing America's Surface Transportation (FAST) Act transformed the Federal-aid highway program by establishing new performance management requirements that ensure the most efficient investments for Federal transportation funds. Performance management refocuses attention on the national transportation goals, increases the accountability and transparency of the Federal-aid highway program, and improves project decision-making through performance-based planning and programming (PBPP).

PBPP is inherently data-driven and involves measuring progress toward meeting goals. It also utilizes information on past and future performance trends to inform current investment and policy decisions. The PBPP framework contains four central questions for transportation planning agencies:

- Strategic Direction: Where do we want to go?
- Analysis: How are we going to get there?
- Programming: What will it take?
- Implementation & Evaluation: How did we do?[i]

The following chapter highlights the strategic direction of the 2050 Metropolitan Transportation Plan (MTP) and identifies how the region intends to reach its vision of the future. The strategic direction of the 2050 MTP is based upon the region's vision for the future, as articulated by the public and stakeholders in the preferred scenario. This strategic direction encompasses both the regional transportation system, as well as the broad community factors impacted or affected by the transportation system, such as quality of life, economic vitality, and environmental quality.

Stemming from the region's vision, this chapter also introduces the goals and objectives that have been developed to reach this vision, as well as illustrates how these goals align with the federal transportation planning factors and IDOT's transportation performance goals. Following the goals and objectives, is a description of the federal performance measures that will be key in assessing the region's progress in meeting some of its goals and objectives. Finally, this chapter introduces the concept of a Livable Communities Initiative. This initiative serves as a tool that could be used to further the region's efforts in reaching its vision by the year 2050.

The Preferred Scenario

Integral to the development of the 2050 vision statement for the Rockford Metropolitan Planning Area (MPA) is the region's preferred scenario. The preferred scenario was developed based on the review of several alternative scenarios and input gathered from stakeholders and the public. The preferred scenario is comprised of various strategies in four policy areas, including transportation, economic, land use and development, and technology.

Local governments are not required to implement the preferred scenario strategies or mandated to select any particular set of strategies that support the preferred scenario. However, within each policy area, there are land use and transportation strategies that could be deployed by one or more jurisdictions to move in the direction of the preferred scenario. The strategies are intended to be flexible and may be reconsidered over time. Most importantly, the preferred scenario is intended to help local governments, key stakeholders, and the public have a unified vision for the transportation system in the year 2050.

More information on the scenario planning process undertaken by the MPO for this update can be found in Technical Memorandum #2: Scenario Planning Process.

Summary

Looking forward to the year 2050, there will be a continuation of the current trends in population and economic growth. Growth in key economic sectors (i.e. manufacturing, healthcare, etc.) will be the main driving force in the region, requiring continual evaluation of the transportation network as it relates to economic needs.

In 2050, stricter environmental regulations (nationwide) are in place in response to extreme weather events and changes in environmental conditions (e.g. increase in flooding, droughts, severe weather, etc.). Due to these changes and regulations, there is demand for "green infrastructure" investment in the Rockford MPA, which includes elements such as permeable pavement and bioswales into transportation projects, where feasible. Additionally, hazard mitigation strategies, such as new development restrictions, are put in place to protect environmentally sensitive areas and floodplains.

In upcoming years, there is a strong shift in preference on where residents want to live and work. This shift in preference results in the continuation of redevelopment occurring in city centers and increased infill development efforts. Additionally, there is a push

to focus new development, as well as encourage redevelopment, in concentrated areas along existing developed areas and arterial corridors. Efficient use of land is gained through increased mixed-use development and related tools through reexamination of local and regional land use and zoning specifications.

Due to projected levels of transportation funding, investments are focused on preserving the existing system and improving system resiliency. However, where expansion is needed due to capacity issues, projects are constructed in a manner that will have lower maintenance costs over time, even though upfront costs may be higher. Where reconstruction or new construction occurs, "Complete Streets" policies and treatments are taken into consideration to bring higher connectivity to the network. Increased density in housing and commercial redevelopment leads to a more robust active transportation network and efficient public transit services. Increasing active and public transit options is a priority for the region to better connect residents with work, services, and home.

To prepare for emerging technological trends in transportation (e.g. connected, autonomous, and electric vehicles), there is continual investment in regional technologies, such as Intelligent Transportation System (ITS) elements and alternative fuel infrastructure. These investments create a more efficient and safer network for both motorized vehicles and alternative transportation options. Through connected technology, a variety of connected vehicle (CV) applications are implemented in the region, including work zone warning, road weather management, pavement condition monitoring, and more. A shift towards system incorporation of autonomous vehicles (AV) and CVs also requires continual evaluation of regional transportation policies, procedures, and investments. These policies include implementation of smart corridors with additional technological infrastructure (i.e. sensors, etc.), dedicated lanes, freight platooning, curbside management policies, and more.

Stricter environmental regulations and evolving transportation technologies produce a greater desire for alternative fuel sources and environmentally-conscious technology; requiring a regional implementation plan for integrating alternative fuels and energy sources. Public-private partnerships (P3s) are developed to best integrate alternative energy options and technologies into the region.

Reaching the Preferred Scenario

While the preferred scenario supports positive outcomes, current funding sources and levels for transportation programs, infrastructure, and operations will most likely not be enough to support the preferred scenario's increased levels of investment. New revenue sources will be required to make necessary investments to support certain strategies identified in the preferred scenario, including additional local, state, federal, and private funding sources.

Furthermore, many of the strategies in the preferred scenario will require significant support from local jurisdictions. Many strategies, particularly in regards to land use and environment, will require either a shift in current or additional ordinances and policies.

The Preferred Scenario



Shifting Demographics
Regional population remains at current levels due to declining birth rates and influx of migration.



Employment Growth
High employment growth in key economic sectors drive the region.



Revitalization
Mixed-use development encouraged in urban centers and other strategic areas along major corridors.



Flooding Mitigation
Due to increasing flooding potential, construction in the flood plains is discouraged & increasing mitigation is required.



Environmental Regulations
Restrictions become stricter on a national level in response to extreme weather events & changes in environmental conditions.



Multimodal Transportation
Focus on expanded alternative transportation facilities with increased first & last mile connectivity.



Maintenance & Preservation
Primary focus on maintenance of existing transportation facilities and regional asset management over new facilities.



System Resiliency
A multimodal transportation strategy is developed that emphasizes maintenance & resiliency.



Intelligent Transportation Systems
Investments in connected/autonomous vehicle technology for transit that is implemented with a robust Intelligent Transportation System (ITS).



Alternative Fuel
Electric charging infrastructure & other alternative fuel sources are available along key corridors and urban cores.

Goals & Objectives

The Rockford MPO has adopted five goals guiding the development of the 2050 MTP and the organization's overall transportation planning initiatives. Each goal is accompanied by a series of objectives, strategies, and performance measures that further define the desired outcomes for the Rockford MPA.

The goals, objectives, and performance measures are based upon the needs and priorities of the overall transportation system, as well as elements that may affect the transportation system, such as land uses, the environment, and quality of life. The 2050 MTP goals and objectives are:

GOAL 1

Create an integrated, multimodal transportation network.

- Objective 1.1: Increase amount of regional public transit and local active transportation options.
- Objective 1.2: Enhance connectivity and mobility to improve continuity and accommodate the efficient movement of goods and services.
- Objective 1.3: Support interregional connections to and from the Metropolitan Planning Area.

GOAL 2

Emphasize a transportation system that is maintained and operated efficiently.

- Objective 2.1: Maximize the multi-modal capacity and operating performance of existing and future transportation infrastructure and services.
- Objective 2.2: Work to achieve a state-of-good-repair for existing transportation assets through asset management.
- Objective 2.3: Improve safety on transportation facilities.
- Objective 2.4: Reduce the vulnerability and increase the resilience of critical infrastructure to the impacts of man-made and natural events.

GOAL 3

Provide a transportation system that supports the regional economy.

- Objective 3.1: Identify and address issues affecting freight movement and passenger services.
- Objective 3.2: Broaden the regional scope of transportation partnerships to include opportunities outside of the MPA.
- Objective 3.3: Advance the efficient urban goods movement of freight within the region.

GOAL 4

Enhance quality of life through integrated transportation and land use planning.

- Objective 4.1: Minimize and mitigate air and water quality impacts from existing and future transportation facilities, services, investments, and operations.
- Objective 4.2: Enhance and promote equity and accessibility in the transportation system contributing to an overall improvement in quality of life.
- Objective 4.3: Promote the protection and sustainable use of diverse regional natural resources and areas.

GOAL 5

Ensure transportation investments effectively serve the regional transportation needs.

- Objective 5.1: Enhance coordination and collaboration in planning, programming, and implementation activities with state, regional, and local partners.
- Objective 5.2: Structure a mix of funding streams maximizing federal and state investment to leverage public/private partnerships.
- Objective 5.3: Create a regional slate of infrastructure priorities based on the strategies outlined in this plan.

Federal Planning Factors

Federal legislation includes several planning factors which must be incorporated into the transportation planning process. Eight planning factors were originally established in the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), enacted in 2005. These planning factors were continued with the enactment of the Moving Ahead for Progress in the 21st Century Act (MAP-21) and expanded upon with the Fixing America's Surface Transportation (FAST) Act, signed into law in 2015, with the addition of two planning factors. The goals and objectives identified above have been created to support these planning factors. The Federal transportation planning factors[ii] are described below:

1. Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency;
2. Increase the safety of the transportation system for motorized and non-motorized users;
3. Increase the security of the transportation system for motorized and non-motorized users;
4. Increase the accessibility and mobility of people and for freight;
5. Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns;
6. Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;
7. Promote efficient system management and operation;
8. Emphasize the preservation of the existing transportation system;
9. Improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation; and
10. Enhance travel and tourism.

Table 2-1 shows how the goals and planning factors relate.

IDOT's Performance Goals

In spring 2019, IDOT released the Illinois Long-Range Transportation Plan. The five goals identified in the plan are listed below.

Economy: Improve Illinois' economy by providing transportation infrastructure that supports the efficient movement of people and goods.

Livability: Enhance the quality of life across the state by ensuring that transportation investments advance local goals, provide multimodal options, and preserve the environment.

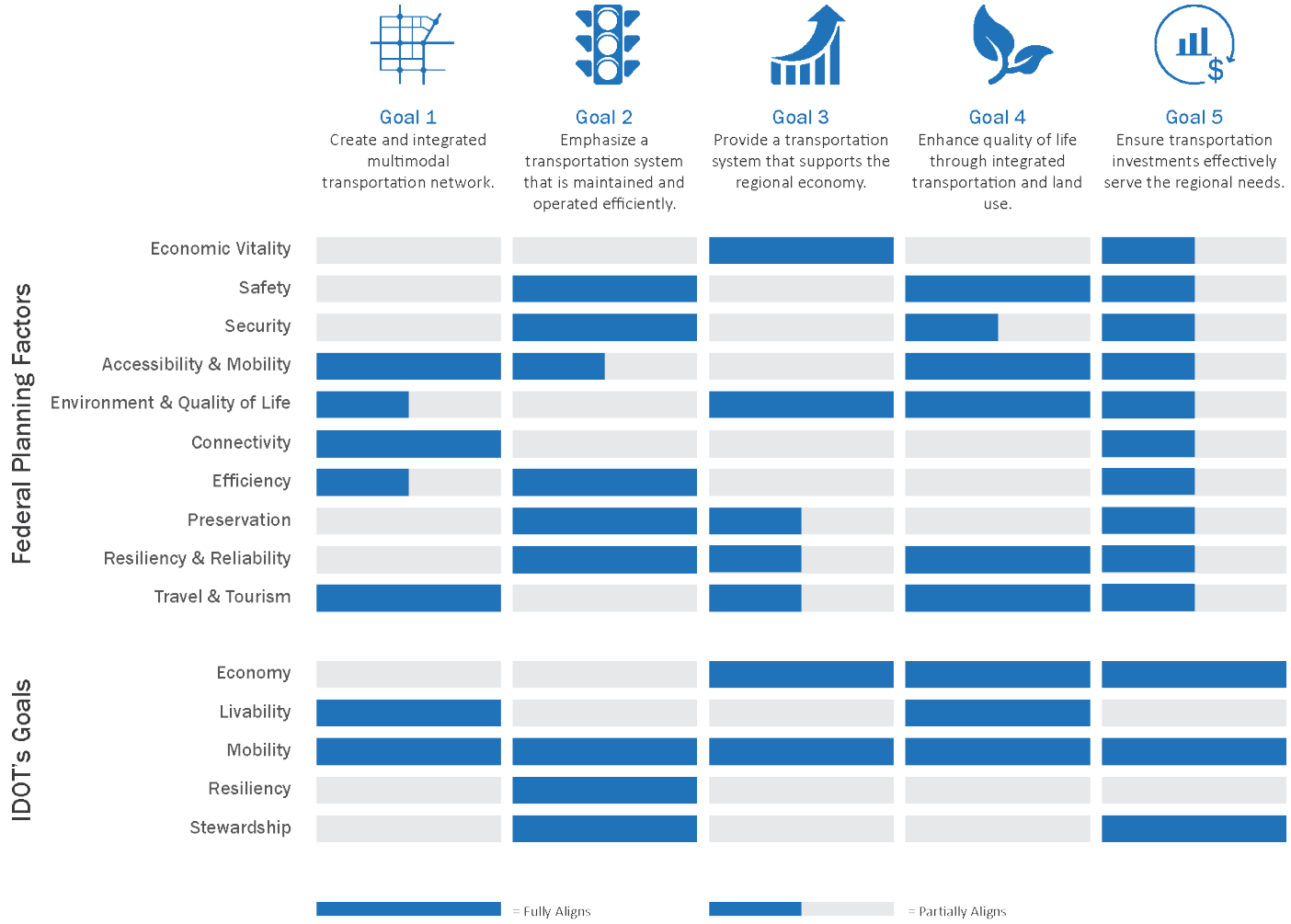
Mobility: Support all modes of transportation to improve accessibility and safety by improving connections between all modes of transportation.

Resiliency: Proactively assess, plan and invest in the state's transportation system to ensure that our infrastructure is prepared to sustain and recover from extreme events and other disruptions.

Stewardship: Safeguard existing funding and increase revenues to support system maintenance, modernization, and strategic growth of Illinois' transportation system.

Table 2-1 shows how the goals of the 2050 MTP align with the Illinois LRTP's performance goals.

Table 2-1. Relationship between 2050 MTP Goals, Federal Planning Factors, and Illinois LRTP Goals



Data sources: Region 1 Planning Council

Performance Measures

In performance-based planning and programming (PBPP), performance measures are key in determining a region's progress in meeting its goals and objectives. These measures serve as the basis for comparing alternative improvement strategies and tracking the progress of those strategies over time. The MPO monitors two sets of performance measures within the 2050 MTP: the federally-required performance measures, as set through transportation legislation, and regionally-developed performance measures, associated with the plan's goals and objectives. The federally-required performance measures are detailed below. The set of regionally-developed performance measures can be found in Part 6: The Action Plan.

Required Performance Measures

To further performance management, states, MPOs, and public transportation operators are now required to show how statewide and regional transportation investments are furthering national transportation goals. As such, these organizations must establish performance targets in key areas such as safety, infrastructure/ capital condition, congestion, system reliability, emissions, and freight movement.

The Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) have detailed these requirements via several rulemakings. These rulemakings outline each performance measure needed to effectively evaluate and report on surface transportation performance across the nation. The final rules include:

- Highway Safety Improvement Program (PM1);
- Assessing Pavement Condition for the National Highway Performance Program and Bridge Condition for the National Highway Performance Program (PM2);
- Assessing Performance of the National Highway System, Freight Movement on the Interstate System, and Congestion Mitigation and Air Quality Improvement Program (CMAQ), (PM3);
- Transit Asset Management (TAM); and
- Public Transportation Agency Safety Plan (PTASP).

More information on these final rules and associated performance measures can be found in the following sections.

Safety (PM1)

The Highway Safety Improvement Program (HSIP) final ruling established performance measures to carry out the HSIP and to assess serious injuries and fatalities on all public roads. The rule outlines the processes for state DOTs and MPOs to establish safety targets and to report on progress for those targets. In total, FHWA established five performance measures to assess safety performance: (1) number of fatalities, (2) rate of fatalities per VMT, (3) number of serious injuries, (4) rate of serious injuries per VMT, and (5) number of combined non-motorized fatalities and non-motorized serious injuries. Each of the safety performance measures are based on a 5-year rolling average.

MPOs are required to establish performance targets for each of the measures; either by choosing to plan and program projects that will support the state DOT in accomplishing the safety target or establishing targets for one or more individual performance measures specifically for their metropolitan planning area. State DOTs and MPOs are expected to use the information and data generated as part of the performance measure process to better inform their transportation planning and programming decision-making, and use their resources in ways that will result in the greatest possible reduction in fatalities and serious injuries. Safety targets must be established on an annual basis and in coordination with the state DOT, to ensure consistency.[iii]

The five safety performance measures are detailed below:

- **Number of fatalities**: the total number of persons suffering fatal injuries in a motor vehicle crash during a calendar year;
- **Rate of fatalities**: the ratio of total number of fatalities to the number of vehicle miles traveled (VMT, in 100 Million VMT) in a calendar year;
- **Number of serious injuries**: the total number of persons suffering at least one serious injury in a motor vehicle crash during a calendar year;
- **Rate of serious injuries**: the ratio of total number of serious injuries to the number of VMT (in 100 Million VMT) in a calendar year; and
- **Number of non-motorized fatalities and serious injuries**: the combined total number of non-motorized fatalities and non-motorized serious injuries involving a motor vehicle during a calendar year.

In January 2018, the Rockford MPO first established safety performance management targets in coordination with Illinois

Table 2-2. Highway Safety (PM1) Targets

Performance Measure	MPO Baseline 5-Year Avg (2013-2017)	State Baseline 5-Year Avg (2012-2016)	State Target 5-Year Avg (2020)
Number of Fatalities	30	989.4	985.0
Rate of Fatalities (per 100 million VMT)	1.11	0.94	0.91
Number of Serious Injuries	224.5	12,168.0	11,668.7
Rate of Serious Injuries (per 100 million VMT)	8.24	11.54	10.80
Number of Non-Motorized Fatalities and Serious Injuries	24.5	1,498.8	1,456.2

Note: The basis for the targets is a 2% reduction annually as compared to 2013-2017 baseline data.
Source: Illinois Department of Transportation

Department of Transportation (IDOT) and its partner agencies. The MPO chose to support the state's safety performance targets in all categories. Since first establishing the targets, the MPO has continued to support the State in accomplishing the its targets of a two-percent reduction for all five safety measures. The most recent targets (2020) is shown in Table 2-2.

Pavement and Bridge Condition (PM2)

The final rule on assessing pavement and bridge condition of the National Highway System (NHS) established measures for state DOTs to carry out the National Highway Performance Program (NHPP) and assess the condition of pavements and bridges on the NHS, including on- and off-ramps connected to the NHS, and pavements on the Interstate System. The national performance goal, in which these performance measures address, is to maintain the condition of highway infrastructure assets in a state of good repair.

The PM2 final rule provides a greater consistency in reporting on the condition and performance of the NHS and requires state DOTs to maintain their bridges and pavements at or above a minimum condition level. Under this final rule, FHWA established six performance measures to assess pavement and bridge conditions.

Similar to the safety performance targets, MPOs are required to establish performance targets for each of the measures; either by choosing to plan and program projects that will support the state DOT in accomplishing the target or establishing targets for one or more individual performance measures specifically for their metropolitan planning area. MPOs must establish two-year and four-year targets in coordination with the state DOT. For reporting, the MPO reports their established target to the state DOT, as well as the baseline condition/performance in progress toward achieving their targets in the system performance report of the MTP.[v]

The six pavement and bridge condition performance measures are:

- Percentage of pavements on the Interstate System in good condition;
- Percentage of pavements on the Interstate System in poor condition;
- Percentage of pavements on the NHS (excluding the Interstate System) in good condition;
- Percentage of pavements on the NHS (excluding the Interstate System) in poor condition;
- Percentage of deck area on NHS bridges in good condition; and
- Percentage of deck area on NHS bridges in poor condition.

In October 2018, the Rockford MPO first established PM2 targets in coordination with IDOT and its partner agencies. The MPO chose to support the State's targets in all six categories. The most recently established targets are shown in Table 2-3.

Table 2-3. Pavement and Bridge Performance (PM2) Targets

Performance Measure	MPO Baseline	State Baseline	2-Year Target	4-Year Target
Interstate Pavement in Good Condition	50.6%	66.0%	65.0%	65.0%
Interstate Pavements in Poor Condition	2.2%	0.3%	< 5.0%	4.9%
Non-Interstate NHS Pavement in Good Condition	25.4%	37.9%	27.0%	27.0%
Non-Interstate NHS in Poor Condition	19.9%	19.4%	6.0%	6.0%
Percentage of Deck Area of NHS Bridges in Good Condition	32.1%	29.1%	28.0%	27.0%
Percentage of Deck Area of NHS Bridges in Poor Condition	4.1%	11.6%	13.0%	14.0%

Source: Illinois Department of Transportation

National Highway Performance Program (NHPP)

A core Federal-aid highway program that provides financial support for the condition and performance of the NHS and the construction of new facilities on the NHS.

Source: Federal Highway Administration



East State Street Bridge. Rockford, IL

System Performance Measures and CMAQ (PM3)

The third FHWA rulemaking establishes the performance measures which state DOTs and MPOs will use to assess the performance of the Interstate and non-Interstate National Highway System (NHS) for the purpose of carrying out the National Highway Performance Program (NHPP); to assess freight movement on the Interstate System; and to assess traffic congestion and on-road mobile source emissions for the purpose of carrying out the Congestion Mitigation and Air Quality Improvement (CMAQ) Program. Specifically, state DOTs and MPOs need to establish targets for the following measures, where applicable:

- **System Performance:**
  - Percent of person miles traveled on the Interstate System that are reliable;
  - Percent of person miles traveled on the Non-Interstate NHS that are reliable;
- **Freight Movement:**
  - Truck Travel Time Reliability Index (TTRI);
- **CMAQ/Air Quality:**
  - Annual Hours of Peak Hour Excessive Delay Per Capita;
  - Percent of Non-Single Occupant Vehicle Travel; and
  - Total Emission Reductions.

The performance measures related to CMAQ are not required to be developed by all state DOTs and MPOs. Instead, only state DOTs and MPOs, that contain urbanized areas in which projects are financed with funds from the CMAQ program apportioned to State DOTs for areas designated as nonattainment or maintenance for ozone (O3), carbon monoxide (CO), or particulate matter (PM10 and PM2.5) National Ambient Air Quality Standards (NAAQS)[vi] are required to establish targets and report progress for the three measures related to traffic congestion and emissions. As such, the Rockford MPO is not required to develop targets for those three measures. More information on the region's air quality can be found in Part 3: Regional Context.

In October 2018, the Rockford MPO first established PM3 targets in coordination with Illinois Department of Transportation (IDOT) and its partner agencies. The MPO chose to support the State's targets in the three categories applicable to the region. The most recently established targets are shown in Table 2-4.

Table 2-4. System Performance (PM3) Targets

Performance Measure	MPO Baseline	State Baseline	2-Year Target	4-Year Target
Interstate Highway Reliable Person-Miles Traveled	100.0%	80.8%	79.0%	77.0%
Non-Interstate NHS Reliable Person-Miles Traveled	92.3%	87.3%	85.3%	83.3%
Truck Travel Time Reliability Index	1.12	1.30	1.34	1.37

Source: Illinois Department of Transportation

Transit Asset Management (TAM)

In 2016, FTA published the Final Rule for Transit Asset Management, which requires FTA grantees to develop asset management plans for their public transportation assets, including vehicles, facilities, equipment, and other infrastructure. In addition to establishing performance measures, the final rule established a national definition of "state of good repair" and established annual reporting requirements to the National Transit Database.[vii]

Four transit performance measures were established under TAM Final Rule and are required to be reported on annually by each transit agency through the National Transit Database (NTB). The performance targets set by transit providers must be based on realistic expectations of the financial resources that are reasonably expected during the TAM plan time horizon. Additionally, the performance targets must be set annually for the following fiscal year. The four required performance measures include:

- **Rolling Stock:** The percentage of revenue vehicles (by type) that exceed the useful life benchmark (ULB).
- **Equipment:** The percentage of non-revenue service vehicles (by type) that exceed the ULB.
- **Facilities:** The percentage of facilities (by group) that are rated less than 3.0 on the Transit Economic

State of Good Repair

The condition in which a capital asset is able to operate at a full level of performance. A capital asset is in a state of good repair when that asset:

1. Is able to perform its designed function;
2. Does not pose a known unacceptable safety risk; and
3. Its lifecycle investments must have been met or recovered.

Source: Federal Transit Administration



RMTD East Side Transfer Center. Rockford, IL

Requirements (TERM) scale.

- **Infrastructure:** The percentage of track segments (by mode) that have performance restrictions.

As Tier II agencies, the public transportation providers for the Rockford urbanized area, Rockford Mass Transit District (RMTD) and Boone County Public Transit (BCPT), opted to support the state sponsored TAM targets outlined in IDOT's Group TAM Plan for Participating Tier II Agencies. In February 2019, the Rockford MPO, in coordination with Illinois Department of Transportation (IDOT), RMTD, and BCPT, adopted the State's performance targets. The most recently established targets are shown in Table 2-5.

Public Transportation Agency Safety Plan

In July 2018, FTA published the Final Rule for the Public Transportation Agency Safety Plan (PTASP), which requires certain operators of public transportation systems who receive FTA grant funds to develop safety plans that include the processes and procedures necessary for implementing Safety Management Systems (SMS). As a recipient of Section 5307 funds, Rockford Mass Transit District is required to develop a safety plan that meets the requirements by July 20, 2020. Each safety plan must include, at a minimum:

- An approval by the agency's Accountable Executive and Board of Directors (or an equivalent authority);
- The designation of a Chief Safety Officer;
- The documented processes of the agency's SMS, including the agency's Safety Management Policy and processes for Safety Risk Management, Safety Assurance, and Safety Promotion;
- An employee reporting program;
- Performance targets based on the safety performance measures established in FTA's National Public Transportation Safety Plan (NSP);
- Criteria to address all applicable requirements and standards set forth in FTA's Public Transportation Safety Program and the NSP; and
- A process and timeline for conducting an annual review and update of the safety plan.

Under the PTASP rule, operators must set safety performance targets based on the following safety performance measures in the National Public Transportation Safety Plan:

- **Fatalities:** total number of reportable fatalities and rate per total vehicle revenue miles by mode;
- **Injuries:** total number of reportable injuries and rate per total vehicle revenue miles by mode;
- **Safety Events:** total number of reportable events and rate per total vehicle revenue miles by mode; and
- **System Reliability:** mean distance between major mechanical failures by mode.

As of the drafting of this document, RMTD is currently working with IDOT to develop their PTASP and establish performance measure targets for the measures above.



RMTD Bus. Rockford, IL

Table 2-5. Transit Asset Management (TAM) Targets

Facility Type	Below 3.0 Rating (#)	Total Facilities	Below 3.0 Rating (%)
Admin/Maintenance	15	87	17%
Passenger/Parking	4	35	11%
Total	**19**	**122**	**16%**

Revenue Vehicle Type	At/Beyond ULB (#)	Total Vehicles	At/Beyond ULB (%)
Articulated Bus	12	16	75%
Automobile	8	8	100%
Bus	160	526	30%
Ferryboat	3	3	100%
Minibus	82	171	48%
Minivan	163	243	67%
Other	8	8	100%
Van	447	852	52%
Total	**883**	**1,827**	**48%**

Non-Revenue Vehicle Type	At/Beyond ULB (#)	Total Vehicles	At/Beyond ULB (%)
Automobile	52	112	46%
Other Rubber Tire Vehicles (including Minivans and Vans)	34	60	57%
Total	**86**	**172**	**50%**

Source: IDOT

Livable Communities Initiative

In 2010, the U.S. Department of Housing and Urban Development (HUD) awarded the Rockford MPO a $600,000 grant through the Partnership for Sustainable Communities program. The grant provided funding to develop a Regional Plan for Sustainable Development (RPSD), known as the Rockford Region Vital Signs project.

The term sustainability has varying definitions to different individuals. However, being a sustainable community is universal to all residents. The goal of sustainability is for community members to make incrementally better choices in the short-term, with the aim to sustain social, economic, and environmental well-being of the region in the long-term.

During the development of the RPSD, a set of guiding principles were developed that would frame future updates to planning documents, such as the MTP, etc. The principles were developed to:

- Discourage the continuation of urban sprawl;
- Concentrate growth in the central core of existing cities and villages;
- Advocate for compact, transit-oriented, walkable, bicycle-friendly land use;
- Provide a healthier mix of housing choices close to job centers and schools;
- Feature the "complete streets" design philosophy on infrastructure projects; and
- Include the redevelopment of traditional neighborhoods.

As part of the resulting RPSD work, and to begin incorporation of principles into regional planning documents, the 2040 Long Range Transportation Plan (LRTP) included five fundamental principles for future planning:

1. The region shall promote the development of an integrated, multimodal metropolitan transportation system that facilitates the efficient, safe, and economic movement of people and goods.
2. The region shall seek a coordinated growth strategy that enhances livability of neighborhoods, balances expansion pressures with infill development, promotes the agricultural economy, reduces greenhouse gas emissions, introduces walkable landscapes, conserves natural resources, and rejuvenates historical economic centers.
3. The region shall focus on and prioritize transportation investments that promote financial and environmental sustainability, fosters a healthy business climate that encourages private sector partnerships, spurs economic competitiveness and creates jobs, utilizes the strengths of an exceptional local labor pool, develops world-class neighborhoods and maximizes the quality of life for the citizens of the region.
4. The regional planning framework shall integrate the different activities of transportation, land use, education, housing, economic development, human capital development, and human services to amplify the incremental value associated with coordinated planning.
5. The region shall develop metrics that provide transparent reporting and analysis of community health indicators framed around equity and environmental justice.

The MPO works to support its member agencies to further advance these principles and the recommendations from the RPSD. To further these elements, the MPO has begun developing a Livable Communities Initiative (LCI) that will approach livability using the transportation planning process to guide successful project implementation.

The initiative utilizes a two-fold approach by first providing transportation planning assistance for local governments or other eligible project sponsors through a technical assistance program, followed by programming federal transportation funds to implement them. The MPO technical assistance program will be designed to implement the adopted planning and investment principles of the MTP; to reimagine auto-focused infrastructure; incorporate ITS; create multi-modal travel choices; improve environmental quality; promote economic development; and transportation and housing linkages.

Funding eligible local planning studies will begin with identifying context sensitive solutions for the selected areas in the region to further LCI's goals and objectives. These goals include:

- Create a connected and integrated multi-modal transportation network;
- Improve safety of the multi-modal transportation network;
- Support the integration of Intelligent Transportation Systems (ITS);
- Reduce potential conflicts through access management;

Partnership for Sustainable Communities

The Partnership for Sustainable Communities was established in 2009 as a federal partnership between the U.S. Department of Transportation (USDOT), the U.S. Environmental Protection Agency (EPA), and U.S. Department of Housing and Urban Development (HUD). With HUD as the lead agency this federal partnership is guided by "Livability Principles" that seek to enhance the sustainability of local communities. The principles are:

1. Provide more transportation choices;
2. Promote equitable, affordable housing;
3. Enhance economic competitiveness;
4. Support existing communities;
5. Coordinate policies and leverage investment; and
6. Value communities and neighborhoods.

Source: US Dept. of Housing and Urban Development



South State Street. Belvidere, IL

- Develop bicycle- and pedestrian-friendly community and site design standards;
- Enhance and develop transit corridors and transit supportive built environments;
- Support urban revitalization and redevelopment of existing commercial/residential areas and corridors;
- Enhance and develop activity centers and town centers; and
- Encourage a greater mix of land uses in municipal centers.

Eligible activities would need to be directly related to transportation, as well as be consistent with the LCI goals and existing local plans. Proposals for technical assistance must also fit into one of the following categories:

- Implementation activities related to completed LCI plans or other completed local planning work (i.e. corridor plans, subarea transportation plans, etc.);
  - New plans, particularly in communities within the MPA that have not previously received technical assistance through the LCI program before, with priority given to:
  - Transportation planning activities (i.e. operational and safety studies),
  - Complete streets guidelines and feasibility studies, and
  - Bicycle and pedestrian planning; or
- Updates of previous LCI plans.

Projects identified through the technical assistance program will ideally lead to locally-sponsored projects applying for federal funding opportunities. This program will also allow smaller municipalities within the MPA to strengthen their planning activities through working directly with the MPO. Currently, the technical assistance program is still in the development phase.

As part of the second component in the LCI program, the MPO will prioritize projects for federal funding apportioned to the MPO for project implementation which have gone through the MPO technical assistance process. This will be achieved by incorporating specific LCI goals and objectives into the MPO project evaluation criteria. This process has already begun with the integration of livability-related criteria into the Surface Transportation Block Grant program (STBG), Transportation Alternative Program (TAP), and the MTP project evaluation criteria. Moving forward, further discussions will be needed to further integrate LCI goals into the process and provide a more holistic evaluation criterion.









Part 3
Regional Context

Key to understanding a region's transportation system is understanding its regional context. The functionality of a transportation system is largely dependent upon factors beyond the transportation network itself, such as population, housing, employment, land use, development patterns, and the environment. Conversely, the transportation network can directly impact these factors. The 2050 Metropolitan Transportation Plan (MTP) provides a comprehensive analysis of these factors to understand how the current transportation system is operating and how the system may function in the future based upon the region's unique characteristics and trends.

This chapter contains three sections that detail the analysis of key factors in understanding the characteristics of the Rockford Region (the region). The first section provides demographic and socioeconomic trends and forecasts for the region, as well as travel trends. The second section discusses the strong link between the region's transportation system and land use. The third and final section details short- and long-term environmental considerations included in the development of the 2050 MTP and the larger planning efforts undertaken by the Metropolitan Planning Organization (MPO).

Population & Employment

The following section contains the basic demographic and socioeconomic data necessary for forming a baseline of characteristics that currently affect how the transportation system operates, as well as provides an understanding of how future demographic changes may influence the transportation system over the next thirty years.

Data from the U.S. Census Bureau (Census) was used to compile the information in this section, unless otherwise noted. A full population count and basic survey is completed every ten years, most recently performed in 2010. The U.S. Census Bureau also conducts an ongoing survey, called the American Community Survey (ACS), which administers a more detailed assessment of a small sample of the population. For the following analysis on demographic and socioeconomic data, the 2013-2017 five-year ACS Estimates was utilized. In some instances, data was not available for the 2013-2017 five-year estimates, and the latest available data was used instead.

For forecasting purposes, the MPO utilizes several software programs, including the Regional Economic Models, Inc. (REMI) TranSight Program and their Metro-PI Program, along with PTV Group's Visum program. Further information on these software programs and the overall modeling framework can be found in Technical Memorandum #3: Modeling Framework.

For consistency, county-wide data from Boone, Ogle, and Winnebago Counties were utilized to develop regional trends and forecasts. Unless otherwise noted, the data presented cumulatively represents all three counties in their entirety.

Population Trends & Growth

The population of the three-county region was estimated to be 392,770[i] in 2017. Of those, 298,560 people live within the census-defined urbanized areas[1], or approximately 74 percent of the population in the three-county region.

Historically, population growth has varied across the region. Since the 1930s, the region has experienced cycles of significant growth followed by stabilization. Most notably, growth in the region slowed to less than two percent during the economic recession of the 1980s. Following the recession, Ogle and Winnebago Counties both returned to a more moderate growth rate – slightly exceeding the average growth rate for Illinois, but still lagging behind the national average for population growth. During the same time, Boone County experienced a rapid population increase; between 1970 and 2010, the County's population more than doubled. Since 2010, the overall region has seen a decline in the total population. Figure 3-1 depicts the population growth from 1950 to 2017.

Winnebago County is home to the largest share of the three-county region's population at 73 percent, approximately 287,510 residents. Both Boone (53,640 residents) and Ogle Counties (51,620 residents) equally share the remaining portions of the region's population, 14 percent and 13 percent of the population, respectively, as shown in Table 3-1.

The three-county region is anticipated to grow by approximately 10 percent between 2015 and 2050, continuing at a similar pace of growth seen throughout recent decades[2]. While all three counties are projected to grow overall, Boone and Winnebago counties are expected to experience similar growth, about 12 percent, which is comparable to overall regional growth. Ogle County is anticipated to grow at a much slower rate than the other two counties. Population growth by county is displayed in Table 3-2, while Figure 3-2 displays the distribution of population growth between 2015 and 2050.

1 The MPA consists of three census-defined urban areas – Byron, IL Urban Cluster, Davis Junction, IL Urban Cluster, and Rockford, IL urbanized Area.

2 The Travel Demand Model (TDM) is currently calibrated to create projections using a baseline year of 2015.

Age

The population in the region is aging, a trend that is being experienced in communities across the nation. While the largest age group within the region is children under the age of 18, comprising 24 percent of the population, and the second largest group are residents over the age of 65. Table 3-1 shows the age distribution of residents in the three county region.

The number of residents over the age of 65 has increased to 16 percent in 2017 from 13 percent in 2000. As the population within the region continues to age, there will be a change in the region's mobility needs. The trend of an aging population is anticipated to continue through 2050, continuing at a faster pace than previously seen in the region. The number of residents over the age of 65 is anticipated to increase by 57 percent between 2015 and 2020. The age group within the region anticipated to see the largest decrease within the same timeframe is residents between the ages of 18 to 24 years, a decrease of 17 percent.

Race & Ethnicity

The majority of residents (82.1 percent) in the region are White. The second largest racial group in the region is Black or African American, comprising 9.7 percent of the population. The remainder of the region's population is comprised of: 3.1 percent "Some Other Race", 2.7 percent "Two or More Races", 2.1 percent Asian, 0.3 percent American Indian or Alaska Native, and 0.0 percent Native Hawaiian or other Pacific Islander. Table 3-1 shows the racial composition of the region.

The largest and fastest growing ethnic minority population in the region is Hispanic or Latino, at 13.1 percent of the total population in 2017. The Hispanic or Latino population nearly doubled between 2000 and 2017, according to Census estimates, shown in Table 3-1.

Race & Ethnicity

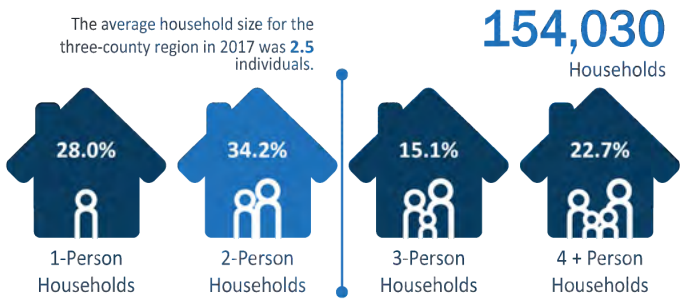
The U.S. Census Bureau considers race and ethnicity to be two separate and distinct concepts. The Census Bureau defines race as a person's self-identification with one or more social groups. Ethnicity determines whether a person is of Hispanic origin or not.

Source: U.S. Census Bureau

Households

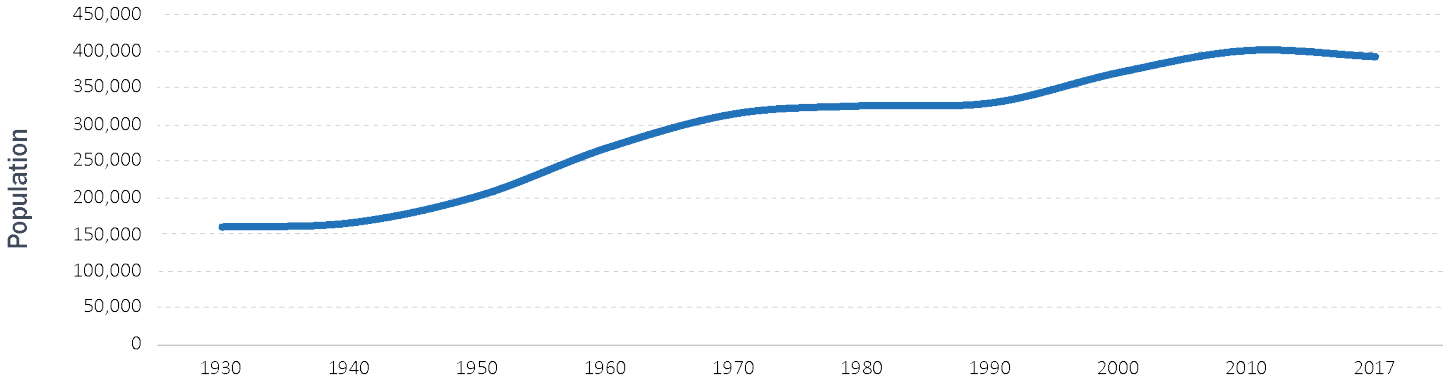
In 2017, there were 154,030 households within the three-county region, an increase of nine percent compared to 2000. Household size is an indicator of population distribution and density within the region. The three-county region is currently experiencing two trends: an increase in the total number of households and a decrease in the average household size. The average household size for the three-county region in 2017 was 2.5 individuals. Two-person households make up the largest type of household (34 percent), followed by single-person households (28 percent), shown in Figure 3-2.

Figure 3-2. Household Size, 2017



Data sources: U.S. Census Bureau

Figure 3-1. Historic Population Growth



Data sources: U.S. Census Bureau

Table 3-1. Population Characteristics, 2017

	Boone		Ogle		Winnebago		3-County Total	
Population	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total Population	53,638	-	51,619	-	287,512	-	392,769	-

	Boone		Ogle		Winnebago		3-County Total	
Age	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Under 18	13,949	26.0%	11,854	23.0%	68,291	23.8%	94,094	24.0%
18 to 24	4,906	9.1%	4,033	7.8%	24,387	8.5%	33,326	8.5%
25 to 34	5,735	10.7%	5,607	10.9%	35,598	12.4%	46,940	12.0%
35 to 44	6,922	12.9%	6,287	12.2%	34,750	12.1%	47,959	12.2%
45 to 54	7,955	14.8%	7,564	14.7%	39,336	13.7%	54,855	14.0%
55 to 64	6,492	12.1%	7,304	14.1%	38,734	13.5%	52,530	13.4%
65 +	7,679	14.3%	8,970	17.4%	46,416	16.1%	63,065	16.1%
Median Age	38.3	-	41.9	-	39.6	-	-	-

	Boone		Ogle		Winnebago		3-County Total	
Race	Number	Percent	Number	Percent	Number	Percent	Number	Percent
White Alone	47,071	87.8%	48,723	94.4%	226,817	78.9%	322,611	82.1%
Black Or African American	1,220	2.3%	565	1.1%	36,256	12.6%	38,041	9.7%
American Indian and Alaska Native	182	0.3%	68	0.1%	847	0.3%	1,097	0.3%
Asian Alone	638	1.2%	252	0.5%	7,305	2.5%	8,195	2.1%
Native Hawaiian or Other Pacific Islander	0	0.0%	7	0.0%	82	0.0%	89	0.0%
Some Other Race	3,362	6.3%	1,179	2.3%	7,468	2.6%	12,009	3.1%
Two or More Races	1,165	2.2%	825	1.6%	8,737	3.0%	10,727	2.7%

	Boone		Ogle		Winnebago		3-County Total	
Ethnicity	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Hispanic or Latino	11,283	21.0%	5,079	9.8%	35,035	12.2%	51,397	13.1%

Data sources: U.S. Census Bureau

Table 3-2. Projected Population Trends, 2050

Population	**2015**	**2050**	**Absolute Growth** (2015 - 2050)	**Percent Growth** (2015-2050)
Boone	53,767	56,364	2,597	4.8%
Ogle	51,785	52,891	1,106	2.1%
Winnebago	288,237	308,415	20,178	7.0%
3-County Total	**393,788**	**417,670**	**23,881**	**6.1%**

Age Group	**2015**	**2050**	**Absolute Growth** (2015 - 2050)	**Percent Growth** (2015-2050)
Under 18	93,232	82,917	-10,315	-11.1%
18 to 24	33,912	28,008	-5,904	-17.4%
25 to 34	46,278	47,298	1,020	2.2%
35 to 44	48,211	52,755	4,544	9.4%
45 to 54	55,558	56,647	1,089	2.0%
55 to 64	53,287	50,428	-2,858	-5.4%
65 +	63,310	99,616	36,306	57.3%

Race & Ethnicity	**2015**	**2050**	**Absolute Growth** (2015 - 2050)	**Percent Growth** (2015-2050)
White, Non-Hispanic	288,270	250,999	-37,271	-12.9%
Black, Non-Hispanic	37,592	44,181	6,589	17.5%
Other, Non-Hispanic	16,459	32,417	15,958	97.0%
Hispanic	51,467	90,074	38,606	75.0%

Data sources: Region 1 Planning Council
Note: Projections are based upon the Preferred Scenario.

Economic and Employment Trends

Transportation investments represent a significant catalyst for economic development. Transportation plans identify facilities and investments needed to promote viable local and regional economies. Additionally, regional transportation networks are essential to regional economies to get employees to their jobs, transporting goods, forming the framework for future expansion, and access to new business locations. The following section provides an economic overview of the region, which helps regional socioeconomic forecasts.

Labor Force

The Rockford Region has shown periods of labor force loss and recovery since 1980. The region's labor force was its smallest in the mid-1980s, during the first major recession. The region recovered to a peak of 222,350 jobs in 2007, after which regional employment plummeted by over 20,000 jobs to 202,010 three years later. Since 2010, employment has slowly recovered to 209,100 jobs in 2017.

Figure 3-3 depicts the current geographic employment distribution for the three-county region.

Total employment in the region is anticipated to continue its current pattern of slow growth between 2015 and 2050. The three-county region is projected to grow by 28,100 jobs (14 percent) between 2015 and 2050. Winnebago County will most likely experience the highest rate of growth at 15 percent between the same time period, followed by Boone County at 10 percent, and Ogle at 9 percent. Table 3-3 presents the total employment trends and forecasts by county and Figure 3-4 displays the distribution of population growth between 2015 and 2050.

Representative of its industrial heritage, manufacturing comprises the largest employment sector in the region, employing 17 percent of the labor force in 2017. The healthcare and social services (12 percent) is the second largest employment sector, followed by retail (10 percent), and government (10 percent), shown in Table 3-4. Table 3-4 lists the top twenty employers in the region[ii].

Looking ahead to 2050, healthcare and social services is anticipated to be the largest employment sector in the region, employing 18 percent of the labor force. Manufacturing will be the second largest employment sector at 16 percent, followed by retail (11 percent), and government at 9 percent.[iii]

Several recently announced business expansions will create significant number of new employment opportunities for the region and have a direct impact on the transportation system, especially near the Chicago Rockford International Airport. In 2019, Pinnacle Logistics announced an expansion of their cargo-related operations, expecting to create an additional 500 jobs at the airport. These jobs will support ground services and supply chain management for Amazon's Prime Air cargo fleet.[iv]

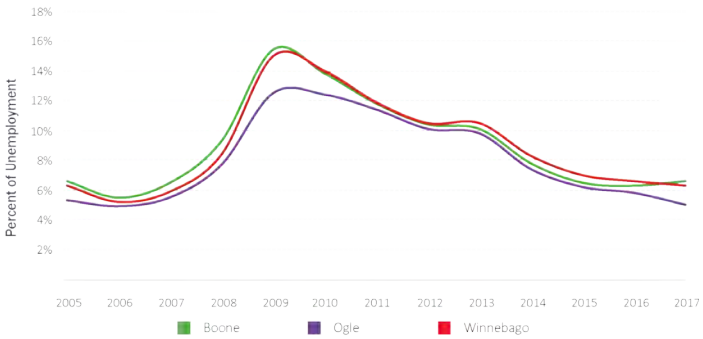
As shown in Figure 3-5, the region's unemployment rate has consistently been above the state and national average since 2000. Unemployment peaked in 2009 at 15 percent, however it has been on a gradual decline in recent years. In 2017, the unemployment rate for the region was 6 percent.[v] Boone and Winnebago Counties historically have had similar unemployment rates, while Ogle County consistently experiences the lowest unemployment rate in the three-county region.

Table 3-3. Projected Employment Growth by County, 2050

Population	2015	2050	Absolute Growth (2015 - 2050)	Percent Growth (2015-2050)
Boone	23,694	26,116	2,422	10.2%
Ogle	23,564	25,705	2,141	9.1%
Winnebago	166,343	190,774	24,431	14.7%
3-County Total	**213,601**	**242,595**	**28,994**	**13.6%**

Data sources: Region 1 Planning Council
Note: Projections are based upon the Preferred Scenario.

Figure 3-5. Annual Unemployment Rate, 2000-2017



Data sources: U.S. Bureau of Labor Statistics

Table 3-5. Top 20 Employers in the Rockford MSA

Company	Industry	Employees
Fiat Chrysler Automobiles	Automotive	5,150
Mercyhealth	Healthcare	4,000
Rockford Public Schools	Education	3,710
SwedishAmerican Health System	Healthcare	3,360
OSF Healthcare	Healthcare	2,800
UPS	Parcel Sorting Hub	2,380
Rockwell Collins	Aerospace Manufacturing	2,200
Woodward	Aerospace Manufacturing	1,900
PCI - Packaging Coordinators Inc	Pharmaceutical Packaging	1,800
Wal-Mart Stores	Retail	1,470
Winnebago County	Government	1,290
Harlem Consolidated Schools	Education	1,100
City of Rockford	Government	1,090
Lowe's	Distribution Center, Retail	900
Belvidere Community Schools	Education	870
Mondelez International	Chewing Gum	850
Magna	Automotive Parts Manufacturing	820
General Mills/Green Giant	Cereal/Snack Bars	680
Taylor Company	Ice Cream Machines	670
Syncreon	Automotive Supplier	600
Alorica	Telemarketing	560

Data sources: Rockford Area Economic Development Council (2018)

Figure 3-3. Current Employment Distribution, 2015

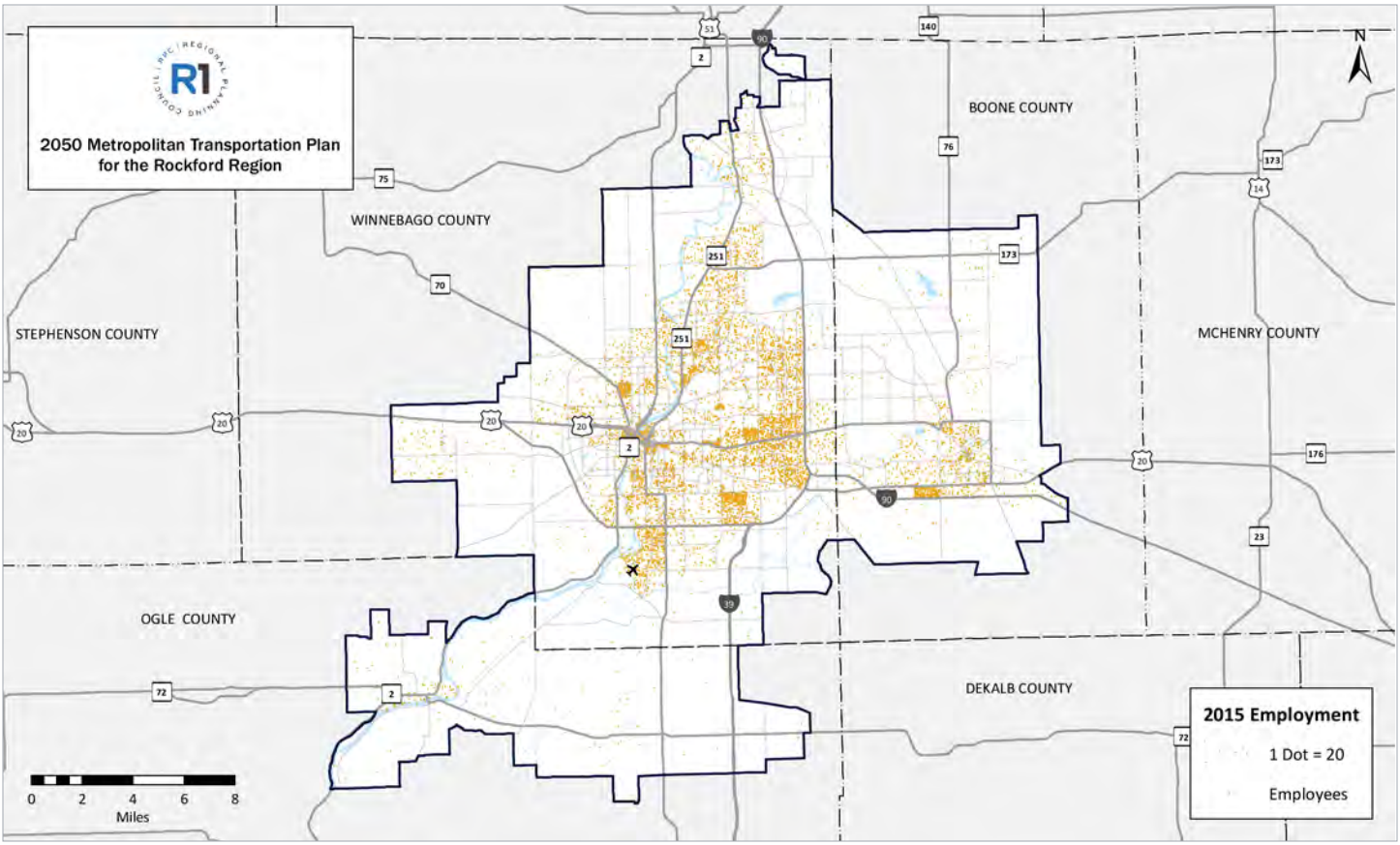
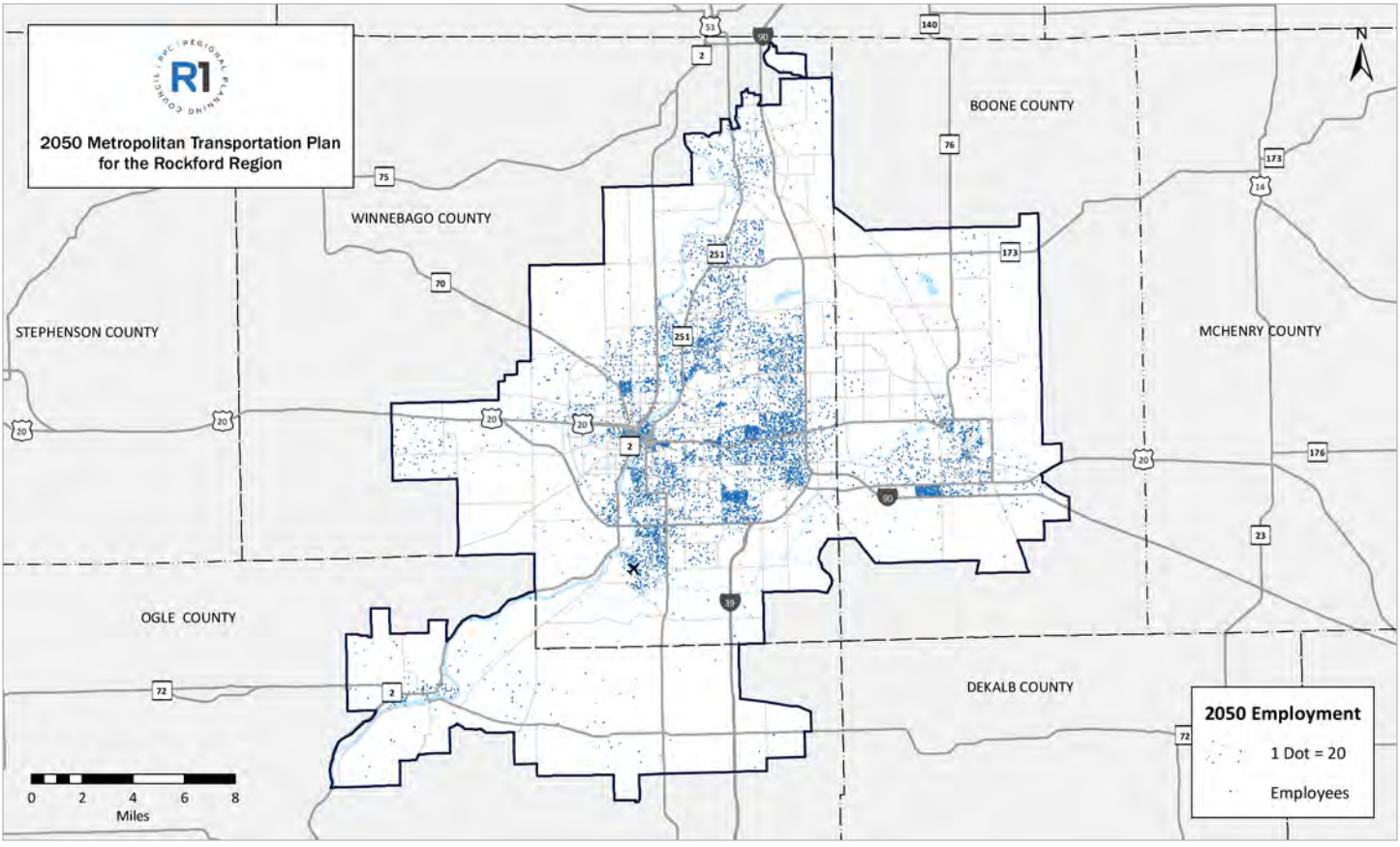


Figure 3-4. Projected Employment Growth Distribution, 2050



Data sources: Region 1 Planning Council

Income

Median household income is a common measure for regional economic wellbeing. The region's median household income varies across county lines. Boone County households earn a median income of just over $62,700, the highest in the three-county region, as well as higher than the state median income of approximately $61,230. Winnebago County households earn the lowest of the three-county region at $51,110, while Ogle County households earn around $57,660. While median income varies significantly across county lines, the median household income for all three has increased since 2000. While a large portion of the region lags behind both the state and nation for median household income, the region offers a relatively lower cost of living.

Median Household Income

Refers to the income level earned by a given household, where half of the households earn more and half earn less.

Source: U.S. Census Bureau

Per Capita Income

The mean income earned per person (including every man, woman, and child) within a region.

Source: U.S. Census Bureau

Per capita income (PCI) is another common measure of a region's economic wellbeing. At the county level, Winnebago County has the lowest PCI at $27,300, while Ogle and Boone Counties had the highest at $29,240 and $29,030, respectively. Similar to the median household income, the region has a lower PCI than state ($32,920) and national levels ($31,180). Since PCI represents a mean across the entire county, it does not accurately represent the income distribution of the region.

Education

Educational attainment plays a profound role on the region's employment. Within the three-county region, 88 percent of the population over the age of 25 has obtained at least a high school diploma. Beyond high school, 24 percent of the population over the age of 25 has received some college education, 9 percent has obtained an Associate's degree, 14 percent has received a Bachelor's degree, and 8 percent has received a Master's degree or higher.

One of the region's assets is the accessibility of quality higher education within commuting distance. The City of Rockford is home to Rockford University, a private four-year college, as well as the University of Illinois' College of Medicine at Rockford. Rock Valley Community College and several technical colleges exist within the region. The region is also within commuting distance of

Table 3-4. Economic Characteristics, 2017

	Boone		Ogle		Winnebago		3-County Total	
Employment Sector	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Health care and social assistance	1,145	4.9%	-	-	24,096	14.8%	25,241	12.1%
Retail trade	1,791	7.7%	2,548	11.0%	17,438	10.7%	21,777	10.4%
Government	2,387	10.2%	3,123	13.4%	15,303	9.4%	20,813	10.0%
Other Services (Non-Gov't)	1,145	4.9%	-	-	24,096	14.8%	25,241	12.1%
All Other Industries	16,883	72.3%	17,560	75.6%	81,582	50.2%	116,025	55.5%
Total Employment	**23,351**	**-**	**23,231**	**-**	**162,515**	**-**	**209,097**	**-**

	Boone		Ogle		Winnebago		3-County Total	
Income	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Median Household Income	$62,701	-	$57,655	-	$51,110	-	-	-
Per Capita Income	$29,029	-	$29,239	-	$27,297	-	-	-

	Boone		Ogle		Winnebago		3-County Total	
Educational Attainment[1]	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Less than 9th Grade	1,968	5.7%	1,318	3.7%	8,494	4.4%	11,780	4.4%
9th to 12th Grade, No Diploma	2,637	7.6%	2,617	7.3%	16,009	8.2%	21,263	8.0%
High School Graduate or Equivalent	12,380	35.6%	12,003	33.6%	62,589	32.1%	86,972	32.8%
Some College, No Degree	7,450	21.4%	8,983	25.1%	46,831	24.0%	63,264	23.8%
Associate's Degree	2,787	8.0%	3,788	10.6%	17,214	8.8%	23,789	9.0%
Bachelor's Degree	4,580	13.2%	4,669	13.1%	27,530	14.1%	36,779	13.9%
Graduate or Professional Degree	2,981	8.6%	2,354	6.6%	16,167	8.3%	21,502	8.1%

	Boone		Ogle		Winnebago		3-County Total	
Gross Domestic Product (In Thousands)	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Industries	$1,680,012	-	$2,971,554	-	$14,127,234	-	$18,778,800	-

Data sources: U.S. Census Bureau; Bureau of Economic Analysis

[1] Educational attainment is calculated for the population 25 years or older.

several four-year colleges and universities, such as Beloit College, Northern Illinois University, and the University of Wisconsin-Whitewater.

Gross Domestic Product

Gross domestic product (GDP) is a measure used to represent the output of an economy and one of the most common indictors of the strength of the region as a whole. Generally speaking, a growth in GDP signifies potential growth in employment and additional disposable income for individuals. According to the Bureau of Economic Analysis (BEA), the three county region's GDP has recently risen to a high of $18.8 billion.[vi] In 2017, manufacturing represented the greatest economic output by industry, accounting for 30 percent of the region's total GDP.

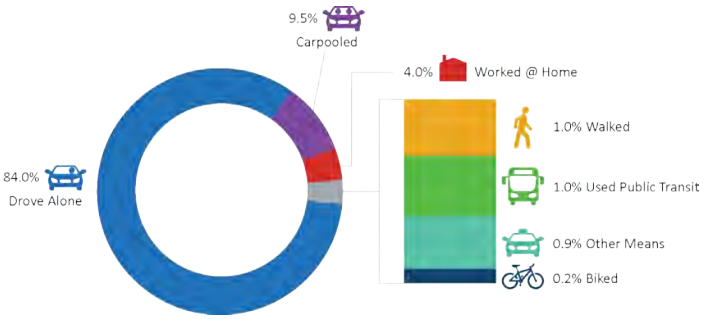
Travel Trends

It is necessary to understand the way people travel throughout the region in order to develop policies and investment decisions for the future. Mode choice and vehicle availability for workers are two factors used to assess the way people travel. Equally important are the commute patterns into and out of the region. The following section provides an overview of the current travel trends within the region and explains how these trends could impact the transportation system looking forward to 2050.

Commuting to Work

In the Rockford Region, the vast majority of commuting to work is by personal automobile; 83 percent of workers 16 years and older drove alone, while another 10 percent carpooled. Alternative transportation choices, including using public transportation, walking, and biking, are primary modes of commuting to work by less than three percent of the working population. While only a small portion of workers use alternative transportation to get to work, seven percent of households do not have access to a vehicle. This indicates either a portion of zero-vehicle households carpool with others, may work from home, or are unable to work.

Figure 3-6. Mode of Transportation to Work, 2017



Data sources: U.S. Census Bureau



Interstate 90 Corridor. Belvidere, IL

The average commute time to work in the region is 26 minutes; the average commute time is highest for workers in Boone County at 29 minutes. For comparison, 14 percent of Boone County workers have a commute greater than 60 minutes, whereas Ogle and Winnebago Counties respectively only had 8 percent and 6 percent of workers commuting longer than 60 minutes. As will be discussed in the next section, Boone County has a larger segment of its population working outside of the county resulting in the longer commute times.

Commuter Flow

Analyzing the in- and outflow of workers in a region provides an understanding of the employment dynamics of the regional economy. Based upon the most recently available data from U.S. Census Bureau on county-to-county commute patterns (2015), the three-county region is generally considered to be self-sustaining as 88 percent of its local labor force resides within the region.[vii]

Table 3-6 represents the employment destination by county for all workers residing in the region (outflow). Eighty-four percent of residents within the three-county region also work within the three counties. Of the remaining 16 percent of residents who work outside of the three-county region, the largest portion work in Rock County, Wisconsin, followed closely by McHenry County, IL and Cook County, IL.

Table 3-7 identifies the place of residence by county for all workers employed within the region (inflow). Eighty-eight percent of workers employed in the region reside within the region as well. Of the 12 percent of workers who reside outside the region, the largest portion reside in Rock County, Wisconsin. Other counties home to a significant amount of workers in the region includes Stephenson, IL and DeKalb, IL counties.

In summary, just over 149,750 people both live and work within the region; 27,990 people live in the region but work elsewhere; and 19,660 people work in the region but live elsewhere.

Table 3-6. Top Places Where Residents Work, 2015

County	Count	Share
Winnebago County, IL	121,181	68.2%
Boone County, IL	14,514	8.2%
Ogle County, IL	14,057	7.9%
Rock County, WI	4,445	2.5%
McHenry County, IL	3,740	2.1%
Cook County, IL	3,462	1.9%
DeKalb County, IL	3,377	1.9%
Kane County, IL	2,917	1.6%
Lee County, IL	1,924	1.1%
Stephenson County, IL	1,892	1.1%
All Other Counties	6,229	3.5%
Total	**177,738**	

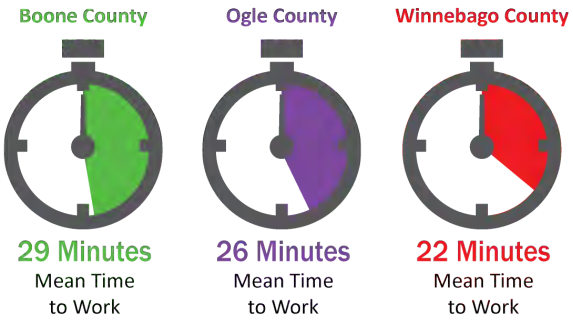
Data sources: U.S. Census Bureau

Table 3-7. Top Places Where Workers Live, 2015

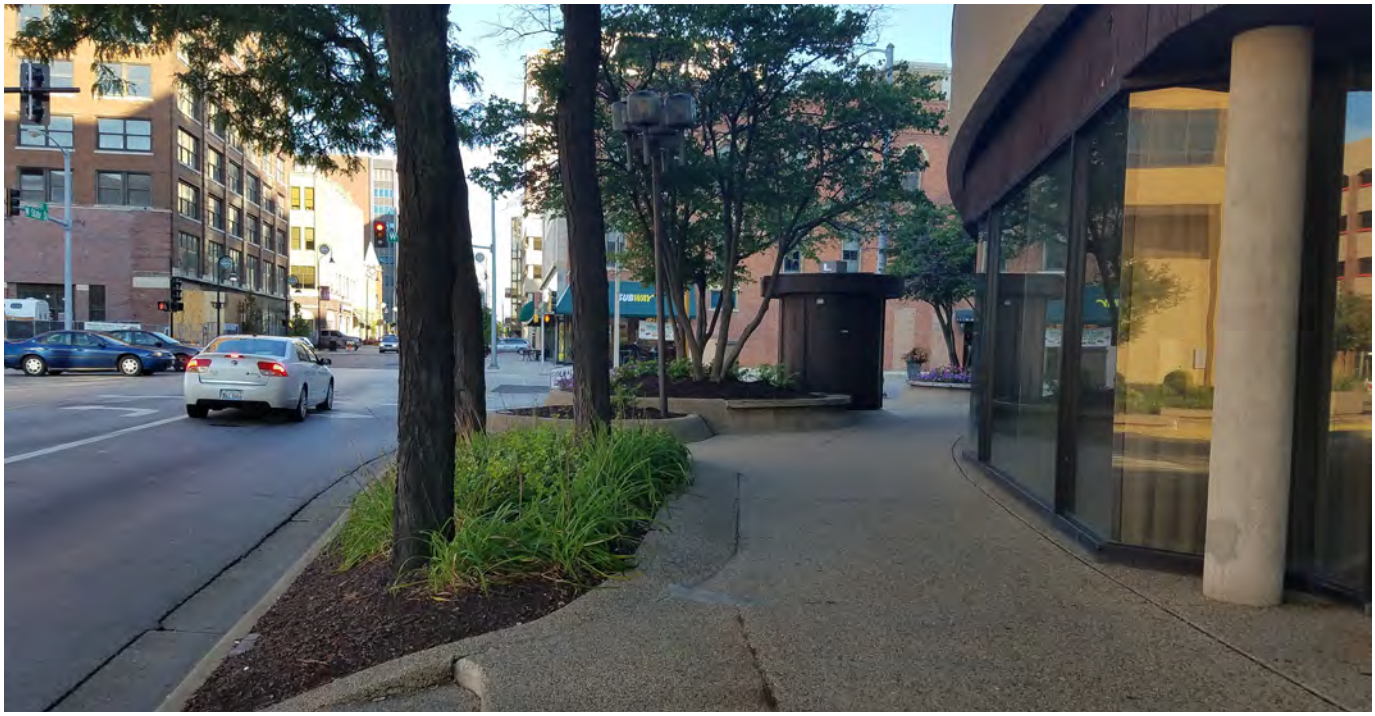
County	Count	Share
Winnebago County, IL	115,145	68.0%
Ogle County, IL	17,884	10.6%
Boone County, IL	16,723	9.9%
Rock County, WI	4,828	2.8%
Stephenson County, IL	2,502	1.5%
DeKalb County, IL	2,015	1.2%
McHenry County, IL	1,948	1.1%
Lee County, IL	1,716	1.0%
Kane County, IL	1,086	0.6%
Cook County, IL	1,066	0.6%
All Other Counties	4,502	2.7%
Total	169,415	

Data sources: U.S. Census Bureau

Figure 3-7. Average Commute Time by County, 2017



Data sources: U.S. Census Bureau



West State Street. Rockford, IL

Land Use & Development

The relationship between land use and transportation is central to understanding a regional transportation system. Land use, more than any other factor, affects the transportation system. This system is affected by where people live, work, and socialize. Improvements in the transportation network can decrease travel time and spur adjacent new development and economic growth. Conversely, new development can strain existing transportation systems and available resources. The relationship between land use and the transportation system can be either complimentary or conflicting depending on a number of factors. The region's existing land use development represents a dynamic blend of built, undeveloped, and natural land. Winnebago, Boone, and Ogle Counties represent a diverse landscape with varying levels of development under rural and urban classifications. Figure 3-8 shows the regional land coverage as of 2016.

Land-use development patterns are often dependent upon historic patterns, population trends, and access to varying modes of transportation. The role of Region 1 Planning Council (RPC), as it pertains to land use, is to coordinate planning and policies at a regional level to further establish and propose goals and objectives that will ensure long-term, sustainable transportation accessibility and land use development linkages. The 2050 Metropolitan Transportation Plan (MTP) provides a comprehensive analysis of these factors to help understand how the current transportation system is operating and how the system may function in the future based upon the region's unique development characteristics and land use trends. Development of effective land use profiles can foster policies and a deeper understanding of how the region can work collaboratively to address future development pressures, while continuing to ensure the preservation and enhancement of natural and cultural resources.

This portion of the plan contains four sections that detail key factors in understanding the land-use characteristics of the region. To ensure consistency across measurable variables, all data presented is at the three-county level unless otherwise noted. The first section describes the relationship between transportation and land use. The second section highlights regional development patterns, as well as population and housing density. The third section provides historic resources that have influenced the region's development patterns to its current state. The fourth and final section details potential strategies that could address future land use needs.

Transportation & Land Use Connection

The transportation system has more impact on the urban form than any other factor. Much like the MTP establishes the foundation for future growth and improvements to a region's transportation system, many communities maintain comprehensive plans to help guide future development. Comprehensive plans generally set the framework for the desired outcome of what a community

will look like 10 to 20 years in the future. Typical comprehensive plans contain demographic, housing, education, land use, transportation and other infrastructure, natural resources, and economic development elements designed to align community development strategies; however, transportation is often a key element that is explored through comprehensive planning. Although content will vary between communities, the ultimate outcome of the comprehensive planning process is the development of a future land use plan that allocates land by desired use, ensures the adequate provision of essential services, and seeks to minimize conflicting uses. Comprehensive land-use plans are typically updated on a regular basis to reflect the requirements of a community as it evolves over time.

Additionally, it is important that the MTP recognizes the importance of access to significant facilities such as commercial facilities, industrial facilities, airports, cultural facilities, freight distribution facilities, hospitals, government facilities, parks, retirement homes, and schools. Access via public transit is particularly important, and efforts should be continued to provide alternative transportation throughout the system, as well in order to enhance mobility, protect the environment, and contribute to a better overall quality of life.

Development Patterns

To encourage more redevelopment and infill development of the region's urban areas and along major corridors, it is important to understand the historic and current trends affecting this growth. While there are many interrelated factors that have contributed to the region's current development patterns, one of the most prevalent is the region's development growth away from urban centers. The urban footprint of the Metropolitan Statistical Area (MSA) has quintupled since 1940, while the population of the urban area has only doubled; this highlights the region's sprawling land use history. The region is not an anomaly; in fact, it is much in alignment with national trends of sprawling, suburban development that occurred following the development of the Interstate Highway System (IHS). Subsequently, recent growth in the region has occurred mostly along the fringes of municipal boundaries and in unincorporated areas of the surrounding counties. This kind of development contributes to a culture of auto-dependence; the disconnection of neighborhoods; and strains on municipal resources (e.g. financial, sanitary sewer, municipal water, access to broadband internet, etc.).

The region's urbanized area (UA) has grown by more than 13 percent since 2000; while the region's urbanized population only grew 8 percent. In 2000, the region's UA was comprised of 91,405 acres and grew to 103,753 acres by 2016. Conversely, the region's urban area population was 275,370 in 2000 and by 2016 had grown to 299,399, as shown in Figure 3-9. Since 2010, the overall region has seen a decline in the total population. However, the region is projected to grow approximately 10 percent between 2015 and 2050. This is likely due to the economic recession and related prolonged periods of low job growth, coupled with statewide population losses.

Metropolitan Statistical Areas (MSA)

At least one urbanized area with a minimum population of 50,000; or a region that consists of a city and its surrounding communities that area linked by social and economic factors. MSAs are defined by their principal city, which is the largest city in the region.

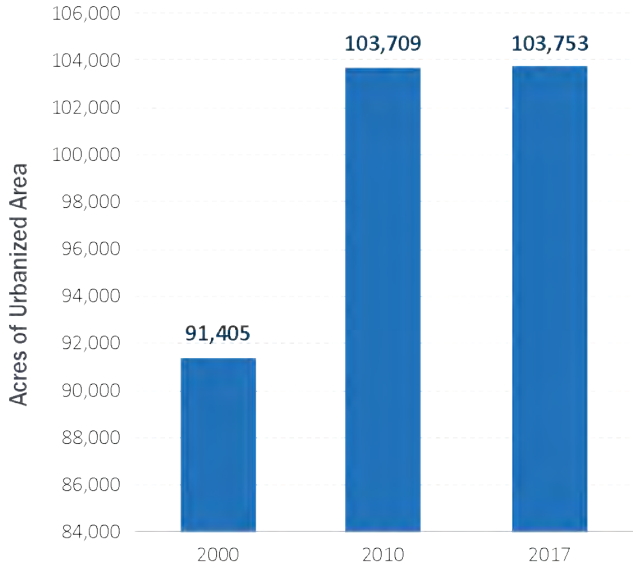
Source: U.S. Office of Management and Budget

Additional Considerations

According to the Federal Highway Administration (FHWA), while passenger vehicles are the most popular form of transportation, people will use alternative modes, such as walking and biking, if readily available. Individuals will generally accept walking a distance of a ¼ mile to reach destinations. Individuals living in dense areas, such as city centers, are shown to drive 26 percent fewer miles per day than those living in less dense areas. Planning for compact neighborhoods can additionally limit the need for automobiles and reduce greenhouse gas emissions. Approaches to development such as mixed-use and pedestrian-friendly streets (e.g. complete street policies) also encourage walking, bicycling, and public transportation.

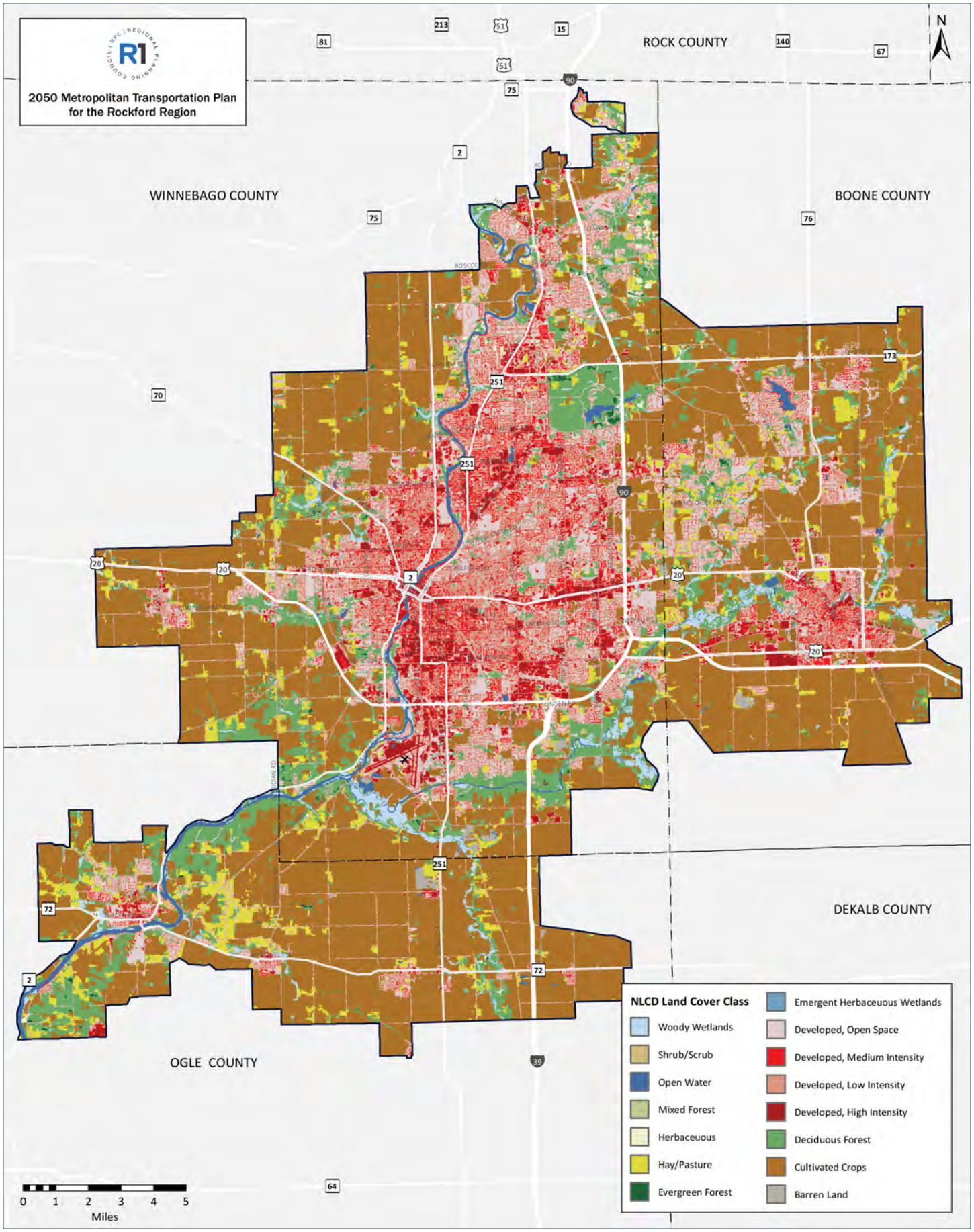
While growth is often attributed to the extension of transportation infrastructure, the availability of sanitary sewer, municipal water, and access to broadband internet also play a key role in shaping urban form. A municipality's ability to provide utilities has an impact on both the type and location of new development. Nearly all municipalities in the region require sewer and water with new development. Additionally, many unincorporated parts of each county allow developments to opt for private well and septic systems. Developments in more rural parts of the region are often low density or small-scale in keeping with the agricultural or rural nature of the area.

Figure 3-9. Urban Growth by Acres, 2000- 2016



Data sources: U.S. Census Bureau

Figure 3-8. Regional Land Cover, 2016



Data sources: Multi-Resolution Land Characteristics Consortium

Population and Housing Density

Population density is a measurable estimate of how many people on average live in one square mile, if the population were distributed equally throughout the region.[viii] Density is influenced by many factors, such as transportation infrastructure, housing types and availability, and municipal development policies. Population density nationally is approximately 87 people per square mile.[ix] The three-county area covers approximately 1,564 square miles. The region's population has fluctuated moderately since 2000. Therefore, moderate changes in density year to year are expected. The population density for the region was 249 people per square mile (PPSM) in 2017. Figure 3-10 shows the historic trends in population density for the region.

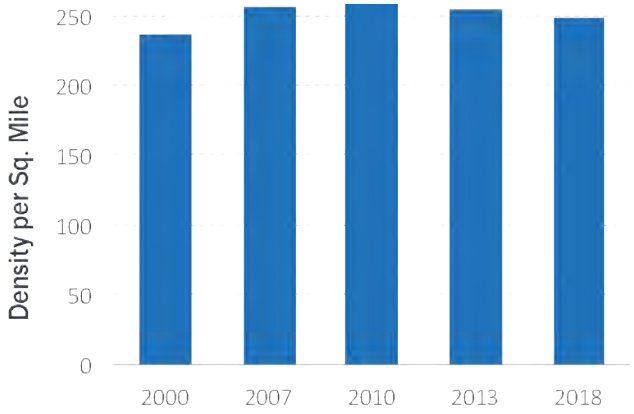
Similar to population density, housing density is another measure of how many people live in a geographic area based on the number of available housing units. The relationship between population and housing densities is complex. It influences, and is influenced by, many external factors such as the economy, land use, transportation infrastructure, and homelessness. The housing density for the region was approximately 108 houses per square mile in 2017, as shown in Figure 3-11.

Historic Resources

The Rockford Region is home to several historic resources. The National Register of Historic Places (NRHP) lists thousands of different buildings, places, and bridges all over the country. Their designation can be assigned based on a variety of reasons, such as age, place in history, or significance during a related event. Examples of historic places located in the region include the Belvidere State Street Historic Districts, the Coronado Theatre, and the Chicago & North Western Railway Stone Arch Bridge, among others. Figure 3-12 shows the locations of places listed in the National Register of Historic Places database.[x]

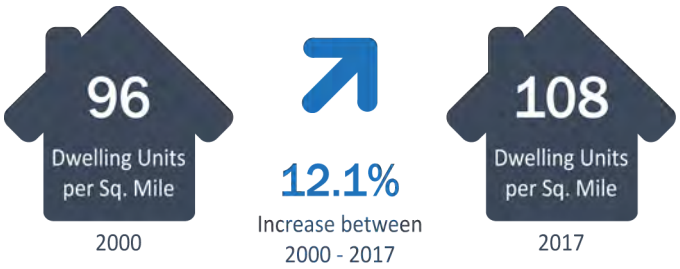
Because transportation infrastructure interacts with so many other areas (e.g. the economy, housing, municipal services, private utilities, etc.) it often comes into contact with buildings, sites, or districts of historical significance. These sites typically represent many years of historical significance that have impacted the development of a community or region. As such, their protection,

Figure 3-10. Population Density per Square Mile, 2000-2018



Data sources: U.S. Census Bureau

Figure 3-11. Housing Unit Density, 2000- 2017

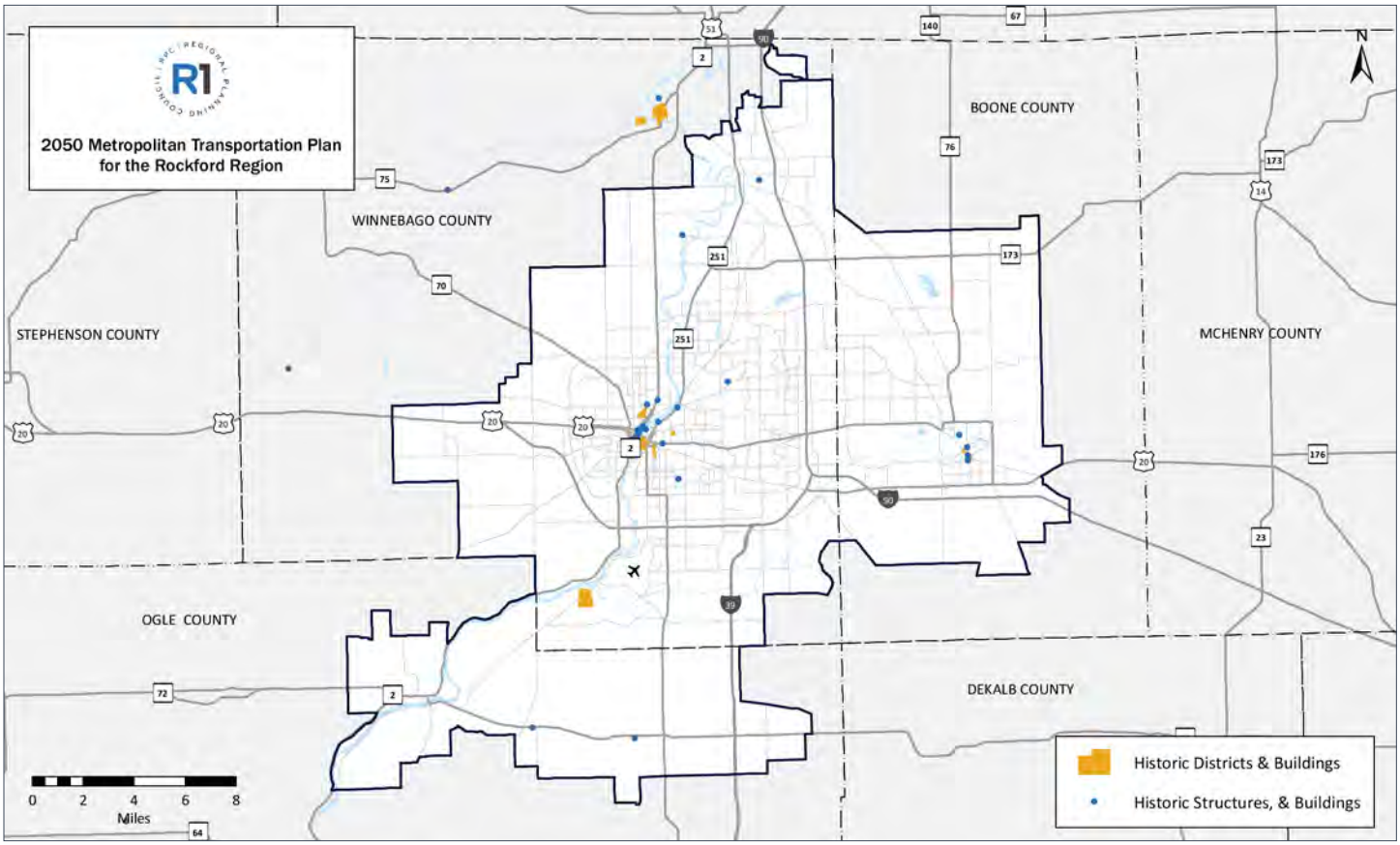


Data sources: U.S. Census Bureau



Frank Llyod Wright's Pettit Memorial Chapel. Belvidere, IL

Figure 3-12. National Register of Historic Places



Data source: National Park Service

just like any natural area or resource, should be factored into the development and planning for new or retrofitting of existing transportation infrastructure and services.

Future Land Use Needs

Over the next few decades, the region will face increased development pressures for land, public services, and infrastructure. As a result, the need to manage future land uses will become more evident. Urban sprawl can often put a strain on natural and municipal resources, infrastructure, and public and private utilities and services; fragment high-quality farmland and disrupt the natural environment; increase commuting costs; decrease overall public health; and increase social stratification.

Density is sometimes negatively associated with crime, blight, and decreased property values. However, studies show that increasing density has many positive benefits for a community. Benefits can include increased walkability and access to green space, which can improve public health and overall well-being; enhanced neighborhood connectivity, which can improve social cohesion; and, as density increases, the costs of public services typically decrease due to an efficiency in distribution networks. The RPC planning process encourages development and growth in suitable locations across the region in order to minimize costs, protect natural resources, and make efficient use of public services and infrastructure.

The greater Rockford Region has a large supply of vacant or abandoned buildings, many of them industrial in origin. As the economy shifted and manufacturing technologies evolved many aging manufacturing facilities are no longer in use. These large tracts of land offer the opportunity to increase density within the city core and revitalize struggling neighborhoods. Infill development can occur in many forms. For example, vacant buildings can be repurposed or demolished and replaced with a new building. This type of development supports efficient use of land already is serviced by public facilities, such as water and sewer. Increased residential infill development should be encouraged near commercial and employment centers.

Alternatively, growth management is a set of planning techniques linking proposed development with planned community improvements and capital needs over a long-range planning horizon. Growth management also seeks to protect prime farmland and natural open spaces, ensure a sufficient affordable housing inventory, and preserve historic landmarks. Many growth management techniques are currently being used by the region's municipalities, such as zoning and the use of impact fees. The RPC seeks to coordinate with partner organizations to encourage mixed-use development and other strategies that will reduce the strain on public services and infrastructure and shorten average trip times.

Environment

Over the past several decades there has been a growing awareness of the need to have a more thorough discussion and understanding of the relationship between the transportation planning process, the impacts of transportation facility programming and construction, and environmental practices. Understanding the complexities of the natural environment and the built environment is a continuous process. As a result, the MPO continues to develop strategies to include conservation in the overall transportation planning process and the development of the 2050 Metropolitan Transportation Plan (MTP). Since the MPO last updated its long range transportation plan (LRTP), progress has been made in green planning initiatives, environmental land use planning, and strategies for a more sustainable approach to transportation planning objectives in the Rockford Metropolitan Planning Area (MPA).

The MPA is home to a diverse array of land coverage, from urban infrastructure to dense forest and agriculture. Therefore, managing growth and resources over the next 30 years will remain a critical challenge for planning, programming, and adapting the transportation infrastructure to ensure the longevity of the region's natural and human resources. By making incremental steps today that link transportation and environmental planning and policies, the region will have a more efficient transportation system and competitive economy moving forward. Additionally by continuing integration of environmental planning and programming practices, the region can mitigate the possible effects of extreme climate as well as strengthen the region's social, environmental, and economic health.

This section details the region's environmental characteristics. First, it defines the connection between transportation and environmental planning, including factors impacted by transportation and land use development. This section also provides information on the region's air and water quality, and finally, the region's significant ecological resources, including its environmentally sensitive areas, parks, and open spaces. These linkages are critical to understanding how to plan, program, and implement transportation projects in a manner that mitigates the impact on the region's natural environment.

Linking Transportation and Environmental Planning

The relationship between transportation and the environment represents a process whereby transportation often directly impacts the environment during planning, programming, and implementation. Linking transportation and environmental planning efforts has been spurred by a number of factors.

- **Passage of the National Environment Policy Act (NEPA), 1970:** Mandates that federal agencies assess the environmental effects of their proposed actions prior to making decisions. While NEPA applies solely to federal agencies, many states have mirror versions of it with similar requirements. Additionally, the requirements outlined in NEPA apply to any project that use federal funds. This requirement mandates the evaluation of impacts on the environment from individual projects – often in the form of Environmental Impact Statements (EIS), as well as the Air Quality Index (AQI) and the National Ambient Air Quality Standards (NAAQS).
- **Congestion Mitigation and Air Quality Improvement (CMAQ) Program, 1992:** Developed to provide funding for state and local governments to fund transportation projects and programs to help meet the requirements of the Clean Air Act (CAA) and its amendments.
- **Passage of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), 2005**: Requires long-range transportation planning to include a discussion of mitigation efforts than are typically contained in the National Environmental Policy Act (NEPA) documents.
- **Moving Ahead for Progress in the 21st Century (MAP-21), 2012:** Continued the incorporation of environmental considerations into the overall transportation process and inclusion in MTP's. Additionally, MAP-21 expanded the CMAQ program to include performance-based features, such as establishing measures to assess traffic congestion and on-road mobile source emissions.
- **Fixing America's Surface Transportation (FAST) Act, 2015:** In addition to continuing the requirements established in the previous federal legislation, the FAST Act requires the planning process to consider projects/strategies that will improve the resilience and reliability of the transportation system and stormwater mitigation.

These requirements support a broader planning approach for incorporating environmental considerations into the transportation process and ensure that potential mitigation activities are considered and carried out. The MPO often assists with environmental resource materials that are used by transportation departments responsible for preparation of NEPA documents.

The MPO has understood the benefits associated with integrating transportation and environmental planning and has been proactive to include an open dialogue with the region's environmental groups, organizations, and planning departments at the local, regional, and non-profit and advocacy groups. In 2013, MPO added several natural resource and utility agencies to the MPO Technical Committee. These agencies included the Boone County Conservation District, Forest Preserves of Winnebago County, Rockford Park District, Rock River Water Reclamation District, and the Winnebago County Soil and Water Conservation District. Working with these agencies has enabled the MPO to gather the latest data and information available on environmental issues within the region, as well as continue to have open and continuous discussions with these agencies improving the

transportation planning process. These relationships are critical to ensuring that the transportation planning process follows the 3-C (continuing, cooperative, and comprehensive) principles.

In 2017, Region 1 Planning Council formed an Environmental Planning Committee. The goal of this committee is to bring together natural resources agencies and environmental advocacy groups to address and contribute to environmental planning throughout the region, specifically the areas of energy conservation/consumption, growth management, air quality, water resources, natural resources, and built infrastructure. MPO staff and representatives from the MPO Technical Committee also participate in the Environmental Planning Committee. The MPO has presented to the Environmental Planning Committee several times on the development of the 2050 MTP and other transportation planning projects.

In addition to having a continual open dialogue with region's environmental groups and organizations, the MPO has included environmental considerations into its programming of the region's suballocation of Transportation Alternative (TA) funds. Specifically, environmental and land use considerations are incorporated into the project selection criteria. Projects which can demonstrate Greenhouse Gas (GHG) emission reductions or other air quality benefits and projects that preserve or restore environmentally sensitive lands or cultural areas receive a higher ranking. This criterion has also been included in the project evaluation criteria for the fiscally-constrained roadway project list of the 2050 MTP. More information on the evaluation criteria can be found in Technical Memorandum #5: Project Evaluation Process.

Air Quality

Air quality in the region is an important environmental factor that is influenced by transportation infrastructure and users. Air quality is measured nationally by the Environmental Protection Agency (EPA) through the AQI Data Report; data is supplemented by the Illinois EPA (IEPA). The AQI is annual summary of all pollutant data for a core based statistical area (CBSA). This is considered the best measure of air quality because all criteria air pollutants in a geographical area are included.[xi] These criteria pollutants include particulates such as carbon monoxide, sulfur dioxide, and nitrogen dioxide. According to the EPA, the transportation sector generated roughly 28.9 percent of greenhouse gas (GHG) emissions nationally and was followed closely by the electricity production sector at 27.5 percent of GHG emissions in 2017. The burning of fuels, such as petroleum, that are commonly used in transportation accounts for the largest percentage of emissions in the transportation sector.[xii]

The Clean Air Act set national standards for air quality for pollutants that are identified as harmful to public health.[xiii] The NAAQS provides primary standards (e.g. protection of public health) and secondary standards (e.g. protection of property and the environment) for different groups. Based on these standards, the EPA assigns two designations, attainment or non-attainment, to counties. Currently, all of the counties in the MPO planning area meet the EPA's standards and the TMA is classified as in attainment status. Attainment versus non-attainment statuses can greatly impact the permitting, construction, and operations of transportation infrastructure projects.

National Ambient Air Quality Standards (NAAQS)

The NAAQS profiles six criteria pollutants including Carbon Monoxide (CO), Lead (Pb), Nitrogen Dioxide NO_2), Ozone (O_3), Particle Pollution (PM), and Sulfur Dioxide (SO_2).

Source: U.S. Environmental Protection Agency

The Rockford Region currently has three monitors in service. The first is an ozone monitor at Maple Elementary School, 1405 Maple Avenue, Loves Park, Illinois. Until 2007, there was a second monitor in the region for ozone, located at Walker Elementary School, 1500 Post Avenue, Rockford, IL. However, this monitor was discontinued in 2008. The region also has two a particulate matter monitors, one located at the City of Rockford Health Department, 201 Division Street, Rockford, Illinois and another located at the City of Rockford Fire Department Administration Building, 2040 South 1st Street, Rockford, IL. The region had a carbon monoxide monitor at Rockford City Hall, 425 E. State Street, Rockford, Illinois, however this monitor was discontinued in 2013.

Ozone

Ground-level ozone is created by chemical reactions between oxides of nitrogen (NO_2) and volatile organic compounds (VOC) in the presence of sunlight. Emissions from industrial facilities and electric utilities, motor vehicle exhaust, gasoline vapors, and chemical solvents are some of the major sources of NO_2 and VOC.

Breathing ozone, a primary component of smog, can trigger a variety of health problems including chest pain, coughing, throat irritation, and congestion. It can worsen bronchitis, emphysema, and asthma. Ground-level ozone also can reduce lung function and inflame the linings of the lungs. Repeated exposure may cause permanent lung damage, scarring lung tissue. Ground-level ozone also damages vegetation and ecosystems.

The Environmental Protection Agency (EPA) standard for ozone is no greater than 0.070 parts per million (ppm) for an 8-hour average concentration, averaged over 3 years. When tabulating results, the worst value for a year is referred to as the "first maximum", the next the "second maximum", and so on. Over a given year, the EPA takes the "fourth maximum" value and compares it to the standard of 0.070 ppm. Based upon current information, the MPA is in conformity with the 0.070 ppm ozone standard with only 3 days exceeding the standard in 2018.

Particulate Matter

Particulate Matter is the term for a mixture of solid particles and liquid droplets found in the air. Some particles, such as dust, dirt, soot, or smoke, are large or dark enough to be seen with the naked eye. Others are so small that they can only be detected using an electron microscope.

These particles can be made up of hundreds of different chemicals.

Some particles, known as primary particles, are emitted directly from a source, such as construction sites, unpaved roads, agricultural fields (especially during harvest times), smokestacks, or fires. Others form in complicated reactions in the atmosphere of chemicals such as sulfur dioxides and nitrogen oxides that are emitted from power plants, industries, and automobiles. These particles, known as secondary particles, make up most of the fine particle pollution in the country.

There are two categories of Particulate Matter regulated by the Environmental Protection Agency (EPA), Particulate Matter smaller than 10 micrometers (PM_{10}) and Particulate Matter smaller than 2.5 micrometers ($PM_{2.5}$). In the Rockford Region, only $PM_{2.5}$ is measured. The EPA standard for $PM_{2.5}$ for a 24-hour average concentration is 35 micrograms per cubic meter of air.

Data indicates that the levels of $PM_{2.5}$ in the Rockford Region are at acceptable levels, and show continued progress towards lower and lower annual means, as well as 98th percentile data. While this data is encouraging, it is in the best interests of the region to continue enacting and developing procedures for $PM_{2.5}$ mitigation and tracking.

Air Quality Categories

Good – Air quality is considered satisfactory, and air pollution poses little or no risk.

Moderate - Air quality is acceptable; however, for some pollutants there may be a moderate health concern for a very small number of people.

Unhealthy for Sensitive Groups- Although general public is not likely to be affected at this AQI range, people with lung disease, older adults and children are at a greater risk from exposure to ozone, whereas persons with heart and lung disease, older adults and children are at greater risk from the presence of particles in the air.

Unhealthy - Everyone may begin to experience some adverse health effects, and members of the sensitive groups may experience more serious effects.

Very Unhealthy- This would trigger a health alert signifying that everyone may experience more serious health effects.

Hazardous - This would trigger a health warnings of emergency conditions. The entire population is more likely to be affected.

Source: U.S. Environmental Protection Agency

Implications

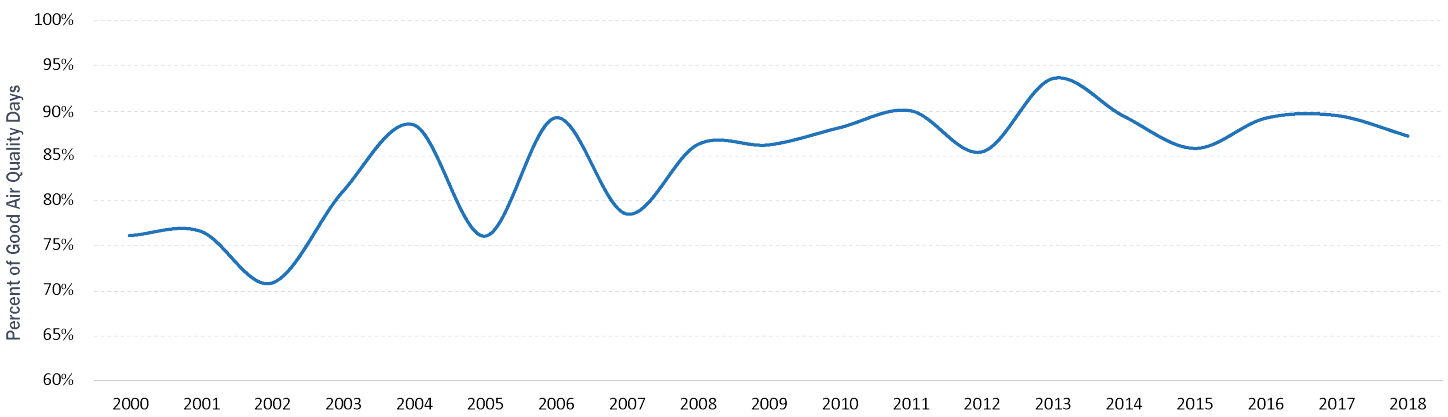
Data indicates that the region continues to maintain a "good" air quality status across all of pollutants tracked. Of the 362 days tracked in 2018, the region had 316 days with good air quality (87.3 percent), 43 days of moderate air quality (11.9 percent), 2 days of unhealthy air quality for sensitive groups (0.6 percent), and 1 day of unhealthy air quality (0.3 percent). Since 2000, the region has seen an increase in the number of good air quality days and a stabilization in this number has occurred since 2015. Figure 3-13 shows the percentage of days in which the region has experienced good air quality.

The monitor's data discussed indicates that the existing efforts of the MPO and its partners to mitigate air pollution have been effective. Continuing to support policies encouraging reduction in the use of single-occupant vehicles, increased public transit and alternative transportation use, and the use of alternative fuel sources will continue to remain a priority for the region. While the region has made great progress in reducing congestion and spurring shifts in modes of transportation used, more initiatives to improve air quality should be sought.

Water Quality

The MPA is home to a host of diverse rivers, lakes, and waterways – offering an abundance of surface and subsurface waters. The region's rivers, the Rock River, Pecatonica River, Kishwaukee River, and Sugar River, provide an abundance of resources that fostered rapid development throughout the 20th century. The region's largest river, the Rock River, is 163 miles long with a total drainage area of 2,272,000 acres and connects with the region's other major rivers and streams. The region's second largest river, the Pecatonica River, is 63 miles long and has a total drainage area of around 800,000 acres. Many of the region's municipalities have developed along these rivers. While there are many benefits provided by the area's rivers, whether it is water resources

Figure 3-13. Percent of "Good" Air Quality Days for the Rockford Metropolitan Area, 2000-2018



Data sources: U.S. Environmental Protection Agency

or fertile agricultural land, they can also create a number of issues. Water quality is a public health concern as it is integral to human life. Water affects nutrition, public health, and sanitation. The main issue impacting the region's rivers are pollution from agriculture, industrial, and stormwater runoff.

Stormwater Mitigation

Stormwater runoff occurs when precipitation from rain or snowmelt flows over the land surface because it is not able to infiltrate the surface material at an equal rate. The addition of roads, driveways, parking lots, rooftops, and other surfaces that prevent water from infiltrating into the ground greatly increases the runoff volume created during storms. This runoff is swiftly carried to our local streams, lakes, wetlands, and rivers; it can cause flooding, erosion, and wash away important habitat for flora and fauna that live in and around waterways. Stormwater runoff also picks up and carries with it many different pollutants that are found on paved surfaces such as sediment, nitrogen, phosphorus, bacteria, oil and grease, trash, pesticides, and metals. It comes as no surprise then that stormwater runoff is the number one cause of stream impairment in urban areas, and Rockford is no different.

To reduce the impacts of runoff on urban streams, the Environmental Protection Agency (EPA) expanded the Clean Water Act in 1987 to require municipalities to obtain permits for discharges of stormwater runoff. As a result, many communities have adopted regulations requiring developers to install stormwater management practices that reduce the rate and/or volume and remove pollutants from runoff generated on their development sites.

Even with local regulations in place, flooding represents a substantial issue in the region. As many areas upstream have urbanized, there are fewer natural areas for water to infiltrate soil. Combined with intense and frequent downpours, this has resulted in significant flooding events that affect not only the region's residents, but also the region's transportation infrastructure; local, state, and federal budgets; and the region's economy. The region is impacted by three kinds of flooding: flash flooding, riverine flooding, and stormwater flooding.

Flooding can be intensified by land use development and transportation infrastructure, especially when development occurs in identified floodplains. Development in floodplains is common due to inexpensive, plentiful land, and historic concentration of municipalities near waterways. However, development in floodplains can be resource intensive over the long-term due to repetitive damage from flooding events and subsequent reconstruction cycles that accompany these events. Stormwater flooding is more likely to occur in heavily urbanized areas because of the distance water often has to travel to infiltrate a porous surface. For context, the City of Rockford has budgeted over $3 million per year for stormwater maintenance, repair, and mitigation actions.[xiv]

Flooding will continue to be an issue for the region over the next 30 years. Stormwater mitigation should be incorporated for any urban or rural area, especially those in close proximity to a waterway. The Federal Emergency Management Agency (FEMA) provides mitigation best management practices for local and state governments to develop their own policies and programs. These practices include property acquisition and demolition; conversion of land located in floodplains into open space; or investment in capital projects that mitigate flooding in certain areas (such as daylighting, improved drains to major waterways, or detention ponds).

Types of Flooding

Flash Flooding: Predominantly affect low-lying areas during periods of intense, rapid rainfall; additionally, areas in close proximity to a river or stream are especially susceptible.

Riverine Flooding: Generally more widespread and longer-term than flash floods; it usually occurs because of heavy, widespread raining over extended periods of time. Areas that are low-lying or in close proximity to a river or stream are especially susceptible.

Stormwater Flooding: (also known as urban flooding) is generally directly attributed to inadequate storm drains or overflow of storm drains combined with intense, rapid rainfall events.

Source: U.S. Environmental Protection Agency

Significant Ecological Resources

Coined the "Region of Four Rivers", the region is home to an extremely rich balance of agricultural land and open space, diversity in species, a collection of dynamic Illinois rivers and many of Northern Illinois most important cold-water streams, as well as the rich natural habitats surrounding those rivers. The MPA includes three Natural Division designations of Illinois and three Conservation Opportunity Areas (COA). The region's many rivers and numerous cold-water streams contribute to the immense natural beauty of the region. Surrounding these rivers is a collection of environmentally sensitive lands that have been preserved as natural or open-space by local and state agencies. More information on the Boone & Winnebago Counties Greenways, open space, agricultural land, and environmentally sensitive areas is included in the following section.

Boone & Winnebago Counties Greenways

One of the most impactful ways in which the MPO has linked transportation and environmental planning is through the development of the regional greenways plan. The development of this plan provides a framework that allows local and state organizations, along with private organizations and individuals, an opportunity to participate in the planning effort and have discussions on the relationships between environmental resources, growth management, and transportation infrastructure. With the completion of the original greenway plan in 1997 and an updated version in 2004, 2011, and 2015, this planning process provides an ongoing basis for agencies involved with transportation, water quality, stormwater and floodwater management, and other environmental and conservation programs to address planning coordination. Through this effort interagency consultation has continued to increase.

In 2015, the MPO developed the fourth iteration of the region's greenways plan. This plan highlights environmental preservation and conservation strategies as well as a regional greenways map. The greenways plan provides, among other things, a demographic makeup of the region, a catalog of the region's greenways and open space, and maps of the region's major trails and paths. More information on the 2015 Greenways: A Green Infrastructure Plan for Boone and Winnebago Counties can be found on the RPC's website.

This plan has been used extensively by the participating agencies as a tool for planning open space acquisition, protection of natural areas, and development of active transportation infrastructure. Additionally, it has been an important resource for grant applications, especially for grants administered by the Illinois Department of Natural Resources (IDNR) and IDOT.

Open Space

Open space provides a number of benefits to the community and quantified through studies highlighting the value of open space as a valuable asset to communities.[xv] In addition to acting as an amenity for both the community and visitors, accessibility to open space has been shown to improve public health, improve rates of physical activity, and reduce social and financial impacts of major natural disasters. Designated open space also serves as a home for the region's diverse ecosystems of trees, plants, and animals. The Rockford Region boasts an ample amount of open space, with the MPA's three counties collectively having over 21,000 acres. Many of these acres are public and private lands are owned by various state and local governments, park districts, conservation districts, non-governmental organizations (NGOs), and not-for-profits. While a significant portion of the MPA is urbanized, neighboring portions of the MPA offer plentiful access to open space in the form of wetlands, nature and forest preserves, conservation easements, trails, public parks, and the largest state park in northern Illinois, Rock Cut State Park.



Windsor Lake. Loves Park, IL

Winnebago County has over 9,300 acres of open space, such as Harlem Hills Nature Preserve, the Kishwaukee Greenway, the Nygren Hills Wetland Trail & Overlook, and the Stone Bridge Trail Land & Water Reserve. In Boone County, there are approximately 1,800 acres of open space. Boone County's open space is predominantly owned and managed by the Boone County Soil & Water Conservation District. In Ogle County, there are over 10,300 acres of open space. In the three counties, private groups make up the dominant owners of open space, followed by the State of Illinois, local governments, and then NGOs.

Prime Farmland

Prime farmland is defined by the Illinois Department of Agriculture (IDOA) as "land that has the best combination of physical and chemical characteristics for producing food, feed, fiber, and oilseed crops, and is also available for these uses; cropland, pastureland, rangeland, forest lands, but not urbanized land or water." It has the soil quality, growing season, and moisture supply needed to produce sustained high yields of crops economically when treated and managed, including water management.[xvi] Much of the farmland in Illinois is considered prime farmland, according to the Farmland Information Center, with approximately 89 percent of the acreage considered prime, or about 19.5 million acres.[xvii]

At the regional level, much of the farmland is protected, either through easements or regulations, from development. Historically, the region's development patterns have contributed to a loss of farmland as urban and suburban areas grew.

While agriculture comprises a relatively small portion of employment, less than 5 percent of the total regional employment, it represents a substantial portion of land for the three counties, see Table 3-8.

Environmentally Sensitive Areas

Environmentally sensitive areas, including wetlands, floodplains, and special natural communities, play a vital role in the region's ecosystem. These areas remove harmful pollutants from the air and water, provide natural habitat for the area's diverse biological makeup, and provide aesthetic amenities, such as parks, greenways, and open space. Environmentally sensitive areas tend to be costly to develop, as they may impose natural hazards to development, and are often expensive to modify to a buildable standard. The construction of transportation infrastructure through environmentally sensitive areas greatly

Table 3-8. Farmland Acreage by County

	Available Farmland	Active Farmland	Farms
Boone	113,500	106,043	457
Ogle	354,587	326,755	1,011
Winnebago	178,633	161,005	736
3-County Total	**646,720**	**593,803**	**2,204**

Data source: U.S. Department of Agriculture

increases project costs and may slow project delivery due to NEPA and other regulations. The MPO will work closely with MPO Technical Committee members and other natural resource partners to identify approaches that will cause the least disruption of environmentally sensitive areas in the region while promoting environmental protection with active transportation strategies. Types of activities that will be considered for mitigating the impacts of transportation projects are: wetland replacement; avoidance of habitat fragmentation; preservation of habitat for endangered species; replacement of trees and other types of vegetation, identification and creation of mitigation banks within the watersheds of possible projects; planting native vegetation; buffering existing parks, forest preserves and other parkland from high-impact land use development; working with the land use controls of the local units of government to adopt policies that would avoid environmentally fragile areas; and develop landscaping plans and other amenities that would restore and enhance the ecological values of the land.

Looking Ahead

Since 2000, the region has be experiencing more severe weather events per year with notable examples including periods of extreme flooding, prolonged periods of drought, and intense thunderstorms. The impacts on the region have resulted in large amounts of monetary damage, lost lives, and intensified strain on resources. Continued development in natural areas can lead to long-term impacts, such as flooding and pollution. Linking environmental to transportation planning and decision-making process improves the quality of life for residents of the region. Environmental protection and conservation can have long-term benefits to the region and surrounding areas.

Conservation

The region will continue to support policies, plans, and initiatives that facilitate the protection of the natural environment and its resources. Looking forward to 2050, the region will be facing more unstable climate and increased demand on natural resources. Policies, plans, and programs that promote the enhancement or conservation of natural resources, along with limiting development in naturally significant areas should be incorporated at the outset of every transportation planning process.

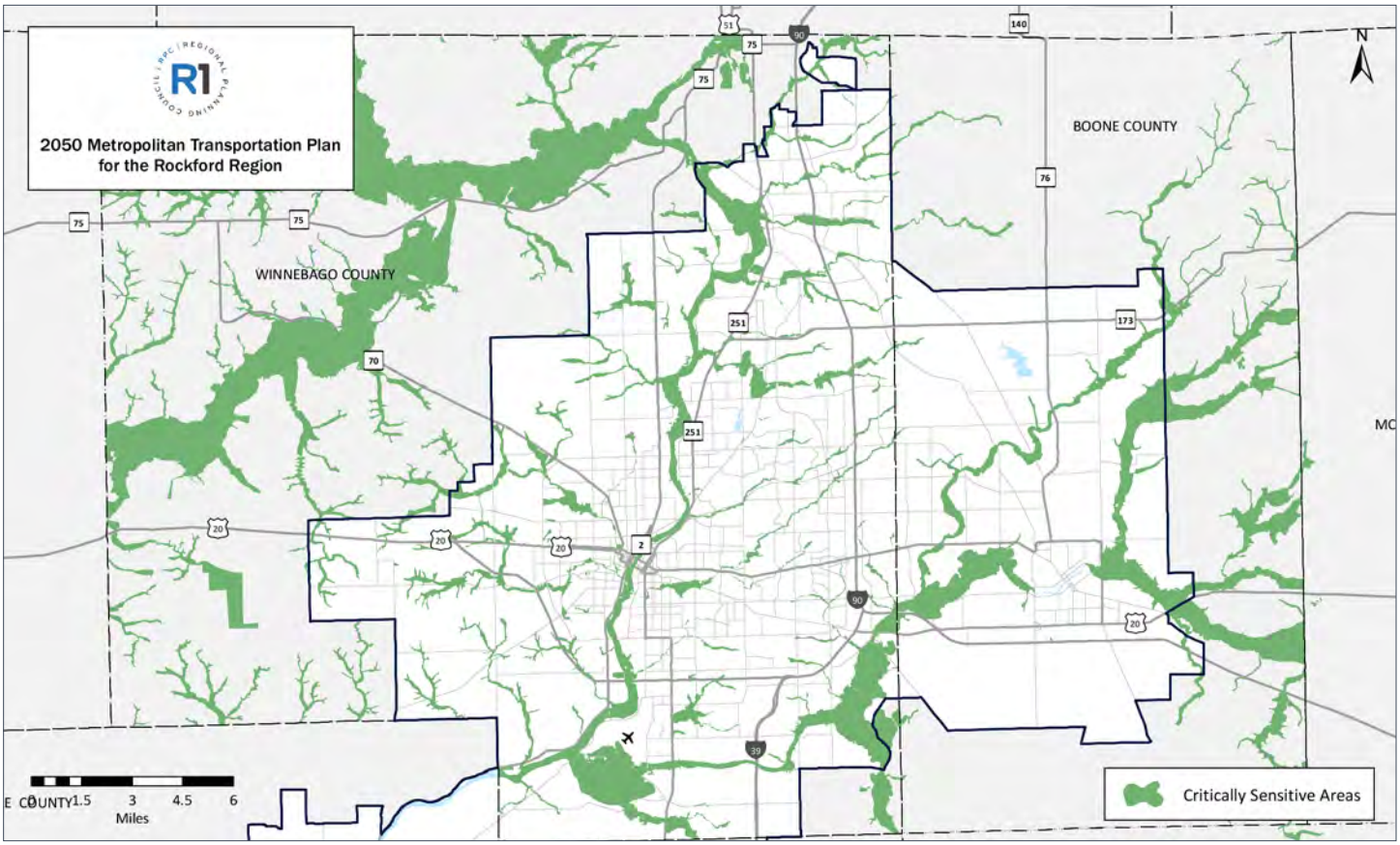
Working with regional partners, the MPO places emphasis on planning and environmental linkages in both the transportation planning process, but also within other regional planning initiatives in which it provides technical assistance, such as:

- **Surface Transportation Block Grant (STBG) and Metropolitan Transportation Plan (MTP) Alignment:** The MPO incorporates environmental and land use considerations into the selection criteria for the STBG and will continue to do so in future awards. Additionally, the MPO incorporates environmental and land use considerations into the project prioritization process through the MTP and will continue to do so in the future. The MPO's considerations include criteria relating to alignment with local comprehensive plans; incorporation of alternative transportation; inclusion of other improvements or investment into urban infrastructure; impacts on the natural environment, which includes language relating to the project's proximity to an environmentally sensitive area or historic resource; and inclusion of green infrastructure elements.
- **Corridor Studies and Sub-Area Plans:** The MPO does and will continue to offer specialized sub-area and corridor planning as a service. For example, the MPO is coordinating with the City of Rockford with the intention to develop a Keith Creek Corridor Study; this plan would analyze the linkages between the environment, land use, and transportation; within the scope of an environmentally fragile area. This project is currently seeking funding to develop the study.
- **Greenways Planning:** The MPO leads the region in the development of both local and regional greenways, trails, park, and path plans. In 2015, the MPO was the lead on the regional greenways plan known as the 2015 Greenways: A Green Infrastructure Plan for Boone and Winnebago Counties. The MPO was the project lead, assisted in the development of the plan and continues to assist today with the implementation of recommendations included in that plan. The MPO is intending to develop an updated version of this greenways plan in the coming years. The MPO will continue to support regional greenways, trails, parks, and path plans that encourage resiliency, sustainability, and resource conservation.
- **Comprehensive Planning:** The RPC continues to work with regional partners in updating or creating their comprehensive plans. The RPC supports comprehensive



Farmland. Boone County, IL

Figure 3-14. Environmentally-Sensitive Area in Boone & Winnebago Counties



Data source: Illinois Department of Natural Resources

planning with local and regional partners with the intention that they will implement comprehensive planning initiatives and policies that support and align with other existing plans. The RPC has assisted with a number of local comprehensive plans, particularly focusing on the connection between land use, conservation, and transportation planning; for example, the update to the City of Loves Park and Boone County Comprehensive Plans and the current development of the City of Belvidere and Village of Poplar Grove Comprehensive Plans. The RPC will continue to support and encourage comprehensive planning from the local and regional levels to support regional planning consistency.

- **Regional Land Use and Environmental Planning:** Through the MPO, land use and environmental considerations have been and will continue to be at the forefront of local and regional planning initiatives. The MPO actively coordinates with local partners to ensure cohesion among their policies, plans, and goals. The MPO has coordinated with the Winnebago County Highway Department on the development of the County's Multi-Hazard Mitigation Plan, which is necessary to maintain compliance and eligibility for Federal Emergency Management Agency (FEMA) grants. The MPO is intending to work with the County in late 2020 to update their Surface Water Management Ordinance; particularly with updating language relating to stormwater management.

The MPO will continue to support regional land use and environmental planning as it pertains to regional plans, policies, goals, and initiatives.

Air and Water Quality

The region's air and water quality is directly linked to its livability and sustainability. Both resources are heavily influenced by transportation and land use development. Air quality is heavily related to transportation sectors; whereas water quality is often affected by both industrial and agricultural activities. The MPO supports a number of ongoing regional initiatives intended to improve the region's air and water quality, as well as incorporates air and water quality considerations throughout the transportation planning process. For example, the MPO is assisting local partners in identifying and securing funds for a regional 3D Groundwater Model that would provide an analysis of the current quantity of underground water within the region's aquifers. Additionally, the MPO is assisting on a 11-county Northwest Illinois Water Study to assess the water quality and is coordinated by the Blackhawk Hills Regional Planning Council. In addition to assisting with these two studies, the MPO sits on several watershed advisory committees, including the Raccoon Creek Watershed Plan and the South Fork Kent Creek Watershed Study. The MPO will continue to support regional environmental and land use initiatives that seek to protect and enhance the region's air and water quality.









Part 4
Regional Transportation System

An extensive transportation system is needed to support the various needs of the people and movement of goods throughout the Rockford metropolitan planning area (MPA). In order to effectively plan for the future transportation system, it is important to understand the existing elements within the system. These elements include a variety of transportation modes, as well as the underlying infrastructure, services, and technology that supports each mode. Equally as important is understanding how the interconnected nature of the transportation system is needed to ensure the movement of people and goods is as efficient and safe as possible.

While an analysis of the existing transportation system is key in planning for the future, transportation is rapidly changing. New technologies, services, and trends will have a major influence on the future transportation system in the Rockford MPA. Looking forward, emerging trends will change how the transportation system operates and effect how it will need to be managed. Some trends include autonomous and connected vehicles, door-to-door freight services, and mobility as a service options. Examining both the current system and emerging trends, the 2050 Metropolitan Transportation Plan will be the blueprint for the regional transportation system over the next 30 years.

This chapter provides an overview of the current conditions of the regional transportation system and identifies needs and gaps in the existing system, as well as highlights emerging trends that may impact the region in the future. The regional transportation system has been broken into three sections: the roadway network, alternative transportation options, and the freight system and goods movement.

As the primary means by which people and goods travel within and through the region, the first section of this chapter provides an overview of the roadway network, including an examination of the network's safety, security, resiliency, and management and operations. The second section highlights alternative transportation modes in the region, including bicycling and walking, public transportation, and proposed passenger rail. Additionally, this section provides insight into the innovative mobility services that are becoming more prevalent within the region. Finally, the chapter focuses on the freight and goods movement within the region, as it is key to the region's economic prosperity. Also, discussed in the final section is the Rockford MPA's role in the broader Midwest Chicago Megaregion.

Roadways & Structures

As mentioned, the roadway network is the primary means of travel, both for personal travel and freight movements, within and through the Rockford MPA. The majority of transportation modes that will be discussed within this chapter are dependent upon the roadway network. The following section describes the current characteristics of the roadway network, including usage, safety and security, resiliency and redundancy, management and operations, asset conditions, and its impact on the region.

System Network

Roadways are the most visible component of the surface transportation system and are the primary means by which people and goods travel. One of the greatest assets to the regional economy and quality of life is the region's location within the national and state highway system. The Rockford MPA serves as the convergence of three major highways: Interstate 90 (I-90), Interstate 39 (I-39), and U.S. Route 20 (US 20). These strategic highways are supported by the regional network of state, county, township, and local highways and roads. The combined state, county, and local roadway network in the Rockford MPA encompasses 2,507 centerline miles.[i]

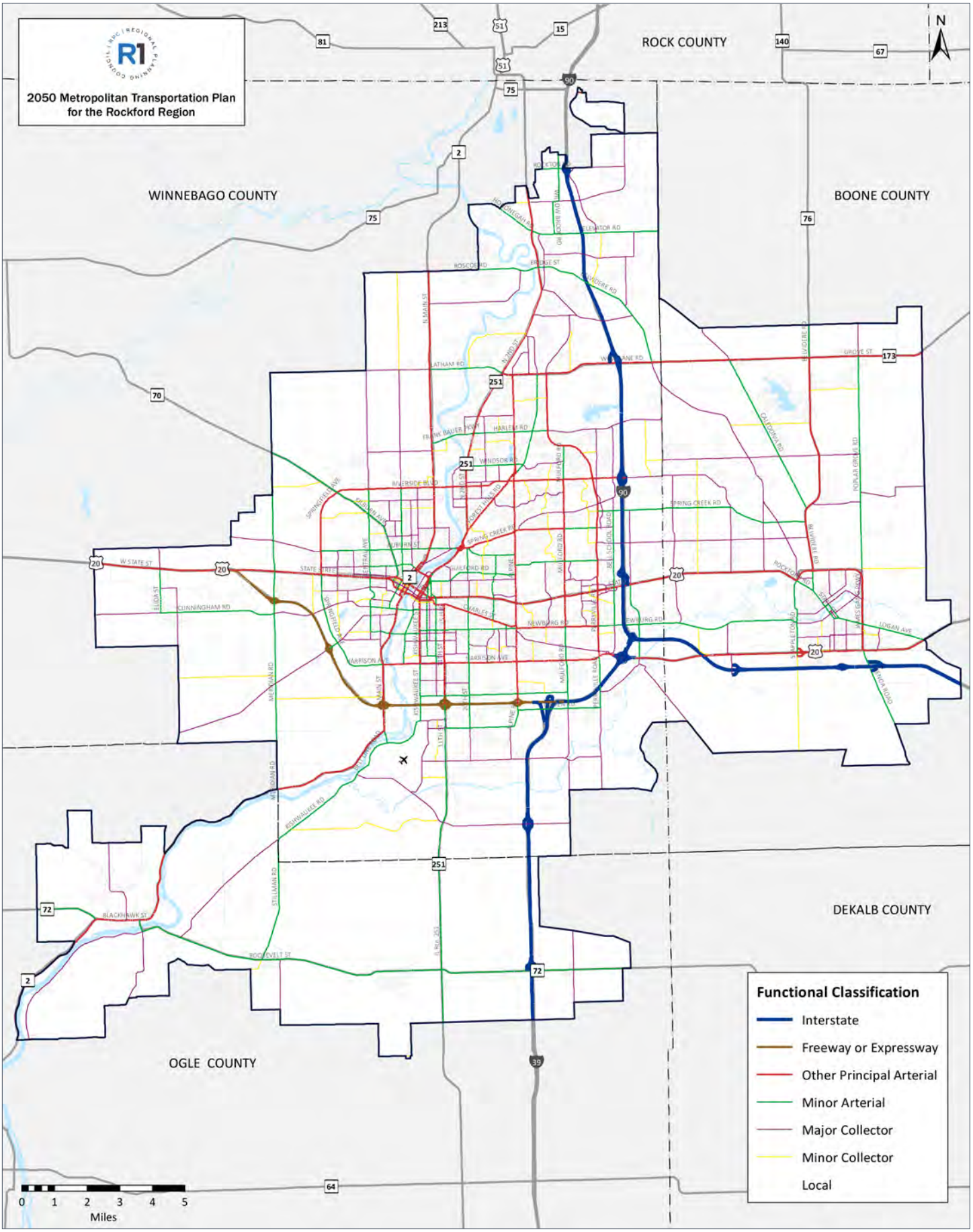
Roadway Functional Classification System

For planning purposes, roadways are classified according to two functions, mobility and access. These two functions lie at opposite ends of the spectrum; most roads provide some combination of both. Higher speeds and fewer intersections are preferred for mobility, while lower speeds and more frequent intersections support access. Roadways are classified by the role they play in the overall transportation network, known as Functional Classification. This hierarchy is broken into Arterial, Collector, and Local categories. Arterials provide the highest level of mobility; local roads provide mostly land access; and collectors have a balanced combination of both.

While the distinction between mobility and access is important in assigning functional classification, several other factors are also considered in the assignment. These factor into the efficiency of travel, access points, speed limits, route spacing, number of lanes, usage volumes, and regional or statewide significance.[ii] These additional factors allow the three main categories to be broken down further to define roadways by the range of mobility and access functions they may serve.

The region's functional classification network is shown in Figure 4-1 and mileage by designated functional classification is presented in Table 4-1.

Figure 4-1. Roadway Network by Functional Classification



Data sources: Illinois Department of Transportation

Functional Classifications

Interstates: Interstates are the highest classification of arterial highways. These roadways are designed and constructed with mobility, long-distance travel, higher-speeds, and high volumes in mind. The Interstate System provides a network of limited access, offering high levels of mobility while linking major urban areas across the nation.

Freeway & Expressway: Roadways in this classification look very similar to Interstates. Like interstates, these highways are designed and constructed to maximize mobility and are not directly accessible by adjacent land uses. These roadways have directional travel lanes, usually separated by some types of physical barrier, and their access is limited to on- and off-ramp locations or a very limited number of at-grade intersections.

Other Principal Arterial: Other Principal Arterials serve major centers of metropolitan areas while providing a high degree of mobility and can also provide mobility through rural areas. Other principal arterials can range from limited access highways to semi-limited roadways that carry high volumes of traffic and are typically used for long trips within the region, as well as connect into statewide or nationwide networks. Access to this type of roadways is at-grade intersections or a limited number of driveways to specific parcels.

Minor Arterial: Minor arterials also provide for high-speed and/or high-volume traffic, but are typically under local jurisdiction. Minor arterials often form boundaries around recognized "neighborhoods" and collect traffic from collector streets. Minor arterials provide more land access than Principal Arterials without penetrating identifiable neighborhoods.

Major Collectors: Major collectors are designed for more moderate-speeds and traffic volumes than arterials. They collect traffic from the neighborhoods and direct it to the nearest arterials, usually over a distance greater than three-quarters of a mile. Access to collectors is not as strictly controlled as with arterials but often access is directed to the local streets. They serve both land access and traffic circulation in higher density residential and commercial/industrial areas.

Minor Collectors: Minor collectors have operating characteristics of lower speeds than major collectors and also fewer signalized intersections. They distribute and channel trips between local roads and minor arterials, usually under a distance of three-quarters of a mile. Minor collectors penetrate residential neighborhoods of varying densities, but often for only a short distance before connecting to a more major roadway classification. They serve both land access and traffic circulation in lower density residential, commercial, and industrial areas.

Local Roads: Local roads and streets account for the largest percentage of all roadways in terms of mileage. They allow direct access to homes, businesses, and to adjacent lands. Traffic control devices, such as stop signs, are sometimes used to discourage through traffic.

Source: Federal Highway Adminstration[iii]

Table 4-1. Functionally Classified Centerline Miles and Lane Miles

Functional Classification	Centerline	Lane
Interstate	60.2	229.1
Freeway & Expressway	20.9	58.7
Other Principal Arterial	170.3	577.8
Minor Arterial	193.7	486.4
Major Collector	268.2	553.1
Minor Collector	82.3	168.1
Local Roads & Streets	1,711.1	3,430.1
Total	**2,506.7**	**5,503.2**

Data source: Illinois Department of Transportation

Roadway Jurisdictions

When an agency has jurisdiction of a street or highway, that agency has the authority and obligation to administer, control, construct, maintain, and operate it. Identifying roadway jurisdiction is an important aspect of the roadway system for two reasons: expense and liability. Routine maintenance of a street or highway is an expensive operation; as is major improvements, including repairs and replacements to structures along the roadway. Routine maintenance and major improvements can consume a substantial portion of an agency's budget. Additionally, an agency having jurisdiction of a roadway has a liability risk in cases involving the condition of those roadways.[iv] The surface transportation system in the Rockford MPA is divided into several jurisdictional systems: state, county, municipal, townships, and other systems.

- **State Highway System:** The state highway system, as defined by IDOT, consists of all highways under the jurisdiction of the Illinois Department of Transportation and contains Interstate highways, all other marked State and U.S. Routes, and some unmarked routes. It is important to note that within the Rockford MPA, the Illinois State Toll Highway Authority (Illinois Tollway) has jurisdiction of I-90.
- **County Road System:** Typically, county governments are responsible for all roads within their boundaries that are not on the State or township highway systems and are not within the corporate limits of a city or village.
- **Municipal Street System:** The municipal system includes public roads and streets within the corporate limits of municipalities, except those on the federal, state, county, and tollway systems.
- **Township System:** The township system consists of all remaining rural (outside corporate limits and outside urban area boundaries) routes, excluding other jurisdictions.
- **Other Systems:** These include other private routes under the jurisdiction of state agencies (e.g., Illinois Department of Natural Resources), federal agencies, and the toll authorities or toll commissions.[v]

While most roadways within the MPA follow the general guidelines of jurisdictional responsibilities detailed above, there are instances in which one agency is responsible for a roadway that would not necessarily fall into its system. For instance, the county

may have jurisdictional responsibility of a roadway within the corporate limits of a municipality. This normally occurs through a jurisdictional transfer. Jurisdictional transfers occur when the jurisdiction of a highway and/or structure is transferred from one agency to another.[vi]

Jurisdiction vs Maintenance

For roadways and structures, there is a difference between jurisdictional responsibility and maintenance responsibility. Jurisdiction entails the responsibility for the entire roadway, even if maintenance duties are completed by another entity. For example, a township can enter into a maintenance agreement with the county to perform maintenance on a section of roadway that is under their jurisdiction. However, the township is still ultimately responsible for ensuring that the maintenance is performed in a satisfactory manner.[vii]

More information on maintenance of roadways and structures can be found under Asset Management.

Table 4-2. Jurisdiction Centerline Miles and Lane Miles

Jurisdiction	Centerline	Lane
IDOT	208.9	606.6
Other State Agency	11.3	21.8
County	203.8	472.6
Muncipality	1,310.3	2,771.9
Private (inc. Tollway)	87.1	263.7
Township	685.3	1,366.7
Total	**2,506.6**	**5,503.2**

Data source: Illinois Department of Transportation

Jurisdictional Transfers

Mandatory: This type of transfer occurs when it is mandated through statute. For example, a municipality that annexes an area that includes a township road is mandated by statute to assume jurisdictional responsibility of the township road. IDOT is not required to approve this type of transfer.

Agreed-to: This type of transfer occurs because the logical need to transfer authority from one agency to another. For example, relocating an existing state highway may result in decreased traffic occurring on the old state highway. Thus, the old state highway may be better served under the jurisdiction of a county, municipality, or township highway system. IDOT is required to approve this type of transfer.

Source: Illinois Department of Transportation

System Designations

In addition to classifying roadways based upon their function, many highways and roads have been designated as part of a larger highway or roadway system. System designations are assigned to a specific roadway to highlight its importance within a broader system. These designations are assigned both at the national and regional level.

National Highway System

The National Highway System (NHS) is a network of strategic roadways important to the nation's economy, defense, and mobility. The NHS is developed by the U.S. Department of Transportation in coordination with the states, local officials, and MPOs.[viii] The NHS includes the following subsystems of roadways:

- **Interstate:** The Eisenhower Interstate system of highways retains it separate identity within the NHS;
- **Other Principal Arterials:** These highways provide access between an arterial and a major port, airport, public transportation facility, or other intermodal transportation facility;
- **Strategic Highway Network (STRAHNET):** This is a network of highways which are important to the United States' strategic defense policy and which provide defense access, continuity, and emergency capabilities for defense purposes;
- **Major Strategic Highway Network Connectors:** These are highways which provide access between major military installations and highways which are part of the Strategic Highway Network; and
- **Intermodal Connectors:** These highways provide access between major intermodal facilities and the other four subsystems making up the National Highway System.

Within the Rockford MPA, 252 miles of roadways are designated as a part of the NHS. A map of the National Highway System is shown in Figure 4-2.

Strategic Regional Arterials

The Strategic Regional Arterials (SRAs) system is a network of highways designed to accommodate long distance regional traffic, to compliment a region's major transit and highway facilities, and to supplement the freeway system. IDOT's SRA concept was originally developed for northeastern Illinois and is presented in the Strategic Regional Arterial Design Concept Report, titled "Operation Green Light", published by IDOT. However, this concept could apply to other cities and regions throughout the state.

While the concept of an SRA system was originally created for the Chicagoland area, the Rockford MPO has previously developed a similar system that capitalizes on the intent of the SRA system but at a smaller scale. Figure 4-3 shows the SRA system for the Rockford MPA. The "ring road" is the region's adaptation of the Chicago SRA system. This ring is comprised of Harrison Avenue, Springfield Avenue, Riverside Boulevard, and Perryville Road. State Street and Spring Creek Road bisect the ring thus giving it interior access points. These facilities are under the jurisdiction of many

Figure 4-2. National Highway System, 2018

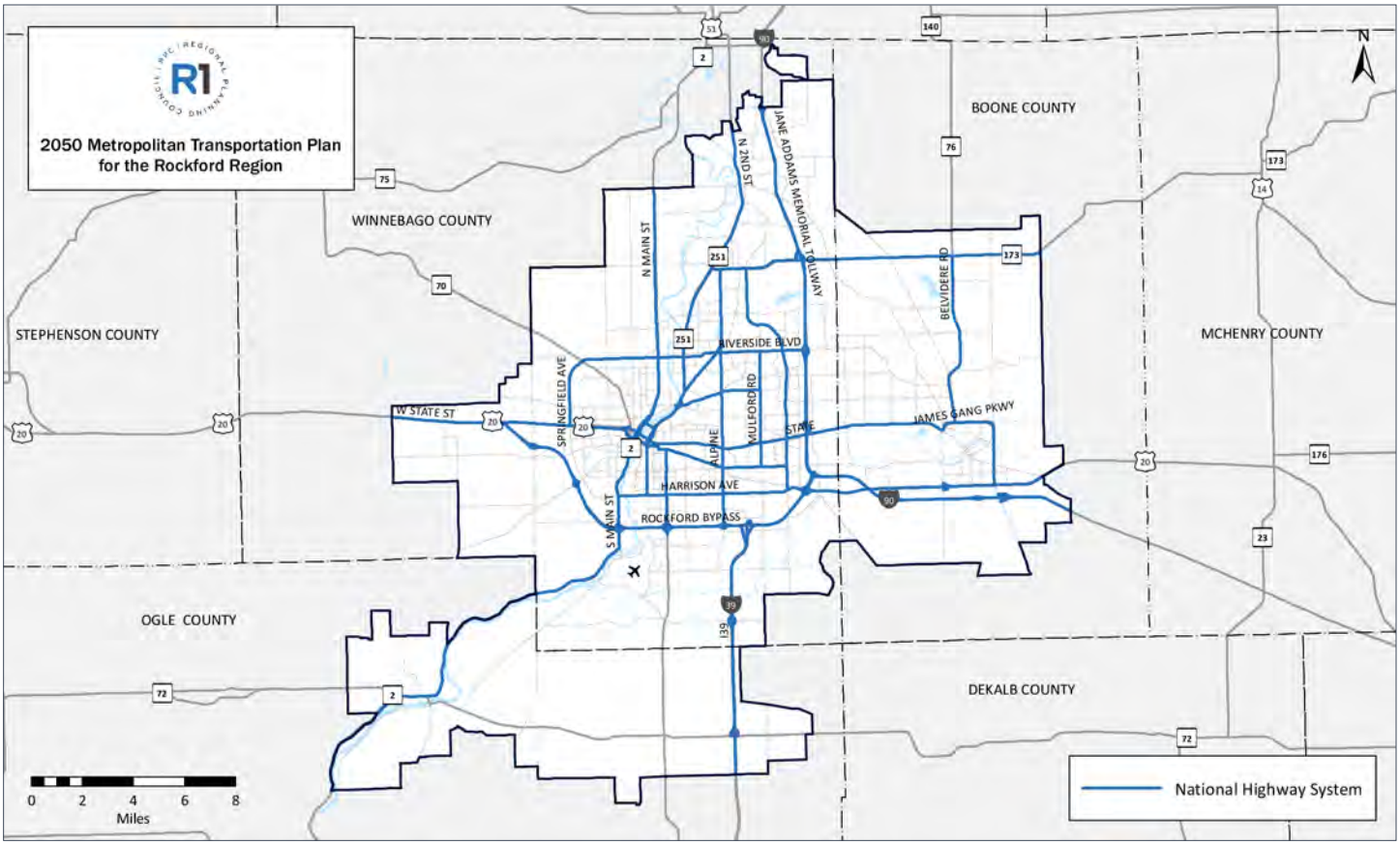
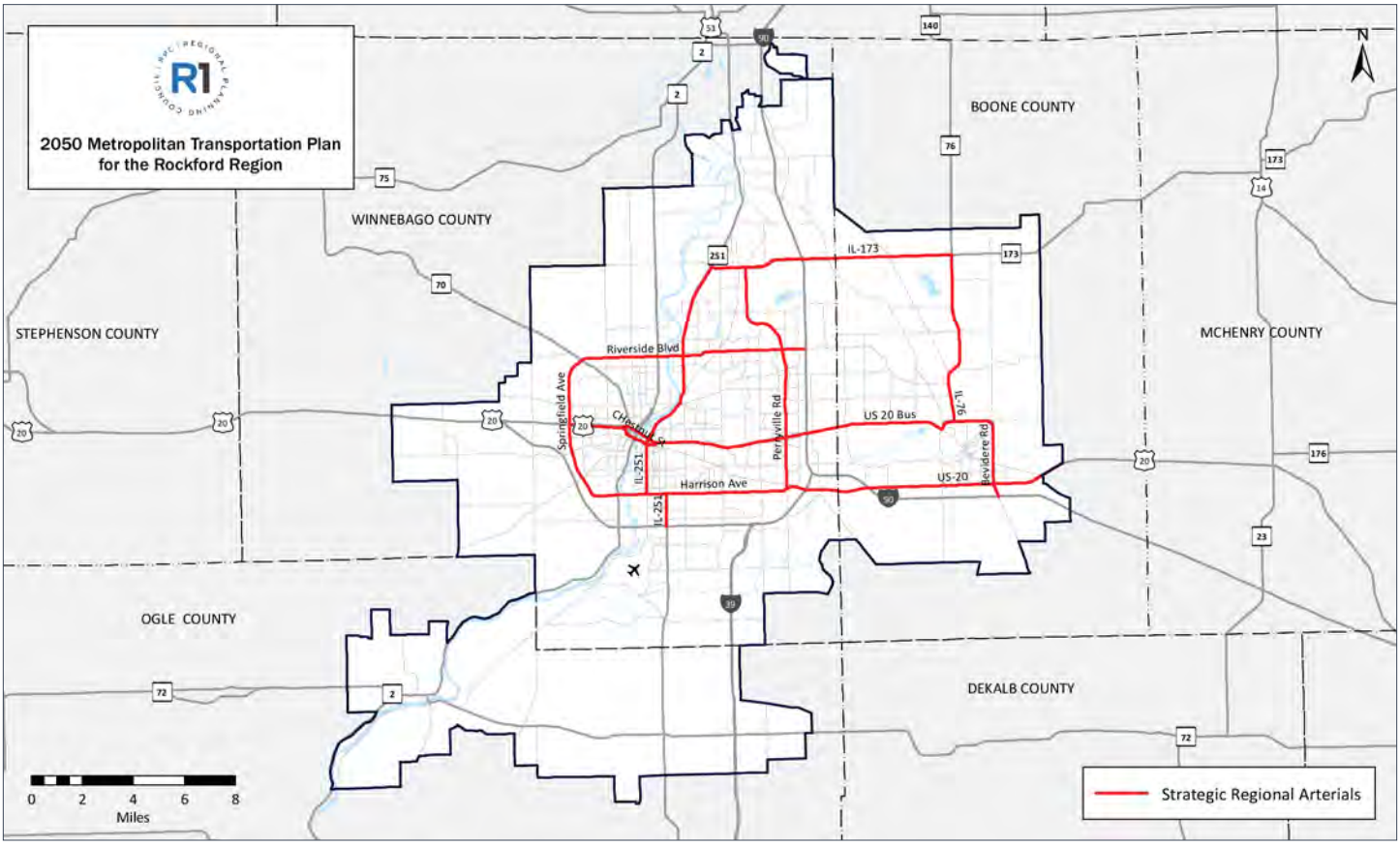


Figure 4-3. Strategic Regional Arterials



Data sources: Illinois Department of Transportation

agencies due to the substantial miles it covers as it circumvents the region.

These SRAs are designated similar to that of Chicago's system, with limited access, large lane widths, ample right-of-way (ROW), and higher speeds. These roadways are key for passenger and freight movement in the region as many commercial and industrial companies have located along this system to take advantage of mobility to and from other major routes in the region: US-20, IL-2, IL-251, and I-90/39. It is important to keep functionality of this roadway system at a maximum level of service (LOS) so that it remains the most efficient way to navigate long distances within the urban area.

Recently, many of the roadways and structures that comprise the region's SRA have undergone improvements or are currently under construction. Harrison Avenue, which was selected by the MPO to receive Surface Transportation Program[1] funds, is in the final stages of reconstruction. However, there are sections of the region's SRA network that are currently operating at a substandard rate and need to either be reconstructed or studied to return the facility to functional and acceptable levels.

Since the adoption of the previous long range transportation plan, the MPO has determined it is satisfied with the current system and no additional linkages are needed. If linkages are added, additional funding will be needed to ensure that the expansion of the SRA system does not subtract from the maintenance and operations of the existing system, which is required to be kept in a state of good repair.

Looking Forward

Connectivity

Providing a strong connected network of roads and active transportation facilities is key in decreasing congestion, reducing travel distances and times, improving the routing of public transportation, and reducing walking and biking distances. Connectivity is defined as the measurement of a system of roads with multiple routes and linkages serving the same origins and destinations. However, system connectivity not only relates to the number of intersections or routes in the system but also how the entire region is connected by the transportation system. While there are various connectivity concerns across all modes of transportation in the region, the following section focuses the connectivity of the region's functionally classified facilities, including arterial and collector roadways. More information on connectivity related to alternative transportation modes and facilities can be found in the Alternative Transportation section of this chapter. The following highlighted projects are examples of the types of connectivity needs within the region and a more robust listing of transportation improvements is listed within the fiscally-constrained roadway project list of the Part 5: The Financial Plan.

When asked during the 2050 MTP's Transportation Needs & Priorities Survey, how select investment priorities should be ranked when considering transportation project selection, increased connectivity ranked third.

North-South Connectivity

North Lyford Road is a major collector parallel to I-90 and provides a north-south connection between East State Street and East Riverside Boulevard. As with many formerly rural areas within the region, this roadway has been developed to respect agricultural land with offset intersections, however as commercial and industrial growth has occurred adjacent to I-90, there has been rising concern regarding connectivity. Of particular concern is the connection of East State Street to the newly constructed Javon Bea Hospital and other commercial growth on East Riverside Boulevard. Currently, North Lyford Road is experiencing traffic flow interruptions at Spring Creek Road, as shown in Figure 4-4, where it is offset by two T-intersections. To improve flow between East State Street and the East Riverside Street, realignment of T-intersections to a single four-legged intersection may be warranted. However, further traffic analysis and studies would need to be conducted as converting two offset T-intersections into a conventional four-legged intersection requires a significant investment of both funding and time.

Another frequently identified north-south connectivity concern in the region is located just north of the North Lyford Road and Spring Creek Road intersections. As noted, significant commercial and industrial growth has occurred at the I-90 interchange at East Riverside Boulevard as well as the I-90 interchange at IL-173 (West Lane Road). This growth has raised concerns over the connectivity between these two major roadways. Specifically, the

Figure 4-4. Lyford Road and Spring Creek Intersections



Data sources: WinGIS

1 Surface Transportation Program has been renamed the Surface Transportation Block Grant (STBG) under Fixing America's Surface Transportation (FAST) Act.

discontinuation of Paulson Road/Paladin Parkway at Harlem Road has been noted. The current configuration is shown in Figure 4-5. The completion of the segment between Harlem Road and IL-173 would have numerous benefits for the region as it would be the final segment in connecting East State Street to IL-173 east of I-90. Just as with the realignment of North Lyford Road, further studies would need to be conducted to determine the feasibility of completing this connection, including an environmental impact study due to its proximity to several large regional parks and Rock Cut State Park.

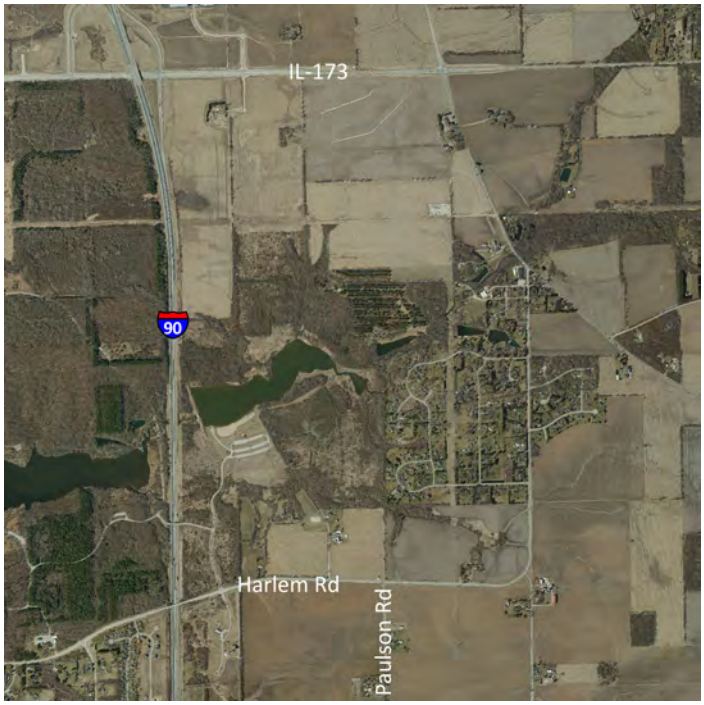
Located in Boone County, a connection between IL-76 and Townhall Road has been an identified need in the region over the past few decades. As a project listed in the previous iteration of the MTP, the IL-76 extension project still remains regionally significant. The construction of the I-90 interchange at Irene Road resulted increased traffic movements between Townhall Road and Caledonia Road. In order to accommodate current and projected traffic, the project proposes the realignment of IL-76, in addition to the construction of new roadway segments and reconstruction of others. At this time, further coordination between Boone County, the City of Belvidere, and IDOT District #2 is needed.

Two-Way Conversions

Designed to meet the travel demands in the early 20th century, downtown Rockford is dominated by one-way streets. These street were designed to efficiently move people and goods to and from manufacturing businesses located in the urban core. With the creation of the Interstate Highway System, many of the manufacturing businesses relocated from their location in the urban cores to land with better access to the highways. As mixed-use redevelopment of the region's urban core has increased, the one-way pair system that dominates downtown Rockford has drawn complaints from those trying to find their way to goods, entertainment, and services now located there. One-ways pairs were designed to move high amounts of traffic in, out, and through the area and do not focus on retaining those passengers for retail purposes. The shift in preferences for redevelopment downtown from industrial to commercial and residential has prompted the idea to convert these one-way pairs into two-way traffic again.

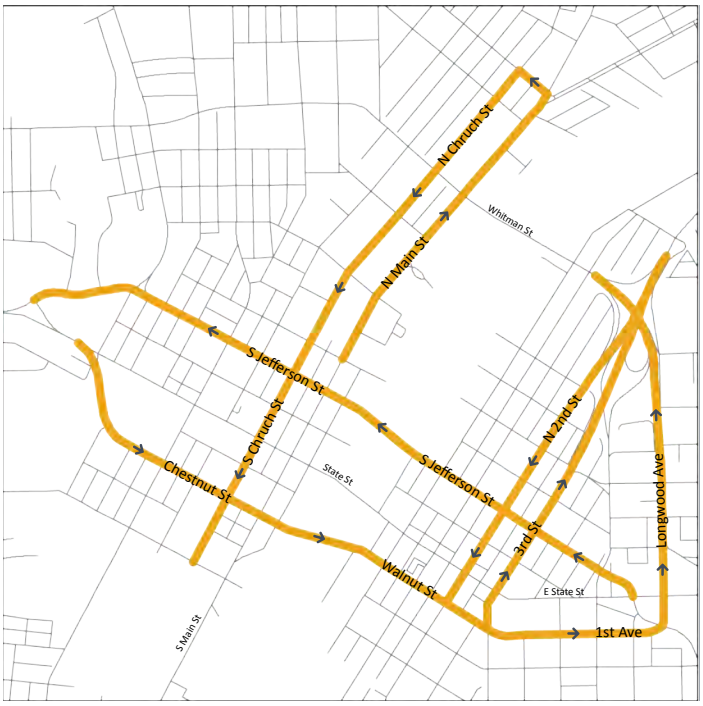
In fall 2019, the City of Rockford launched the Activate Church + Main project aimed at converting Church Street and Main Street from one-way to two-way streets. The goal of the project is to enable economic development, improve mobility, improve safety and access for emergency responders, improve bicycle and pedestrian facilities, and minimize potential impacts to property owners.

Figure 4-5. Paulson Road/Paladin Parkway Configuration



Data sources: WinGIS

Figure 4-6. Downtown Rockford Existing One-Way Pairs



Data sources: Region 1 Planning Council

Asset Management

Asset management, as it pertains to transportation planning, is the practice of planning, maintaining, and preserving transportation infrastructure to ensure safe and efficient operations. This includes evaluating the performance of assets, managing maintenance and service projects, forecasting demands, and planning facility capacity in response to future developments.

With the release of FHWA's final ruling on pavement and bridge condition performance measures, states and MPOs are required to maintain bridges and pavements above the minimal condition level, establish targets that can be aggregated at the national level, and make significant progress towards meeting those targets. The FHWA Final Rule also states that, "State DOTs and metropolitan planning organizations (MPO) will be expected to use the information and data gathered as a result of the new regulations to inform their transportation planning and programming decisions". For more information and analysis on all of the performance measures for the region, refer to Part 2: Planning Framework.

Asset management is integral to the sustained success of any transportation system and, when done well, can lead to increased trip efficiency, safety, and financial savings for a region's roads and structures. However, assets in poor condition can place potential financial stress on users of the transportation system and strain the reliability and dependability of the network as a whole. For these reasons and more, it is important to develop a regional approach that both evaluates and enhances the condition of the transportation system.

Historically, projects in the region, as well as statewide, have been programmed using a 'worst-first' investment strategy where the roads and structures in the poorest condition get prioritized and reconstructed first. However, this can lead to programs that finance a few large-scale projects while the rest of the system may remain neglected. However, in recent years the regional strategy has shifted to a more proactive approach where smaller projects are programmed to prevent the overall system from falling into a state of disrepair while also ensuring that large-scale needs are met.

The MPO has recently developed a regional approach to manage assets in the transportation system. The first step in this process is evaluating the condition of the roads, bridges, and other assets in the MPA. However, many local agencies have developed different metrics and measurements to rate the condition of their respective assets. This makes a comprehensive analysis of asset condition in the MPA difficult. Since local condition ratings vary, the MPO has begun the analysis process by focusing on the condition ratings conducted by IDOT on major roadways in the region. Figure 4-7 displays the IDOT condition rating of some major roadways in the MPA.

According to 2018 Highway Performance Monitoring System (HPMS) reports, 34.0 percent of lane miles of the NHS received an overall rating condition of good and 47.0 percent of lane miles received an overall condition rating of fair. Within the region, 17.2 percent of lane miles are considered to be in poor condition according to HPMS. Approximately 1.9 percent of lane miles were missing an overall rating score.

In addition to roadway condition, the condition of structures is equally important. Of the 163 structures on the region's NHS, 31.3 percent received a condition rating of good, 62.6 percent received a condition rating of fair, and 6.1 percent received a condition of poor, according to the 2018 HPMS reports.

As a state, Illinois has the fourth most structurally deficient bridges in the nation with over 2,200. This number will only continue to rise with the aging of older assets. This means structures with deficiencies need to be identified throughout the region so constant monitoring can take place to ensure the integrity of those assets.

Through collaboration with partner agencies, a regional approach to evaluating the condition of assets is planned in coming years. This will enable any future analysis of the region to be done with a shared perception of what constitutes 'good' condition. Having a shared understanding of asset conditions will enable more impactful and efficient management of the system as a whole. At the time of writing this document, Illinois MPOs and IDOT have been coordinating on the collection of pavement condition data.

Asset Management

A strategic and systematic process of operating, maintaining, and improving physical assets, with a focus on engineering and economic analysis based upon quality information, to identify a structured sequence of maintenance, preservation, repair, rehabilitation, and replacement actions that will achieve and sustain a desired state of good repair over the lifecycle of the assets at minimum practicable cost.

Source: 23 U.S.C. 101(a)(2)

IDOT Pavement Condition Grades

Good: These pavements generally exhibit low to medium levels of distress and are not in need of an immediate improvement based on surface condition. Visible tight transverse and longitudinal cracking may be present. Maintenance such as crack sealing may have occurred. Pavements in the good category are commonly prime candidates for preventative maintenance or preservation treatments.

Fair: These pavements will likely need improvement over the short term. Fair pavements can exhibit moderate rutting, a rougher ride along with more frequent and severe cracking. Fair pavements may be eligible for preservation treatments which are a cost-effective option to maximize the pavement life

Poor: These pavements are generally in need of improvement. These pavements will exhibit higher levels of distress over larger areas of the pavement surface. High levels of cracking lead to material loss, patch deterioration and loss of structural integrity. Major rehabilitation or reconstruction is generally the only option for pavement in the poor category.

Source: Illinois Department of Transportation

Figure 4-7. Pavement Condition of the National Highway System , 2018

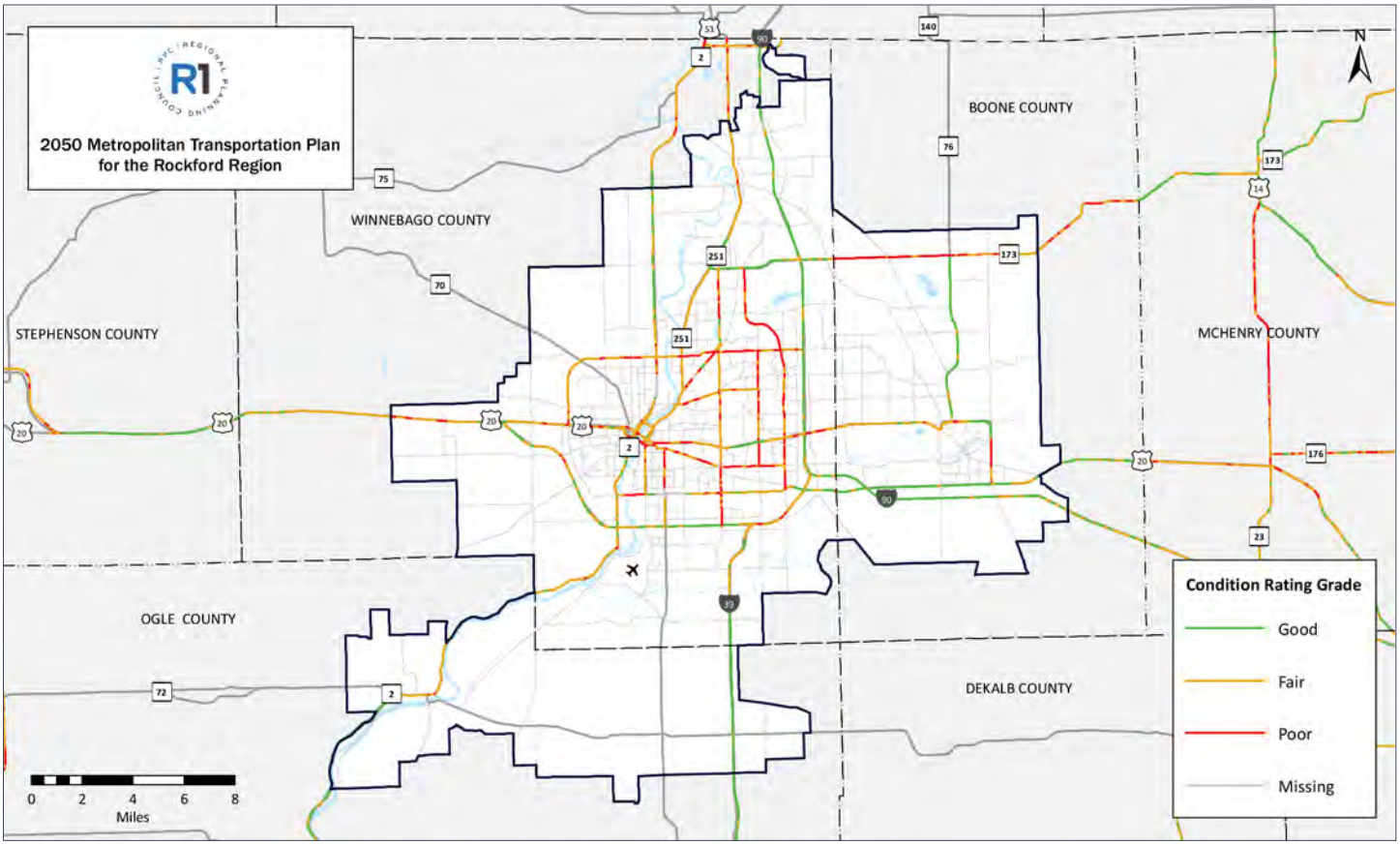
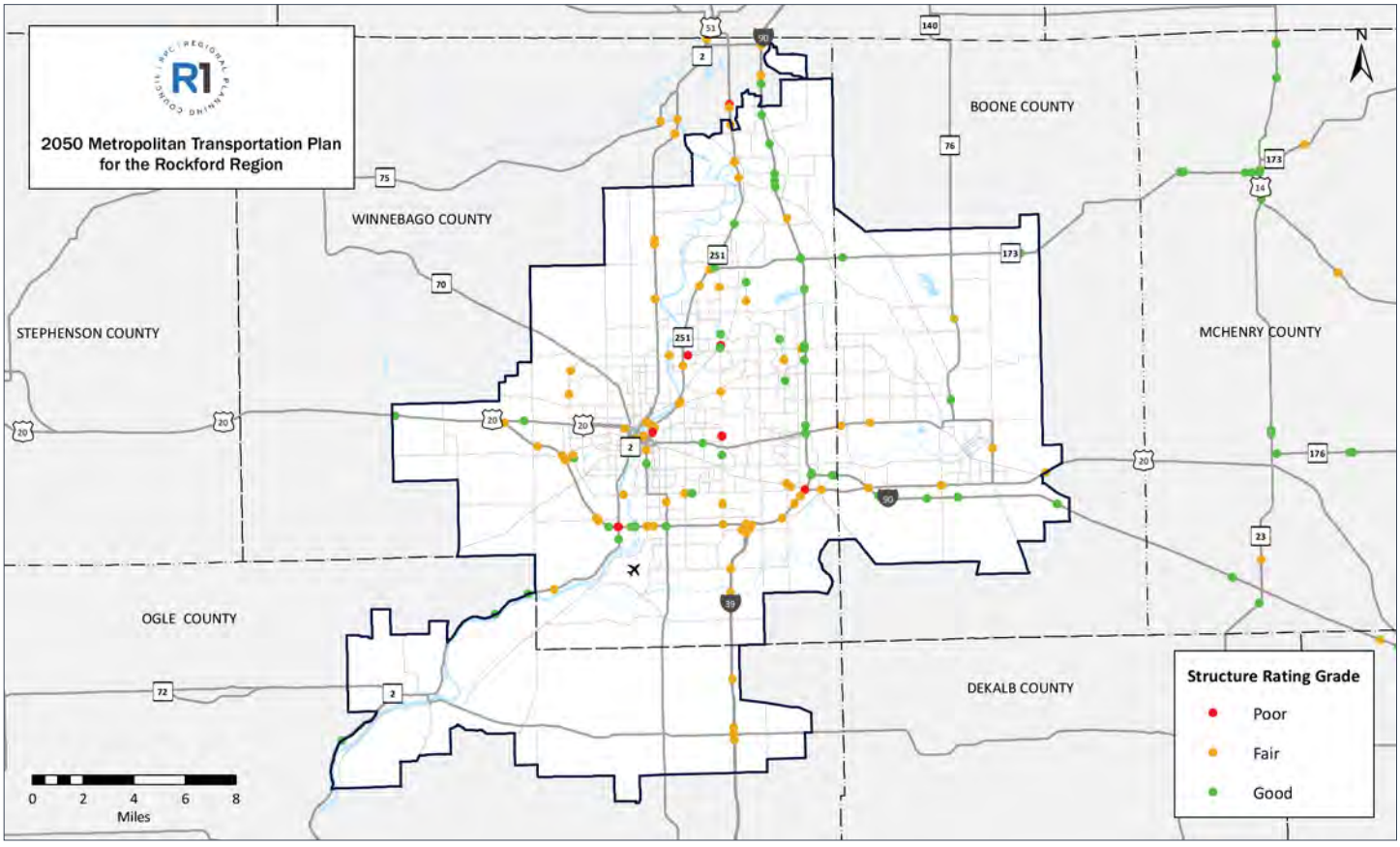


Figure 4-8. Structure Condition of the National Highway System, 2018



Data sources: Illinois Department of Transportation

The MPO will continue discussion with IDOT on the collection of condition data for all functionally classified roadways.

Along with the condition of assets, the assessment of risks to assets, both natural and manmade, also needs to be addressed. Gauging the potential for, and the impact of risks on the life-cycle of an asset, is a process that necessitates collaboration between agencies and amongst varying professions. This ensures an accurate image of potential issues is taken into consideration when developing plans and programming projects within the region. These issues will be further discussed in the Resiliency & Redundancy section.

The regional asset management strategy will continue to be developed and refined through constant collaboration with local planners and engineers.

Looking Forward

Regional Condition Rating System

Planning for asset management at the regional level can be a difficult task. Each transportation jurisdiction is responsible for transportation asset management within their boundaries and many have developed unique internal transportation asset management process. With multiple methodologies and processes utilized, the current conditions of the region's transportation system cannot necessarily be compared to one another. The need for a unified asset management program has been identified by the MPO Technical Committee members so that conditions may be tracked at a regional level. The process adopted should allow all jurisdictions, regardless of size or available resources, to participate yet be extensive enough to inform the planning, design, and decision-making processes made in the future.

In order to develop a regional condition rating system, the MPO will be conducting a Regional Transportation Asset Management Study, which will be a collaborative effort with partner agencies. The study will focus on the following elements:

- An analysis of current conditions based on available data;
- Potential condition rating alternatives;
- A vulnerability assessment to locate areas and document factors within the region that are at increased risk of not meeting their expected lifespan;
- An evaluation of asset life-cycles in order to identify the most effective construction techniques; and
- Development of a strategy that comprehensively enhances the conditions of all assets throughout the region.

Database

Following the development and implementation of the regional condition rating system, a database of infrastructure locations and conditions can be created and used to develop strategies to prioritize projects for programming. This database will allow the MPO and partner organizations to identify transportation corridors with quality design improvements where high return on investment can be demonstrated.

Regional Design Standard Policy

Consistency in the quality and maintenance of the transportation system is key to ensuring safe and efficient movement through and within the region. One option is to develop an agreed-upon regional design standards policy for the region. Regionally accepted design standards will ensure that future stresses placed on the transportation system are planned for. These stresses could be potential new travel patterns, economic and land use development, and extreme climate events that may occur in the next 30 years.

An important step in creating a regional design standards policy will be to ensure it is developed equitably for all agencies within the MPA. This will be done through close collaboration with partner agencies and organizations that are responsible for constructing and maintaining transportation infrastructure to understand limitations and obstacles that could occur due to particular design standards. The regional design standard policy would also encompass all modes of transportation, including personal vehicles, bicyclists, and pedestrians.

Safety & Security

One of the most important components of the transportation system is ensuring that those who travel in it are protected from harm as much as possible. Ensuring roadways, structures, and bicycle-pedestrian facilities are well-designed, well-managed, and well-maintained is one of the most important goals of transportation planning and programming. Additionally, federal legislation has identified safety and security of the transportation system for motorized and non-motorized users as one of the federal planning factors and emphasizes the important role they play in the development of the MPO's federally required documents.

Safety

Safety is defined by the United States Department of Transportation (USDOT) as freedom from harm resulting from unintentional acts or circumstances on roads, structures, and multi-modal facilities of a transportation system. This is important to ensure the sustained quality of life that all users of the transportation network desire and deserve. The primary goal of transportation safety planning is to improve safety by supporting efforts to develop policies, programs, and projects related to all modes of transportation on roadways and highways throughout the region.

Safety is measured in a number of ways, including the number and severity of crashes that occur at particular locations.

Crash severity measures are used by the MPO to report progress towards targets set by IDOT, as is required by federal law. Safety target monitoring and reporting requirements were issued in 2016 by FHWA in the Safety Performance Management Measures Final Rules. The ruling requires State Departments of Transportation and metropolitan transportation organizations to report their progress on achieving annual performance targets for the following five measures:

- Number of fatalities;

- Rate of fatalities per 100 million vehicle miles traveled;
- Number of serious injuries;
- Rate of serious injuries per 100 million vehicle miles traveled; and
- Number of non-motorized fatalities and non-motorized serious injuries.

Figure 4-9 shows the 5-year averages for fatalities, serious injuries, and non-motorized fatalities and serious injuries vehicle crashes in the MPA.

There has been a downward trend in the rate of serious injuries and fatalities, signifying that the region is contributing to meeting performance measure targets. While this data is important, it is not the only data that can be used to help steer investment or prioritize projects. For more information and analysis on all of the performance measures for the region, refer to Part 2: Planning Framework.

State and Federal Safety Efforts

A Strategic Highway Safety Plan (SHSP) is a major component and requirement of the Highway Safety Improvement Program (HSIP).[x] The SHSP is a statewide-coordinated safety plan that provides a comprehensive framework for reducing fatalities and serious injuries on all public roads. An SHSP identifies a State's key safety needs and guides investment decisions towards strategies and countermeasures with the highest potential to save lives and prevent injuries. SHSPs were first required under SAFETEA-LU, which established the HSIP as a core federal program and continued under MAP-21. The Fixing America's Surface Transportation (FAST) Act continues the HSIP as a core Federal-aid program and the requirement for States to develop, implement, evaluate, and update an SHSP that identifies and analyzes highway safety problems and opportunities on all public roads.

A SHSP is developed by the State Department of Transportation in a cooperative process with local, state, federal, tribal, and private sector safety stakeholders. It is a data-driven, multi-year comprehensive plan that establishes statewide goals, objectives, and key emphasis areas and integrates the four E's of highway safety- engineering, education, enforcement and emergency medical services (EMS). The SHSP allows highway safety programs and partners in the State to work together in an effort to align goals, leverage resources, and collectively address the State's safety challenges. The most recent edition of the SHSP was released by IDOT in 2017 and can be used as a tool for smaller regional and local agencies in their safety planning efforts.[xi]

Regional Crash Trends

In addition to the number and severity of crashes, it is important to understand the various types of crashes in the region. Having knowledge on the types of crashes that happen most often in the MPA allows for the development of more effective plans and programs to improve safety in the transportation system.

Crash data provided by IDOT also identifies the 'type' of each crash that occurs. These are categorized based on the first object

Crash Severity Definitions

Fatal (K): A traffic crash involving a motor vehicle in which at least one person dies within 30 days of the crash.

Incapacitating Injury (A): A traffic crash resulting in an injury, other than a fatal injury, which prevents the injured person from walking, driving, or normally continuing the activities he/she was capable of performing before the injury occurred.

Non-Incapacitating Injury (B): A traffic crash resulting in any injury, other than a fatal or incapacitating injury, which is evident to observers at the scene of the crash.

Possible Injury (C): A possible injury is any injury reported or claimed which is not a fatal, suspected serious, or suspected minor injury.

No Apparent Injury (O): No apparent injury is a situation where there is no reason to believe that the person received any bodily harm from the motor vehicle crash. There is no physical evidence of injury and the person does not report any change in normal function.

Source: Illinois Department of Transportation[ix]

Figure 4-9. 5-Year Fatalies, Serious Injuries, and Non-motorized Fatalities and Serious Injuries, 2017



Data sources: Illinois Department of Transportation

the primary vehicle makes contact with in a collision. Therefore, crashes are grouped, as follows: angle; animal; fixed object and overturned vehicle; head-on and sideswipe opposite direction; non-collision, other object, parked car, train and unknown; pedalcyclist; pedestrian; rear end and sideswipe same direction; and turning.

Based on the data available, region-wide crash type trends can be identified, allowing countermeasures to be examined throughout the MPA.

Some of the most prevalent types of crashes that occur within the MPA are roadway departures, non-motorized vehicles, and aggressive and/or distracted driving.

Roadway Departures

Roadway departure crashes are defined as being those where a vehicle collides with a fixed object off the roadway, overturns, strikes another vehicle head-on, or contacts the side of another vehicle that is traveling in the opposite direction. These are of particular concern in the region for not only the number that occurs but also the increased severity of those crashes. Of non-intersection crashes, 16.3 percent of those that occurred in urbanized areas involved roadway departure and 36.7 percent of rural non-intersection crashes involved roadway departure. Of those, 32.1 percent of urban and 56.4 percent of rural roadway departure crashes were severe. These percentages are nearly twice as high, meaning that crashes involving roadway departure in the region are about twice as likely to result in a fatality or incapacitating injury compared to other types of crashes.

The types of countermeasures that could be implemented throughout the region, and especially in rural areas, are those that prevent vehicles from leaving the driving surface or allow for a greater ability to recover. Examples of these would be guardrails, implementation of shoulders, and enhanced signage, amongst others.

Non-Motorized User Safety

In recent years, the region has seen increases in the number and severity of crashes involving pedestrians, cyclists, and other non-motorized users of the transportation system. However, this trend is not unique to the region and can be seen throughout the state and nation. There are numerous factors that can contribute to this increase, including the rise in popularity and diversification of alternative modes of transportation, an increase in vehicle miles traveled (VMT) within the region; and lack of education on how vehicles, cyclists, and pedestrians should properly interact. To combat this, there are a number of countermeasures that could be implemented, including separated and/or protected facilities, road diets, pedestrian beacons, crossing islands, and leading pedestrian intervals. Increased efforts to accommodate and account for the growth in popularity and use of non-motorized transportation modes in future programs will help mitigate perceived safety concerns of the system.

Distracted & Aggressive Driving

Data for distracted and aggressive driving can be difficult to identify as a contributing factor to crashes due to the lack of evidence it often leaves behind. However, it is nationally recognized as an issue and identified by IDOT as a safety emphasis area. The issue is growing each year with the development of new technologies that ease use of hand-held devices while driving on roadways, such as adaptive cruise control.

In order to lessen the number of users driving in an aggressive or distracted manner, most countermeasures are centered around enforcement of existing driving laws, such as red-light and speeding cameras, increased patrols, etc.

FHWA Proven Safety Countermeasures

FHWA has released four sets of proven countermeasures that can be effective in enhancing safety for most situations. These countermeasures are grouped into four categories by the area in which the countermeasure improves safety the most, such as roadway departure, intersections, pedestrian and/or bicycle, and crosscutting countermeasures. For more detailed information on each of the 20 nationally recognized countermeasures, specific materials can be found here at https://safety.fhwa.dot.gov/provencountermeasures/.

Source: Federal Highway Adminstration

Crash Location Analysis

In addition to raw counts and classifications, IDOT also provides spatial crash report data. This data allows for geographic analysis of crash trends to be observed based on a number of variables, as well as the identification of specific areas that may warrant further investigation and potential intervention. Figure 4-10 is an example of the high-level of spatial analysis that can be conducted using this information displays where crashes occur in the MPA.

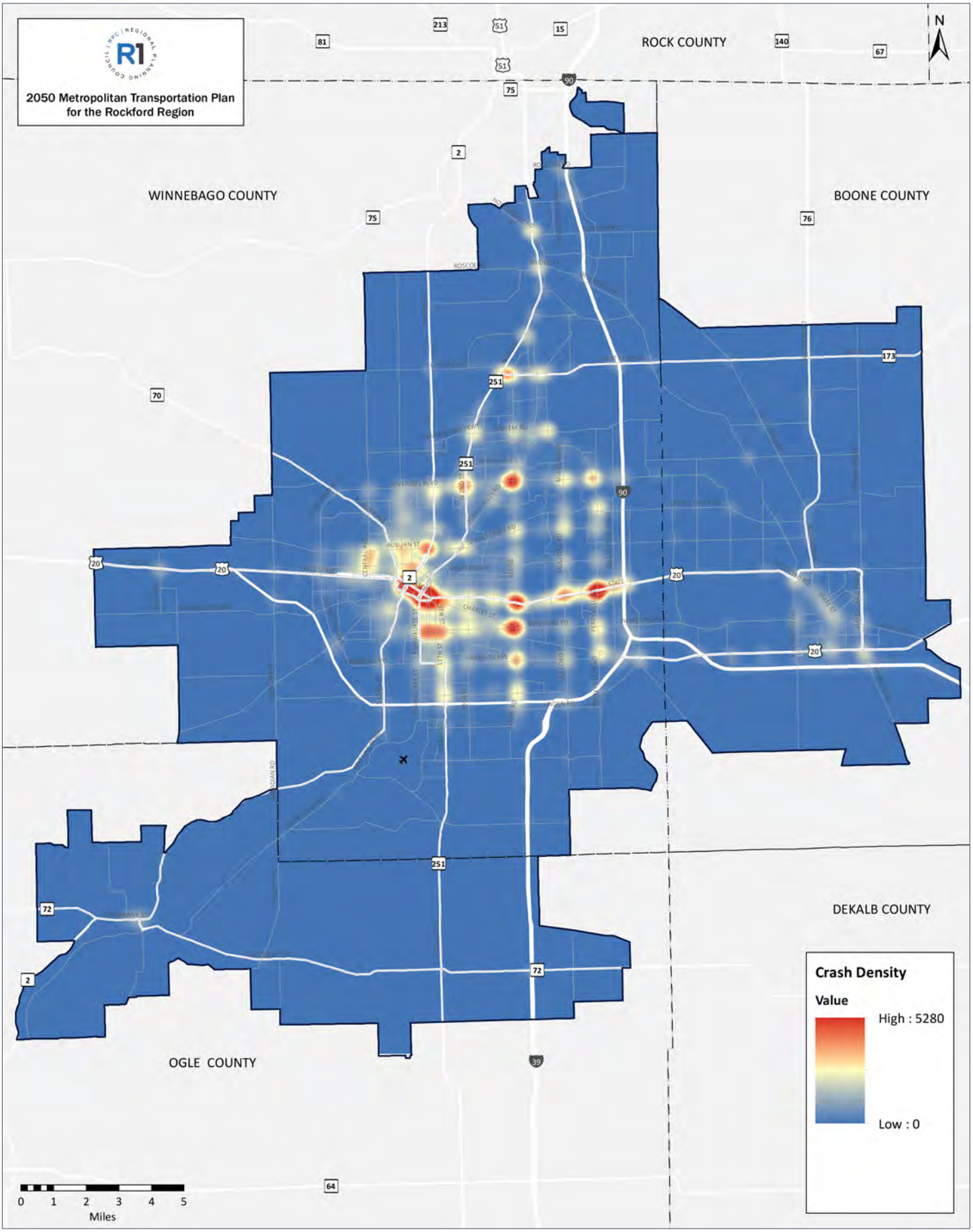
Perhaps the most important analysis that can be done using geographic safety data is the granular analysis of particular corridors and intersections. This analysis can be conducted by municipalities themselves or in coordination with the MPO. Analysis on this level helps determine specific geometric components or behavioral attributes that may be contributing to crashes. To help in this process, the MPO has created heat maps for every municipality in the MPA to help local agencies in their safety planning efforts.

Local Safety Efforts

In 2020, the MPO began further coordination efforts to build an awareness on the local level of the safety issues and initiatives present within the region. These various meetings convened public works and county highway departments to present data and preliminary analysis conducted by the MPO. Current transportation safety measures and programs pertaining to each respective agency were also discussed as well as potential countermeasures that could be developed to further enhance existing safety initiatives.

This data gathering, analysis, and meetings have all been part of a larger process to create a regional safety plan. This collaborative document aims to develop a regional framework to share data, exchange local knowledge based on experiences, and form an

Figure 4-10. Crash Heat Map, 2010-2017



Data sources: Illinois Department of Transportation

approach to improve transportation safety throughout the region. The MPO will continue coordination and development on this initiative.

Further evolution of this initiative include:

1. Development of local implementation plans that utilize information presented within the regional safety document; and
2. Potential development of a safety working group made up of representatives from partner agencies, 4-E, and other organizations with a vested interest in safe travel throughout the region. The aim of this working group would be to enhance communication between agencies, allow for more up-to-date safety data to be exchanged, and allow for local knowledge and experience-based countermeasures to be applied to the issues that other agencies may be having. This narrative driven process will allow for new ideas to be brought to the forefront and previously unexplored or unknown variables to be identified prior to the design or implementation of particular countermeasures.

Conversations regarding roadway safety initiatives and countermeasures stemming from data presented in the SHSPs and the regional safety planning efforts are ongoing and will continue to be incorporated into the transportation planning process within the MPA.

The MPO will work with IDOT and local agencies to coordinate and develop strategies. However, it will be the responsibility of local partner organizations to implement these strategies. The MPO and its partner organizations will integrate a multi-stakeholder process to improve the attributes of transportation facilities, users, and vehicles to reduce traffic related deaths and life-altering injuries in the Rockford Region and support the goals of the statewide Illinois SHSP.

Security

While safety is a widely studied and incorporated factor in the planning process, security of the transportation network should equally be addressed. At times, it has been a subset of safety rather than an area of specific analysis and planning. However, it is crucial that security of the transportation system be evaluated separately due to the vulnerability of infrastructure. The transportation system services a high concentration of people, provides access to services for users, and is crucial to sustaining and enhancing the way of life for users. This means that any manmade or natural disaster that may befall the system could create consequences if scenarios have not been properly planned for.

When it comes to the transportation system, security can best be defined as the ability of users to safely access and utilize the transportation network in the event of a natural or manmade disaster. Planning for transportation security includes preventing, managing, and responding to threats against the regional transportation system. These threats could include a variety of events, such as natural disasters, terrorism, or hazardous spills, all of which endanger the health of users and important transportation infrastructure. The MPO coordinates with local, regional, and state partner agencies on how to best mitigate those dangers, should they ever occur. The primary goals of incorporating security into the planning process is to ensure resiliency after an event or disaster, continued functionality following such events, and maintaining the ability to mobilize civilians and the military for evacuation or relief efforts.

Security plays a crucial role to public health and safety, as well as economic productivity and continuity. As such, the MPO will continue to cooperate and provide assistance to any partner agencies or organizations that request or require it. As comprehensive strategic approaches evolve to address security needs of the region, the MPO will be integral coordinating a regional plan to address any potential hazards that may befall the area.

Transportation System Vulnerability Assessment

In the event of an emergency, it is paramount that the transportation system remains functional to the degree necessary to get supplies and other relief-assistance to residents. In order to do this, agencies need to utilize the expertise and local knowledge of regional stakeholders to create a list of threats and hazards that could impact the region and then locate assets in the region that are most at risk.

Regional Hazards

Identifying threats and their impacts to the transportation system are key considerations in the design and programming of transportation projects. Hazards must be taken into account throughout the planning process. Elements of this incorporation into the planning process for the region may include:

- An evaluation of recent disasters;
- An assessment of transportation asset vulnerability;
- Consistent coordination with partner organizations; and
- Communication with and education of the public.

As an example of the types of risks that could possibly occur in

Emergency Preparedness Plans

Numerous agencies and organizations that the MPO has collaborated with in the past have created a myriad of plans pertaining to security of regional systems in the event of an emergency. A few of these plans are listed below:

- Winnebago County Multi-Hazard Mitigation Plan (2019)
- Winnebago County Health Department's Health Vulnerability Assessment (2019)
- Boone County Community Health Status Assessment (2018)
- EMA Illinois Natural Hazard Mitigation Plan (2018)
- Ogle County Multi-Jurisdictional All Hazards Mitigation Plan (2018)
- Winnebago County Emergency Operations Plan (2018)
- Boone County Multi-Hazard Mitigation Plan (2014)
- SwedishAmerican Hospital System Emergency Operations Plan (2013)
- City of Rockford Emergency Operations Plan (2012)

the region, the Winnebago County's Multi-Hazard Mitigation Plan (MHMP) is presented in Figure 4-3. This listed was developed in coordination with stakeholders in the region.

Assets at Risk

While knowing what dangers are most likely to threaten the transportation system is undoubtedly important, equally important is knowing where assets are most susceptible to those hazards that have been identified. As an example, Figure 4-11 depicts the parts of the transportation system that may potentially be affected by identified flooding hazards.

Table 4-3. Winnebago County MHMP Risk Matrix

Ranking	Hazard
1	Winter Storms
2	Thunderstorms
3	Tornadoes
4	Flooding
5	Drought/ Heat
6	Earthquake
7	Hazardous Materials Storage and Transportation
8	Ground Water Shortage
9	Dam/ Levee Failure

Data source: Winnebago County

Nearly 14 percent of roadway mileage in the MPA is located in 100-year flood zones. This means that continuous evaluation of the systems function should be undertaken, especially in the wake of an emergency. With increased volatility of climatic events in recent years, it is crucial to ensure the sustained security of the system. More information regarding the impact of extreme weather on the region's transportation system can be found in the next section.

Looking Forward

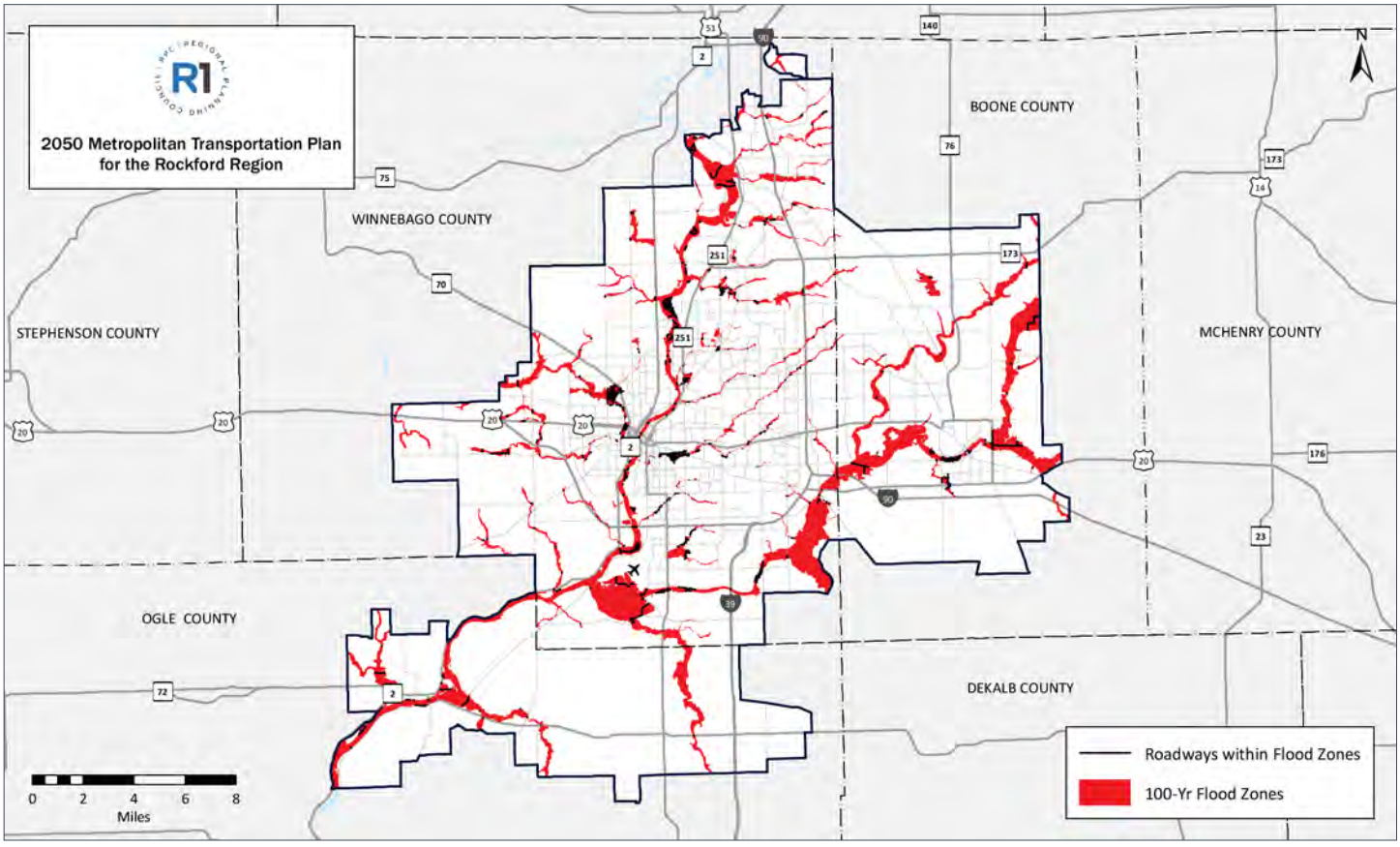
Regional Safety Study

To begin addressing safety on a regional scale, the MPO and partner agencies need to understand the current safety trends and develop a unified approach moving forward. Understanding current safety trends includes locations and corridors with higher than average crash rates, the most prevalent types of crashes, and contributing factors. This analysis will be conducted through coordinated data collection between the state, regional, and local agencies, along with the MPO.

In close collaboration with partner agencies, the MPO will be creating a comprehensive snapshot of safety-related issues and concerns in relation to the overall the transportation system. The MPO's regional safety study is currently in development and will contain the following key components:

- **Safety Performance Measures:** Analysis and tracking

Figure 4-11. Assets within Floodplains, 2020



Data sources: Federal Emergency Management Agency; Illinois Department of Transportation

of the federally-required safety performance targets;

- **Historical Analysis:** Analyzing the region's crash history and identification of the most prevalent contributing factors to crashes in the region;
- **Spatial Analysis:** Identifying the locations and corridors where crashes have historically occurred more often or with a higher frequency using spatial data;
- **Common Trends**: Identifying common trends, , such as driver behavior, geometric design or geographic traits, that may be contributing to crashes;
- **Countermeasures**: Categorize safety countermeasures and projects that could improve safety; and
- **Project Specific Safety Studies**: Work with partner agencies to develop site-specific safety strategies and countermeasures.

Once the MPO and partner agencies have developed this document, the strategies and action items produced will help to further incorporate safety elements into all transportation planning and programming.

Non-Motorized User Safety

As non-motorized modes of transportation continue to grow in popularity, it will be important for the MPO and other agencies in the region to continue ensuring the safety of those users. The MPO's 2017 Bicycle and Pedestrian Plan identified and outlined a number of safety recommendations grounded in the principles of the 5 E's (Engineering, Education, Encouragement, Enforcement, and Evaluation) of bicycle and pedestrian planning.

Some of the safety recommendations identified in the Bicycle and Pedestrian Plan include:

- Separating different modes of travel when possible and practical;
- Creating a more connected system for non-motorized users; and
- Including considerations for pedestrians in all new construction projects.



Main Street. Roscoe, IL

Safe Routes to School

The Safe Routes to School (SRTS) programs aim to make it safer for students to walk and bike to school and encourage more walking and biking where safety is not a barrier. Utilizing and building upon the foundation set in recent years by this initiative can help immensely improve safety.

IDOT has identified three primary goals for the statewide STRS program:

- To enable and encourage children, including those with disabilities, to walk and bicycle to school;
- To make bicycling and walking to school a safer and more appealing transportation alternative, thereby encouraging a healthy and active lifestyle from an early age; and
- To facilitate the planning, development, and implementation of projects and activities that will improve safety and reduce traffic, fuel consumption, and air pollution in the vicinity (within two miles) of both public and private primary and middle schools (grades K-8).

Safety Countermeasures

While data, studies, and reports can quantify, analyze, and provide a better understanding of the safety trends in the MPA, implementation of safety strategies and countermeasures will be the driving forces for improved safety. Beginning in 2007, FHWA began promoting certain infrastructure-oriented safety treatments and strategies, chosen based on proven effectiveness and benefits, to encourage widespread implementation by transportation agencies to reduce serious injuries and fatalities on roadways, known as the Proven Safety Countermeasures. FHWA defines countermeasures as infrastructure-oriented safety treatments and strategies that have proven effectiveness and benefits in improving safety on a variety of roadways.

While FHWA's proven safety countermeasures offer a set of solutions that can enhance safety, each project must be context sensitive. For example, safety countermeasures that work well on rural roadways may not be compatible to urban roadways. Developing projects to site-specific characteristics will be essential in enhancing safety on a variety of roadways within the region.

Additionally, there are several safety solutions the can be implemented at a low-cost and are proactive in nature, such as the installation of chevron signage at roadway curves or setting centerline rumble strips during a routine surface repaving. Further pairing safety planning with routine infrastructure improvements will allow for cost-effective safety solutions to be made. The MPO will continue to work closely with partner agencies to identifying

candidate locations for safety countermeasures and assist in researching new, innovative approaches to safety planning.

Resiliency & Redundancy

Extreme weather events and manmade disasters can greatly jeopardize the health, safety, and welfare of people throughout the region. The effects of these events can be heightened if the transportation system is impacted and the ability to properly evacuate or respond to such events is not possible. For these reasons, it is imperative that the transportation system is prepared to handle the stresses of potential events that may affect it.

Resiliency is defined by Presidential Policy Directive PPD21, as "the ability to prepare for and adapt to changing conditions and withstand and recover rapidly from disruptions. Resilience includes the ability to withstand and recover from deliberate attacks, accidents, or naturally occurring threats or incidents." The MPO aims to create and sustain a transportation system that is resilient enough to withstand and rebound from extreme events that may arise in coming years.

Fixing America's Surface Transportation (FAST) Act, signed into law in December 2015, requires agencies to take resiliency into consideration during transportation planning processes. The transportation planning rule includes:

- A new planning factor for states and metropolitan planning organizations (MPOs) to consider and implement: improving the resiliency and reliability of the transportation system.
- A recommendation for MPOs to consult with agencies and officials responsible for natural disaster risk reduction when developing a metropolitan transportation plan and the transportation improvement program.
- A requirement that the metropolitan transportation plan assess capital investment and other strategies that reduce the vulnerability of the existing transportation infrastructure to natural disasters.
- Additionally, agencies can integrate resilience into the transportation planning process through:
  - Regional Vision & Goals: Establish goals and performance measures related to resilience (e.g. system reliability, sustainability, reduced delays)
  - Long Range Transportation Plan: Use information on resilience to identify strategies and investment scenarios during development of long range transportation plans.
  - Project Evaluation & Prioritization: Use resilience as a factor in project prioritization.

Regional resilience initiatives are not one size fits all. Therefore, when determining which critical infrastructure sectors need to be addressed and prioritized for a particular region, it is necessary for regional partners – owners and operators, state and local government, non-profit organizations, and community groups – to be at the table. However, resiliency can be addressed by incorporating new design, capabilities, and configurations into infrastructure repair and replacement.

Threats

Over the most recent decade, extreme weather has greatly impacted the nation. Greenhouse gas (GHGs) emissions are cited as the predominant cause for the climatic variations that have become evident in recent years. In the United States, transportation is identified as a leading contributor to GHG emissions, second only to the generation of electricity. This increased volatility weather may produce profound impacts throughout northern Illinois. Some of these impacts include:

- An increase in annual temperatures by mid-century;
- An increase in the number of extremely hot days (100 degrees Fahrenheit or higher), and an increase in seasonal overnight low temperatures;
- A decrease in the number of days below freezing;
- An increase in the number of freeze-thaw cycles annually;
- An increase in precipitation; however, the increase is most likely to be seen during winter and spring months rather than evenly distributed throughout the year;
- An increase in extreme rainfall events punctuated by periods of drought; and
- An increase in winter precipitation occurring as rain rather than snow; however individual snowfall events are expected to have a greater snowfall intensity due to higher atmospheric moisture.

Changes in the regional climate have the potential to greatly impact transportation infrastructure. For example, more extreme rainfall events may result in greater bridge scour and erosion, as well as inadequately sized culverts and storm sewers; an increase in freeze-thaw cycles may result in more potholes; extreme heat may cause pavement and rail buckling; and greater seasonal fluctuations will make it more difficult to plan for necessary inputs for routine maintenance such as roadway salt. Transportation systems are designed to withstand a wide range of environmental conditions, however shifts in the strength and duration of climate events can add additional stressors that may not have been accounted for at the time of design and may compromise the region's transportation infrastructure and jeopardize the systems safety and reliability.

In addition to natural threats, there is potential for attacks against the people and infrastructure of the region as well. As such, it is crucial that agencies within the region collaborate to protect the area through implementing strategies to prevent, deter, mitigate, or neutralize aggressive acts such as terrorist attacks, cyber-attacks, biological offensives, and others which may impact the transportation system. Due to these considerations, it is important to plan the transportation system in a way that not only protects or minimizes the damage that it may sustain in any of these events, but also ensures it can remain functional to assist evacuation efforts, allow for evacuations, ensure quick delivery of supplies, and rapid response time for relief.

Redundancy

As it pertains to transportation planning, redundancy can be defined as the creation of routes and services that can maintain the functionality of the transportation system in the event of an emergency. However, optimizing transportation systems and



County Highway V. Sauk County, WI (Courtsey of Burnie Turner)

facilities often reduces the number of redundancies required but has the potential to create unintended points of failure for numerous transportation services if used in the event of a disaster.

To mitigate this, creating some systematic redundancies for major routes is ideal to allow for the continued function of the transportation system, should an emergency ever necessitate the need for alternate routes to move people and goods. Efforts to create potential redundancies in the system should be undertaken when they are financially possible and systematically cohere to the normal operations conditions of the transportation system.

Looking Forward

Vulnerability Assessment

In order to assess the transportation system and determine areas that are more susceptible to shortened life-cycles or extended delays due to damage, manmade or natural, a vulnerability assessment will need to be conducted. A vulnerability assessment analyzes the entire transportation system to identify areas at increased risks of damage due to extreme weather events or attacks. These risks could be due to their location or regional significance in the transportation system.

Part of a vulnerability assessment is determining how and to what extent extreme weather may impact the transportation system. The vulnerability assessment could include an analysis on areas where assets have historically deteriorated at faster rates than anticipated or have needed increased routine maintenance due to factors other than normal wear-and-tear.

Additionally, the susceptibility of the transportation system to an attack is also taken into account in vulnerability assessments. Conducting a vulnerability assessment would further the existing emergency management practices and help identify a number of strategies for various scenarios relating to the region's emergency management preparedness.

Public Awareness & Education

It is important for the public to understand the impacts associated with potential threats and how to react to rapid changes in asset condition, traffic flow, and other factors that may be introduced during the aftermath of a major event. Preparation is the primary variable in the resiliency of transportation systems. It is imperative to plan and implement resiliency strategies that will mitigate damage and expedite recovery time. Public education can be carried out in a number of ways, such as handouts or short presentations at driver education courses or posting signage around the region with instructions in the event of an emergency.

Redundancy Analysis

In the event of a natural or manmade event, normal operations of the transportation system may be impacted. As such, alternative routes or operations may need to be utilized. To ensure the optimization of the transportation systems, a redundancy analysis can evaluate the system's capacity to maintain performance during or following major event. This analysis would look for

redundancies and alternate routes that would allow continued efficiency and safety.

A redundancy analysis results in a comprehensive system of detour routes and closure plans for major roadways and assist in detouring, delivering, or evacuating a given area. Pre-identified plans, routes, and courses of action will enhance efficiency and safety in a time of need.

Green Infrastructure

The potential impacts of the built infrastructure on the environment is a consideration in the transportation planning process. Construction, particularly the use of impermeable materials, can intensify the effects of storms and floods. To better balance the infrastructure and the natural environment, there are several green infrastructure practices that can be incorporated, when possible, to increase the resiliency of the transportation system, particularly during weather events, such as flooding.

Section 502 of the Clean Water Act defines green infrastructure as "...the range of measures that use plant or soil systems, permeable pavement or other permeable surfaces or substrates, stormwater harvest and reuse, or landscaping to store, infiltrate, or evapotranspirate stormwater and reduce flows to sewer systems or to surface waters." Increased implementation of green infrastructure throughout the region could assist with increasing awareness of the impact that infrastructure has on the environment, as concerns over changes in climate patterns continue to develop. Green infrastructure is a cost-effective, resilient approach to managing wet weather impacts. Types of cost-effective green infrastructure include rain gardens, planter boxes, bioswales, permeable pavements, and land conservation.

Transportation System Management & Operations

The quality of life in the Rockford Metropolitan Planning Area (MPA) is directly influenced by the safety, capacity, and reliability of the regional transportation system. With limited financial resources and increased demand, it is essential to find opportunities that optimize the effectiveness of the transportation system at a reasonable cost, while also improving safety. Historically, congestion issues have been addressed through funding major capital projects for the transportation facilities with physical capacity constraints. However, transportation system management and operations (TSMO) strategies can provide a more cost-effective way to improve the performance of the entire transportation system by optimizing system efficiency, increasing system reliability, and enhancing system choice.

TSMO is an integrated approach to optimize the performance of existing infrastructure through the implementation of multimodal, intermodal, and often cross-jurisdictional systems, services, and projects. It encompasses a broad range of strategies, that, along with context-sensitive roadway design, can provide the region with significant benefits. These benefits enhance the quality of life of citizens of the region by providing safer travel, more leisure time, improved reliability, less fuel wasted, cleaner air, and improved livability.[xii] TSMO strategies include work zone management, transit management, freight management, traffic signal coordination, access to traveler information, access management, and improved bicycle and pedestrian crossings.

Overall, the goal of incorporating management and operations into planning and programming is to provide system-level operational solutions that optimize the performance of the overall system. This means that successful TSMO planning looks at the performance from a systems perspective, not just one strategy, project, or corridor. However, context is still an essential consideration in determining how individual corridors impact the overall transportation system. TSMO works best in addressing efficiency and reliability when there is an optimal mix of both physical infrastructure and operational strategies implemented.

Congestion Management

The performance of the region's transportation system in terms of how efficiently users can traverse it can be described in three basic terms: congestion, mobility, and accessibility. One of the MPO's goals is to link operations and planning of the regional transportation system to solve operational problems, improve system performance, and improve communication across transportation-related agencies. In order to effectively plan for future TSMO strategies, the following analysis on current system conditions and performance is needed along with how the system is projected to operate over the next 30 years.

System Efficiency

One of the most impactful ways that TSMO strategies can improve the performance of the transportation system is by contributing to the efficient movement of people and goods, helping reduce congestion, and minimizing fuel consumption and costs. The most common way to promote efficiency of the transportation system is by managing and reducing congestion. There are two commonly

How does TSMO effect the region?

Mobility and Accessibility: How efficiently people and goods can move from place to place and their ability to take advantage of different transportation choices.

Safety: How safe is it to walk, bike, take transit, or drive from place to place.

Reliability: how long travelers are stuck in unexpected traffic due to incidents, work zones, special events, or bad weather.

Community Life: How pleasant the community environment is in urban areas, suburban neighborhoods, and rural communities.

Economic Vitality: How efficiently goods reach markets and how costly it is for the public and shippers to reach destinations.

Environmental Quality: How much fuel is being used and pollution produced by transportation operations.

Source: Federal Highway Adminstration[xiii]

used indicators of performance that communicate the quality of a roadways performance: level of service (LOS) and volume-to-capacity (V/C) ratio.

Level of Service

One of the most visible measures of a transportation system's efficiency is congestion. Congestion often prevents the transportation system from operating in an efficient matter and is caused by both recurring or non-recurring causes. Recurring congestion is consistent and repetitive in peak usage periods, often known as "rush hour" traffic. It occurs regularly and can be predicted with a high degree of reliability. This type of congestion often relates to a capacity issue; such as travel demand exceeding physical capacity. Non-recurring congestion occurs due to unexpected events, such as traffic crashes and bad weather, or due to special events, such as construction or work zones. More information on non-recurring congestion is discussed in greater detail under "System Reliability".

Roadway traffic congestion is often expressed in terms of level of service (LOS), as defined by the Highway Capacity Manual (HCM). Level of service characterizes the operating conditions on a roadway in terms of performance measures related to speed and travel time, freedom to maneuver, traffic interruptions, and comfort and convenience.[xiv] The levels of service range from A (least congested) to F (most congested) and is context-sensitive based upon the functional classification and location of the roadway.

The MPO has developed a measure for the current congestion conditions, based upon LOS rating for roadways, as well as the projected conditions within the MPA utilizing the Travel Demand Model (TDM), as shown in Figures 4-12 and 4-13, respectively.

While congestion can be particularly frustrating to roadway users, there are major economic and environmental costs that arise from congestion, as well. In 2017, congestion cost for individual commuters in the Rockford Urbanized Area (UA) was an average of $394 and cost the region approximately $122 million. The annual amount of wasted fuel per auto commuter was around 9 gallons.[xvi]

Volume-to-Capacity

The second way of measuring roadway congestion is the volume-to-capacity ratio method. While traffic volumes provide the usage of the overall system or on a particular road segment, it does not provide information on how smoothly traffic is flowing. To determine the efficiency of a road, the volume can be used in conjunction with the design and engineering characteristics of a road (capacity) in order to determine how efficiently vehicular traffic flows, known as the volume-to-capacity (V/C) ratio. The lower the V/C ratio, the more hypothetically efficient traffic flow is on that road.

Figure 4-14 and Figure 4-15, show the V/C for the base year (2015) and projected year (2040).[2]

2 The Travel Demand Model (TDM) are currently calibrated to create projections out to the year 2040. Updates to the TDM are underway that would extend projections out to 2050.

There are many TSMO strategies that improve system efficiency within the existing transportation footprint. These strategies reduce the need for roadway widening projects that can have adverse effects on surrounding communities.[xvii] System efficiency strategies include arterial management, bottleneck mitigation, traffic signal management, traveler information, and travel demand management. Recommendations for improving the region's transportation system efficiency, including TSMO strategies can be found below.

System Reliability

Congestion has traditionally been measured in terms of roadway capacity, however travel time is a more direct measure of how congestion affects users of the transportation system. Reliability refers to the consistency and predictability of travel time for people and goods. Most congestion experienced by travelers is not caused by infrastructure capacity of the roadway, instead it is caused by non-recurring events, such as weather conditions, work zones, special events, and major emergencies.[xviii] The Federal Highway Administration recommends four measures to quantify travel time reliability: 90th or 95th percentile travel time, buffer index, planning time index, and frequency that congestion exceeds some expected threshold.

Currently, travel time reliability data available for the Rockford MPA includes the travel time index and planning time index for freeways. In the future, the MPO would like to collect and track the other measures of travel time reliability.

The travel time index is the ratio of travel time in the peak driving periods to the travel time at normal conditions. Planning time index represents the total travel time that should be planned when an adequate buffer time is included to ensure on-time arrival. Figure 4-16 shows the travel time index and freeway

Level of Service (LOS)

A: Free flow, with low volumes, and high speeds

B: Reasonable flow, but speeds are beginning to be restricted by traffic conditions.

C: Stable flow, but most drivers are restricted in the freedom to select their own speeds.

D: Approaching unstable flow, drivers have little freedom to select their own speeds.

E: Unstable flow, may be short stoppages.

F: Forced or breakdown flow, unacceptable congestion, stop-and-go.

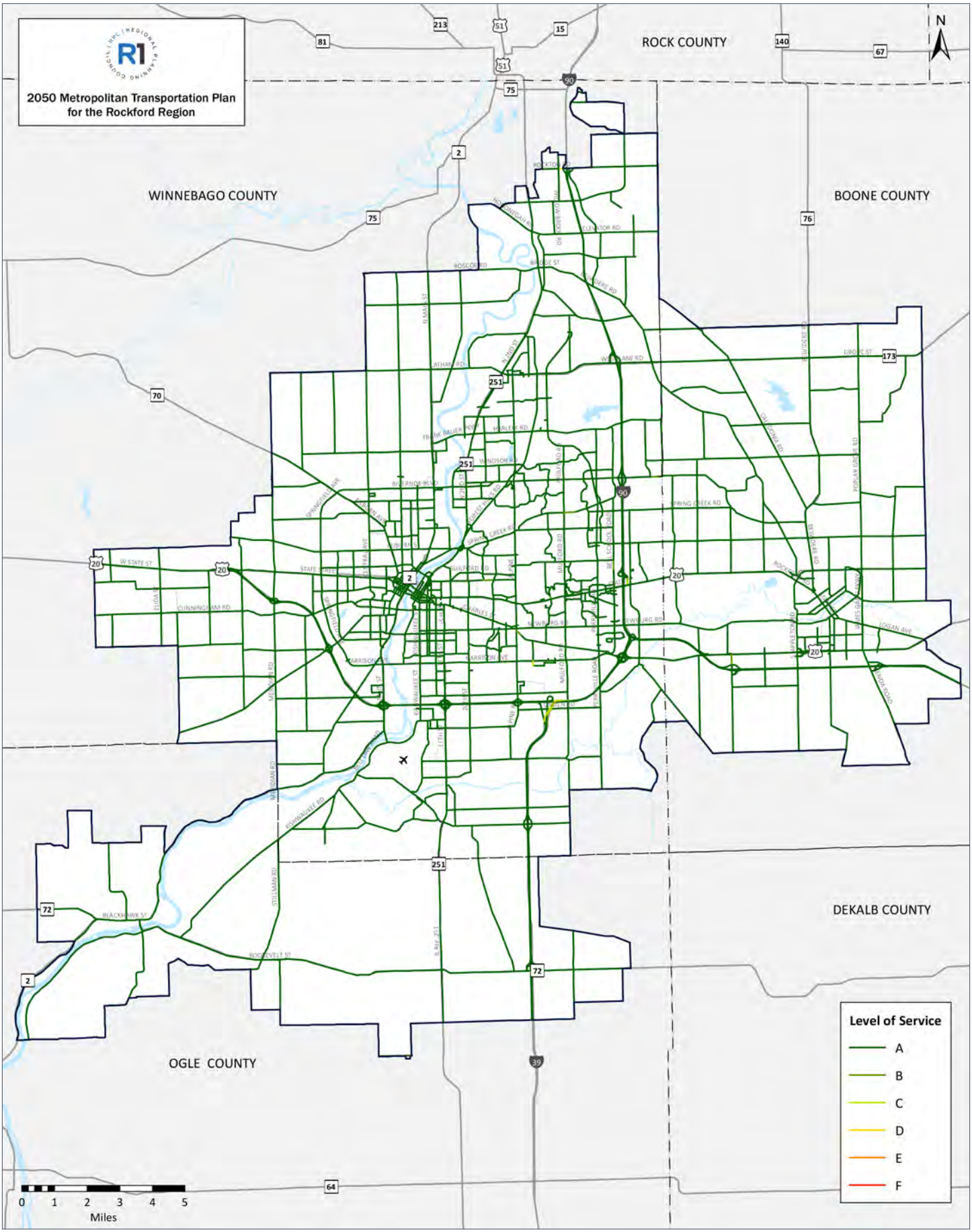
Source: Federal Highway Administration[xv]

Travel Time Reliability

The consistency or dependability in travel times, as measured from day-to-day and/or across different times of the day.

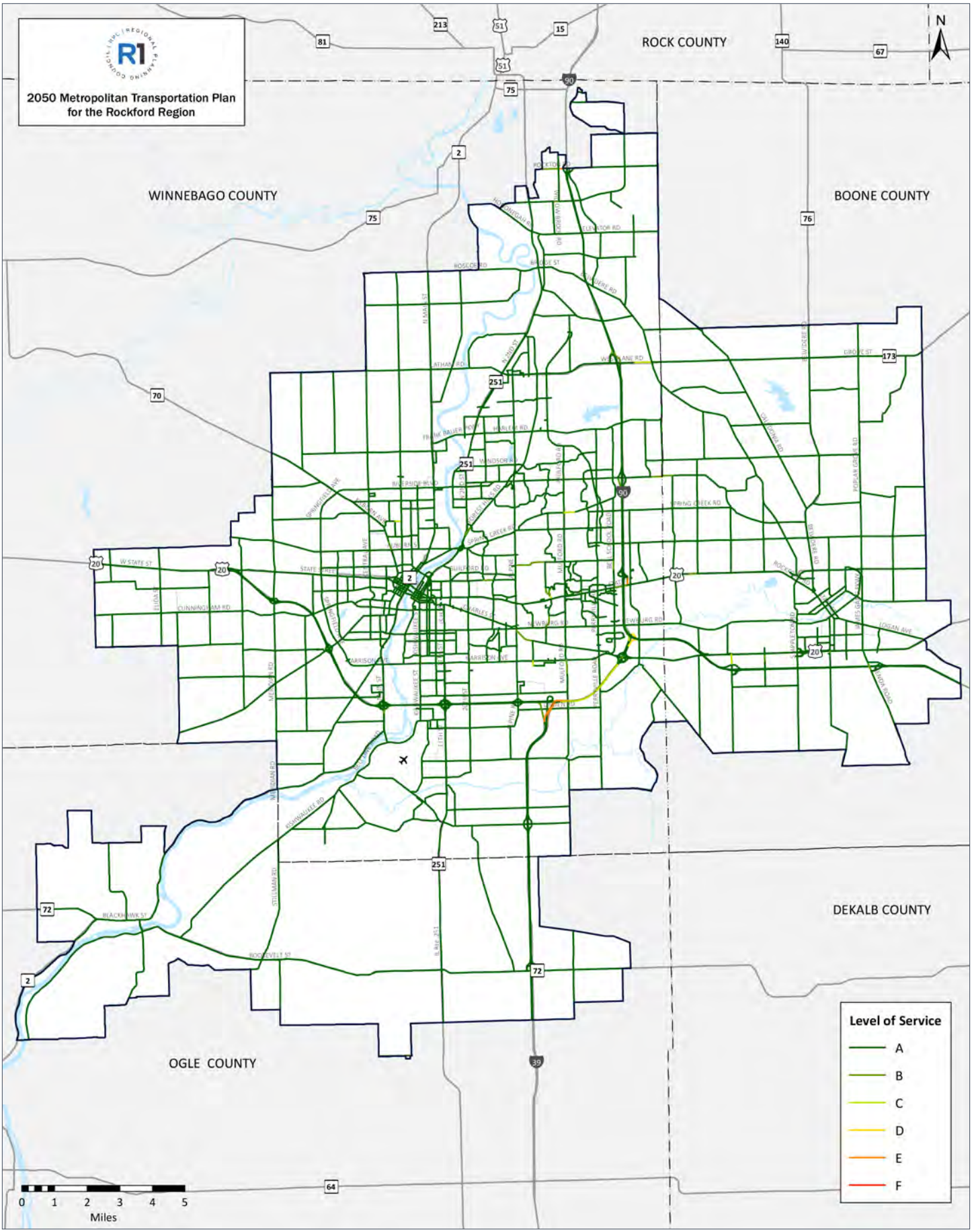
Source: Federal Highway Administration[xv]

Figure 4-12. Roadway Congestion Condition, 2015



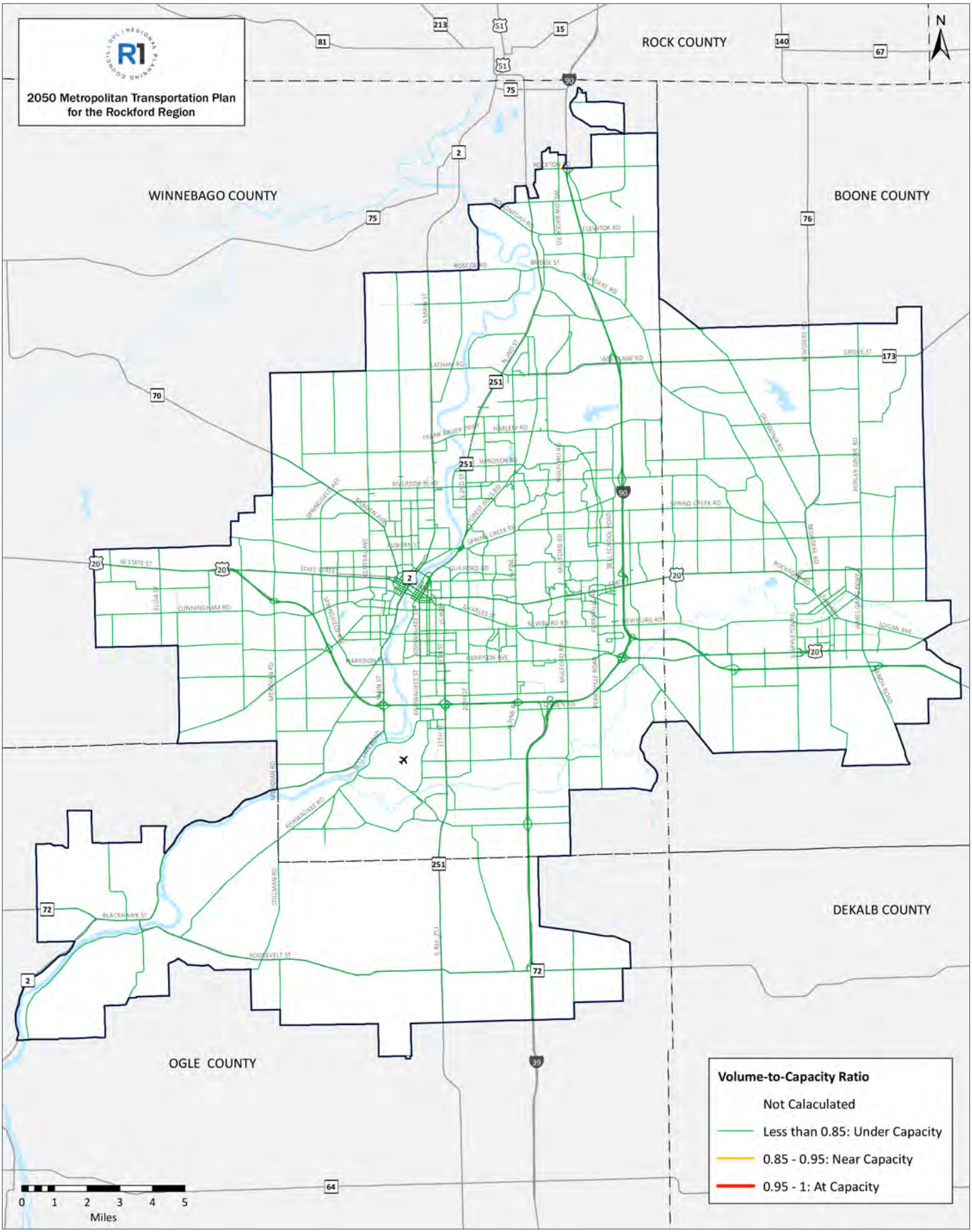
Data sources: Region 1 Planning Council

Figure 4-13. Roadway Congestion Condition, 2040



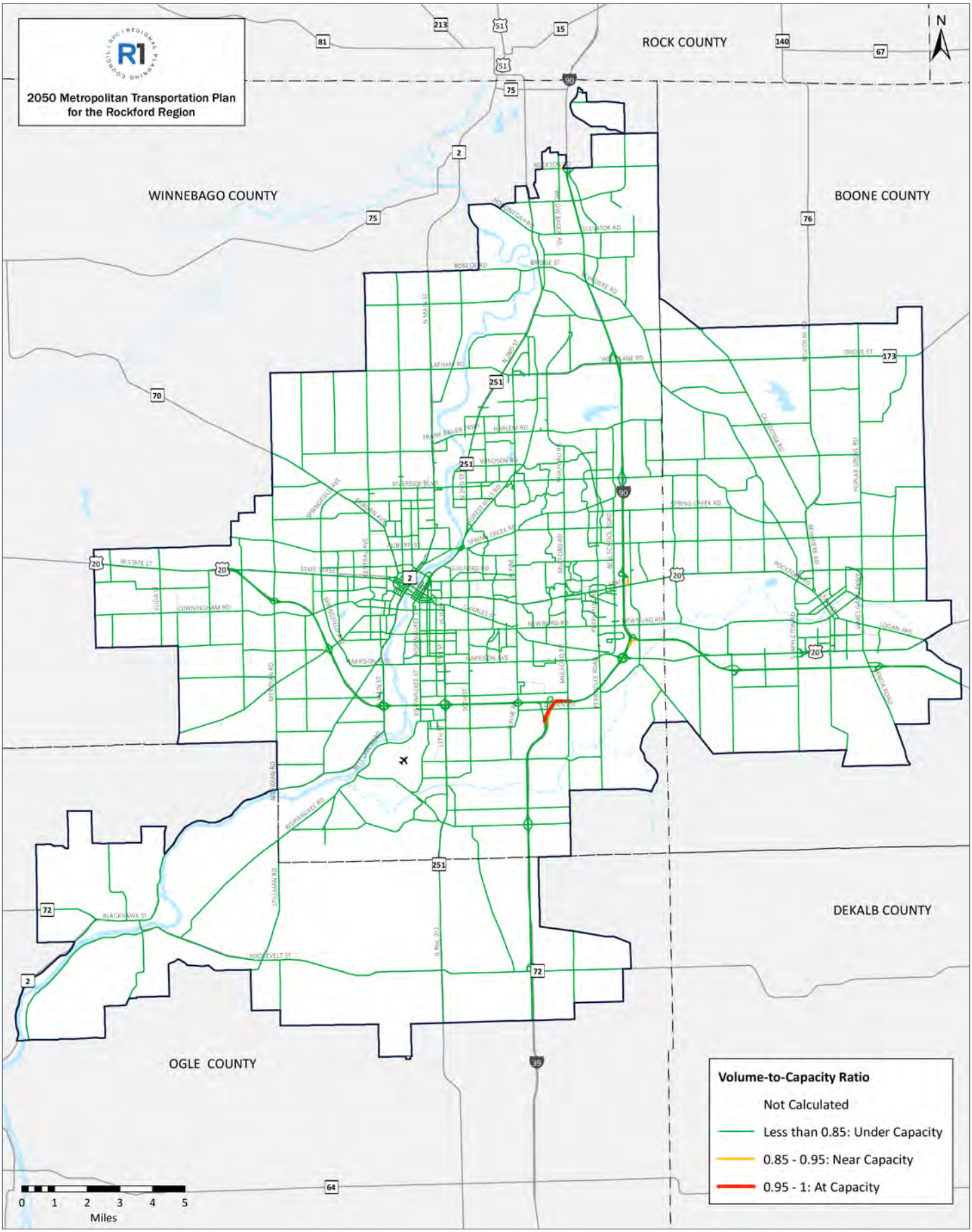
Data sources: Region 1 Planning Council

Figure 4-14. Roadway V/C Ratios, 2015



Data sources: Region 1 Planning Council

Figure 4-15. Projected Roadway V/C Ratios, 2040



Data sources: Region 1 Planning Council

planning time index for the Rockford urban area.

Annual hours of delay represents the amount of time lost due to congested conditions and measures the severity, duration, and extent of congestion within a region. Annual hours of delay can be measured by total annual hours of delay, per auto commuter, and by truck delay. Figure 4-16 shows the annual hours of delay for the Rockford urban area in 2017.

Similar to system efficiency, there are TSMO strategies that can improve consistency and predictable travel time, as well as decrease cost, increase user comfort, and increase mode availability. Some strategies that could be implemented to address system reliability include arterial management, emergency/incident management, special event management, and travel weather management.

Congestion Management Process

In order to address the current system performance and mitigate future congestion, the MPO adopted a congestion management process (CMP) in 2008. CMP is a systematic and regionally-accepted approach to managing the transportation system performance and finds alternative ways to alleviate congestion and enhance the mobility of people and goods.[xxi] As a transportation management area (TMA), the Rockford MPO is federally-required to develop and implement the adopted CMP as an integrated part of the metropolitan transportation planning process.

The adopted CMP strategies guide the development of work programs of the MPO, including the 2050 MTP. The goal is to provide a mix of strategies across a variety of transportation modes and projects that will mitigate future congestion and increase the safety and mobility of persons and goods moving through the transportation system. The following table is a living document and will be updated as needed to guide the regional congestion management process.

Intelligent Transportation System

Intelligent transportation systems (ITS) apply information, technology, and systems engineering principles to the management and operations of surface transportation facilities. ITS is the integration of advanced communication technologies into transportation infrastructure and in vehicles. The main purpose of ITS is to utilize technology and information to improve the operating capacities of the overall system, as well as improve transportation safety and mobility across all modes and facility types to support the entire multimodal transportation system. To optimize the current transportation system and better prepare for rapidly emerging transportation technologies, it is essential that the region continues to incorporate and implement ITS technologies.

The MPO has been, and continues to be, involved with IDOT in coordinating and implementing ITS in the region. Currently, IDOT is updating the Illinois Statewide Architecture and Strategic Plan and looking at regional ITS architectures throughout the state, including the Rockford Region. The project will assess the current use of ITS throughout the state and regionally, as well as recommend approaches to enhance the integration and deployment of ITS for the future. Following IDOT's lead, the MPO is looking to update the Regional ITS Architecture, which was last adopted in 2005.

Travel Time Index

A travel time index value of 1.30 indicates that a trip that would typically take 10-minutes would take 13 minutes in the peak driving times (10 minutes x 1.3 = 13 minutes).xix Planning Time Index: A planning time index of 1.6 means that, for a 10-minute trip in light traffic, the total time that should be planned for is 16 minutes (10 minutes x 1.6 = 16 minutes).

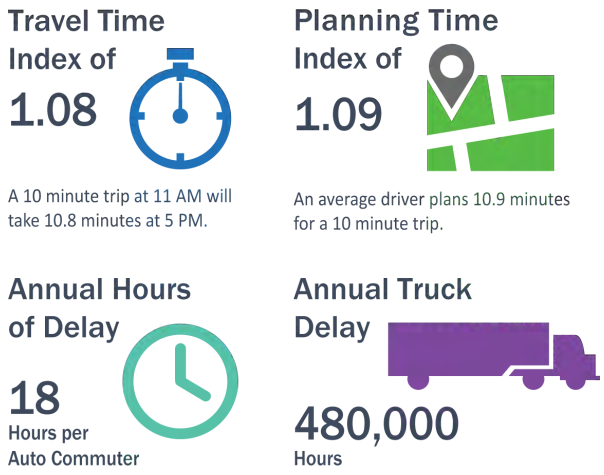
Source: Federal Highway Administration[xv]

ITS Architecture

Provides the framework to efficiently use technology to solve transportation systems and to make better use of existing infrastructure and resources.

Source: Federal Highway Administration

Figure 4-16. Travel Time Reliability & Annual Hours of Delay, 2017



Data sources: Texas A&M

The ITS Architecture for North-Central Illinois, which is the currently adopted ITS architecture for the region, covers Boone, Winnebago, DeKalb and Ogle Counties and was prepared in a cooperative effort between IDOT and the Wisconsin Department of Transportation. The architecture report involves regional stakeholders that have roles and responsibilities in traffic management, emergency management, information service providers, transit management, operations and management, and parking management.

The following concepts were identified in the 2005 Regional ITS Architecture as potential strategies for regional implementation:

- **Traffic Management and Maintenance Control Center:** This center would serve for coordinating interagency activities during traffic incidents. It would also be used to distribute traveler information through the use of

Table 4-4. Adopted Congestion Management Strategies

Strategy Class	Representative Strategies/Measures
Transportation Demand Management (TDM) Measures	Ridesharing (carpool/vanpool)
	Alternative Work Arrangements (telecommuting, flex-time, compressed work week)
	Transit and/or Shared Ride Subsidies
	Parking Management
	Guaranteed Ride Home Programs
Traffic Operational Improvements	Traffic Signal Improvements (timing improvements, demand-responsive signals, coordinated systems, computerized systems)
	Roadway Geometric Improvements (turn lanes, acceleration/deceleration lanes, channelization)
	Time-of-Day Restrictions (turn restrictions, truck restrictions)
	Ramp Metering
	Commercial Vehicle Improvements
	Construction Management
High Occupancy Vehicle (HOV) Measures	HOV Lane Priority
	HOV Signal Priority
	HOV Access Priority (ramp by-pass)
	Support Facilities and Services (park-and-ride facilities)
Public Transit Capital Improvements	Exclusive Rights-of-Way (rail, busways, bus lanes)
	Bus By-Pass Ramps
	Fleet Expansion
	Vehicle Replacement/Upgrade
	Transit Vehicle Management System
	Park-and-Ride Facilities
	Mode Change Facilities (transit centers, transit rail stations)
Public Transit Operational Improvements	Transit Service Improvements (frequency, stop frequency, vehicle type, operating hours)
	Transit Coordination/Marketing
	Transit Information Systems
	Fare Reductions or Packages
	Traffic Operations (signal preemption, turnouts, rail crossing coordination)
Non-Motorized Mode Measures	Infrastruction Improvements (bike lanes, paths, sidewalks)
	Support Services (bike racks and lockers, bike route maps)
Congestion Pricing	Road User Fees
	Parking Fees
Growth Management	Land Use Policies/Regulations
	Design Standards
Access Management	Driveway Control
	Median Control
	Frontage Roads
Incident Management	Detection
	Response
	Clearance
	Information/Routing
Intelligent Transportation Systems (ITS)	Advanced Traffic Management Systems
	Advanced Traveler Information Systems
	Advanced Public Transportation Systems
	Commercial Vehicle Operations
General Purpose Lanes	Freeway Lanes
	Arterial Lanes

Data sources: Region 1 Planning Council

dynamic message signs.

- **Interstate Traffic Monitoring and Traveler Information:** Incidents will be verified through the use of traffic detectors and traffic cameras.
- **Advance Signal Operations/Coordination and Surface Street Traffic Monitoring:** Will enhance existing signal systems and make them more responsive to actual traffic conditions.
- **Agency Data Sharing:** This element will implement or enhance traffic data sharing with emergency response agencies.
- **Winter Weather Maintenance Enhancement**: This element will enhance the ability to better predict, respond to, and minimize winter weather impacts.
- **Arterial Dynamic Message Signs and Dynamic Trailblazer Signing:** Will assist motorists by providing them with alternative route signing and timely information on planned and unplanned incidents.
- **Construction Work Zone Safety, Traffic Monitoring and Traveler Information:** This element will monitor and detect fluctuations in traffic conditions influenced by construction activity or unplanned incidents.
- **Advance Rail Crossing Notification System:** Enhancement to estimate the time of arrival and duration of closing.
- **Supplement Emergency Vehicle Traffic Signal Preemption:** Improvements to all traffic signals on Illinois State routes that will allow emergency vehicles to preempt a signal or temporarily modify its timing.

Looking Forward

The MPO recently began the initial process of updating its Transportation System Management and Operations (TSMO) Plan. To be effective, this update will be a collaborative effort between the MPO and those directly responsible for operating the system. Key to this effort will be an agreement on what measures will be used to assess the performance of the system, a consensus of how the system should be operated on a regional basis, and how to make changes to achieve desired improvements in operating performance. This coordination and consensus helps ensure that the regional transportation investment decisions reflect full consideration of all available strategies and approaches to meet regional goals and objectives.

Similar to the previous TSMO plan, this update will include the development of a program that identifies key transportation performance measures of relevance to the region, coordinate with transportation systems operators and providers to collect appropriate data for those measures, compile and analyze the data, and incorporate its performance within the MTP's System Performance Reports. Additionally, the MPO will pursue several substudies to further the strategies identified within the TSMO plan update. These substudies include Arterial Management Program and an update to the Regional ITS Plan and Architecture.

Arterial Management Program

Arterial roadways are critical in the regional transportation system by providing mobility and access to land uses that are vital to the economy and quality of life. The goal of developing an arterial management program for the region is to advance management and operation strategies that address delay, reliability, and access issues currently experienced on an arterial roadway as well as prevent future issues from arising. There are commonly four TSMO strategies designed to address the management of traffic on arterial roads: traffic signal improvements, advanced traffic signal control, traffic monitoring, and access management.

Primarily focused on the Strategic Regional Arterials system and minor arterial/other principal arterial facilities as appropriate, this program would allow the region to design specific strategies for each of the arterials to meet its particular concerns, as well as ensure the arterial system as a whole is operating at an optimal level.

Intelligent Transportation System

The MPO intends to update the Regional ITS Architecture which will be key for the region as new and developing technologies



Smart Road Over-the-Road Signs. Schaumburg, IL (Courtsey of Illinois State Toll Highway Authority)

have incredible impacts on the field of transportation. In addition to the ITS strategies identified above, the MPO will be integrating emerging technologies into the update of the Regional ITS Plan and Architecture, such as electric, connected, and autonomous vehicles.

Hybrid and Electric Vehicles

Over the past decade, concerns of transportations' contribution to greenhouse gas has increased public and private interest in hybrid and electric vehicles. These technologies lower reliance on fossil fuels and release less harmful pollutants in the air. The more common and lower cost these vehicles and associated technologies become to implement the more overall health and environment benefits will be reaped. In the Rockford Region, there has been a steady rise in the number of hybrid and electric vehicles registered. The number of hybrid vehicles registered in the region has increased by 18.7 percent since December 2017; the number of electric vehicles has increased by 144.7 percent during the same time frame.

With a strong growth rate in the region, there are some challenges for these types of vehicles that will need to be address over the next couple of years. The biggest challenge is the lack of infrastructure needed for widespread usage. Vehicle charging stations have not been heavily invested in, currently making it difficult for long or extended trips.

In winter 2019, the MPO launched a feasibility study to investigate how the region could begin providing public electric charging stations. The feasibility study reviews current electric charging infrastructure, local conditions, regional land use policies and zoning, and provides suggestions for regional planning and future infrastructure needs. Moving forward, creating a regional policy for non-private electric charging infrastructure will allow for user ease and municipal conformity.

Connected and Autonomous Vehicles

Connected and autonomous vehicle (CAV) technology has the potential to change transportation patterns dramatically over the next 30 years. Often thought of as a technology far off into the future, many of the technologies associated with CAV exist in the transportation sector today. While it is easy to often focus on the benefit of these technologies will have, system operational impacts also need to be considered. The considerations that will need to be taken into account are safety, mobility and accessibility, expanding mobility options, congestion management driving behavior, environment, and transportation infrastructure. Addressing the transportation infrastructure and policies needed to support these vehicles and their operation within the region will be critical for the MPO and its partners over the next few years.

At the time of development for the MTP, preliminary research has been conducted by the MPO on the incorporation of CAVs into the transportation planning process. As the MPO pursues an update to the Regional ITS Strategic Plan and Architecture, connected and autonomous vehicles will be further incorporated. Some of the concepts and questions the MPO, along with its partner agencies, will pursue include:

- How CAV technologies can contribute to the region's transportation goals?
- How will CAV technologies influence future land use and development patterns?
- How with CAV technology impact public transit services, the freight industry, and vehicle ownership?
- How can CAV-supportive instrumentation be a part of corrective/preventive road and bridge maintenance projects?
- What CAV-supportive technologies and infrastructure can be incorporated as elements of a complete street and how will they be integrated into road and street design?
- What changes will be required regarding the function, design, and placement of traffic signals, signage, striping, lighting, and other roadway elements to make them applicable to CAVs?

Types of Electric Vehicles

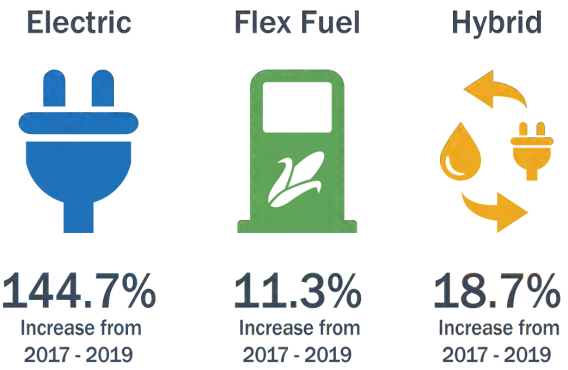
Hybrid Electric Vehicles: Powered by an internal combustion engine and an electric motor, which uses energy stored in batteries.

Plug-in Hybrid Electric Vehicles (PHEVs): Typically use batteries to power an electric motor and use another fuel, such as gasoline, to power an internal combustion engine.

All-electric Vehicles (EVs): Have an electric motor instead of an internal combustion engine.

Source: US Department of Energy[xxii]

Figure 4-17. Hybrid and Electric Vehicle Registrations, 2017 – 2019



Data sources: Illinois Secretary of State



Alternative Transportation

Overview

For most of the twentieth century, development of the transportation network focused on accommodating automobile travel, specifically single-occupant vehicles. Creating a safe and efficient transportation network, however, needs to accommodate all users of the network, including individuals who are unable to either access a personal vehicle for a variety of reasons or choose to not use a personal motorized vehicle. Luckily, in recent decades there has been a significant increase in the number of individuals supporting and advocating for a regional multi-modal transportation network that incorporates viable alternative transportation options beyond personal automobiles.

The Rockford MPO has always placed a strong emphasis on planning and programming for alternative transportation through various planning efforts. Recently, the MPO formed the Alternative Transportation Committee (ATC) to provide information and guidance to the MPO on issues and strategies related to accessibility, connectivity, and the ease of multi-modal mobility throughout the Metropolitan Planning Area (MPA). Additionally, the committee works to improve conditions for bicycling, walking, and public transportation by planning for and supporting the development of local and regional improvements for active (bicycling and walking) and public transportation modes.

As demographics and the environment change over the next 30 years, it will be important for the Rockford Region to continue to prioritize alternative transportation planning and programming. More information on the various types of alternative transportation options within the region are detailed in the following section, along with emerging trends and services that will become a focus in upcoming years, such as micromobility and mobility as a service (MaaS). Also provided is a summary of benefits associated with a robust alternative transportation network.

Alternative Transportation

any mode of personal transportation other than a single-occupant vehicle. Alternative transportation modes include biking, walking, carpooling, and public transportation.

Source: MPO's Alternative Transportation Committee By-laws

Benefits

A community with an extensive multi-modal transportation network that balances the needs of all users of the transportation system offers a variety of benefits, including: economic, environmental, equity, health, quality of life, safety, and transportation. Some of these benefits are highlighted below.

Economic

Investment into a comprehensive alternative transportation network contributes to the economic growth and stability of a community in a number of ways. A robust multimodal network can lead to decreased household transportation costs by providing free or cost-reduced alternatives to vehicle ownership. Additionally, the availability of multiple transportation options can increase both residential and commercial property values by increasing the number of clientele that can access the property, as well as other positive impacts associated with increased pedestrian traffic in commercial and mixed use areas. Above all else, it provides affordable access to regional jobs and services that could otherwise go unfulfilled.

Livability

Walkability is key to an urban area's efficient alternative transportation network. Every trip begins and ends with walking some distance, even if very small. Walking remains the most

cost effective form of transportation; and a walkable community provides the most affordable and socially equitable transportation system that any community can plan, design, build, and maintain. Walkable communities can lead to happier and healthier lives for the people who live in them while also attracting and retaining jobs in the area. Walkability studies have shown more walkable neighborhoods are traditionally better-off economically, have lower crime rates, and have lower public transit operating costs.[xxiii] The higher quality of life afforded within a walkable neighborhood also means non-drivers (seniors, youth, and those without a car) can more easily access services and activities.

Public health experts also promote active transportation as a means of addressing many health issues, such as childhood or adult obesity rates and diabetes. Studies have shown that as little as a half hour of moderate activity, like walking and biking, can promote long term health outcomes.[xxiv] However, studies have also highlighted that only one quarter of the United States population achieves this initiative.[xxv] Community fitness as a whole can be improved with the inclusion of pedestrian and bicycle networks along with public transportation.

Alternative transportation modes not only help individual and community health, but the activities also help to reduce environmental issues, such as air and water pollution. Motorized vehicles emit particulates into the air that are linked to increases of asthma and other respiratory illnesses within communities. By reducing the total amount of vehicle travel, pedestrian and bicycle facilities can help reduce particulate matter and other emissions released from motorized vehicles.

Mobility

Alternative transportation modes promote mobility by providing multiple options to access regional goods, services, and recreational opportunities. A robust alternative transportation network can assist in free or reduced cost travel within and to adjacent neighborhoods and communities. When pairing active transportation with public transportation, individuals have the opportunity to access regional amenities, including fresh-food groceries, specialized medical services, and employment opportunities. By removing the mobility barrier imposed by auto-centric infrastructure, all residents can safely and affordably access amenities needed to thrive, and will in turn improve the health and well-being of the region.

Complete Streets

Many regions and communities across the United States have begun to address alternative transportation needs through the creation of complete streets. Complete streets is a transportation policy and design approach that requires streets to be planned, designed, and maintained to enable safe, convenient, and comfortable travel for all modes of travel. At the core of the complete streets philosophy is the idea that pedestrians, bicyclists, motorists, and public transportation users of all ages and abilities are able to safely move along and across a street.

There is no single formula or approach to creating complete streets. Each complete street is unique and responds to the context of the surrounding area. Elements that may be found on a complete street include: sidewalks, bike lanes (or wide paved shoulders), special bus lanes, comfortable and accessible public transportation stops, frequent crossing opportunities, median islands, accessible pedestrian signals, curb extensions, and more. A complete street in a rural or non-urban area looks quite different from a complete street in a highly urban area, but both are designed to balance safety and convenience for everyone using the road.

Following the proliferation of the personal automobile, American roadways were designed to move as many vehicles as possible between destinations, without much consideration of access alternatives to surrounding land uses. This auto-focused design has at times presented challenges to meet the needs of the increased preference of alternative transportation modes of the traveling public. For some people owning an automobile can be cost prohibitive, others want safer opportunities for their children to walk or bike to school, and some may want greener, more sustainable options. There are also a growing aging population that is facing decrease in available mobility options. In 2005, the National Complete Streets Coalition was formed in order to promote low cost options for existing roadways and ensure all new roadways are designed to provide safe access for all users.[xxvi]

In 2007, recognizing this need the State of Illinois adopted a "Complete Street Law" (Public Act 950665). This law provides the framework for Illinois municipalities, counties, and metropolitan areas to establish policies and standards to incorporate complete street principles in their planning, programming, and implementation documents. This law enables all users of the network, including pedestrians, bicyclists, motorists, and public transportation users, to safely move along and across a complete street. In March 2010, USDOT reinforced this position by stating, "Every transportation agency, including the DOT, has the responsibility to improve conditions and opportunities for walking and bicycling and to integrate walking and bicycling into their transportation systems."[xxvii] Since the passage of this law, IDOT has incorporated complete streets design practices into

Complete Streets Policies

Following are the most common types of policies:

- **Resolution of Support:** Issued by a governing or policy body. Resolutions are non-binding official statements of support for complete streets. These resolutions do not require any action, so they are often a critical first step in gathering support to furthering complete streets initiatives in the future. This type of policy can be enacted at the municipal, county, MPO, or state level.
- **Ordinance:** legally requires the needs of all users to be addressed in transportation projects, and updates city code to reflect this accordingly. Ordinances legally binding and enforceable by law. Ordinances may be passed by all implementing agencies, including municipalities and counties.
- **Updating Design Guidelines/Manuals:** incorporating complete street principles is the most effective means for ensuring complete streets become widely implemented in construction and maintenance standards. Updates of this nature may be a lengthy process.

their projects, where possible.

In 2010, IDOT's Bureau of Design and Environment revised its design manual to incorporate complete streets standards and treatments.[xxix] Local municipalities may work in consultation with IDOT to develop local design guidelines to integrate complete street treatments into local project development.

As of 2019, over 1,500 complete street policies have been passed in the United States, including 33 state governments. As of 2019, approximately 55 Illinois municipalities and other entities have adopted complete street policies.[xxviii] Like the infrastructure treatments, complete street policies can come in many forms with varying degrees of enforcement ability.

Within the MPA, the City of Rockford currently has a complete streets policy, and several municipalities are working towards adopting their own.

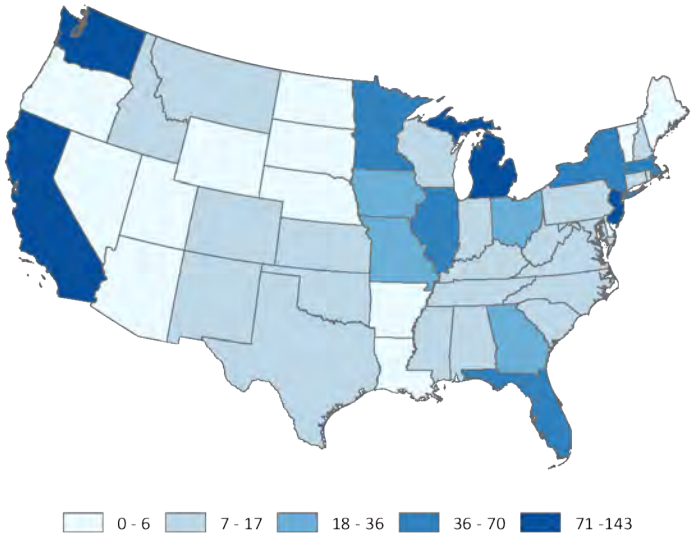
Active Transportation

Planning for pedestrian and bicycle infrastructure networks within the Rockford Region is an important part of the MTP. For multiple population segments, these networks may be their only means of transportation. The MPO has supported and planned for the bicycle and pedestrian network for many years.

Bicycle and pedestrian system planning was initiated with the Regional Bikeway and Pedestrian Plan, adopted by the Rockford Area Transportation Study (RATS) on June 27, 1984. The Rockford Park District, the Forest Preserves of Winnebago County, cities of Rockford and Loves Park, the villages of Machesney Park and Cherry Valley, and Winnebago County also adopted this plan.

Following the 1984 Bikeway Plan, the MPO conducted a workshop, in January 2005, to encourage public involvement in the bicycle system planning process. This group represented a cross section of bicycle stakeholders from the Rockford MPA. The attendees were requested to review the existing plan, propose new bikeway facilities, and recommend changes to bikeway policy. After open discussion, the attendees ranked the planned bikeway system along with new proposed facilities and policies. Through this process, connectivity of the existing paths, especially in an east-west manner was ranked high. In addition, the use of on-street lanes or routes as a method of connectivity also ranked highly. The Rockford Area Transportation Study Pedestrian and Bicycle Plan (2008), which built off the momentum of the 2005 Workshop, contains an area-wide analysis of bicycle and pedestrian facilities and appeared as an appendix in the MPO's 2035 and 2040 Long Range Transportation Plans (LRTP), predecessors to the 2050 MTP.

Figure 4-18. Complete Streets Policies Adopted Nationwide



Data sources: Smart Growth America

In 2017, the latest MPO Bicycle and Pedestrian Plan was adopted. The purpose of the plan is to promote a safe and efficient transportation network for people that provides a balanced multi-modal system while minimizing costs and impacts to the taxpayer, society, and the environment. The Plan addresses the development of a region-wide system of on-street bicycle and pedestrian facilities to connect with existing shared use path facilities, existing and planned public transportation services, and provide model development regulations and ordinances to promote and encourage bicycle- and pedestrian-friendly growth in the Rockford Metropolitan Planning Area (MPA).

The vision of the 2017 Bicycle & Pedestrian Plan reads: "The Rockford Metropolitan Area envisions a community provided with a diverse and safe active transportation network of interconnected, continuous, and accessible system of sidewalks, bicycle facilities, and trails throughout the region. This network will foster a culture of safety, health, awareness, and recreation to enhance the quality of life for both residents and visitors through promoting active transportation alternatives."

This vision was drafted, along with the following goals, by the Bicycle and Pedestrian Advisory Committee (BPAC) during the development of the plan. Members of the BPAC included residents, bicycle and running groups, park districts, colleges, RMTD, and others. The following themes were adopted as the five overarching goals of the Bicycle and Pedestrian Plan: Safety; Infrastructure; Collaboration; Funding; and Education, Encouragement, Enforcement, and Evaluation.

Bicycle Facilities

Many changes to the bicycle network have occurred in the Rockford Metropolitan Planning Area (MPA) since the first iteration of the Bicycle and Pedestrian Plan. While shared use paths are still the dominate bicycle facility choice in the region, many new on-street facilities have been added to the local bicycle network. While the region has made progress in increasing the number and type of on-street bicycle facilities, additional facilities should continue to be developed.

Existing Facilities

In the MPA, most bicycle facilities can be grouped into two overarching categories: on-street facilities (shared lanes, bike lanes, bike routes) and shared use paths. Shared use paths are the

most predominate and widespread type of facility in the MPA that is designed for bicycle use. Overall, there are 128 miles of shared use paths located within the MPA. Additionally, within Winnebago County there is currently 45.5 miles of existing on-street bicycle facilities. Of those on-street bicycle facilities, there are 32.8 miles of on-street bike routes designated by a route sign, seven miles of on-street bike routes with "sharrow" pavement markings, and only 5.7 miles of on-street bike lanes in the region. At this time, the portions of Boone and Ogle Counties within the MPA do not have on-street bicycle facilities and the region, as a whole, does not have buffered or separated bike lanes. Figure 4-19 shows the existing bicycle facilities within the MPA.

Demand

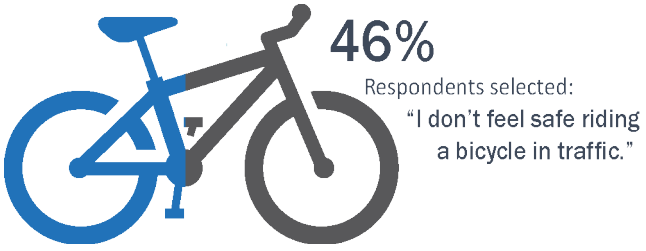
A well-connected bicycle network allows residents to get from their homes to parks, grocery stores, social service centers, work, and to see friends and relatives. Bicycle network demand is highly influenced by the concentration of where people live and work, which are locations known as generators or origins. However, generators are only one component of a demand analysis. Where people want to ride or where they would likely ride to, if adequate facilities exist, is the second component of a demand analysis.

A bicycle demand analysis was conducted for the Bicycle and Pedestrian Plan for the Rockford Region (2017) to provide a snapshot of bicycle demand based on the density of the bicycle trip generators and attractors. Factors were chosen to estimate the potential demand for a variety of bicycling trips, including utilitarian, commuting, and recreational. Demand factors were organized into five overarching categories: live, work, learn, play/shop, and transit. Table 4-5 lists eash of the factors and their associated scores

Constraints and Barriers

Accessibility issues is one of the main constraints in the bicycle network. Bicyclists face physical obstacles that may impede a preferred route. In certain instances, these obstacles may impose such a substantial barrier that bicycling is unsafe or altogether is not feasible and create stressful environments for non-motorized travel. Physical barriers lead to injuries and collisions and may place cyclists in a situation that makes compliance to laws and ordinances difficult. If cyclists do not feel safe riding in traffic, they may end up taking route choices which make compliance with transportation ordinances difficult. This is why modern on-street bike facilities are important in providing for safe and efficient movement of bicyclists. Constraints and barriers to the bicycle

Figure 4-20. Bicycle and Pedestrian Survey: "I don't feel safe riding a bicycle in traffic."



Data sources: Region 1 Planning Council

Types of Bicycle Facilities

Shared Use Path: A bikeway physically separated from motor vehicle traffic by an open space or barrier and either within the highway right-of-way or within an independent right-of-way.



Bike Lane: A portion of roadway designated for preferential or exclusive use by bicyclists by pavement markings and, if used, signs.

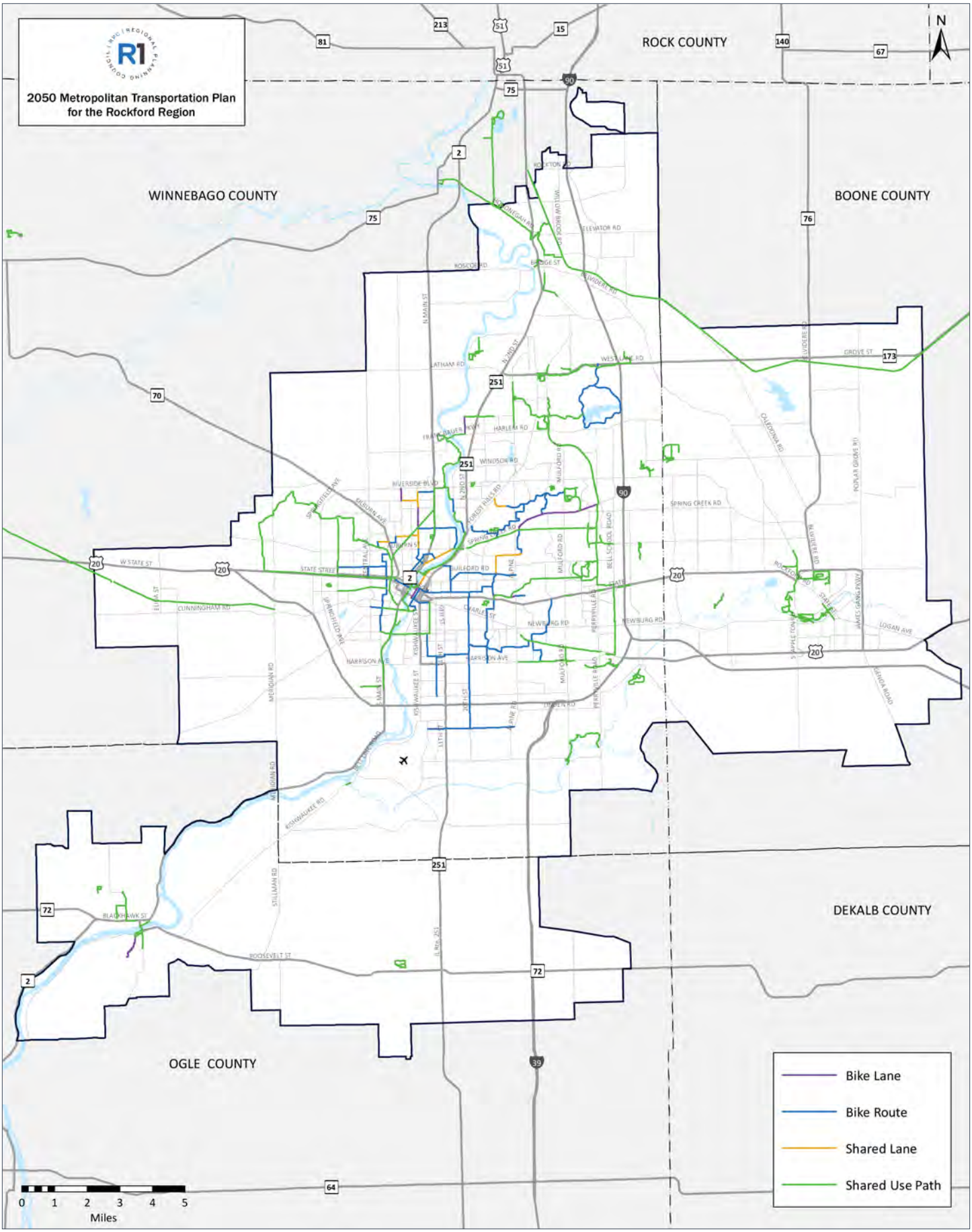


Shared Lane: Roads with "sharrows" to indicate a shared lane environment



Source: AASHTO

Figure 4-19. Existing On-Street Bicycle Facilities & Shared Use Paths



Data sources: Region 1 Planning Council

network include: system connectivity and gaps; active and inactive railroads; high speed and high volume traffic; psychological and social barriers; environmental barriers; and policy barriers.

Opportunities

There are numerous opportunities within the MPA for establishing bicycle facilities that build upon efforts and plans already in place. Some of the opportunities for the region's bicycle network include: future road improvements; greenways; jurisdictional plans; traffic regulations; shifting culture; and rise in advocacy groups.

Municipalities have undertaken steps to improve the bicycling network through updates to their local bicycle plans, such as City of Rockford's 10-Year Bicycle Implementation Plan and local comprehensive plans.

Pedestrian Facilities

Sidewalks and appropriate pedestrian crossings are essential in creating a walkable and livable region. Since the adoption of the 2008 Pedestrian and Bicycle Plan, planning efforts directed towards creating safe and desirable pedestrian ways throughout the region have taken place. While the region has made significant progress increasing the number of sidewalks and improving the accessibility of sidewalks, there is still a need for improvement. As of 2015, the MPA had approximately 1,233 miles of existing sidewalk, including those adjacent to local roads.

Existing Facilities

As part of the 2017 Bicycle and Pedestrian Plan update, a Pedestrian Suitability Index (PSI) was developed to determine the quantity and quality of pedestrian facilities along collector-level or above streets and intersections in the MPA. The index provides a quantitative method for assessing the pedestrian environment related to demand, traffic patterns, and designs.

The PSI uses both supply and demand factors to quantify the walkability of a given roadway or intersection. It combines key data and attributes of the physical infrastructure (supply) with pedestrian generator data (demand) to rank roadways within urbanized area's transportation network by levels of walkability. A three-part geographic information system (GIS) analysis was used to complete the PSI: a demand analysis, pedestrian network analysis, and an intersection analysis.

Part 1: Demand Analysis

Similar to the bicycle demand analysis conducted, the pedestrian demand analysis encompasses various influences by studying where concentrations of people live and work, in conjunction with proximity to significant pedestrian trip generators. The combination of these two calculations was organized into five indicators: live, work, learn, play/shop, and transit.

The initial process for the demand analysis included collecting data for each factor and entering it into GIS. Each factor was scored and grouped in the five overarching categories. Each of the categories were weighted equally at twenty percent. Each category's weighted score was then calculated to produce a composite score for each U.S. Census Block in the MPA. A more detailed overview of the categories and process can be found in the Bicycle & Pedestrian Plan for the Rockford Metropolitan Area.

Table 4-5. Demand Analysis Factors & Scores

Live & Work	Score	Weight
Total Population	1-5	20%
Total Employment	1-5	
Learn	**Score**	**Weight**
Higher Education	1	20%
Elementary School	1	
Middle School	1	
High School	1	
Play & Shop	**Score**	**Weight**
Major Generators	1	20%
Parks	1	
Retail & Entertainment	1	
Medium Generators	1	
Hospitals	1	
Community Services	1	
Transit	**Score**	**Weight**
Bus Stops	1	20%

Data source: Region 1 Planning Council

Part 2: Pedestrian Network Analysis

To complement the demand analysis, a pedestrian network analysis examined the design characteristics and traffic patterns of roadways, as well as the pedestrian environment adjacent to each roadway. Similar to the demand analysis, major roads within the MPA were given a composite score between 0 to 100 based on various roadway and sidewalk characteristics, which can be found below. Higher scores indicate a more suitable environment for pedestrians. Major roadways, with a functional classification of collector or above, were broken into street segments between two given intersections.

Factors for the pedestrian network suitability analysis were grouped into two infrastructure categories: roadway characteristics, with a maximum score of 55 points, and pedestrian space, with a maximum score of 45 points. Table 4-6 shows each of the factors and the number of miles and percent of roadway miles that fits into each factor's score band.

Table 4-7 illustrates the composite scores of the pedestrian network analysis. The results of the roadway characteristics and pedestrian space factors produced four different categories of overall roadway network suitability: high, medium-high, medium, and low.

Part 3: Intersection Suitability

The final step in quantifying the suitability of the overall pedestrian network was through an analysis of intersections within the roadway network. Generally, intersections are the

preferred crossing location for pedestrians. Marked crosswalks and pedestrian signal heads serve to allocate the right-of-way to pedestrians and motorists, reducing the probability of a collision.

Similar to the pedestrian network suitability analysis, factors in the intersection suitability analysis were divided into two characteristics, with a maximum score of 70 points, and pedestrian infrastructure, with a maximum score of 30 points. Each intersection's weighted totals were derived from data on each street segment that crosses within the intersections, known as intersection legs. The lowest pedestrian suitability score among the individual intersection legs was chosen to be the composite score for that intersection.

Figure 4-21 and Figure 4-22 and Table 4-8 illustrate the results of the analysis, based on factor scores and weights. The results of the composite scores of roadway characteristics and pedestrian space factors produced four different categories of overall roadway network suitability.

Table 4-6. Pedestrian Network Analysis Factors & Scores

Roadway Characteristics

Posted Speed Limit	Miles	Percent
< = 25 mph	17.1	2%
30-35 mph	230.0	32%
> = 40 mph	471.3	66%

Number of Lanes	Miles	Percent
2 lanes	532.4	74%
3-4 lanes	181.0	25%
> = 5 lanes	5.4	1%

Truck Routes	Miles	Percent
Absence of truck route	453.4	63%
Presence of truck route	265.4	37%

Traffic Volumes	Miles	Percent
< = 9,000 AADT	572.2	80%
9,000 - 15,000 AADT	70.8	10%
> 15,000 AADT	75.8	11%

Pedestrian Space

Sidewalk Presence	Miles	Percent
Complete Sidewalk	114.2	16%
Partial Sidewalk	78.8	11%
Little Sidewalk	32.4	5%
No Sidewalk	493.4	69%

Sidewalk Width	Miles	Percent
> = 10'	16.1	2%
5 - 10'	62.6	9%
< 5'	640.1	89%

Sidewalk Buffer	Miles	Percent
Buffer	191.8	27%
No buffer	527.0	73%

Data source: Region 1 Planning Council

Constraints and Barriers

Existing public infrastructure, land uses, and current traffic patterns affect the safety, usability, and convenience of pedestrian facilities. Many major corridors in the Rockford Region lack complete, multimodal facilities to accommodate all modes of transportation. Constraints to the pedestrian network and walkability include: physical infrastructure; system connectivity and gaps; active and inactive railroads; infrastructure maintenance; perceived safety concerns; land use patterns and sprawl; and multi-modal conflicts.

Opportunities

There are numerous opportunities within the MPA for expanding the pedestrian network that build upon current efforts and plans already occurring. Some opportunities for the region's pedestrian network include: future road improvements; new developments; existing road widths; current enhancement projects; jurisdictional comprehensive planning; and future road improvements.

Future road improvements that are planned for construction offer a wide range of opportunities to include pedestrian accommodations. Using planned future roadway improvement projects to incorporate pedestrian facilities can reduce overall installation infrastructure costs. Often, planned future roadway improvements are maintenance related and include low cost solutions for crosswalks, such as restriping the pavement and resurfacing.

Reconstructing existing facilities is more frequent and has a lower cost estimate than providing new construction. Future improvements of this type could streamline the improvement process of pedestrian facilities. Many pedestrian friendly elements

Table 4-7. Overall Pedestrian Network Analysis Results

Class	Miles	Percent
High Suitability (75 - 100)	59.1	8.2%
Medium High Suitability (55 - 70)	111.9	15.6%
Medium Suitability (35 - 50)	351.7	48.9%
Low Suitability (0 - 30)	196.1	27.3%
Total Roadway	718.7	-

Data source: Region 1 Planning Council

Table 4-8. Pedestrian Intersection Analysis Results

Class	Miles	Percent
High Suitability (75 - 100)	104.0	2.8%
Medium High Suitability (55 - 70)	347.0	9.5%
Medium Suitability (35 - 50)	1,643.0	45.0%
Low Suitability (0 - 30)	1,558.0	42.7%
Total Intersections	3,652.0	-

Data source: Region 1 Planning Council

Figure 4-21. Pedestrian Network Analysis Results

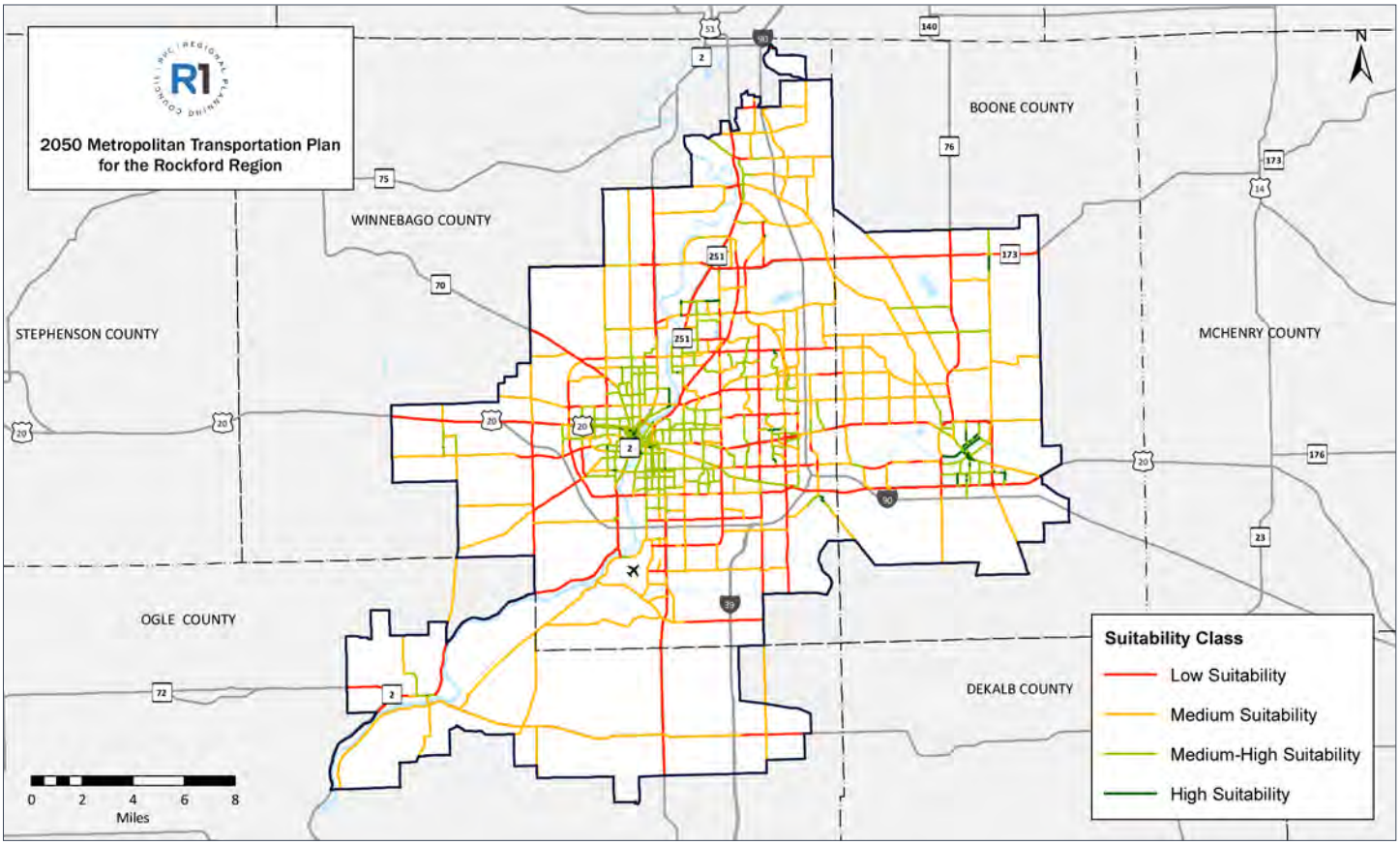
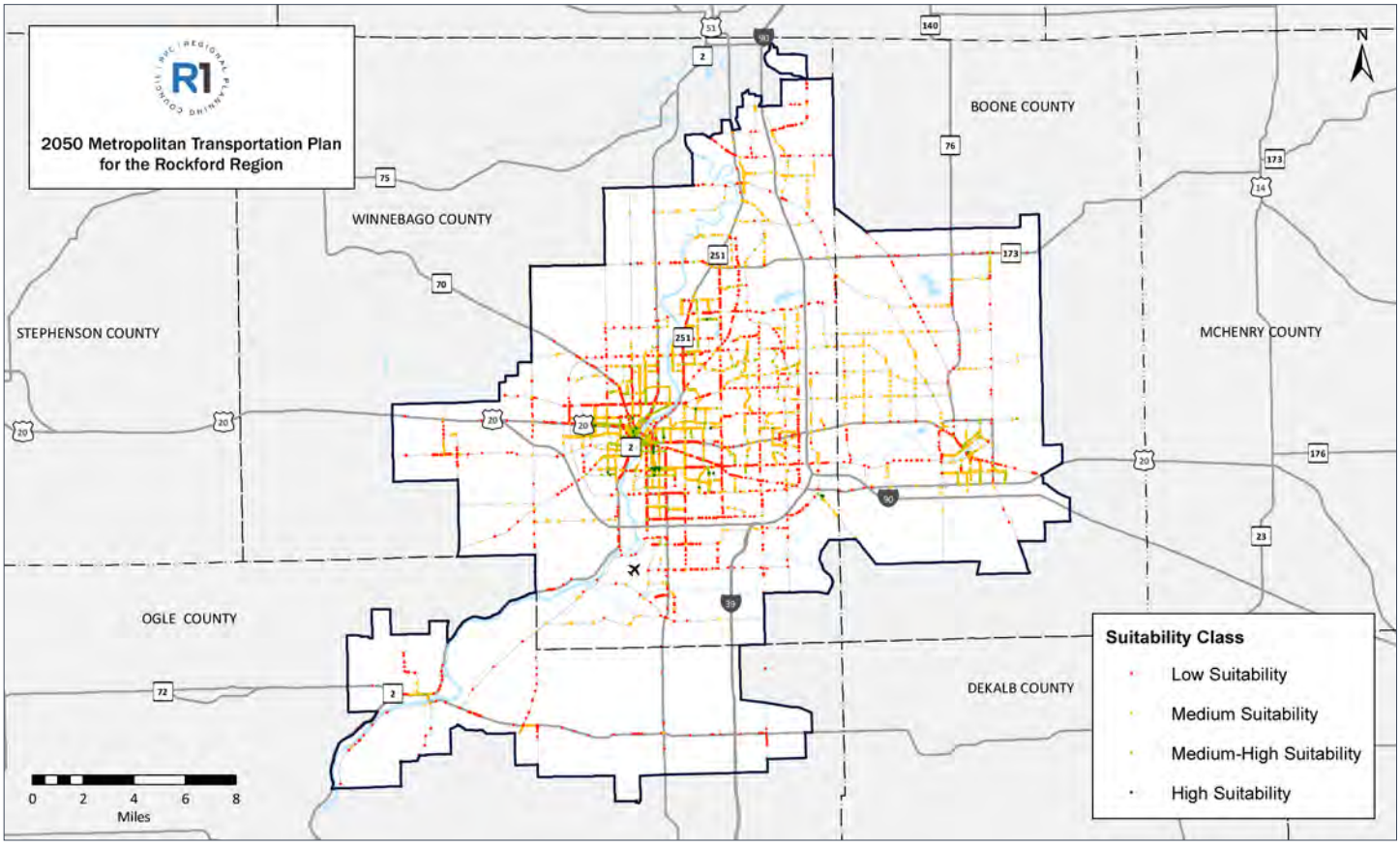


Figure 4-22. Pedestrian Intersection Analysis Results



Data sources: Region 1 Planning Council

that can be included in the roadway are not major infrastructure installations. For example, restriping pavement to create narrower lanes create a more pleasant experience for pedestrian without significant infrastructure construction or high cost estimates.

Safety

According to the Federal Highway Administration (FHWA), an estimated 5,977 pedestrians and 783 bicyclists were killed and roughly 71,000 pedestrians and 50,000 bicyclists were injured in 2017, nationwide.[xxx] Pedestrian and bicyclist safety is an ongoing element included in the transportation planning process. Many cities in the United States have found that bike lanes slowed motor vehicle traffic, increased bicycle ridership, reduced crashes, and improved people's perceptions of safety on those corridors.

In this region, an estimated 22 pedestrians and 6 bicyclists were involved in severe crashes and 65 pedestrians and 45 bicyclists were injured in 2017. Following the federal performance management framework, the MPO sets targets for the reduction of non-motorized fatalities and serious injuries in the region. The MPO has chosen to support the State's target of a 2 percent reduction in crashes for all safety performance measures. More information on the performance measures and targets can be found in Section 2: Planning Framework.

Americans with Disabilities Act

Americans with Disabilities Act (ADA) is a federal civil rights law that prohibits discrimination against people with disabilities. Under this law, people with disabilities are entitled to all of the same rights, privilages, advantages, and opportunities that others have when participating in civic activities. Title II of the ADA requires state and local governments to make pedestrian crossings accessible to people with disabilities by providing curb ramps. When sidewalks are built or alter post-ADA (January 26, 1992) curb ramps must be included at certain locations, such as curb ramps or other sloped areas wherever they intersect with a roadway and where pedestrian may legally cross the vehicular way, as well as at public transportation stops.

In order to comply with requirements of the ADA, local and state governments have developed ADA Transition Plans for public right-of-ways and sidewalks to remove barriers and take proactive steps to ensure ADA compliance. The MPO can provide technical assistance to partner agencies to complete their plans, as well as incorporate ADA design standards and guidance in regional planning initiiatives.

Looking Forward

Bicycle & Pedestrian Plan for the Rockford Region's Action Plan

The current regional bicycle and pedestrian plan is intended to serve as a comprehensive planning tool for the MPO and local jurisdictions to develop a well-connected network of active transportation options and more livable communities. The recommendations of this plan are related to five categories that are essential in making great places for bicycling and walking. These are known collectively as the "Five E's": Engineering, Education, Encouragement, Enforcement, and Evaluation. Both the League of American Bicyclists and the Walk Friendly Communities (WFC) promote use of the "Five E's" to foster a walk-friendly or bike-friendly community. Policies and programs that fit into these categories build on each other to approach walking and bicycling improvements in a holistic way.

Some of the recommendations described in the plan that are being addressed through ongoing efforts in the region, include:

- A comprehensive online website for bicycle- and pedestrian-related materials. To address this need, the MPO is developing a pair of online regional bicycle facilities maps. These regional maps provide a multijurisdictional overview of available facilities in the region. The first phase is a Google My Maps version that provides easy mobile access for the public. The second phase is a companion resource through ArcGIS online that will host additional data. This will also begin the process for updating the current regional Greenways map.
- Conducting walking and biking audits. The MPO is providing best practice and assistance with the development of several walking and biking audits throughout the region. Boone County Hunger Coalition is currently conducting walking audits in the City of Belvidere and Boone County to address food access. This will lead to additional analyzes of how active transportation plays a role in ability to access healthy food.

The MPO, local agencies, and organizations will continue to promote activities that improve the active transportation network in the region through the implementation of the bicycle and pedestrian plan recommendations and future planning efforts.

Closing the Gaps

Connectivity between facilities is one of the largest considerations for increasing the use of the current system. It has been identified through various planning initiatives that the region specifically lacks sufficient east to west routes. Further development and



East State Street. Rockford, IL

incorporation of these east-west routes would provide greater mobility through the region and connect to existing bicycle and pedestrian infrastructure. For example, the City of Rockford is currently updating their 10-Year Bicycle Plan to identify and address gaps in the regional system under their jurisdiction. In the 2017 Bicycle and Pedestrian Plan, the MPO identified key east-west routes and north-south routes that are being incorporated in the City's 10-Year Bicycle Plan.

A major barrier to the pedestrian network is the historic development patterns which can be unsafe and inefficient for walking. Residential streets in certain areas of the region terminate in dead-ends or cul-de-sacs, thereby abruptly ending the sidewalk network and perpetuating a network lacking continuity. As a result, it prohibits safe and convenient travel for many pedestrians and bicyclists and perpetuates challenges for connected and convenient travel for many pedestrians and bicyclists.

Regarding resource availability to promote connected bicycle and pedestrian infrastructure, the MPO through the Transportation Alternatives Program (TAP), has awarded funds to several projects which close the gaps in the pedestrian infrastructure. Additionally, several significant bicycle and pedestrian projects within the region have been awarded through the Illinois Transportation Enhancement Program (ITEP). Connectivity is one of several considerations that is reviewed in both the TAP and ITEP project selection processes.

According to the FHWA, the provision of connected and consistent facilities for pedestrians and bicyclists can reduce conflicts among modes and encourage higher levels of walking and bicycling. Walking and bicycling routes should form a comfortable network for all ages and abilities throughout a region, with a focus on making logical connections to places of employment, social services, public transportation and other important points of interests which will maximize overall transportation system use.

Innovative Mobility Services

Similar to advancements within the built transportation infrastructure, transportation modes and services with which individuals interact with continue to evolve. Web-based applications, advanced by the proliferation of smartphones during the 2010s, provide a new platform for innovative transportation-related problem solving, including redefining personal automobile ownership. The following services detailed below, some new and some reimagined, have transformed the way people perceive and interact with the regional transportation network and will continue to play a role on the path to 2050.

Ridehailing

Traditional taxi services have been a long-lasting enterprise within the Rockford Region. With a single phone call, a trip can be scheduled for any destination in and around northern Illinois. This service was put on fast-forward in 2015 when Uber, a Transportation Network Company (TNC), launched services in the region. Although the technology itself was revolutionary, using a web-based service (in this case a smartphone application) to schedule an on-demand trip, the most well-known feature of traditional TNCs is how the trip is provided. In place of a fleet of vehicles specifically designed to carry out the service, TNCs connect ride-seekers with individuals who are willing to provide trips in their personal vehicles. Although the definition of employment-status of individuals who provide the trips has evolved, the basic structure still stands, and has experienced a demand great enough for another TNC operator, Lyft, to launch service in the region in 2017.

Ridesharing

In contrast to taxi services and Transportation Network Companies (TNC) that allow individuals to purchase point-to-point transportation services, ridesharing refers to connecting individual trip makers to collectively travel to a certain destination(s). Just as TNCs evolved the provision of taxi-like services, similar web-based products evolved traditional carpooling networks by revolutionizing how trip-makers communicate with each other. Trip matching, either actively pursued by the participant or coordinated through an external partner, allow individuals to share in trip costs and reduce single-occupant vehicle (SOV) trips associated with increased congestion and reduced air quality.

Outside of traditional carpooling networks that exist within the Rockford Region, most innovative ridesharing services are attributed to providers currently outside of the region. Multiple private third-party websites are available to match individual drivers with potential riders. These online forums are great resources for matching both everyday commuters and temporary long-distance trips. Similar services are being provided by TNC operators, who will connect multiple individuals to share a similar destination trip. However, this service has yet to be launched in the Rockford Region.

Pace Suburban Bus, the public transportation provider for the suburban Chicago region, offers a vanpool program to Rockford's regional residents who make daily trips into their service area. This program provides an all-expenses paid multi-passenger van to a volunteer driver who is responsible for picking up a group of individuals and traveling to a certain destination within the Chicago Region. As of July 2019, nine Pace Vanpools leave the Rockford MPA and travel to destinations in Chicago, Des Plaines, Elgin, Hines, and Schaumburg.[xxxi] Each passenger pays a monthly fare amount that is dependent on both the distance traveled and

Ridehailing

Online platform to connect passengers with drivers and automate reservations, payments, and customer feedback. Other names include ridesourcing, e-hailing.

Source: Trasnportation Research Board

Transportation Network Company (TNC)

Ridesourcing companies that provide prearranged and on-demand transportation services for compensation, which connect drivers of personal vehicles with passengers.

Source: Trasnportation Research Board

number of passengers carried. Along with free transportation, drivers are also allotted 300 personal use miles per month.

Micromobility

One major barrier to alternative transportation use is the lack of mobility options for small-to-medium distance trips that are both too far to walk but too close to wait for public transportation, forcing residents to either drive or hail a ride. Large cities and universities have overcome this issue by offering bike-share programs, where users rent bicycles at built stations and return the bicycle to the station closest to their destination.

In spring 2016, the MPO completed the City of Rockford's Bike Share Feasibility Study. This study analyzed bike-sharing as a potential option to overcome transportation barriers and supplement access to public transportation while fostering a growing bicycle culture within the region. Ultimately, the study suggests multiple steps for the city to take while implementing a bike share system, including increasing its investment in city bicycle and pedestrian infrastructure and implementing local and regional complete streets policies.

In 2018, two years after the release of the study, LimeBike launched a dockless bike share system in the Rockford Region. As with ride-hailing and ride-sharing companies, LimeBike paired innovative technologies with web-based applications to increase the options available for short-to-medium distance trips. Web-based applications and advanced GPS systems removed the need for docked systems, allowing patrons to locate, pay for, and leave a bicycle near their destination. Over the six-month operating period, LimeBike hosted more than 25,000 individual rides and around 26,000 miles' worth of bicycle travel.



LimeBike. Rockford, IL

Micromobility

A privately owned and operated shared transportation system that can offer fixed routes and schedules, as well as flexible routes and on-demand scheduling and is generally utilized through an app. Types of micromobility include station-based bike share, dockless bike share, scooter share.

Source: Trasnportation Research Board

Unfortunately, 2018 was the only year Limebike operated within the Rockford Region, ultimately leaving the market to focus on new technologies. Currently, dockless systems are pairing with innovative battery-electric technologies to offer shared systems for multiple light vehicles, such as electric bikes and scooters. However, the region's experience with a bike-share system will continue to influence decision-making and move the region closer to its alternative transportation goals.

Looking Forward

Data Sharing and Local Policy

As mobility innovations enter the market, it is important for host communities to capitalize on data sharing agreements and other policies that govern access to and use of public space. Effective data-sharing agreements can benefit all parties through increased regional multimodal planning, ultimately providing a collaborative approach to meeting multiple transportation preferences. Access to transportation user data leads to municipalities having a better understanding of their transportation network and make strategic decisions for the future. Data sharing agreements also allow the regional transportation network to continue to evolve to effectively meet the needs of its users, including how private services interact with local ingrained transportation systems.

As a region, it will be increasingly important to study best practices and establish policies to prepare for future investment and access for mobility technologies. With a thorough understanding of how region-specific users are accessing mobility programs and services, future planning studies can address evolving transportation gaps in human service provision.

Mobility as a Service

Mobility as a Service (MaaS) relies on a digital platform that integrates end-to-end trip planning, booking, electronic ticketing, and payment services across all modes of transportation, public or private. While still in the beginning stages of development, there are some critical components common to most MaaS efforts. Currently, the region has not yet developed all of the components of MaaS but is taking steps to move forward. One of the partners needed to implement MaaS, Rockford Mass Transit District (RMTD), is beginning to explore electronic data needs and upgrading their fleet. To address MaaS, the MPO and partner agencies will work together to create a seamless multijurisdictional multimode transportation network. This will require further collaboration on data policy, online service, and closing the gaps in the transportation network. The key components that need to

be addressed are outlined below.

Infrastructure

MaaS is a data-driven, user-center paradigm, powered by the growth in use of smartphones. To work effectively, MaaS requires the following conditions: widespread penetration of smartphones on 3G/4G/5G networks; high levels of connectivity; secure, dynamic, up-to-date information on travel options, schedules, and updates; and cashless payment systems.[xxxii] To allow for these conditions, a diverse range of partners would need to cooperate: mobility management partners, telephone companies, payment processors, public and private transportation providers, and local authorities with responsibility for transportation and municipal planning. There should also be an emphasis on complete streets to allow for the integration of physical infrastructure that enables transfers between transportation services, such as bike and ridesharing spaces at bus stations.

Data Providers

Users access MaaS through a platform – either a multimodal trip-planning app or a webpage. A good platform identifies a range of transportation options and offers real-time traffic updates, often crowdsourced. CityMapper, Moovit, and Ally are a few of the platforms used around the world. The data provider is one of the intermediary layers between the transportation operator and the end user. It manages the data exchange between the multiple service providers, providing the application programming interface (API) gateways and analytics on usage, demand, planning, and reporting. Since individual service providers may not have incentive to share their app data, having a third party involved can remove some of the barriers to cooperation that could arise.

Transportation Operators

Essential to any MaaS offering is public transportation operators. Demands to expand service delivery have driven many transportation agencies to introduce new modes of travel, such as bike sharing, or to join up with complementary modes, such as ridesharing. Gaps in public transportation services have fueled a growing contingent of small-scale private providers, each offering a specific service: parking, carpooling, peer-to-peer car clubs, ride-hailing, or on-demand bus rides. Typically, each operator requires its own app with a separate interface and payment mechanism, and each service maintains its own customer relationships.

Mobility Advisor

The newest and most integral component of MaaS consists of third-party aggregators. Using an asset-light model similar to Alibaba, Airbnb, or Uber, the trusted mobility advisors link the services of the various private and public operators, arranging bookings and facilitating payments through a single gateway.

Curbside Management

New mobility options have placed an emphasis on how jurisdictions manage curb space. Curb space is where movement meets access. Not only is it used for car parking and loading, but it also serves as the front stoop, sidewalk café, transit hub, freight delivery zone, taxi stand, rain garden, or trash collection area. It serves many purposes throughout the day and makes possible the exchanges and interactions that occur on successful streets. Curb space has historically been a reliable revenue source for municipalities through parking fees and a key indicator for real estate and retail value.

Previously, curb space uses and regulations have often been created piecemeal in response to property and business owners, and primarily allocated to private vehicle storage. The proliferation of shared mobility options like bike share, for-hire vehicle companies, micro-mobility modes, and e-commerce



East State Street. Rockford, IL

package deliveries has intensified demand for curb access, and highlighted the urgency of managing curb space as a public asset. Essential functions of the public-right-of-way can be divided into several categories:

- **Mobility:** The movement of people and goods, including sidewalks, bicycle lanes and protected bikeways, dedicated bus or light/rail streetcar lanes, and general purpose vehicular travel lanes.
- **Access for People:** People arriving at their destination or transferring between different modes of transportation. This includes transit stops, passenger loading/unloading zones, taxi zones, short-term parking, bicycle parking, and curb extension.
- **Access for Commerce:** Goods and services reaching their customers and markets primarily through commercial vehicle or truck loading zones.
- **Storage:** Provision of storage for vehicles and equipment, including bus layover spaces, reserved spaces for specific uses such as police or government vehicles, short-term vehicle and bicycle parking, loner-term on-street parking, and construction vehicles.

There are a variety of tools and treatments that can be used in coordination and/or combination with one another to serve the land uses, activity demands, and modal priorities identified within a curbside management plan. Moving forward in the Rockford Region, a curbside management study should be conducted to plan for current and future uses/treatments.

Public Transit

Public transit transforms communities and the lives of the people living in them by spurring economic development, promoting sustainable lifestyles, and providing a higher quality of life. The Rockford Metropolitan Planning Area (MPA) is served by four public transit agencies, including the urban fixed-route mass transportation provider Rockford Mass Transit District (RMTD), demand-response service providers Boone County Public Transit (BCPT), Stateline Mass Transit District (SMTD), and Lee-Ogle Transportation Systems (LOTS), as well as a collection of human-service agencies filling specific transportation needs for their client-base. Collectively, these agencies coordinate to provide service to most of the MPA, excluding unincorporated portions of Winnebago County, the Village of Winnebago, and portions of the Villages of Cherry Valley and New Milford.

Coordinated Human Service Transportation

Several human service transportation gaps currently exist in the MPA, largely due to constrained resources and limitations in fixed-route and demand-response services. Due to shortages both at the local and state levels, finding areas of coordination and partnership can reduce the impact of those gaps by capitalizing on the strengths and resources of multiple agencies and partners to address common issues.

The MPO Coordinated Public Transit-Human Services Transportation Plan (Coordinated Plan) helps fulfill this need by identifying needs and gaps in public transportation services, particularly for seniors, individuals with disabilities, individuals with low incomes, and other transit-dependent populations in the MPA. Last updated in July 2017, the Coordinated Plan proposed the following goals to address public transportation gaps and needs within the MPA.

- Maintain or enhance existing service levels;
- Improve coordination and communication;
- Seek efficiencies in service delivery; and
- Improve educational outreach of transit providers and services.

The MPO's Alternative Transportation Committee (ATC) serves as a forum for public transit and human service agencies to discuss items related to public transportation policy, planning, implementation activities, and related transportation planning initiatives, including participation in the creation, adoption, and implementation of the Coordinated Plan. Through active participation in the committee, agencies can also take advantage of coordination opportunities as policies evolve at the state and federal level.

Currently, all public transit agencies within the Rockford urbanized area actively coordinate services for inter-jurisdictional trips. Concurrent to offering similar service hours, SMTD riders can access both the RMTD fixed-route and paratransit services and vice-versa through a transfer point located at the Machesney Park Target, located along IL-173. SMTD also provides transfers to Beloit Transit System across the Wisconsin state line as long as the trip begins or ends within SMTD's service area. Transfers between RMTD and BCPT can occur at any RMTD bus stop in Boone County as long as the ride is scheduled with BCCA, the contracted operator for Boone County Public Transit services. However, inter-jurisdictional transfers are not free, requiring full-fare payment to each organization.

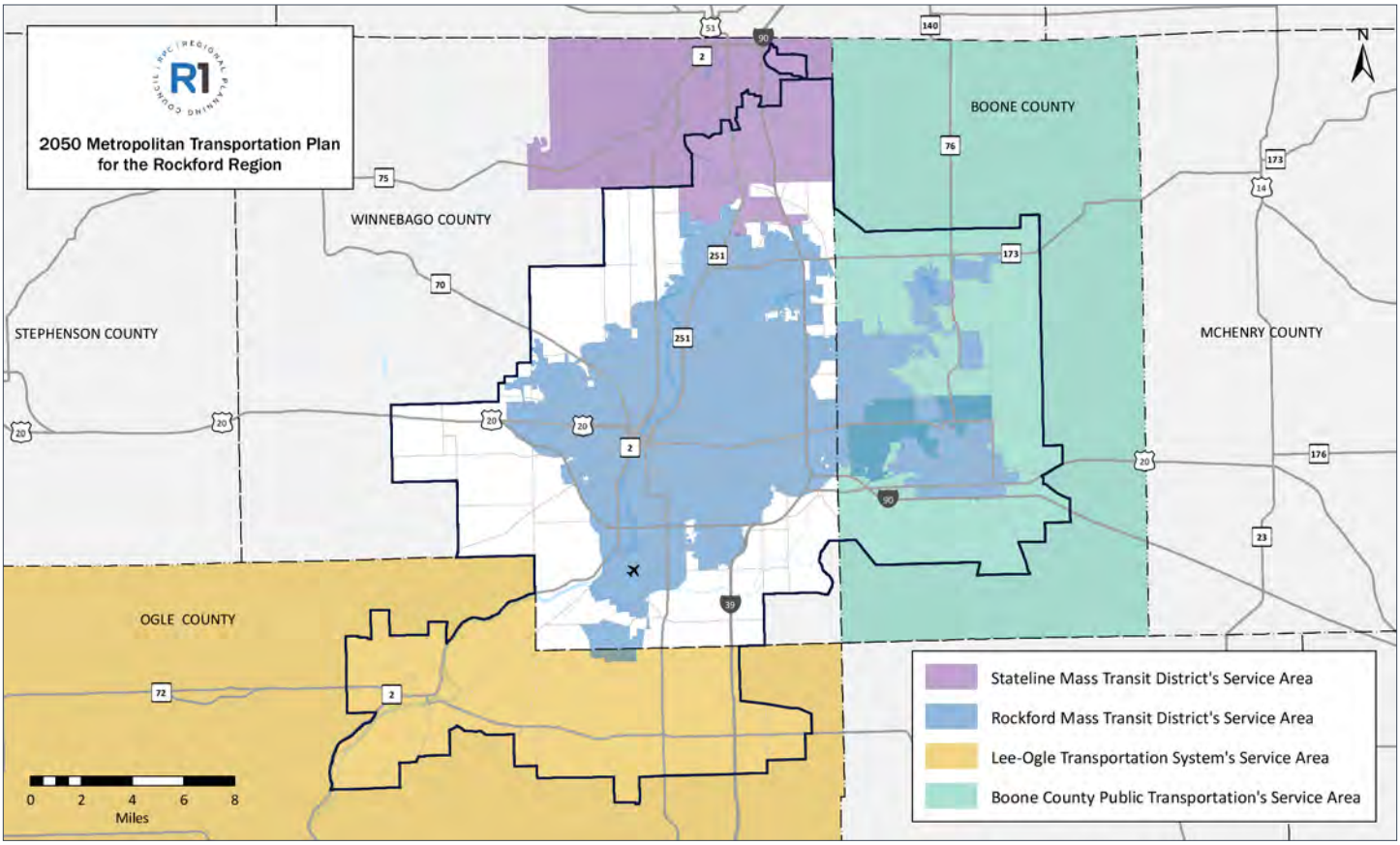
Rockford Mass Transit District

Rockford Mass Transit District (RMTD) provides fixed-route and complimentary origin-destination paratransit services within Rockford, Loves Park, Machesney Park, and Belvidere, and contracts the Boone County Council on Aging (BCCA) to provide demand-response service to the urbanized potions of Boone County. In total, RMTD's service area covers 155 square miles and approximately 227,000 of the region's residents.

Service

RMTD operates 19 daily fixed-routes (Monday-Saturday), six weeknight routes, and five Sunday routes. Most of RMTD's fixed-route services are provided on a hub-and-spoke radial operation pattern originating from the Downtown Transfer Center in Rockford. General service hours include service to all municipalities during weekdays, service to Rockford, Loves Park, and Machesney Park on Saturdays, and only to certain areas in Rockford on Sundays. Services are not provided on Saturday and Sunday nights. Additionally, service to and around CherryVale Mall, in the village of Cherry Valley, is also provided during regular operating periods for an additional zone fare. Most fixed-routes run at 60 minute headways, with only two weekday routes (#2 School St and #11 East State) running every 30 minutes and

Figure 4-23. Public Transit Service Areas



Data sources: Region 1 Planning Council

another two weekday routes (#3 Huffman and #6 Kilburn) running every 90 minutes.

RMTD provides complimentary origin-destination paratransit service at a minimum three-quarters of a mile from their fixed-route system, and where applicable, extends this service area to the incorporated limits of Rockford, Machesney Park, Loves Park, and Belvidere. Paratransit services operate the same schedule as RMTD's fixed-route system. Although weeknight fixed-route service is only available in Rockford, complimentary paratransit service is extended to 10:00pm for Loves Park and Machesney Park.

Governance

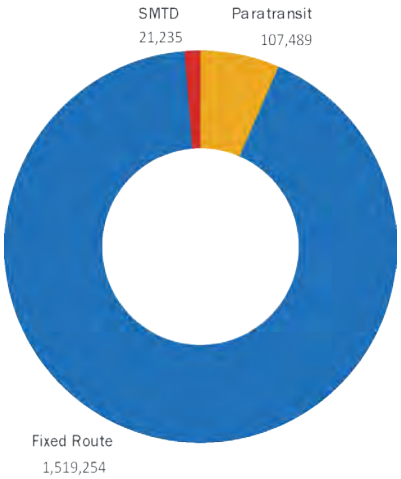
Rockford Mass Transit District is governed by a three-person Board of Trustees appointed by the Rockford City Mayor and approved by the Rockford City Council. For service provision to jurisdictions outside of the City of Rockford, RMTD operates under separate Intergovernmental agreements (IGA) with the City of Loves Park, Village of Machesney Park, City of Belvidere, and Boone County. These agreements specify a service fee based on the degree of service provided, including additional fixed-route miles, extended paratransit service boundaries, and operating hours.

RMTD also maintains multiple service agreements with adjacent public transit agencies. Through an IGA with Boone County, RMTD provides demand-response service to urbanized portions of the county by contracting with BCCA, Boone County Public Transit's designated service provider of the demand-response service in rural areas of the county, to operate the service. Similarly, an IGA exists with Stateline Mass Transit District (SMTD) for RMTD to operate the demand-response service in Rockton, Rockton Township, Roscoe, Roscoe Township, and South Beloit.

Ridership

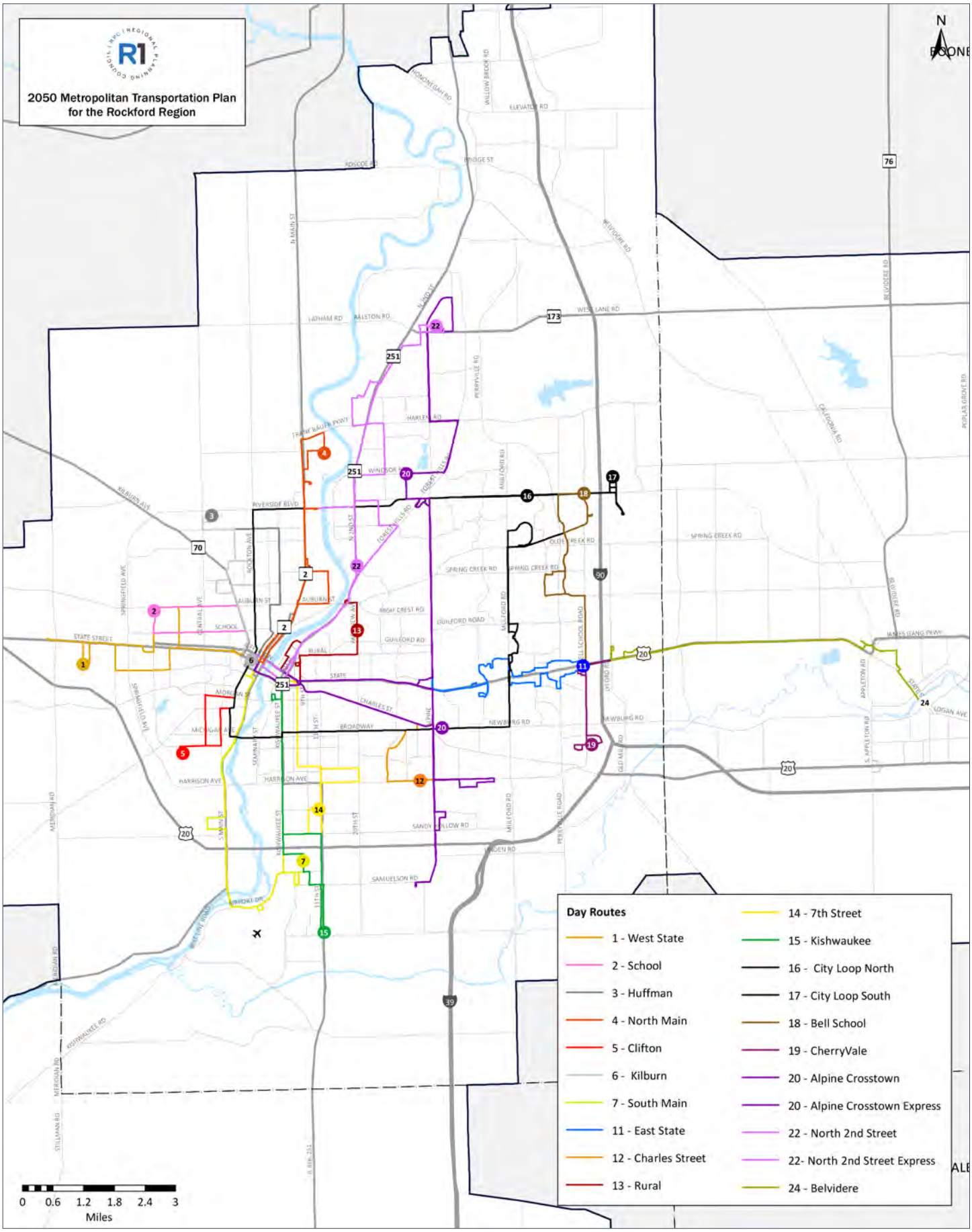
In fiscal year 2019 (July 2018-June 2019) RMTD provided 1,647,978 unlinked trips across all services they operate. Figure 4-24 provides

Figure 4-24. Ridership by Service



Data sources: Rockford Mass Transit District

Figure 4-25. Rokford Mass Transit District's Fixed Route System



Data sources: Rockford Mass Transit District

an overview of how these trips are distributed between the fixed-route, paratransit, and SMTD demand-response services. At 92 percent of all trips provided, RMTD's fixed-route service is the driving force for mass transportation in the region. However, over the last 10 years, RMTD has seen steady decreases in their fixed-route ridership, a trend seen nationwide.

Transit fares for the public transportation services originating within the MPA are:

RMTD Fixed Route Service

- $1.50 per ride for Adults (Ages 12 years and older)
- $0.75 per ride for Children (ages 5-11), Students (ages 20 and younger), and people with a disability
- Free fare for Children under 5, Senior Citizens (ages 65 and older), and people with a disability enrolled in the Illinois Benefit Access program

Declining Public Transit Ridership

In April 2018 report, published by the American Public Transportation Association's (APTA) Policy Development and Research team describes a recent but steady drop in transit ridership, and attributes this drop to four plausible phenomena:

1. The erosion of time competitiveness;
2. The cost competitiveness in modes of transportation;
3. Reduced customer affinity and loyalty to transit; and
4. Multiple externalities.

Driving factors behind many of these phenomena include the proliferation of transportation network companies (Uber, Lyft, taxi services, etc.), ease-of-access to personal vehicle financing options to low-income individuals, and concurrently, an increase in roadway congestion that leads to increased bus wait times, placing financial strain on transit providers to keep up headways. Externalities include the increased availability of parking, fringe-development of essential services, mental health policy shifts, and associated housing shortages.

Source: American Public Transportation Association

- Bulk-fare Ticket options available
- $3.00 Full or $1.50 reduced All Day Passes
- 7-day and 30-day unlimited ride saver passes
- Free same-system transfers
- Riders going to and from CherryVale Mall have to pay an additional $0.25 zone fare.

Paratransit Services

- $3.00 per ride

Boone County Public Transportation Services

- $2.00 per BCPT ride for Adults (ages 13 – 60)
- $1.00 per BCPT ride for Children (ages 12 and younger)
- Free BCPT fare for Adults aged 60 and older, but donations are graciously accepted

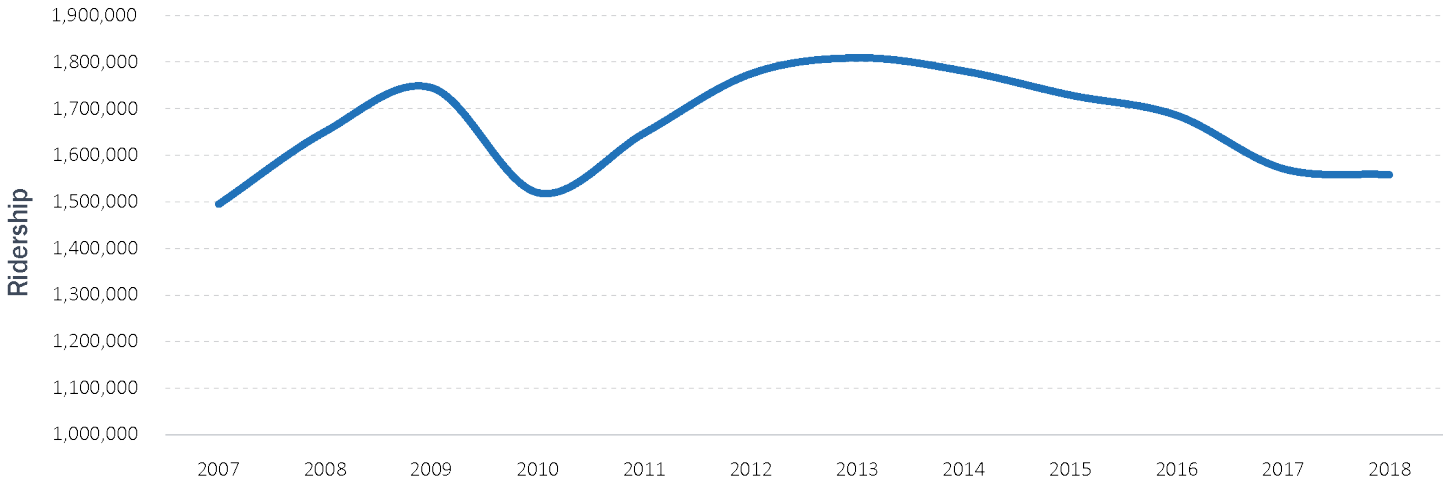
RMTD Paratransit and BCPT riders must schedule their trips the day before and during normal during business hours. Same day paratransit service is available to eligible riders for health care trips only.

Capital

RMTD's fixed-route fleet consists of 41, 35-foot diesel, buses purchased between 2007 and 2013, and one special event trolley. Each fixed-route bus has a 12-year replacement schedule, meaning that the entire fleet is expected to be replaced or in the process of being replaced by 2025. For the first round of replacements, RMTD's Board of Trustees voted in 2019 to move forward with the purchase of five diesel-electric hybrids to align better with market forces and RMTD's Sustainability Policy. However, at approximately 50 percent more than the price of diesel-only replacements, RMTD will continue to explore alternative funding sources to maintain their current replacement schedule.

RMTD's complimentary paratransit fleet consists of a mixture of 33 medium and super-medium duty transit buses, each with a state-defined useful life of eight to nine years. As with the fixed-route buses, RMTD is expected to begin replacing this fleet with alternative-fuel options, but a direct course of action has not yet been identified.

Figure 4-26. Historic Fixed-Route Ridership



Data sources: Rockford Mass Transit District

A majority of RMTD's operations occur at their downtown campus in Rockford. This location includes their newly renovated Downtown Transfer Center passenger terminal, which serves as the focal point for their hub-and-spoke radial operation pattern, their administration and maintenance facility, and a paratransit vehicle storage and maintenance facility. In 2011, RMTD opened the East Side Transfer Center on Lyford Road, just east of I-90. This facility serves as a passenger terminal for several RMTD fixed-routes as well as three private intercity passenger services. The East Side Transfer Center also houses a meeting center, leased office space, and paid long-term parking for intercity travelers.

The physical and operating condition of both the capital rolling stock and facilities are monitored according to the Transit Asset Management (TAM) performance measure criteria authorized by the FAST act. Due to its size and lack of rail services, RMTD is considered a Tier II agency, and participated in IDOT's Group TAM Plan for Participating Tier II Agencies (2018). More information on performance measures can be found in the Performance Measures sections of this document.

Demand-Response Services

Three demand-response services operate within a portion of the MPA: Boone County Public Transit, Stateline Mass Transit District, and Lee-Ogle Transportation Systems. By scheduling a specific trip at least 24 hours in advance, a user can ride to and from anywhere within their agency's service area. Unlike complimentary paratransit services offered by RMTD, this form of public transportation is open to anyone that resides within the agency's specific jurisdiction. The flexibility of these systems, particularly with large coverage areas, are often preferred for low-density areas that would not normally be served well by a fixed-route bus.

Service

Boone County Public Transit (BCPT), which is operated by the Boone County Council on Aging (BCCA), is the only agency that originates services within the Rockford Urbanized area and provides service to rural Boone County. As previously mentioned, Boone County has an IGA with RMTD to provide demand-response service to the urbanized portions of Boone County. RMTD has historically awarded BCCA the contract to operate due to their unique situation as the existing demand-response service provider for rural Boone County. BCCA also provides complimentary paratransit service for RMTD's fixed-route to Belvidere. All services provided to Boone County and Belvidere are only available during weekdays.

RMTD maintains an IGA with Stateline Mass Transit District (SMTD) to operate demand response services in Roscoe, Roscoe Township, Rockton, Rockton Township, and South Beloit. Although this service originates within the Beloit, WI urbanized area, the service area also covers portions of the Rockford, IL urbanized area, including Roscoe and urbanized parts of Roscoe township. SMTD requests that trips be scheduled at least 24 hours in advance, but will consider same day trips if scheduling allows. Service hours are similar to those of RMTD, including weekdays and nights until 10:00pm, Saturdays, and Sundays. RMTD operates, maintains, and dispatches SMTD vehicles out of their downtown facilities.

Demand-response public transportation service provided by Lee-Ogle Transportation System (LOTS) exists within the portion of Ogle County included in the Metropolitan Planning Area (MPA), but not within the U.S. Census designated urbanized area. Similar to Boone County, service is provided on weekdays throughout Lee County and Ogle County and requires trips to be scheduled at least one day in advance. LOTS offers trips into the Rockford area three times a month for medical or shopping purposes.

Governance

Boone County Public Transit and Lee-Ogle Transportation Systems are chartered through their sponsored governments, Boone County and Lee County, and report directly to a specific County Government board. LOTS expanded service to Ogle County through an intergovernmental agreement (IGA) with Lee County, and also presents to the Ogle County board.

Stateline Mass Transit District is independently chartered and obtains local funding through separate jurisdiction agreements. SMTD is governed by a Board of Trustees representative of their service jurisdictions. This seven-person board consists of two representatives each from Rockton and Roscoe, and three representatives from South Beloit. Board members are appointed at their local-jurisdictional level.

Comprehensive Mobility Analysis

Since Fall 2018, Rockford Mass Transit District and the Region 1 Planning Council have been collaborating on the Comprehensive Mobility Analysis, a multi-faceted approach to reviewing public transportation needs within the community. Concurrent to internal analysis on the strengths and weaknesses of the current public transportation system within the Rockford Region, the analysis also places emphasize on direct feedback from both the public and stakeholder organizations on their day-to-day needs.

Since the release of the previously completed Comprehensive Transit Analysis in 2012, an abundance of planning products has helped define the evolving public transportation network. The Comprehensive Mobility Analysis both draws from and supports this planning process by providing insight into regional interactions with public transportation and developing a well-defined path to bring identified goals and strategies to fruition. The four-step evaluation process includes the following items:

1. **Market Analysis:** Central to the evaluation of transit coverage is to understand the service area. This first step includes documenting the population characteristics and transportation infrastructure pertinent to an efficient and equitable transit system in the Rockford urbanized area (UA). A socioeconomic travel demand index was used in conjunction with commuter and pedestrian-accessibility data to identify gaps and opportunities in populations served.
2. **Service Evaluation:** Similar in importance, an internal and external evaluation of service provided valuable perspective into current operations. A two-pronged service evaluation included quantitative views of user boarding and alighting, statistical trend analysis, and peer-agency comparisons, along with qualitative data

collected through a series of multiple public input sessions, internal staff surveys and interviews, and stakeholder workshops.

3. **Alternatives Analysis:** Combined with complementary needs identified in related regional guidance, gaps and opportunities were converted into short- and long-term recommendations to prepare for service demand alternatives. Concurrent efforts to guide future recommendations include the maintenance of current transit-accessibility parameters and periodic performance measurements.
4. **Implementation Plan:** Charting an implementable action plan is key to obtaining results from service recommendations. Based on input and guidance received from key officials, the last step of the analysis includes additional planning services to bring selected recommendations to fruition. Considerations for the implementation plan included capital investment, route-realignment and scheduling, operation adjustments, infrastructure enhancements, and financial constraints.

The most notable contribution of the Comprehensive Mobility Analysis to the regional transportation planning process has been its extensive public engagement. Due to its focus on public transit, traditional public engagement activities, including surveys, forums, and public presentations, received foundational support through non-traditional targeted activities. These activities ranged from expanding individual stakeholder engagement from traditional government partners to community human service agencies, major employers, economic development organizations, regional advocates for fair treatment, and actively engaging with public transportation users by canvasing the bus network. This vast collection of data has helped shape the issues and desires of multiple levels of stakeholders, and in turn assist future MPO and RMTD planning products.

Concurrent to the contributions of the public engagement process, the Comprehensive Mobility Analysis continues to work in tandem with the many planning products produced by the MPO. Steps within the analysis, including a market study, will assist in determining the effectiveness of transportation investments and their relation to accessibility, especially disadvantaged portions of the population.

Looking Forward

Alternative-Fuel Fleets

Unlike the personal electric vehicle trend that is only now being adopted by large automakers, the public transit industry has been embracing alternative-fuel based vehicles throughout the decade. According to the American Public Transit Association's (APTA) Public Transportation Vehicle Database, alternative fuels (biodiesel, hydrogen, electric, propane, etc.) and hybrid drivetrains powered more than half of all transit buses in 2017 and 2018. This embrace stems from multiple benefits of non-petrol based engines, including the potential for lower maintenance and fuel costs and reduced greenhouse gas (GHG) emissions and other harmful air pollutants.

A barrier to an alternative-fuel transition for smaller transit agencies has been the higher initial price tag for buses and new fueling infrastructure. However, through multiple discretionary Federal grant programs, such as the Low or No Emission Vehicle and Bus and Bus Facilities programs, agencies are slowly acquiring

RMTD's Sustainability Policy

As the Rockford Mass Transit District is committed to the environment and enhancing the quality of life in our community, we therefore will work toward implementing environmentally sustainable practices whenever financially feasible. These include, but are not limited to the adoption of alternative fuel technology vehicles to reduce greenhouse gas emissions and to increase energy efficiencies with our fleet, our facilities, our operations and our staff.

Source: Rockford Mass Transit District



35' Diesel Hybrid Electric Buses. Rockford, IL

funds needed to overcome the initial cost. Advancements in vehicle technology have also aided in the reducing price barriers, such as advanced battery electric buses that only require improvements to existing electrical utilities instead of new fuel-storage systems.

Regionally, Rockford Mass Transit District (RMTD) recently began the process of converting their bus fleet to alternative-fueled vehicles. In 2019, RMTD placed their first order for five diesel hybrid-electric buses as replacements for past-useful life diesel vehicles. The initial conversion from diesel to diesel-hybrids will provide RMTD time to analyze and test needed utility and infrastructure improvements required to power a full alternative-fueled fleet while slowly absorbing the higher initial-price tag of alternative-fueled buses over the next decade.

Autonomous & Connected Vehicles

Technology advancements for public transit often transition with other forms of transportation, but typically at different rates. Unlike the public transit industries quick adoption of alternative-fuel powertrains, the pace of growth and adoption of autonomous vehicle technologies has been conservative. Of many reasons listed in the Federal Transit Administration's (FTA) 2018 Strategic Transit Automation Research (STAR) report, user acceptance of automated bus systems operating on public roadways has been limited partially due to human-elements often associated with bus operator's roles. Outside of physically driving the vehicle, bus operators also serve as the contact point for customer assistance and fare collections. Although the future benefits of transit automation will continue to drive research and implementation, FTA plans to carefully examine their policies and procedures before jumping into automation.

One early facet of automation, connected vehicles, and connected infrastructure is already making a big impact on all areas of transportation. For public transit, connected services, such as signal prioritization, is making an impact on the schedule reliability and speed of bus services. Other connected technologies, such as GPS-enabled systems, have led to multiple advancements in multi-modal trip planning, including real-time transit arrival signage and smartphone applications that allow users to track the bus along its route.

Rockford Mass Transit District (RMTD) has already begun phasing in GPS and real-time information signing for trip planning, and will be an active member during the update to the region's Transportation System Management and Operations (TSMO) Plan and future arterial management studies. Through increase collaboration between municipalities, counties, and transit agencies, best-fit connected technologies can optimize roadway and service planning operations.

Microtransit and Express Services

While the market for transportation network companies (TNCs) continues to grow private on-demand service options, public transit agencies are exploring options to provide more time-competitive services for patrons that rely on affordable transportation. Two options, microtransit and express bus services, are rebalancing affordable service options while maintaining quick access to goods and services. Microtransit, defined by the APTA as small-scale on-demand public transit services, can operate a myriad of schedules, many of which mimic TNC-like services that connect an individual to either a nearby fixed-route system or provide full origin-destination service. These services are often directed towards lower-density urban areas, such as business parks or suburban neighborhoods, where a full fixed-route system would not be as productive.

Other time-saving options becoming more prevalent are express bus routes and bus rapid transit (BRT). Express buses, much like regular fixed-routes, operate in mixed traffic along a designated route, but maintain a limited number of stops. Limited stopping points, when paired with pull-up stop infrastructure and signal prioritization, can move individuals at a much faster rate through a region. The next step up from an express bus, BRT, operates much like a light rail system. At least 50 percent of a BRT's route is a fixed or dedicated roadway lane, and includes full stations for at-grade boarding and alighting. When stations are paired with other fixed-route, on-demand, or park and ride services, they can serve as a central access point to the community.

As part of the Comprehensive Mobility Analysis, and continuing in future studies, RMTD is reviewing how new service models, such as microtransit and express services, can complement and improve access to existing services. With a multitude of existing pilot programs exploring the interactivity of these concepts throughout the nation, a conservative approach will allow RMTD to research, review, and implement based on best practices.

Commuter Services

In contrast to intercity services, commuter services provide quick transportation options both within and to adjacent regions and are designed for users to depart from and return to a location within the same day. Concurrent to an increase in super commuters, or long-distance home-based work trips, these types of services are becoming more prevalent to control the number of vehicles on a roadway and open up access to jobs and services in adjacent regions. As a region geographically located within an hour's drive of four other metropolitan areas, including Chicago, future commuter services would provide safe and affordable option for interregional travel.

Mobility Management

The mobility of a region can be broken down into subparts representing not only private or public options, but various travel modes and user-specific needs. This often unconnected network of programs, funds, and services leads to confusion and inefficient service delivery for the people they are designed to help. Mobility Management, as defined by the National Center for Mobility Management, is an approach to designing and delivering transportation services that starts and ends with the customer, ultimately pointing them to the transportation options that best suit their specific needs.

This process starts with developing an understanding of the specific service providers, service needs, and human service programs that advocate for the unrestricted ability to access employment, goods, and services. With an archive of information,

customers have a one-stop user information system to direct them to the correct transportation option. This holistic view also allows transportation providers, planners, and other community stakeholders to identify and work toward addressing regional transportation service gaps.

Intercity Transportation

Although technically not a part of the MPA's public transportation system, the Rockford Region hosts three intercity transportation services. These private services connect the region to adjacent urban areas in Illinois, Southern Wisconsin, and Eastern Iowa. Additionally, with multiple connections to Chicago's transportation market, these services also serve as the connection point to many megaregional, national, and international markets.

Coach Bus Service

Three private intercity coach bus services operate four distinct routes in the region. Van Galder/Coach U.S.A operates 13 daily round trips between Rockford and Chicago Union Station, with 11 of the trips connecting to Chicago Midway International Airport and north to South Beloit, Janesville, and Madison, WI. Van Galder/Coach U.S.A also operates 18 daily round trips between Rockford and Chicago O'Hare International Airport. Burlington Trailways operates one daily round trip along I-90 and US 20 between Iowa and Chicago. Lee-Ogle Transportation Systems (LOTS), the demand-response public transportation provider in Lee and Ogle Counties, contracts Greyhound to operate one daily round trip from Chicago to Rockford, and all major cities along I-39 and I-74 to Danville, IL through FTA 5311(f) Intercity Service funds.

Pricing for trips varies with trip length, service used, and typical demand. For example, trips to and from Chicago from the MPA range between $20-$25, while similar distance trips to and from Madison from the MPA are only $11. RMTD hosts the Van Galder/Coach U.S.A's Chicago Union Station service, Burlington Trailways, and Greyhound at their East Side Transfer Center. This facility is open 24/7 to support these services, offers paid long-term parking, and acts as a ticket agent for the intercity service providers using the location during business hours. Van Galder/Coach U.S.A's O'Hare service is operated at their own facility in Rockford.

Passenger Rail

Following over a decade of planning and preparation, former Illinois Governor Pat Quinn announced on April 10th, 2014 that $223 million in funding was made available to restore intercity passenger rail service between Chicago and Rockford, and eventually continuing to Dubuque, Iowa. Funding for the project included track, signaling, and safety improvements, as well as the development of stations in Belvidere and Huntley. Three million dollars in state and federal funding was also previously made available for a permanent Rockford Multimodal Station in 2012. However, a state budget impasse resulted in the project being put on an indefinite hold by former Governor Bruce Rauner in 2015.

Today, a possible passenger rail connection between Rockford and Chicago has been renewed with the passage of current Governor J.B. Pritzker's 2019 Rebuild Illinois Capital Plan. This new capital plan provides $275 million for all facets of the project, including rail stations.

The Rockford MPA has been host to two intercity passenger rail lines in the past. The Land'O Corn, operated by the Illinois Central Railroad, stopped in Rockford while running between Chicago and Waterloo, Iowa from 1941 to 1967. After the formation of Amtrak in 1971, the Black Hawk service was restored between Chicago and Dubuque, Iowa from 1974 to 1981. With the contemporary rise of super-commuters, renewed interest, and statewide investment in rail transportation, there is a growing demand for

Chicago-Rockford Intercity Rail

"The sum of $275,000,000, or so much thereof as may be necessary, is appropriated from the Multi-Modal Transportation Bond Fund to the Department of Transportation for all costs associated with the Chicago to Rockford Intercity Passenger Rail expansion."

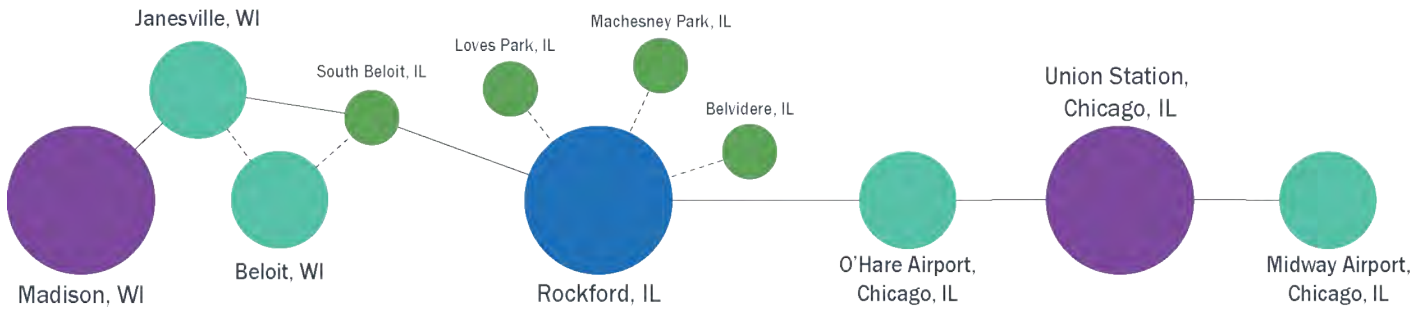
Source: 2019 Rebuild Illinois Capital Bill, Article 5, Section 190

Super-Commuter

A person who lives in a different metropolitan area than they work.

Source: U.S. Census Bureau

Figure 4-27. Intercity Destinations



Data sources: Region 1 Planning Council

an intercity rail connection for the Rockford Region.

Commuter Studies

The Chicago-Rockford intercity passenger rail project currently funded under the 2019 Rebuild Illinois Capital Plan can attribute some of its development to a concurrent study of commuter rail services for the Rockford Region. Although IDOT and the Northern Illinois Commuter Transportation Initiative (NICTI) committee disagreed on initial route alignments in the prior analysis process, planning work for the commuter rail service ultimately moved the project forward when host-railroad negotiations stalled with the Canadian National (CN) Railroad. A recent history of the two projects is provided in Table 4-9.

Since the 2019 Rebuild Illinois Capital Bill, IDOT is moving forward with the intercity passenger rail service. As a result, this project would provide the initial infrastructure needed for commuter rail service, as outlined in the initial NICTI reports and through additional analysis that IDOT is currently conducting. The MPO will continue to have a role in the planning process for the infrastructure investment and service provision and coordinate with IDOT and local partner agencies as this project moves forward.

Looking Forward

Intercity Service Restart

Short, intercity-rail service routes are becoming commonplace as a quick and affordable alternative to both automobile and air travel, and have become a staple point to Amtrak's spread of services. Unlike many coach bus operations, users are free to walk about the cabins and can enjoy the time-reliability benefits of bypassing congested roadway networks. For the Rockford Region, this potential connection would bring increased access to Chicago-area amenities and connections, and provide a seamless connection to other state-sponsored and long-distance rail lines serving Chicago's Union Station.

With the passage of the 2019 Rebuild Illinois Capital Plan, IDOT has begun reviewing and updating the passenger rail service framework initially pursued in 2014. Moving forward, IDOT and the MPO will work together to identify the best fit service options for region, including working with the cities of Rockford and Belvidere to gather public input on service hours and station locations.

Table 4-9. Passenger Rail Service Planning History

2002	Over 50 elected officials from Northern Illinois gather to advocate for intercity passenger rail service. Northern Illinois Commuter Rail Initiative (NICRI) is formed to study commuter rail options for Northern Illinois.
2004	NICRI releases their report on commuter rail feasibility, demonstrating the need and sustainability of commuter rail for the region.
2006	The Blackhawk Area Rail Coalition is formed to advocate for the restoration of intercity passenger rail service between Chicago and Dubuque. $3 million is earmarked for an Alternatives Analysis in the Federal Transit Administration's New Starts program. NICRI is changed to NICTI to account for the addition of bus-transportation alternatives.
2007	IDOT releases an Amtrak Feasibility Study, performed by Amtrak on behalf of IDOT, that presents intercity passenger rail service options for a new line connecting Chicago and Dubuque.
2008	As a result of the Alternatives Analysis, NICTI and RMAP select the Union Pacific Belvidere Subdivision route (CR6) as the Locally Preferred Alternative, and ask IDOT and Amtrak to co-locate passenger and commuter rail services.
2009	IDOT completes a Tier 1 Environmental Assessment for intercity service between Chicago and Dubuque, selects Route C through Genoa as recommended route. NICTI also completes their Draft Environmental Assessment for the Union Pacific Belvidere Subdivision Route.
2010	IDOT releases their final planning document for the Chicago to Dubuque intercity service, and begins negotiations with Canadian National (CN) after Route C through Genoa is again favored. Governor Quinn announces state capital funding to establish intercity passenger rail service from Chicago to Dubuque.
2011	NICTI completes their Draft Environmental Impact Study for the Union Pacific Belvidere Subdivision Route.
2014	After negotiations with the CN stall, Governor Quinn and IDOT announce an agreement with Union Pacific railroad to establish service along Route A (the Union Pacific Belvidere Subdivision Route), providing $223 million for the project between Chicago and Rockford.

Data sources: Region 1 Planning Council

Freight & Urban Goods Movement

Overview

Transportation plays a vital role in the economic success of the metropolitan planning area (MPA). One of the top economic assets of the MPA, as noted in the region's Comprehensive Economic Development Strategy (CEDS), is its location in the nation at the junction of major highways, railways, and air with proximity to Chicago, Madison, and Milwaukee.[xxxiii] The regional economy depends on the efficient movement of freight over its extensive well-established network of highways, bridges, railroads, airports, and pipelines. Table 4-10 and Figure 4-28 provides a look into the major components of the region's freight network.

Recently, the MPO has completed several assessments on the current condition of the freight network and examined how supply-chains are moving along the multimodal network to ensure that goods are moved efficiently throughout the region. Key takeaways from these studies, include:

- In order to attract future industrial development in the MPA, it is critical to maintain and enhance the current supply-chain;
- Continued investment into the freight network will lead to industrial and commercial supply chain attraction and operability; and
- Having well-established connections to existing and planned points of destinations in the MPA will continue to provide for economic development opportunities but also maintain a focus on supply chains.

Freight considerations are essential in transportation planning as the region looks ahead to 2050. According to the Bureau of Transportation Statistics' Freight Facts and Figures, the weight of shipments are expected to increase by about 1.5 percent annually between 2017 and 2045.[xxxiv] Due to its location at a critical crossroads in the national and international movement of goods and services, the region needs to have an understanding of the freight volumes, value, key commodities, and mode splits in the region. This data will enable the MPO to continually integrate freight into the overall transportation planning process and better account for regional freight needs in programming locally allocated funds.

Table 4-10. Miles of Freight-Related Infrastructure by Mode

Mode	Miles
National Highway System	252.1
Railroads	130.2
Navigable Waterways	0.0
Pipelines - Petroleum	29.6
Pipelines - Natural Gas	153.2
Pipelines - Crude Oil	8.3
Total	**573.4**

Data sources: Illinois Department of Transportation, U.S. Department of Energy, U.S. Department of Homeland Security

More information on the various modes of transportation in the freight network are highlighted in this section, as well as an overview of the ground freight flows within the three-county region and a description on the region's role within the Midwest Chicago Megaregion.

Midwest Chicago Megaregion

Megaregions are characterized as networks of metropolitan areas, connected by existing economic, social, and infrastructure relationships. As economic globalization continues to become more competitive, investments in transportation connectivity in and among megaregions will be crucial to economic growth. The Rockford MPA is strategically located within the Midwest Chicago Megaregion. The Midwest Chicago Megaregion includes seven states – Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, and Wisconsin – and is home to several of the most populous metropolitan areas in the country. The Midwest Chicago Megaregion, sometimes referred to as the Great Lakes Megaregion, is dispersed in a "hub and spoke" network with Chicago serving as its center.

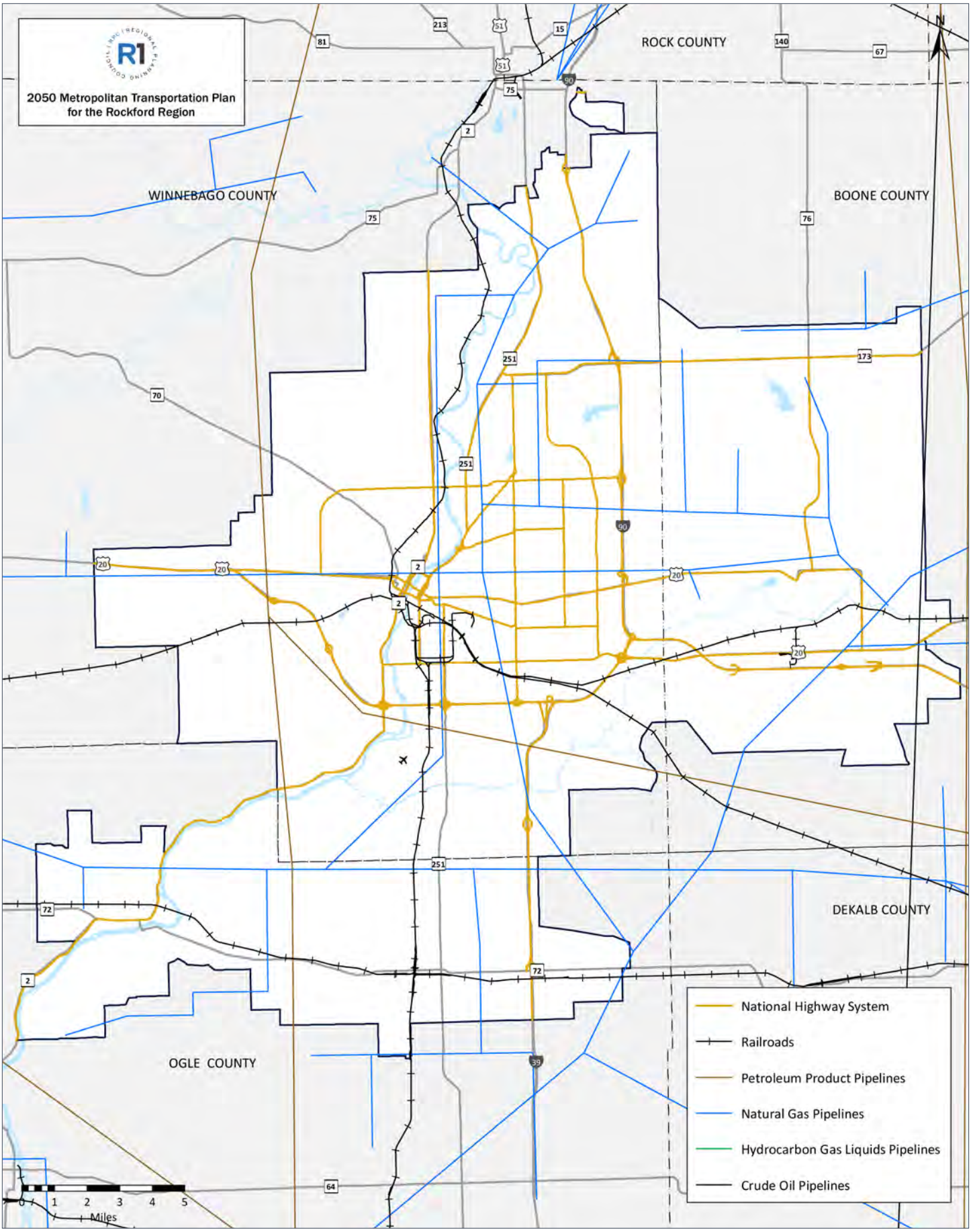
Freight movement in the Midwest Chicago Megaregion is facilitated by all transportation modes. Within the megaregion, Illinois has the highest volume of freight movement, approximately 26 percent of the total freight volume. A majority of goods is carried by trucks across Interstate highways, state highways, and U.S. routes. Rail is also a major component of the Midwest Megaregion and is one of the few places in the country that is served by all seven American

Figure 4-29. Midwest Chicago Megaregion



Data sources: Region 1 Planning Council

Figure 4-28. Regional Goods Movement Network



Data sources: Region 1 Planning Council

and Canadian Class I freight railroads.[xxv]

The Rockford Region is in a unique position within the larger megaregion. As the convergence point for U.S. Route 20, Interstate 90, and Interstate 39, the region experiences a significant amount of pass-through freight movement on its highways. In this role, it is important for the region to continue coordination with partners throughout the megaregion to address some of the challenges that the Midwest Chicago Megaregion will face over the next few decades, including: congestion at convergence points, truck parking, maintenance and state of good repair, and funding.[xxvi]

Economic Impact of Freight

Freight-Dependent Industries

Due to the region's geographic location in the Midwest Chicago Megaregion, and its proximity to major transportation hubs, the Rockford Region is home to a host of industries that directly rely on an efficient freight and goods movement network. These industries are known as freight-dependent sectors, and include the following: agriculture and farming, wholesale and retail trade, manufacturing, construction, transportation and warehousing, mining, and utilities. These industries all play a major role in the region's economy. The Table 4-12 outlines in detail the industries associated with each sector and the areas of the economy in which they directly affect.

Freight-dependent sectors make up a large portion of the region's total economy. Using the REMI economic modeling software, the MPO was able to look closely at these specific sectors and how their impacts differ between Boone, Ogle, and Winnebago counties. The REMI model also enabled the MPO to forecast the economic impacts of these industry sectors in the year 2050.

Regional Overview

In 2019, over 40 percent of the region's employment fell within the freight-dependent sector economy and nearly 54 percent of the region's gross domestic product (GDP) was directly tied to freight-related industries. By 2050, employment in these sectors is forecasted to increase by just over 9 percent, from approximately 87,700 to 95,800 employed in Boone, Winnebago, and Ogle counties, while the value added to economic output (GDP) is expected to increase by just over 82 percent from $9.5 billion to $17.4 billion. Future transportation and capital improvement plans should align with the needs in order to aid in the efficient distribution of freight throughout the region.

Value-Added

The gross output of an industry or a sector less its intermediate inputs and is the contribution of an industry or sector to gross domestic product (GDP).

Source: U.S. Bureau of Economic Analysis

Table 4-11. Distance to Major Metropolitan Areas

Metropolitan Area	Straight Line Distance	Approximate Driving Distance	Approximate Driving Time
Madison, WI	58.0	73.2	1 hr 24 min
Chicago, IL	77.4	88.8	1 hr 32 min
Milwaukee, WI	78.3	95.4	1 hr 44 min
Indianapolis, IN	229.4	275.0	4 hr 19 min
Des Moines, IA	239.2	289.0	4 hr 18 min
St. Louis, MO	258.8	296.0	4 hr 25 min
Minneapolis, MN	281.0	334.0	5 hr 10 min
Detroit, MI	306.1	378.0	5 hr 44 min

Data sources: WinGIS, Google Maps

Table 4-12. Freight-Dependent Sectors and Industry Definitions

Industry	Definition
Agriculture and Farming including Forestry, Fishing and Related Activities (NAICS 11)	Establishments primarily engaged in growing crops, raising animals, harvesting timber, and harvesting fish and other animals from a farm, ranch, or their natural habitats.
Construction (NAICS 23)	Establishments primarily engaged in the construction of buildings or engineering projects (e.g., highways and utility systems).
Manufacturing (NAICS 31-33)	Establishments engaged in the mechanical, physical, or chemical transformation of materials, substances, or components into new products.
Mining including, Quarry, Oil, and Gas Extraction (NAICS 21)	Establishments that extract naturally occurring mineral solids, such as coal and ores; liquid minerals, such as crude petroleum; and gases, such as natural gas.
Retail Trade (NAICS 44-45)	Establishments engaged in retailing merchandise, generally without transformation, and rendering services incidental to the sale of merchandise.
Transportation and Warehousing (NAICS 48-49)	Industries providing transportation of passengers and cargo, warehousing and storage for goods, scenic and sightseeing transportation, and support activities related to modes of transportation. The modes of transportation are air, rail, water, road, and pipeline.
Utilities (NAICS 22)	Establishments engaged in the provision of the following utility services: electric power, natural gas, steam supply, water supply, and sewage removal.
Wholesale Trade (NAICS 42)	Establishments engaged in wholesaling merchandise, generally without transformation, and rendering services incidental to the sale of merchandise.

Data sources: Region 1 Planning Council

Freight-dependent industries play a different role in each of the three counties within the Metropolitan Planning Area (MPA). These differences are detailed below.

Boone County

Boone County has a smaller economy by GDP than both Ogle and Winnebago Counties. Historically, Boone County has been sensitive to economic fluctuations due to the freight-dependent sector being the predominate employer; most of this employment is located in one company and its suppliers. In 2019, Boone County contained just under 11 percent of the region's total employment. However, within freight-dependent sectors, Boone County makes up 15 percent of the region's total workforce. In 2019, approximately 13,200 jobs were within the freight-dependent sectors of Boone County. Within the County itself, 56 percent of total employment is within freight-dependent sectors. Of those employed in freight-dependent sectors 70 percent are employed in the manufacturing and retail trades. Freight-dependent employment is forecasted to increase 16 percent by 2050, to a total of 15,300. In 2019, Boone County's freight-dependent industries contributed $1.32 billion to the region's economy, or GDP. This was slightly over 72 percent of all of Boone County's total GDP, and 14 percent of the regions total freight-dependent GDP in 2019. The economic output (GDP) of the freight-dependent sectors within Boone County will likely increase from $1.32 billion to $2.42 billion by 2050, an increase of just under 84 percent.

Ogle County

Ogle County has only a slightly larger economy than Boone County as measured by GDP. In 2019, Ogle County contained 11 percent of the region's total employment. Within freight-dependent industries Ogle County makes up 14 percent of the region's total workforce. In 2019, approximately 12,550 jobs were within the freight-dependent sector. Jobs in freight-dependent industries account for 53 percent of the county's total employment levels. Of those employed in this sector 50 percent are in retail trades and

Table 4-13. Regional Employment and Economic Impact by Freight-Dependent Sectors, 2020- 2050

2019 Employment	Boone	Ogle	Winnebago	3-County Total
Total Employment	23,350	23,800	170,000	217,150
Frieght-Dependent Employment	13,180	12,550	62,000	87,730
Percent of Freight-Dependent Employment	56.4%	52.7%	36.5%	40.4%
2050 Employment	**Boone**	**Ogle**	**Winnebago**	**3-County Total**
Total Employment	26,100	25,700	190,700	242,500
Frieght-Dependent Employment	15,300	14,000	66,500	95,800
Percent of Freight-Dependent Employment	58.6%	54.5%	34.9%	39.5%
Employment Growth in Freight-Dependent Industries	**Boone**	**Ogle**	**Winnebago**	**3-County Total**
Absolute Growth (2019 - 2050)	2,750	1,900	20,700	25,350
Percent Growth (2019 - 2050)	16.1%	11.6%	7.3%	9.2%

Data sources: Region 1 Planning Council (REMI)

Table 4-14. Freight-Dependent Sectors Economic Impact (GDP) by County, 2020- 2050

2019 Gross Domestic Product	Boone	Ogle	Winnebago	3-County Total
Total Gross Domestic Product	$1.82	$1.88	$14.06	$17.76
Frieght-Dependent Gross Domestic Product	$1.32	$1.25	$6.96	$9.53
Percent of Freight-Dependent Gross Domestic Product	72.4%	66.3%	49.5%	53.6%
2050 Gross Domestic Product	**Boone**	**Ogle**	**Winnebago**	**3-County Total**
Total Gross Domestic Product	$3.25	$3.50	$24.74	$31.48
Frieght-Dependent Gross Domestic Product	$2.42	$2.45	$12.51	$17.38
Percent of Freight-Dependent Gross Domestic Product	74.6%	70.1%	50.6%	55.2%
GDP Growth in Freight-Dependent Industries	**Boone**	**Ogle**	**Winnebago**	**3-County Total**
Absolute Growth (2019 - 2050)	$1.43	$1.62	$10.68	$13.72
Percent Growth (2019 - 2050)	83.6%	96.3%	79.7%	82.4%

Data sources: Region 1 Planning Council (REMI)

manufacturing industries. Freight-dependent sector employment is forecasted to increase just over 11.5 percent by 2050, to a total of nearly 14,000. In 2019, Ogle County's freight-dependent industries contributed $1.25 billion to the region's economy, or GDP. This was just over 66 percent of all of Ogle County's total GDP, and 13 percent of the region's total freight-dependent GDP in 2019. The economic output (GDP) of the freight-dependent sectors within Ogle County will likely increase from $1.25 billion to $2.45 billion by 2050, an increase of about 96 percent.

Winnebago County

Winnebago County contains most of the region's population, dwelling units, and employment centers. Therefore, the majority of freight-dependent businesses, as well as the majority of the truck and rail transportation network necessary to move goods to, from, and through the region are located there. In 2019, Winnebago County contained just over 78 percent of the region's total employment. Within freight-dependent industries Winnebago County contains just under 71 percent of the region's total employment. In 2019, approximately 62,000 jobs were within the freight-dependent sector of Winnebago County's employment force. These jobs account for 36.5 percent of the county's total employment levels which is a lower percentage than both Boone or Ogle County. This is due to Winnebago's employment force being more diversified. Of those employed in this sector 68 percent are in retail trades and manufacturing industries. Freight-dependent sector employment is forecasted to increase by just over 7 percent by 2050, to a total of approximately 66,500 jobs. In 2019, Winnebago County's freight-dependent industries contributed nearly $7 billion to the region's economy, or GDP. This was 39 percent of all of Winnebago County's GDP, and 73 percent of the region's total freight-dependent GDP in 2019. The economic output (GDP) of the freight-dependent sectors within Winnebago County will likely increase from $7 billion to $12.5 billion by 2050, an increase of about 80 percent over these years.

Industrial and Distribution Sites

Nationally, there has been a shift toward distribution, order fulfillment, and value-added manufacturing. Many labor intensive and concentrated manufacturing industries have been replaced by value-added companies. Additionally, the proliferation of e-commerce has exponentially increased retailers demand for next-day deliveries and curbside pickup. As a direct result, innovations in supply chain management and logistics puts a greater emphasis on infrastructure capacity and adaptable improvements. Supply chains are strategic in their logistic operations as a tactical element, built on time and managing costs, which often means operating across multiple modes of transportation. As the industrial and retail sectors change, distribution has surpassed warehousing and these trends will likely continue, making the link between land use and transportation grow even stronger. Regional industrial and distribution sites will need to be easily accessible to all types of transportation modes.

Globalization trends and advances in supply chain management elevated industrial real estate to be part of the larger supply-chain system. New business models, time value, schedules, production, and distribution models, together with transportation interfaces, are more important to businesses than ever. Industrial space is less specialized on the outset which fosters a greater opportunity in distribution and warehousing. The facility-to-transportation connection leads to increased tradability among industrial properties. Therefore, transportation infrastructure enables municipalities and other public sector entities to shape and guide growth of industrial properties. Adaptable industrial real estate enables greater customization if connected to transportation infrastructure.



Madison Street. Rockford, IL

The Rockford MPA is uniquely situated in terms of geography in relation to its history of industrial and transportation investment. The regional strengths for existing and future industries include its central location within the Midwest Chicago Megaregion and the nation. In 2016, the RPC partnered with the Rockford Area Economic Development Council and Growth Dimensions (the economic development council for Boone County) to create the Northern Illinois Qualified Sites website. This website shows available industrial site location opportunities within the region that meet a set of criteria that guarantees quick and successful development. All current sites listed are in close proximity to either I-90, I-39, or US 20; within 20 miles of the Chicago Rockford International Airport; and within 20 miles of rail. These sites only represent a few of the available industrial facilities, industrial sites, and buildings that are adaptive for freight-dependent companies near the region's robust transportation system.

Intermodal Terminals

One of the most important attractors for freight-dependent industries is a region's proximity to an intermodal terminal. Currently, the MPA is not home to an intermodal terminal. However, the nearest intermodal terminal to the region is located just 30 miles south in Rochelle, IL.

In 2003, Union Pacific (UP) opened its Global III Intermodal Terminal in Rochelle. The hub was one of five UP intermodal facilities based in northern Illinois. Rochelle was chosen due to its location at the crossroads of I-88 and I-39, just 80 miles west of downtown Chicago. The UP owns proximately 1,200 acres of land, with 700 acres developed, and has a capacity to handle 720,000 containers annually when fully operational. The facility serves as a critical hub and loading/unloading terminal for rail shipments moving to Iowa and Wisconsin.[xxxvii] In 2019, the UP announced it would be simplifying its intermodal terminal network and operations at the Global III facility would be idled.

Intermodal terminals are located and thrive where a market corridor exists that captures industrial supply chains and has an operational advantage that arises from its location near a strong multimodal transportation system. There are two prime locations that would be ideal for future intermodal facilities in the Rockford MPA:

- Along the I-90 corridor, in Boone and Winnebago Counties;
- Access to rail trackage and yards; and
- Near the US 20 corridor, starting in Belvidere and extending past Rockford towards the Village of Winnebago.

Intermodal Terminals

Locations for the transfer of freight from one transport mode to another.

Source: U.S. Federal Highway Adminstration

Providing access to and from these locations from the highways and interchanges is extremely important. Having well established connections to the existing and planned terminals would provide additional economic development opportunities for the region and also maintain a focus on supply chains.

Ground Freight Flows

Although freight moves throughout the nation, the demand for freight transportation is driven primarily by the geographic distribution of population and economic activity.[xxxviii] Understanding how goods and services are moving to, from, and within the region is essential in determining the demand on the region's infrastructure and the connection between freight and the economy. The following section highlights the freight flows that occur on the region's surface transportation network.

In 2014, 46.9 million tons of freight originated or terminated within the three-county region.[1] This cargo was valued at $65.4 billion.[xxxix] As shown in Table 4-15, the largest amount of freight weight, by tonnage, was transported by trucks. An overview of the three-county modal breakdown and directional flow of freight movement is shown in Table 4-15.

When looking at the three counties individually, there are variations in the value and weight of cargo by mode of transport, as shown in Table 4-15. Notable findings by county are highlighted below.

Boone County

Of the three counties, Boone County has the lowest amount of cargo tons inbound and outbound from the county. The inbound and outbound tonnage across all modes is essentially balanced at 3.6 million tons each, with cargo tonnage being transported mainly by trucks. However, when examining the value of cargo, there is a greater difference between the value entering the county versus leaving the county. In 2014, approximately $4 billion worth of cargo entered into the county, while just over $10 billion of worth of cargo was outbound from the county.

Table 4-15. Mode and Type of Flow Overview by Tonnage & Value, 2014

Tons	Trucks	Rail Intermodal	Rail Carload	Total
Inbound	23,451,890	281,555	747,795	**24,481,240**
Outbound	19,756,987	608,026	2,021,084	**22,386,097**

Dollars (Millons)	Trucks	Rail Intermodal	Rail Carload	Total
Inbound	$22,234	$4,467	$1,134	**$27,836**
Outbound	$24,837	$8,027	$4,656	**$37,521**

Data sources: Illinois Department of Transportation

1 During the development process of the 2050 MTP, 2014 freight data was the most recently available data at the county-level for the region.

Ogle County

While approximately 88.6 percent of the cargo, by weight, is transported into Ogle County by trucks, it only accounts for 37.5 percent of the $7.8 billion of cargo coming into the county. Over half (56.8 percent) of the $7.8 billion of cargo entering into Ogle is transported via intermodal rail. This means that lower value commodities are entering the county on trucks. A similar pattern can be seen in Ogle County's outbound cargo. Seventy-eight percent of cargo is transported out of the county by trucks, but only accounts for 29.1 percent of the $11.5 billion of cargo leaving the county. Outbound rail intermodal cargo represents 69.8 percent of the value.

Winnebago County

In Winnebago County, the largest share of inbound and outbound cargo was transported by trucks. Inbound tonnage for the county was just over 14.2 million tons, of which 99 percent was transported by trucks with the remaining one percent transported by rail carload. The total inbound value of the cargo for Winnebago County was just under $16 billion. Cargo outbound from Winnebago County weighted approximately 10.4 million tons and was valued at $16 billion.

All three counties are expected to see similar growth in inbound and outbound cargo tons transported by trucks by 2045[2], as shown in Figure 4-30. Winnebago County is expected to see the largest increase in the value of cargo outbound from the county (63.7 percent), with Boone and Ogle Counties expected to see smaller shares of growth, 37.8 percent and 21.4 percent, respectively. Looking at the growth of inbound cargo values, Boone and Winnebago Counties are projected to see the largest increases at 74.2 and 73.6 percent, respectively, while Ogle County is projected to increase by 29.8 percent in the value of cargo inbound by trucks.

Table 4-16. County-Level Mode and Type of Flow by Tonnage, 2014

Inbound	Tons	Truck	Rail Intermodal	Rail Carload
Boone	3,580,766	97.3%	-	2.7%
Ogle	6,660,224	88.6%	4.2%	7.2%
Winnebago	14,240,248	98.8%	-	1.2%
Total	**24,481,238**	**95.8%**	**1.2%**	**3.1%**

Outbound	Tons	Truck	Rail Intermodal	Rail Carload
Boone	3,633,368	84.0%	NA	16.0%
Ogle	8,381,963	77.8%	7.3%	15.0%
Winnebago	10,370,766	98.2%	NA	1.8%
Total	**22,386,097**	**88.3%**	**2.7%**	**9.0%**

Data sources: Illinois Department of Transportation

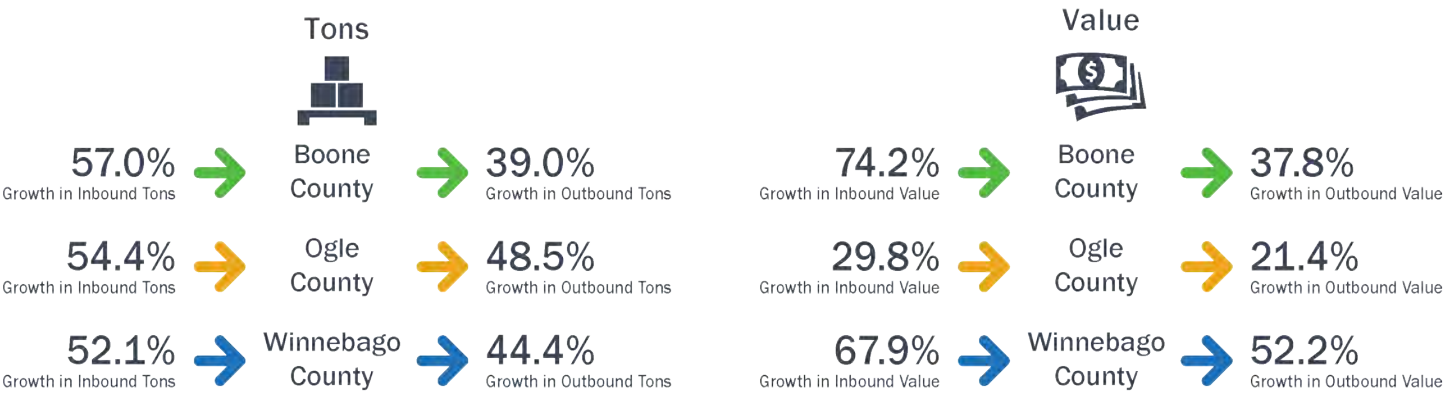
Table 4-17. County-Level Mode and Type of Flow by Value, 2014

Inbound	Value (Millions USD)	Truck	Rail Intermodal	Rail Carload
Boone	$4,020	86.9%	-	13.1%
Ogle	$7,865	37.5%	56.8%	5.7%
Winnebago	$15,951	99.0%	-	1.0%
Total	**$27,836**	**79.9%**	**16.0%**	**4.1%**

Outbound	Value (Millions USD)	Truck	Rail Intermodal	Rail Carload
Boone	$10,016	55.3%	-	44.7%
Ogle	$11,500	29.1%	69.8%	1.0%
Winnebago	$16,000	99.7%	-	0.4%
Total	**$37,516**	**66.2%**	**21.4%**	**12.4%**

Data sources: Illinois Department of Transportation

Figure 4-30. Growth of Truck Freight Flow by Tonnage and Value, 2014- 2045



Data sources: Illinois Department of Transportation

2 During the development process of the 2050 MTP, freight projections were only available out to the year 2045 at the county-level.

Commercial Fleets

Ground freight shipments by truck dominate the region's goods movement. As with passenger-related travel, system performance for freight-related traffic focuses on congestion, pavement condition, and reliability. Throughout the Rockford MPA, a subsystem of roadways has been designated as truck routes. The purpose of this system has been to limit truck traffic to roadways that are geometrically designed and properly constructed to accommodate large heavy vehicles hauling freight.

Bottlenecks

Congestion in the transportation network can be a significant impediment to the efficiency of freight movement. One of the most apparent factors in freight congestion are bottlenecks on highways. As a part of the Illinois State Freight Plan, a comprehensive analysis was conducted to identify the worst bottlenecks within the state. Bottleneck locations were classified by severity, in terms of delay and unreliability. A location classified as "high" would be ranked in the top third of bottleneck locations. As expected, the highest amount of bottleneck locations was identified in the Chicago metropolitan area. However, some bottleneck locations outside of the Chicago metropolitan area were ranked as some of the least performing roads.

Northbound Interstate 39 after the junction with US 20 is the only bottleneck within the Rockford MPA identified in the Illinois State Freight Plan, and is ranked in the bottom third of severe bottleneck locations in the state.[xlii]

Table 4-18. Miles of Truck Routes by Level of Designation

Rail Class	Locally Maintained	State Maintained	Tollway Maintained	Total
Class I	-	26.0	25.6	51.5
Class II	173.6	131.2	-	304.8
Total	**173.6**	**157.2**	**25.6**	**356.4**

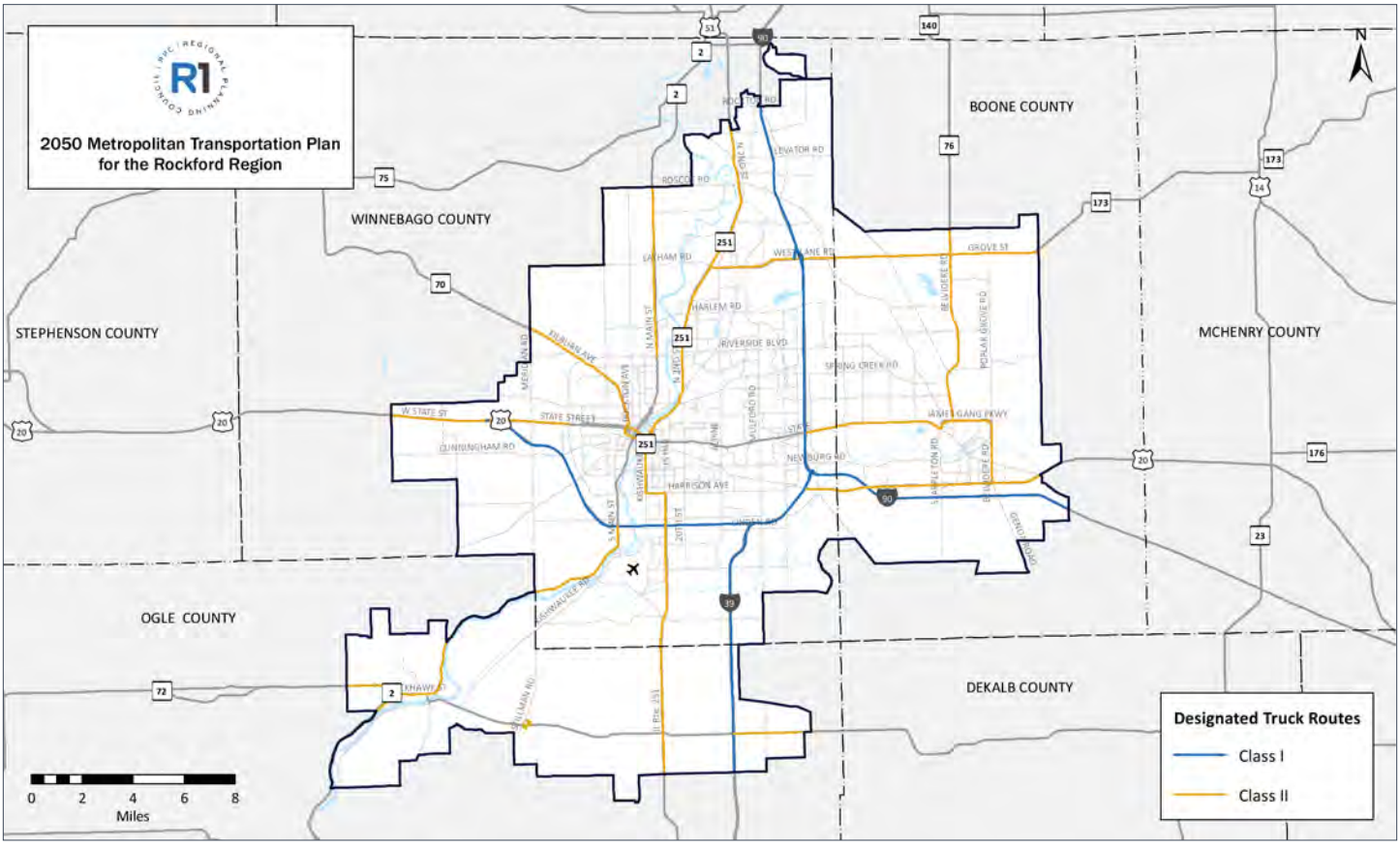
Data sources: Illinois Department of Transportation

Elimination of Class III Truck Routes

Effective January 1, 2020, Public Act 101-0328 changed the classification of truck routes in Illinois. The goal of this act was to simplify truck route classifications. The provision eliminated State Highway Class III, Local Highway Class III, and Local Preferred Truck Routes. Additionally, State and Local Class II were combined and State and Local Non-Designated classifications were combined. As a result, there are three classifications remaining: Class I (Interstates, expressways, tollways); Class II (State and Local Designated highways with at least 11-foot lanes), and Non-Designated (all other State and Local highways).

Source: Illinois Department of Transportation[xl]

Figure 4-31. State Designated Truck Routes



Data sources: Illinois Department of Transportation

Primary Highway Freight Network

Fixing America's Surface Transportation (FAST) Act directed the Federal Highway Administration (FHWA) to establish a National Highway Freight Network (NHFN) to strategically direct Federal resources and policies toward improved performance of highway portions of the U.S. freight transportation system. The FAST Act established four subsystem categories within the NHFN: Primary Highway Freight System (PHFS), Critical Rural Freight Corridors (CRFC, Critical Urban Freight Corridors (CUFC), and those portions of the Interstate System that are not part of the PHFS.

The initial designation of the Primary Highway Freight System (PHFS) was set by the FAST Act. Approximately 41,518 miles nationwide were included within this initial designation. States, and in some instances MPOs, are responsible for designating public roads for the CRFCs and CUFCs. States are allowed to designate a maximum of 150 miles of highway or 20 percent of the PHFS mileage in the State as CRFCs. State and MPO designation of the CUFCs is limited to a maximum of 75 miles of highway or 10 percent of the PHFS mileage in the State, whichever is greater. The Illinois Department of Transportation (IDOT) can designate approximately 168.5 miles of CUFCs statewide.

In 2016, The MPO requested a total of 45.2 miles within the MPA to be designated as CUFCs. The MPO recommended the following corridors to be designated:

- US 20: From IL-2 to I-39/90 – 8.6 miles;
- Harrison Avenue: From the Bypass (US-20) to IL-2 (South Main Street) – 7.4 miles;
- Riverside Boulevard: From I-90 to IL-251 (North 2nd Street) – 4.8 miles;
- Alpine Road: Bypass US-20 to IL-173, west on IL-173 to IL-251, north on IL-251 to Gardner Road – 19.4 miles;
- IL-251 (North 2nd Street): From IL-173 to East Riverside Boulevard – 3.7 miles; and
- IL-2 (South Main Street): From Harrison Avenue to US-20 – 1.3 miles.

The only CUFC designation in the Rockford Region was US 20 for 5.6 miles from South Main Street to I-39. The MPO will continue to highlight these corridors in the planning process as future designations may be considered and may be better positioned to compete for formula freight funds and discretionary funding in the future.

Looking Forward

Regional Freight Study

In 2009, the MPO and the City of Rockford conducted a Regional Transportation Freight Study. The goal of the study was to analyze the regional freight transportation network, identify current operational strengths and weaknesses, evaluate findings relative to the area's economic impacts, and make recommendations for projects to improve the freight transportation network. Since the completion of the study, significant trends have changed in the regional economy, freight movement, industrial supply chains, and the fright industry itself. To addresses these changes, the MPO will be pursuing an update to the Regional Freight Study.

The updated regional freight study would help further integrate freight-related goals and strategies into the MPO's short- and long-range planning processes. The overarching goal for this study is to strengthen the connection between the region's key freight transportation assets, core industries, and land use development. Key to the study's success will be the early and continuing inclusion of the private sector in its development, including shippers and receivers, carriers, logistics providers, and terminal facility operators. Some elements that will be included in the study are:

- Review and analysis of existing conditions in the region, including commodity flows, private sector partners, local freight attractors and generators, freight networking and routing, and economic impact;
- Analysis of future conditions, including a forecast of commodity flows and freight movement;
- Evaluation of programmed and planned transportation improvements, land use policies, and economic development plans that may affect or be affected by freight and goods movement;
- Planning and programming framework to address freight and goods movement weaknesses, threats, and opportunities; and
- Recommend infrastructure projects that improve the freight networking and routing, programs that increase freight operations, and policies that promote economic development, including freight attractors and generators.

Urban Goods Movement

Urban goods movements can be categorized into two groups: goods being transported between metropolitan areas and goods being transported within a metropolitan area.[xliii] Most freight transportation that occurs within the planning area is provided by trucks or vans, especially the final stages of good movement to their final destination, known as the "last mile". Historically, a majority of urban goods movement involved business-to-business activities. However, the proliferation of e-commerce has exponentially increased the number of home deliveries, requiring trucks to access smaller throughways and neighborhood streets.

Currently, there is limited data available for goods movements occurring within the Rockford MPA, especially at the neighborhood level. Often times, route choices for home deliveries within neighborhoods are complex and non-intuitive. However, recent technologies will allow the region to further analyze the possible impact the e-commerce industry and increased home deliveries will have on the region's roads.[xliv]

While there is limited data on the volume and routing of urban goods movement, several studies have identified emerging challenges related to increased goods movement within metropolitan areas that the MPO can begin to address with partner agencies, including the following:

- Accommodation for trucks at the curbside and/or on the street;
- Routes that match truck capacity, such as appropriate weight limits and geometric design, with truck demand;

- Delivery zones in central business districts, such as sufficient loading docks and commercial vehicle parking zones;
- Environmental concerns, including increased pollution and noise from idling vehicles; and
- Peak-hour deliveries in city centers and residential areas.

Rail

Rail transportation, particularly freight, provides the region with promising opportunities for economic development, job creation, and return on investment. Currently, three of the seven Class I railroads operate within the Rockford MPA, including Canadian National, Canadian Pacific, and Union Pacific. In addition to the Class I railroads, the Illinois Railway also operates within the region. In total, there are 130.2 miles of railroad tracks in the MPA, including 7.5 miles of privately-owned tracks. Figure 4-32 shows miles of rail by ownership. While individual companies own particular lines, railroad companies have track rights to operate on their partner's rail lines. A brief profile of each of the four railroad companies that serve the region are provided below.

Existing Railroad Assets

Canadian National

Canadian National (CN) currently owns 21.9 miles of track within the Rockford Region, that was formerly owned by the Illinois Central Railroad and the Chicago, Central, and Pacific Railroad. The CN operates one of the two east-west through rail lines in the region and handles significant rail freight volume. The CN has four stations within the region:

- **West Rockford:** Yard facility located just west of South Main Street in Downtown Rockford,
- **Rockford:** Located near the intersection Kishwaukee Street (IL-251) and Buckbee Street,
- **Perryville:** Located adjacent to Perryville Road at an industrial park in Cherry Valley, and
- **Irene:** Located south of the intersection of Irene and Bloods Point Roads.

Canadian Pacific Railroad

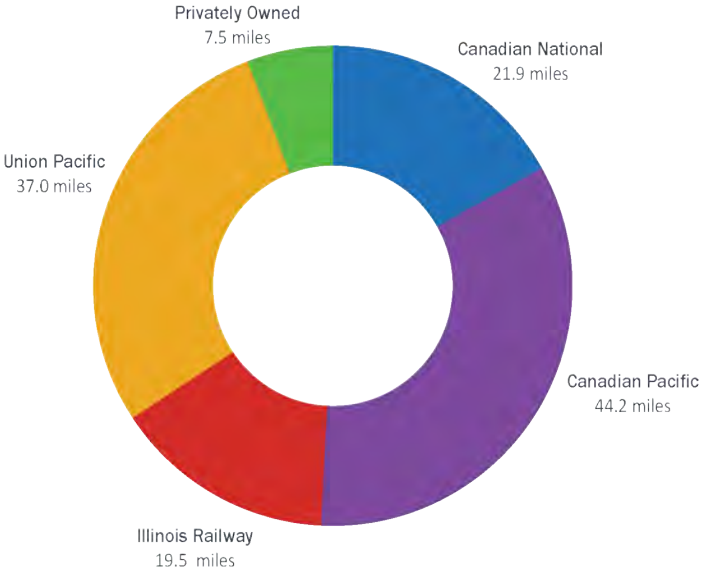
Canadian Pacific (CP) trackage in the region consists of two distinct pieces: an east-west corridor between Chicago and the Mississippi River and a north-south corridor between Rockford and Janesville, WI. Within the MPA, the CP owns the largest portion of trackage at 44.2 miles. Illinois Railway (IR) provides track rights to CP, which allows freight traffic between its east-west and north-south corridors. The CP/IR corridor travels through the Rockford Global TradePark and the Chicago Rockford International Airport (RFD); greatly contributing to enhanced economic development opportunities in freight. Currently, CP has rail yards located in downtown Rockford, just west of the Rock River, as well as a station in Davis Junction.

Class I Railroads

Class I Railroad have an annual operating revenue of at least $266.7 million.

Source: Federal Highway Adminstration[xlv]

Table 4-32. Miles of Railroad by Ownership



Data sources: U.S. Department of Homeland Security

Union Pacific

Union Pacific (UP) owns 37 miles of track within the Rockford MPA. The UP's largest portion of trackage is known as the Belvidere Subdivision. The Belvidere Subdivision consists of a single track between the UP's West Chicago Yard and the end of the line, just west of its crossing at South Central Avenue in Rockford. Additionally, UP operates a short spur along the east side of the Rock River from Windsor Road in Loves Park to downtown Rockford, where it connects into the Belvidere Subdivision. Both the Belvidere Subdivision and the short spur are located adjacent to significant industrial and commercial areas within the MPA, including the Windsor Lake Business Park in Loves Park and the Belford, Belvidere West, Landmark, and Townhall industrial parks in Belvidere.

Illinois Railway

The Illinois Railway (IR), a subsidiary of Omnitrax, operates four separate lines in northern Illinois. Within the Rockford MPA, IR owns 19.5 miles of trackage. IR's Rockford Line begins at their station in Flagg Center, which provides an interchange with the BNSF Railway, and heads north to rail yards in downtown Rockford.

The IR has three stations within the region:

- **Davis Junction:** Provides an interchange with the CP,
- **Camp Grant:** Located at the Chicago Rockford International Airport, and
- **Rockford:** Provides an interchange with the CN.

Looking Forward

Grade Crossing Improvements

Highway-rail grade crossings are unique in that it constitutes the intersection of at least two transportation modes, which differ greatly in terms of physical characteristics, movements, and operations. Highway-rail crossings are categorized into three categories: public, private, and pedestrian. Public crossings are those on highways under the jurisdiction of and maintained by a public authority and open to the public. Private crossings are those on roadways privately owned and utilized only by the landowner. Pedestrian crossings are those used solely by pedestrians. For planning and programming purposes, the MTP focuses specifically on public and pedestrian grade crossings. Within the Rockford MPA, there are 185 public highway-rail crossings currently open, with 146 of these are at-grade crossings (62 percent). Table 4-19 shows the number of highway-rail crossing by type.

While crossing collisions account for a small amount of all crashes, the severity of crossing collisions can be devastating, resulting in fatalities and incapacitating injuries. Highway-rail grade crossing safety improvements are critical to reducing collisions in combination with educational and enforcement efforts. Within the state of Illinois, the Illinois Commerce Commission (ICC) has statutory responsibility to improve safety at public highway-rail crossings. In coordination with IDOT, the two agencies have developed safety strategies and efforts to carry out a highway-rail safety program that promotes a safe, economical, and efficient railroad transportation system. Illinois has identified and implements physical and system improvements to improve grade crossing safety, including some of the following: warning device upgrades; grade separations - new and reconstructed; traffic and warning signal synchronization; remote monitoring devices; low cost improvements at unsignalized crossings; and crossing closures.[xlvi]

The MPO and its partner agencies will continue to advocate for grade crossing improvements within the region and pursue funding revenues for their implementation. More information on ICC's Crossing Safety Improvement Program can be found on their website.

Table 4-19. Number of Highway-Rail Crossings by Type

Type	Open Crossing	Closed Crossing	Total
Public At-Grade	146	88	234
Public RR-Over Road	11	4	15
Public RR-Under Road	28	5	33
Total	**185**	**97**	**282**

Data sources: Illinois Commerce Commission

Rail Consolidation

Over the past few decades, both public and private sectors have made considerable efforts to plan, invest, and promote rail transportation in the region. Significant investment by the four railroad companies have been made in recent years, as well as cooperation in a rail consolidation program that aims to enhance key rail components and eliminates redundant, non-critical rail assets. The aforementioned rail consolidation study was completed in 2003. The objective of the study was to eliminate abandoned or underused trackage and encourage redevelopment opportunities. The benefit to the railroads would be improved operations and reduced capital and operating costs as well as additional income generated by land development. The public benefit of rail consolidation would be potential land development opportunities, conversion of abandoned rail right-of-ways to



Madison Street. Rockford, IL

bicycle and pedestrian paths, and reduced roadway congestion through elimination of at-grade crossings. Additionally, the rail consolidation program would have significant transportation safety benefits.

Since freight and passenger rail in the region is intricately linked, the continuation of the railroad consolidation project, and possible update to the study, is needed with the passage of the Rebuild Illinois Capital Plan in 2019. The Rebuild Illinois Capital Plan apportioned $275 million dollars to a possible passenger rail connection between Chicago and Rockford. Regardless of if the passenger rail service moves forward, the 2003 Rockford Rail Consolidation Study should be reviewed to determine if there has been a change in the economic benefit to the community from the rail consolidation, if there are any new or updated railroad company concurrences and/or agreements, and updates to the financial components of the study.

More information on the history of passenger rail in the region, as well as current initiatives, can be found in the Intercity Transportation section of this document.

Airport

Three airports are currently located within the Rockford MPA, the Chicago Rockford International Airport (RFD), as well as two smaller local airports: Poplar Grove and Cottonwood. Of these, the Chicago Rockford International Airport is responsible for a significant amount of cargo that moves through the region. This section predominately focuses on freight movement at the Chicago Rockford International Airport, while acknowledging the region's close proximity to Chicago O'Hare International Airport, one of the world's largest passenger and freight air facilities, and the numerous benefits it offers the region.

In 2018, the Chicago Rockford International Airport was named the fastest growing airport for cargo in the world, growing by 56.6 percent.[xlvii] As the 19th largest cargo airport in the nation, the Chicago Rockford International Airport has been a major hub for cargo in the region and over the past decade has played a significant role in the attraction of logistics and warehousing industries to the MPA. Figure 4-33 shows the growth of cargo landed weight for RFD since 2000.

Located in the southern part of Rockford, RFD serves not only the counties immediately adjacent to the Rockford MPA but also northern Illinois and southern Wisconsin. RFD is both a passenger and cargo airport, with a majority of its operations focusing on air cargo. RFD is an independent municipal corporation and operated by the Greater Rockford Airport Authority (GRAA). The GRAA is led by a Board of Commissioners with seven members appointed by the elected officials of Loves Park, Machesney Park, Rockford, and Winnebago County.

The airport itself is located in the southwest quadrant of Rockford, as shown in Figure 4-34, encompasses over 3,000 acres, 800 of which are airfield related, and has easy access to the region's five major highways. Additionally, a large component of its success has been its strategic location within the Midwest Chicago Megaregion, as it is approximately 85 miles northwest of Chicago, 90 miles southwest of Milwaukee, and 60 miles south of Madison.

Also contributing to its success as one of the fastest growing cargo airports in the world is its status as a United States Customs Port of Entry and grantee of Foreign Trade Zone (FTZ) #176. The Foreign Trade Zone (FTZ) program creates a partnership between American businesses and the federal government, increasing the global market share of U.S. businesses and retaining or creating jobs at home.[xlviii]

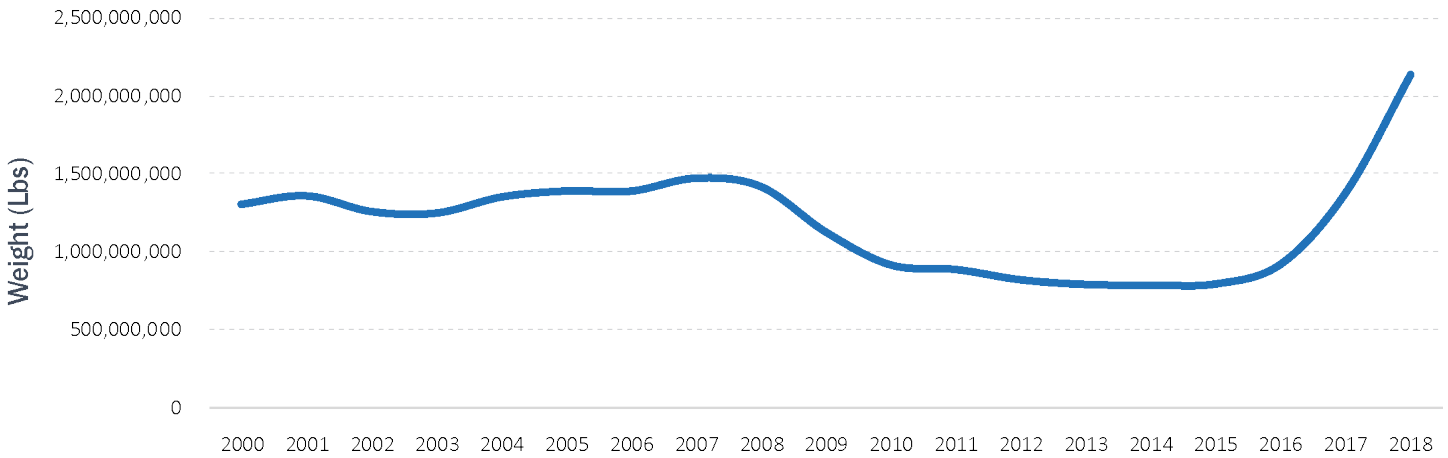
RFD is capable of landing aircrafts in Category II/III conditions on their two runways, measuring 8,200 feet and 10,000 feet. The 10,000-foot runway has a Category II/III Landing System, which allows RFD to land any jet aircraft operating in the world today, even under the most adverse conditions. Additionally, RFD has a

Foreign Trade Zones

ecured, designated locations near a U.S. Customs Port of Entry that are generally considered to be outside of U.S. Customs territory. As a result, business can reduce or eliminate duty of imports.

Source: Greater Rockford Airport Authority

Figure 4-33. Cargo Landed Weight, 2000 – 2018



Data sources: Federal Aviation Administration

Figure 4-34. Chicago Rockford International Airport



Data sources: WinGIS

two million-gallon fuel station facility that is directly linked to an underground pipeline that ships the jet fuel necessary to maintain consistent operations at the airport.

Over the past several years, millions of dollars have been invested in infrastructure improvements and facilities at the airport. Most recent infrastructure improvements at the airport include the following:

- In 2017, construction was completed on the 200,000 square foot Maintenance, Repair, and Overhaul (MRO) facility;
- In 2017, construction began on the 30,000 square foot addition to the terminal. Upon completion, the terminal will offer expanded passenger areas, increased TSA security lines, and improved baggage handling areas;
- In 2018, RFD broke ground on a 120,000 square foot Northwest Cargo building. The addition will support the growing Amazon Air operation that is currently under lease; and
- Several large reconstruction and rehabilitation projects have been completed on the major roadways leading to and around the airport, including: Falcon Road, Airport Drive, Beltline Road, and Midfield Road.

Looking Forward

Over the next few years, there are several large infrastructure projects proposed at RFD. The first major project is the further development of the northwest cargo area. The proposed timeframe for construction is Fall 2019 through Fall 2020. Work includes:

- Construct, light, and mark northwest air cargo apron to accommodate up to 10 wide-body aircraft parking positions;
- Construct proposed service and access roads;
- Construct proposed truck parking facility;
- Grading, drainage, and stormwater improvements;
- Construct new detention area to accommodate additional impervious surface; and
- Security and wildlife fencing modifications and installation.

The second major project proposed at RFD is the construction of a new midfield air cargo area. The project's construction timeframe is anticipated to begin in Spring 2020 and be completed by 2022. The proposed project includes the following:

- Construct, light, and mark partial parallel taxiway to one of the existing runway, connecting the taxiways and taxi lane;
- Construct, light, and mark midfield air cargo apron to accommodate up to 12 wide-body aircraft parking positions;
- Construct new air cargo building;
- Construct new ground support equipment and maintenance buildings, covered storage, and equipment staging area;
- Construct, light, and mark proposed truck dock and truck parking area;
- Construct new truck and employee entrance/access roads connecting to Beltline Road, including associated intersection improvements;
- Construct new service/access roads;
- Grading, drainage, and utility expansion/improvements (water, stormwater, sanitary sewer, and electricity);
- Construct new detention areas to accommodate additional impervious surface; and
- Security and wildlife fencing modifications and installation.[xlix]





Part 5
The Financial Plan

The 2050 Metropolitan Transportation Plan (MTP) provides a framework for determining future transportation needs and subsequently identify projects, policies, and investments that fulfill those needs within projected funding levels. Generally speaking, a financial plan is a statement of an entity's long-term objectives and the accompanying investment strategy for achieving them. Specifically, in transportation planning, financial planning is the process of defining and evaluating funding sources, sharing this information, and deciding how to allocate available funding through a financial analysis and evaluation of transportation infrastructure and capital projects.

The MTP's financial plan must contain several components, according to the most recent federal transportation authorization legislation, Fixing America's Surface Transportation (FAST) Act, and several final rulemakings on metropolitan planning. First, it must present a picture of funding that is reasonably expected to be available in the region, including the identification of funding sources, costs, and proposed expenditures. Second, the financial plan needs to contain a fiscally-constrained list of transportation projects that supports the MTP's implementation. Third, for illustrative purposes, it may include additional projects that would be in the fiscally-constrained list of projects if additional resources beyond what has been identified become available. Finally, the financial plan provides recommendations on any additional financial opportunities that could be used to fund projects and programs included in the plan, such as tolling, bonding, public private partnerships, or other strategies.[i] A comprehensive list of required elements of the financial plan can be found in Appendix B. The following chapter outlines the 2050 MTP's financial plan as detailed above.

Financial Outlook

Developing the financial plan of the MTP began with identifying funding sources and estimating the amount of funding that will be available for transportation projects over the next 30 years. Funds to implement the projects listed within this document will come from a variety of federal, state, and local funding sources. Many of the sources and programs have specific purposes and eligibility limitations, while others are more flexible. Before any financial assumptions can be made, there must be an understanding of the sources that are reasonably anticipated to be available over the next 30 years.

Sources

Federal

Authorizing legislation for the FAST Act sets the maximum amount of funding that can be appropriated to programs. While the FAST Act provides long-term funding certainty, it only authorizes funding over FY 2015 – FY 2020. At the time of drafting this document, Congress has been working on a new, multiyear act for transportation funding. With some uncertainty in the federal transportation funding programs, the MPO has prepared the financial plan with assumptions using currently available sources and 30-year revenue projections. Revenue projections for federal transportation programs, in particular, are based upon the existing federal-aid highway and public transportation programs.

Federal funding programs are key in the implementation of many large-scale transportation projects within the Rockford MPA. Federal transportation funding ensures that state and local governments are able to carry out transportation programs and projects that address challenges facing the transportation system, including improving safety, maintaining infrastructure condition, reducing traffic congestion, improving efficiency of the system and freight movement, and protecting the environment. Federal transportation programs require a local match, ranging from 10- to 50-percent. The main federal funding sources for surface transportation currently received in the region are:

- National Highway Performance Program (NHPP);
- Surface Transportation Block Grant (STBG), including the following set-asides and suballocations:
  - Transportation Alternatives (TA) set-aside,
  - State Planning and Research (SPR) set-aside[1],
  - Set-aside for bridges not on the Federal-aid highway system,
  - Suballocation to urbanized areas with population over 200,000,
  - Suballocation to areas with population between 5,000 and 200,000, and
  - Suballocation for rural projects on any Federal-aid

Fiscal Constraint

Assuring that a given program or project can reasonably expect to receive funding within the time allotted for its implementation.

Source: Federal Highway Administration

1 Statewide Planning & Research (SPR)funds are used to support planning and research activities. The funds are used to establish a cooperative, continuous, and comprehensive framework for making transportation investment decisions and to carryout transportation planning and research activities throughout the State. Eligible activities include: planning studies, data purchase, collection, and/or analysis, research activities; program development activities, performance management activities, and outreach activities.

highway; and
- Highway Safety Improvement Program (HSIP), including the Railway-Highway Crossing Program set-aside.

Over the past five years, approximately 37 percent of all roadway projects in the Rockford MPA have been funded through federal programs (see Figure 5-1). On average, the STBG program funds the largest portion of surface transportation projects receiving federal funds (66 percent), followed by the NHPP (19 percent).

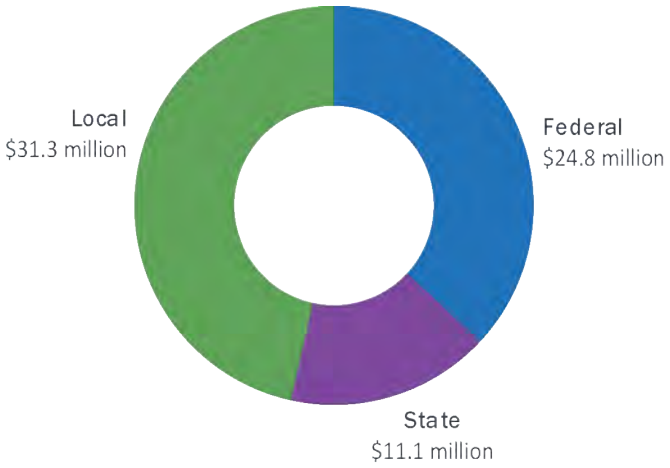
Surface Transportation Block Grant program funds are received from the federal government through the Illinois Department of Transportation (IDOT). These funds, as outlined in the legislation, are then apportioned by the state, following the formula shown in Figure 5-2, to local jurisdictions for programming.

Due to the size of the Rockford urbanized area, the Rockford MPO has an additional designation, known as a Transportation Management Area (TMA). As a TMA, the MPO is responsible for the project selection of the suballocation of STBG funds for urbanized areas over 200,000, as well as for a portion of the TA Set-Aside program. The local TA program, administered by the Rockford MPO, is known as the Transportation Alternatives Program (TAP). More information on the STBG program and the local administered programs, please see Technical Memorandum #4: Financial Analysis & Funding Resources.

The FAST Act also authorizes several funding programs specifically for the provision of public transportation services, including both capital purchases and operating assistance. Programs used within the MPA include:

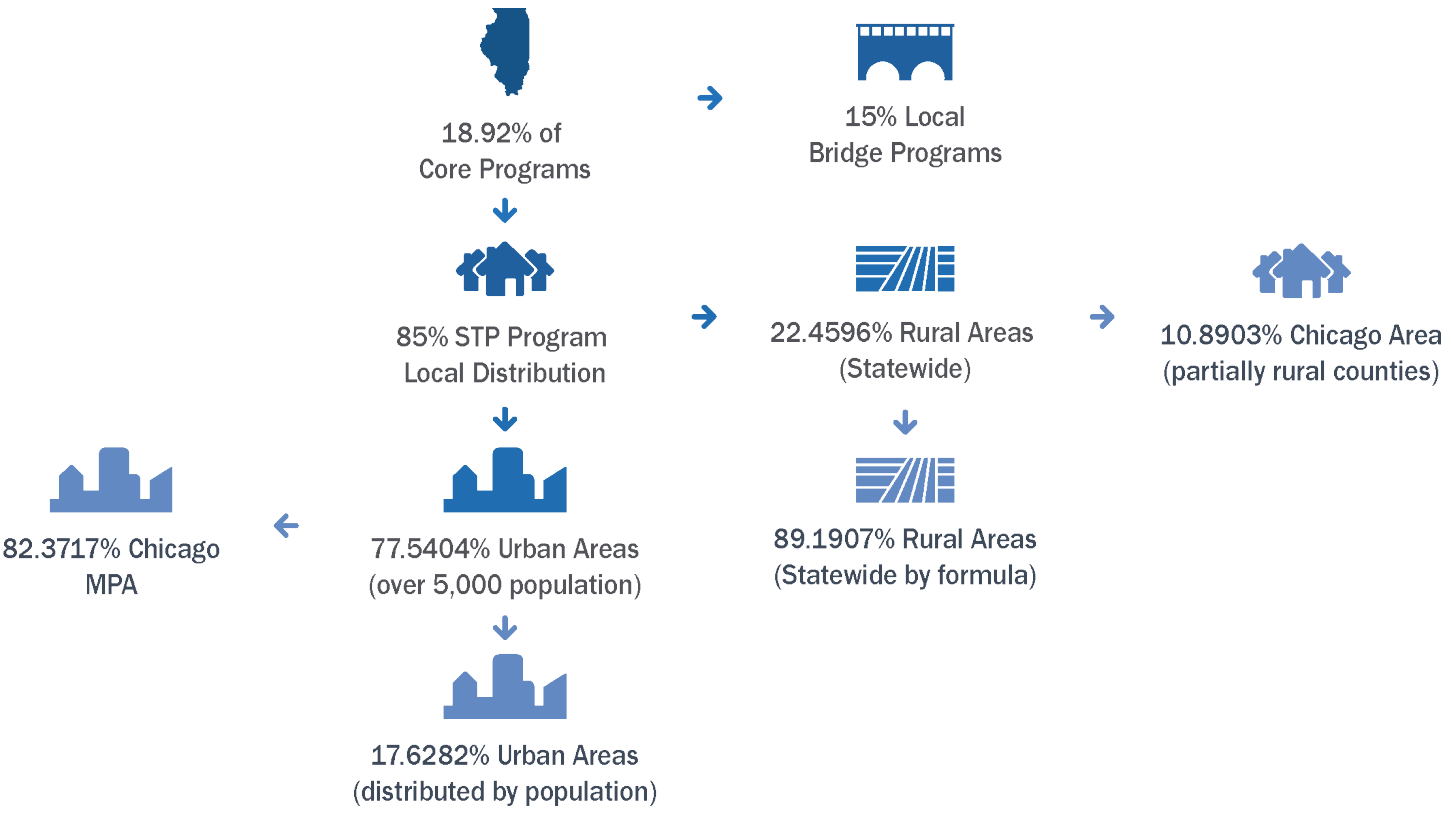
- Urbanized Area Formula Grant (Section 5307);
- Enhanced Mobility of Seniors and Individuals with Disabilities (Section 5310);
- Rural and Small Urban Areas (Section 5311); and
- Buses and Bus Facilities Formula Program (Section 5339).

Figure 5-1. Breakdown of Funding Sources



Data sources: Region 1 Planning Council

Figure 5-2. Surface Transportation Block Grant Program Distribution



Data sources: Illinois Department of Transportation

State

While IDOT relies heavily upon federal funding to build and maintain roads and bridges on the state and federal systems, it also collects revenues at the state-level to fund expansion and improvement projects, as well as to meet the federal funding match requirements. These funding sources include state motor fuel tax revenues, vehicle registrations, license fees, and bond issuances. However, the state has been facing a long-term funding gap between stagnating revenue streams and rising construction costs.

To combat the growing funding concerns, Governor Pritzker signed a historic, bipartisan bill that gives Illinois its first capital plan in over a decade. Rebuild Illinois makes $33.2 billion dollars' worth of investments in roads, bridges, railroads, and mass transit over six years (FY 2019 – 2024). In addition to being a long awaited capital bill, it is the first one in the state that truly addresses a multimodal system.[ii] Figure 5-3 shows an outline of the funding breakdown for transportation projects statewide. Some of the biggest components of the Rebuild Illinois capital plan includes:

- Adjusting the motor fuel tax from 19 cents to 38 cents per gallon for gas and diesel;
- Increasing vehicle registration fees from $101 per vehicle to annual fees for vehicles newer than 3 years to $199, 4-6 years to $169, 7-11 years to $139, and vehicles 12 years or older to $109; and
- Increasing vehicle registration fees for electric vehicles.

Public transportation agencies operating outside of the Chicago region are also reliant upon the state for operating and capital funding assistance. Illinois' transit Downstate Operating Assistant Program (DOAP) currently matches 65 percent of an agency's eligible operating expenses. As with the aforementioned Rebuild Illinois capital bill, downstate public transportation agencies also depend on state contributions to maintain and/or expand bus fleet and facility capital. However, the unpredictable nature of short-term capital bills requires agencies to fluctuate their capital replacement schedules to best meet incoming revenue.

Local

Transportation projects receive local funding through municipal and county budgets, local MFT distributions, retail sales, public transit fares, natural land and park district budgets, and special assessments and referendums. On average, 50 percent of transportation-related projects that occur in the region are funded solely by local funding sources.

Figure 5-3. Rebuild Illinois Transportation Funding Breakdown



Data sources: Region 1 Planning Council



Rebuild Illinois Press Conference. (Courtesy of IDOT)

Financial Assumptions

Forecasting future funding levels requires a large number of assumptions to be made, including that federal transportation programs and local revenue sources will continue at the same levels as in the past decade. However, it is typical for certain types of funding to fluctuate from one fiscal year (FY) to another making it difficult to determine the exact amount of funding that will be available. Near-term forecasts are typically more accurate than long-term forecasts. While past funding levels may not be a good predictor of future funds, using the total of the average expenditures and allocated funds over the last five years is the most commonly used approach by MPOs for forecasting transportation funds. As the MTP is updated on a five-year cycle, these financial projections are monitored and updated within future releases of the plan to accurately depict funding sources and revenue amounts.

Roadway Financial Assumptions

Table 5-1 illustrates funds that have been programmed from funding identified above between FY 2016 and FY 2020. The table shows that the average annual public funding for roadway improvements was $67,263,190 in "year of expenditure" (YOE) dollars. Table 5-2 illustrates the types of projects these funds were used for over the past five years.

The revenues detailed in the following section cover a 30-year period beginning in FY 2021 and extends through the FY2050. In order to reflect fiscal constraints, as required by 23 CFR part 450.324, forecasted revenues are presented in "year-of-expenditure dollars" and consist of all revenues sources that are "reasonably expected to be available" within the planning horizon. It should be noted that Tables 5-1 and 5-2, include all funding sources that were expended between FY 2016 and FY 2020, however only specific funding sources have been included in the forecasted revenues to represent sources that are "reasonably expected to be available." The plan assumes a 2-percent inflation rate for all sources. Estimations of revenue, and the corresponding list of projects, have also been classified into four cost bands: current (2021 – 2025), short-range (2026 – 2030), mid-range (2031 – 2040), and long-range (2041 – 2050). Table 5-3 provides the revenue forecasts for the 30-year planning horizon.

Table 5-2. Roadway Expenditures by Improvement Type, FY 2016- FY2020 (in Millions)

Improvement Type	5-Year Average	Percent of Expenditures
Bridge Replacement or Improvement	$3.4	4.9%
Engineering, Planning, or Design	$0.2	0.2%
Enhancement	$2.8	4.1%
Intersection Improvement	$3.1	4.5%
Land Acquisition	$0.0	0.0%
New Construction	$2.6	3.7%
Reconstruction	$36.7	53.2%
Rehabilitation	$2.3	3.4%
Resurfacing	$14.4	20.9%
Safety	$3.4	5.0%
Utility	$0.0	0.0%
Total	**$69.0**	**-**

Data sources: Region 1 Planning Council

Table 5-1. Roadway Expenditures by Source, FY 2016- FY2020 (in Millions)

Funding Source	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	5-Year Average
STBG-State	$46.5	$0.0	$1.0	$0.0	$0.0	**$9.5**
STBG-Rural	$1.5	$1.6	$1.7	$1.7	$1.8	**$1.7**
STBG (MPO)	$2.6	$2.8	$2.9	$3.0	$3.0	**$2.8**
STBG-Bridge	$1.6	$1.9	$2.0	$1.3	$1.4	**$1.7**
TAP	$0.3	$0.3	$0.3	$0.3	$0.3	**$0.3**
ITEP	$1.7	$0.0	$0.5	$0.0	$0.0	**$0.4**
Major Bridge	$1.3	$2.5	$0.0	$0.0	$1.5	**$1.1**
NHPP	$24.0	$0.0	$0.0	$0.0	$0.0	**$4.8**
HSIP	$3.8	$1.8	$6.4	$0.1	$0.6	**$2.6**
IDOT	$37.5	$4.0	$0.7	$0.0	$11.2	**$10.7**
Other State	$0.3	$1.8	$0.0	$0.0	$0.2	**$0.5**
Local	$40.0	$31.8	$21.2	$15.3	$48.0	**$31.3**
Total	**$161.2**	**$48.6**	**$36.8**	**$21.7**	**$68.1**	**$67.3**

Data sources: Region 1 Planning Council, Illinois Department of Transportation

Transit Financial Assumptions

Looking at the future of public transit in the region, various factors must be taken into consideration to enhance and assist the functionality and accessibility of transit options in the metropolitan planning area (MPA). Table 5-4 displays the regionally-allocated capital funding sources for the 30-year period (FY 2021 – FY 2050), while Table 5-5 displays the operating revenue sources and forecasts. Forecasts for capital and operating revenues were developed utilizing actual budget numbers from FY 2015 to FY 2019 and projected budget data from 2021 to 2050. The 5-year average for 2015-2019 was substituted as the value for FY 2020 because budget actuals for operating costs are not available until the end of the fiscal year. Funding sources included in these forecasted revenues are FTA sections 5307, 5310, and 5339 formula funds; state and local assistance and matches; and revenue directly generated from the provision of public transportation. The plan assumes a 3-percent inflation rate for federal funding sources and a 2.1-percent inflation rate for all other sources, as agreed upon by Region 1 Planning Council and Rockford Mass Transit District. Estimations of revenue have been classified into four cost bands

More detailed information on the transportation funding sources and programs, along with the methodology used in calculating the financial assumptions can be found in Technical Memorandum #4: Financial Analysis & Funding Resources.

Table 5-3. Roadway Revenue Forecast by Source, in Year-of-Expenditure Dollars (in Millions)

Funding Source	Current (2021-2024)	Short (2025-2030)	Mid (2031-2040)	Long (2041-2050)	30-Year Totals (2021-2050)
STBG-State	$50.5	$55.7	$130.5	$159.1	**$395.8**
STBG-Rural	$8.8	$9.7	$22.7	$27.6	**$68.8**
STBG (MPO)	$15.1	$16.7	$39.1	$47.6	**$118.5**
STBG-Bridge	$8.8	$9.7	$22.7	$27.6	**$68.7**
TAP	$1.7	$1.9	$4.4	$5.4	**$13.4**
ITEP	$2.4	$2.6	$6.2	$7.5	**$18.7**
Major Bridge	$5.6	$6.2	$14.5	$17.7	**$44.0**
NHPP	$25.5	$28.2	$66.0	$80.5	**$200.1**
HSIP	$13.5	$14.9	$35.0	$42.7	**$106.2**
IDOT	$56.7	$62.5	$146.6	$178.7	**$444.4**
Other State	$2.4	$2.7	$6.3	$7.7	**$19.1**
Local	$166.0	$183.3	$429.4	$523.5	**$1,302.2**
Other	$0.0	$0.0	$5.5	$3.8	**$9.3**
Total	**$356.9**	**$394.0**	**$928.9**	**$1,129.4**	**$2,809.2**

Data sources: Region 1 Planning Council

Table 5-4. Capital Revenue Forecast by Source, in Year-of-Expenditure Dollars

Funding Source	Current (2021-2024)	Short ŽŽŽŽŽ	Mid ŽŽŽŽŽ	Long ŽŽŽŽŽ	30-Year Totals (2021-2050)
FTA 5307	$6,166,518.0	$7,148,684.4	$18,111,479.1	$24,340,313.4	**$55,766,994.9**
FTA 5339	$1,868,873.5	$2,166,536.6	$5,489,007.5	$7,376,767.1	**$16,901,184.7**
FTA 5310	$1,491,483.8	$1,729,038.6	$2,190,294.3	$2,943,572.4	**$8,354,389.1**
Total	**$13,532,286.3**	**$11,044,259.6**	**$25,790,780.9**	**$34,660,652.9**	**$85,027,979.7**

Data sources: Region 1 Planning Council, Rockford Mass Transit District

Table 5-5. Operating Revenue Forecast by Source, in Year-of-Expenditure Dollars

Funding Source	Current (2021-2024)	Short (2025-2030)	Mid (2031-2040)	Long (2041-2050)	30-Year Totals (2021-2050)
Federal	$9,057,309.2	$10,499,903.8	$26,601,927.9	$35,750,766.7	**$81,909,907.6**
State	$53,801,854.2	$59,693,350.2	$140,981,421.9	$173,547,877.7	**$428,024,504.1**
Local	$14,567,908.4	$16,163,146.6	$38,173,488.0	$46,991,495.4	**$115,896,038.4**
Operating	$9,273,403.5	$10,288,874.5	$24,299,861.7	$29,913,086.2	**$73,775,225.8**
Total	**$86,700,475.4**	**$96,645,275.1**	**$230,056,699.5**	**$286,203,225.9**	**$699,605,675.9**

Data sources: Region 1 Planning Council, Rockford Mass Transit District

Fiscally-Constrained Projects

This section discusses the proposed roadway system improvements over the time frame of the 2050 MTP. Fiscally-constrained projects are those with either dedicated or reasonably anticipated funding sources for completion and are considered financially viable with respect to projections of future revenue. Additionally, it should be noted that the following projects presented, especially these within the mid-range and long-range timeframe, are conceptual in nature and are intended to be used only as a guide. There are countless factors that may affect the projected timeline, cost estimates, and scope of the projects identified. Contributing factors that may affect the projects include the pace and direction of community growth, the state of the overall economy, and its significance to the region.

Roadway Projects

The following roadway project lists are not intended to be comprehensive or compulsory; instead these projects are the major improvements likely to occur. These projects are of varying degrees of scale and cost, but all contribute to the overall improvement of the regional transportation system. To ensure that these projects align with the goals and priorities of the region, the MPO created an evaluation process for the fiscally-constrained project list within the 2050 Metropolitan Transportation Plan (MTP) update and received concurrence from the MPO Technical and Policy Committees.

The purpose of this process is to evaluate roadway projects based on criteria determining if, and to what extent, each project adequately addresses the region's transportation needs and goals. The evaluation criteria for this process has also been developed to reflect the federal transportation planning factors. The evaluation criteria categories include: system preservation, safety and security, mobility, system reliability, livability and accessibility, economic vitality, environmental stewardship, and funding effectiveness. Each of these categories have been broken into a number of sub-criteria based upon available data. The project evaluation process for the 2050 MTP was conducted as follows:

1. Compiling short- and long-range roadway projects received by partner organization;
2. Categorizing projects by anticipated implementation timeframe and type of project;
3. Internal review of available data sources, identification of additional information needed, and reaching out to submitting organization for needed materials;
4. Comparing grouped projects to reasonably anticipated funding levels;
5. Compiling lists of projects with baseline data, where available, and provided these lists to partner organization for review;
6. Presenting final lists to Technical and Policy Committees for review and concurrence; and
7. Incorporating the lists into the 2050 MTP.

More detailed information on the evaluation criteria used, along with the methodology, used can be found in Technical Memorandum #5: Project Evaluation Process.

Additionally, the evaluation criteria will assist the MPO in the federally-required System Performance Report. The data collected during the project evaluation process will be the basis for the region's transportation system baseline performance. As projects are implemented, the MPO will be able to track each project's impact on the overall system's performance, as well as their impact on the federal performance measures and regional metrics.

The projects listed in the fiscally-constrained element of the Financial Plan are organized into two categories: state-sponsored and locally-sponsored. The locally-sponsored roadway projects have been further delineated by the four cost bands: current (2021 – 2025), short-range (2026 – 2030), mid-range (2031 – 2040), and long-range (2041 – 2050).

All project cost estimates from partner agencies were in 2019 dollars. Project costs, similar to the development of the revenue forecasts, are required to be in YOE dollars. For cost estimating purposes, the proposed roadway projects were divided into cost bands, based upon their projected completion year. Each project was inflated at a rate of 3.4 percent to the middle year of the respective cost band. The rate of 3.4 percent includes a 2-percent inflation rate, as well as a 1.4-percent growth rate to account for increases that may occur in construction costs, such as labor and materials.

State-sponsored highway projects anticipated to occur in the MPA over the next 30 years are listed in Table 5-6, and depicted in Figure 5-4.

A list of the locally-sponsored roadway projects, by cost band, are provided in Tables 5-7 through 5-10, and illustrated in Figures 5-5 to Figure 5-8.

Table 5-6. State-Sponsored Highway Projects, FY 2021 – FY 2050 (in Millions)

Current (2021-2024)

ID	Project	Extents	Jurisdiction	Description	Funding Sources	2019 Cost	YOE Cost
01-06	IL-2 (N. Main St)	Latham Rd to Rockton Bypass	IDOT	Road Widening	F/S	$26.5	$27.7
					Current Expenditures	**$26.5**	**$27.7**

Short (2025 - 2030)

ID	Project	Extents	Jurisdiction	Description	Funding Sources	2019 Cost	YOE Cost
01-03	I-39	I-90 to Blackhawk Rd	IDOT	Road Widening	F/S	$248.4	$277.7
01-05*	IL-2	IL-72 E to Beltline Rd	IDOT	Road Widening	F/S	$84.4	$94.3
01-07	IL-251 (Harrison Av)	Kishwaukee St to 9th St	IDOT	Road Widening	F/S	$9.4	$10.5
01-11	US BUS 20	Shaw Rd to State St	IDOT	Road Widening	F/S	$70.3	$78.6
01-15*	US 20 Business	IL-76 to US-20	IDOT	Road Widening	F/S	$52.7	$58.9
					Short Range Expenditures	**$465.1**	**$520.0**

Mid (2031 - 2040)

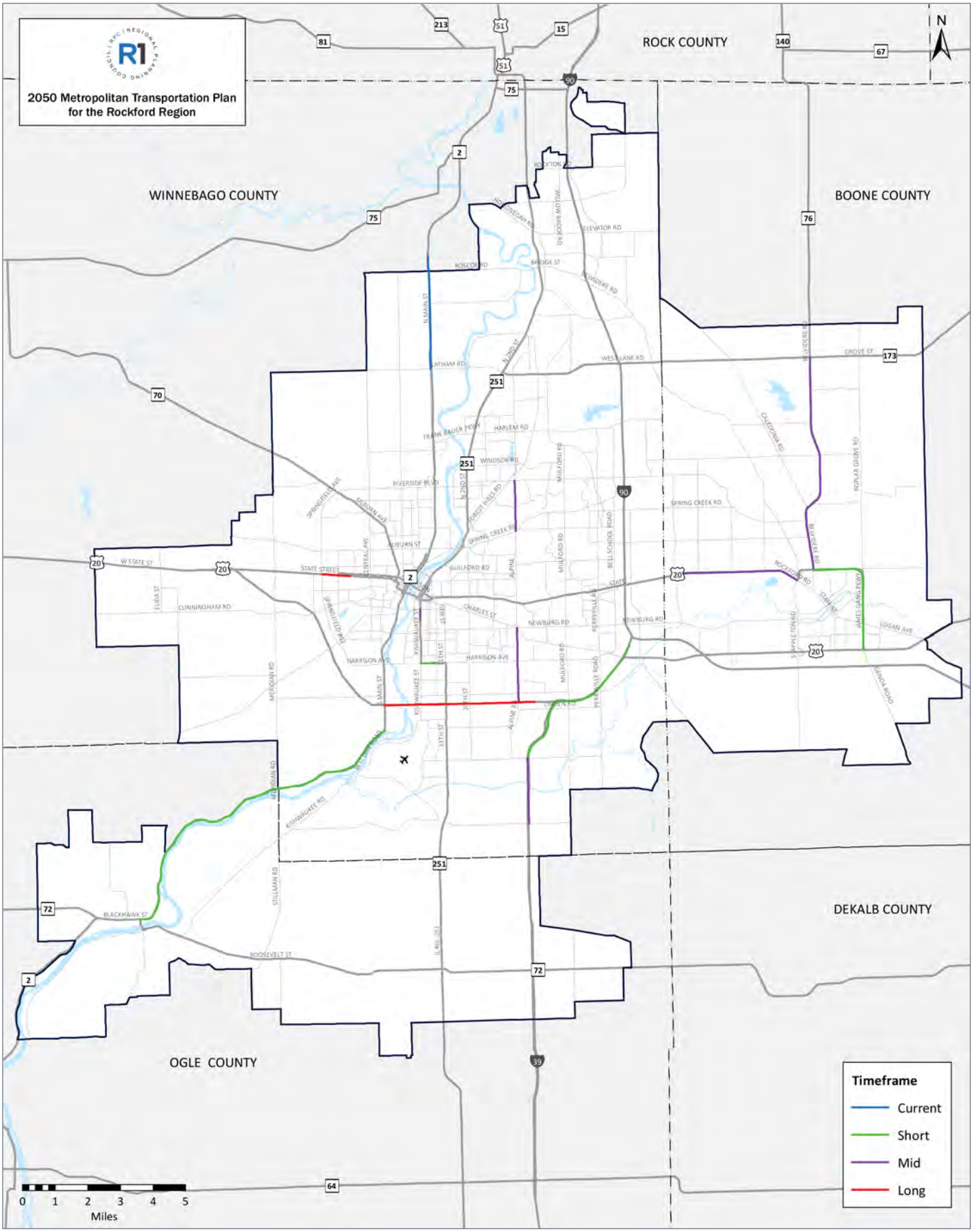
ID	Project	Extents	Jurisdiction	Description	Funding Sources	2019 Cost	YOE Cost
01-01	Alpine Road - North Section	Spring Creek Rd to Riverside Blvd	IDOT	Reconstruction	F/S	$32.9	$41.2
01-02	Alpine Road - South Section	Newburg Rd to US-20	IDOT	Reconstruction	F/S	$41.2	$51.5
01-04	I-39	Blackhawk Rd to Baxter Rd	IDOT	Reconstruction	F/S	$152.4	$190.4
01-08	IL-251 (Kishwaukee St)	College Ave to Pope St	IDOT	Road Widening	F/S	$8.2	$10.3
01-09	IL-76	US 20 Bus to IL-173	IDOT	Road Widening	F/S	$141.4	$176.7
01-12	US Bus 20	State St to US-20	IDOT	Road Widening	F/S	$71.4	$89.2
					Mid Range Expenditures	**$447.5**	**$559.3**

Long (2041 - 2050)

ID	Project	Extents	Jurisdiction	Description	Funding Sources	2019 Cost	YOE Cost
01-10	IL-76	US 20 Bus to US-20	IDOT	New Road or Extensic	F/S	$125.5	$180.3
01-13	US BUS 20 (W. State St)	Springfield Ave to Day Ave	IDOT	Road Widening	F/S	$21.8	$31.3
01-14	US-20 (Bypass)	IL-2 to I-39	IDOT	Road Widening	F/S	$204.2	$293.3
					Long Range Expenditures	**$351.4**	**$504.8**
					Total Expenditures	**$1,290.6**	**$1,611.7**

Note: For projects marked with an asterisks (*), the cost of this project is factored into the Maintenance & Presevation in Table 5-11, rather than Capacity Expansion.

Figure 5-4. State-Sponsored Highway Projects, FY 2021 – FY 2050



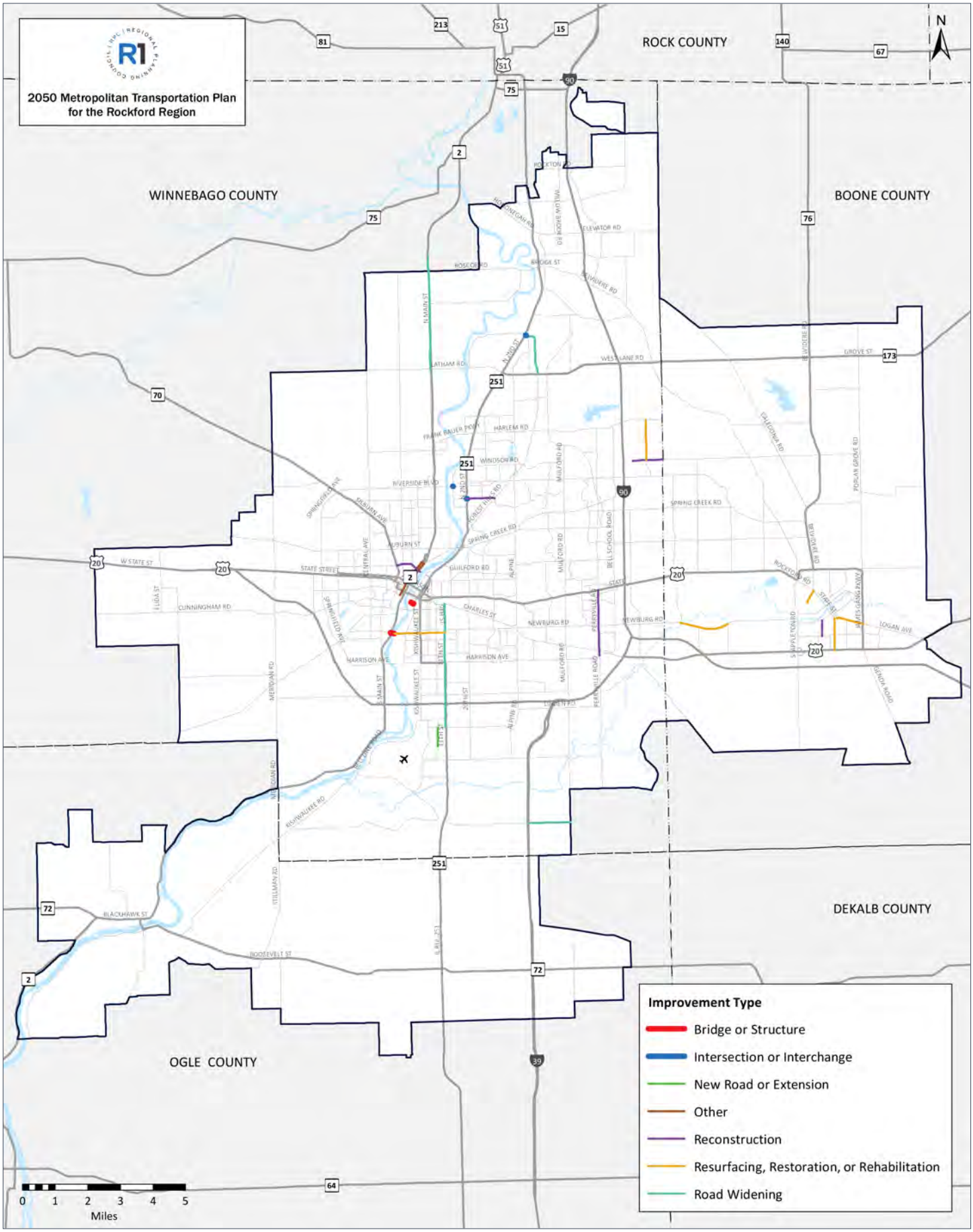
Data sources: Region 1 Planning Council

Table 5-7. Current Locally-Sponsored Roadway Projects, FY 2021 – FY 2025 (in Millions)

ID	Project	Extents	Jurisdiction	Description	Funding Sources	2019 Cost	YOE Cost
02-02	Baxter Road	I-39 to Mulford Rd	County	Road Widening	S/L	$4.6	$5.1
02-20	Perryville Road	Harrison Ave to E State St	County	Reconstruction	F/S/L	$20.0	$22.1
03-01	15th Avenue Bridge	Over Rock River	Municipality	Bridge or Structure	L	$12.0	$13.3
03-02	1st Street and 2nd Street Bridges over UP Railroad	Over UP	Municipality	Bridge or Structure	L	$2.4	$2.7
03-04*	11th Street Corridor Improvements	Samuelson Rd to Charles St	Multi-Jurisdictional	Road Widening	F/S/L	$8.0	$8.9
03-05	15th Avenue Corridor Improvements	Rock River to 11th St	Municipality	3R	L	$1.9	$2.1
03-11	Church Street and Main Street Two-Way Conversion	Cedar St to John St	Multi-Jurisdictional	Other	L	$4.0	$4.4
03-16	Logistics Parkway Extension	Milford Ave to Samuelson Rd	-	New Road or Extensic	L	$5.0	$5.5
03-20	Whitman Street Reconstruction	Kilburn Ave to Rock River	Municipality	Reconstruction	L	$3.0	$3.3
04-05*	East Drive/Riverside Boulevard Intersection	-	Municipality	Intersection	L	$3.0	$3.3
04-10*	IL-251	At River Ln	Multi-Jurisdictional	Intersection	L	$3.0	$3.3
04-15	River Lane	IL-251 to Forest Hills Rd	Municipality	Reconstruction	L	$2.5	$2.8
04-18	Orth Road	Argyle Rd to Paladin Pkwy	Municipality	Reconstruction	L	$4.7	$5.3
04-20	Paulson Road	Orth Rd to Harlem Rd	Municipality	3R	L	$5.0	$5.5
05-01	Forest Hills Road	IL-173 to IL-251	Municipality	Reconstruction	L	$3.9	$6.7
05-02	Forest Hills Road/IL-251 Improvements	Forest Hills Rd to IL-251	Multi-Jurisdictional	Intersection	S/L	$3.5	$6.0
14-06	Newburg Road	Shaw Rd to Irene Rd	Municipality	3R	L	$0.4	$0.5
14-07	South State Street	Logan Ave to US-20	Municipality	3R	L	$0.7	$0.8
14-10	5th Avenue	6th St to Locust St	Municipality	Reconstruction	L	$4.6	$5.1
14-11	Logan Avenue	Whitney Blvd to US Bus 20	Municipality	3R	S/L	$2.0	$2.2
14-12	West Harrison Street	N State St to W Jackson St	Municipality	3R	L	$2.6	$2.8
					Total Expenditures	**$92.3**	**$111.7**

Note: For projects marked with an asterisks (*), the cost of this project is factored into the Maintenance & Presevation in Table 5-11, rather than Capacity Expansion.

Figure 5-5. Current Locally-Sponsored Roadway Projects, FY 2021 – FY 2025



Data sources: Region 1 Planning Council

Table 5-8. Short-Range Locally-Sponsored Roadway Projects, FY 2026 – FY 2030 (in Millions)

ID	Project	Extents	Jurisdiction	Description	Funding Sources	2019 Cost	YOE Cost
02-24	Riverside Boulevard	Material Ave to Sage Dr	County	Road Widening	F/L	$32.5	$42.6
03-03	6th Street and 9th Street Two-Way Conversion	E State St to 23rd Ave	Municipality	Other	F/L	$6.0	$7.9
03-09*	Edson Road Widening	Friday Rd to IL-251	Municipality	Road Widening	L	$4.0	$5.2
03-14	Whitman Interchange	Walnut St to Y Blvd	Multi-Jurisdictional	New Road or Extensic	F/S/L	$20.0	$26.2
03-17	Longwood Street/9th Street/6th Street Two-Way Conversion	E State St to Whitman St	Municipality	Other	F/L	$4.0	$5.2
03-21	Harrison Avenue	Rock River to IL-251 (Kishwaukee St)	Municipality	Reconstruction	F/L	$10.0	$13.1
04-04	Clifford Avenue	At Hollis Ave	Municipality	Bridge or Structure	F/L	$1.5	$2.0
04-16	Riverside Boulevard	Rock River to Merrill Ave	Municipality	Road Widening	L	$25.0	$32.7
04-17	Riverside Boulevard Bridge	Over Rock River	Municipality	Bridge or Structure	F/L	$35.0	$45.8
04-19*	Intersection of East Riverside Boulevard and Argyle Road	Argyle Rd to Gray Fox Run	Municipality	Intersection	F/L	$2.1	$2.8
13-13	Russellville Road Bridge	Over Piscasaw Creek	Township	Bridge or Structure	L	$1.0	$1.3
13-14	Shattuck Road Bridge	Over Mosquito Creek	Township	Bridge or Structure	L	$1.0	$1.3
13-15	Stone Quarry Road Bridge	Over Hackey Creek	County	Bridge or Structure	L	$0.7	$0.9
13-20*	Riverside/Spring Creek Corridor Improvements	Paulson Rd to IL-76	Township	Road Widening	F/L	$5.0	$6.5
					Total Expenditures	**$147.8**	**$193.6**

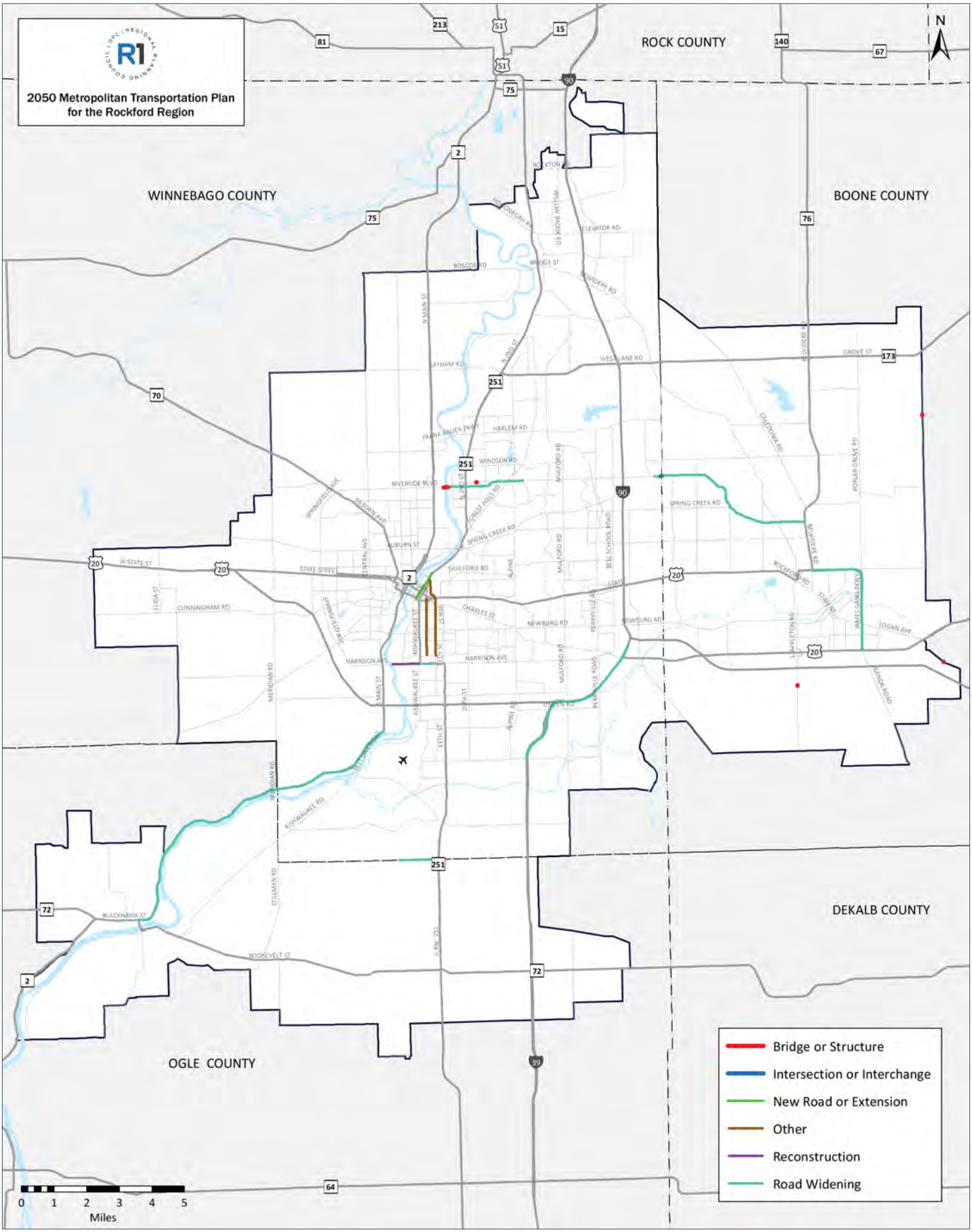
Note: For projects marked with an asterisks (*), the cost of this project is factored into the Maintenance & Presevation in Table 5-11, rather than Capacity Expansion.

Table 5-9. Mid-Range Locally-Sponsored Roadway Projects, FY 2031 – FY 2040 (in Millions)

ID	Project	Extents	Jurisdiction	Description	Funding Sources	2019 Cost	YOE Cost
03-08*	Auburn Street Corridor	Springfield Ave to IL-2	Municipality	Road Widening	L	$8.0	$13.7
03-10	Charles Street Culvert over Keith Creek	20th St to Hunter Ave	Municipality	Bridge or Structure	F/L	$13.0	$22.3
03-13	East State Street & Alpine Road Intersection	-	Multi-Jurisdictional	Intersection	S/L	$10.0	$17.2
03-15	Jefferson Street Bridge over Rock River	Madison St to Wyman St	Multi-Jurisdictional	Bridge or Structure	F/L	$40.0	$68.6
03-18	Lyford Road Corridor Improvements	E State St to Spring Creek Rd	Multi-Jurisdictional	Road Widening	L	$6.0	$10.3
03-19	Madison Street Corridor	Grove St to Y Blvd	Municipality	3R	L	$6.0	$10.3
04-02*	Bell School Road	Riverside Blvd to Harlem Rd	Municipality	Road Widening	F/L	$15.0	$25.7
13-03	IL-76	Belvidere City Limits to Caledonia Rd	Multi-Jurisdictional	Road Widening	S/L	$9.0	$15.4
13-08	Orth Road Extension	Poplar Grove Rd to Denny Rd	Municipality	New Road or Extensic	F/S/L	$7.2	$12.4
13-11*	Poplar Grove Road & Marengo Road Intersection	-	County	Intersection	F/S/L	$1.0	$1.7
13-18	Woodstock Road Extension	Poplar Grove Rd to Grange Hall Rd	County	New Road or Extensic	F/L	$7.0	$12.0
14-01*	Appleton Road	US-20 to Newburg Rd	Municipality	Road Widening	F/L	$5.9	$10.2
14-04	Morreim Boulevard	Irene Rd to Townhall Rd	Municipality	New Road or Extensic	L/S/Pvt	$2.3	$3.9
14-09	West Hills Boulevard	Distillery Rd to IL-76	-	New Road or Extensic	L/Pvt	$3.6	$6.2
					Total Expenditures	**$134.0**	**$229.9**

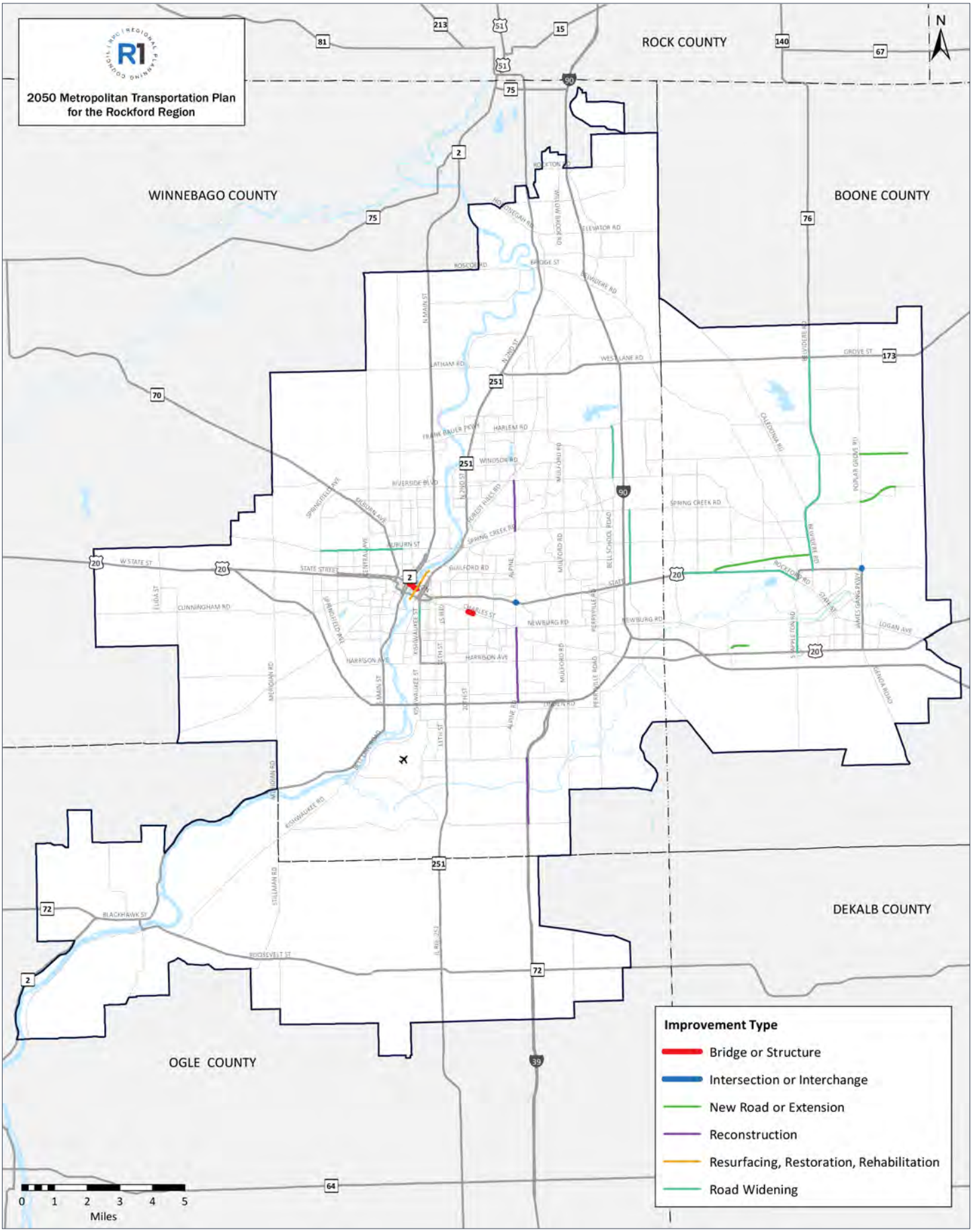
Note: For projects marked with an asterisks (*), the cost of this project is factored into the Maintenance & Presevation in Table 5-11, rather than Capacity Expansion.

Figure 5-6. Short-Range Locally-Sponsored Roadway Projects, FY 2026 – FY 2030



Data sources: Region 1 Planning Council

Figure 5-7. Mid-Range Locally-Sponsored Roadway Projects, FY 2031 – FY 2040



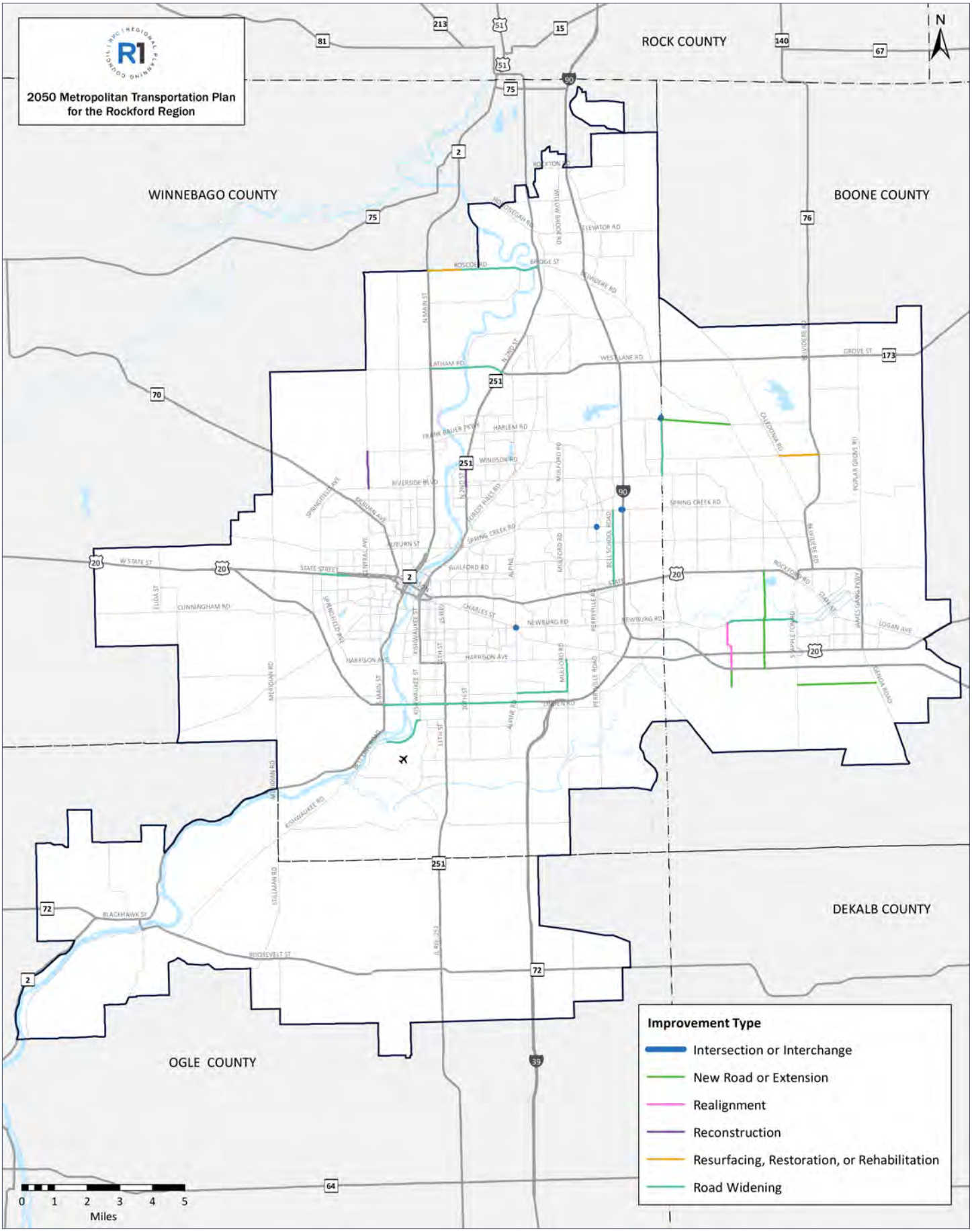
Data sources: Region 1 Planning Council

Table 5-10. Long-Range Locally-Sponsored Roadway Projects, FY 2041 – FY 2050 (in Millions)

ID	Project	Extents	Jurisdiction	Description	Funding Sources	2019 Cost	YOE Cost
02-04	Bell School Road	Spring Creek Rd to Old Creek Rd	County	Road Widening	F/L	$8.5	$20.4
02-05	Bell School Road	Argus Rd to Spring Creek Rd	County	Road Widening	F/L	$8.3	$20.0
02-14	Latham Road/Ralston Road	IL-2 to IL-251	County	Road Widening	F/L	$17.6	$42.3
02-17	Mulford Road	Harrison Ave to Sandy Hollow Rd	County	Road Widening	F/L	$9.0	$21.6
02-18	Owen Center Road	Riverside Blvd to Elmwood Road	County	Reconstruction	F/L	$2.5	$6.0
02-21	Perryville Road	At Spring Creek Rd	Multi-Jurisdictional	Intersection	F/L	$7.0	$16.8
02-28	Roscoe Road	Old River Rd to IL-251	County	Road Widening	F/L	$18.3	$44.0
02-29	Roscoe Road/Old River	IL-2 to Old River Rd	County	3R	F/S/L	$2.5	$6.0
03-06	Airport Dr	Kishwaukee St to Beltline Rd	Municipality	Road Widening	L	$5.0	$12.0
03-07*	Alpine Road & Newburg Road Intersection Improvements	-	Municipality	Intersection	F/L	$12.0	$28.8
03-12	Spring Creek Road & Interstate 90/39 Interchange	-	Township	Interchange	F/L	$40.0	$96.2
03-23	Sandy Hollow Road	Alpine Rd to Mulford Rd	Municipality	Road Widening	F/L	$4.0	$9.6
04-01	Argyle Road	Riverside Blvd to Harlem Rd	Multi-Jurisdictional	Road Widening	F/L	$8.5	$20.4
04-07*	Harlem Road/ Argyle Road Intersection	-	Multi-Jurisdictional	Intersection	F/S/L	$3.0	$7.2
04-09	IL-251	Forest Hills Rd to Windsor Rd	Multi-Jurisdictional	Reconstruction	F/S/L	$10.0	$24.0
05-03	Rock Cut Pass	Perryville Rd to IL-173	-	New Road or Extensic	F/L	$6.0	$14.4
13-01	Graham Road Extension	Stone Quarry Rd to Genoa Rd	Township	New Road or Extensic	F/L	$4.0	$9.6
13-02	Harlem Road/Dawson Lake Road Connection	Argyle Rd to Beloit Rd	County	New Road or Extensic	L	$3.0	$7.2
13-04	IL-76	US Bus 20 to Irene Rd	Multi-Jurisdictional	New Road or Extensic	F/L	$27.0	$64.9
13-05	IL-76	Woodstock Rd to Townhall Rd	Multi-Jurisdictional	New Road or Extensic	F/L	$24.0	$57.7
13-06	Irene Road	US 20 South to Graham Rd	Township	New Road or Extensic	S/L	$1.8	$4.3
13-07	Orth Road	Caledonia Rd to IL-76	Municipality	3R	F/L	$0.4	$0.8
14-02	IL-76 Extension	Caledonia Rd to I-90	Municipality	New Road or Extensic	F/S/L	$33.6	$80.8
14-05*	Newburg Road	S Appleton Rd to Irene Rd	Municipality	Road Widening	F/S/L	$12.0	$28.8
14-08	Irene Road	Newburg Rd to I-90	Multi-Jurisdictional	Realignment	F/S/L/Pvt	$7.5	$18.0
					Total Expenditures	**$275.5**	**$662.2**

Note: For projects marked with an asterisks (*), the cost of this project is factored into the Maintenance & Presevation in Table 5-11, rather than Capacity Expansion.

Figure 5-8. Long-Range Locally-Sponsored Roadway Projects, FY 2041 – FY 2050



Data sources: Region 1 Planning Council

System-Level Maintenance and Operations

In mature urban areas, such as the Rockford MPA, the bulk of the system of highways and bridges has existed for many years. As such, most transportation improvements and project funding are aimed at maintaining and preserving the existing transportation system. The types of projects considered maintenance and preservation include: reconstruction; resurfacing, restoration, or rehabilitation (3R); minor intersection improvements, and bridges and structures.

Nevertheless, to keep pace with growth, development, and increases in traffic, a significant amount of funding must also be directed towards ensuring the system is operating efficiently. Projects aimed at improving the operations of the roadway include: realignment of existing roads, the construction of new roadways, widening existing segments, major intersection improvements, new interchanges, and other measures that may improve system efficiency.

It should be noted, however, that many of the proposed projects in the 2050 MTP's fiscally-constrained list address the maintenance needs of the system, while also improving operational efficiency. For example, while road widening projects have historically described projects addressing physical capacity issues through the addition of travel lanes, many road widening projects are to address safety and maintenance issues, such as adding designated turn lanes and the widening shoulders. Additionally, road widening projects often include maintenance and preservation improvements within the overall scope of the project, such as rehabilitation or reconstruction.

Table 5-11 illustrates the types of projects anticipated to funded over the next 30 years. The types of projects listed within this table have been grouped into capacity expansion and system maintenance. Due to the nature of particular project scopes, certain projects, noted in Tables 5-6 – 5-10, are more appropriately identified as system maintenance projects.

As can be seen, the cost to the region over the next 30-year period is a substantial one, but a necessary one in order to not only maintain the roadways as they currently stand, but to expand them in order to meet future demand and economic growth that will occur in that same timeframe. The total cost to the region for the fiscally-constrained project list is estimated at $2.81 billion, which aligns with the reasonably anticipated funding revenues, as shown in Table 5-12.

Table 5-12. Roadway Expenditures vs Revenue, FY 2021 – FY 2050 (in Millions)

Cost Band	Revenue	Expenditures	Difference
Current (2021-2024)	$356.9	$139.4	**$217.5**
Short (2025-2030)	$394.0	$713.6	**-$319.6**
Mid (2031-2040)	$928.9	$789.2	**$139.7**
Long (2041-2050)	$1,129.4	$1,167.0	**-$37.6**
30-Year Totals (2021-2050)	**$2,809.2**	**$2,809.2**	**$0.0**

Data sources: Region 1 Planning Council
Note: Roadway revenue consists of all revenues sources that are "reasonably expected to be available" including those from private sources.

Table 5-11. Expenditures by Improvement Type, FY 2021 – FY 2050 (in Millions)

Capacity Expansion Projects	Current (2021-2024)	Short (2025-2030)	Mid (2031-2040)	Long (2041-2050)	30-Year Totals (2021-2050)	Percent of Expenditures
New Road or Extension	$5.5	$26.2	$34.5	$419.2	**$485.5**	**17.3%**
Interchange	$0.0	$0.0	$0.0	$96.2	**$96.2**	**3.4%**
Intersection	$6.0	$0.0	$17.2	$16.8	**$40.0**	**1.4%**
Realignment	$0.0	$0.0	$0.0	$18.0	**$18.0**	**0.6%**
Road Widening	$32.8	$442.1	$301.9	$515.0	**$1,291.7**	**46.0%**
Total	**$44.3**	**$468.3**	**$353.6**	**$1,065.2**	**$1,931.3**	**68.8%**
Maintenance & Preservation Projects	**Current** (2021-2024)	**Short** (2025-2030)	**Mid** (2031-2040)	**Long** (2041-2050)	**30-Year Totals** (2021-2050)	**Percent of Expenditures**
Bridge or Structure	$15.9	$51.3	$90.9	$0.0	**$158.2**	**5.6%**
Intersection	$6.6	$2.8	$1.7	$36.1	**$47.2**	**1.7%**
Reconstruction	$45.3	$13.1	$283.1	$30.0	**$371.5**	**13.2%**
Resurfacing, Restoration, or Rehabilitiation	$13.9	$0.0	$10.3	$6.9	**$31.1**	**1.1%**
Road Widening	$8.9	$165.0	$49.6	$28.8	**$252.3**	**9.0%**
Other	$4.4	$13.1	$0.0	$0.0	**$17.5**	**0.6%**
Total	**$95.1**	**$245.4**	**$435.6**	**$101.8**	**$877.9**	**31.2%**

Data sources: Region 1 Planning Council

Public Transit Expenditures

Rockford Mass Transit District (RMTD) receives allocations for federal, state, and local sources and anticipates that these funding sources will cover operations and most of the capital expenditures in the urbanized area over the 30-year planning horizon of the 2050 MTP. To calculate the expenditure forecasts for both capital and operations, the MPO used actual budget numbers from FY 2015 to FY 2019 and projected budget data from FY 2021 out to FY 2050, using the same methodology and inflation assumption as used in projecting public transit revenues. Tables 5-13 and Table 5-14 display the capital and operating expenditures between FY 2021 and FY 2050 across four cost bands: current (FY 2021 – FY 2025), short-range (FY 2026 – FY 2030), mid-range (FY 2031 – FY 2040), and long-range (FY 2041 – FY 2050).

It should be noted that for public transportation projections an assumption has been made that current funding strategies will remain the same as of the development of the 2050 MTP, which is often not the case in dynamically funded services. Often public transit operators need to shift directions due to updates related to federal transportation funding authorization bills, but they also have to adjust capital and operating spending based on state and local funding sources.

For example, following nationwide trends and goals, RMTD is currently converting its bus fleet to alterative-fueled options, such as electric-hybrid buses. This decision has directly impacted their current capital replacement strategy due to the higher initial cost, and will require multiple scenario-planning activities to rebalance capital needs with revenues. However, this transition is captured within the snapshot of funding used for the projections, and ultimately results in an imbalance of capital expenditures and expected revenue. Strategies to combat the discrepancy will continue to evolve as RMTD takes advantage of opportunities, such as growing federal discretionary capital funding programs and money awarded during various statewide capital plans that largely supplement the basic formula funding used for this analysis.

Table 5-13. Capital Expenditure Forecast by Source, in Year-of-Expenditure Dollars

Cost Band	Revenues	Expenditures	Difference
Current (2021-2024)	$13,532,286.3	$12,400,478.5	**$1,131,807.8**
Short (2025-2030)	$11,044,259.6	$20,927,093.2	**-$9,882,833.6**
Mid (2031-2040)	$25,790,780.9	$33,264,477.3	**-$7,473,696.4**
Long (2041-2050)	$34,660,652.9	$56,445,430.0	**-$21,784,777.1**
30-Year Totals (2021-2050)	**$85,027,979.7**	**$123,037,479.0**	**-$38,009,499.3**

Data sources: Region 1 Planning Council

Table 5-14. Operating Expenditure Forecast by Source, in Year-of-Expenditure Dollars

Cost Band	Revenues	Operating	Difference
Current (2021-2024)	$86,700,475.4	$86,465,117.2	**$235,358.2**
Short (2025-2030)	$96,645,275.1	$95,933,357.6	**$711,917.5**
Mid (2031-2040)	$230,056,699.5	$226,571,655.1	**$3,485,044.3**
Long (2041-2050)	$286,203,225.9	$278,909,301.6	**$7,293,924.4**
30-Year Totals (2021-2050)	**$699,605,675.9**	**$687,879,431.5**	**$11,726,244.4**

Data sources: Region 1 Planning Council



Rockford Mass Transit District's Downtown Transfer Center. Rockford, IL

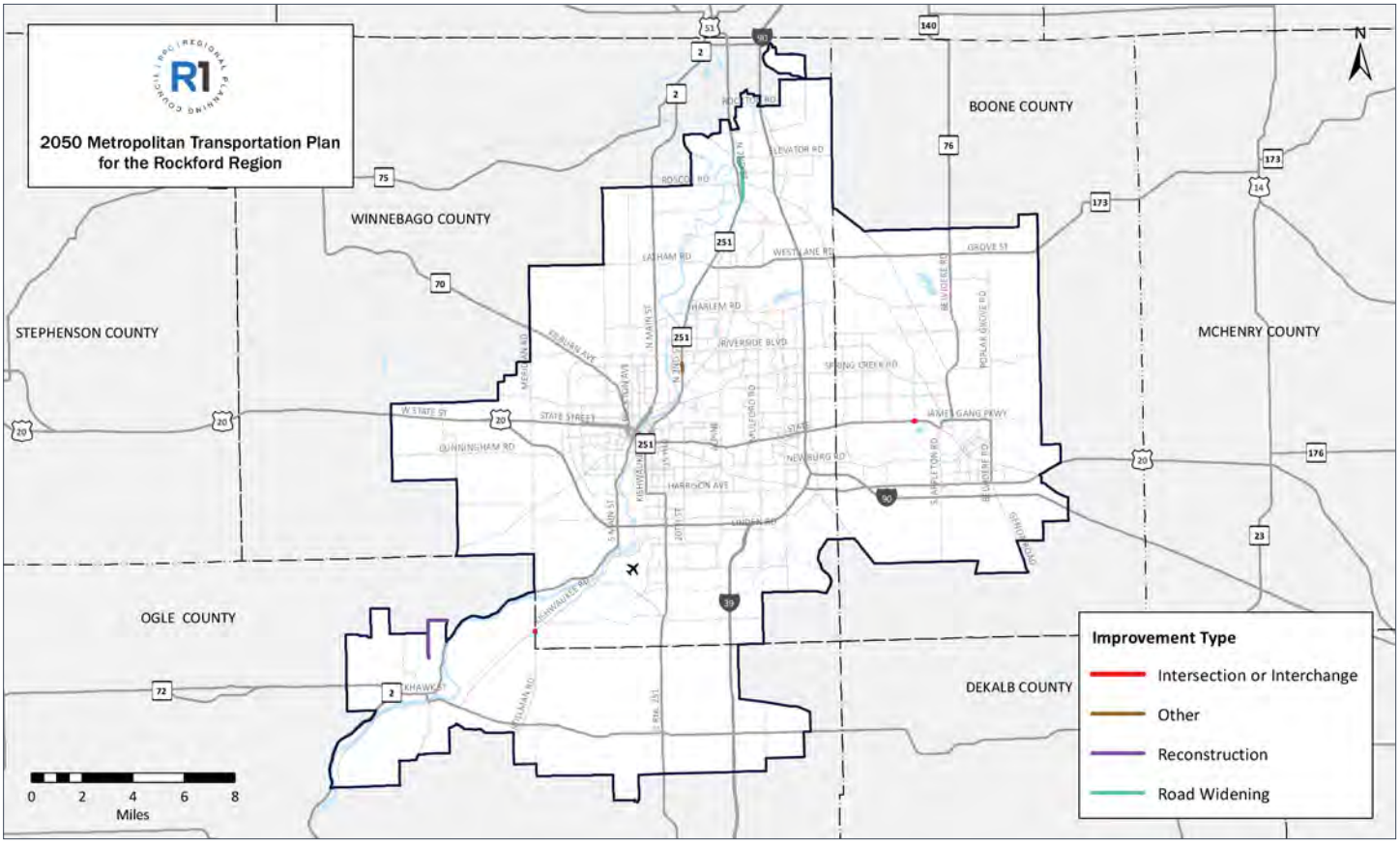
Illustrative Projects

In accordance with federal requirements, all the projects listed in the fiscally-constrained portion are those with either identified or reasonably anticipated funding sources. However, MPO's may select to include additional transportation projects that would be included in the plan if additional resources beyond those identified were to become available.[iv] Through the MTP development process, a number of projects have been identified as desirable and regionally significant; however, it is not reasonably expected that there will be funding available for them. The scope of these transportation projects may also require additional planning and studies to be conducted before being listed as a fiscally-constrained project, such as feasibility analysis and detailed engineering. The projects in Table 5-15 should be considered conceptual and intended as a guide only. A location map of these projects is shown in Figure 5-9.

Table 5-15. Illustrative Projects

ID	Project	Extents	Jurisdiction	Description	Funding Sources	2019 Cost
04-08	IL-251	Pearl Ave to Merrill Ave	Multi-Jurisdictional	Other	L	-
13-10	Townhall Road & US 20 Bus Intersection	Townhall Rd & US 20 Bus	Multi-Jurisdictional	Intersection	-	-
25-01	Barker Road and Short Road	Byron City Limit to Kennedy Hill Rd	Township	Reconstruction	L	$3.0
25-03	Kishwaukee and Meridian Road	Kishwaukee Rd & Meridan Rd	County	Intersection	F/S/L	$1.0
47-02	Main Street	Elevator Rd to McDonald Rd	Municipality	Road Widening	L	$4.6

Figure 5-9. Illustrative Projects



Data sources: Region 1 Planning Council

Other Regionally Significant Projects

Enhancement Projects

Enhancement projects are those that add value to the transportation system. These projects provide alternative modes of transportation, enhance the transportation system through preservation, enhance the aesthetics of a transportation facility, or reduce the adverse impacts of such facilities. While these projects are often constructed as part of a roadway project, some are completed as standalone projects. A large portion of these projects will be funded through local sources, however some may be funded through the Transportation Alternatives (TA) set-aside of the Surface Transportation Block Grant, either through the state's Illinois Transportation Enhancement Program (ITEP) or the MPO's Transportation Alternative Program (TAP).

Examples of the types of enhancement projects include, but are not limited to:

- Bicycle and pedestrian facilities;
- Landscaping and other beautification efforts;
- Transportation-related historic preservation;
- Conversion of abandoned rail corridors to recreational trails; and
- Environmental mitigation efforts, e.g. addressing water pollution due to highway run-off.

Anticipated enhancement projects are listed in Table 5-16 and depicted in Figure 5-10.

Corridor & Subarea Studies

Corridor and subarea studies are the precursor to many transportation investments. The corridor planning process integrates transportation and community planning together in one process. While the contents of each study will vary depending on the needs of the corridor or subarea, these studies consider multiple modes of transportation, the relationship to the adjacent land uses, and the connection to the greater transportation system. Following a context sensitive solution (CSS) approach, which encourages stakeholder and public engagement, will yield a plan that is responsive to social, economic, and environmental factors. This approach minimizes potential conflicts and maximizes investment.

The MPO is a critical partner in much of the corridor and subarea planning in the region, often assisting municipalities in securing funding needed to initiate a plan or providing technical assistance. The MPO will continue to coordinate with partner organizations and provide technical assistance in corridor study efforts throughout the duration of this MTP.



North Alpine Path. Machesney Park, IL

Table 5-16. Active Transportation Projects, FY 2021- 2050

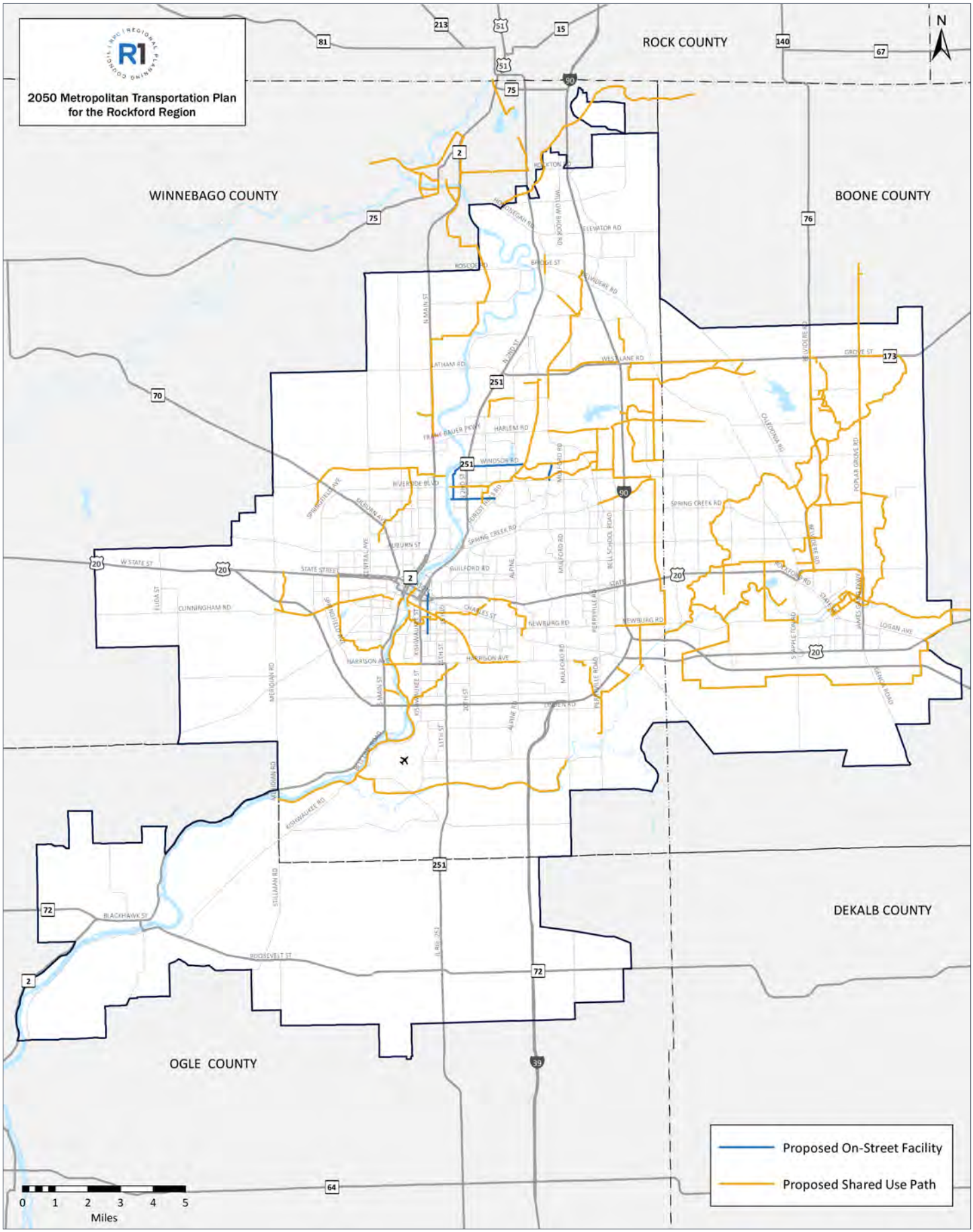
On-Street Facilities

Name	Extent	Location	Status
Landstrom Rd	Forest Hills Road to Bradley	Loves Park	Proposed
River Ln	Western Terminus to Forest Hills Rd	Loves Park	Proposed
Glendale Rd	Burrwood Ave to Forest Hills Rd	Loves Park	Proposed
East Dr	River Ln to Burrwood Ave	Loves Park	Proposed

Shared Use Paths & Trails

Name	Extent	Location	Status
IL 251 Path	Harlem Rd to Municiple Limit	Machesney Park	Planned
Willow Creek Path	Alpine to IL 251	Machesney Park	Planned
Mitchell Road Path	Anjali to Price Park	Machesney Park	Programmed
Perryville Path	Willowbrook Ln to Anjali Way	Winnebago County	Programmed
Perryville Path	W Lane Rd to Hart Rd	Winnebago County	Programmed
Beaver Creek Path	Long Prairie Trl to Newburg Rd	Boone County	Proposed
Beloit Rd Path	Beloit Rd to State Rte 76	Boone County	Proposed
Boone County Fairgrounds Path	Beloit Rd to State Rte 76	Boone County	Proposed
Boone/McHenry County Line Rd	S of Orth Rd to Kishwaukee River	Boone County	Proposed
Caledonia Rd/ State Rte 76	Beaver Creek to Spring Creek Rd	Boone County	Proposed
Charles Street	28th St to Parkside Dr	Rockford	Proposed
Chestnut Street Bridge	Over the Rock River	Rockford	Proposed
County Road 1	State Rte 173 to Woodstock Rd	Boone County	Proposed
County Road 3	Kishwaukee Creek to Fruit Farm Rd	Boone County	Proposed
Distillery Rd Path	River Run Dr to Newburg Rd	Boone County	Proposed
E Pleasant Ave/County Rd 1	Woodstock Rd to E State St Path	Boone County	Proposed
E State Street	N Bell School Rd to N Perryville Rd	Rockford	Proposed
Fairgrounds Rd	Long Prairie Trl to S of US 20 Bus	Boone County	Proposed
Fern Hill Rd	Johnson Rd to Us Hwy 20	Boone County	Proposed
Forest Hills Rd	West Lane Rd to Riverside Blvd	Loves Park	Proposed
Harlem Rd	N Perryville Rd to Mcfarland Rd	Loves Park	Proposed
Harrison Avenue	IL-2 to Kishwaukee St	Rockford	Proposed
Johnson Rd/Chrysler Dr	Chrysler Dr to Fern Hill Dr	Boone County	Proposed
Keith Creek Greenway	10th Ave Park to College Avenue	Rockford	Proposed
Keith Creek Greenway	10th Ave Park to Alpine Park	Rockford	Proposed
Kishwaukee River/Beaver Creek	N of I-90 to W of Rustic Waters Cte	Boone County	Proposed
Kishwaukee Riverfront Path	NW of S Main St to E Pleasant St	Belvidere	Proposed
Kishwaukee Riverfront Path	Lawrenceville Rd to Boone/McHenry County Line Rd	Boone County	Proposed
Lawrenceville Rd/E Lincoln Ave	E Lincoln Ave to US Hwy 20 Bus	Boone County	Proposed
Madison St	Prairie St to Y Blvd	Rockford	Proposed
Piscasaw Creek Path	Woodstock Rd to N of Lawrenceville Rd	Boone County	Proposed
Poplar Grove Rd	0.3 MI N of N Boone School Rd to Long Prairie Trl	Boone County	Proposed
Railroad Path	Newburg Rd to US Hwy 20	Boone County	Proposed
River Run Dr	Kishwaukee River to Distillery Rd	Boone County	Proposed
Riverside Blvd	Alpine Rd to Perryville Rd	Loves Park	Proposed
Riverside Blvd/N Bell School Rd	Rock Valley Pkwy to Paladin Pkwy	Loves Park	Proposed
Sandy Hollow Rd	Kishwaukee St to 9th St	Rockford	Proposed
Squaw Praire Rd/McKinley Ave	State Rte 76 to Woodstock Rd	Boone County	Proposed
State Rte 173	Long Prairie Path to Boone County Border	Boone County	Proposed
State Rte 76	Spring Creek Rd to Caledonia Rd	Boone County	Proposed
Town Hall Rd/Newburg Rd/Stone Quarry Rd	Boone County Fairgrounds Path to Kishwaukee Riverfront Path	Boone County	Proposed
US Hwy Bus 20/ Lawrenceville Rd	Beloit Rd to Piscasaw Creek	Boone County	Proposed
W Riverside Blvd	East Dr to E Riverside Blvd	Loves Park	Proposed
W State St	N Sunset Ave to N Day Ave	Rockford	Proposed
Walker Ave	Riverside Blvd to Lawn Dr	Loves Park	Proposed
Warren Ave	Kishwaukee River Path to E Pleasant St	Boone County	Proposed
West Lane Rd	N Perryville Rd to I-90	Loves Park	Proposed
Whitman Interchange	-	Rockford	Proposed
Whitman St	Mel B Anderson Path SE termination to Rock River	Rockford	Proposed
Whitney Blvd/S Main St	S Main St/Kishwaukee Riverfront Path to E Pleasant St	Boone County	Proposed
Willow Creek Path	Roosevelt Rd to N Alpine Rd	Loves Park	Proposed
Willow Creek Path	Willow Creek to Long Prairie Trl	Boone County	Proposed
Windsor Rd	Forest Hills Rd to Mcfarland Rd	Loves Park	Proposed
Woodstock Rd	State Rte 76 to Piscasaw Creek	Boone County	Proposed

Figure 5-10. Active Transportation Projects, FY 2021- 2050



Data sources: Region 1 Planning Council

Financing Opportunities

The region has a wealth of physical transportation infrastructure and capital assets, and maintaining it can be costly. Investments to achieve a state-of-good repair of existing assets can extend the useful life of infrastructure and rolling stock and reduce lifecycle costs. Just as businesses invest in their physical assets, governments must invest in transportation strategically. Exploring a framework of how to mix streams of funding sources that maximizes investment is essential over the next three decades. The following solutions are examples of revenue-generating techniques used by other states and local governments to fund transportation infrastructure and capital projects.

Public-Private Partnerships

Traditionally, local governments have only engaged the private sector in construction aspects of transportation projects, and to some extent the design and maintenance of the projects. FHWA encourages the consideration of public-private partnerships (P3s) in the development of transportation improvements. Public-private partnerships are contractual agreements formed between a public agency and a private sector entity that allow for greater private sector participation in the delivery and financing of transportation projects. Risks, rewards, and resources are shared between government and private sector stakeholders engaged in this cooperative endeavor. As shown in Figure 5-11, there are several P3 options for financing transportation projects.

P3s can be applied to a range of transportation functions across all modes, including: project conceptualization and origination, design, construction, operations, maintenance, toll collection, and project management.[v] Expanding the private sector role in transportation projects allows public agencies to tap private sector technical, management, and financial resources in new ways to achieve public agencies' objectives. These objectives include greater cost and schedule certainty, supplementing in-house staff, innovative technology applications, access to specialized expertise, or access to private capital.

Some of the primary reasons for public agencies to enter into public-private partnerships are:

- Accelerating the implementation of high priority projects by packaging and procuring services in new ways;
- Turning to the private sector to provide specialized management capacity for large and complex projects;
- Encouraging the use of new technologies and innovations developed by private entities;
- Drawing on private sector expertise in accessing and organizing the widest range of private sector financial resources;
- Providing access to private equity and commercial financing that would not otherwise be available to public sector project sponsors; and
- Encouraging private entrepreneurial development, and operation of highways and/or related assets.

In Illinois, two state statutes authorize transportation agencies and municipalities to enter into P3s. The Illinois Department of Transportation (IDOT) and the Illinois State Toll Highway Authority (ISTHA) are authorized under the Public-Private Partnerships for Transportation Act (630 ILCS §15/5). While municipalities are authorized, under statute, "to make contracts 'of every kind and nature' to acquire, construct, reconstruct, improve, enlarge, better, operate, maintain and/or repair any bridge within five miles of the corporate limits of the municipality, and to fix and apply tolls and fees for use of such a bridge."[vi]

In further developing the capacity to include P3s in regional transportation planning projects, the P3 Toolbox, developed by FHWA's Center for Innovative Finance Support, should be used. These tools serve as reference for decision-makers and practitioners seeking to understand P3s as a financing alternative for major capital projects and provide an analytical tool to run risk assessments, value for money analysis, benefit-cost analysis, and financial viability analysis.

Figure 5-11. Public-Private Partnership Options



Public Responsibility — Private Responsibility

New Build Facilities	Private Contract Fee Services	Design-Build	Design-Build-Operate-Maintain	Design-Build-Finance	Design-Build-Operate-Finance-Maintain
Existing Facilities	O & M				Long-Term Lease

Data sources: Federal Highway Adminstration

Road Pricing

Fixing America's Surface Transportation (FAST) Act established the Surface Transportation System Funding Alternatives (STSFA) program. The program provides funding to States to conduct pilot programs to test the design, acceptance, and implementation of user-based alternative revenue mechanisms, such as road pricing. Road pricing refers to a fee related to the use of a roadway facility. Presently, traditional tolling is the most common form of road pricing and collects a flat-rate fee based on the type of vehicle driven on the facility. However, several additional types of road pricing are being piloted across the nation, including congestion pricing and vehicle-miles traveled (VMT) fees.

Congestion Pricing

Congestion pricing, also known a value pricing, variable pricing, peak-period pricing, or market-based pricing, entails collecting fees or tolls based upon the level of demand on the facility. Congestion pricing works by charging road users based on the level of congestion and/or time of day. This provides an incentive for motorists to shift some trips to off-peak times, less congested routes, or alternative modes. In addition to serving as a financing mechanism, this type of road pricing is also used as a demand management strategy. With limited financial resources and increased demand, many agencies have begun to pilot congestion pricing as a way to optimize the effectiveness of the existing transportation system. In addition to generating revenues, this strategy has the potential to reduce wasted time, fuel, and emissions associated with traffic congestion.

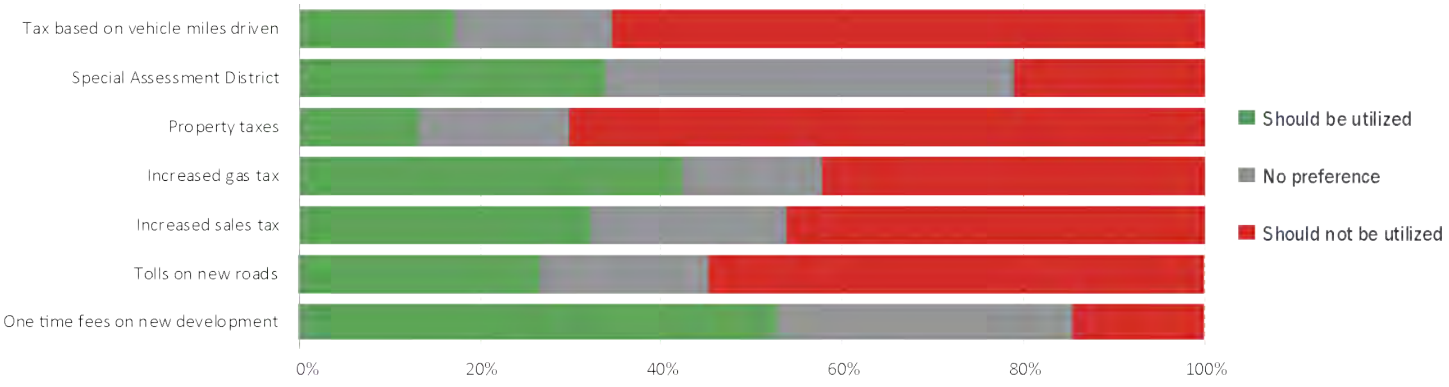
Vehicle-Miles Traveled Fees

Vehicle-miles traveled (VMT) fees are distance-based fees levied on a vehicle user for the use of a roadway system. As opposed to tolls or congestion pricing, VMT fees are not facility-specific but rather based on the distance driven on a defined network of roadways. In theory, the use of an onboard vehicle device would capture the distance driven by a vehicle through GPS or other technology. This device would then relate the distance driven to a method of charging, which could range from manual cash payment to automatic deduction from a prepaid customer account.[vii] VMT fees are often proposed as an alternative to the motor fuel tax (MFT). Over the past few years, the popularity in fuel-efficient and electric vehicles has raised concerns over the sustainability of financing transportation projects primarily through the MFT. VMT fees are seen as an equitable alternative as it reflects the same concept that those who drive the most also pay the most. According to the Transportation Needs and Priorities Survey, respondents found VMT fees to be one of least acceptable transportation funding mechanisms, along with property taxes.[2]

As a part of the Transportation Needs and Priorities Survey, conducted for the 2050 MTP development process, respondents were asked their opinions on potential funding sources to pay for transportation infrastructure. Sources given as options on the survey included: one time fees on new development, tolls on new roads, increased sales tax, increased gas tax, property taxes, special assessment districts, and tax based on vehicle miles driven. Results of this question can be found in Figure 5-12.

2 A full summary on the results Transportation Needs and Priorities Survey can be found in Technical Memorandum #1: Public Engagement Process

Figure 5-12. Public Opinion on Funding Sources for Transportation Infrastructure



Data sources: Region 1 Planning Council

Value Capture

Land use decisions and transportation systems are closely linked. Improvements to the transportation system can encourage new development and economic growth. However, new development and redevelopment of both residential, commercial, and industrial areas can induce additional demand on the transportation system. As a result, additional investments into the transportation system may be required to maintain an optimal level of performance and pavement condition. Value capture techniques allow local governments to collect a portion of increased property values to pay for needed improvements or future transportation investments. Value capture techniques are commonly used with transit projects, but have been growing in popularity as a mechanism for roadway investment. There are several forms of value capture commonly used in the United States, including impact fees, land value tax, sales tax districts, special assessments, tax increment financing, and transportation utility fees. Within the region, tax increment financing (TIF) districts and negotiated exactions are utilized by several of the municipalities. According to the Transportation Needs and Priorities Survey, 53 percent of respondents were of the opinion that one time fees on new development should be utilized and 45 percent of respondents did not have a preference on special assessment districts, shown in Figure 5-16. These innovative financing techniques will need to be further researched over the next few years to determine feasibility or alternatives.

Table 5-17 provides an overview of the varying type of value capture techniques used.

Table 5-17. Value Capture Techniques

Technique	Description
Development Impact Fees	One-time charges levied by local governments on new development.
Land Value Tax	A levy on the value of unimproved land.
Negotiated Exactions	Payments made by a developer as a condition for receiving municipal approvals.
Special Assesssments	Incremental property taxes on land and often the buildings on land that derives direct benefits due to a transportation improvement.
Business Improvement District	A privately directed and publicly sanctioned organizations that supplement public services within geographically defined boundaries by generating multiyear revenue through a compulsory assessment on local property owners and/or businesses. Also known as a special service area.
Sales Tax District	A form of special assessment districts that levy an incremental sales tax on goods sold within a designated area.
Transportation Improvement District	A special assessment district to improve the transportation system - road or transit related - within a designated zone. Also known as a transportation development districts.
Tax Increment Financing	A value capture revenue tool that uses taxes on future gains in real estate values to pay for new infrastructure improvements.
Transporation Reinvestment Zones	Designated areas located around transportation projects created to encourage development and capture property tax increments to help fund the improvements.
Transportation Utility Fees	A financing mechanism that treats the transportation system like a utility in which residents and businesses pay fees based on their use of the transportation system rather than taxes based on the value of property they occupy.

Data sources: Federal Highway Adminstration







Part 6
The Action Plan

Implementation Actions

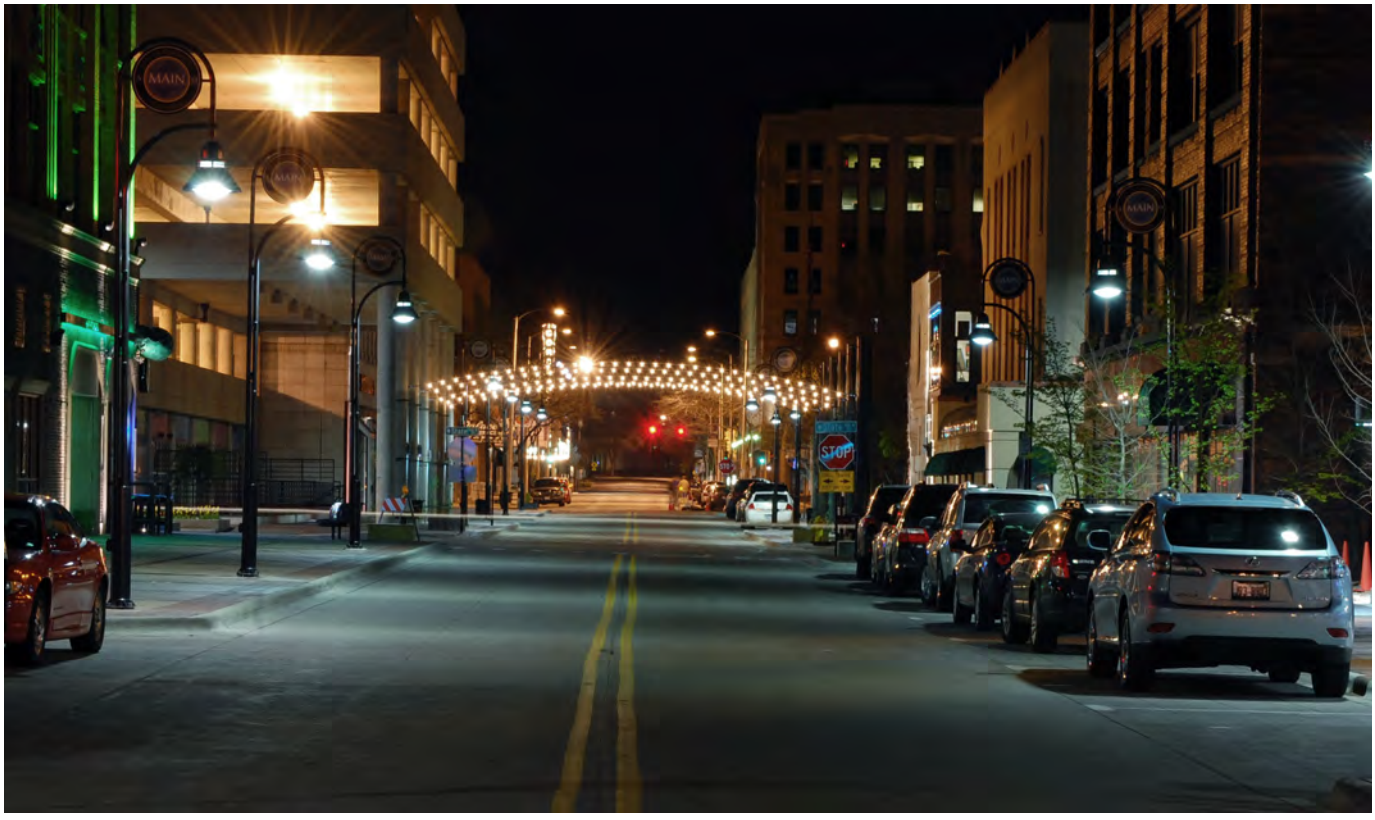
To be a data-driven, performance-based metropolitan transportation plan (MTP) there needs to be a clear vision for the future. As discussed in Part 2: Planning Framework, identifying goals and objectives is critical for establishing a strategic direction for the plan. However, in order to achieve the vision, a series of strategies need to be put in place. Strategies are the overall approaches the region will use for attaining results.

The following action plan identifies each of the goals and objectives of the 2050 MTP, along with recommended strategies or tactics to achieve them. A wide range of strategies can be implemented to achieve the overarching goals set forth in the 2050 MTP, covering a variety of topics, timeframes, and investment levels. Due to this wide range, the Metropolitan Planning Organization (MPO) analyzed the overarching goals and objectives to identify key strategies that would be most successful for the region and may help accomplish multiple goals or objectives. However, the recommended strategies are not exclusive and should be afforded flexibility, as new opportunities or issues arise that may impact not only the transportation system but also the region's social structure, economy, and environment. This action plan is not meant to include all possible strategies or activities that can be used to improve the transportation needs in the region, but identify possible solutions that could make a difference.

Strategies needed to achieve the vision of the future, based upon the preferred scenario, will require both physical changes to the existing transportation system and policy-level changes. As such, a significant amount of support from state and local governments, as well as the public-at-large, will play a large role in the implementation of the 2050 MTP. Because of the collaboration and coordination that will be needed, each strategy in the action plan will need a lead entity who will be critical in its implementation, as well as partners that could provide support to the lead entity. The lead and partner agencies and organizations include:

- Region 1 Planning Council, serving as the MPO;
- State of Illinois, acting through the Illinois Department of Transportation (IDOT);
- Local municipalities and counties;
- Stakeholder organizations, such as natural resource agencies, etc.;
- Public transportation providers; and
- Private sector.

The goals, objectives, and strategies of the 2050 MTP are presented on the following pages.



North Main Street. Rockford, IL

Goal 1
Create an integrated, multimodal transportation network.

Objective 1.1: Increase amount of regional transit and local active transportation options.

- Improve bicycle ridership and riders' experience through the development of an online interactive bicycle facilities map.
- Maintain or enhance public transportation existing service levels while addressing service area gaps.
- Improve the walkability and bikeability of the region by increasing connectivity of sidewalks, walkways, and bikeways.
- Coordinate with partner agencies to identify and implement subsequent mobility-as-a-service strategies.
- Incorporate innovative and technological practices for all residents' multi-modal trip making, including transit signage on arrival times, stops, etc.

Objective 1.2: Enhance connectivity and mobility to improve continuity and accommodate the efficient movement of goods and services.

- Improve east/west and north/south access across the Metropolitan Planning Area.
- Coordinate with partner agencies to identify and implement subsequent strategies which enhance transportation system performance, (i.e. Identify the need for two-way conversions for improving network functionality, etc.)
- Identify the need for accelerated interregional travel, including express bus and bus rapid transit (BRT), for improving multimodal corridors.
- Identify opportunities for walking/biking improvements in the network through the use of walking & biking audits.

Objective 1.3: Support interregional connections to and from the Metropolitan Planning Area.

- Increase access to adjacent interregional jobs and services through coordinated multi-modal commuter connections, including coordinated transfers between both human service transportation providers and transit agencies.
- Promote existing intercity service providers and advocate for additional connections, infrastructure, and services that are both frequent and affordable.

Goal 2
Emphasize a transportation system that is maintained and operated efficiently.

Objective 2.1: Maximize the multi-modal capacity and operating performance of existing and future transportation infrastructure and services.

- Develop a regional arterial management program that improves the performance of the regional arterial system through a blend of traffic signal improvements, advanced traffic signal controls, traffic monitoring, and access management.
- Identify the need for transit signal prioritization and other modal related technologies/strategies for improving multimodal corridors.
- Better understand the need for and implement Intelligent Transportation Systems (ITS) regionally and invest in proven ITS strategies.

Objective 2.2: Work to achieve a state-of-good-repair for existing transportation assets through asset management.

- Develop Regional Condition Rating System.
- Coordinate with partner agencies to develop a prescribed set of highways that can support heavier loads (i.e. 120,000 lbs.) to reduce transportation costs and energy usage linking to freight hubs and/or other transportation systems.
- Develop a database of deficient infrastructure and target transportation corridors with quality design improvements where high return on investment can be demonstrated.
- Evaluate the economic and community development benefits of infrastructure maintenance and preservation investments.

Objective 2.3: Improve safety on transportation facilities.

- Promote rail and roadway safety by identifying potential conflicts highway at-grade crossings.
- Reduce roadway and multimodal crashes.
- Institute additional safe-routes-to-school paths.
- Coordinate with partner agencies to identify opportunities related to traffic safety education and develop methods to make the information readily available.

Objective 2.4: Reduce the vulnerability and increase the resilience of critical infrastructure to the impacts of man-made and natural events.

- Identify assets at risk of shortened life-cycles due to climatic events, increased wear-and-tear, or attack and create plans for those areas to mitigate damage and ensure usefulness of assets.
- Create a comprehensive system of detour routes and closure plans for major roadways.
- Evaluate existing infrastructure for stormwater runoff mitigation.

Goal 3

Provide a transportation system that supports the regional economy.

Objective 3.1: Identify and address issues affecting freight movement and passenger services.

- Collaborate and consult with freight and passenger stakeholders to address regional freight and passenger transportation issues.
- Support new technologies that provide improved operational efficiencies and travel/route planning and safety.
- Invest in highway projects that improve access to freight generators/attractors (such as intermodal facilities, etc.) in order to improve economic competitiveness.
- Invest in freight projects that meaningfully increase and improve access to economic growth opportunities.

Objective 3.2: Broaden the regional scope of transportation partnerships to include opportunities outside of the MPA.

- Align future transportation plans and programs to include considerations of the transportation authorities of the Midwest Chicago Megaregion, such as Chicago, Madison, and Milwaukee regions.
- Collaborate with other MPOs to foster the efficient movement of multimodal freight through the megaregion.

Objective 3.3: Advancement of efficient urban goods movement of freight within the region.

- Improve land use and transportation connectivity through curbside management approaches.
- Coordinate with IDOT in the development of the Statewide Truck Parking Study to provide local needs and identify opportunities.
- Enhance access to the Chicago Rockford International Airport through transportation infrastructure projects which streamline the movement of freight and support nearby logisitic and distribution centers.
- Enhance intermodal connectivity by identifying and implementing improvements needed to truck routes, airports, and rail lines that provide access to intermodal facilities.
- Explore ITS technologies to foster the most efficient movement of freight.
- Investigate potential use of commercial connected/autonomous vehicles (CAV) for the movement of freight.

Goal 4

Enhance quality of life through integrated transportation and land use planning.

Objective 4.1: Minimize and mitigate air and water quality impacts from existing and future transportation facilities, services, investments, and operations.

- Support reduction in the use of single occupancy vehicles (SOVs).
- Develop a regional Electric Vehicle Readiness Plan and Implementation Plan.
- Encourage green Infrastructure (e.g. solar power generation, permeable pavements, wetland creation, etc.) in the transportation planning process.
- Coordinate with partner agencies in the stormwater management planning and regional water planning mitigation initiatives.
- Establish recommended standards for public and private incorporation of renewable energy (e.g. electric vehicle charging stations, etc.).

Objective 4.2: Enhance and promote equity and accessibility in the transportation system contributing to an overall improvement in quality of life.

- Develop principles addressing livability using the transportation planning process to guide successful project implementation.
- Develop regional complete streets policy.
- Coordinate with partner organizations to identify potential corridors and locations for "traffic calming" techniques.

Objective 4.3: Promote the protection and sustainable use of diverse regional natural resources and areas.

- Planning and development efforts in areas with high growth or redevelopment potential by prioritizing their transportation infrastructure needs.
- Coordinate with partner agencies to preserve and protect environmentally sensitive areas from development.
- Coordinate with partner agencies to conserve natural areas with additional policies and programming.
- Support ecological connectivity as well as transportation and environmental planning linkages through continued greenways planning.
- Encourage inclusion of resiliency and redundancy into planning for transportation and infrastructure regionally.

Goal 5

Ensure transportation investments effectively serve the regional transportation needs.

Objective 5.1: Enhance coordination and collaboration in planning, programming, and implementation activities with state, regional, and local partners.

- Improve coordination and communication between human service transportation providers, private, and public transportation providers and seek efficiencies in service delivery.
- Improve the educational outreach of public transit providers of their available services.
- Develop data sharing agreements which allows municipalities to have a better understanding of their transportation network and make strategic decisions.
- Coordinate with partner agencies to develop strategies to incentivize public-private partnerships by establishing a tax-credit program for infrastructure improvements.
- Coordinate with local and statewide partners in the development of connected/autonomous vehicle (CAV) initiatives.

Objective 5.2: Structure a mix of funding streams maximizing federal and state investment to leverage public/private partnerships.

- Capitalize on the economic development potential of current and planned roadway improvement projects through coordination between local agencies, IDOT, and the Illinois Tollway.
- Diversify the mix of funding sources for transportation infrastructure improvements.
- Leverage public-private and local-state-federal partnerships for infrastructure improvements through innovative methods.

Objective 5.3: Create a regional slate of infrastructure priorities based on the strategies outlined in this plan.

- Enhance performance-based project selection process and accompanying tools to ensure consideration of land use and transportation connections.
- Update the MPO's Congestion Management Process (CMP) strategies.
- As the region advances identified priority infrastructure projects, consider the need for additional local revenues to support their completion.

System Performance

Monitoring, evaluating, and reporting is key in performance-based planning. By tracking specific metrics and targets, the region will not only have a better understanding of how the transportation system is performing, but also a way to track which strategies have been effective and why. To further incorporate a performance-based planning process into the development of the MTP, Fixing America's Transportation (FAST Act) requires MPOs to develop a system performance report and subsequent updates evaluating the condition and performance of the transportation system with respect to the federally-required performance targets.[i] Tracking performance measures will help determine whether objectives are being met, if adjustments to projects and programs are needed, and assist in refining or redeveloping objectives and targets.[ii]

To supplement federal performance measures and targets, the MPO has identified a set of regionally-defined performance metrics. These performance measures will help the MPO track the success of the plan's strategies. These additional performance measures are both quantitative and qualitative. Quantitative measures, such as number of crashes, are more direct in calculation, while the qualitative measures, such as quality of life, are more difficult to measure. Coordination with regional stakeholders assisted in determining which performance measures and targets are most suitable for the region. Other considerations are data availability, and resources needed to analyze, monitor, and report on the measures and targets.

Each performance measure listed in Table 6-1 is supplemented with the baseline, target or desired trend, current results, and status. It should be noted that many of the performance measures have been developed as a part of this MTP. As such, many of the measures will not have current results or status shown in Table 6-1. These measures and targets will be monitored and reported in a system performance report. The system performance report will be evaluated at least every five years as a part of the MTP update. The federally-required performance measures will be reported in accordance with federal guidelines.



East State Street. Rockford, IL

Table 6-1. System Performance Report

Federally-Required

Highway Safety (PM1)	MPO Baseline	State Baseline	State Target	Desired Trend	Current Results (Statewide)	Actual Trend (Statewide)
Number of Fatalities	30.0	989.4	985.0	Decrease	-	-
Rate of Fatalities (per 100 million VMT)	1.110	0.940	0.910	Decrease	-	-
Number of Serious Injuries	224.5	12,168.0	11,668.7	Decrease	-	-
Rate of Serious Injuries (per 100 million VMT)	8.240	11.540	10.800	Decrease	-	-
Number of Non-Motorized Fatalities and Serious Injuries	24.5	1,498.8	1,456.2	Decrease	-	-

Pavement & Bridge Condition (PM2)	MPO Baseline	State Baseline	State Target	Desired Trend	Current Results (Statewide)	Actual Trend (Statewide)
Interstate Pavement in Good Condition	50.6%	66.0%	65.0%	Increase	-	-
Interstate Pavements in Poor Condition	2.2%	0.3%	< 5.0%	Decrease	-	-
Non-Interstate NHS Pavement in Good Condition	25.4%	37.9%	27.0%	Increase	-	-
Non-Interstate NHS in Poor Condition	19.9%	19.4%	6.0%	Decrease	-	-
Percent of Deck Area on NHS Bridges in Good Condition	32.1%	29.1%	28.0%	Increase	-	-
Percent of Deck Area on NHS Bridges Classified in Poor Condition	4.1%	11.6%	13.0%	Decrease	-	-

System Performance (PM2)	MPO Baseline	State Baseline	State Target	Desired Trend	Current Results (Statewide)	Actual Trend (Statewide)
Interstate Highway Reliable Person-Miles Traveled	100.0%	80.8%	79.0%	Increase	79.2%	Increase
Non-Interstate NHS Reliable Person-Miles Traveled	92.3%	87.3%	85.3%	Increase	89.4%	Increase
Truck Travel Time Reliability Index	1.12	1.30	1.34	Decrease	1.33	Decrease

Transit Asset Management	MPO Baseline	State Baseline	State Target	Desired Trend	Current Results (Statewide)	Actual Trend (Statewide)
Revenue Vehicles that have met or exceed their useful life	49%	48%	-	Decrease	-	-
Non-revenue vehicles and equipment that have met or exceeded their useful life	67%	50%	-	Decrease	-	-

Regional Performance Targets

Environment Sustainability	Baseline	Desired Trend	Current Results	Actual Trend
Attainment Level Status for Air Quality	In attainment	Maintain	-	-
Public Electric Charging Stations	9 stations	Increase	-	-
Commute by SOV	83.3%	Decrease	-	-
Public Alternative Fuel Stations	ŽŽŽŽŽ	Increase	-	-
Acres of Agricultural and Open Space	668,169 acres	Maintain	-	-

Mobility & Accessibility	Baseline	Desired Trend	Current Results	Actual Trend
Transit Ridership	1,626,743	Increase	-	-
Bicycle Infrastructure	212 miles	Increase	-	-
Pedestrian Infrastructure	ŽŽŽŽŽ	Increase	-	-
Safe Route To School Programs	1	Increase	-	-
Commuter Service Connections	0	Increase	-	-

System Efficiency	Baseline	Desired Trend	Current Results	Status
Planning Time Index	1.09	Decrease	-	-
Annual Truck Delay	490,000 Hours	Decrease	-	-
Annual Delay per Auto Commuter	18 Hours	Decrease	-	-

System Preservation	Baseline	Desired Trend	Current Results	Status
Roads at weight limit of 120,000 lbs.	TBD	Decrease	-	-
Regional transportation assets deemed vulnerable	TBD	Decrease	-	-

The MTP & Transportation Improvement Plan

The 30-year framework of the MTP has created a set of policies, goals, and recommended actions the region should take to achieve its desired vision. Additionally, this long-range plan forecasts the transportation needs of the region and provides a comprehensive list of transportation infrastructure and capital projects that will help achieve a safe and efficient transportation system for all users.

As such, the 2050 MTP guides the list of projects that will be formally programmed into the region's short-range document, known as the Transportation Improvement Program (TIP). The purpose of the TIP is to document infrastructure and non-infrastructure transportation projects programmed within the Rockford metropolitan planning area (MPA) for the next four fiscal years. This includes all surface transportation projects receiving Federal and State funding, projects of regional significance, and public transportation operations and/or capital. Similar to the MTP, the TIP is a fiscally constrained program outlining the most immediate implementation priorities and is updated annually. In order to receive federal and state highway, transit, or other transportation related funds, a project must be listed in the TIP.

Annual TIP Update

The TIP is generally prepared to coincide with the Illinois Department of Transportation's (IDOT) fiscal year, which is the same as the MPO's, July 1 through June 30. MPO staff begins work on the TIP approximately three to six months prior to the start of the fiscal year. The schedule is deliberately extended over several months to provide ample opportunities for public involvement.

At the beginning of the update process, the MPO requests that local jurisdictions review the current TIP project list and identify any changes to the current TIP projects in funding sources, project cost, and project schedule. Local jurisdictions are also requested to provide projects that have received funding but were not in the previous TIP and projects that need to be moved into the current year or out of the current year due to funding constraints.

It is important to note that projects listed within the TIP document are derived from partner agency's capital improvement programs (CIP) and the MTP. Additionally, public participation and input opportunities are provided during the program development stages of the MPO partner organizations' CIP documents and prior to approval of the TIP. The draft TIP is made available for comment for 30 days. Any public comment received during this review period is taken into account by the MPO and is presented to the MPO Technical and Policy Committees as part of the approval process.

Revisions to the TIP

Sometimes revisions to the TIP may occur between its annual updates. If alterations or advancements to any of the projects in these years need to be made after the document has been adopted there are two processes by which the MPO can do so, administrative modifications and amendments.

An administrative modification to the TIP is for minor revisions. After MPO staff has reviewed an agency's request for an administrative modification, a draft memo will be sent to the agency for final verification. An administrative modification does not require the MPO Technical Committee or MPO Policy Committee to formally recommend and adopt the modification. However, the MPO Technical Committee and MPO Policy Committee will be notified of any administrative modifications to the TIP during their regularly scheduled meetings following the processing of an administrative modification. Thresholds have been identified below to outline when an administrative modification to MPO's TIP is appropriate.

- Minor revision to project name and/or project extent description;
- Changes to the project total cost or project phase break out costs in a decrease of ≤ 10%;
- Minor changes, deletions or revisions to typographical errors or data entry error;
- Movement of an included project among fiscal years of the TIP. This may include project phases (i.e. construction, engineering) or movement of the entire project; and
- Advanced Construction notices for projects currently listed within the TIP as provided to the MPO by the Illinois Department of Transportation (IDOT).

Amendments are major revisions to the TIP, typically in regards to a project. An amendment to the TIP requires a resolution to be formally recommended by the MPO Technical Committee and adopted by the MPO Policy Committee. The thresholds below will be used to determine if an amendment to the TIP is appropriate:

- Changes to the project total cost or project phase break out costs in an increase of funds;
- Changes to the project total cost or project phase break out costs in a decrease of > 10%;
- Changes in federal, state or local identified funding

Advanced Construction

A technique that allows the state to initiate a project using non-federal funds while preserving eligibility to convert to federal-aid funds in the future. After an AC project is federally authorized, the State may convert the project to regular federal-aid funding at any time before project close-out, provided federal funds are available for the project at the time of the conversion.

Source: Federal Highway Adminstration

sources for project(s) currently within the approved TIP;
- Addition of a project into the TIP which is Federally/ State funded or regionally significant and is not currently assigned within the approved TIP; and
- Deletion of a project from the TIP which is Federally or State funded or regionally significant and is currently assigned within the approved TIP.

In spring of 2018, the MPO Policy Committee adopted formal guidelines through the "Procedure to Amend and Modify the MPO Transportation Improvement Program" to be followed during the TIP program maintenance process. The purpose of these guidelines is to provide partner agencies an outlined, standardized procedure to maintain major and minor project updates which include changes such as: project cost estimates, project phase completion and award letting within the TIP's four-year timeframe.

Interactive TIP

In 2019, the MPO launched an interactive TIP as a tool for partner agencies and the public to view projects that are within the MPO's TIP document. Each project featured on the map provides a high-level summary of the project scope, funding sources/costs, and project sponsor. It provides the most up-to-date information the MPO has on each project.

The map currently only features projects that have specific project locations and/or extents. Other projects listed in the TIP that are labelled as district-wide and city-wide are not visually displayed. Public transportation non-infrastructure based capital projects (i.e. capital rolling stock, vehicle equipment, operating and maintenance funding, etc.) are also not visually represented due to the nature of those projects being disbursed throughout the RMTD service area as part of regular public transit service provision and operations.

The MPO's Interactive TIP can be accessed at r1planning.org/tip.

Title VI & Environmental Justice Considerations

The MPO operates under several federal guidelines to ensure the delivery of public transportation services and the priority setting for transportation improvements does not disproportionately distribute the benefits of these publicly-funded activities away from traditionally underserved populations (TUPs). TUPs include low-income, racial/ethnic minorities, Limited English Proficiency, elderly (aged 65 and above), and zero car households. Conversely, these efforts also seek to ensure that potentially adverse consequences of transportation services or improvements are not disproportionately burdened upon TUPs.

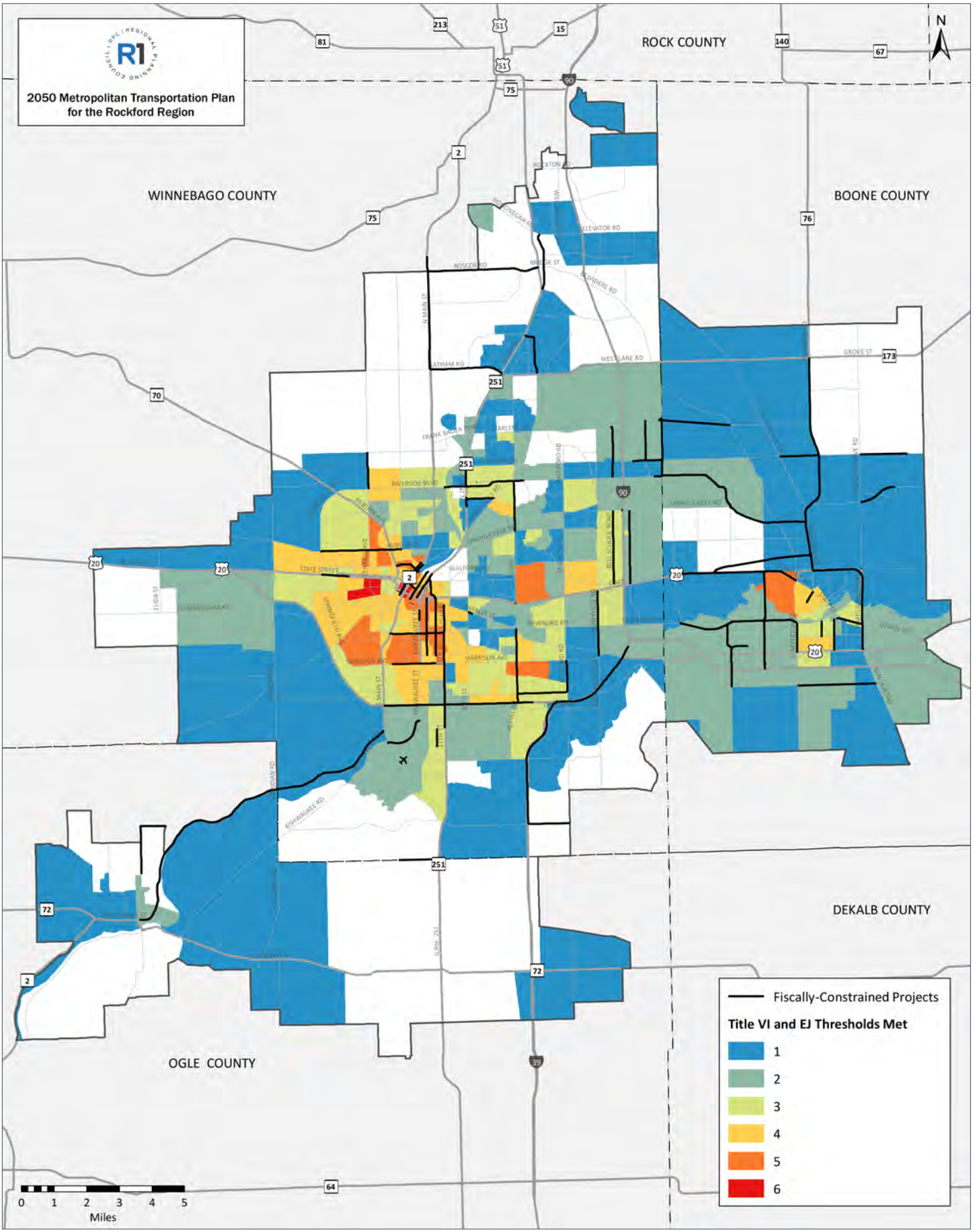
Environmental Justice (EJ) is an amplification of Title VI that extends the basic principles of Title VI to low-income populations. Recent emphasis on EJ stems from the 1994 Executive Order 12898 that states, "Each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations." In, 1997, the US Department of Transportation (USDOT) issued its Order to Address Environmental Justice in Minority Populations and Low-Income Populations to summarize and expand upon the requirements of Executive Order 12898.

To fulfill and expand upon the federal guidelines, both the MTP and TIP recognizes the following goals as part of its transportation project selection and evaluation process:

- Minority and low-income populations along with other traditionally underserved populations (TUPs) should be allocated a fair share of transportation expenditures and services programmed;
- TUPs should not be burdened with a disproportionate share of the adverse impacts originating from the transportation projects;
- In the process of developing these documents, a concerted effort will be made to determine what populations are going to be affected by the projects listed;
- The MPO will periodically review and analyze projects and transportation decisions to determine if, in fact, all groups have been treated equitably; and
- MPO and its participants will make concerted efforts to inform and involve traditionally underserved population groups in the transportation decision-making process.

All updates to the MTP and short-range TIP will include a map of proposed projects overlaying these concentrations to assess any benefits and burdens on TUPs. The fiscally-constrained projects are shown overlaying TUPs in Figure 6-1. The presence of these populations are also used as a weight in the selection process and programming of the Surface Transportation Block Grant (STBG) and Transportation Alternatives Program (TAP) funds allocated to the region.

Figure 6-1. Title VI & EJ Areas with Fiscally-Constrained Project List



Data sources: U.S. Census Bureau; Region 1 Planning Council

2050 MTP Revisions & Updates

A new MTP update will not be required for five years from the approval date of the 2050 MTP; however, there is a large amount of uncertainty in what could happen within the region over that timeframe. Following the adoption of the MTP, there are often unforeseen events and factors that may occur making it necessary to revise the document between updates. The MTP can be amended or updated by the MPO Policy Committee for reasonable cause at any time. The process to amend or refine elements of the Plan can be initiated by contacting the MPO or any member of the MPO Technical or Policy Committees. These requests will be examined by the MPO and MPO Technical Committee with the direction and approval of the MPO Policy Committee.

The public comment and review period for draft 2050 MTP was from May 15, 2020 through June 29, 2020. The draft was made available for review via the MPO's website (posted May 15, 2020), as well as at the RPC offices. Results from the public comment and review period can be found in Technical Memorandum #1: Public Engagement Process.

Since the release of the May 15, 2020 draft 2050 MTP, technical and formatting corrections have been made to the text and maps of the document. Additionally,

- Language has been incorporated into the Active Transportation section regarding requirements of the Americans with Disabilities Act (ADA) related to public infrastructure.
- Updates were made to the Fiscally-Constrained Project List at the request of the City of Rockford to include the Harrison Avenue Reconstruction project (from IL-251 to Rock River) in the short-range locally-funded roadway projects.
- Calculation discrepancies in the financial analysis were corrected and updated within the document text, tables, and figures.
- Updates were made to "Table 5-16. Active Transportation Projects, FY 2021- 2050" at the request of the City of Rockford for the inclusion of several off-street paths the City is currently considering.

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Appendices

Appendix A: Glossary of Terms

Acroynms & Abbreviations .....
Glossary of Terms.....

Appendix B: Required Elements

Development & Content of the Metropolitan Transportation Plan (23 CFR § 450.324) .....
IDOT Metropolitan Planning Organization Cooperative Operations Manual .....
Rockford, Illinois TMA Certification Review (2016) .....
Rockford, Illinois TMA Certification Review (2020) .....

Appendix C: The MTP and Planning Document Connections

Statewide Plans & Studies .....
Regional Plans & Studies .....
Local Plans & Studies .....

Appendix A: Glossary of Terms

Acroymns & Abbreviations

#

3-C	Continuing, Comprehensive, and Cooperative

A

AADT	Annual Average Daily Traffic
AC	Advanced Construction
ACS	American Community Survey
APTA	American Public Transit Association
AQI	Air Quality Index
ATC	Alternative Transportation Committee
AV	Autonomous Vehicle

B

BCCA	Boone County Council on Aging
BCCD	Boone County Conservation District
BCPT	Boone County Public Transit
BEA	Bureau of Economic Analysis
BNSF	Burlington Northern Santa Fe
BRT	Bus Rapid Transit
BUILD	Better Utilizing Investments to Leverage Development

C

CAA	Clean Air Act
CAV	Connected and Autonomous Vehicle
CBSA	Core Based Statistical Area
CEDS	Comprehensive Economic Development Strategy
CEI	Climate Extremes Index
CIP	Capital Improvement Program
CMAQ	Congestion Mitigation and Air Quality Improvement Program
CMP	Congestion Management Process
CN	Canadian National
CO	Carbon Monoxide
COA	Conservation Opportunity Area
CP	Canadian Pacific
CSS	Context Sensitive Solution
CV	Connected Vehicle

D

DOT	Department of Transportation

E

EDD	Economic Development District
EIS	Environmental Impact Statements
EJ	Environmental Justice
EMS	Emergency Medical Services
EPA	Environmental Protection Agency
EV	Electric Vehicle

F

FAST Act	Fixing America's Surface Transportation Act
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
FTZ	Foreign Trade Zone

G

GDP	Gross Domestic Product
GHG	Greenhouse Gas
GIS	Geographic Information System
GRAA	Greater Rockford Airport Authority

H

HCM	Highway Capacity Manual
HSIP	Highway Safety Improvement Program
HSTP	Human Services Transportation Plan
HUD	US Department of Housing and Urban Development

I

ICC	Illinois Commerce Commission
IDNR	Illinois Department of Natural Resources
IDOA	Illinois Department of Agriculture
IDOT	Illinois Department of Transportation
IEPA	Illinois Environmental Protection Agency
IGA	Intergovernmental Agreement
IHS	Interstate Highway System
IR	Illinois Railway
ISTHA	Illinois State Toll Highway Authority
ITEP	Illinois Transportation Enhancement Program
ITS	Intelligent Transportation System

L

LBA	Land Bank Authority
LCI	Livable Communities Index
LOS	Level of Service
LOTS	Lee-Ogle Transportation Systems
LRTP	Longe Range Transportation Plan

M

MaaS	Mobility as a Service
MAP-21	Moving Ahead for Progress in the 21st Century
MFT	Motor Fuel Tax
MPA	Metropolitan Planning Area
MPO	Metropolitan Planning Organization
MRO	Maintenance, Repair, and Overhaul
MSA	Metropolitan Statistical Area
MTP	Metropolitan Transportation Plan

N

NAAQS	National Ambient Air Quality Standards
NCDC	National Climatic Data Center
NCEI	National Centers for Environmental Information
NEPA	National Environment Policy Act
NGO	Non-Governmental Organization
NHPP	National Highway Performance Program
NHS	National Highway System
NHTSA	National Highway Traffic Safety Administration

NICTI	Northern Illinois Commuter Transportation Initiative
NO_2	Nitrogen Dioxide
NOAA	National Oceanic and Atmospheric Administration
NSP	National Public Transportation Safety Plan
NTB	National Transit Database

O

O_3	Ozone

P

P3	Public-Private Partnership
Pb	Lead
PBPP	Performance-Based Planning and Programming
PCI	Per Capita Income
PDSI	Palmer Drought Severity Index
PHEV	Plug-in Hybrid Electric Vehicle
PM	Particulate Matter
PM1	Highway Safety Improvement Program
PM_{10}	Particulate Matter smaller than 10 Micrometers
PM2	"Assessing Pavement Condition for the National Highway Performance Program and Bridge Condition for the National Highway Performance Program"
$PM_{2.5}$	Particulate Matter smaller than 2.5 Micrometers
PM3	"Assessing Performance of the National Highway System, Freight Movement on the Interstate System, and Congestion Mitigation and Air Quality Improvement Program"
PPM	Parts Per Million
PPP	Public Participation Plan
PPSM	People Per Square Mile
PSI	Pedestrian Suitability Index
PTASP	Public Transportation Agency Safety Plan

R

RATS	Rockford Area Transportation Study
REMI	Regional Economic Models Inc.
RFD	Chicago-Rockford International Airport
RMAP	Rockford Metropolitan Agency for Planning
RMTD	Rockford Mass Transit District
ROW	Right-of-Way
RPC	Region 1 Planning Council
RPD	Rockford Park District
RPSD	Regional Plan for Sustainable Development

S

SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users
SGNC	Species in Greatest Need of Conservation
SHSP	Strategic Highway Safety Plan
SLATS	State Line Area Transportation Study
SMTD	Stateline Mass Transit District
SO2	Sulfur Dioxide
SOV	Single Occupant Vehicle
SPF	State Planning Fund
SPR	Statewide Planning & Research
SRA	Strategic Regional Arterials
SRTS	Safe Routes to School
STAR	Strategic Transit Automation Research
STBG	Surface Transportation Block Grant
STRAHNET	Strategic Highway Network
STSFA	Surface Transportation System Funding Alternatives

T

TA	Transportation Alternative
TAM	Transit Asset Management
TAMP	Transit Asset Management Plan
TAP	Transportation Alternatives Program
TDM	Travel Demand Model
TERM	Transit Economic Requirements Model
TIF	Tax Increment Financing
TIP	Transportation Improvement Program
TMA	Transportation Management Area
TNC	Transportation Network Company
TSMO	Transportation System Management & Operations
TSP	Transportation Service Provider
TTRI	Truck Travel Time Reliability Index

U

UA	Urbanized Area
ULB	Useful Life Benchmark
UP	Union Pacific
USDOT	United States Department of Transportation
UWP	Unified Work Program

V

V/C	Volume-to-Capacity
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compounds

W

WFC	Walk Friendly Community

Glossary of Terms

#

3-C Process
Continuing, comprehensive, and cooperative transportation planning process.
Source: Federal Highway Administration

A

Accessibility
The ease of reaching valued destinations, such as jobs, shops, schools, entertainment, and recreation.
Source: Federal Highway Administration

Advanced Construction (AC)
A technique that allows the state to initiate a project using non-federal funds while preserving eligibility to convert to federal-aid funds in the future.
Source: BATIC Institute

Air Quality Index (AQI):
An indicator of overall air quality, by taking into account all of the criteria air pollutants measured within a geographic area.
Source: U.S. Environmental Protection Agency

Alternative Transportation
Any mode of personal transportation other than a single-occupant vehicle, including biking, walking, carpooling, and public transportation.
Source: MPO Alternative Transportation Committee Bylaws

Arterial
A class of roads serving major traffic movements (high-speed, high volume) for travel between major points.
Source: Federal Highway Administration

Attainment Area
An area considered to have air quality that meets or exceeds the U.S. Environmental Protection Agency (EPA) health standards used in the Clean Air Act.
Source: Federal Highway Administration

Autonomous Vehicle
Also known as self-driving or driverless vehicles, are vehicles in which some aspect of control is automated by the car.
Source: National Highway Traffic Safety Administration

Average Annual Daily Traffic (AADT)
The total volume of traffic on a highway segment for one year, divided by the number of days in the year.
Source: Federal Highway Administration

B

Bike Lane
A portion of roadway designated for preferential or exclusive use by bicyclists by pavement markings and, if used, signs.
Source: National Association of City Transportation Officials

Bikesharing
Short-term bike rental, usually for individual periods of an hour or less.
Source: Transportation Research Board

Bottlenecks
A section of a highway or rail network that experiences operational problems such as congestion. Bottlenecks may result from factors such as reduced roadway width or steep freeway grades that can slow trucks.
Source: Federal Highway Administration

Bus Rapid Transit
Fixed-route bus systems that operate at least 50 percent of the service on fixed guideway. These systems also have defined passenger stations, traffic signal priority or preemption, short headway bidirectional services for a substantial part of weekdays and weekend days; low-floor vehicles or level-platform boarding, and separate branding of the service. Agencies typically use off-board fare collection as well. This is often a lower-cost alternative to light rail.
Source: Federal Transit Administration

C

Capacity
The maximum hourly flow rate of persons or vehicles under prevailing conditions.
Source: Federal Highway Administration

Carpooling
A formal or informal arrangement where commuters share a vehicle for trips from either a common origin, destination, or both, reducing the number of vehicles on the road.
Source: U.S. Department of Transportation

Carsharing
A service that provides members with access to an automobile for intervals of less than a day.
Source: Transportation Research Board

Centerline Miles
The total length of a given road from its starting point to its end point, and does not take width or number of lanes into account.
Source: Texas Department of Transportation

Class I Railroads
Railroad companies with an annual operating revenue of at least $266.7 million.
Source: Federal Highway Administration

Clean Air Act
The law that defines the U.S. Environmental Protection Agency's responsibilities for protecting and improving the nation's air quality and stratospheric ozone layer.
Source: U.S. Environmental Protection Agency

Collector
A street that provides direct access to neighborhoods and arterials.
Source: Federal Highway Administration

Commuter Bus
Local fixed-route bus transportation primarily connecting outlying areas with a central city. Characterized by a motorcoach (aka over-the-road bus), multiple trip tickets, multiple stops in outlying areas, limited stops in the central city, and at least five miles of closed-door service.
Source: Federal Transit Administration

Commuter Rail
An electric or diesel propelled railway for urban passenger train service consisting of local travel which operates between a central city and outlying areas. Service must be operated on a regular basis by or under contract with a transit operator for the purpose of transporting passengers within urbanized areas (UZAs), or between urbanized areas and outlying areas.
Source: Federal Transit Administration

Complete Streets
A transportation policy and design approach that requires streets to be planned, designed, and maintained to enable safe, convenient, and comfortable travel for all modes of travel. At the core of the complete streets philosophy is the idea that pedestrians, bicyclists, motorists, and public transportation users of all ages and abilities are able to safely move along and across a street.
Source: U.S. Department of Transportation

Complimentary Paratransit Service
Transportation service required by the Americans with Disabilities Act (ADA) for individuals with disabilities who are unable to use fixed route transportation systems. This service must be comparable to the level of service provided to individuals without disabilities who use the fixed route. Service must be provided in a corridor ¾ of a mile on either side of the bus routes.
Source: Federal Transit Administration

Congestion
The travel time or delay in excess of that normally incurred under light or free-flow travel conditions.
Source: Transportation Research Board

Congestion Management Process (CMP)
A systematic approach applied in a metropolitan region to identify congestion and its causes, propose mitigation strategies, and evaluate the effectiveness of implemented strategies.
Source: Federal Highway Administration

Congestion Mitigation and Air Quality Improvement Program
The CMAQ program provides funds to States for transportation projects designed to reduce traffic congestion and improve air quality, particularly in areas of the country that do not attain national air quality standards.
Source: U.S. Department of Transportation

Congestion Pricing
Collection of fees or tolls based upon the level of demand on the facility.
Source: Federal Highway Administration

Connected Vehicle
A vehicle with internal devices that allow it to connect to other vehicles or with an external infrastructure system.
Source: Federal Highway Administration

Coordinated Human Services Transportation Plan (HSTP)
Locally developed transportation plans that identifies the needs of individuals with disabilities, older adults, and people with low incomes, provide strategies for meeting these needs, and prioritize transportation services for funding and implementation. These plans must involve representatives of public, private, and non-profit transportation and human services providers, as well as members of the public.
Source: Federal Transit Administration

Core Based Statistical Area
A statistical geographic entity consisting of the county or counties associated with at least one core (urbanized area or urban cluster) of at least 10,000 population, plus adjacent counties having a high degree of social and economic integration with the core as measured through commuting ties with the counties containing the core.
Source: Office of Management and Budget

Courier Network Service
Also known as flexible goods delivery, these provide for-hire delivery services for monetary compensation using an online application or platform (such as a website or smartphone app) to connect delivery drivers using a personal transportation mode with a package/item or food delivery requests.
Source: U.S. Department of Transportation

D

Dedicated Short-Range Communication
Vehicle-to-vehicle and vehicle-to-infrastructure communications.
Source: Federal Communication Commission

Demand Response Public Transportation
A transit mode comprised of passenger cars, vans or small buses operating in response to calls from passengers or their agents to the transit operator, who then dispatches a vehicle to pick up the passengers and transport them to their destinations.
Source: Federal Transit Administration

E

Electric Vehicle (EV)
A vehicle that has an electric motor instead of an internal combustion engine.
Source: U.S. Department of Energy

Emissions
Harmful, polluting gases that affect the Earth's atmosphere.
Source: U.S. Environmental Protection Agency

Environmental Impact Statement
A document prepared by or for U.S. Environmental Protection Agency which identifies and analyzes, in detail, environmental impacts of a proposed action. As a tool for decision-making, the EIS describes positive and negative effects and lists alternatives for an undertaking, such as development of a wilderness area.
Source: U.S. Environmental Protection Agency

Ethnicity
The U.S. Census Bureau adheres to the U.S. Office of Management and Budget's (OMB) definition of ethnicity. There are two minimum categories for ethnicity: Hispanic or Latino and Not Hispanic or Latino.
Source: U.S. Census Bureau

F

Financial Analysis
Estimating costs, establishing a revenue baseline, comparing revenues with costs and evaluating new revenue sources.
Source: Federal Highway Administration

First Mile
The movement of people from their point of origin to a public transportation hub.
Source: Federal Transit Administration

Fiscal Constraint
Ensures that a given program or project can reasonably expect to receive funding within the time allotted for its implementation.
Source: Federal Highway Administration

Fixed Route Public Transportation
Services provided on a repetitive, fixed schedule basis along a specific route with vehicles stopping to pick up and deliver passengers to specific locations; each fixed route trip serves the same origins and destinations.
Source: Federal Transit Administration

Foreign Trade Zone (FTZ)
An area or zone set aside at or near a port or airport, under the control of the U.S. Customs Service, for holding goods duty-free pending customs clearance.
Source: Federal Highway Administration

Functional Classification (FC)
Classification of roadways based on the type of service the road provides to the motoring public.
Source: Federal Highway Administration

G

Green House Gas
Gases that trap heat in the upper atmosphere are defined as greenhouse gases (e.g. Carbon Dioxide, Methane, Nitrous Oxide, and Fluorinated Gases).
Source: U.S. Environmental Protection Agency

Green Infrastructure
Strategically planned and managed networks of natural lands, working landscapes and other open spaces that conserve ecosystem values and functions and provide associated benefits to human populations.
Source: The Conservation Fund

Gross Domestic Product (GDP)
1) The total value of goods and services produced by labor and property located in the United States. As long as the labor and property are located in the United States, the supplier (that is, the workers and, for property, the owners) may be either U.S. residents or residents of foreign countries. 2) The total output of goods and services produced by labor and property located in the United States, valued at market prices. As long as the labor and property are located in the United States, the suppliers (workers and owners) may be either U.S. residents or residents of foreign countries.
Source: Federal Highway Administration

H

Headways
The time interval between vehicles moving in the same direction on a particular route.
Source: Federal Transit Administration

Housing Density
An estimate of how many housing units exists, on average, per square mile; the measurement is based on a pre-determined geographic measurement (e.g. square miles).
Source: U.S. Census Bureau

Housing Unit
A house, an apartment, a mobile home or trailer, a group of rooms, or a single room occupied as separate living quarters, or if vacant, intended for occupancy as separate living quarters.
Source: U.S. Census Bureau

Hybrid Electric Vehicle (HEV)
Vehicles powered by an internal combustion engine and an electric motor, which uses energy stored in batteries.
Source: U.S. Department of Energy

I

Intelligent Transportation Systems (ITS)
The application of advanced technologies to improve the efficiency and safety of transportation systems.
Source: Federal Highway Administration

Intelligent Transportation Systems (ITS) Architecture
A systems framework to guide the planning and deployment of ITS infrastructure.
Source: Federal Highway Administration

Intercity Bus
Regularly scheduled public service using an over-the-road bus that operates with limited stops between two urbanized areas or that connects rural areas to urbanized areas.
Source: Federal Transit Administration

Intercity Passenger Service
Regularly scheduled bus or rail service for the general public that operates with limited stops over fixed routes connecting two or more urban areas not in close proximity, that has the capacity for transporting baggage carried by passengers, and that makes meaningful connections with scheduled intercity services to more distant points.
Source: Federal Transit Administration

Intermodal
The ability to connect, and the connections between, modes of transportation.
Source: Federal Highway Administration

Intermodal Terminals
A location where links between different transportation modes and networks connect. Using more than one mode of transportation in moving persons and goods.
Source: Federal Highway Administration

J

Jurisdiction
The authority and obligation to administer, control, construct, maintain and operate a highway subject to the provisions of the Illinois Highway Code.
Source: Illinois Department of Transportation

Jurisdictional Transfer
When the jurisdiction of a highway and/or structure is transferred from one agency to another.
Source: Illinois Department of Transportation

L

Land Cover
Similar to land use, land cover defines the natural use of land (e.g. forests, wetlands, impervious surfaces, agriculture, and other land and water types).
Source: National Oceanic and Atmospheric Administration

Land Use
Land use is a term used to describe the human use of land. It represents the economic and cultural activities (e.g. agricultural, residential, industrial, mining, and recreational) that are practiced at a given area.
Source: U.S. Environmental Protection Agency

Lane Miles
Calculated by multiplying the centerline mileage of a road by the number of lanes it has.
Source: Texas Department of Transportation

Last Mile
The movement of people and goods from a transportation hub to a final destination.
Source: Federal Transit Administration

Level of Service (LOS)
1) A qualitative assessment of a road's operating conditions. For local government comprehensive planning purposes, level of service means an indicator of the extent or degree of service provided by, or proposed to be provided by, a facility based on and related to the operational characteristics of the facility. Level of service indicates the capacity per unit of demand for each public facility. 2) This term refers to a standard measurement used by transportation officials which reflects the relative ease of traffic flow on a scale of A to F, with free-flow being rated LOS-A and congested conditions rated as LOS-F.
Source: Federal Highway Administration

Livability
A livable community provides more transportation choices that are safe, reliable, and economical; promotes equitable, affordable housing options; enhances economic competitiveness; supports and targets funding toward existing communities; and values communities and neighborhoods.
Source: Federal Highway Administration

M

Median Household Income
The income level earned by a given household, where half of the households earn more and half earn less.
Source: U.S. Census Bureau

Megaregion
A network of metropolitan areas, connected by existing economic, social, and infrastructure relationships.
Source: Federal Highway Administration

Metropolitan Planning Area (MPA)
The geographic area in which the metropolitan transportation planning process required by 23 U.S.C. 134 and section 8 of the Federal Transit Act (49 U.S.C. app. 1607) must be carried out.
Source: Federal Highway Administration

Metropolitan Planning Organization (MPO)
A regional policy body, required in urbanized areas with populations over 50,000, and designated by local officials and the governor of the state to carry out the metropolitan transportation requirements of federal highway and transit legislation.
Source: Federal Highway Administration

Metropolitan Transportation Plan (MTP)
The official intermodal transportation plan that is developed and adopted through the metropolitan transportation planning process for the metropolitan planning area.
Source: Federal Highway Administration

Metropolitan Statistical Area (MSA)
The county or counties (or equivalent entities) associated with at least one urbanized area with a population of at least 50,000, plus adjacent counties having a high degree of social and economic integration with the core as measured through commuting ties.
Source: U.S. Census Bureau

Micromobility
Shared-use fleets of small, fully or partially human-powered vehicles such as bikes, e-bikes and e-scooters. These vehicles are generally rented through a mobile app or kiosk, are picked up and dropped off in the public right-of-way, and are meant for short point-to-point trips.
Source: National Association of City Transportation Officials

Microtransit
A privately owned and operated shared transportation system that can offer fixed routes and schedules, as well as flexible routes and on-demand scheduling. The vehicles generally include vans and buses.
Source: U.S. Department of Transportation

Mixed-Use Development
A series of complementary uses such as residential, retail, commercial, employment, civic, and entertainment uses in close proximity- sometimes in the same building.
Source: Municipal Research and Services Center

Mobility
The ability to move or be moved from place to place.
Source: Federal Highway Administration

Mobility as a Service
A customer-focused interface that incorporates multiple mobility options into a single, intuitive and seamless platform or app that allows for choosing the right option, scheduling and paying for that option.
Source: National Center for Mobility Management

Mobility Management
A customer-centered approach to designing and delivering mobility services. It embraces a shared table of transportation providers, planners, and community stakeholders to collaborate, plan, implement and maintain transportation services. It includes local and regional solutions customized to fit community needs and visions, and involves innovation in transportation service, coordination and connectivity. Mobility management strives for easy information and referral to assist individuals in learning about and accessing community and regional transportation services.
Source: National Center for Mobility Management

Multimodal
The availability of transportation options using different modes within a system or corridor.
Source: Federal Highway Administration

N

National Ambient Air Quality Standards
Regulations establishing national standards for six principal pollutants (including Carbon Monoxide (CO); Lead (Pb); Nitrogen Dioxide (NO2); Ozone (O3); Particle Pollution (PM); and Sulfur Dioxide (SO2)).
Source: U.S. Environmental Protection Agency

National Environmental Policy Act
Regulation requiring federal agencies, and any projects using federal dollars, to assess the environmental effects of their proposed actions prior to implementation.
Source: U.S. Environmental Protection Agency

National Highway System (NHS)
The system of highways designated and approved in accordance with the provisions of 23 U.S.C. 103b).
Source: Federal Highway Administration

Nonattainment Area
Any geographic area that has not met the requirements for clean air as set out in the Clean Air Act of 1990.
Source: Federal Highway Administration

O

Operations
The provision of integrated systems and services that make the best use of existing transportation systems in order to preserve and improve customer-related performance.
Source: Federal Highway Administration

P

Per Capita Income
The mean income earned per person (including every man, woman, and child) within a region.
Source: US Census Bureau

Performance-Based Planning
Process that applies performance management principles to transportation system policy and investment decisions, providing a link between management and long range decisions about policies and investments that an agency makes in its transportation system.
Source: Federal Highway Administration

Performance Measures
Indicators of how well the transportation system is performing with regard to such things as average speed, reliability of travel, and accident rates. Used as feedback in the decision-making process.
Source: Federal Highway Administration

Planning Time Index
The total travel time that should be planned when an adequate buffer time is included to ensure on-time arrival.
Source: Federal Highway Administration

Population Density
Total population within a geographic entity (for example, United States, state, county, place) divided by the land area of that entity measured in square kilometers or square miles.
Source: U.S. Census Bureau

Programming
Prioritizing proposed projects and matching those projects with available funds to accomplish agreed upon, stated needs.
Source: Federal Highway Administration

Plug-in Hybrid Electric Vehicle (PHEV)
A vehicle that use batteries to power an electric motor and use another fuel, such as gasoline, to power an internal combustion engine.
Source: US Department of Energy

Public Participation
The active and meaningful involvement of the public in the development of transportation plans and programs.
Source: Federal Highway Administration

Public-Private Partnership (P3):
Contractual agreements between a public agency and a private entity that allow for greater private participation in the delivery of projects.
Source: U.S. Department of Transportation

R

Race
A person's self-identification with one or more social groups.
Source: U.S. Census Bureau

REMI TranSight Model
A direct input-output model used to evaluate the total economic effects of changes to the transportation systems and the economy. Integrating economic forecasting tools with travel demand modeling, REMI demonstrates how transportation makes economies competitive.
Source: Regional Economic Model, Inc.

Regionally Significant Project
A project that is on a facility which serves regional transportation needs.
Source: Federal Highway Administration

Reliability
The degree of certainty and predictability in travel times on the transportation system. Reliable transportation systems offer some assurance of attaining a given destination within a reasonable range of an expected time.
Source: Federal Highway Administration

Ridesharing
A formal or informal arrangement where commuters share a vehicle for trips from a common origin, destination, or both.
Source: Federal Highway Administration

Ridesourcing
Online platform to connect passengers with drivers and automate reservations, payments, and customer feedback. Other names include on-demand ride services, peer-to-peer services, ridehailing, e-hailing.
Source: Transportation Research Board

Right-of-Way (ROW)
The land (usually a strip) acquired for or devoted to highway transportation purposes.
Source: Federal Highway Administration

Road Pricing
A fee related to the use of a roadway facility.
Source: Federal Highway Administratio

S

Scenario Planning
A process that provides a framework for developing a shared vision for the future by analyzing various forces that affect a community. Developed by the private sector to anticipate future business conditions, scenario planning has been adopted in transportation planning as a way to understand various future inputs.
Source: Transportation Research Board

Shared Lane
Any roads with "sharrows" to indicate a shared lane environment between automobiles and bicycles.
Source: National Association of City Transportation Officials

Shared Use Mobility
Transportation services that are shared among users, including public transit; taxis and limos; bikesharing; carsharing (round-trip, one-way, and personal vehicle sharing); ridesharing (carpooling, van-pooling); ridesourcing; scooter sharing; shuttle services; neighborhood jitneys; and commercial delivery vehicles providing flexible goods movement.
Source: Federal Highway Administration

Shared Use Path
A bikeway physically separated from motor vehicle traffic by an open space or barrier and either within the highway right-of-way or within an independent right-of-way.
Source: National Association of City Transportation Officials

Stakeholders
Individuals and organizations involved in or affected by the transportation planning process. Include federal/state/local officials, MPOs, transit operators, freight companies, shippers, and the general public.
Source: Federal Highway Administration

State of Good Repair
The condition in which a capital asset is able to operate at a full level of performance.
Source: Federal Transit Administration

Supply Chain
Starting with unprocessed raw materials and ending with final customer using the finished goods.
Source: Federal Highway Administration

T

Transportation Management Area (TMA)
An urbanized area with a population over 200,000 (as determined by the latest decennial census) or other area when TMA designation is requested by the Governor and the MPO (or affect local officials), and officially designated by the Administrators of the Federal Highway Administration and the FTA.
Source: Federal Highway Administration

Transportation Network Company
Ridesourcing companies that provide prearranged and on-demand transportation services for compensation, which connect drivers of personal vehicles with passengers.
Source: U.S. Department of Transportation

Transportation System Management and Operations (TSMO)
Integrated strategies to optimize the performance of existing infrastructure through the implementation of multimodal and intermodal, cross-jurisdictional systems, services, and projects designed to preserve capacity and improve security, safety, and reliability of the transportation system.
Source: Federal Highway Administration

Travel Demand Model:
A program or set of computer programs and data which are assembled and usually run by professionals who specialize in travel forecasting.
Source: Ohio Department of Transportation

Travel Time Index
The ratio of travel time in the peak driving periods to the travel time at normal conditions.
Source: Federal Highway Administration

Travel Time Reliability
A measure of the quality and variability of travel time. A reliable transportation system dependably provides users with a consistent range of predictable travel times.
Source: Federal Highway Administration

U

Unlinked Passenger Trips
The number of passengers who board public transportation vehicles. Passengers are counted each time they board vehicles no matter how many vehicles they use to travel from their origin to their destination.
Source: Federal Transit Administration

Urban Area
Collective term referring to urbanized areas and urban clusters.
Source: US Census Bureau

Urban Cluster
A densely developed territory that contains a minimum residential population 2,500 people but fewer than 50,000.
Source: U.S. Census Bureau

Urban Goods Movements
The movement of goods throughout an urban area.
Source: Transportation Research Board

Urbanized Areas (UA)
An area consisting of a densely developed territory that contains a minimum residential population of at least 50,000 people.
Source: U.S. Census Bureau

V

Value-Added
The gross output of an industry or a sector less its intermediate inputs.
Source: U.S. Bureau of Economic Analysis

Value Capture Strategies
Mechanisms that may be used to derive monetary value from transportation improvements to help defray the cost of their implementation.
Source: Federal Highway Administration

Vehicle-miles Traveled (VMT)
The number of miles traveled by vehicles for a period of 1 year.
Source: Federal Highway Administration

Volume-to-Capacity (V/C) Ratio
A measurement of the operating capacity of a roadway or intersection where the number of vehicles passing through is divided by the number of vehicles that could theoretically pass through when at capacity.
Source: Greenbelt Alliance

Appendix B: Required Elements

Development & Content of the Metropolitan Transportation Plan (23 CFR § 450.324)

450.324 (a) The metropolitan transportation planning process shall include the development of a transportation plan addressing no less than a 20-year planning horizon as of the effective date. In formulating the transportation plan, the MPO shall consider factors described in § 450.306 as the factors relate to a minimum 20-year forecast period. In nonattainment and maintenance areas, the effective date of the transportation plan shall be the date of a conformity determination issued by the FHWA and the FTA. In attainment areas, the effective date of the transportation plan shall be its date of adoption by the MPO.

How/where it has been addressed: This plan addresses a horizon of 2050 (30 years from adoption).

450.324 (b) The transportation plan shall include both long-range and short-range strategies/actions that provide for the development of an integrated multimodal transportation system (including accessible pedestrian walkways and bicycle transportation facilities) to facilitate the safe and efficient movement of people and goods in addressing current and future transportation demand.

How/where it has been addressed: Strategies and actions have been developed and listed within this plan. These items can be found in Part 6: Action Plan.

450.324 (c) The MPO shall review and update the transportation plan at least every 4 years in air quality nonattainment and maintenance areas and at least every 5 years in attainment areas to confirm the transportation plan's validity and consistency with current and forecasted transportation and land use conditions and trends and to extend the forecast period to at least a 20-year planning horizon. In addition, the MPO may revise the transportation plan at any time using the procedures in this section without a requirement to extend the horizon year. The MPO shall approve the transportation plan (and any revisions) and submit it for information purposes to the Governor. Copies of any updated or revised transportation plans must be provided to the FHWA and the FTA.

How/where it has been addressed: This is an update to the 2040 LRTP (adopted in 2015).

450.324 (d) In metropolitan areas that are in nonattainment for ozone or carbon monoxide, the MPO shall coordinate the development of the metropolitan transportation plan with the process for developing transportation control measures (TCMs) in a State Implementation Plan (SIP).

How/where it has been addressed: Not Applicable.

450.324 (e) The MPO, the State(s), and the public transportation operator(s) shall validate data used in preparing other existing modal plans for providing input to the transportation plan. In updating the transportation plan, the MPO shall base the update on the latest available estimates and assumptions for population, land use, travel, employment, congestion, and economic activity. The MPO shall approve transportation plan contents and supporting analyses produced by a transportation plan update.

How/where it has been addressed: The MTP was developed using the latest data available from the US Census Bureau, US Bureau of Labor Statistics, and the US Bureau of Economic Analysis (see Part 3: Regional Context). Additionally, the MPO regularly coordinated with members of the MPO Technical Committee regarding data and to receive input on the plan during the development process.

450.324 (f) The metropolitan transportation plan shall, at a minimum, include:

450.324 (f)(1) The current and projected transportation demand of persons and goods in the metropolitan planning area over the period of the transportation plan;

How/where it has been addressed: For current and projected demand on the transportation network, the MPO used the PTV Visum Travel Demand Model, which includes travel/traffic estimates, and the Regional Economic Model, Inc's TranSight, which provides local and national economic impacts of the transportation network. More information on the models used can be in Technical Memorandum #3: Modeling Framework.

450.324 (f)(2) Existing and proposed transportation facilities (including major roadways, public transportation facilities, intercity bus facilities, multimodal and intermodal facilities, nonmotorized transportation facilities (e.g., pedestrian walkways

and bicycle facilities), and intermodal connectors) that should function as an integrated metropolitan transportation system, giving emphasis to those facilities that serve important national and regional transportation functions over the period of the transportation plan.

How/where it has been addressed: An inventory and current conditions report for all modes of transportation can be found in Part 4: Regional Transportation System.

450.324 (f)(3) A description of the performance measures and performance targets used in assessing the performance of the transportation system in accordance with § 450.306(d).

How/where it has been addressed: A description of the federal performance measures and performance targets can be found in Part 2: Planning Framework (Performance Measures). Regionally-developed performance measures and targets can be found in Part 6: Action Plan (System Performance).

450.324 (f)(4) A system performance report and subsequent updates evaluating the condition and performance of the transportation system with respect to the performance targets described in § 450.306(d), including—

(i) Progress achieved by the metropolitan planning organization in meeting the performance targets in comparison with system performance recorded in previous reports, including baseline data; and

How/where it has been addressed: Each performance measure is listed in Part 6: Action Plan (System Performance) and is supplemented with the baseline, target or desired trend, current results, and status. It should be noted that many of the performance measures have been developed as a part of this MTP and, as such, many of the measures will not have current results or status shown.

(ii) For metropolitan planning organizations that voluntarily elect to develop multiple scenarios, an analysis of how the preferred scenario has improved the conditions and performance of the transportation system and how changes in local policies and investments have impacted the costs necessary to achieve the identified performance targets.

How/where it has been addressed: Performance measures related to the Preferred Scenario have been developed and are listed in Part 6: Action Plan (System Performance).

450.324 (f)(5) Operational and management strategies to improve the performance of existing transportation facilities to relieve vehicular congestion and maximize the safety and mobility of people and goods;

How/where it has been addressed: Transportation operational and management strategies have been identified in Part 4: Regional Transportation System (Roadways & Structures), as well as identified in Part 6: Action Plan (Implementation Actions).

450.324 (f)(6) Consideration of the results of the congestion management process in TMAs that meet the requirements of this subpart, including the identification of SOV projects that result from a congestion management process in TMAs that are nonattainment for ozone or carbon monoxide.

How/where it has been addressed: Congestion management process has been integrated into the project evaluation criteria for the financially-constrained project list. More information can be found in Part 5: The Financial Plan and Technical Memorandum #5: Project Evaluation Process.

450.324 (f)(7) Assessment of capital investment and other strategies to preserve the existing and projected future metropolitan transportation infrastructure, provide for multimodal capacity increases based on regional priorities and needs, and reduce the vulnerability of the existing transportation infrastructure to natural disasters. The metropolitan transportation plan may consider projects and strategies that address areas or corridors where current or projected congestion threatens the efficient functioning of key elements of the metropolitan area's transportation system.

How/where it has been addressed: Congestion considerations have been integrated into the project evaluation criteria for the financially-constrained project list. More information can be found in Part 5: The Financial Plan and Technical Memorandum #5: Project Evaluation Process.

450.324 (f)(8) Transportation and transit enhancement activities, including consideration of the role that intercity buses may play in reducing congestion, pollution, and energy consumption in a cost-effective manner and strategies and investments that preserve and enhance intercity bus systems, including systems that are privately owned and operated, and including transportation alternatives, as defined in 23 U.S.C. 101(a), and associated transit improvements, as described in 49 U.S.C. 5302(a), as appropriate;

How/where it has been addressed: Part 4: Regional Transportation System (Alternative Transportation) includes several

innovative mobility solutions that are emerging in the region, as well as several strategies for furthering intercity travel within the region.

450.324 (f)(9) Design concept and design scope descriptions of all existing and proposed transportation facilities in sufficient detail, regardless of funding source, in nonattainment and maintenance areas for conformity determinations under the EPA's transportation conformity regulations (40 CFR part 93, subpart A). In all areas (regardless of air quality designation), all proposed improvements shall be described in sufficient detail to develop cost estimates;

How/where it has been addressed: Detailed project scope has been provided for all projects listed within the 2050 MTP and can be found in Technical Memorandum #6: Detailed Project List.

450.324 (f)(10) A discussion of types of potential environmental mitigation activities and potential areas to carry out these activities, including activities that may have the greatest potential to restore and maintain the environmental functions affected by the metropolitan transportation plan. The discussion may focus on policies, programs, or strategies, rather than at the project level. The MPO shall develop the discussion in consultation with applicable Federal, State, and Tribal land management, wildlife, and regulatory agencies. The MPO may establish reasonable timeframes for performing this consultation;

How/where it has been addressed: A discussion on the types of environmental mitigation activities and potential policies, programs, and strategies have been included in Part 3: Regional Context (Land Use; Environment); Part 6: Action Plan (Implementation Plan). Additionally, environment impact considerations have been integrated into the project evaluation criteria for the financially-constrained project list (see Technical Memorandum #5: Project Evaluation Process).

450.324 (f)(11) A financial plan that demonstrates how the adopted transportation plan can be implemented.

(i) For purposes of transportation system operations and maintenance, the financial plan shall contain system-level estimates of costs and revenue sources that are reasonably expected to be available to adequately operate and maintain the Federal-aid highways (as defined by 23 U.S.C. 101(a)(5)) and public transportation (as defined by title 49 U.S.C. Chapter 53).

How/where it has been addressed: A description of the financial analysis process for the 2050 MTP can be found in Part 5: Financial Plan (Financial Outlook) and Technical Memorandum #4: Financial Analysis and Funding Resources.

(ii) For the purpose of developing the metropolitan transportation plan, the MPO, public transportation operator(s), and State shall cooperatively develop estimates of funds that will be available to support metropolitan transportation plan implementation, as required under § 450.314(a). All necessary financial resources from public and private sources that are reasonably expected to be made available to carry out the transportation plan shall be identified.

How/where it has been addressed: A description of the financial analysis process for the 2050 MTP can be found in Part 5: Financial Plan (Financial Outlook) and Technical Memorandum #4: Financial Analysis and Funding Resources.

(iii) The financial plan shall include recommendations on any additional financing strategies to fund projects and programs included in the metropolitan transportation plan. In the case of new funding sources, strategies for ensuring their availability shall be identified. The financial plan may include an assessment of the appropriateness of innovative finance techniques (for example, tolling, pricing, bonding, public private partnerships, or other strategies) as revenue sources for projects in the plan.

How/where it has been addressed: Additional funding strategies can be found in Part 5: Financial Plan (Financing Opportunities).

(iv) In developing the financial plan, the MPO shall take into account all projects and strategies proposed for funding under title 23 U.S.C., title 49 U.S.C. Chapter 53 or with other Federal funds; State assistance; local sources; and private participation. Revenue and cost estimates that support the metropolitan transportation plan must use an inflation rate(s) to reflect ''year of expenditure dollars,'' based on reasonable financial principles and information, developed cooperatively by the MPO, State(s), and public transportation operator(s).

How/where it has been addressed: A description of the financial analysis process for the 2050 MTP can be found in Part 5: Financial Plan (Financial Outlook) and Technical Memorandum #4: Financial Analysis and Funding Resources.

(v) For the outer years of the metropolitan transportation plan (i.e., beyond the first 10 years), the financial plan may reflect aggregate cost ranges/ cost bands, as long as the future funding source(s) is reasonably expected to be available to support the projected cost ranges/cost bands.

How/where it has been addressed: A description of the financial analysis process for the 2050 MTP can be found in Part 5: Financial Plan (Financial Outlook) and Technical Memorandum #4: Financial Analysis and Funding Resources.

(vi) For nonattainment and maintenance areas, the financial plan shall address the specific financial strategies required to ensure the implementation of TCMs in the applicable SIP.

How/where it has been addressed: Not applicable.

(vii) For illustrative purposes, the financial plan may include additional projects that would be included in the adopted transportation plan if additional resources beyond those identified in the financial plan were to become available.

How/where it has been addressed: A list of illustrative projects has been included in Part 5: Financial Plan (Illustrative Projects)

(viii) In cases that the FHWA and the FTA find a metropolitan transportation plan to be fiscally constrained and a revenue source is subsequently removed or substantially reduced (i.e., by legislative or administrative actions), the FHWA and the FTA will not withdraw the original determination of fiscal constraint; however, in such cases, the FHWA and the FTA will not act on an updated or amended metropolitan transportation plan that does not reflect the changed revenue situation.

How/where it has been addressed: Not applicable.

450.324 (f)(12) Pedestrian walkway and bicycle transportation facilities in accordance with 23 U.S.C. 217(g).

How/where it has been addressed: A inventory and current conditions reports on pedestrian walkways and bicycle facilities can be found in Part 4: Regional Transportation System (Alternative Transportation).

450.324 (g) The MPO shall consult, as appropriate, with State and local agencies responsible for land use management, natural resources, environmental protection, conservation, and historic preservation concerning the development of the transportation plan. The consultation shall involve, as appropriate:

(1) Comparison of transportation plans with State conservation plans or maps, if available; or

(2) Comparison of transportation plans to inventories of natural or historic resources, if available.

How/where it has been addressed: The MPO has provided descriptions on land use management, natural resources, environmental protection, conservation, and historic preservation practices and initiatives in Part 3: Regional Context (Land Use; Environment). Additionally, these were taken under consideration during the evaluation process of the fiscally-constrained project list (see Technical Memorandum #5: Project Evaluation Process).

450.324 (h) The metropolitan transportation plan should integrate the priorities, goals, countermeasures, strategies, or projects for the metropolitan planning area contained in the HSIP, including the SHSP required under 23 U.S.C. 148, the Public Transportation Agency Safety Plan required under 49 U.S.C. 5329(d), or an Interim Agency Safety Plan in accordance with 49 CFR part 659, as in effect until completion of the Public Transportation Agency Safety Plan, and may incorporate or reference applicable emergency relief and disaster preparedness plans and strategies and policies that support homeland security, as appropriate, to safeguard the personal security of all motorized and nonmotorized users.

How/where it has been addressed: Public transportation goals and strategies have been included throughout the MTP including in the following sections: Part 2: Planning Framework (Preferred Scenario; Goals & Objectives), Part 4: Regional Transportation System (Alternative Transportation); Part 5: Financial Plan; and Part 6: Action Plan (Implementation Plan; System Performance).

450.324(i) An MPO may, while fitting the needs and complexity of its community, voluntarily elect to develop multiple scenarios for consideration as part of the development of the metropolitan transportation plan.

How/where it has been addressed: As part of the 2050 MTP development process, five alternative scenarios were developed and considered. More information can be found in Part 1: Introduction; Part 2: Planning Framework (Preferred Scenario); and Technical Memorandum #2: Scenario Planning.

450.324(i)(1) An MPO that chooses to develop multiple scenarios under this paragraph (i) is encouraged to consider:

(i) Potential regional investment strategies for the planning horizon;

(ii) Assumed distribution of population and employment;

(iii) A scenario that, to the maximum extent practicable, maintains baseline conditions for the performance areas identified in §450.306(d) and measures established under 23 CFR part 490;

(iv) A scenario that improves the baseline conditions for as many of the performance measures identified in §450.306(d) as possible;

(v) Revenue constrained scenarios based on the total revenues expected to be available over the forecast period of the plan; and

(vi) Estimated costs and potential revenues available to support each scenario.

How/where it has been addressed: All of the consideration and a description of the scenario planning process that was undertaken for the 2050 MTP can be found in Technical Memorandum #2: Scenario Planning Process.

450.324(i)(2) In addition to the performance areas identified in 23 U.S.C. 150(c), 49 U.S.C. 5326(c), and 5329(d), and the measures established under 23 CFR part 490, MPOs may evaluate scenarios developed under this paragraph using locally developed measures.

How/where it has been addressed: The MPO has developed several regional-defined performance measures, which can be found in Part 6: Action Plan (System Performance).

450.324(j) The MPO shall provide individuals, affected public agencies, representatives of public transportation employees, public ports, freight shippers, providers of freight transportation services, private providers of transportation (including intercity bus operators, employer-based commuting programs, such as carpool program, vanpool program, transit benefit program, parking cashout program, shuttle program, or telework program), representatives of users of public transportation, representatives of users of pedestrian walkways and bicycle transportation facilities, representatives of the disabled, and other interested parties with a reasonable opportunity to comment on the transportation plan using the participation plan developed under § 450.316(a).

How/where it has been addressed: See Technical Memorandum #1: Public Engagement Process for a full description of the engagement efforts undertaken by the MPO during the development of the 2050 MTP.

450.324(k) The MPO shall publish or otherwise make readily available the metropolitan transportation plan for public review, including (to the maximum extent practicable) in electronically accessible formats and means, such as the World Wide Web.

How/where it has been addressed: The 2050 MTP was made available for public review on the Region 1 Planning Council website from May 15, 2020 to June 29, 2020.

450.324(l) A State or MPO is not required to select any project from the illustrative list of additional projects included in the financial plan under paragraph (f)(11) of this section.

How/where it has been addressed: Not applicable.

450.324(m) In nonattainment and maintenance areas for transportation related pollutants, the MPO, as well as the FHWA and the FTA, must make a conformity determination on any updated or amended transportation plan in accordance with the Clean Air Act and the EPA transportation conformity regulations (40 CFR part 93, subpart A). A 12-month conformity lapse grace period will be implemented when an area misses an applicable deadline, in accordance with the Clean Air Act and the transportation conformity regulations (40 CFR part 93, subpart A). At the end of this 12-month grace period, the existing conformity determination will lapse. During a conformity lapse, MPOs can prepare an interim metropolitan transportation plan as a basis for advancing projects that are eligible to proceed under a conformity lapse. An interim metropolitan transportation plan consisting of eligible projects from, or consistent with, the most recent conforming transportation plan and TIP may proceed immediately without revisiting the requirements of this section, subject to interagency consultation defined in 40 CFR part 93, subpart A. An interim metropolitan transportation plan containing eligible projects that are not from, or consistent with, the most recent conforming transportation plan and TIP must meet all the requirements of this section.

How/where it has been addressed: Not applicable.

A. Contents & General Requirements

A Long Range Transportation Plan (LRTP), also known as a Metropolitan Transportation Plan (MTP), is a federally required planning document that serves as the guiding force for a region's transportation planning decisions. 23 CFR 450.322 and 49 CFR 613.100 state that the metropolitan planning process shall provide for the establishment and use of a performance-based approach to transportation decision-making to support the national goals. The LRTP is a significant contributor to that performance-based approach. This includes the use of developing a preferred scenario, travel demand modeling, population forecasting and many other planning efforts to anticipate demographic, population, mode and many more changes within the horizon year of the LRTP. The LRTP shall include a description of the performance measures and performance targets used in assessing the performance of the transportation system in accordance with 23 CFR 450.306(d). IDOT encourages MPOs to consider the LRTP as a document for how planning decisions are made at the regional level. The federal requirements are as follows:

1. Eight planning factors must be considered in the planning process as a potential basis for developing plan goals, objectives, and performance measures. These eight planning factors should be used to guide the discussion in formulating the LRTP goals not merely translated into the goals of the LRTP.

   How/where it has been addressed: The ten Federal planning factors are reflected in the 2050 MTP's goals and objectives (see Part 2: Planning Framework), as well as incorporated into the fiscally-constrained evaluation criteria (found in Technical Memorandum #5: Project Evaluation Process).

2. Consultation with various interested parties: As detailed below, various elements of the LRTP must be coordinated with appropriate agencies as specified in 23 USC 134 and 49 USC 5303, and other interested parties must be provided with a reasonable opportunity to comment on the transportation plan. MPOs shall, to the maximum extent possible, hold meetings at convenient and accessible locations and times; employ visualization techniques to describe plans' and make public information available in electronically accessible format and means. Some of the agencies that might be consulted for participation in the LRTP process are listed below:

   i. Federal, State, tribal, wildlife, land management, and regulatory agencies for potential environmental mitigation activities;

   ii. Transit operators and the state for estimates of funds that will be available to support plan implementation;

   iii. State and local agencies responsible for "land use management, natural resources, environmental protection, conservation, and historic preservation", as appropriate.

   iv. Air quality agencies in metropolitan areas that are designated as nonattainment for specific air pollutants, and

   v. All other interested parties including "citizens , affected public agencies, representatives of public transportation employees, freight shippers, providers of freight transportation services, private providers of transportation, representatives of users of pedestrian walkways and bicycle transportation facilities, and persons with disabilities, and other interested parties with a reasonable opportunity to comment" on the plan.

   How/where it has been addressed: Technical Memorandum #1: Public Engagement Process provides a full description of the engagement efforts undertaken by the MPO during the development of the 2050 MTP.

3. Identification and assessment of human and natural environments including but not limited to community assessment, cultural resources, historic resources, farmlands, wetlands and /or ecosystem and wildlife habitat as appropriate.

   How/where it has been addressed: Part 3: Regional Context provides descriptions of the human and natural resources found within the region.

4. Discussion of environmental mitigation activities and potential areas in which to carry out these activities.

   How/where it has been addressed: Part 3: Regional Context (Land Use, Environment) discusses environment mitigation activities and potential areas. Additionally, Part 4: Regional Transportation System (Roadways & Structures) provides a discussion on resiliency activities and possible initiatives/activities.

5. Analysis of Equity and Environmental Justice

   i. Title VI of the 1964 Civil Rights Act 42 USC 2000d-1 prohibits recipients of federal financial assistance from taking actions that discriminate on the basis of race, sex, color, national origin, or religion. Title VI bars intentional discrimination as well as disparate impact discrimination (i.e., a neutral policy or practice that has a disparate impact on protected groups).

   ii. Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, further amplifies Title VI by providing that "each Federal agency shall make achieving environmental justice a part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health

or environmental effects of its programs, policies, and activities on minority populations and low-income populations". These requirements apply not only during project development, but also to the processes and products of statewide and metropolitan transportation planning, such as the development of transportation plans.

How/where it has been addressed: Title VI and EJ considerations were included in the public engagement process of the 2050 MTP development (see Technical Memorandum #1: Public Engagement Process), as well as within the evaluation criteria for the fiscally-constrained project list (see Technical Memorandum #5: Project Evaluation Process).

B. Fiscal Constraint & Financial Planning

LRTPs must include a financial plan identifying the revenue that is reasonably expected to be available for the specific projects and initiatives included in the plan. Part of this is determining available funding for proposed projects. Both revenues and expenditures should be in Year of Expenditure dollars. The LRTP must be fiscally constrained, meaning, the cost of implementing the proposed transportation improvements, operations, and facility maintenance included in the plan must not exceed the level of reasonably expected revenue. It is important to note that if funding shortfalls do occur, MPOs may not be required to alter the funding forecasts to meet the financial demands of fiscally constrained planned projects or revise the fiscally constrained planned project(s). Federal regulation requires that financial plans be based on future reasonably expected funding for transportation uses. Revenue projections should be based on data reflecting the existing and historical situation. However, the LRTP can identify and suggest additional funding strategies that may not exist yet, but might be available in the future. Since it is typical for proposed LRTP projects to exceed the amount of funding reasonably expected to be available, those projects may be identified for illustrative purposes as priority projects that would be implemented in the metropolitan area if additional revenues were identified.

How/where it has been addressed: A description of the financial analysis process for the 2050 MTP can be found in Part 5: Financial Plan (Financial Outlook) and Technical Memorandum #4: Financial Analysis and Funding Resources.

C. Horizon or Life Span of the Plan

Federal regulation 23 CFR 450.322 requires that "the metropolitan transportation planning process shall include the development of a transportation plan addressing no less than a 20-year planning horizon.

How/where it has been addressed: This plan addresses a horizon of 2050 (30 years from adoption).

D. Development Process

Development of the LRTP will differ between MPOs. MPOs should cultivate their own development process, ensuring that the requirements listed in this section are met and the planning process is cooperative, continuous, and comprehensive. IDOT, and specifically the Metro Manager, will participate in the development as well as work with MPOs to assist in determining these processes if needed.

How/where it has been addressed: A brief description of the development process undertaken can be found in Part 1: Introduction (Planning Process).

E. Update Requirements

Updating a LRTP (every 4 years in an air quality nonattainment area and every 5 years in an attainment area) is an important part of the metropolitan planning process and is required per 23 CFR 450.322 (c) of the planning process. The purpose of updating the LRTP is to ensure that the document is valid and consistent with current and forecasted transportation and land use conditions, ensure that the financial plan is still fiscally constrained, and reflect changes in performance measures.

How/where it has been addressed: This is an update to the 2040 LRTP (adopted in 2015).

MPO committees should take time to think about the goals and objectives stated in the LRTP. Committees should reaffirm existing goals and objectives or revise them as the regional situation and priorities require. These goals and objectives should guide all other transportation planning processes- ensuring they are correct and relevant is vitally important to the planning process. Updates require public involvement and MPO Policy Committee approval.

How/where it has been addressed: The goals and objectives were discussed at the June 20, 2019 MPO Technical Committee and at the June 27, 2019 MPO Policy Committee meetings.

F. Approval

MPOs alone approve LRTPs which reflects the importance of developing regionally agreed upon goals, metrics, and strategies. However, while U.S. DOT and IDOT do not approve LRTPs, planning funds and project development approvals may be at risk if LRTP requirements are not satisfied. Typically, U.S. DOT would act through the certification review process or the STIP approval process to formally take action against LRTP deficiencies.

How/where it has been addressed: The adopted 2050 MTP will be sent to FHWA and IDOT for final approval.

Rockford, Illinois TMA Certification Review (2016)

2-1. Organizational Structure of Study Area

Finding **Regional leaders are encouraged to continue examining various modes of regional planning to maximize effectiveness and efficiency.**

Recommendation: Clearly define authorities of MPO Policy Committee as part of any restructuring to a Regional Planning Commission model.

How/where it has been addressed: The authorities of the MPO Policy Committee as part of the restructuring to a Regional Planning Council are defined in the "Cooperative Agreement Forming and Empowering the Rockford Metropolitan Planning Agency" (dated August 23, 2018) and in the "Bylaws of the Region 1 Planning Commission" (dated December 19, 2019).

2-4. Unified Work Program

Finding **Reimbursement of federal planning funds has exceeded MAP-21 requirements.**

Recommendation: IDOT should consider defining MPO reimbursements as capital expense for State appropriation purposes.

How/where it has been addressed: The MPO follows the guidelines for reimbursements as outlined in the "IDOT Metropolitan Planning Organization Cooperative Operations Manual (dated February 3, 2020).

2-5. Transportation Planning Process

Finding **MAP-21 Rulemaking will be finalized early in the new Certification cycle.**

Recommendation: RMAP should continue to work closely with Federal, State, Transit, and local partners as Performance Measurement and Metropolitan Planning Rulemaking is finalized.

How/where it has been addressed: On May 3, 2018, the MPO Policy Committee adopted the "Intergovernmental Agreement between IDOT, Region 1 Planning Council (MPO), Rockford Mass Transit District (RMTD), and Boone County". The intergovernmental agreement establishes that the four identified agencies will coordinate and development a performance-based approach to planning in order to address the performance measures, as required in 23 CFR 450.314(h) and the "Statewide and Nonmetropolitan Transportation Planning; Metropolitan Transportation Planning" Final Rule.

Finding **HSTP update can be better coordinated.**

Recommendation: Cycle Human Service Transportation Plan (HSTP) updates in proximity to the LRTP, include selected projects in the HSTP document.

How/where it has been addressed: On July 20, 2017, the MPO Policy Committee adopted the current version of the Coordinated Public Transit – Human Services Transportation Plan. The MPO plans to update the HSTP on a three-year cycle and will begin the next update process starting in Summer 2020 (FY 2021).

2-6. Long Range Transportation Plan

Finding **Scenario Planning could better coordinate planning efforts.**

Recommendation: The RMAP should use scenario planning to implement the LRTP consistent with the Regional Plan for Substantial Development (RPSD).

How/where it has been addressed: The Rockford MPO utilized scenario planning to develop the regional vision, goals, and strategies for the 2050 Metropolitan Transportation Plan (MTP). The exact process was developed by examining best practice nationally and reviewing FHWA's Scenario Planning Guidebooks. The MPO used the Visioning scenario planning process which emphasizes desired outcomes rather than focusing on the external forces and uncertainty. The MPO ensured that the Preferred Scenario for the MTP aligns with the goals and strategies of the RPSD. More information on the scenario planning process can be found in Technical Memorandum #2: Scenario Planning Process. Additionally, the MPO aligned many of the goals and strategies of the 2050 MTP and future initiatives with the goals and strategies outlined in the RPSD. These connections can be found in Part 2: Planning Framework.

Finding **Benefit-Cost Analysis or comparable analysis is not apparent in project selection processes.**

Recommendation: The RMAP should reevaluate the methodology for rating and selecting major capital investment projects in the LRTP.

How/where it has been addressed: For the 2050 MTP update, the MPO has developed an evaluation process for the fiscally-constrained project list. The purpose of this process was to evaluate potential roadway and structure projects for programming and funding. The evaluation criteria determined if and to what extent each project adequately addresses the region's transportation needs and goals, as outlined in the 2050 MTP. More information on the project evaluation criteria for the 2050 MTP can be found in Technical Memorandum #5: Project Evaluation Process.

Finding **Commuter Rail project is fiscally unconstrained.**

Recommendation: The LRTP must be updated to demonstrate fiscal constraint for the commuter rail project for the project to advance.

How/where it has been addressed: The Chicago-Rockford intercity passenger rail project is currently being funded under the 2019 Rebuild Illinois Capital Plan and can attribute some of its development to a concurrent study of commuter rail services for the Rockford Region. Since the 2019 Rebuild Illinois Capital Bill, IDOT is moving forward with the intercity passenger rail service. As a result, it is anticipated that this project would provide the initial infrastructure needed for commuter rail service, as outlined in the initial NICTI reports.

2-7. Financial Planning

Finding **Section 5339 projects are not found in the TIP.**

Recommendation: Section 5339 projects must be programmed in the TIP.

How/where it has been addressed: Section 5339 projects are programmed within the transit tables of annual TIP documents.

2-8. Air Quality

Finding **New ozone standards could affect the region.**

Recommendation: Monitor non-attainment designation process.

How/where it has been addressed: MPO regularly monitors levels of ozone as new data becomes available from the US EPA.

2-9. TIP & Project Selection

Finding **Performance based programming should be advanced.**

Recommendation: Regional programming of Surface Transportation Program –Urban (STP-U) and Transportation Alternative Program (TAP) funds should consider agreed upon metrics.

How/where it has been addressed: In 2017, the MPO undertook an extensive update to its selection and priority process for the regionally allocated Surface Transportation Block Grant (STBG) funds. As a part of that update, the MPO developed a set of project selection guidelines, including project selection criteria. These guidelines set the parameters by which the MPO selects the projects submitted by member agencies to receive federal STBG funding. In 2018, the MPO undertook a similar process for the regionally allocated Transportation Alternatives Set-aside program, known locally as the Transportation Alternatives Program (TAP). The TAP project selection guidelines and project selection criteria were updated in this process. Both of the update process occurred in close coordination with the STBG Working Group, an ad hoc group formed of members of the MPO Technical Committee. In both instances, the selection criteria was recommended by the MPO Technical Committee and subsequently adopted by the MPO Policy Committee.

2-10. Public Outreach & Public Involvement

Finding **The RMAP website is underutilized.**

Recommendation: Incorporate use of social media in public participation efforts.

How/where it has been addressed: Since the 2016 Rockford TMA Certification Review, a new website has been created for the MPO. The website contains the same materials as the previous website but has been expanded to include several new features, such as the Interactive Transportation Improvement Program (TIP) map. Additionally, the RPC's Facebook account

regularly publishes MPO materials and transportation-related messaging. Social media strategies have been incorporated into the current Public Participation Plan (2018) and played a significant role in the public engagement process of the MTP, which can be read about in Technical Memorandum #1: Public Engagement Process.

Finding **Section 5307 program of projects is not adequately publicized.**

Recommendation: Provide statement in TIPs and PPP that they are being used to satisfy the Section 5307 program of projects public notification requirements.

How/where it has been addressed: The Section 5307 program of projects is listed within the annual TIP, which follows the public notification process as outlined in the Public Participation Plan (PPP).

2-12. Title VI & 3-1. Environmental Justice

Finding **Improve benefits and burdens analysis.**

Recommendation: Analyze discrepancies between disadvantaged communities and other regional populations in travel distances and times by mode.

How/where it has been addressed: On February 29, 2019, the MPO Policy Committee adopted the current version of the Title VI and Environmental Justice Considerations. As a part of the update to this report, the MPO calculated thresholds for the metropolitan planning area (MPA), to be used for determining areas with Traditionally Underserved Populations (TUP) that may be particularly impacted by a transportation/transit service change or facility improvement. In addition to this calculation the document provides examples of possible benefits, burdens, and mitigation strategies based on proposed project types. The intent of the analysis is to judge how well the benefits and burdens generated by TIP projects are balanced between areas with high concentrations of TUPs, and all other areas of the MPA.

2-13. Congestion Management Process

Finding **CMP strategies are not given substantive consideration.**

Recommendation: Document steps taken when considering strategies to reduce congestion and SOV demand during systems planning and project selection.

How/where it has been addressed: As outlined in the FY 2021 Unified Work Program (UWP), the MPO will be undertaking a comprehensive update to its 2008 Transportation System Management and Operations (TSMO) and the Congestion Management Process. The overarching goal of this project is to further strengthen linkages between operations and planning of the regional transportation system to solve operational problems, improve system performance, improve communication across transportation agencies, and prepare for the incorporation of emerging technology. The plan will identify key transportation performance measures of relevance to the region, coordinate with transportation system operators and providers to collect appropriate data for those measures, compile and analyze the data, and develop a set of preferred TSMO solutions to be incorporated into the transportation planning process.

2-14. List of Obligated Projects

Finding **The Rockford Mass Transit District (RMTD) entries use disbursements and not obligations.**

Recommendation: Annual RMTD obligations must be differentiated from disbursements.

How/where it has been addressed: Annual RMTD obligations and disbursements have been delineated within the Annual Listing of Federally Obligated Projects.

Finding **Federal Listing of Obligated Projects document not considered effective for generating public engagement.**

Recommendation: Highlight project impacts to prioritized performance measures.

How/where it has been addressed: As projects within the Transportation Improvement Program (TIP) and the Annual Listing of Federally Obligated Projects are implemented, the MPO will be tracking and comparing their impacts on meeting the federal performance targets.

2-15. Environmental Mitigation

Finding **Continue integration of planning and environmental review processes.**

Recommendation: Follow through on proposed GREEN Strategy Action to environmentally screen projects.

How/where it has been addressed: The MPO has continued to integrate transportation planning with environmental initiatives in the region. Currently, the MPO actively participates on the RPC's Environmental Planning Committee. Additionally, environmental considerations have been included within the selection criteria for the MPO's Surface Transportation Block Grant (STBG) program and the Transportation Alternatives Program (TAP). Environmental considerations are also discussed within the 2050 MTP update (see Part 3: Regional Context) as well as the project evaluation criteria for the fiscally-constrained project list. More information on environmental considerations in the project evaluation criteria can be found in Technical Memorandum #5: Project Evaluation Criteria.

3-13. Livability & Sustainability

Finding **Vital Signs website is not functional.**

Recommendation: Site should be updated or taken down from public access.

How/where it has been addressed: The site has been taken down from public access.

Finding **There are inconsistencies between the RPSD and the LRTP.**

Recommendation: Implement RPSD and rectify inconsistencies with LRTP.

How/where it has been addressed: The MPO has incorporated several elements of the RPSD within the 2050 MTP, including aligning the goals and strategies of the two planning documents, as well as identifying future planning efforts, such as the Livable Communities Initiative, that would further the implementation of these two documents. These connections can be found in Part 2: Planning Framework and Part 6: Action Plan.

Rockford, Illinois TMA Certification Review (2020)

2-1. Organizational Structure of Study Area

Commendation The region is **commended** for the incorporation of the Region One Planning Council that will serve as the operational foundation for the MPO. This organizational structure will provide the transportation planning process with access to greater technical resources including research and analysis and further integrate the MPO mission with efforts of community leaders across the policy spectrum.

Observation Proxy representation at MPO Policy Committee meetings is common. Executives on the MPO Policy Committee are encouraged to attend meetings and limit the use of proxy representation.

Recommendation: It is **recommended** that MPO staff actively track member attendance and present alternate meeting logistics if repeated proxy representation is necessary under current practices.

How/where it has been addressed: Beginning in 2020, the MPO Policy Committee made several changes to the logistics of its regularly scheduled meetings, including the frequency of meetings and the date and timing of the meetings. Previously, the MPO Policy Committee meet on the fourth Thursday of each month at 1:30 PM. MPO Policy Committee meetings are now held on the last Friday of even months (February, April, June, August, October, and December) at 8:30 AM CST. Additional meetings are held on an as needed basis. The MPO will continue to track member attendance under the newly incorporated practices.

Commendation The R1PC and the Rockford Mass Transit District (RMTD) are **commended** for funding a joint position that supports MPO transit planning and RMTD operations planning and analysis.

Commendation The R1PC staff are **commended** for their participation and leadership in community organizations, particularly young professionals groups such as IGNITE Rockford and Next Rockford. Staff have also participated in Planners Network activities such as speaking at area high schools.

Recommendation While there is considerable cross-pollination among the various policy boards under the Regional Planning Council framework, US DOT **recommends** that each of the policy level bodies is routinely informed of the actions and deliberations of the other policy bodies.

How/where it has been addressed: Under the Regional Planning Council (RPC) framework, the Governing Board (comprised of the policy-level bodies of the MPO, EDD, and WinGIS) meets on a quarterly basis. Under the structure of the Governing Board meetings, the Policy

2-2. Metropolitan Area Planning Boundaries

Commendation The R1PC is **commended** for its active leadership in Census 2020 including forming the Regional Complete Count Committee and in serving as a Regional Intermediary for the Illinois Census Office 2020 Grant Program.

2-4. Unified Work Program

Observation MPOs that receive State Planning Funds to provide for the local match to Federal planning funds have previously become over reliant on such funding.

Recommendation: It is **recommended** that the local governments are annually notified of what their share of the match would be without the discretionary State funding.

How/where it has been addressed: As a part of the annual update to the Unified Work Program, MPO staff will present to the MPO Policy Committee on their share of match with discretionary State funding, as well as their share of match if the discretionary State funding would become unavailable.

Commendation The US DOT **commends** the IDOT Metropolitan Planning Manager who has received considerable praise from MPO staff for assistance and support in helping the MPO navigate and comply with the Illinois Grant Accountability and Transparency Act (GATA).

Observation It is noted that R1PC efforts to comply with GATA are costing the agency approximately $50,000 annually in accountant fees that would otherwise be used for advancing regional planning priorities.

2-6. Metropolitan Transportation Plan

Commendation The MPO is **commended** for the emphasis on data and analysis contributing towards the development of Plan 2050. In particular, the integration between the region's travel demand model and economic model (REMI) has allowed detailed analysis of the impacts of different growth rates considered in the different planning scenarios. The IDOT is also **commended** for its continued support of the region's modeling efforts through discretionary State Planning and Research funding.

Commendation The MPO is **commended** for it advancement of wide-ranging scenario planning options throughout the development and public outreach for Plan 2050. Considerable effort has been expended in analysis of a range of potential priorities as a preferred scenario is considered.

2-7. Financial Planning

Recommendation It is **recommended** that costs to maintain and operate the region's legacy transportation systems be clearly articulated in the Metropolitan Transportation Plan and the Transportation Improvement Program.

How/where it has been addressed: The MPO has incorporated a table with the anticipated expenditures to be spent over the next thirty years in maintaining and operating the system. This table summaries costs by improvement type and was developed based upon the fiscally-constrained project list within the 2050 MTP. This table can be found in Part 5: The Financial Plan (Fiscally-Constrained Projects). A similar table will be incorporated into future iterations of the Transportation Improvement Program.

2-9. Transportation Improvement Program Development and Project Selection

Corrective Action Consistent with the FAST act, US DOT expects the MPO's use of Surface Transportation Block Group (STBG) program funding to support performance based planning and programming. All future STBG funding shall be programmed utilizing a committee process that considers the adopted MPO STBG project selection criteria.

How/where it has been addressed: In August 2019, the MPO Policy Committee approved an update to the "Project Selection and Programming Process for STBG Funds." This document was created to establish the procedure and criteria for the selection of projects to be funded with the portion of the Surface Transportation Block Grant Program funds annually allocated to the Rockford Urbanized Area. This document will be published as a part of future STBG Call for Project programs. Any amendments or updates to this document will be discussed by the MPO's STBG Working Group, MPO Technical Committee, and formally adopted by the MPO Policy Committee prior to a STBG Call for Project.

Corrective Action The adoption of the FY 2021 Transportation Improvement Plan (TIP) is expected to identify the region's balance of STBG funds.

How/where it has been addressed: The MPO will publish the region's balance of STBG funds within the next iteration of the annual Transportation Improvement Program (FY 2021 - 2024 Transportation Improvement Program).

Commendation The MPO is **commended** for the successful implementation of the interactive TIP which is user friendly and visually appealing while providing substantive information.

2-10. Public Outreach & Participation

Commendation The R1PC is **commended** for the emphasis placed on public outreach and engagement ranging from its organizational structure to the development and execution of its plans and programs and including the development of Plan 2050.

Recommendation The MPO is **recommended** to review FHWA resources related to virtual public involvement (VPI). These VPI resources aim to help agencies facilitate community engagement using different technologies. While Plan 2050 has already made successful use of online surveys, other techniques such as mobile applications, dashboards, and virtual town halls may be effective alternatives when in-person interactions are not possible.

How/where it has been addressed: On June 17, 2020, the MPO hosted its first virtual public meeting for the 2050 Metropolitan Plan's public comment period. A link to the virtual meeting was sent out to the RPC's various mailing lists, along with a press release and social media posts to promote the event. The MPO will continue to research and further incorporate virtual public involvement into its planning process. More information on the virtual public

meeting held for the 2050 MTP can be found in Technical Memorandum #1: Public Engagement Process.

2-14. List of Obligated Projects

Observation There is no evidence that the planning process uses the results of the Obligations report in any meaningful way.

Recommendation: It is **recommended** that R1PC should continue to explore ways to make award and obligation data informative and useful to future investment and policy decisions.

How/where it has been addressed: The MPO will further research ways make the award and obligation data presented in federally-required planning document more informative for both to the public, as well as an analysis tool for future investment and policy decisions, such as an annual report that focuses on the impacts of project implementation.

2-17. Transportation Systems Management and Operations

Recommendation As the scenarios are considered through the planning process and a preferred scenario is adopted in the Plan, it is **recommended** that periodic assessment of the effectiveness of associated M&O strategies should be made.

How/where it has been addressed: Beginning in FY 2021, the MPO will begin the process of updating the 2008 Transportation System Management & Operations Plan (TSMO). To achieve an objectives-driven, performance-based approach to TSMO planning in the region, the plan will identify key transportation performance measures, coordinate with transportation system operators and providers to collect appropriate data for those measures, compile and analyze the data, and develop a set of preferred TSMO solutions to be incorporated into the transportation planning process, as well as track the effectiveness of those solutions through the System Performance Report. More information on the TSMO Plan can be found in Part 4: Regional Transportation System and information on the System Performance Report can be found in Part 6: The Action Plan.

2-18. Transportation Safety Planning

Commendation The US DOT **commends** the region for ensuring that the safety of transportation system users is a top priority for transportation agencies in the region.

2-20. Transportation Safety Planning

Recommendation It is **recommended** that undesignated routes from the region's Critical Urban Freight Corridor proposal should remain highlighted in the planning process so that future designations may be considered.

How/where it has been addressed: The MPO has incorporated the designated Primary Critical Urban Freight Corridors (CUFC) in the region within the 2050 MTP, as well as a list of the requested corridors to be designated as CUFCs sent to IDOT in 2016. The list of proposed CUFCs within the MPA can be found in Part 4: Regional Transportation System (Freight and Urban Goods Movement).

Appendix C: 2050 MTP & Planning Document Connections

The following section provides a list of completed planning documents. Planning documents currently underway by partner agencies will be monitored and included in upcoming MPO planning initiatives and future iteriations of the metropolitan transportation plan.

Statewide Plans & Studies

Illinois Department of Transportation FY 2020-2025 Proposed Highway Improvement Program (2019)

IDOT's Multi-Year Improvement Program (MYP) provides Illinoisans and IDOT stakeholders with an improvement plan for Illinois' transportation system within a proposed six-year program. IDOT understands that the department needs to look at a full range of transportation options, evaluate how they affect mobility for users, assess the current infrastructure, prioritize needed improvements based on system performance metrics and then, with available revenue sources, strive to integrate them into the overall IDOT transportation strategy. Through IDOT's MYP, the department strives to provide details on the plan's funding, process, and proposed projects and initiatives that will preserve, maintain, improve, and expand Illinois' system. It is IDOT's expectation that these efforts continue to provide Illinois with safe, reliable, and accessible travel and freight options.

Connections to the 2050 MTP: Part 3: Regional Context (Land Use & Environment); Part 4: Regional Transportation System (Roadways & Bridges), and Part 5: Financial Plan (Funding)

Illinois State Freight Plan (2018)

The Illinois State Freight Plan provides data and analysis on the movement of goods and also identifies major freight corridors and bottlenecks. Also included in the document is a freight investment plan which shows the projects that will be funded with the freight formula funds provided under the FAST Act. These projects were selected through the Illinois Competitive Freight Program, which allowed stakeholders to submit freight projects for evaluation using a transparent set of eligibility and scoring criteria.

Connections to the 2050 MTP: Part 4: Regional Transportation System (Freight)

Illinois State Rail Plan Update (2017)

The Illinois State Rail Plan Update presents existing and future passenger and freight rail services and conditions in Illinois. The Plan formulates a state of Illinois vision describing the role of passenger and freight rail services in Illinois and illustrates what these services will look like in the future.

Connections to 2050 MTP: Part 4: Regional Transportation System (Alternative Transportation; Freight)

Illinois Statewide Public Transportation Plan (2018)

The Illinois Statewide Public Transportation Plan develops a vision for an integrated public transportation system that promotes mobility and access for people living, working, or visiting Illinois. The focus of this plan is the area of the state that lies outside of the six-county Chicago metropolitan area. The plan identifies goals, objectives, and strategies to meet the demand for services.

Connections to 2050 MTP: Part 4: Regional Transportation System (Alternative Transportation)

Long-Range Transportation Plan (2019)

The primary purpose of the Illinois Long-Range Transportation Plan (LRTP) is to provide strategic direction for the development of the Illinois transportation system. The LRTP vision for transportation in Illinois is to provide innovative, sustainable and multimodal transportation solutions that support local goals and grow Illinois' economy.

Connections to 2050 MTP: Part 1: Introduction (Scenario Planning) Part 2: Planning Framework (Goals & Strategies); Part 3: Regional Context (Land Use & Development); and Part 4: Regional Transportation System (Roadways & Bridges)

Strategic Highway Safety Plan (2017)

The Illinois' Strategic Highway Safety Plan (SHSP) is a statewide data driven plan developed in partnership by the Department and key safety stakeholders and includes comprehensive and coordinated safety strategies involving Engineering, Education, Enforcement, and Emergency Medical Services with the goal to eliminate all fatal and serious injury crashes on all Illinois roadways. The SHSP contains ten emphasis areas to focus resources and efforts based on data and improve the safety performance of roadways through design and traffic operations, change roadway user behavior through traffic law enforcement and education programs, and enhance emergency response as it relates to all public roads.

Connections to the 2050 MTP: Part 4: Regional Transportation System (Roadways & Bridges)

Transportation Asset Management Plan (2019)

The Transportation Asset Management Plan (TAMP) prioritizes the maintenance of roads and bridges to save the state — and taxpayers — money in the long run, exploring practices that prolong the life of assets and minimize life-cycle cost. This plan will guide IDOT's new approach to operating, maintaining and improving the state's vast network of highways and bridges.

Connections to 2050 MTP: Part 4: Regional Transportation System (Roadways & Bridges)

Regional Plans & Studies

Metropolitan Planning Organization

Bicycle & Pedestrian Plan for the Rockford Metropolitan Area (2017)

The purpose of the Bicycle and Pedestrian Plan is to promote a safe and efficient transportation network for people that provides a balanced multi-modal system minimizing costs and impacts to the taxpayer, society and the environment. The plan addresses the development of a region-wide system of on-street bicycle and pedestrian facilities to connect with existing shared use path facilities, existing and planned public transportation services and provide model development regulations and ordinances to promote and encourage bicycle- and pedestrian-friendly growth in the Rockford Metropolitan Planning Area (MPA).

Connections to the 2050 MTP: Part 2: Planning Framework (Preferred Scenario, Goals & Objectives, Livable Communities); Part 4: Regional Transportation System (Alternative Transportation)

Coordinated Public Transit – Human Services Transportation Plan (2017)

The Coordinated Public Transit-Human Services Transportation Plan (HSTP) is intended to identify needs and gaps in public transportation on services, particularly for seniors, individuals with disabilities, individuals with low incomes, and other transit-dependent populations in the MPA. The document also sets forth goals and steps to maintain or enhance the existing service levels, improve coordination and communication, improve educational outreach of transit providers and services, and lessen the financial, service, and infrastructure gaps of the transit system.

Connections to 2050 MTP: Part 2: Planning Framework (Goals and Objectives); Part 4: Regional Transportation System (Alternative Transportation); Part 5: Financial Plan

FY 2020-2024 Transportation Improvement Program (2019)

Created every year, this document details the transportation projects planned for the four fiscal years following its adoption. This includes all surface transportation projects receiving Federal and State funding, projects of regional significance, and public transportation operations and/or capital. Information provided includes project locations, cost, funding sources and lead agencies, amongst other details.

Connections to 2050 MTP: Part 4: Regional Transportation System (Roadways & Bridges) and Part 5: Financial Plan; Technical Memorandum #4: Financial Assumptions and Funding Sources

Greenways: A Green Infrastructure Plan for Boone and Winnebago Counties (2016)

The Greenways Plan promotes a regional greenway network that protects natural and cultural resources; provides alternative forms of transportation and recreational benefits; enhances environmental and scenic qualities; and stimulates economic development. The Greenways Plan lays the foundation for natural areas protection, balanced growth, and expanded transportation choices.

Connections to 2050 MTP: Part 2: Planning Framework (Goals and Objectives); Part 3: Regional Context (Land Use, Environment); and Part 4: Regional Transportation System (Alternative Transportation)

Public Participation Plan for the Rockford Metropolitan Planning Area (2018)

The purpose of Public Participation Plan (PPP) is to set forth the policies, procedures, methods and details for involving the general public and area transportation stakeholders in the transportation planning and programming activities of the Rockford Metropolitan Planning Organization (MPO) for the Rockford Metropolitan Area.

Connections to 2050 MTP: Part 1: Introduction (Public Engagement); Technical Memorandum #1: Public Engagement Process

Rockford Regional Freight Study (2007)

The Rockford Regional Freight Study was initiated to identify the actions and transportation projects that could be undertaken within the region to increase industrial development and job creation for the area. Further, this study examined the opportunity for the freight volumes currently bypassing the area traveling along major corridors to "stop for value added" by the unique and skilled work force in the greater Rockford/Belvidere area. The study also identified the intrinsic value of supply chain operations and role in the business success for area industries.

Connections to 2050 MTP: Part 4: Regional Transportation System (Freight System & Urban Goods Movement)

Rockford Region Vital Signs: Regional Plan for Sustainable Development (2014)

The Regional Plan for Sustainable Development (RPSD) puts forth an analysis and framework for promoting a sustainable community in the Rockford Region based upon the core principles of providing more transportation choices, promoting equitable and affordable housing, enhancing economic competitiveness, supporting existing communities, coordinating policies and leveraging investment, and valuing communities and neighborhoods in the Rockford MPA.

Connections to 2050 MTP: Part 2: Introduction (Goals and Objectives, Livable Communities Initiative); Part 3: Regional Context (Land Use, Environment); Part 4: Regional Transportation System (Roadways, Alternative Transportation, Freight); Part 6: Action Plan (Implementation Plan, System Performance)

Title VI and Environmental Justice Report (2019)

This Title VI and Environment Justice (EJ) Program reflects the Rockford MPO's commitment to implementing planning processes that are designed to protect against discrimination and to ensure that it provides fairness and consideration of issues impacting disadvantaged residents. It also provides a clear process that a resident may use if the individual feels that they have been discriminated against in one of RPC's programs or activities. Finally, the Title VI Program outlines the strategies and tools that the Rockford MPO utilizes to reach and involve all of its residents, including those who are historically harder to reach.

Connections to 2050 MTP: Part 1: Introduction (Planning Process); Part 3: Regional Context (Population & Employment); Technical Memorandum #1: Public Engagement Process; Technical Memorandum #5: Evaluation Criteria

Transportation System Management & Operations Plan (2008)

The goal of the TSMO Plan is to link operations and planning of the regional transportation system to solve operational problems, improve system performance, and improve communication across transportation-related agencies. There are many programs in the region that, in order to be successful, must cross functional and jurisdictional boundaries. These programs depend on an unprecedented level of collaboration, coordination, and integration to achieve optimum performance and truly benefit the region's residents, businesses and travelers.

Connections to 2050 MTP: Part 2: Planning Framework (Goals and Objectives; Performance Measures); Part 4: Regional Transportation System (Roadways & Bridges); Part 6: Action Plan (Implementation Plan, System Performance)

Economic Development District

Rockford Comprehensive Economic Development Strategy (2015)

Throughout this document, strategies and action items center on collaboration within the region and fostering efficient business development, expansion, diversification, job growth, and entrepreneurial enterprises across the region. The end goal of the document is to make the Northern Illinois Region a world-class, prosperous region with a resilient economic base and a superior quality of life that outperforms peer regions in job growth, capital investment, and innovation by 2020.

Connections to 2050 MTP: Part 4: Regional Transportation System (Freight System & Urban Goods Movement)

Local Plans & Studies

Boone County

Boone County Comprehensive Plan (2019)

The Boone County Comprehensive Plan establishes a community vision for the future and serves as a guide for development in Boone County as a whole over the next ten years. It was created through collaboration with county staff, elected officials, municipalities, and the general public within the county.

Connections to 2050 MTP: Part 3: Regional Context (Land Use & Development) and Part 4: Regional Transportation System (Roadways & Bridges)

Flora Neighborhood Plan (2005)

This document was created to help refine transportation and land use recommendations for the I-90 corridor that runs along the southern edge of Belvidere. The plan was largely funded by three large property owners with interest in how development will occur along the I-90 corridor.

Highway 173 Corridor Plan (2009)

The Boone County Highway 173 Corridor Plan examines the long-range future of the 12-mile segment of Highway 173 in Boone County. The purpose of this plan is to identify detailed land use, transportation, and design recommendations for the length of the corridor.

City of Belvidere

City of Belvidere Comprehensive Plan (2006)

The city's current comprehensive plan sets out programs and policies that could be of great benefit for community members over a fifty-year timeframe. The plan was developed by city staff through collaboration with those in the community.

Connections to 2050 MTP: Part 3: Regional Context (Land Use & Development) and Part 4: Regional Transportation System (Roadways & Bridges)

City of Loves Park

City of Loves Park Comprehensive Plan (2017)

The City of Loves Park Comprehensive Plan acts as the City's official policy guide for future land use, development and conservation within the community. It considers the needs and concerns of the community in the short term and projects future improvements and developments for the next 10-20 years. The primary purpose of the Plan is to advance the welfare of people by creating an increasingly better, sustainable environment composed of three interrelated parts – social, economic, and built environment.

Connections to 2050 MTP: Part 3: Regional Context (Land Use & Development) and Part 4: Regional Transportation System (Roadways & Bridges)

Loves Park Public Safety Study (2018)

The Loves Park Public Safety Study is a comprehensive evaluation of the services provided to the residents of Loves Park by the city's police and fire departments. An emphasis is placed on Emergency Medical Services. Additionally, an analysis of the strengths and weaknesses of their services was performed and forecasts made on the potential needs for the future of Loves Park.

Ogle County

Ogle County Amendatory Comprehensive Plan "2012 Update" (2012)

This comprehensive plan is the center-piece of the community development planning process, stating the county's development goals and outlining public policies for guiding future growth. It establishes an identifiable destination that allows both the governing body and private interests to plan and budget with an idea as to the direction the County may move in the future, and helps to ensure that future growth is not only anticipated, but planned for. The plan functions as a practical guide to coordinate day-to-day decisions so they make sense in the future.

Ogle County Greenways & Trails Plan (2010)

The Ogle County Greenways & Trails Plan is the long-range master plan for the green infrastructure in the county. The plan serves multiple use and objectives, including (1) identifying the resources and opportunities for open space and recreational trail systems and (2) linking communities with one another and with the natural areas and cultural resource areas via greenways and trail network. It looks to utilize the strengths of the county to balance the environment, recreational needs, economic growth, and sustainability.

City of Rockford

Bike Share Feasibility Study for the City of Rockford (2016)

On the behalf of the City of Rockford, the MPO conducted a feasibility study to evaluate whether a bike share program is operationally feasible in Rockford. The information gathered for the study was analyzed through a multi-stage process that included data gathering and current conditions analysis, as well as research into the following areas: Community Analysis, Demand Analysis, Public and Professional Engagement, Goal and Strategy Orienting, and the Feasibility Findings and Recommendations.

Connections to the 2050 MTP: Part 4: Regional Transportation System (Alternative Transportation)

City of Rockford: Stormwater Master Plan (2015)

The purpose of the Stromwater Master Plan is to develop a comprehensive planning approach to manage storm water quality and quantity throughout Rockford. It helps to mitigate potential damage to property and infrastructure that may occur in the future.

Connections to 2050 MTP: Part 3: Regional Context (Environment)

Downtown Rockford Strategic Action Plan (2015)

The overarching goals of this plan are to create a strategic vision to guide policy for the revitalization of Rockford's downtown and align land use, transportation, and urban design implementation strategies so that the entire city can benefit from increased growth and development.

Envision North Main

The Envision North Main Street Corridor Plan is the result of a collaborative process that included analyzing the existing conditions and opportunities, developing alternative improvement strategies, refining the preferred strategies and establishing an implementation action plan. The planning process included a community workshop to brainstorm concepts for the corridor and a public open house to solicit community feedback on alternative strategies. The result is a vision for the corridor that is unique to Rockford.

Kishwaukee Street Corridor Revitalization Plan (2009)

The Kishwaukee Street Corridor Revitalization Plan was initiated by the City of Rockford to establish a long-term vision for the future of this central artery through the City, linking Downtown Rockford on the north to the Chicago Rockford International Airport on the south. This document was created through collaboration with business-owners along the Kishwaukee Street corridor and describes specific land use changes, economic investment strategies, and transportation improvements that could help revitalize the area.

Rockford's 2020 Plan: Entering the 21st Century (2011)

Rockford's 2020 Plan serves as the city's comprehensive plan and acts as the official policy guide for future land use, development and conservation within the community. The purpose is to lay the groundwork for creating a community that is a good place to live, work, raise a family, and basically enjoy life.

Connections to 2050 MTP: Part 3: Regional Context (Land Use & Development) and Part 4: Regional Transportation System (Roadways & Bridges)

Rockford Madison Street: Charrette Summary (2017)

The Madison Street Charrette was initiated to develop an integrated plan and implementation strategy to knit the corridor together. This focus group process lead to a consensus on the three-part organization of the plan: Mobility, Environment, and Place-Based Economic Development. In short, the consensus was that a coherent streetscape was needed to unify the corridor, a design with high environmental performance would both protect and emulate the Rock River, and that the most powerful project driver was the economic redevelopment of the Madison Corridor as a vibrant mixed-use place.

Rockford Riverwalk Vision Plan (2006)

The Rockford Riverwalk Vision Plan is focused on showing how a continuous pathway along both banks of the River can become a reality. It identifies important issues and opportunities but stops short of laying out a plan for development; this will be done in the public arena at the project development stages for each increment of the Riverwalk. Its goal is to raise popular support for improving connections along the River rather than define a particular design.

West State Street Corridor Plan (2002)

This plan analyzes a four-mile stretch of State Street in Rockford, IL west of the Rock River. The plan looks at some of the more economically depressed areas in the city and seeks to create a strategy for energizing and revitalizing homes and businesses along the corridor.

South Main Revitalization Strategy (2011)

The South Main Revitalization Strategy develops a revitalization and implementation strategy for the South Main Street/Illinois Route 2 Corridor. The process sought to build upon programmed and pending improvements to the Corridor, including the Illinois Department of Transportation's (IDOT) roadway reconstruction of South Main Street, as well as a number of other studies and initiatives conducted around and within the South Main Corridor.

Village of Machesney Park

Village of Machesney Park Comprehensive Plan (2010)

This comprehensive plan sets forth long-range recommendations for the maintenance and enhancement of existing community areas, and for desirable improvements, developments, and redevelopments within the Village and its planning area.

Connections to 2050 MTP: Part 3: Regional Context (Land Use)

Village of Poplar Grove

Village of Poplar Grove Comprehensive Plan (2009)

The comprehensive plan serves as a guideline to use in making decisions and taking actions that will affect the future of the village. Its covers a variety of topics including the village's history, population and demographics, jurisdictional boundaries, natural resource, transportation infrastructure, community facilities, telecommunications and utilities, housing, and economic development.

Connections to 2050 MTP: Part 3: Regional Context (Land Use)

Winnebago County

2030 Land Resource Management Plan (2009)

The 2030 Land Resources Management Plan ensures that change in the county occurs pursuant to the consensus of area stakeholders, such as civic and business leaders, various interest groups, citizens, and the County's municipalities and townships. The Plan looks to accommodate an increased population with the proportional economic development, perverse and enhance both the urban and rural characters of the County, and minimize the impact of future development on natural resources, agriculture, and the environment.

Connections to 2050 MTP: Part 3: Regional Context (Land Use)

Winnebago County Multi-Hazard Mitigation Plan (2019)

The Winnebago County Multi-Hazard Mitigation Plan (MHMP) represents the integration of a community profile, hazard profile, mitigation strategies, and a Risk Priority Analysis profile into one plan. The MHMP is a stakeholder-driven document that a state, tribal, or local government uses to describe risks and vulnerabilities as well as long-term strategies and implementation approaches for reducing loss of life and property from natural disasters.

Connections to 2050 MTP: Part 3: Regional Context (Environment) and Part 4: Regional Transportation System (Roadways & Bridges)

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Additional Resources

2050 MTP Technical Memorandum #1: Public Engagement Process
http://r1planning.org/mtp

2050 MTP Technical Memorandum #2: Scenario Planning Process
http://r1planning.org/mtp

2050 MTP Technical Memorandum #3: Modeling Framework
http://r1planning.org/mtp

2050 MTP Technical Memorandum #4: Financial Analysis and Funding Resources
http://r1planning.org/mtp

2050 MTP Technical Memorandum #5: Project Evaluation Process
http://r1planning.org/mtp

2050 MTP Technical Memorandum #6: Detailed Project List
http://r1planning.org/mtp

Region 1 Planning Council Website
http://r1planning.org/

2050 Metropolitan Transportation Plan Webpage
http://r1planning.org/mtp

Transportation for Tomorrow (2040): A Long Range Plan for the Rockford Region
http://r1planning.org/fundamentals



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