Alternative Urban Areawide Review (AUAR) Update

MAY 2023

Prepared for:

SAINT PAUL
MINNESOTA

In cooperation with:

RYAN

Prepared by:

Kimley»Horn

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1. Introduction

The Alternative Urban Areawide Review (AUAR) study area for Highland Bridge (formerly referred to as the Ford Site) encompasses four parcels totaling approximately 139 acres in Saint Paul, Minnesota. All four parcels were included in the *Ford Site Zoning and Public Realm Master Plan* (Ford Site Master Plan) adopted by the Saint Paul City Council on September 27, 2017 (last amended September 21, 2022). The four parcels, shown on Figure 1, include:

- One 122-acre parcel referred to as the Ford Site
- One 4-acre parcel referred to as the Burg & Wolfson (Highland Village Center) property (referred to as the Burg & Wolfson (Lunds & Byerlys) property in the 2019 AUAR)
- Two parcels totaling 13 acres referred to as the Canadian Pacific Railway property

The 2019 AUAR included analysis of two development scenarios as summarized in Table 1. These scenarios and the study area were consistent with the master plan. The Ryan Development Scenario represented the density of the development proposed by Ryan Companies US, Inc. (Ryan) on the 122-acre parcel. The Master Plan Maximum Development Scenario represented the maximum density allowed under the zoning code and adopted Ford Site Master Plan on all four parcels within the study area. The City of Saint Paul adopted the Ford Site Final AUAR and Mitigation Plan on November 4, 2019.

Table 1: 2019 Development Scenarios

Component	Ryan Development Scenario	Master Plan Maximum Density Scenario
Residential (dwelling units)	3,800	4,000
Retail and Service (square feet of gross floor area)	150,000	300,000
Office and Employment (square feet of gross floor area)	265,000	450,000
Civic and Institutional (square feet of gross floor area)	50,000	150,000

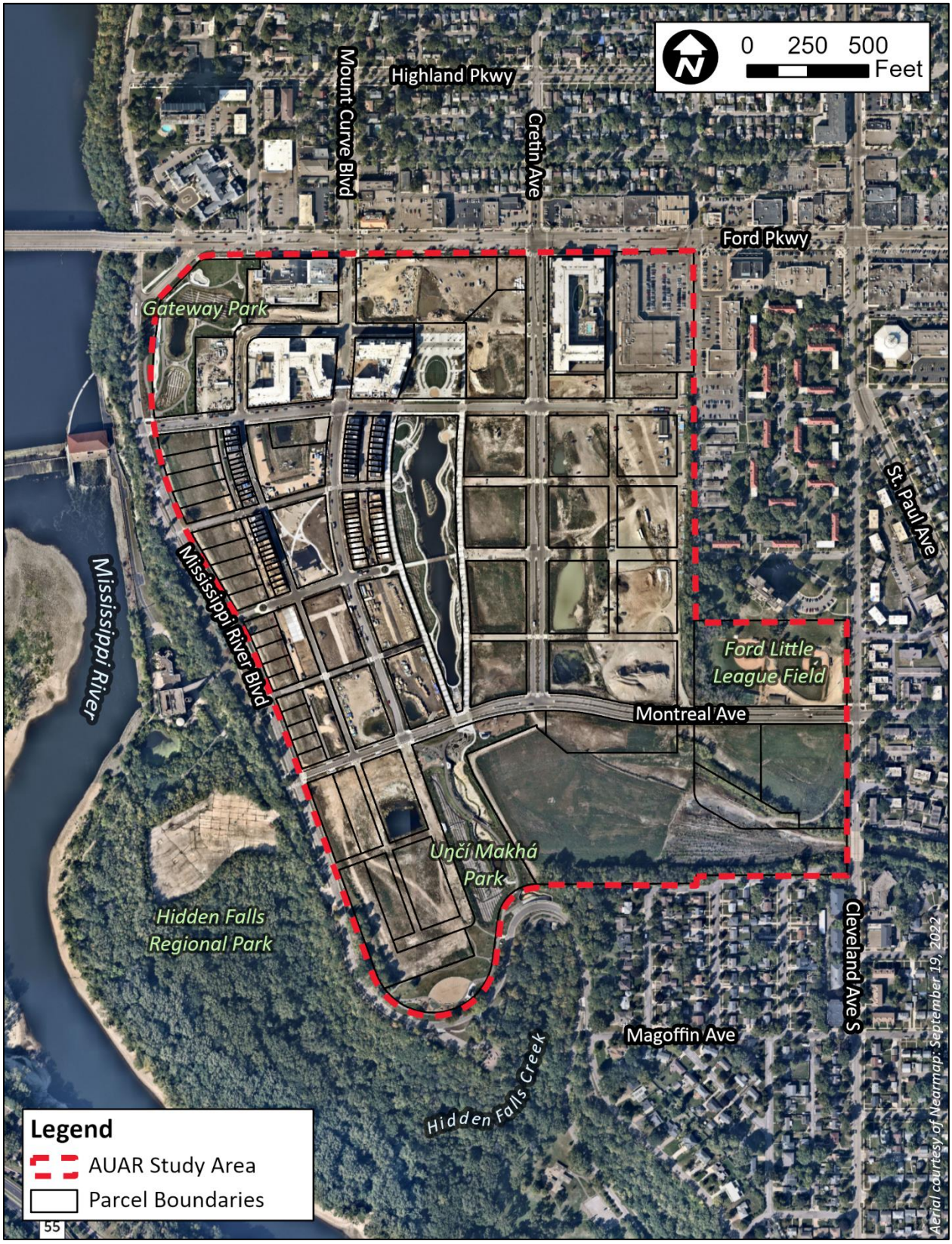
The University of Saint Thomas (UST), in cooperation with Ryan, is proposing to develop a portion of the study area south of Montreal Avenue into new ballfield facilities (see Section 3 for more information). As such, this report is intended to serve as an update to the 2019 AUAR pursuant to Minnesota Rules, part 4410.3610, subpart 7, and includes information on development to date, the updated development scenarios, updates to the environmental analysis where necessary, and a review of mitigation measures that are required.

2. Existing Conditions

As of May 2023, most of the AUAR study area is under development (see Figure 2). The entire study area, other than the Canadian Pacific Railway property, has been graded. Public infrastructure that has been completed to date, including roadways and trails, sanitary sewer, storm sewer, and lighting, is shown in the exhibits in Attachment A. Private site development that has been constructed or entitled is also illustrated in an exhibit in Attachment A.

Figure 1: AUAR Study Area

Figure 2: Existing Conditions



3. Updated Scenarios

This AUAR Update includes three development scenarios: the two scenarios evaluated in the 2019 AUAR (the Ryan Development Scenario and the Master Plan Maximum Development Scenario) as well as a new scenario that incorporates UST's proposal (referred to as the 2023 Development Scenario). These three scenarios are defined in Table 2, and the 2023 Development Scenario is described in more detail in Section 3.1.

Table 2: Updated Development Scenarios

Component	Ryan Development Scenario	Master Plan Maximum Density Scenario	2023 Development Scenario
Residential (dwelling units)	3,800	4,000	3,800
Retail and Service (square feet of gross floor area)	150,000	300,000	150,000
Office and Employment (square feet of gross floor area)	265,000	450,000	265,000
Civic and Institutional (square feet of gross floor area)	50,000	150,000	100,000
UST Ballfields (total number of seats)	0	0	2,500

3.1. 2023 Development Scenario

UST, in cooperation with Ryan, is proposing to develop 21.6 acres of the AUAR study area south of Montreal Avenue that includes four parcels that have been subdivided from the original 122-acre Ford Site as well as the Canadian Pacific Railway property (see Figure 3). This area would include several athletic facilities: a 1,500-seat baseball stadium, a 1,000-seat softball stadium, indoor practice and training facilities, staff offices, and a 500-space parking structure.[1] The remaining portions of the AUAR study area would be consistent with the Ryan Development Scenario.

[1] The 500-space parking structure is the maximum amount of parking anticipated long term and, therefore, is being evaluated as part of the 2023 Development Scenario. A surface lot with up to 330 stalls may be constructed in the short-term instead, which would require an amendment to the Ford Site Master Plan to allow a surface lot with more than 20 stalls.

Figure 3: 2023 Development Scenario – Area Proposed to be Developed by UST

4. Impact Analysis

4.1. Areas of No Anticipated Change

The analysis that was completed in 2019 for the following issue areas remains valid for the Ryan Development Scenario and the Master Plan Maximum Density Scenario. The 2019 findings also apply to the 2023 Development Scenario.

- Geology, soils, and topography/landforms
- Air
- Other potential environmental effects

4.2. Areas Requiring Updated Analysis

4.2.1. Cover Types

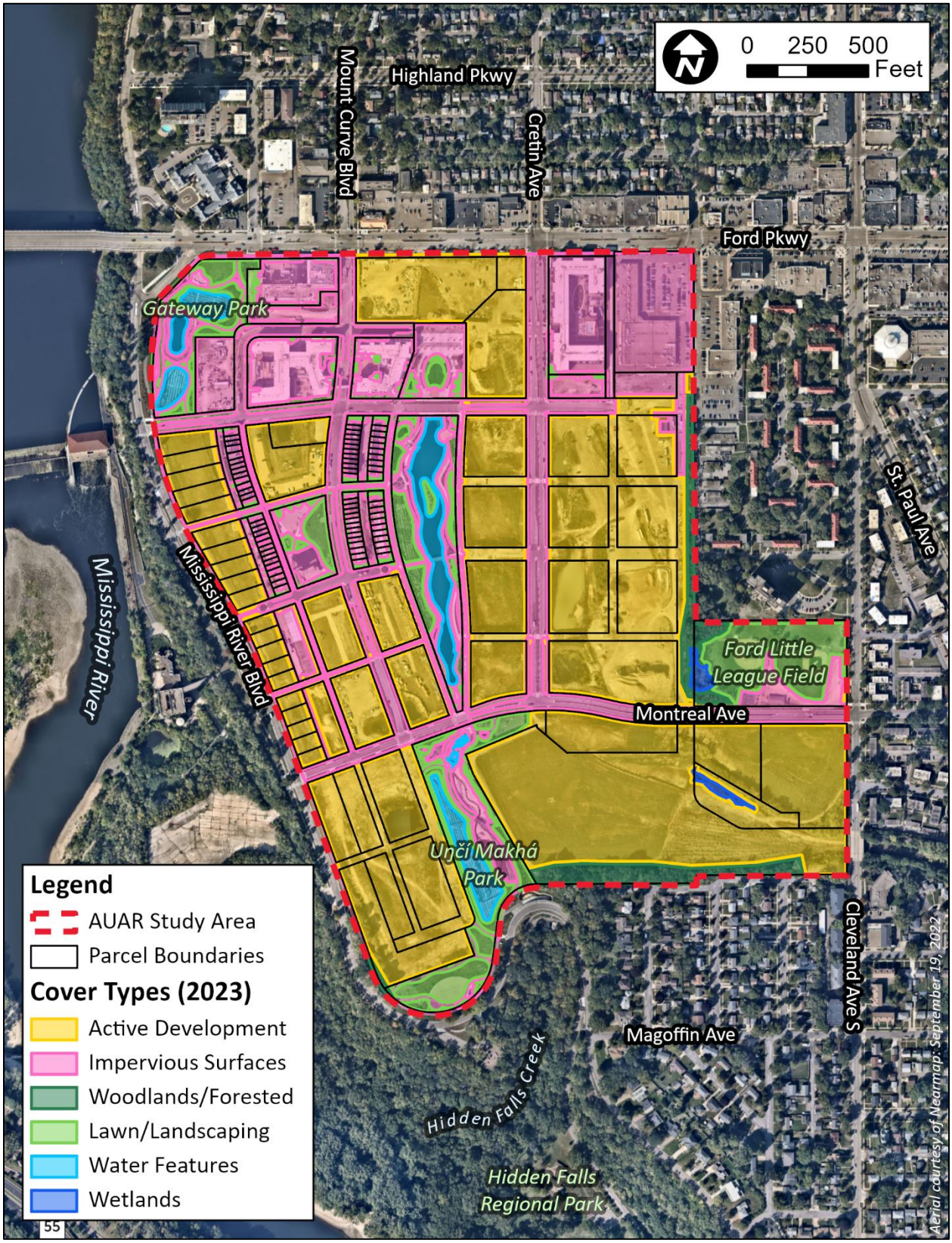
The AUAR study area covers 139 acres of urban land, most of which is currently undergoing redevelopment. Approximately 122 acres of the AUAR study area (excluding the Burg & Wolfson (Highland Village Center) property and Canadian Pacific Railway property) were previously cleared of prior improvements for redevelopment. Table 3 summarizes cover types prior to demolition of the Ford Motor Company assembly plant, the current (2023) conditions, and proposed cover types under each development scenario. Current (2023) cover types are shown in Figure 4.

Table 3: Cover Types

Cover Type	Pre-Demolition Conditions (acres)	Current (2023) Conditions (acres)[2]	Ryan Development Scenario (acres)	Master Plan Maximum Density Scenario (acres)	2023 Development Scenario (acres)
Active Development	0	71.7	0	0	0
Impervious Surfaces	118.2	45.2	105	105	95.9
Woodlands/Forested	5.9	3.6	1.1	0	1.1
Lawn/Landscaping	13.8	13.8	27.7	29.4	36.8
Wetlands	1.1	0.5	0.6	0	0.6
Stormwater Treatment/ Water Feature	0	4.2	4.6	4.6	4.6
Total	139	139	139	139	139

[2] Based on 2022 aerial photography

Figure 4: Current Cover Types (2023)



Urban Heat Island

Impervious surfaces such as roads, parking lots, and buildings absorb and re-emit more heat from the sun than natural landscapes, which can significantly raise air temperature and overall extreme heat vulnerability in urban areas where there are dense concentrations of these surfaces. This is referred to as the urban heat island effect. This can cause an increased risk of heat stroke and heat exhaustion to populations residing in medium and high-risk areas of the city, particularly during extended heatwaves, which are expected to become more common by the middle of the 21st century.[3] According to the Metropolitan Council's Extreme Heat Map Tool, the AUAR study area is in an area susceptible to medium to high temperature increases associated with the urban heat island effect.[4] Aspects of site design may impact urban heat island conditions in the surrounding area, including materials, architecture, and landscaping. As shown in Table 3, the proposed development scenarios would decrease the overall amount of impervious surface and increase vegetated surfaces through the addition of trees and green space throughout the development, which would help reduce the urban heat island effect.

4.2.2. Land Use

Ford Site Zoning and Public Realm Master Plan

The *Ford Site Zoning and Public Realm Master Plan* (Ford Site Master Plan) was developed specifically for this site and was adopted by the Saint Paul City Council in September 2017. Amendments to the master plan have been adopted by the City Council since publication of the 2019 AUAR.[5] The master plan defines minimum and maximum development for the site, and the 2023 Development Scenario would be within the range defined in master plan.

2040 Comprehensive Plan: Saint Paul for All

The City of Saint Paul adopted a new comprehensive plan, *Saint Paul for All,* in November 2020.[6] This plan designates the 2040 land use for the entire study area as mixed-use development. The plan also identifies the Ford Site as an "opportunity site," a large site ready for redevelopment to create a significant impact on the City's vitality, tax base, and livability. All three development scenarios are consistent with the designated 2040 future land use.

Additionally, *Saint Paul for All* identifies transportation and recreation opportunities within and near the AUAR study area. A potential future right-of-way connection along the Ford Spur is identified,

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[3] City of Saint Paul. *Saint Paul Climate Action and Resilience Plan*. Adopted December 2019. Available at https://www.stpaul.gov/sites/default/files/Media%20Root/Mayor%27s%20Office/Saint%20Paul%20Climate%20Action%20%26%20Resilience%20Plan.pdf

[4] Metropolitan Council. *Extreme Heat Map Tool*. Available at https://metrocouncil.org/Communities/Planning/Local-Planning-Assistance/CVA/Tools-Resources.aspx

[5] City of Saint Paul. *Ford Site Zoning and Public Realm Master Plan*. Adopted September 27, 2017. Last amended September 21, 2022. Available at https://www.stpaul.gov/departments/planning-and-economic-development/planning/ford-site-highland-bridge/ford-site-zoning.

[6] City of Saint Paul. *Saint Paul for All: 2040 Comprehensive Plan.* Adopted November 18, 2020. Available at https://www.stpaul.gov/sites/default/files/2022-01/CSP_2040_CompPlan_FinalAdopted_101521.pdf.

terminating in the southeastern corner of the AUAR study area. The plan also identifies a proposed regional trail search corridor through the study area. Regional trail corridors are intended to provide for recreational travel along linear pathways throughout the metropolitan area. To achieve regional trail status and be eligible for Regional Parks System funding, corridors must be part of a Metropolitan Council-approved master plan. Regional trail search corridors are proposed general trail alignments that have not yet been through that process. The Hidden Falls - Samuel Morgan regional trail search corridor (also known as the Canadian Pacific or Ford Spur) would connect Hidden Falls/Crosby Farm Regional Park to the Samuel Morgan Regional Trail near Island Station and link neighborhoods within the West 7th/Fort Road and Highland Park planning districts of Saint Paul. The proposed development scenarios would not preclude these potential future transportation and recreation opportunities.

Mississippi River Corridor Critical Area Plan

A portion of the AUAR study area is within the Mississippi River Corridor Critical Area (MRCCA), which is a joint state, regional, and local program that provides coordinated planning and management for the 72-mile stretch of the Mississippi River through the seven-county metropolitan area. The City of Saint Paul's MRCCA Plan chapter was officially adopted as part of *Saint Paul for All* in 2020.[7]

The discussion included in the 2019 AUAR still applies with the adopted MRCCA chapter of the Comprehensive Plan. The Ryan Development Scenario, Master Plan Maximum Development Scenario, and the 2023 Development Scenario are generally consistent with MRCCA chapter policies. One of the relevant guiding principles of the plan related to development in the MRCCA is Policy CA-1: Guide land use and development activities consistent with the management purpose of each of the MRCCA Districts. The two proposed MRCCA districts that are within the proposed development are CA-RTC River Towns and Crossings and CA-UM Urban Mixed. The land uses proposed within the CA-UM District are consistent with the intent of the district, which includes a mix of uses, including institutional, commercial, industrial, and residential areas and parks and open space. Development within the CA-RTC District is intended to provide "more intensive redevelopment in limited areas at river crossings to accommodate compact walkable development patterns and connections to the river… and minimize erosion and flow of untreated storm water in the river." Consistent with the Ford Master Plan, the scenarios propose lower building heights and less intense development within the CA-RTC District, and the proposed stormwater facilities will be designed to accommodate the new development runoff.

Local adoption of specific new MRCCA overlay zoning districts and regulations is also required by Minnesota Rules Chapter 6106 to protect scenic, environmental, recreational, economic, cultural and historic resources and functions of the river corridor while providing for continued growth and development of a variety of urban uses. The City is in the process of developing its new MRCCA ordinance, and, after adoption, future development within the MRCCA will be required to comply with the ordinance.

[7] Available at https://www.stpaul.gov/sites/default/files/2021-05/CA_Chapter_FinalAdopted_110920.pdf.

4.2.3. Water Resources

Surface Waters

Multiple field wetland delineations occurred within the AUAR study area since the adoption of the AUAR in 2019. Some of the delineated wetlands have been permitted and filled as a result of infrastructure construction. An additional wetland delineation for the Canadian Pacific Railway property occurred in 2021 and the Wetland Conservation Act Local Government Unit (WCA LGU) made an incidental wetland determination in 2022. The remaining delineated wetlands are shown on Figure 4.

Groundwater

Since publication of the 2019 AUAR, all existing monitoring wells within the study area have been sealed according to Minnesota Pollution Control Agency (MPCA) and Minnesota Department of Health (MDH) requirements.

Wastewater

Based on the Metropolitan Council Environmental Services (MCES) Sewer Availability Charge (SAC) program, the estimated daily flow for the 2023 Development Scenario is 0.829 million gallons per day (MGD) (see Attachment B). Using the Metropolitan Council's hourly peaking factor of 3.2, the estimated peak flow generated is 2.66 MGD (1.1 percent of existing capacity). The existing municipal wastewater infrastructure is capable of handling new demand generated by the development. No land uses that would generate wastewater requiring pretreatment are anticipated. The 2023 Development Scenario is consistent with the City's planned sanitary sewer usage as identified in the 2040 Comprehensive Plan. The City of Saint Paul Sewer Utility Division has confirmed that the regional treatment facility and the wastewater collection system have sufficient long-term capacity to handle the additional wastewater flow generated by this development scenario.

Stormwater

The Mississippi River is an important source of drinking water for the City of Saint Paul. Rainwater traveling across pavement during heavy rainfalls can pick up trash, leaves, animal waste, salt, and chemicals as it travels toward the river. According to the City's Climate Action and Resilience Plan, keeping rainwater where it falls or slowing its path to lakes and rivers can improve water quality by filtering out harmful chemicals and other pollutants.[3] All three development scenarios propose a decrease in impervious surfaces compared to conditions prior to demolition of the Ford Motor Company assembly plant (see Table 3). This will allow a higher amount of rainwater to infiltrate into the ground where it falls. Additionally, a stormwater management system has been constructed for the 122-acre Ford Site to treat stormwater as it travels though the AUAR study area toward the Mississippi River. However, this system was not designed to accommodate stormwater from the Burg & Wolfson (Highland Village Center) or Canadian Pacific Railway properties. To accommodate this runoff, a new stormwater system owned by UST will be constructed to treat stormwater for the Canadian Pacific Railway property and portions of the Ford Site south of Montreal Avenue. The proposed stormwater management will be designed to comply with all City and Capitol Region Watershed District standards and with all maintenance/monitoring requirements of the City and watershed district.

Water Appropriation

As noted in the 2019 AUAR, the water supply for the development will be obtained from the municipal water supply system operated by Saint Paul Regional Water Services (SPRWS). The 2023 Development Scenario will require 829,000 gallons per day. SPRWS infrastructure has existing capacity to supply this development scenario.

4.2.4. Contamination/Hazardous Materials/Wastes

The proposed development would generate new demands on solid waste management and sanitation services provided in the project area as summarized in Table 4.

Table 4: Estimated Solid Waste Generation[8]

	Ryan Development Scenario	Master Plan Maximum Development Scenario	2023 Development Scenario
Residential Units	3,800	4,000	3,800
Residential Waste (tons per year)[9]	8,903	9,372	8,903
Non-Residential Area (square feet)	465,000	900,000	515,000
Non-Residential Waste (tons per year)	6,975	13,500	7,725
Total Waste (tons per year)	**15,878**	**22,872**	**16,628**

According to the 2018 Ramsey County Solid Waste Management Master Plan, Ramsey County will ensure compliance with applicable laws, rules, and ordinances related to the management of solid and hazardous waste as required by Minnesota Statutes, section 473.811. Recycling for residential units and commercial buildings in the AUAR study area will be conducted in accordance with the 2016 Recycling Law (Minnesota Statutes Chapter 115A, Section 115A.151 and Section 115A.552). Furthermore, City Leg. Code § 357.09 requires mandatory source separation and curbside pick-up within the city.

4.2.5. Fish, Wildlife, Plant Communities, and Sensitive Ecological Resources (Rare Features)

The 2019 AUAR identified no adverse impacts to state-listed or federally listed species. For this AUAR Update, a review of the Minnesota Department of Natural Resources (DNR) Natural Heritage Information System (NHIS) was conducted per license agreement LA-1074 to identify state-listed threatened, endangered, and special concern species within 1 mile of the AUAR study area. This review identified 28 species within one mile of the AUAR study area, the majority of which are aquatic species found within the Mississippi River or Minnehaha Creek.

[8] The US Environmental Protection Agency's website titled "National Overview: Facts and Figures on Materials, Wastes and Recycling" was consulted as a basis for estimating municipal solid waste generation for the proposed development.

[9] It is estimated that 4.9 pounds of municipal solid waste (MSW) will be generated per person per day. An average household occupancy of 2.62 was applied to the estimated residential units based on 2015-2019 US Census Bureau data.

The AUAR study area is highly disturbed with a lack of bumble bee or other native wildlife habitat. Species currently using the AUAR study area are adapted to a highly disturbed urban environment, and minimal impacts are anticipated to those species. No adverse impacts to protected species are anticipated. A review request has been submitted to the DNR and a response is pending.

4.2.6. Historic Properties

The analysis that was completed in 2019 for historic properties remains valid for the Ryan Development Scenario and the Master Plan Maximum Density Scenario and also apply to the 2023 Development Scenario. Since publication of the 2019 AUAR, an archaeological, historical, and cultural resources search of the Canadian Pacific Railway property was conducted as part of a Phase I Environmental Site Assessment, and no archaeological resources were identified.

4.2.7. Visual

The UST ballfields proposed as part of the 2023 Development Scenario would include outdoor lighting to be used during events. The NCAA's best lighting practices for baseball and softball will be used to guide light pole placement and light levels, and the UST ballfields will comply with the Ford Master Plan's lighting Standards for Outdoor Uses Including Performance, Sport, and Recreation Facilities.

The 2023 Development Scenario would not impact any Public River Corridor Views identified in the 2019 AUAR. Therefore, visual impacts are not anticipated.

4.2.8. Noise

The UST ballfields proposed as part of the 2023 Development Scenario would generate noise during events. As design of the facilities advances, a noise study would be conducted to model future noise levels during typical baseball and softball game events at adjacent noise-sensitive locations and, if necessary, identify mitigation measures to reduce noise if noise levels exceed 65 dBA from these locations.

4.2.9. Transportation

Parking

The parking information in the 2019 AUAR remains valid for the Ryan and Master Plan Maximum Development Scenarios.

The 2023 Development Scenario would include the parking described for the Ryan Development Scenario in the 2019 AUAR (approximately 5,890 off-street vehicular parking spaces and approximately 3,700 bicycle parking spaces, plus on-street parking along the public roadways within the Ford Site parcel in accordance with the Ford Site Master Plan), plus the 500-space parking structure to serve the proposed UST ballfields.

Trip Generation

The trip generation information in the 2019 AUAR remains valid for the Ryan and Master Plan Maximum Development Scenarios.

The 2023 Development Scenario is anticipated to generate approximately 23,890 vehicular trips per day, including approximately 1,554 a.m. peak hour and 1,981 p.m. peak hour vehicular trips. The a.m. peak hour represents a typical weekday from 7:30 a.m. to 8:30 a.m., while the p.m. peak hour represents a typical weekday from 4:45 p.m. to 5:45 p.m. More details on the analysis for the 2023 Development Scenario are included in Attachment C.

Anticipated trip generation for all three scenarios is presented in Table 5. Because the 2023 Development Scenario is expected to generate trips similar to the Ryan Development Scenario, the mitigation improvements identified for the Ryan Development Scenario (see Table 7 in Section 5) should continue to be monitored to determine if and when improvements are needed.

Table 5: Trip Generation Comparison

Scenario	A.M. Peak Hour Trips		P.M. Peak Hour Trips		Daily Trips
	In	Out	In	Out	
Ryan Development Scenario	636	804	940	914	21,791
Master Plan Maximum Development Scenario	878	891	1,124	1,238	27,573
2023 Development Scenario	685	869	1,019	962	23,890

Availability of Transit and/or Other Transportation Modes

The AUAR study area is served by several existing transit routes operated by Metro Transit, including the A Line arterial bus rapid transit (BRT) and Routes 23, 74, and 87. The A Line BRT includes enhanced transit service such as limited stop service, high customer amenity stations, and transit signal priority. Transit stops are located at nearly every other block along Ford Parkway and Cleveland Avenue, which border the AUAR study area.

Bicycle and Pedestrian Facilities

Since publication of the 2019 AUAR, improvements have been made to the bicycle network in the vicinity of the AUAR study area, including:

- Enhanced shared lanes on Cleveland Avenue between Saint Paul Avenue and Mississippi River Boulevard
- On-street bike lanes on Saint Paul Avenue between Edgcumbe Road and W 7th Street

Given that the on-street bicycle lanes recently implemented on Saint Paul Avenue resulted in the removal of vehicular travel lanes, sensitivity analysis tests were conducted to determine anticipated improvement need timelines along the corridor, and are documented in Attachment C. Based on the sensitivity analysis, traffic control improvements are expected to be needed at the St. Paul Avenue/Montreal Avenue intersection in the next five (5) years.

4.2.10. Cumulative Potential Effects

Cumulative potential effects are defined as the “effect on the environment that results from the incremental effects of a project in addition to other projects in the environmentally relevant area that might reasonably be expected to affect the same environmental resources, including future projects actually planned or for which a basis of expectation has been laid, regardless of what person undertakes

the other projects or what jurisdictions have authority over the projects."[10] The geographic areas considered for cumulative effects are those areas adjacent to the AUAR study area, and the timeframe considered includes projects that would be constructed in the reasonably foreseeable future.

Ramsey County is currently conducting the Blue Line/Riverview Connection Study to create a community-focused, equitable transit vision for the greater Highland Park area, which includes the AUAR study area. The outcome of the study will be transit recommendations and an implementation plan that Ramsey County, Metro Transit, the City of Saint Paul, and other agency stakeholders can consider for further study based on future growth and funding.[11] As of April 2023, the study is in its final phase, and the recommended option includes improvements to pedestrian and bicycle infrastructure connections to transit, as well as transit speed and reliability improvements. The recommended sidewalk and bike lane improvements will be further evaluated by the City of Saint Paul, and the transit service improvements will be further analyzed and prioritized as appropriate by Metro Transit as part of a study called Network Now.[12] Given that specific improvements are not yet planned or programmed, they are not considered reasonably foreseeable future projects.

Because no reasonably foreseeable future projects have been identified, cumulative potential effects are not anticipated.

5. Mitigation Summary and Update

The mitigation measures developed as part of the 2019 AUAR process are outlined below in Table 6 and Table 7 along with a status update and any additional mitigation identified based on the information presented in Section 4.2.

Table 6: Anticipated Permits and Approvals

Unit of Government	Type of Application	Status[13]
Federal		
Federal Aviation Administration	Obstruction Evaluation/Notice of Proposed Construction or Alteration (Form 7460-1)	In process
US Army Corps of Engineers	Section 404 Approval	Completed
	Wetland Delineation Concurrence	Completed
State		
Minnesota Department of Natural Resources	Temporary Water Appropriation Permit for Construction Dewatering	Completed
Minnesota Pollution Control Agency	National Pollutant Discharge Elimination System Stormwater Permit for Construction Activities	Completed
	Sanitary Sewer Extension Permit	Completed

[10] Minnesota Rules, part 4410.0200, subpart 11a

[11] Ramsey County. "Blue Line/Riverview Connection Study." Available at https://www.ramseycounty.us/residents/roads-transportation/multi-modal-planning/blue-lineriverview-connection-study.

[12] More information on the Network Now study is available at https://www.metrotransit.org/network-now.

[13] "In process" is defined as completed for development to date and still applicable for future development.

Unit of Government	Type of Application	Status[13]
	Construction Contingency Plan Approval	To be applied for, if needed
	Section 401 Water Quality Certification	To be applied for, if needed
Minnesota Department of Health	Watermain Installation Permit	Completed
Local		
Metropolitan Council	Sanitary Sewer Extension Permit	Completed
	Sanitary Sewer Permit to Connect	Completed
Capitol Region Watershed District	Permit for Stormwater Management, Erosion and Sediment Control, Wetland Management	In process
Saint Paul Regional Water Services	Plumbing Permits	In process
	Watermain Installation	In process
Ramsey County	Right-of-Way Permits	In process
	Road Access Permits	In process
City of Saint Paul	Alternative Urban Areawide Review	Completed
	Ford Site Master Plan Amendments	In process
	Site Plan Review	In process
	Preliminary & Final Plat	In process
	Development Agreements	Completed
	Sign Permits	In process
	Building Permits	In process
	Excavation and Grading Permits	In process
	Certificate of Occupancy	In process
	Ordinance Permit for Construction of Public Improvements	In process
	Right-of-Way Excavation and Obstruction Permits	In process
	Sewer Utility Connection Permits	In process
	Wetland Conservation Act Approval	In process

Table 7: Mitigation Summary

Resource Area	Applicable Scenarios	Mitigation	Status		
			Ongoing from 2019 AUAR	Completed	New with AUAR Update
Land Use	All	Any zoning inconsistencies, such as floor area ratio or building height, will be addressed through the City's variance and/or conditional use permit process.	X		
Geology, Soils, and Topography/ Landforms	All	Where required, slope stabilization will be provided by means of vegetation establishment, erosion control blankets, or other standard methods of erosion and sediment control.	X		
Water Resources	All	Infrastructure will be built within the AUAR study area to convey stormwater to stormwater management areas to help achieve the appropriate water quality treatment.	X		
	All	Stormwater will be conveyed by means of an underground storm sewer to constructed stormwater management areas. Conveyance systems will be designed in accordance with acceptable industry standards and in conformance with jurisdictional requirements.	X		
	All	Wetland impacts will be minimized and avoided to the extent practicable as a mass grading plan and specific development plans are created.	X		
	All	Wetland impacts will be replaced at a minimum of a 2:1 replacement ratio with wetland replacement occurring within Capitol Region Watershed District standards.	X		
	All	At minimum, a 25-foot unmanicured vegetative buffer is required around all wetlands located within the AUAR study area. The wetland buffers will be incorporated into site design.	X		
	All	Construction activities associated with dewatering will include discharging into temporary sedimentation basins to reduce the rate of water discharged from the site, as well as discharging to temporary stormwater BMPs.	X		
	All	Groundwater monitoring wells will be abandoned prior to construction within the AUAR study area per MPCA and MDH well sealing requirements.		X	

Resource Area	Applicable Scenarios	Mitigation	Status		
			Ongoing from 2019 AUAR	Completed	New with AUAR Update
Contamination/ Hazardous Materials/ Wastes	All	Products will be kept in their original containers unless they cannot be resealed. Original labels and Material Safety Data Sheets will be made available. Surplus materials will be properly removed from the property upon completion of use.	X		
	All	A Construction Contingency Plan will be developed and submitted to the MPCA to address proper handling of any potential impacted soils or other regulated materials/wastes that may be encountered during construction.	X		
Fish, Wildlife, Plant Communities, and Sensitive Ecological Resources (Rare Features)	All	Effective erosion prevention and sediment control practices will be incorporated into any stormwater management plan and also must be implemented and maintained near the Mississippi River to protect listed mussel species in the river.	X		
	All	Wildlife friendly erosion control methods will be utilized within the study area to minimize impacts to wildlife using the site during construction.	X		
Historic Properties	2023 Development Scenario, Master Plan Maximum Development Scenario	An archaeological survey will be required prior to development of the Canadian Pacific Railway property.		X	
Air	All	Temporary fugitive dust emissions during construction will be controlled by sweeping, watering, or sprinkling, as appropriate or as prevailing weather and soil conditions dictate.	X		

Resource Area	Applicable Scenarios	Mitigation	Status		
			Ongoing from 2019 AUAR	Completed	New with AUAR Update
Noise	All	Construction activities (i.e., blasting, pile-driving, crushing, and grading activities) will be conducted in compliance with the City of Saint Paul Noise regulations to minimize noise levels and nighttime construction activities.	X		
	2023 Development Scenario	A noise study will be conducted as design of the UST ballfields advances to model future noise levels during typical baseball and softball game events at adjacent noise-sensitive locations and, if necessary, identify mitigation measures to reduce noise if noise levels exceed 65 dBA from these locations.			X
Transportation	All	Ford Parkway/Mount Curve Boulevard: • Signalize/turn lane improvements		X	
		Ford Parkway/Cretin Avenue: • Modify signal timing and phasing • Extend eastbound and westbound left-turn lanes • Restrict parking to Pinehurst/Highland and restripe segment	X		
		Ford Parkway/Cleveland Avenue: • Extend eastbound left turn lane • Restrict parking and provide a southbound right turn lane	X		
		Ford Parkway/Fairview Avenue: • Provide left turn signal phasing • Provide southbound right turn lane	X		
		Cretin Avenue/Montreal Avenue: • Switch side-street stop control to north/south approach or install all-way stop control • Construct intersection for potential future signal		X	
		Saint Paul Avenue/Montreal Avenue: • Install traffic signal/turn lanes or hybrid roundabout	X		
		Cretin Avenue/Randolph Avenue: • Provide northbound/southbound left turn lanes	X		

Resource Area	Applicable Scenarios	Mitigation	Status		
			Ongoing from 2019 AUAR	Completed	New with AUAR Update
	Master Plan Maximum Development Scenario	Ford Parkway/Cretin Avenue • Construct southbound right turn lane	X		
		Ford Parkway/Fairview Avenue • Implement TDM strategies and refine land use guidance	X		

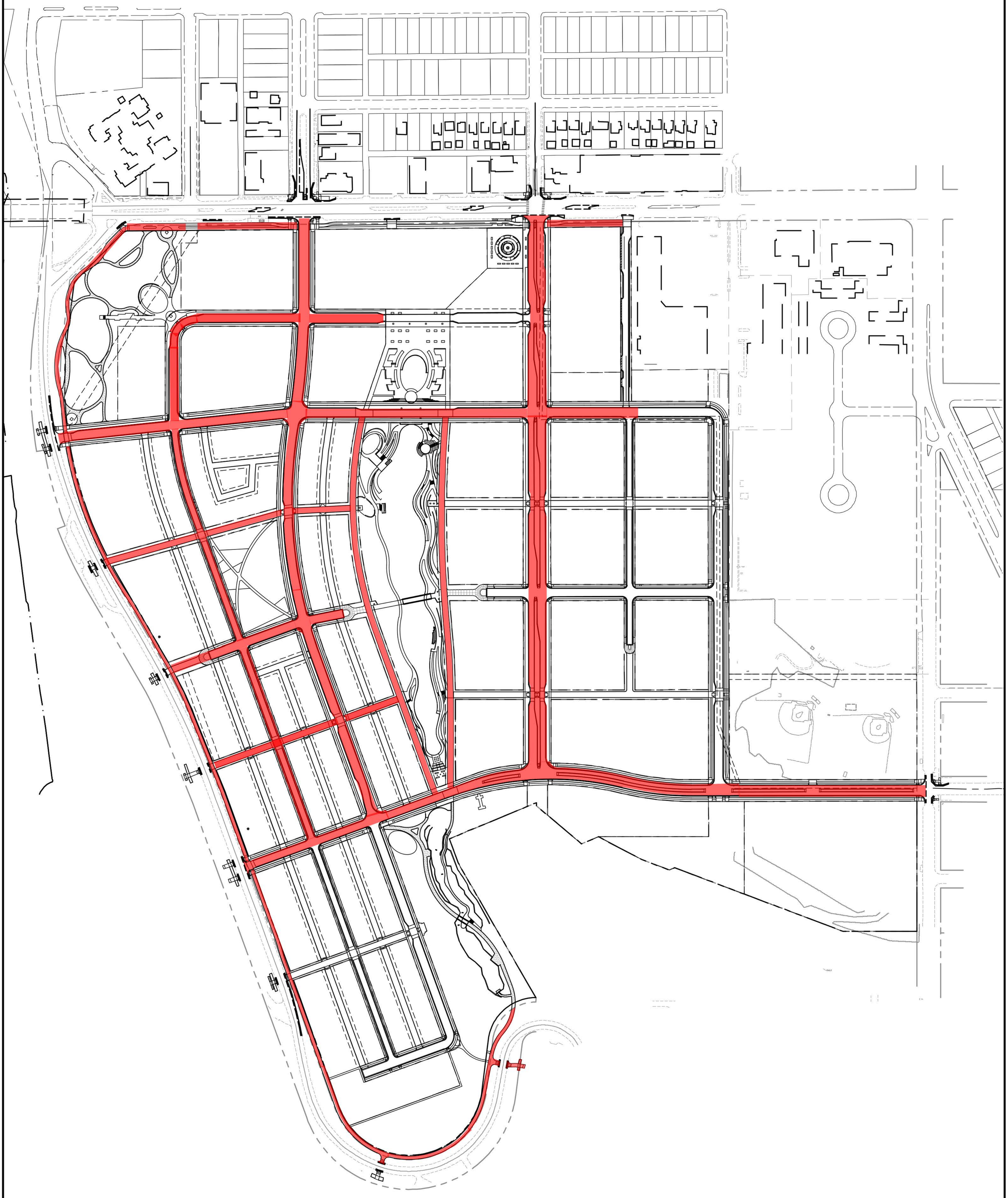
6. AUAR Update Review

Pursuant to Minnesota Rules, part 4410.3610, subpart 7, this AUAR Update is available for a comment period of 10 business days. Once the comment period is over and if no objections are filed by state agencies or the Metropolitan Council, the City of Saint Paul will adopt the AUAR Update. The Highland Bridge AUAR will remain valid for five years from the adoption date.

Attachment A

Completed Public Infrastructure and Private Site Development Exhibits

ROADWAY/TRAIL COMPLETION 4/28/2023



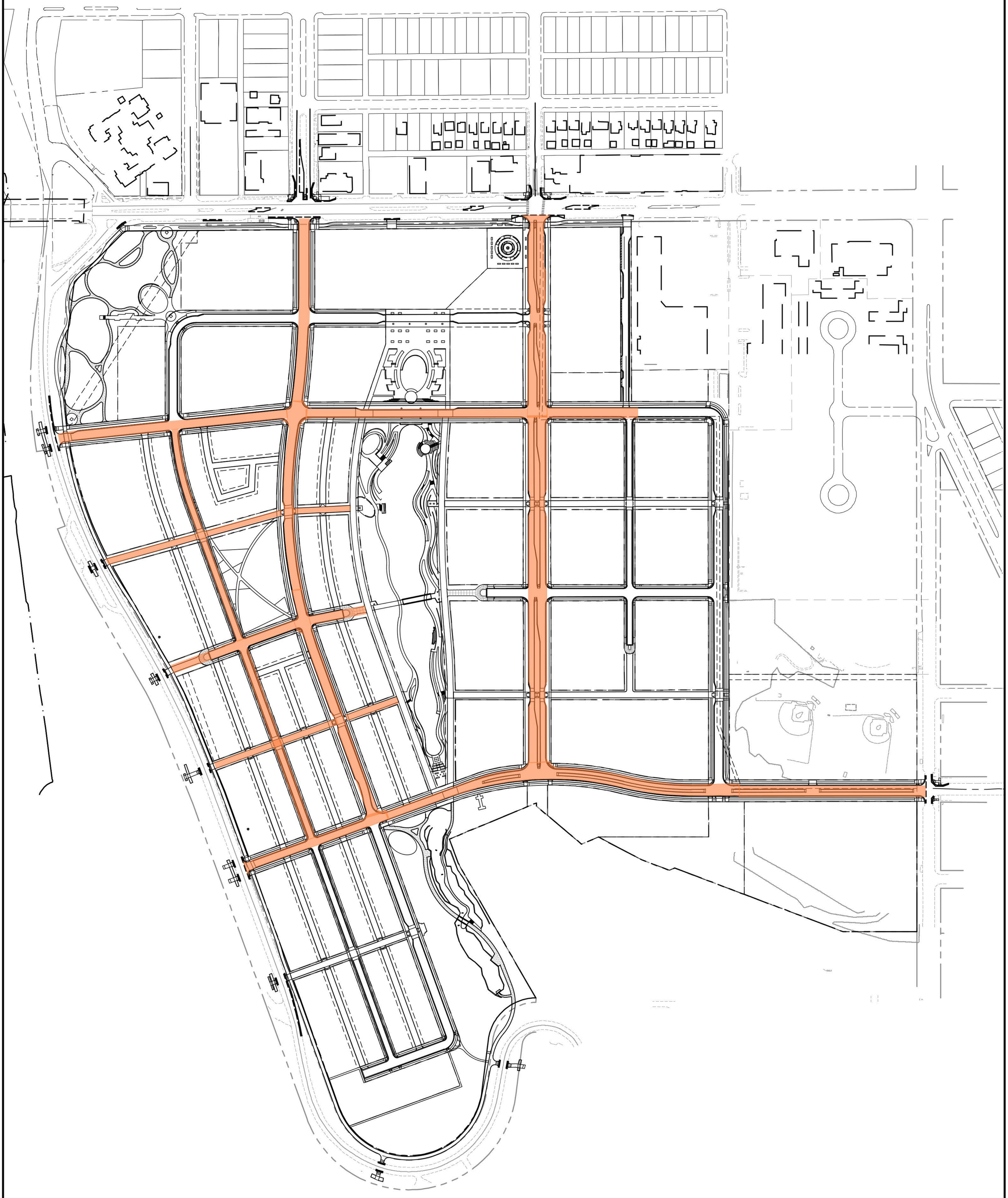
FORD SITE REDEVELOPMENT -
ROADWAY CONSTRUCTION PHASING PLAN

DATE:
01/21/2020

RYAN

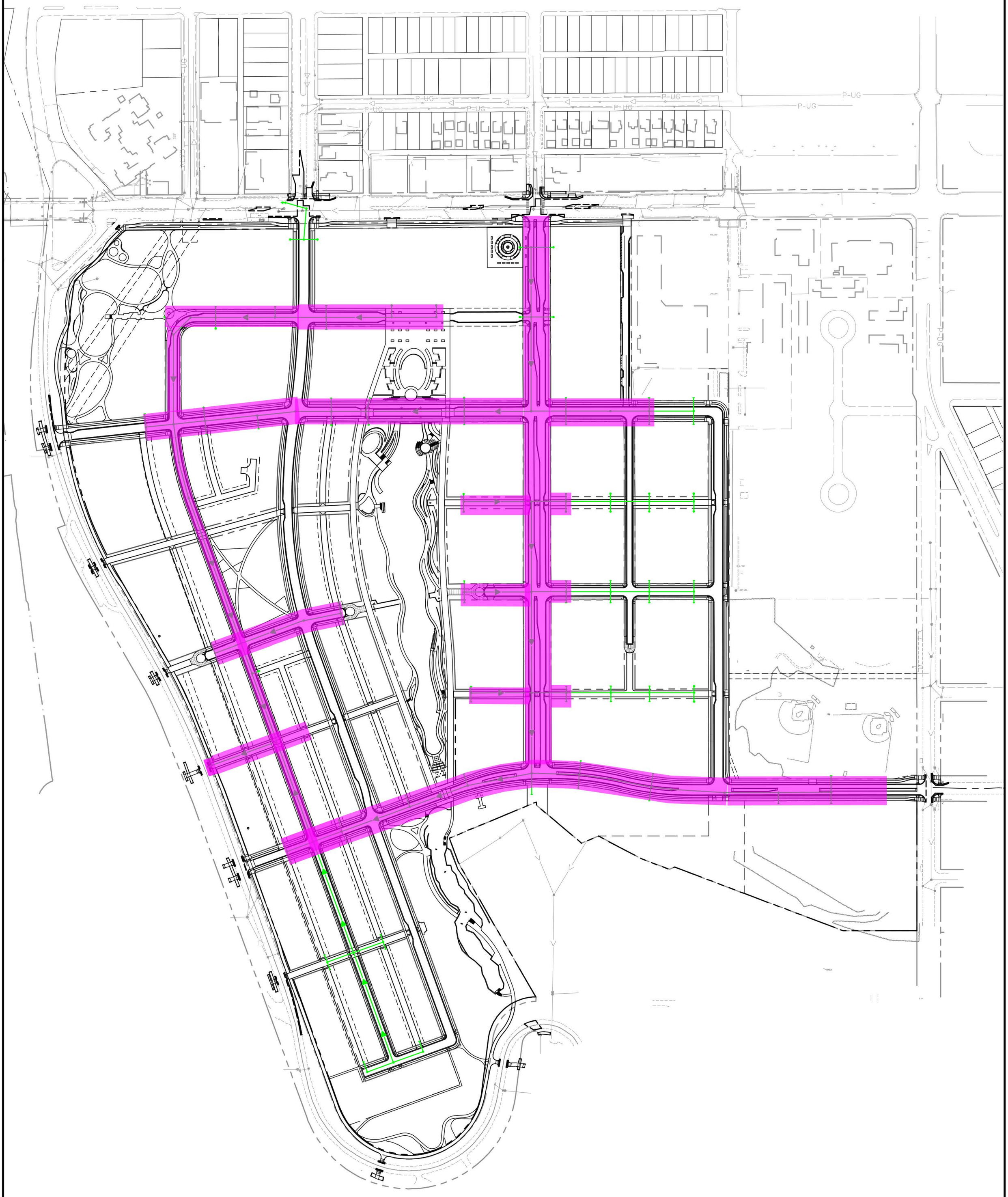
Kimley»Horn

TRAFFIC SIGNAGE AND PAVEMENT MARKING COMPLETION 4/28/2023



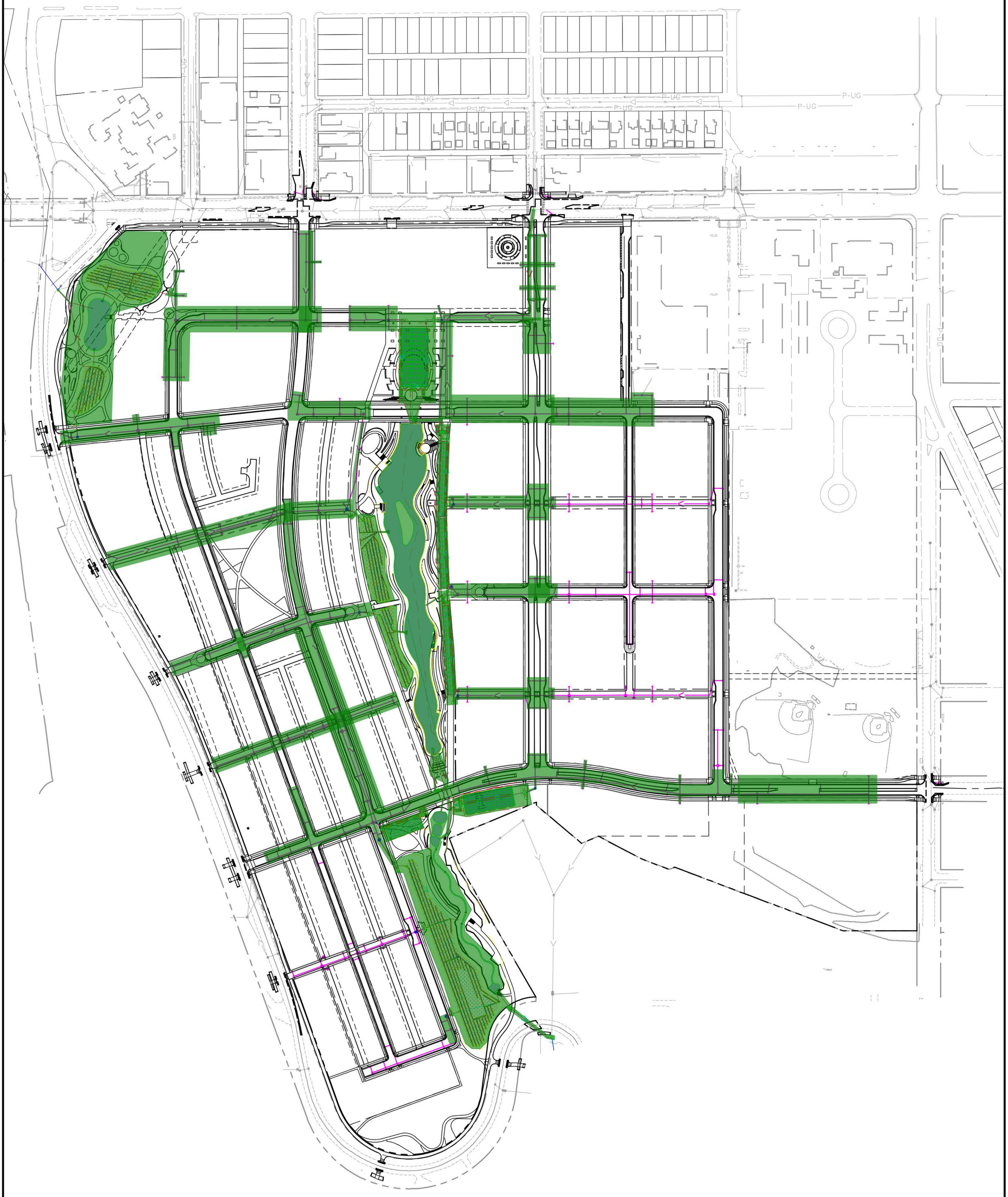
FORD SITE REDEVELOPMENT - ROADWAY CONSTRUCTION PHASING PLAN	DATE: 01/21/2020	RYAN	Kimley»Horn	

SANITARY SEWER COMPLETION
4/28/2023



FORD SITE REDEVELOPMENT - SANITARY CONSTRUCTION PHASING PLAN	DATE: 01/21/2020	RYAN	Kimley»Horn	

STORM SEWER COMPLETION 4/28/2023



FORD SITE REDEVELOPMENT -
STORM CONSTRUCTION PHASING PLAN

DATE:
01/21/2020

RYAN

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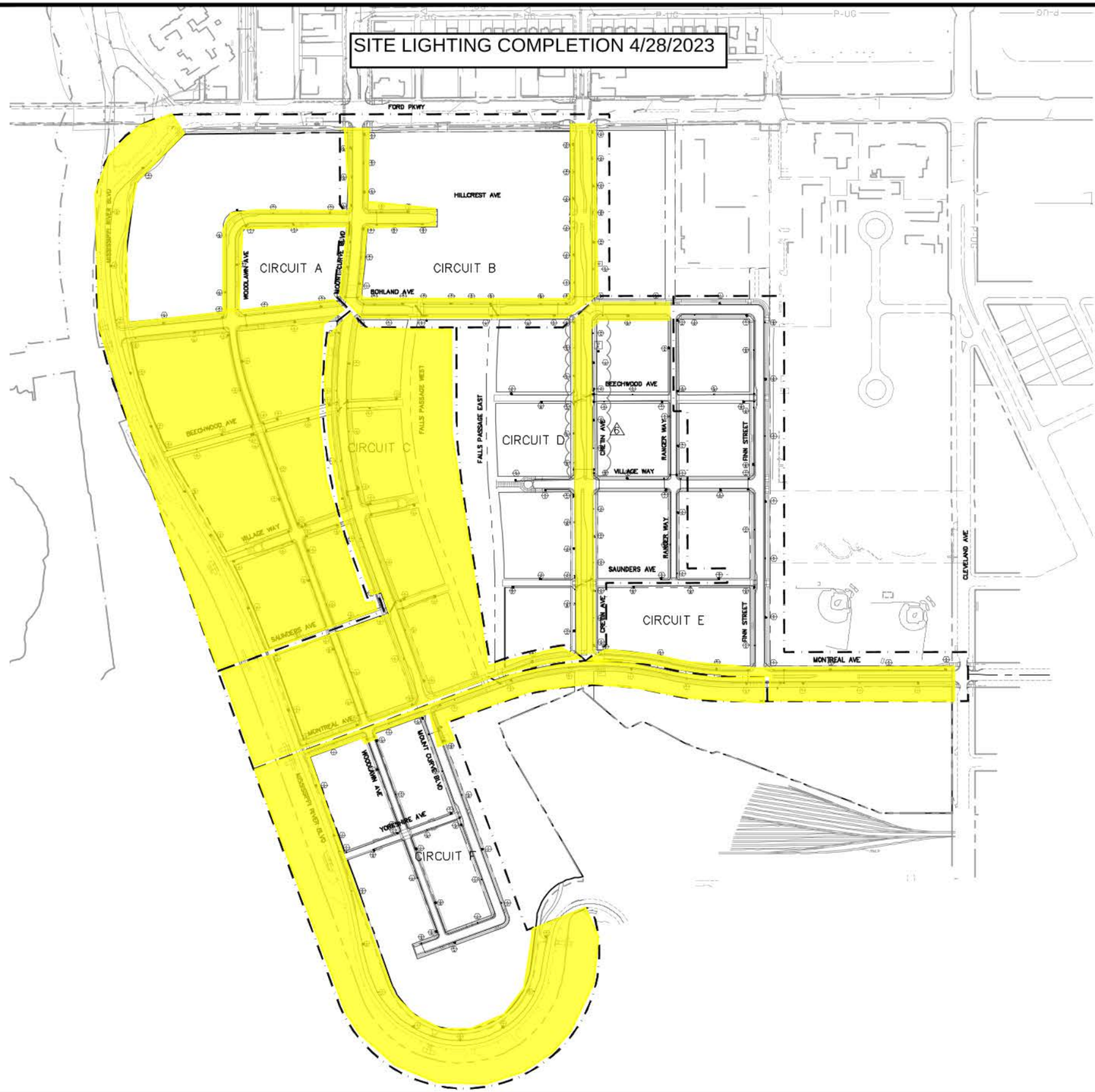
SITE LIGHTING COMPLETION 4/28/2023



LEGEND

LIGHTING CIRCUIT BOUNDARY

0 100 200 400

HORIZONTAL SCALE IN FEET

No.	Date	Revisions	App.
5	2/19/21	BULLETIN #5	JAH
6	4/2/21	BULLETIN #6	JAH

DRAWING NAME	Ford LightCircuits.dwg
DESIGNED BY:	KJC
DRAWN BY:	KJC
CHECKED BY:	JAH
DATE:	4/2/21
PROJECT NO.	160640016

Kimley»Horn
767 EUSTIS STREET, SUITE 100, ST. PAUL, MN 55114
PHONE: 651-645-4197
WWW.KIMLEY-HORN.COM

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

JOEL A. HINNENKAMP, PE

DATE: 4/2/21 MN LIC. NO. 53081

RYAN

RYAN COMPANIES US, INC.
FORD SITE REDEVELOPMENT
CITY OF ST PAUL, MINNESOTA
FINAL SITE PLAN

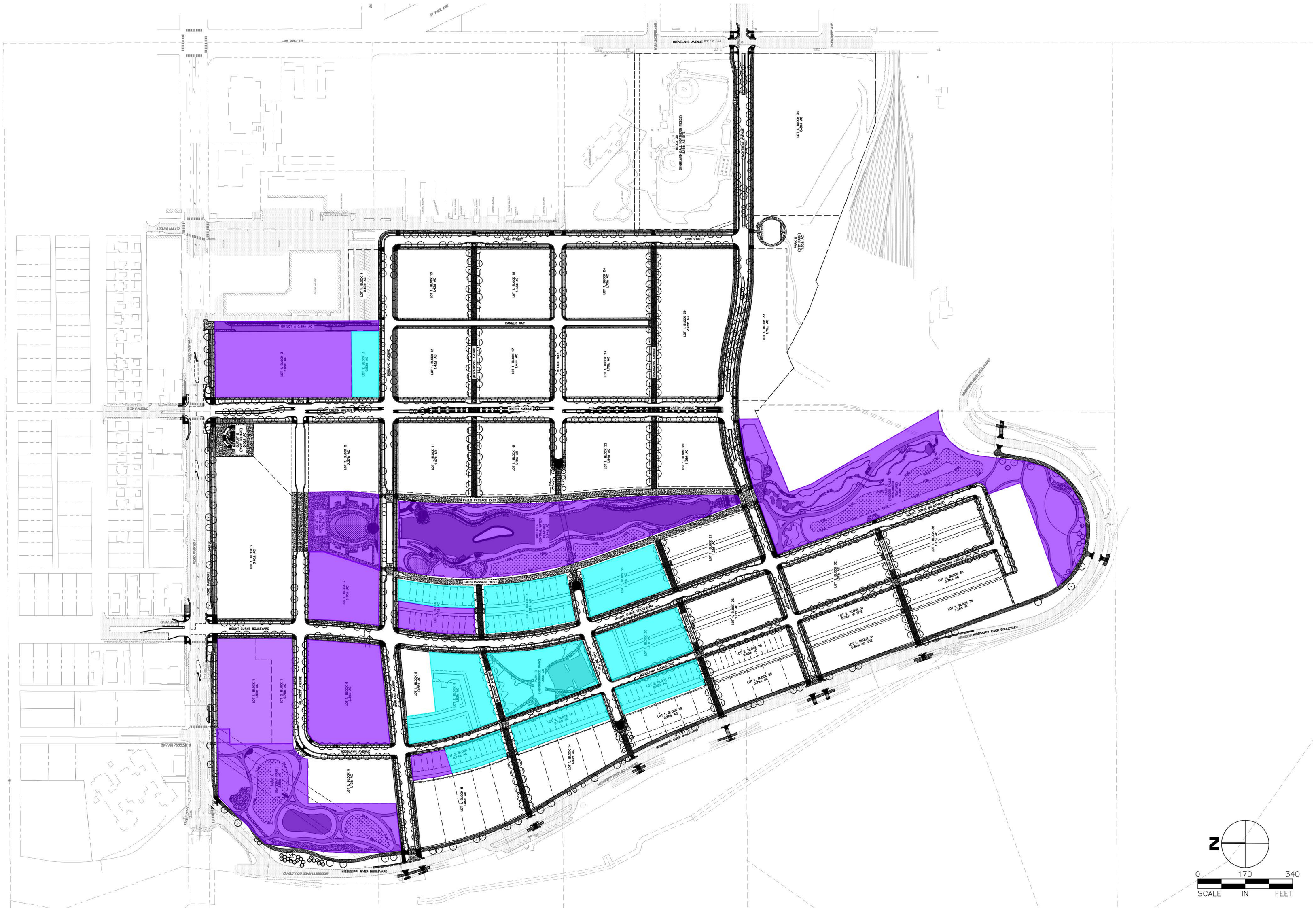
LIGHTING CIRCUIT OVERVIEW

SHEET NO. 446 / 522

PRIVATE SITE DEVELOPMENT COMPLETION 4/28/2023

ENTITLED

CONSTRUCTED



Attachment B

Sewer Availability Charge Projections

	SAC Calculations per the 2021 Ford Site Infrastructure Design
	SAC Calculations/Determinations per Actual Development Projects To Date
	SAC Projections per Ryan's Estimates of Future Projects

Highland Bridge SAC Calculations

Block/Lot	Infrastructure Design				Private/Public Development Design						Projected Development			
	Anticipated Land Use	MCES SAC Definition	SAC	GPD	Project	Proposed Land Use	MCES SAC Definition	SAC	GPD	SAC Determination	Projected Land Use	MCES SAC Definition	SAC	GPD
1/1	55K SF Medical	2150 SF/SAC	26	7009	Lot 1 Block 1 MOB	62.5K Medical	2150SF/SAC	29	7965	28	-	-	-	-
	140 Units Affordable	1 Unit/SAC	140	38360	PPL Nellie Francis Court & Emma Norton Residence 2.0	135 Units Affordable	1 Unit/SAC	135	36990	127	-	-	-	-
2/1	Mixed Use (27K SF Retail / 150 Units MF / 120K SF Fitness / 29.4K SF Office)	3800 SF/SAC + 1 Unit/SAC + 1600 SF/SAC +2650 SF/SAC	243	66647							Mixed Use (79.1K SF Retail / 65 Units MF / 53.5K SF Office)	3800 SF/SAC + 1 Unit/SAC + 2650 SF/SAC	106	29045
2/2	Mixed Use (20K SF Retail / 138 Units MF)	3800 SF/SAC + 1 Unit/SAC	143	39254							Mixed Use (125 Units Senior Living / 3.5K SF Retail)	1 Unit/SAC + 3800 SF/SAC	126	34502
3/1	Mixed Use (50K SF Retail / 200 Units MF)	3800 SF/SAC + 1 Unit/SAC	213	58405	Lot 1 Block 3 Mixed-Use	Mixed Use (61K SF Retail / 230 Units MF)	3800 SF/SAC + 1 Unit/SAC	246	67418	286	-	-	-	-
3/2	62 Units Affordable	1 Unit/SAC	62	16988	Lot 2 Block 3 CommonBond	60 Units Affordable	1 Unit/SAC	60	16440	48	-	-	-	-
4/1	None	-	0	0							None	-	0	0
5/1	111.4K Office	2650 SF/SAC	42	11518							30K SF Office			
6/1	166 Units Senior Living / 24K SF Mixed Use	1 Unit/SAC + 3800 SF/SAC	172	47215	Presybterian Homes	182 Units Senior Living / 5K SF Office	1 Unit/SAC + 2650 SF/SAC	184	50385	94	-	-	-	-
7/1	130 Units Condominiums / 15K SF Mixed Use	1 Unit/SAC + 3800 SF/SAC	134	36702	Presybterian Homes	118 Units Senior Living / 4K SF Retail	1 Unit/SAC + 3800 SF/SAC	119	32620	81	-	-	-	-
8/1	5 1-6 Unit Homes	1 Unit/SAC	30	8220							5 1-6 Unit Homes	1 Unit/SAC	30	8220
8/2	12 Rowhomes	1 Unit/SAC	12	3288	Pulte Model Homes	4 Rowhomes	1 Unit/SAC	4	1096	4	15 Rowhomes	1 Unit/SAC	15	4110
9/1	59 Units Affordable	1 Unit/SAC	59	16166							59 Units Affordable	1 Unit/SAC	59	16166
9/2	21 Rowhomes	1 Unit/SAC	21	5754	Pulte Phase 4	28 Rowhomes	1 Unit/SAC	28	7672		-	-	-	-
10/1	18 Rowhomes	1 Unit/SAC	18	4932	Pulte Phase 1A	22 Rowhomes	1 Unit/SAC	22	6028	22	-	-	-	-
11/1	170 Units MF	1 Unit/SAC	170	46580	Lot 1 Block 11 Mixed-Use	Mixed Use (2.1K SF Retail / 180 Units MF	3800 SF/SAC + 1 Unit/SAC	181	49471	190	-	-	-	-
12/1	59 Units Affordable	1 Unit/SAC	59	16166							59 Units Affordable	1 Unit/SAC	59	16166
	149 Units MF	1 Unit/SAC	149	40826							149 Units MF	1 Unit/SAC	149	40826
13/1	65 Units Affordable	1 Unit/SAC	65	17810							65 Units Affordable	1 Unit/SAC	65	17810
	66 Units Affordable	1 Unit/SAC	66	18084							66 Units Affordable	1 Unit/SAC	66	18084
	62 Units Affordable	1 Unit/SAC	62	16988							62 Units Affordable	1 Unit/SAC	62	16988
14/1	5 1-6 Unit Homes	1 Unit/SAC	30	8220							5 1-6 Unit Homes	1 Unit/SAC	30	8220
14/2	12 Rowhomes	1 Unit/SAC	12	3288	Pulte Phase 1B	15 Rowhomes	1 Unit/SAC	15	4110	15	-	-	-	-
15/1	22 Rowhomes	1 Unit/SAC	22	6028	Pulte Phase 1A	25 Rowhomes	1 Unit/SAC	25	6850	25	-	-	-	-
16/1	211 Units MF	1 Unit/SAC	211	57814							211 Units MF	1 Unit/SAC	211	57814
17/1	192 Units MF	1 Unit/SAC	192	52608							192 Units MF	1 Unit/SAC	192	52608
18/1	197 Units MF	1 Unit/SAC	197	53978							197 Units MF	1 Unit/SAC	197	53978
19/1	5 1-6 Unit Homes	1 Unit/SAC	30	8220	Block 19 Alley Submittal	5 1-Unit Homes	1 Unit/SAC	5	1370	-	-	-	-	-
19/2	11 Rowhomes	1 Unit/SAC	11	3014	Block 19 Alley Submittal;3rd Add/Ph 3	14 Rowhomes	1 Unit/SAC	14	3836	14	-	-	-	-
20/1	22 Rowhomes	1 Unit/SAC	22	6028	3rd Add/Phase 3	24 Rowhomes	1 Unit/SAC	24	6576	-	-	-	-	-
21/1	20 Rowhomes	1 Unit/SAC	20	5480	3rd Add/Phase 3	24 Rowhomes	1 Unit/SAC	24	6576	-	-	-	-	-
22/1	129 Units MF	1 Unit/SAC	129	35346							129 Units MF	1 Unit/SAC	129	35346
23/1	59 Units Affordable	1 Unit/SAC	59	16166							59 Units Affordable	1 Unit/SAC	59	16166
	205 Units MF	1 Unit/SAC	205	56170							205 Units MF	1 Unit/SAC	205	56170
24/1	55 Units Affordable	1 Unit/SAC	55	15070							55 Units Affordable	1 Unit/SAC	55	15070
	159 Units MF	1 Unit/SAC	159	43566							159 Units MF	1 Unit/SAC	159	43566
25/1	5 1-6 Unit Homes	1 Unit/SAC	30	8220	Block 25 Alley Submittal	5 1-Unit Homes	1 Unit/SAC	5	1370	-	-	-	-	-
25/2	11 Rowhomes	1 Unit/SAC	11	3014	Block 25 Alley Submittal	14 Rowhomes	1 Unit/SAC	14	3836	-	-	-	-	-
26/1	22 Rowhomes	1 Unit/SAC	22	6028							28 Rowhomes	1 Unit/SAC	28	7672
27/1	22 Rowhomes	1 Unit/SAC	22	6028							26 Rowhomes	1 Unit/SAC	26	7124
28/1	176 Units MF	1 Unit/SAC	176	48224							176 Units MF	1 Unit/SAC	176	48224
29/1	173 Units MF	1 Unit/SAC	173	47402							173 Units MF	1 Unit/SAC	173	47402
	219 Units MF	1 Unit/SAC	219	60006							219 Units MF	1 Unit/SAC	219	60006
30/1	Ballfields	17 Fixture Units/SAC	3.7	1015							Ballfields	17 Fixture Units/SAC	3.7	1015
31/1	5 1-6 Unit Homes	1 Unit/SAC	30	8220							5 1-6 Unit Homes	1 Unit/SAC	30	8220
31/2	13 Rowhomes	1 Unit/SAC	13	3562							15 Rowhomes	1 Unit/SAC	15	4110
32/1	26 Rowhomes	1 Unit/SAC	26	7124							30 Rowhomes	1 Unit/SAC	30	8220

	SAC Calculations per the 2021 Ford Site Infrastructure Design
	SAC Calculations/Determinations per Actual Development Projects To Date
	SAC Projections per Ryan's Estimates of Future Projects

Highland Bridge SAC Calculations

Block/Lot	Infrastructure Design				Private/Public Development Design						Projected Development				
	Anticipated Land Use	MCES SAC Definition	SAC	GPD	Project	Proposed Land Use	MCES SAC Definition	SAC	GPD	SAC Determination	Projected Land Use	MCES SAC Definition	SAC	GPD	
33/1	55 Units Affordable	1 Unit/SAC	55	15070							55 Units Affordable	1 Unit/SAC	55	15070	
	55 Units Affordable	1 Unit/SAC	55	15070							55 Units Affordable	1 Unit/SAC	55	15070	
34/1	100K SF Light Office	2650 SF/SAC	38	10340							100K SF Light Office	2650 SF/SAC	38	10340	
35/1	10 1-6 Unit Homes	1 Unit/SAC	60	16440							10 1-6 Unit Homes	1 Unit/SAC	60	16440	
35/2	13 Rowhomes	1 Unit/SAC	13	3562							15 Rowhomes	1 Unit/SAC	15	4110	
36/1	26 Rowhomes	1 Unit/SAC	26	7124							30 Rowhomes	1 Unit/SAC	30	8220	
Outlot A	-	-	0	-	Lot 1 Block 3 Mixed-Use	-	-	-	-	-	-	-	-	-	
Outlot B	Water Feature	17 Fixture Units/SAC	1	274							Water Feature	17 Fixture Units/SAC	1	274	
Outlot C	Civic Plaza Programming	17 Fixture Units/SAC	1.9	521	Outlot C Submittal	-	-	-	-	-	-	-	-	-	
Outlot D	-	-	0	-	Outlot D Submittal	Future 1000 SF Warehouse	7000 SF/SAC	0.1	39	-	-	-	-	-	
Park A	Gateway Park Programming	17 Fixture Units/SAC	1.9	521	Park A Submittal	-	-	-	-	-	-	-	-	-	
Park B	-	-	0	-	Park B Submittal	Future Restroom	Park Shelter (1 toilet, 1 sink, 2 floor drains)	0.65	178	-	-	-	-	-	
Park C	-	-	0	-	Park C Submittal	-	-	-	-	-	-	-	-	-	
Park D	-	-	0	-	Park D Submittal	-	-	-	-	-	-	-	-	-	
CP Rail Site*	55 Residential Homes	1 Unit/SAC	93	25,410							UST Ballfields	Per Detailed SAC Spreadsheet	98	26852	Credits Remaining
	100K Office	2650 SF/SAC													
Total	-	-	**4311**	**1181083**	**Total Public/Private Development Design**			**1134**	**310828**	**934**	**Total Projected Development**		**3027**	**829225**	**196**

Note: 4157 SAC Credits available within the Ford Site Redevelopment project area. Credits Remaining calculated sa 4157 credits available subtract SAC Determinations received (column L74) subtract SAC Projections (column O74)

Attachment C

Highland Bridge AUAR Transportation Update Memo

Memorandum

SRF No. 13856.07

To: Anthony Adams, PE, Civil Engineer
Ryan Companies

From: Brent Clark, PE, Traffic Studies Lead

Date: May 2, 2023

Subject: Highland Bridge AUAR Transportation Section Update

Project Background

The Highland Bridge development (formerly known as the Ford Site) is a mixed-use redevelopment of the former Ford Motor Company manufacturing plant in Highland Park. The development is generally bounded by Ford Parkway to the North, Mississippi River Boulevard to the West and South, and Cleveland Avenue to the East. The framework of the development was guided by the Ford Site Zoning and Public Realm Master Plan (hereon referred to as the *Master Plan*), which was a culmination of a decade of planning between the City of St. Paul and area stakeholders.

The *Ford Site AUAR Transportation Analysis* was developed by SRF Consulting Group, Inc. (SRF) in October 2019 (hereon referred to as the *Ford Site AUAR*), which was an independent study that identified study area impacts and mitigation improvements for all users and transportation modes. Since completion of the *Ford Site AUAR*, various traffic review documents have been developed for Highland Bridge development parcels that have been through or are currently going through the City of St. Paul's site plan approval process. These documents have been utilized to monitor development, provide recommendations for site-specific issues, as well as document recommended Travel Demand Management (TDM) strategies.

While these traffic review documents have helped monitor specific development parcels, as part of the Alternative Urban Areawide Review (AUAR) process, the *Ford Site AUAR* is to be updated every five (5) years until the site is fully developed. The University of St. Thomas (UST) is actively pursuing the development of a 1,500-seat baseball stadium and 1,000-seat softball stadium, as well as practice facilities and parking to support the project. The proposed development (hereon referred to as the UST Development) is located within the CP Rail site of the Highland Bridge development. Therefore, the AUAR update was accelerated from 2024, as the UST development opportunities would represent a vastly different land use than what was assumed within the *Ford Site AUAR* and *Master Plan*.

Note that since the Highland Bridge development is still largely under construction (only a few development parcels are fully open/leased), new traffic data collection and intersection operations analysis were not the focus of this AUAR update. The AUAR update is intended to provide a comprehensive overview of the current development proposal, assumptions, and status of mitigation associated with the *Ford Site AUAR,* from a non-event weekday perspective. The evaluation of transportation impacts/potential mitigation associated with events at the potential UST Development will be documented as part of future project design phases.

AUAR Assumptions

The *Ford Site AUAR* was reviewed to identify key assumptions associated with land use, evaluation scenarios, trip generation, and mitigation/infrastructure improvements. The evaluation scenario assumptions, as well as infrastructure mitigation status, are summarized in the following sections.

Evaluation Scenarios/Land Use

As part of the *Ford Site AUAR*, two future build scenarios were reviewed and summarized below:

- **Ryan Proposal:** Included a mixture of Civic, Office, Retail, and Residential land uses. The scenario was Ryan Companies' previous development proposal and was consistent with the amended *Master Plan* as approved by the City Council in April 2019.
- **Max Build:** Includes similar land uses as the Ryan Proposal, but at a higher density. The scenario was consistent with the highest development density permitted by the *Master Plan*. The scenario also included additional roadway extensions/redevelopment based on current zoning, such as: Finn Street extension/Highland Center Village redevelopment, Cretin Avenue extension/CP Rail site redevelopment, and Saunders Avenue extension/Partial Ford Site Ballfield redevelopment.

The *Ford Site AUAR* evaluated and developed mitigation improvements for both the Ryan Proposal and Max Build scenarios. The current land use proposal, referred to as the "2023 Development Scenario", is based on the most up to date land use projections for the Highland Bridge development. Note these projections take into account developments that have recently been constructed, developments that have gone through and/or are going through the City of St. Paul's site plan approval process, and future land use predictions, such as the UST Development. A detailed summary of the specific parcel assumptions and differences in trip generation is provided later in this document.

A summary of the previous and current land use assumptions within the Highland Bridge development is shown in Table 1. Comparing the previous Ryan Proposal land use assumptions with the current 2023 Scenario indicates that the proposed civic space (i.e., stadiums/training facilities) has been increased by approximately 50,000-sf. Retail, employment/office, and residential land use densities are expected to remain consistent with the Ryan Proposal. While the stadiums are categorized as civic space, an additional line item is included in Table 1 to indicate the number of seats proposed.

Table 1. AUAR Land Use Scenarios

Development Type	Ryan Proposal	Max Build	2023 Scenario
Residential	3,800 Units	4,000 Units	3,800 Units
Retail	150,000 SF	300,000 SF	150,000 SF
Employment (Office)	265,000 SF	450,000 SF	265,000 SF
Civic	50,000 SF	150,000 SF	100,000 SF
UST Stadiums	--	--	2,500 seats

Infrastructure Review

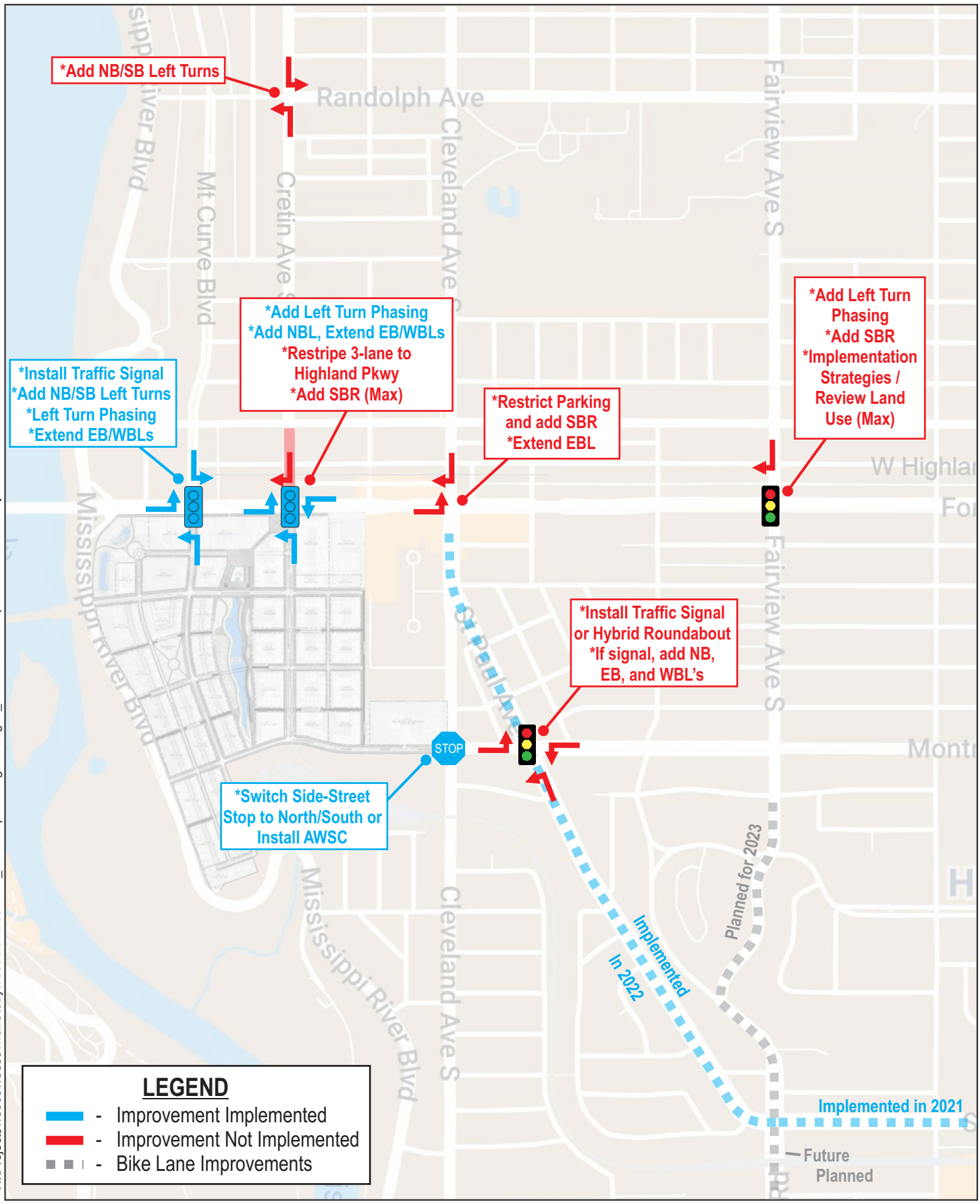
Several improvements were identified as part of the *Ford Site AUAR*. The improvements identified were classified into two categories; considerations or mitigations. Considerations were improvements that were expected to help the identified issues, however, may conflict with access, pedestrian/bicyclist, transit, and/or right-of-way priorities. Mitigations were improvements that were considered necessary due to the adverse operational and queuing issues. The focus of the infrastructure review is on the previous "mitigation" improvements. The specific mitigation associated with each scenario (not including signal timing optimization improvements) are summarized in Table 2. Note the table also summarizes whether the improvement has been implemented (highlighted in blue) and corresponds to Figure 1. The remaining mitigation that has not been implemented ranges from turn lane modifications and pavement striping to traffic signal/roundabout installations.

Table 2. *Ford Site AUAR* Infrastructure Improvement Review

Intersection	Improvement	Implementation Status
Existing Conditions		
Ford Pkwy/Cleveland Ave	Extend EB Left Turn Lane	Not Implemented
	Remove Parking and Provide SB Right Turn Lane	Not Implemented
2040 No Build		
Ford Pkwy/Fairview Ave	Provide Left Turn Signal Phasing for All Approaches	Not Implemented
Cretin Ave/Randolph Ave	Provide NB/SB Left Turn Lanes	Not Implemented
2040 Ryan Proposal		
Ford Pkwy/Mt Curve Blvd	Install Traffic Signal/Turn Lane Improvements	Implemented
Ford Pkwy/Cretin Ave	Add NB/SB/WB Left-Turn Signal Phasing	Implemented
	Add NBL Turn Lane and Extend EB/WB Turn Lanes	Implemented
	Restrict Parking & Restripe 3-lane to Highland Pkwy	Not Implemented
Ford Pkwy/Fairview Ave	Construct SB Right Turn Lane	Not Implemented
Cleveland Ave/Montreal Ave	Switch Side-Street Stop to N/S Approach or Install AWSC	Implemented
	Construct Intersection for Potential Future Signal	Implemented
St Paul Ave/Montreal Ave	Install Traffic Signal/Turn Lanes or Hybrid Roundabout (1)	Not Implemented
2040 Max Build		
Ford Pkwy/Cretin Ave	Construct SB Right Turn Lane	Not Implemented
Ford Pkwy/Fairview Ave	Implement TDM Strategies and Refine Land Use Guidance	Partially Implemented (2)

(1) Recent on-street bicycle lane implementation projects have resulted in the removal of vehicular travel lanes along St. Paul Avenue, which may accelerate the need for traffic control improvements.

(2) TDM strategies, such as indoor secured bicycle parking and unbundling on-site parking costs from rent, have been implemented at most developments, therefore, the mitigation has been partially implemented.



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SRF

Infrastructure Improvement Summary

Highland Bridge AUAR Transportation Section Update

City of Saint Paul

Figure 1

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May 2023

In addition to the capacity related improvements, several multi-modal considerations were discussed within the *Ford Site AUAR*. The considerations were based on a review of the existing and proposed pedestrian/bicycle networks to determine locations where priority enhancements and connections could be considered. Since completion of the study, two bicycle facility improvements have been implemented and are further discussed below. The other multi-modal improvements identified in the *Ford Site AUAR* should continue to be considered for future implementation, specifically multi-modal improvements that address gaps to/from the UST Development location (i.e., bicycle facility gap on Montreal Avenue, from Cleveland Avenue to St. Paul Avenue; pedestrian sidewalk gap on Cleveland Avenue, from Saunders Avenue to south of Yorkshire).

In 2019, the City of St. Paul implemented enhanced shared lanes on Cleveland Avenue, between St. Paul Avenue and Mississippi River Boulevard. In addition, the City of St. Paul and Ramsey County recently implemented on-street bicycle facilities along St. Paul Avenue from Ford Parkway to Highway 5. The City also plans to implement on-street bicycle lanes along Edgcumbe Road (north of St. Paul Avenue) in 2023, and Ramsey County is planning to implement the segment south of St. Paul Avenue as part of future mill and overlay projects. As part of the 2023 implementation, a new traffic signal is expected to be constructed at the St. Paul Avenue/Edgcumbe Road intersection, which is anticipated to have improved signal capability (i.e., an EBR/NBL overlap phase). These projects have and will result in the elimination of vehicular travel lanes in each direction of travel, as summarized below:

- **St. Paul Avenue from Edgcumbe Road to TH 5:** Removal of Eastbound and Westbound vehicular travel lanes.
- **St. Paul Avenue from Ford Parkway to Edgcumbe Road:** Removal of Northbound and Southbound vehicular travel lanes.
- **Edgcumbe Road from Quirnia Street to St. Paul Avenue:** Removal of Northbound and Southbound vehicular travel lanes. (Planned for 2023)
- **Edgcumbe Road from St. Paul Avenue to Munster Avenue:** Removal of Northbound and Southbound vehicular travel lanes. (Planned in the future)

Note these modifications were discussed as part of the *Ford Site AUAR*, as they are consistent with the City of Saint Paul Bicycle Plan and help support non-motorized trips to/from the Highland Bridge development. However, the elimination of travel lanes reduces vehicular capacity through the corridor, which may accelerate the need for traffic control improvements at the St. Paul Avenue/Montreal Avenue intersection. Therefore, sensitivity analysis tests were conducted along St. Paul Avenue to understand current/future operations and infrastructure improvement timelines and are discussed later in this document.

2023 Development Scenario

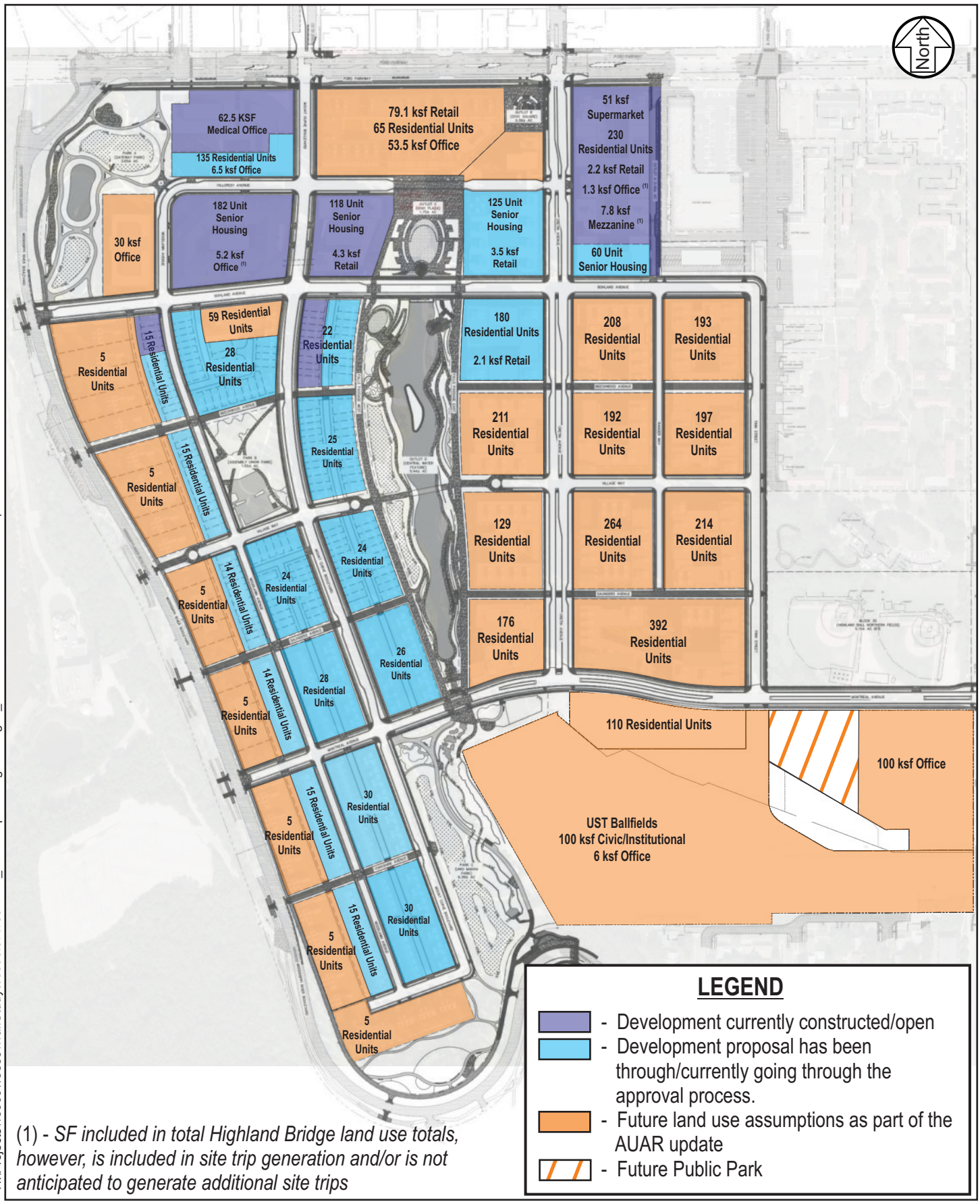
The current 2023 Development Scenario land use and trip generation were reviewed and compared to previous AUAR assumptions. The following sections outline the current land use and trip generation data associated within the development area.

Land Use

As mentioned previously, the current 2023 scenario is based on the most up to date land use projections for the Highland Bridge development. These projections take into account developments that have been recently constructed/open, developments that have gone through and/or are going through the City of St. Paul's site plan approval process, and future land use predictions, such as the UST Development. A detailed breakdown of the land use assumptions per parcel are shown in Figure 2. Note that developments that have been constructed or have been through/currently going through the City of St. Paul's site plan approval process are highlighted in blue, whereas future land use assumptions are highlighted in orange. In addition to the specific parcel assumptions, the current development proposals were compared to the overall site, which is summarized in Table 3. Based on the land use/trip generation comparisons, approximately 40 percent of the site has currently been through/going through the City of St. Paul's site plan approval process. Of the developments that are currently constructed/open, approximately 60 percent of the residential units have been leased. The medical office building in Lot 1 Block 1 is currently 84 percent leased and the retail space in Lot 1 Block 7 is currently unoccupied.

Table 3. 2023 Scenario – Current & Remaining Development

Development Type	Current Development	2023 Scenario	Remaining Development
Civic	--	100,000 SF	100,000 SF
Employment (Office)	75,500 SF	265,000 SF	189,500 SF
Retail	70,900 SF	150,000 SF	79,100 SF
Residential	1,355 Units	3,800 Units	2,445 Units



(1) - *SF included in total Highland Bridge land use totals, however, is included in site trip generation and/or is not anticipated to generate additional site trips*

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SRF

2023 Scenario - Land Use Assumptions

Highland Bridge AUAR Transportation Section Update
City of Saint Paul

Figure 2

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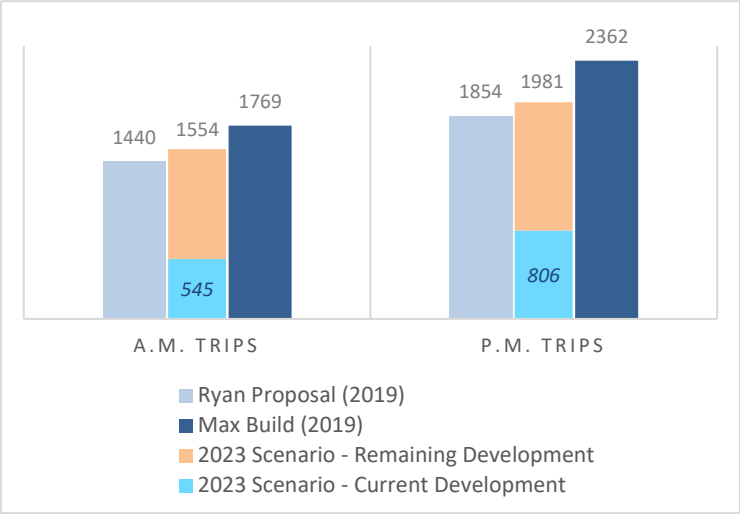
May 2023

Trip Generation

To account for traffic impacts associated with the current development proposal, trip generation estimates for the weekday a.m. and p.m. peak hours and on a daily basis were calculated using the *ITE Trip Generation Manual, 10th Edition*. It should be noted that in order to be consistent with the *Ford Site AUAR*, the same ITE edition (i.e. the *10th Edition*), multi-use reductions, and various reductions were applied. These reductions were based on a combination of internal capture rate methodology in the *ITE Trip Generation Handbook* and the *Traffic Generated by Mixed-Use Developments – Thirteen-Region Study Using Consistent Measures of Build Environment, (2015)* published by the Transportation Research Board (No. 2500). In addition, various trip reductions were applied to account for area transit service, walking/bicyclist facilities and environment, jobs and housing balance, amount of below market rate housing, and Travel Demand Management (TDM) Programs. Note that these reductions are considered long-term reductions and will likely not fully materialize until the Highland Bridge development is fully developed. A detailed breakdown of the current and previous overall site trip generation is shown in the Appendix.



The trip generation estimates for the 2023 scenario were compared to the *Ford Site AUAR* trip generation estimates and are shown in Table 4 and the inset. The comparison indicates that the 2023 Scenario is expected to generate approximately 114 to 127 additional a.m. and p.m. peak hour trips, respectively, as compared to the Ryan Proposal, and approximately 215 to 381 fewer a.m. and p.m. peak hour trips, respectively, as compared to the Max Build scenario. Note that the 2023 Scenario is expected to generate slightly more trips than the previous Ryan Proposal, even though the total office, retail, and residential land use densities have remained consistent.

This increase is mostly attributed to updates in the retail land use assumptions based on discussions with the project team (i.e., higher restaurant assumptions versus generic ITE shopping center land use). While the proposed Civic space has increased, this has minimal impacts on traffic, as the UST Development is expected to generate minimal peak hour trips during non-event conditions.

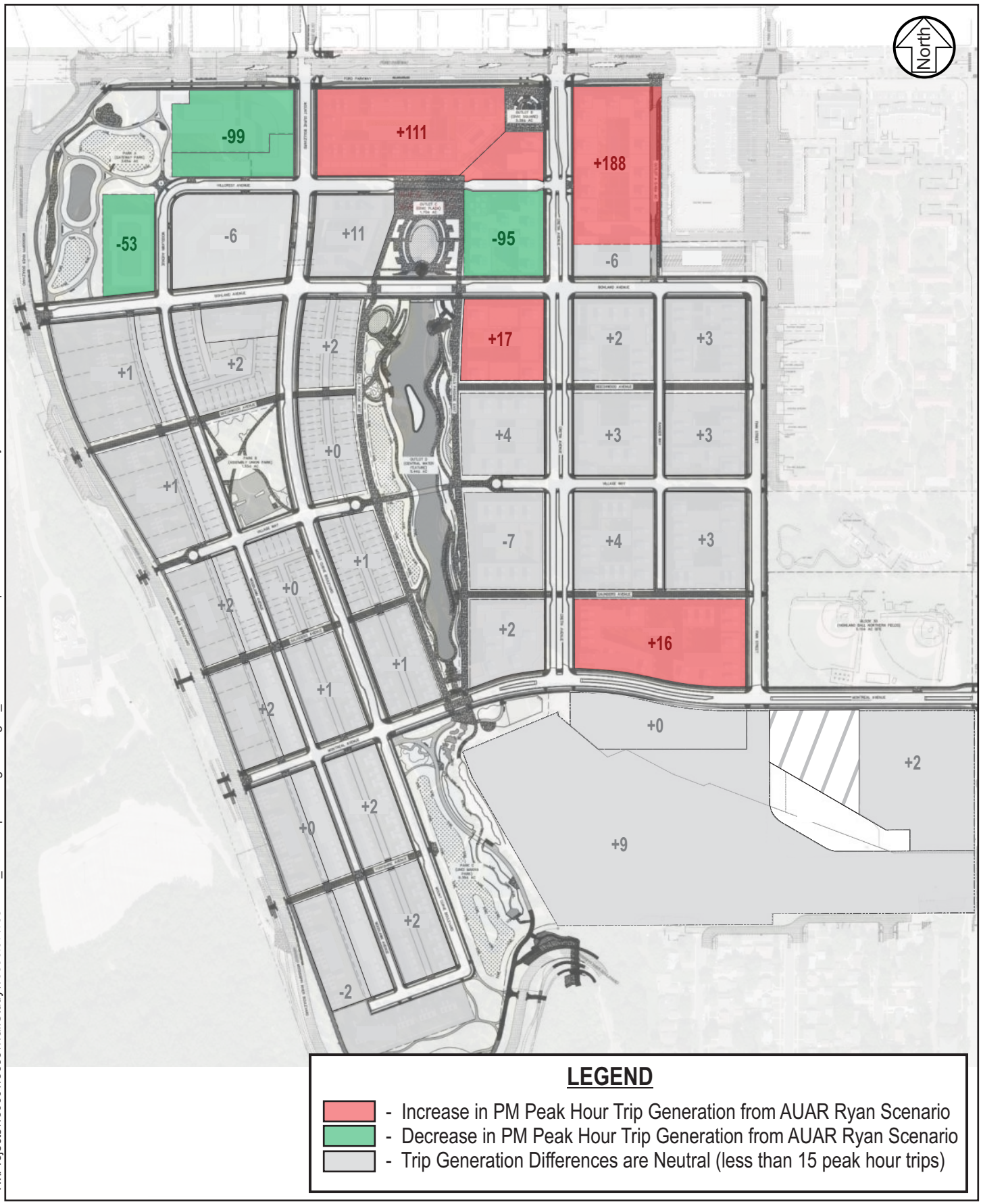
Table 4. Highland Bridge Trip Generation Comparison

Land Use Scenario	A.M. Peak Hour Trips		P.M. Peak Hour Trips		Daily Trips
	In	Out	In	Out	
Ford Site AUAR - Ryan Proposal	636	804	940	914	21,791
Ford Site AUAR – Max Build	878	891	1,124	1,238	27,573
AUAR Update - 2023 Scenario	685	869	1,019	962	23,890
Total Change in Trips from Ryan Proposal	+49	+65	+79	+48	+2,099
Total Change in Trips from Max Build	(-193)	(-22)	(-105)	(-276)	(-3,683)

The 2023 scenario trip generation differences by block is summarized in Figure 3 to illustrate where anticipated trips have increased/decreased as compared to the previous AUAR assumptions. Note that vehicle routing to/from the site can be heavily influenced based on the site location within Highland Bridge. For example, vehicles from developments on the northern portion of Highland Bridge will likely route to/from the east using Ford Parkway, whereas trips to/from developments on the southern portion will likely utilize Montreal Avenue. Therefore, identifying the trip generation differences on a block level can help identify potential impacts to area roadways. As shown in Figure 3, the largest anticipated trip increases are from the Lot 1 Block 2 and Lot 1 Block 3 developments, which are located adjacent to Cretin Avenue, directly south of Ford Parkway, which may result in more impacts along Ford Parkway. However, it should be noted that the total trip generation for developments north of Bohland Avenue is only expected to generate an additional 49 p.m. peak hour trips compared to previous assumptions.

Note Lot 1 Block 3 was recently constructed and opened in 2022. As part of the City of St. Paul's site plan approval process, the future traffic operations and potential issues associated with the increase in trips was documented within the *Ford Site Lot 1 Block 3 – Traffic Review*. The traffic review recommended several mitigation strategies and improvements for consideration, should issues occur along Cretin Avenue. Given the importance of Cretin Avenue to the roadway network, operations should continue to be monitored, particularly as development occurs to the south, to determine if/when additional mitigation improvements/strategies are needed.

Overall, the current 2023 Scenario is expected to generate trips similar to the previous Ryan Proposal scenario. The mitigation improvements identified as part of the *Ford Site AUAR* for the Ryan Proposal should continue to be monitored to determine if/when improvements are needed.



LEGEND

- Increase in PM Peak Hour Trip Generation from AUAR Ryan Scenario
- Decrease in PM Peak Hour Trip Generation from AUAR Ryan Scenario
- Trip Generation Differences are Neutral (less than 15 peak hour trips)

H:\Projects\13000\13856\TraffStudy\13856.07\13856.07_AUAR Update\Figures\Fig03_2023 Scenario - Trip Generation Difference by Block.cdr

SRF

2023 Scenario - Trip Generation Difference by Block

Highland Bridge AUAR Transportation Section Update
City of Saint Paul

Figure 3

02313856.07
May 2023

Sensitivity Analysis

As mentioned previously, on-street bicycle lanes were recently implemented along St. Paul Avenue, from Ford Parkway to TH 5, that resulted in the removal of vehicular travel lanes in each direction. The elimination of travel lanes reduces vehicular capacity through the corridor, which may accelerate the need for traffic control improvements at the St. Paul Avenue/Montreal Avenue intersection.

Therefore, new turning movement count data was collected, and sensitivity analysis tests were conducted to understand current and future operations, as well as infrastructure improvement timelines. Results of the sensitivity analysis, which is documented in the Appendix, indicate that existing traffic volumes along Ford Parkway and St. Paul Avenue have decreased by 15 to 30 percent compared to 2019 counts. While the infrastructure improvement recommendations are generally consistent with the *Ford Site AUAR*, the sensitivity analysis helps provide an estimate for when the improvements are expected to be needed, which is largely based on Highland Bridge development timelines. Based on the sensitivity analysis, traffic control improvements are expected to be needed at the St. Paul Avenue/Montreal Avenue intersection in the next five (5) years. The study area should continue to be monitored to determine if/when improvements are needed.

Summary and Conclusion

The following summary and conclusions are offered for consideration:

1) As part of the Alternative Urban Areawide Review (AUAR) process, the *Ford Site AUAR* is to be updated every five (5) years until the site is fully developed. The AUAR update was accelerated from 2024, as the UST development opportunities within the CP rail site would represent a vastly different land use than what was assumed within the *Ford Site AUAR* and *Master Plan*.
    a. Note the Highland Bridge development is still largely under construction (only a few development parcels are fully open/leased), therefore, new traffic data collection and intersection operations analysis were not the focus of this AUAR update.
2) Multiple improvements were identified as part of the *Ford Site AUAR*, several of which have been implemented. However, there is mitigation that was identified that has yet to be implemented. The remaining mitigation that has not been implemented ranges from turn lane modifications and pavement striping to traffic signal/roundabout installations.
3) In addition to capacity related improvements, several multi-modal considerations were identified within the *Ford Site AUAR*. Two bicycle lane improvements have been implemented; the other multi-modal improvements should continue to be considered for future implementation.
    a. In 2019, the City of St. Paul implemented enhanced shared lanes on Cleveland Avenue, between St. Paul Avenue and Mississippi River Boulevard.
    b. The City of St. Paul and Ramsey County recently implemented on-street bicycle facilities along St. Paul Avenue, and are planning future on-street bicycle implementation along Edgcumbe Road. Note these modifications were discussed as

part of the *Ford Site AUAR*, as they are consistent with the City of Saint Paul Bicycle Plan and help support non-motorized trips to/from the Highland Bridge development.

c. However, the removal of travel lanes reduces vehicular capacity through the corridor, which may accelerate the need for traffic control improvements at the St. Paul Avenue/Montreal Avenue intersection and may cause longer queueing/delay at the St. Paul Avenue/Edgcumbe Road intersection.

4) The current AUAR development land use and trip generation were reviewed and compared to previous AUAR assumptions.

   a. The current 2023 Scenario civic space (i.e., stadiums/training facilities) has been increased by approximately 50,000-sf. Retail, employment/office space, and residential land use densities are expected to remain consistent with the Ryan Proposal.

   b. The 2023 scenario is expected to generate approximately 114 to 127 <u>additional</u> a.m. and p.m. peak hour trips, respectively, as compared to the Ryan Proposal, and approximately 215 to 381 <u>fewer</u> a.m. and p.m. peak hour trips, respectively, as compared to the Max Build scenario.

      i. The increase from the Ryan Proposal is mostly attributed to updates in the retail land use assumptions based on discussions with the project team (i.e., higher restaurant assumptions versus generic ITE shopping center land use).

5) The current 2023 Scenario is expected to generate trips similar to the previous Ryan Proposal scenario. The mitigation improvements identified as part of the *Ford Site AUAR* for the Ryan Proposal should continue to be monitored to determine if/when improvements are needed.

   a. Continue to monitor operations along Cretin Avenue, particularly as development occurs to the south, to determine if/when additional mitigation strategies/improvements identified in the *Ford Site Lot 1 Block 3 – Traffic Review* are needed.

   b. Sensitivity analysis tests were performed along St. Paul Avenue and Ford Parkway, and are documented in the Appendix. While the recommended infrastructure improvements are generally consistent with the *Ford Site AUAR*, the sensitivity analysis helps provide an estimate for when the improvements are expected to be needed. Based on the sensitivity analysis, traffic control improvements are expected to be needed at the St. Paul Avenue/Montreal Avenue intersection in the next five (5) years.

Appendix

A2 - Development Tracking - Daily Trips

Highland Bridge Vehicle Trip Generation

Block/Lot	AUAR Traffic Study (Ryan Scenario)					Private Development Traffic Memo					
	Anticipated Land Use	Size	Daily Trips	Total Daily Trips	Adjusted Total Daily Trips	Proposed Land Use	Size	Daily Trips	Total Daily Trips	Adjusted Daily Trips	Adjusted Daily Trip Differential
1/1	Medical-Dental Office Building	112 ksf	3898	3898	2349	Medical-Dental Office Building	62.5 ksf	2175	2175	1311	-1038
	Mid-Rise Multifamily Housing (Lot 2 Block 1)	129 DU	702	702	423	General Office Building	6.5 ksf	797	797	481	58
						Mid-Rise Multifamily Housing (Lot 2 Block 1)	135 DU				
2/1	Shopping Center	77 ksf	2907	6626	3994	Shopping Center	62.1 ksf	6886	9102	5485	1491
	Fast Casual Restaurant	2 ksf	630			Fast Casual Restaurant	6 ksf				
	High-Turnover (Sit-Down) Restaurant	2 ksf	224			High-Turnover (Sit-Down) Restaurant	9 ksf				
	Coffee/Donut Shop without Drive-Through Window	2 ksf	1641			Coffee/Donut Shop without Drive-Through Window	2 ksf				
	Mid-Rise Multifamily Housing	225 DU	1224			Mid-Rise Multifamily Housing	65 DU	354			
						Medical-Dental Office Building	53.5 ksf	1862			
2/2	Shopping Center	26 ksf	982	2783	1677	High-Turnover (Sit-Down) Restaurant	3.5 ksf	393	856	515	-1162
	Fast Casual Restaurant	2 ksf	630								
	High-Turnover (Sit-Down) Restaurant	2 ksf	224			Senior Adult Housing - Attached	125 DU	463			
	Mid-Rise Multifamily Housing	174 DU	947								
3/1	Shopping Center	33 ksf	1246	3340	2013	Shopping Center	2.2 ksf	5529	6780	4086	2073
	Fast Casual Restaurant	2 ksf	630			Supermarket	51 ksf				
	High-Turnover (Sit-Down) Restaurant	2 ksf	224			Mid-Rise Multifamily Housing	230 DU	1251			
	Mid-Rise Multifamily Housing	228 DU	1240								
3/2	Mid-Rise Multifamily Housing	62 DU	337	337	203	Senior Adult Housing - Attached	60 DU	222	222	134	-69
4/1	None		-	-	-						
5/1	General Office Building	106 ksf	1032	1032	622	General Office Building	30 ksf	292	292	176	-446
6/1	Senior Adult Housing-Attached	220 DU	814	1178	710	Senior Adult Housing - Attached	102 DU	377	1184	714	4
						Assisted Living	80 Beds	208			
7/1	Mid-Rise Multifamily Housing	67 DU	364			Senior Adult Housing - Attached	118 DU	437			
						Retail	4.3 ksf	162			
8/1	Single-Family Detached Housing	5 DU	47	47	28	Single-Family Detached Housing	5 DU	47	47	29	1
8/2	Low-Rise Multifamily Housing	12 DU	88	88	53	Low-Rise Multifamily Housing	15 DU	110	110	66	13
9/1	Mid-Rise Multifamily Housing	59 DU	321	321	193	Mid-Rise Multifamily Housing	59 DU	321	321	193	0
9/2	Low-Rise Multifamily Housing	21 DU	154	154	93	Low-Rise Multifamily Housing	28 DU	205	205	124	31
10/1	Low-Rise Multifamily Housing	18 DU	132	132	79	Low-Rise Multifamily Housing	22 DU	161	161	97	18
11/1	Mid-Rise Multifamily Housing	167 DU	908	909	548	Mid-Rise Multifamily Housing	180 DU	979	1215	732	184
						High-Turnover (Sit-Down) Restaurant	2.1 ksf	236			
12/1	Mid-Rise Multifamily Housing	203 DU	1104	1105	666	Mid-Rise Multifamily Housing	208 DU	1132	1132	682	16
13/1	Mid-Rise Multifamily Housing	186 DU	1012	1012	610	Mid-Rise Multifamily Housing	193 DU	1050	1050	633	23
14/1	Single-Family Detached Housing	5 DU	47	47	28	Single-Family Detached Housing	5 DU	47	47	28	0
14/2	Low-Rise Multifamily Housing	12 DU	88	88	53	Low-Rise Multifamily Housing	15 DU	110	110	66	13
15/1	Low-Rise Multifamily Housing	22 DU	161	161	97	Low-Rise Multifamily Housing	25 DU	183	183	110	13
16/1	Mid-Rise Multifamily Housing	196 DU	1066	1066	643	Mid-Rise Multifamily Housing	211 DU	1148	1148	691	48
17/1	Mid-Rise Multifamily Housing	176 DU	957	957	577	Mid-Rise Multifamily Housing	192 DU	1044	1044	630	53
18/1	Mid-Rise Multifamily Housing	186 DU	1012	1012	610	Mid-Rise Multifamily Housing	197 DU	1072	1072	645	35
19/1	Single-Family Detached Housing	5 DU	47	47	28	Single-Family Detached Housing	5 DU	47	47	28	0
19/2	Low-Rise Multifamily Housing	11 DU	81	81	49	Low-Rise Multifamily Housing	14 DU	102	102	62	13
20/1	Low-Rise Multifamily Housing	22 DU	161	161	97	Low-Rise Multifamily Housing	24 DU	176	176	106	9
21/1	Low-Rise Multifamily Housing	20 DU	146	146	88	Low-Rise Multifamily Housing	24 DU	176	176	106	18
22/1	Mid-Rise Multifamily Housing	156 DU	849	849	511	Mid-Rise Multifamily Housing	129 DU	702	702	423	-88
23/1	Mid-Rise Multifamily Housing	248 DU	1349	1349	813	Mid-Rise Multifamily Housing	264 DU	1436	1436	866	53
24/1	Mid-Rise Multifamily Housing	199 DU	1083	1083	652	Mid-Rise Multifamily Housing	214 DU	1164	1164	701	49
25/1	Single-Family Detached Housing	5 DU	47	47	28	Single-Family Detached Housing	5 DU	47	47	28	0
25/2	Low-Rise Multifamily Housing	11 DU	81	81	49	Low-Rise Multifamily Housing	14 DU	102	102	62	13
26/1	Low-Rise Multifamily Housing	22 DU	161	161	97	Low-Rise Multifamily Housing	28 DU	205	205	124	27
27/1	Low-Rise Multifamily Housing	22 DU	161	161	97	Low-Rise Multifamily Housing	26 DU	190	190	115	18
28/1	Mid-Rise Multifamily Housing	168 DU	914	914	551	Mid-Rise Multifamily Housing	176 DU	957	957	577	26
29/1	Mid-Rise Multifamily Housing	333 DU	1812	1812	1092	Mid-Rise Multifamily Housing	392 DU	2132	2132	1285	193
30/1	None		-	-	-						
31/1	Single-Family Detached Housing	5 DU	47	47	28	Single-Family Detached Housing	5 DU	47	47	28	0
31/2	Low-Rise Multifamily Housing	13 DU	95	95	57	Low-Rise Multifamily Housing	15 DU	110	110	66	9
32/1	Low-Rise Multifamily Housing	26 DU	190	190	115	Low-Rise Multifamily Housing	30 DU	220	220	132	17
33/1	Mid-Rise Multifamily Housing	110 DU	598	598	361	Mid-Rise Multifamily Housing	110 DU	598	598	361	0
34/1	General Office Building	97 ksf	945	945	569	General Office Building	100 ksf	974	974	587	18
35/1	Single-Family Detached Housing	12 DU	113	113	68	Single-Family Detached Housing	10 DU	94	94	57	-11
35/2	Low-Rise Multifamily Housing	13 DU	95	95	57	Low-Rise Multifamily Housing	15 DU	110	110	66	9
36/1	Low-Rise Multifamily Housing	26 DU	190	190	115	Low-Rise Multifamily Housing	30 DU	220	220	132	17
CP Rail	None		0	0	0	UST Ballfields	100 ksf & 6 ksf	350	350	350	350
Total	-		**36158**	**36160**	**21791**	-		**39412**	**39412**	**23890**	**2099**

Development Constructed/Open
Current Development Proposals
Future Development Assumptions

A3 - Development Tracking - Peak Hour Trips

Highland Bridge Vehicle AM & PM Peak Trips														
Block/Lot	AUAR Traffic Study (Ryan Scenario)					Private Development Traffic Memo					Change in Trips			
	Anticipated Land Use	A.M. In	A.M. Out	P.M. In	P.M. Out	Proposed Land Use	A.M. In	A.M. Out	P.M. In	P.M. Out	A.M. In	A.M. Out	P.M. In	P.M. Out
1/1	Medical-Dental Office Building	151	42	66	170	Medical-Dental Office Building	84	24	37	95	-67	-18	-29	-75
	Mid-Rise Multifamily Housing (Lot 2 Block 1)	7	21	21	14	General Office Building Mid-Rise Multifamily Housing (Lot 2 Block 1)	12	23	22	18	5	2	1	4
2/1	Shopping Center Fast Casual Restaurant High-Turnover (Sit-Down) Restaurant Coffee/Donut Shop without Drive-Through Window Mid-Rise Multifamily Housing	113	122	162	151	Shopping Center Fast Casual Restaurant High-Turnover (Sit-Down) Restaurant Coffee/Donut Shop without Drive-Through Window Medical-Dental Office Building Mid-Rise Multifamily Housing	198	134	195	229	85	12	33	78
2/2	Shopping Center Fast Casual Restaurant High-Turnover (Sit-Down) Restaurant Mid-Rise Multifamily Housing	28	41	74	62	High-Turnover (Sit-Down) Restaurant Senior Adult Housing - Attached	17	20	24	17	-11	-21	-50	-45
3/1	Shopping Center Fast Casual Restaurant High-Turnover (Sit-Down) Restaurant Mid-Rise Multifamily Housing	34	51	91	76	Shopping Center Supermarket Mid-Rise Multifamily Housing	87	87	187	168	53	36	96	92
3/2	Mid-Rise Multifamily Housing	4	10	10	6	Senior Adult Housing - Attached	2	5	5	5	-2	-5	-5	-1
4/1	None	-	-	-	-	None	-	-	-	-	-	-	-	-
5/1	General Office Building	66	11	12	62	General Office Building	19	3	3	18	-47	-8	-9	-44
6/1	Senior Adult Housing-Attached	9	18	19	16	Senior Adult Housing - Attached Assisted Living	17	22	29	29	4	-7	-1	6
7/1	Mid-Rise Multifamily Housing	4	11	11	7	Senior Adult Housing - Attached Retail								
8/1	Single-Family Detached Housing	1	2	2	1	Single-Family Detached Housing	1	2	2	1	0	0	0	0
8/2	Low-Rise Multifamily Housing	1	2	2	2	Low-Rise Multifamily Housing	1	3	3	2	0	1	1	0
9/1	Mid-Rise Multifamily Housing	3	10	10	6	Mid-Rise Multifamily Housing	3	10	10	6	0	0	0	0
9/2	Low-Rise Multifamily Housing	1	4	4	3	Low-Rise Multifamily Housing	2	6	6	3	1	2	2	0
10/1	Low-Rise Multifamily Housing	1	4	4	2	Low-Rise Multifamily Housing	1	5	5	3	0	1	1	1
11/1	Mid-Rise Multifamily Housing	10	28	27	17	Mid-Rise Multifamily Housing High-Turnover (Sit-Down) Restaurant	17	36	37	24	7	8	10	7
12/1	Mid-Rise Multifamily Housing	12	33	33	21	Mid-Rise Multifamily Housing	12	34	34	22	0	1	1	1
13/1	Mid-Rise Multifamily Housing	11	31	30	19	Mid-Rise Multifamily Housing	11	32	32	20	0	1	2	1
14/1	Single-Family Detached Housing	1	2	2	1	Single-Family Detached Housing	1	2	2	1	0	0	0	0
14/2	Low-Rise Multifamily Housing	1	2	2	2	Low-Rise Multifamily Housing	1	3	3	2	0	1	1	0
15/1	Low-Rise Multifamily Housing	1	5	5	3	Low-Rise Multifamily Housing	2	6	5	3	1	1	0	0
16/1	Mid-Rise Multifamily Housing	11	32	32	21	Mid-Rise Multifamily Housing	12	35	35	22	1	3	3	1
17/1	Mid-Rise Multifamily Housing	10	29	29	18	Mid-Rise Multifamily Housing	11	32	31	20	1	3	2	2
18/1	Mid-Rise Multifamily Housing	11	31	30	19	Mid-Rise Multifamily Housing	11	32	32	20	0	1	2	1
19/1	Single-Family Detached Housing	1	2	2	1	Single-Family Detached Housing	1	2	2	1	0	0	0	0
19/2	Low-Rise Multifamily Housing	1	2	2	1	Low-Rise Multifamily Housing	1	3	3	2	0	1	1	1
20/1	Low-Rise Multifamily Housing	1	5	5	3	Low-Rise Multifamily Housing	1	5	5	3	0	0	0	0
21/1	Low-Rise Multifamily Housing	1	4	4	3	Low-Rise Multifamily Housing	1	5	5	3	0	1	1	0
22/1	Mid-Rise Multifamily Housing	9	26	26	16	Mid-Rise Multifamily Housing	8	21	21	14	-1	-5	-5	-2
23/1	Mid-Rise Multifamily Housing	14	41	41	26	Mid-Rise Multifamily Housing	16	43	43	27	2	2	2	1
24/1	Mid-Rise Multifamily Housing	11	33	33	21	Mid-Rise Multifamily Housing	12	35	35	22	1	2	2	1
25/1	Single-Family Detached Housing	1	2	2	1	Single-Family Detached Housing	1	2	2	1	0	0	0	0
25/2	Low-Rise Multifamily Housing	1	2	2	1	Low-Rise Multifamily Housing	1	3	3	2	0	1	1	1
26/1	Low-Rise Multifamily Housing	1	5	5	3	Low-Rise Multifamily Housing	2	6	6	3	1	1	1	0
27/1	Low-Rise Multifamily Housing	1	5	5	3	Low-Rise Multifamily Housing	2	6	6	3	1	1	1	0
28/1	Mid-Rise Multifamily Housing	10	28	27	18	Mid-Rise Multifamily Housing	10	29	29	18	0	1	2	0
29/1	Mid-Rise Multifamily Housing	19	55	54	35	Mid-Rise Multifamily Housing	23	64	64	41	4	9	10	6
30/1	None	-	-	-	-	None	-	-	-	-	-	-	-	-
31/1	Single-Family Detached Housing	1	2	2	1	Single-Family Detached Housing	1	2	2	1	0	0	0	0
31/2	Low-Rise Multifamily Housing	1	3	3	2	Low-Rise Multifamily Housing	1	3	3	2	0	0	0	0
32/1	Low-Rise Multifamily Housing	2	6	6	3	Low-Rise Multifamily Housing	2	7	7	4	0	1	1	1
33/1	Mid-Rise Multifamily Housing	6	18	18	12	Mid-Rise Multifamily Housing	6	18	18	12	0	0	0	0
34/1	General Office Building	60	10	11	57	General Office Building	62	10	11	59	2	0	0	2
35/1	Single-Family Detached Housing	1	4	5	3	Single-Family Detached Housing	1	3	4	2	0	-1	-1	-1
35/2	Low-Rise Multifamily Housing	1	3	3	2	Low-Rise Multifamily Housing	1	3	3	2	0	0	0	0
36/1	Low-Rise Multifamily Housing	2	6	6	3	Low-Rise Multifamily Housing	2	7	7	4	0	1	1	1
CP Rail	None	0	0	0	0	UST Ballfields	8	36	1	8	8	36	1	8
Total	-	**636**	**804**	**940**	**914**	-	**685**	**869**	**1019**	**962**	**49**	**65**	**79**	**48**

Development Constructed/Open
Current Development Proposals
Future Development Assumptions

Addendum

SRF No. 13856.07

To: Anthony Adams, PE, Civil Engineer
Ryan Companies

From: Brent Clark, PE, Traffic Studies Lead

Date: May 2, 2023

Subject: *Highland Bridge AUAR Transportation Section Update* – Sensitivity Analysis Addendum

Introduction

As mentioned within the *Highland Bridge AUAR Transportation Section Update*, on-street bicycle lanes were recently implemented along St. Paul Avenue, from Ford Parkway to TH 5, that resulted in the removal of vehicular travel lanes in each direction. The elimination of travel lanes reduces vehicular capacity through the corridor, which may accelerate the need for traffic control improvements at the St. Paul Avenue/Montreal Avenue intersection. Therefore, new turning movement count data was collected, and sensitivity analysis tests were conducted to understand current and future operations, as well infrastructure improvement timelines. The following information summarizes the results of the sensitivity analysis.

Existing Conditions

1) Intersection turning movement counts were collected by SRF on Thursday, March 30, 2023, at the following intersections. Based on a review of MnDOT detector data, March 30th was representative of an average day. Existing traffic volumes are illustrated in Figure 1.
    a) Ford Parkway/Cretin Avenue
    b) Ford Parkway/Cleveland Avenue
    c) St. Paul Avenue/Montreal Avenue
    d) St. Paul Avenue/Edgcumbe Road

2) The following Highland Bridge developments were open at the time of data collection efforts:
    a) L1B3 – Lund's and Byerly's
    b) L1B3 – The Collection Apartments (approximately 75 percent leased)
    c) L1B67 – Marvella Senior Housing (approximately 50 percent leased)
    d) L1B1 – Multi-tenant Medical Office Building (approximately 85 percent leased)
    e) Approximately 12 Pulte Rowhomes

3) The turning movement counts were compared to 2019 counts collected as part of the *Ford Site AUAR*. Note that even with multiple Highland Bridge developments constructed and open (summarized above) the following travel pattern changes were observed within the study area, as compared to the 2019 counts:

    a) Traffic volumes along Ford Parkway were down by approximately 20 percent in the a.m. peak hour and 15 percent in the p.m. peak hour.

    b) Traffic volumes along St. Paul Avenue were down by approximately 30 percent in the a.m. peak hour and 15 percent in the p.m. peak hour.

    c) Traffic volumes at the St. Paul Avenue/Edgcumbe Road intersection were down by approximately 40 percent in the a.m. peak hour and 30 percent in the p.m. peak hour.

    d) Approximately 150 to 200 peak hour trips were observed to utilize the Highland Bridge internal roadway network, thus avoiding the Ford Parkway/Cleveland Avenue intersection, which is consistent with estimates documented within the *Ford Site AUAR*.

4) Existing operations were analyzed using Synchro/SimTraffic and are summarized in Table 1. Results of the analysis indicate that the travel pattern changes within the study area have significantly improved operations. All sensitivity intersections currently operate at overall LOS C or better during peak hours. The following 95th percentile queues were observed:

    a) The southbound approach of the Ford Parkway/Cretin Avenue intersection has 95th percentile queues of approximately 325 feet during the p.m. peak hour.

    b) The southbound approach of the Ford Parkway/Cleveland Avenue intersection has 95th percentile queues of approximately 400 feet during the p.m. peak hour.

    c) The northbound approach of the St. Paul Avenue/Montreal Avenue intersection has 95th percentile queues of approximately 300 feet during p.m. peak hour.

Table 1. Existing Intersection Capacity Analysis

Intersection	A.M. Peak Hour		P.M. Peak Hour	
	LOS	Delay	LOS	Delay
Ford Parkway / Cretin Avenue	B	16 sec.	C	23 sec.
Ford Parkway / Cleveland Avenue	B	19 sec.	C	33 sec.
St. Paul Avenue / Montreal Avenue (1)	C	16 sec	C	21 sec.
St. Paul Avenue / Edgecumbe Road	B	15 sec.	B	17 sec.

(1) Indicates an intersection with all-way stop control.

Future Conditions

5) Sensitivity analysis tests were performed at the study intersections under near- and long-term conditions to determine infrastructure improvement timelines. The near-term/interim analysis was based on the year 2028 conditions, which represents a five-year window. Highland Bridge developments assumed to be completed under interim conditions were based on discussions with the project team, but generally represents about 75 percent of the full buildout. The long-term conditions (i.e., year 2040) were based on a full buildout of the "2023 Scenario" which are the most up to date land use projections for the Highland Bridge development. Note that trips were either not generated or partially generated for the developments that are currently open, and signal timing within the study area was optimized. Traffic forecasts are shown in Figures 2 and 3.

6) Interim (2028) intersection capacity results are summarized in Table 2 and improvement considerations are discussed below.

    a) The **St. Paul Avenue/Montreal Avenue** intersection is expected to be over capacity during the p.m. peak hour. Providing northbound left- and eastbound right-turn lanes could help minimize delay and queuing impacts during the p.m. peak hour, however, the intersection is still expected to operate in the LOS E/F threshold. It should be noted the intersection would operate at an acceptable overall LOS C with the previous lane configuration.

        - Construct a traffic signal or single-lane roundabout at the intersection.

    b) While the **Ford Parkway/Cleveland Avenue** intersection is expected to operate at an acceptable overall LOS C during the p.m. peak hour, the southbound approach is expected to operate at LOS E (67 seconds) and queues are expected to extend to Highland Parkway.

        - Consider restricting parking on the west side of Cleveland Avenue, from Ford Parkway to the alley, and provide a southbound right-turn lane to reduce southbound queues and improve operations. In addition, extending the eastbound left-turn lane would provide operational/queueing benefits.

    c) The westbound left-turn movement at the **Ford Parkway/Cretin Avenue** intersection is expected to extend beyond storage approximately 30 percent of the p.m. peak hour. Consideration could be made towards extending the turn lane an additional 100-120 feet.

        - Note the westbound left-turn lane was extended in 2021 based on *Ford Site AUAR* recommendations, however, the stop bar/crosswalk was also shifted east, limiting the amount of additional vehicular storage provided.

Table 2. Interim (2028) Conditions Intersection Capacity Analysis

Intersection	A.M. Peak Hour		P.M. Peak Hour	
	LOS	Delay	LOS	Delay
Ford Parkway / Cretin Avenue	B	19 sec.	C	27 sec.
Ford Parkway / Cleveland Avenue	C	20 sec.	C	35 sec.
St. Paul Avenue / Montreal Avenue (1)	D	35 sec	F	155 sec.
St. Paul Avenue / Edgecumbe Road	B	19 sec.	C	21 sec.

(1) Indicates an intersection with all-way stop control.

7) Year 2040 (i.e., Full Build) sensitivity analysis results are summarized in Table 3, and improvement considerations are discussed below. Note a single-lane roundabout was assumed at the St. Paul Avenue/Montreal Avenue intersection.

    a) While all intersections are expected to operate with acceptable overall LOS D or better, the queuing and delay identified in the interim conditions are expected to worsen. The **Ford Parkway/Cretin Avenue** intersection is expected to have southbound queues of 450 feet or greater. In addition to the previously identified improvements, consider restriping Cretin Avenue from Ford Parkway to Highland Parkway to provide adequate storage for southbound queues.

Table 3. Full Build (2040) Conditions Intersection Capacity Analysis

Intersection	A.M. Peak Hour		P.M. Peak Hour	
	LOS	Delay	LOS	Delay
Ford Parkway / Cretin Avenue	C	21 sec.	C	34 sec.
Ford Parkway / Cleveland Avenue	C	23 sec.	D	38 sec.
St. Paul Avenue / Montreal Avenue (1)	B	11 sec.	B	14 sec.
Edgecumbe Road / St. Paul Avenue	B	20 sec.	C	25 sec.

(1) Analyzed as a single-lane roundabout.

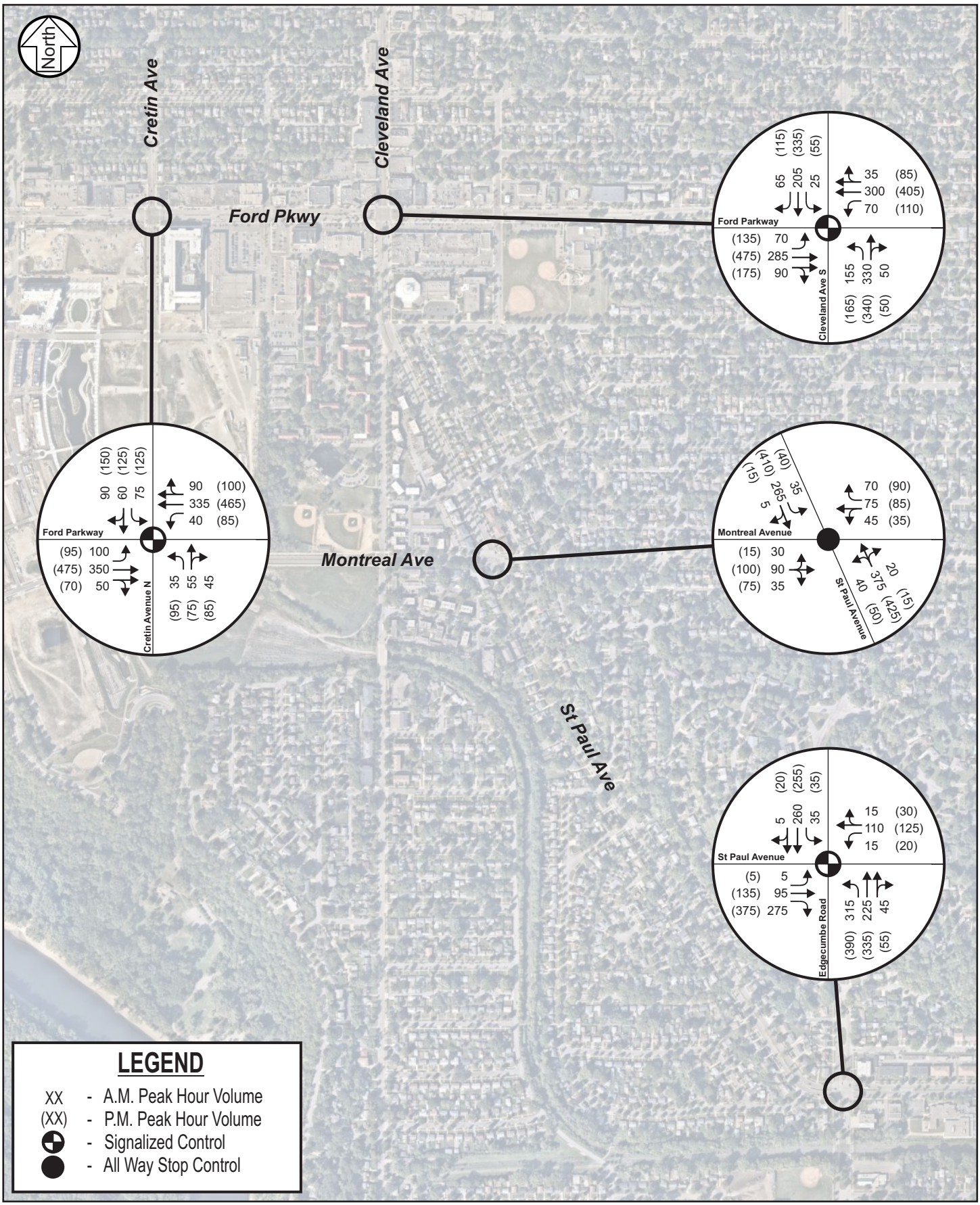
Summary

Even with multiple Highland Bridge developments currently open, traffic volumes are down 15-30 percent within the study area. The sensitivity analysis study intersections are currently operating acceptably. As development occurs within Highland Bridge, the study intersections should continue to be monitored, and the following improvements should be considered. Note the improvements identified are consistent with the *Ford Site AUAR*.

- **St. Paul Avenue/Montreal Avenue** – Construct a traffic signal or single-lane roundabout.
    - **Timeline:** Based on the development timeline assumptions, improvements are expected to be needed in the next five (5) years.

- **Ford Parkway/Cleveland Avenue** – Monitor the intersection and consider restricting parking to provide an approximately 150-foot southbound right-turn lane. In addition, consider extending the eastbound left-turn lane.
    - **Timeline:** Could be implemented now, or in the next five (5) to 10 years.

- **Ford Parkway/Cretin Avenue** – Monitor the intersection and consider restricting on-street parking and restriping Cretin Avenue, north of Ford Parkway, to provide additional southbound storage. In addition, consider extending the westbound left-turn lane.
    - **Timeline:** Could be implemented now, or in the next five (5) to 10 years.
    - Note the westbound left-turn lane was extended in 2021, however, the stop bar/crosswalk was also shifted east, limiting the amount of additional vehicular storage provided.



Existing (2023) Conditions

Highland Bridge AUAR Transportation Section Update – Sensitivity Analysis Addendum

City of St. Paul

Figure 1

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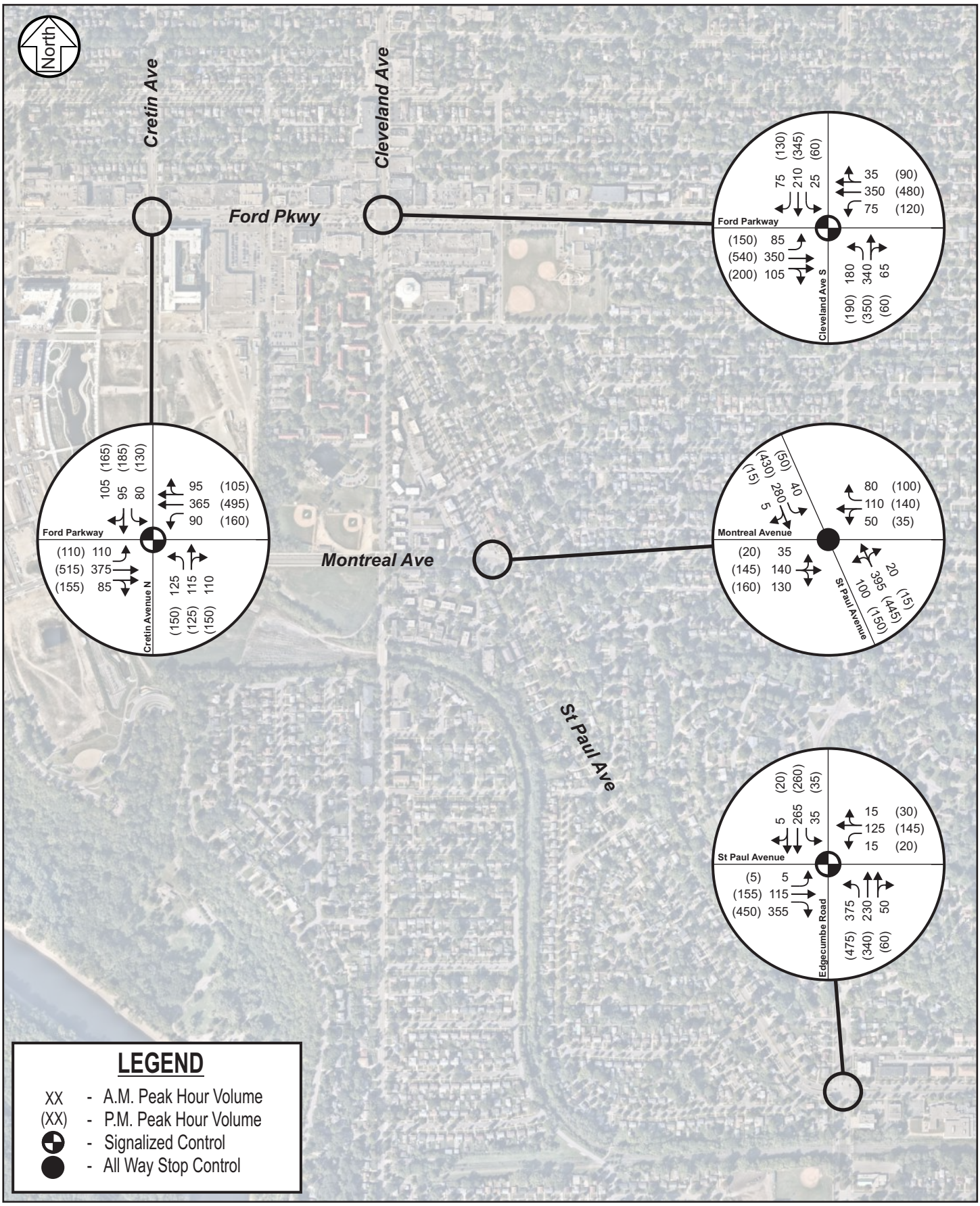
April 2023



Interim (2028) Conditions

Figure 2

Highland Bridge AUAR Transportation Section Update – Sensitivity Analysis Addendum

City of St. Paul

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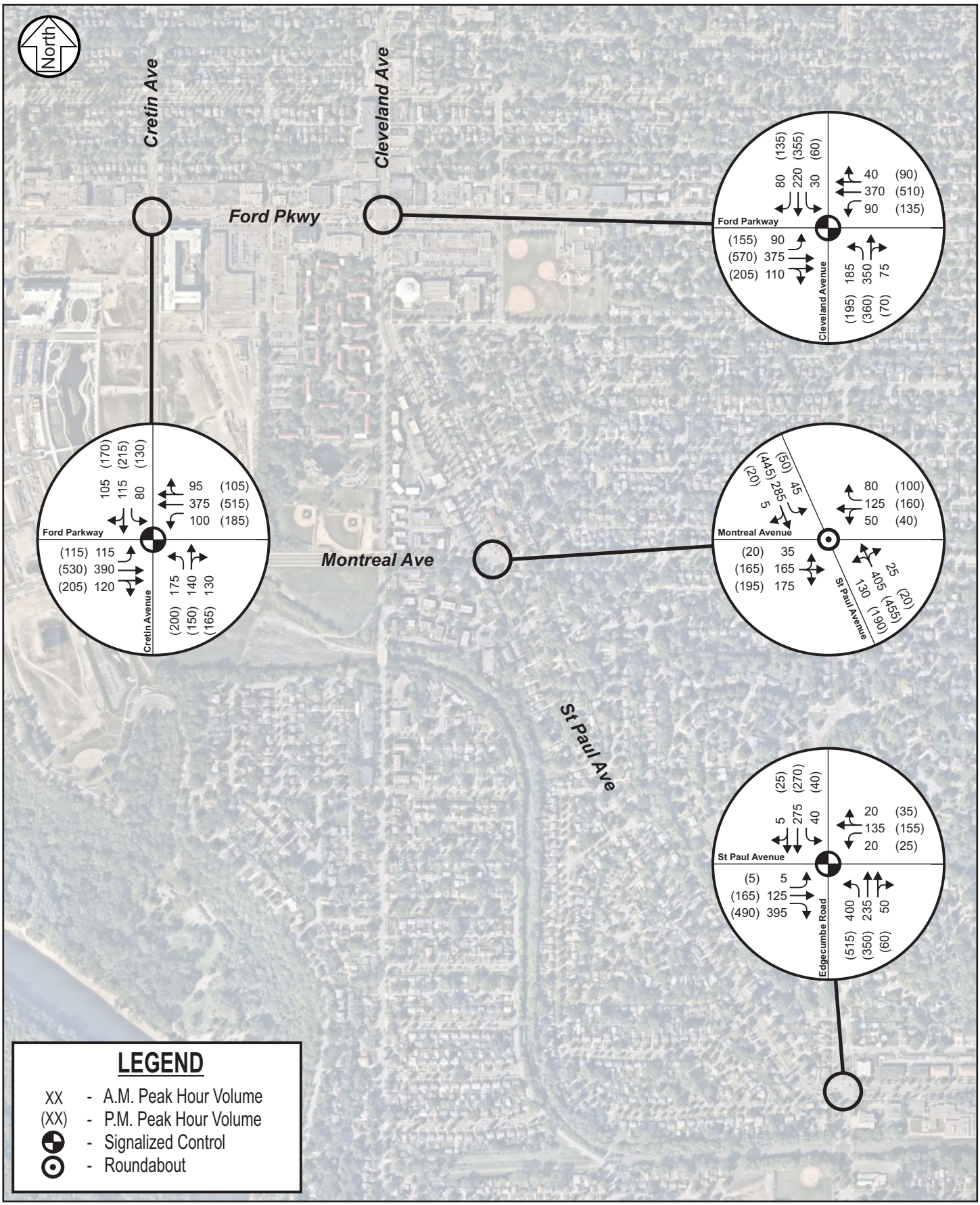
April 2023



Full Build (2040) Conditions

Figure 3

Highland Bridge AUAR Transportation Section Update – Sensitivity Analysis Addendum

City of St. Paul

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April 2023