Application

17071 - 2022 Roadway Spot Mobility

17672 - Brooklyn Park - U.S. Hwy. 169 at 109th Avenue N.

Regional Solicitation - Roadways Including Multimodal Elements

Status:	Submitted
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Primary Contact

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What Grant Programs are you most interested in?	Regional Solicitation - Roadways Including Multimodal Elements			

Organization Information

Name:	BROOKLYN PARK, CITY OF

Jurisdictional Agency (if different):	
Organization Type:	City
Organization Website:	
Address:	5200 85TH AVE N

*	BROOKLYN PARK	Minnesota	55443
	City	State/Province	Postal Code/Zip

County:	Hennepin
Phone:*	763-493-8185 Ext.
Fax:	
PeopleSoft Vendor Number	0000020926A1

Project Information

Project Name	US Hwy 169 at 109th Avenue N Intersection Improvements
Primary County where the Project is Located	Hennepin
Cities or Townships where the Project is Located:	Brooklyn Park, Champlin
Jurisdictional Agency (If Different than the Applicant):	MnDOT, City of Brooklyn Park, City of Champlin

Brief Project Description (Include location, road name/functional class, type of improvement, etc.)

US Highway 169 (US 169) is a principal arterial with a posted speed limit of 55 mph in the project area and a 2019 AADT of 47,000 VPD. It is the only continuous north-south corridor that passes through the Cities of Brooklyn Park and Champlin providing regional access to businesses and residents in both cities. 109th Avenue N is a B Minor Arterial roadway that forms the border between Brooklyn Park and Champlin and has a 2019 AADT of 10,700 VPD. US 169 at the existing US 169/109th Avenue N intersection is a four-lane divided road with one left and one right turn lane in each direction. Eastbound 109th Avenue N is a four-lane undivided roadway with one left, two through and one right turn lane provided at the intersection. Westbound 109th Avenue N is a three-lane undivided roadway with one left, one through and one right turn lane provided at the intersection. Currently, the north intersection leg is the only location with a marked crosswalk and median refuge for nonmotorized users crossing US 169. There is a continuous sidewalk on the north side of 109th Avenue N.

The two cities previously studied improvements to 109th Avenue between Jefferson Highway and Winnetka Avenue. A preferred option, identified in 2018, includes the following improvements proposed, which are part of this application:

-Additional turn lanes to create dual left turn lanes on all four intersection legs

-Upgraded traffic signal, including ADA compliant components

-Crosswalk and median work on all four intersection legs

-Adding median and widening receiving lanes on east and west legs to accommodate dual left lanes

The primary benefits of the proposed project would be improved mobility and safety. The project would increase capacity for turning movements by providing dual lefts, which could also increase green time, improve mobility, and reduce congestion on US 169. Reducing congestion would improve safety conditions at the intersection, which experiences a high number of rear end crashes related to congested conditions. The intersection is the first signalized location for northbound US 169 traffic north of the Minnesota River, and marks the transition from freeway to expressway. These improvements would benefit businesses reliant on safe and efficient transportation networks to deliver goods and services, including new and potential tenants of the NorthPark Business Park in the southeast intersection quadrant. The proposed project would improve bicycle and pedestrian mobility and safety through a reconstructed sidewalk and an improved crossing of US 169. All non-motorized facilities constructed as part of the proposed project will be ADA compliant.

(Limit 2,800 characters; approximately 400 words)

TRANSPORTATION IMPROVEMENT PROGRAM (TIP) DESCRIPTION - will be used in TIP if the project is selected for funding. See MnDOT's TIP description guidance.

US 169, at the intersection with 109th Ave N, construction of turn lanes, signal replacement, sidewalk construction, crosswalk and median work and ADA improvements.

Include both the CSAH/MSAS/TH references and their corresponding street names in the TIP Description (see Resources link on Regional Solicitation webpage for examples).

Project Length (Miles)

0.6

to the nearest one-tenth of a mile

Project Funding

Are you applying for competitive funds from another source(s) to implement this project?

No

If yes, please identify the source(s)

Federal Amount $2,494,800.00

Match Amount $623,700.00

Minimum of 20% of project total

Project Total $3,118,500.00

For transit projects, the total cost for the application is total cost minus fare revenues.

Match Percentage 20.0%

Minimum of 20%
Compute the match percentage by dividing the match amount by the project total

Source of Match Funds City of Brooklyn Park, City of Champlin

A minimum of 20% of the total project cost must come from non-federal sources; additional match funds over the 20% minimum can come from other federal sources

Preferred Program Year

Select one: 2026, 2027

Select 2024 or 2025 for TDM and Unique projects only. For all other applications, select 2026 or 2027.

Additional Program Years: 2024, 2025

Select all years that are feasible if funding in an earlier year becomes available.

Project Information: Roadway Projects

County, City, or Lead Agency City of Brooklyn Park

Functional Class of Road Principal Arterial

Road System TH

TH, CSAH, MSAS, CO. RD., TWP. RD., CITY STREET

Road/Route No. 169

i.e., 53 for CSAH 53

Name of Road US Highway 169

Example; 1st ST., MAIN AVE

Zip Code where Majority of Work is Being Performed 55445

(Approximate) Begin Construction Date 04/01/2026

(Approximate) End Construction Date 12/31/2026

TERMINI:(Termini listed must be within 0.3 miles of any work)

From:
(Intersection or Address)

To:
(Intersection or Address)

DO NOT INCLUDE LEGAL DESCRIPTION

Or At 109th Avenue N

Miles of Sidewalk (nearest 0.1 miles) 0.2

Miles of Trail (nearest 0.1 miles) 0

Miles of Trail on the Regional Bicycle Transportation Network (nearest 0.1 miles) 0

Primary Types of Work GRADE, AGG BASE, BIT SURF, SIDEWALK, CURB, GUTTER, PED RAMPS, DRAINAGE STORM SEWER, LIGHTING, SIGNALS

Examples: GRADE, AGG BASE, BIT BASE, BIT SURF, SIDEWALK, CURB AND GUTTER,STORM SEWER, SIGNALS, LIGHTING, GUARDRAIL, BIKE PATH, PED RAMPS, BRIDGE, PARK AND RIDE, ETC.

BRIDGE/CULVERT PROJECTS (IF APPLICABLE)

Old Bridge/Culvert No.:

New Bridge/Culvert No.:

Structure is Over/Under (Bridge or culvert name):

Requirements - All Projects

All Projects

1.The project must be consistent with the goals and policies in these adopted regional plans: Thrive MSP 2040 (2014), the 2040 Transportation Policy Plan (2018), the 2040 Regional Parks Policy Plan (2018), and the 2040 Water Resources Policy Plan (2015).

Check the box to indicate that the project meets this requirement. Yes

2.The project must be consistent with the 2040 Transportation Policy Plan. Reference the 2040 Transportation Plan goals, objectives, and strategies that relate to the project.

Briefly list the goals, objectives, strategies, and associated pages:

Goal B; Objective A; Strategy B1 (page 2.5), B6 (page 2.8).

Goal C; Objective A; Strategy C1 (page 2.10), C2 (page 2.11), C16 (page 2.23).

Goal D; Objective B, Objective C; Strategy D1 (page 2.26), D5 (page 2.28).

Goal E; Objective C; Strategy E3 (page. 2.31).

Limit 2,800 characters, approximately 400 words

3.The project or the transportation problem/need that the project addresses must be in a local planning or programming document. Reference the name of the appropriate comprehensive plan, regional/statewide plan, capital improvement program, corridor study document [studies on trunk highway must be approved by the Minnesota Department of Transportation and the Metropolitan Council], or other official plan or program of the applicant agency [includes Safe Routes to School Plans] that the project is included in and/or a transportation problem/need that the project addresses.

List the applicable documents and pages: Unique projects are exempt from this qualifying requirement because of their innovative nature.

City of Brooklyn Park 2040 Comprehensive Plan: pages 5-22, 5-23, 5-26

City of Brooklyn Park Capital Improvement Plan, 2022-2026: Page 113

City of Champlin 2040 Comprehensive Plan: pages 6-11, 6-15, 6-30

City of Champlin Capital Improvement Plan, 2022-2031: pages 9-10

As noted in the application, the US 169 & 109th Avenue N intersection was also identified as a medium priority interchange in the Principal Arterial Intersection Conversion Study and is an opportunity area noted in the Congestion Management Safety Plan IV.

Limit 2,800 characters, approximately 400 words

4.The project must exclude costs for studies, preliminary engineering, design, or construction engineering. Right-of-way costs are only eligible as part of transit stations/stops, transit terminals, park-and-ride facilities, or pool-and-ride lots. Noise barriers, drainage projects, fences, landscaping, etc., are not eligible for funding as a standalone project, but can be included as part of the larger submitted project, which is otherwise eligible. Unique project costs are limited to those that are federally eligible.

Check the box to indicate that the project meets this requirement. Yes

5.Applicant is a public agency (e.g., county, city, tribal government, transit provider, etc.) or non-profit organization (TDM and Unique Projects applicants only). Applicants that are not State Aid cities or counties in the seven-county metro area with populations over 5,000 must contact the MnDOT Metro State Aid Office prior to submitting their application to determine if a public agency sponsor is required.

Check the box to indicate that the project meets this requirement. Yes

6.Applicants must not submit an application for the same project elements in more than one funding application category.

Check the box to indicate that the project meets this requirement. Yes

7.The requested funding amount must be more than or equal to the minimum award and less than or equal to the maximum award. The cost of preparing a project for funding authorization can be substantial. For that reason, minimum federal amounts apply. Other federal funds may be combined with the requested funds for projects exceeding the maximum award, but the source(s) must be identified in the application. Funding amounts by application category are listed below in Table 1. For unique projects, the minimum award is $500,000 and the maximum award is the total amount available each funding cycle (approximately $4,000,000 for the 2022 funding cycle).
Strategic Capacity (Roadway Expansion): *$1,000,000 to $10,000,000*
Roadway Reconstruction/Modernization: *$1,000,000 to $7,000,000*
Traffic Management Technologies (Roadway System Management): *$500,000 to $3,500,000*
Spot Mobility and Safety: *$1,000,000 to $3,500,000*
Bridges Rehabilitation/Replacement: *$1,000,000 to $7,000,000*

Check the box to indicate that the project meets this requirement. Yes

8.The project must comply with the Americans with Disabilities Act (ADA).

Check the box to indicate that the project meets this requirement. Yes

9.In order for a selected project to be included in the Transportation Improvement Program (TIP) and approved by USDOT, the public agency sponsor must either have a current Americans with Disabilities Act (ADA) self-evaluation or transition plan that covers the public right of way/transportation, as required under Title II of the ADA. The plan must be completed by the local agency before the Regional Solicitation application deadline. For the 2022 Regional Solicitation funding cycle, this requirement may include that the plan is updated within the past five years.

The applicant is a public agency that employs 50 or more people and has a completed ADA transition plan that covers the public right of way/transportation. Yes

(TDM and Unique Project Applicants Only) The applicant is not a public agency subject to the self-evaluation requirements in Title II of the ADA.

Date plan completed: 12/03/2018

Link to plan: 1649867041761_181127-Brooklyn-Park-ADA-Transition-Plan.pdf

The applicant is a public agency that employs fewer than 50 people and has a completed ADA self-evaluation that covers the public right of way/transportation.

Date self-evaluation completed:

Link to plan:

Upload plan or self-evaluation if there is no link 1649867041761_181127-Brooklyn-Park-ADA-Transition-Plan.pdf

Upload as PDF

10.The project must be accessible and open to the general public.

Check the box to indicate that the project meets this requirement. Yes

11.The owner/operator of the facility must operate and maintain the project year-round for the useful life of the improvement, per FHWA direction established 8/27/2008 and updated 6/27/2017. Unique projects are exempt from this qualifying requirement.

Check the box to indicate that the project meets this requirement. Yes

12.The project must represent a permanent improvement with independent utility. The term independent utility means the project provides benefits described in the application by itself and does not depend on any construction elements of the project being funded from other sources outside the regional solicitation, excluding the required non-federal match. Projects that include traffic management or transit operating funds as part of a construction project are exempt from this policy.

Check the box to indicate that the project meets this requirement. Yes

13.The project must not be a temporary construction project. A temporary construction project is defined as work that must be replaced within five years and is ineligible for funding. The project must also not be staged construction where the project will be replaced as part of future stages. Staged construction is eligible for funding as long as future stages build on, rather than replace, previous work.

Check the box to indicate that the project meets this requirement. Yes

14.The project applicant must send written notification regarding the proposed project to all affected state and local units of government prior to submitting the application.

Check the box to indicate that the project meets this requirement. Yes

Roadways Including Multimodal Elements

1.All roadway and bridge projects must be identified as a principal arterial (non-freeway facilities only) or A-minor arterial as shown on the latest TAB approved roadway functional classification map.

Check the box to indicate that the project meets this requirement. Yes

Roadway Strategic Capacity and Reconstruction/Modernization and Spot Mobility projects only:

2.The project must be designed to meet 10-ton load limit standards.

Check the box to indicate that the project meets this requirement. Yes

Bridge Rehabilitation/Replacement and Strategic Capacity projects only:

3.Projects requiring a grade-separated crossing of a principal arterial freeway must be limited to the federal share of those project costs identified as local (non-MnDOT) cost responsibility using MnDOTs Cost Participation for Cooperative Construction Projects and Maintenance Responsibilities manual. In the case of a federally funded trunk highway project, the policy guidelines should be read as if the funded trunk highway route is under local jurisdiction.

Check the box to indicate that the project meets this requirement.

4.The bridge must carry vehicular traffic. Bridges can carry traffic from multiple modes. However, bridges that are exclusively for bicycle or pedestrian traffic must apply under one of the Bicycle and Pedestrian Facilities application categories. Rail-only bridges are ineligible for funding.

Check the box to indicate that the project meets this requirement.

Bridge Rehabilitation/Replacement projects only:

5.The length of the bridge clear span must exceed 20 feet.

Check the box to indicate that the project meets this requirement.

6. The bridge must have a National Bridge Inventory Rating of 6 or less for rehabilitation projects and 4 or less for replacement projects.

Check the box to indicate that the project meets this requirement.

Roadway Expansion, Reconstruction/Modernization, and Bridge Rehabilitation/Replacement projects only:

7. All roadway projects that involve the construction of a new/expanded interchange or new interchange ramps must have approval by the Metropolitan Council/MnDOT Interchange Planning Review Committee prior to application submittal. Please contact Michael Corbett at MnDOT (Michael.J.Corbett@state.mn.us or 651-234-7793) to determine whether your project needs to go through this process as described in Appendix F of the 2040 Transportation Policy Plan.

Check the box to indicate that the project meets this requirement.

Requirements - Roadways Including Multimodal Elements

Specific Roadway Elements

CONSTRUCTION PROJECT ELEMENTS/COST ESTIMATES	Cost
Mobilization (approx. 5% of total cost)	$115,000.00
Removals (approx. 5% of total cost)	$185,400.00
Roadway (grading, borrow, etc.)	$172,100.00
Roadway (aggregates and paving)	$727,400.00
Subgrade Correction (muck)	$0.00
Storm Sewer	$242,100.00

Ponds	$0.00
Concrete Items (curb & gutter, sidewalks, median barriers)	$203,700.00
Traffic Control	$204,200.00
Striping	$49,200.00
Signing	$17,600.00
Lighting	$0.00
Turf - Erosion & Landscaping	$64,600.00
Bridge	$0.00
Retaining Walls	$0.00
Noise Wall (not calculated in cost effectiveness measure)	$0.00
Traffic Signals	$450,000.00
Wetland Mitigation	$0.00
Other Natural and Cultural Resource Protection	$0.00
RR Crossing	$0.00
Roadway Contingencies	$486,300.00
Other Roadway Elements	$0.00
Totals	**$2,917,600.00**

Specific Bicycle and Pedestrian Elements

CONSTRUCTION PROJECT ELEMENTS/COST ESTIMATES	**Cost**
Path/Trail Construction	$0.00
Sidewalk Construction	$50,500.00
On-Street Bicycle Facility Construction	$0.00
Right-of-Way	$0.00
Pedestrian Curb Ramps (ADA)	$66,900.00
Crossing Aids (e.g., Audible Pedestrian Signals, HAWK)	$50,000.00
Pedestrian-scale Lighting	$0.00
Streetscaping	$0.00
Wayfinding	$0.00
Bicycle and Pedestrian Contingencies	$33,500.00
Other Bicycle and Pedestrian Elements	$0.00
Totals	**$200,900.00**

Specific Transit and TDM Elements

CONSTRUCTION PROJECT ELEMENTS/COST ESTIMATES	Cost
Fixed Guideway Elements	$0.00
Stations, Stops, and Terminals	$0.00
Support Facilities	$0.00
Transit Systems (e.g. communications, signals, controls, fare collection, etc.)	$0.00
Vehicles	$0.00
Contingencies	$0.00
Right-of-Way	$0.00
Other Transit and TDM Elements	$0.00
Totals	**$0.00**

Transit Operating Costs

Number of Platform hours	0
Cost Per Platform hour (full loaded Cost)	$0.00
Subtotal	$0.00
Other Costs - Administration, Overhead,etc.	$0.00

Totals

Total Cost	$3,118,500.00
Construction Cost Total	$3,118,500.00
Transit Operating Cost Total	$0.00

Congestion within Project Area:

Free-Flow Travel Speed:	57
The free-flow travel speed is the black number	
Peak Hour Travel Speed:	39
The peak hour travel speed is the red number	
Percentage Decrease in Travel Speed in Peak Hour Compared to Free-Flow (calculation):	31.58%
Upload the "Level of Congestion" map:	1649867278264_US169_Level of Congestion.pdf

Congestion on adjacent Parallel Routes:

Adjacent Parallel Corridor CSAH 103/Winnetka Avenue N

Adjacent Parallel Corridor Start and End Points:

Start Point: Just north of 109th Avenue N

End Point: Just south of 109th Avenue N

Free-Flow Travel Speed: 37

The Free-Flow Travel Speed is black number.

Peak Hour Travel Speed: 31

The Peak-Hour Travel Speed is red number.

Percentage Decrease in Travel Speed in Peak Hour Compared to Free-Flow (calculation): 16.22%

Upload the "Level of Congestion" map: 1649867278264_US169_Level of Congestion.pdf

Principal Arterial Intersection Conversion Study:

Proposed at-grade project that reduces delay at a High Priority Intersection:

(70 Points)

Proposed at-grade project that reduces delay at a Medium Priority Intersection: Yes

(65 Points)

Proposed at-grade project that reduces delay at a Low Priority Intersection:

(60 Points)

Not listed as a priority in the study:

(0 Points)

Congestion Management and Safety Plan IV:

Proposed at-grade project that reduces delay at a CMSP opportunity area: Yes

(70 Points)

Not listed as a CMSP priority location:

(0 Points)

Measure C: Current Heavy Commercial Traffic

RESPONSE: Select one for your project, based on the updated 2021 Regional Truck Corridor Study:

Along Tier 1: Yes

Miles: 0.2

(to the nearest 0.1 miles)

Along Tier 2:

Miles: 0

(to the nearest 0.1 miles)

Along Tier 3:

Miles: 0

(to the nearest 0.1 miles)

The project provides a direct and immediate connection (i.e., intersects) with either a Tier 1, Tier 2, or Tier 3 corridor:

None of the tiers:

Measure A: Engagement

i.Describe any Black, Indigenous, and People of Color populations, low-income populations, disabled populations, youth, or older adults within a ½ mile of the proposed project. Describe how these populations relate to regional context. Location of affordable housing will be addressed in Measure C.
ii.Describe how Black, Indigenous, and People of Color populations, low-income populations, persons with disabilities, youth, older adults, and residents in affordable housing were engaged, whether through community planning efforts, project needs identification, or during the project development process.
iii.Describe the progression of engagement activities in this project. A full response should answer these questions:

Brooklyn Park is a fast-growing and diverse community. According to 2016-2020 ACS Five-Year Estimates, roughly 60 percent of residents report their race and ethnicity as other than white alone, non-Hispanic or Latino. Just over 28 percent of residents are younger than age 18. In addition, roughly 15 percent of Champlin residents report their race and ethnicity as other than white alone, non-Hispanic or Latino, and nearly 25 percent are younger than age 18.

Response:

According to American Community Survey (ACS) 2015-2019 5-year estimates, the population within one-half mile of the proposed project intersection is approximately five percent people of color, 31 percent younger than age 18, seven percent age 65 and older, and one percent with household income of $25,000 or less. Six percent of housing units are renter occupied (see Attachment A). The proposed project will improve mobility and safety on US 169, a major regional corridor, including for the equity populations identified above. This will benefit existing and future businesses adjacent to the project area, which are a source of employment growth for residents (see Figure 2).

The Cities of Brooklyn Park and Champlin worked together to identify a preferred layout for improvements to 109th Avenue between Jefferson Highway and Winnetka Avenue. Some of these improvements are included in this application. A series of public meetings were conducted between 2016 and 2018 to engage community members and property owners in identifying issues and potential transportation solutions. At each meeting, the project team reported back to attendees on the feedback that had been provided and how it was incorporated into successive iterations of the design. The process included outreach to the

Marvella Addition (see Figure 3), which is home to many older adults.

The proposed improvements were also included in the City of Brooklyn Park?s 2040 Comprehensive Plan, which included a robust public engagement process. Throughout 2016 the city engaged community members in a collective visioning effort. Nearly 1,000 people participated in this iterative process. Thirty-one percent of the input came from events where city staff convened community members at community café events. The majority of the input was gathered by city staff meeting community members where they gather, including at community/civic group meetings, mini-interviews with youth at Zanewood Rec Center, a senior forum, outreach tables at community events, and through online forums and whiteboards posted throughout the city.

As the project moves forward, partners will work to engage equity populations, and will follow NEPA guidance with regard to engaging environmental justice populations in the project area.

(Limit 2,800 characters; approximately 400 words):

Measure B: Equity Population Benefits and Impacts

Describe the projects benefits to Black, Indigenous, and People of Color populations, low-income populations, children, people with disabilities, youth, and older adults. Benefits could relate to:
This is not an exhaustive list. A full response will support the benefits claimed, identify benefits specific to Equity populations residing or engaged in activities near the project area, identify benefits addressing a transportation issue affecting Equity populations specifically identified through engagement, and substantiate benefits with data.
Acknowledge and describe any negative project impacts to Black, Indigenous, and People of Color populations, low-income populations, children, people with disabilities, youth, and older adults. Describe measures to mitigate these impacts. Unidentified or unmitigated negative impacts may result in a reduction in points.
Below is a list of potential negative impacts. This is not an exhaustive list.

The proposed project will provide mobility and safety benefits for BIPOC and low-income populations using motorized vehicles, while also improving nonmotorized connectivity and safety.

The proposed project is located in census tracts with populations above the regional average rates for in poverty or populations of color. The improvements will have benefits to residents beyond the immediate project area. According to American Community Survey (ACS) 2015-2019 5-year estimates, the population within one mile of the proposed project intersection is approximately eight percent people of color, 28 percent younger than age 18, 13 percent age 65 and older, and six percent with household income of $25,000 or less. In addition, eight percent of housing units are renter occupied (see Attachment A).

Response:

According to American Community Survey (ACS) 2016-2020 Five-Year Estimates, approximately 89 percent of Brooklyn Park residents depend on motorized vehicles to commute to work, either driving alone or carpooling, as well as 90 percent of Champlin residents. Roughly 35 percent of non-home-based Brooklyn Park workers aged 16 and over have a commute that lasts 30 minutes or longer (along with 41 percent in Champlin), and the top workplace location for residents of both cities was Minneapolis as of 2018 (Metropolitan Council Community Profiles). With a large percentage of the population in this area relying on motor vehicles to commute a significant distance to work, school, and other key regional and local destinations, the proposed intersection improvements will provide direct safety and mobility benefits for all users accessing US 169 via 109th Avenue N.

The proposed project would increase capacity for turning movements by providing dual lefts, which could also increase green time, improve mobility, and reduce congestion on US 169. Reducing congestion would also improve safety conditions at the intersection, which experiences a high number of rear end crashes related to congested conditions. Reduced congestion will result in localized improvements to air quality. In addition to the benefits to motorized vehicles, additional marked crosswalks, a second pedestrian median refuge on US 169, ADA improvements, and reconstructed sidewalk will improve connectivity and safety for people walking and biking.

No negative impacts to Equity populations as a result of the proposed project are anticipated at this time.

(Limit 2,800 characters; approximately 400 words):

Measure C: Affordable Housing Access

Describe any affordable housing developmentsexisting, under construction, or plannedwithin ½ mile of the proposed project. The applicant should note the number of existing subsidized units, which will be provided on the Socio-Economic Conditions map. Applicants can also describe other types of affordable housing (e.g., naturally-occurring affordable housing, manufactured housing) and under construction or planned affordable housing that is within a half mile of the project. If applicable, the applicant can provide self-generated PDF maps to support these additions. Applicants are encouraged to provide a self-generated PDF map describing how a project connects affordable housing residents to destinations (e.g., childcare, grocery stores, schools, places of worship).

Describe the projects benefits to current and future affordable housing residents within ½ mile of the project. Benefits must relate to affordable housing residents. Examples may include:

This is not an exhaustive list. Since residents of affordable housing are more likely not to own a private vehicle, higher points will be provided to roadway projects that include other multimodal access improvements. A full response will support the benefits claimed, identify benefits specific to residents of affordable housing, identify benefits addressing a transportation issue affecting residents of affordable housing specifically identified through engagement, and substantiate benefits with data.

Response:

(Limit 2,800 characters; approximately 400 words):

As noted on the Socio-Economic Conditions map, there are 364 publicly subsidized rental housing units in census tracts within 1/2 mile of the project area. There are no planned or under construction affordable housing developments within 1/2 mile of the proposed project.

The Marvella Addition, one of the older neighborhoods within Brooklyn Park, is located near the project area and contains affordable homes. Residents of this area, including many older adults, would see improvements to mobility and safety as a result of the proposed improvements. There is also affordable housing located north of the project area on the US 169 corridor that would benefit from the proposed improvements. As of December 2020, there were 440 units of affordable housing located in developments within the City of Champlin north of the project area (see Figure 3). Residents of these units who use US 169 to reach jobs, school, or other key destinations would benefit from the operational and safety improvements provided by the proposed intersection modifications.

As noted above, approximately 89 percent of Brooklyn Park residents depend on motorized vehicles to commute to work, either driving alone or carpooling, as well as 90 percent of Champlin residents. The top workplace location for residents of both cities was Minneapolis as of 2018. With a large percentage of the population in this area relying on motor vehicles to commute a significant distance to work, school, and other key regional and local destinations, improvements to US 169 will provide benefits beyond the immediate project area.

Measure D: BONUS POINTS

Project is located in an Area of Concentrated Poverty:	
Projects census tracts are above the regional average for population in poverty or population of color (Regional Environmental Justice Area):	Yes
Project located in a census tract that is below the regional average for population in poverty or populations of color (Regional Environmental Justice Area):	
Upload the Socio-Economic Conditions map used for this measure.	1649867637418_US169_Socio-Economic.pdf

Measure A: Congestion Reduction/Air Quality

Total Peak Hour Delay Per Vehicle Without The Project (Seconds/ Vehicle)	Total Peak Hour Delay Per Vehicle With The Project (Seconds/ Vehicle)	Total Peak Hour Delay Per Vehicle Reduced by Project (Seconds/ Vehicle)	Volume without the Project (Vehicles per hour)	Volume with the Project (Vehicles Per Hour):	Total Peak Hour Delay Reduced by the Project:	Total Peak Hour Delay Reduced by the Project:	EXPLANATION of methodology used to calculate railroad crossing delay, if applicable.	Synchro or HCM Reports
40.8	28.3	12.5	4202	4202	52525.0	52525.0	NA	1649867962849_169 and 109th Existing-Build AM - Synchro Report.pdf
						52525		

Vehicle Delay Reduced

Total Peak Hour Delay Reduced	52525.0
Total Peak Hour Delay Reduced	52525.0

Measure B:Roadway projects that do not include new roadway segments or railroad grade-separation elements

Total (CO, NOX, and VOC) Peak Hour Emissions without the Project (Kilograms):	Total (CO, NOX, and VOC) Peak Hour Emissions with the Project (Kilograms):	Total (CO, NOX, and VOC) Peak Hour Emissions Reduced by the Project (Kilograms):
21.35	20.01	1.34
21	**20**	**1**

Total

Total Emissions Reduced:	1.34
Upload Synchro Report	1649868247150_169 and 109th Existing-Build AM - Synchro Report.pdf

Please upload attachment in PDF form. (Save Form, then click 'Edit' in top right to upload file.)

Measure B: Roadway projects that are constructing new roadway segments, but do not include railroad grade-separation elements (for Roadway Expansion applications only):

Total (CO, NOX, and VOC) Peak Hour Emissions without the Project (Kilograms):	Total (CO, NOX, and VOC) Peak Hour Emissions with the Project (Kilograms):	Total (CO, NOX, and VOC) Peak Hour Emissions Reduced by the Project (Kilograms):
0	**0**	**0**

Total Parallel Roadway

Emissions Reduced on Parallel Roadways	0
Upload Synchro Report	

Please upload attachment in PDF form. (Save Form, then click 'Edit' in top right to upload file.)

New Roadway Portion:

Cruise speed in miles per hour with the project:	0
Vehicle miles traveled with the project:	0
Total delay in hours with the project:	0
Total stops in vehicles per hour with the project:	0
Fuel consumption in gallons:	0
Total (CO, NOX, and VOC) Peak Hour Emissions Reduced or Produced on New Roadway (Kilograms):	0
EXPLANATION of methodology and assumptions used:(Limit 1,400 characters; approximately 200 words)	

Total (CO, NOX, and VOC) Peak Hour Emissions Reduced by the Project (Kilograms):	0.0

Measure B:Roadway projects that include railroad grade-separation elements

Cruise speed in miles per hour without the project:	0
Vehicle miles traveled without the project:	0
Total delay in hours without the project:	0
Total stops in vehicles per hour without the project:	0
Cruise speed in miles per hour with the project:	0
Vehicle miles traveled with the project:	0
Total delay in hours with the project:	0
Total stops in vehicles per hour with the project:	0
Fuel consumption in gallons (F1)	0
Fuel consumption in gallons (F2)	0
Fuel consumption in gallons (F3)	0
Total (CO, NOX, and VOC) Peak Hour Emissions Reduced by the Project (Kilograms):	0
EXPLANATION of methodology and assumptions used:(Limit 1,400 characters; approximately 200 words)	

Measure A: Benefit of Crash Reduction

Crash Modification Factor Used: *(Limit 700 Characters; approximately 100 words)*	Left turn phase improvement; Install a raised median
Rationale for Crash Modification Selected: *(Limit 1400 Characters; approximately 200 words)*	Left turn phase improvement applies to all crashes due to all approaches being improved with dual left turn lanes; install a raised median applies to crashes on 109th Avenue due to those approaches being improved with raised medians.
Project Benefit ($) from B/C Ratio	$2,569,498.00
Total Fatal (K) Crashes:	0
Total Serious Injury (A) Crashes:	0
Total Non-Motorized Fatal and Serious Injury Crashes:	0
Total Crashes:	50
Total Fatal (K) Crashes Reduced by Project:	0

Total Serious Injury (A) Crashes Reduced by Project:	0
Total Non-Motorized Fatal and Serious Injury Crashes Reduced by Project:	0
Total Crashes Reduced by Project:	8
Worksheet Attachment	1649885809059_US169_BC_Crashes_CMF.pdf

Upload Crash Modification Factors and B/C Worksheet in PDF form.

Measure A: Pedestrian Safety

Determine if these measures do not apply to your project. *Does the project match either of the following descriptions?*
If either of the items are checked yes, then ***score for entire pedestrian safety measure is zero****. Applicant does not need to respond to the sub-measures and can proceed to the next section.*

Project is primarily a freeway (or transitioning to a freeway) and does not provide safe and comfortable pedestrian facilities and crossings.	No
Existing location lacks any pedestrian facilities (e.g., sidewalks, marked crossings, wide shoulders in rural contexts) and project does not add pedestrian elements (e.g., reconstruction of a roadway without sidewalks, that doesnt also add pedestrian crossings and sidewalk or sidepath on one or both sides).	No

SUB-MEASURE 1: Project-Based Pedestrian Safety Enhancements and Risk Elements
To receive maximum points in this category, pedestrian safety countermeasures selected for implementation in projects should be, to the greatest extent feasible, consistent with the countermeasure recommendations in the Regional Pedestrian Safety Action Plan and state and national best practices. Links to resources are provided on the Regional Solicitation Resources web page.
Please answer the following two questions with as much detail as possible based on the known attributes of the proposed design. If any aspect referenced in this section is not yet determined, describe the range of options being considered, to the greatest extent available. If there are project elements that may increase pedestrian risk, describe how these risks are being mitigated.
1. Describe how this project will address the safety needs of people crossing the street at signalized intersections, unsignalized intersections, midblock locations, and roundabouts.
Treatments and countermeasures should be well-matched to the roadways context (e.g., appropriate for the speed, volume, crossing distance, and other location attributes). Refer to the Regional Solicitation Resources web page for guidance links.

Response:

The proposed improvements will be constructed at the US 169 & 109th Avenue N intersection, which is currently (and will remain) signalized. There is an existing marked crosswalk and pedestrian refuge with APS button on the north leg. The proposed project would add additional marked crosswalks on the south, east, and west legs along with APS push buttons and countdown timers to improve the ability of people biking and walking to safely cross US 169. It would also add a new pedestrian median refuge on the south leg and reconstruct the median refuge on the north leg. Pedestrian median refuges are an FHWA proven safety countermeasure, and will improve safety for nonmotorized users crossing US 169. Changes to signal phasing to improve safety for bicyclists and pedestrians will also be explored. As a large multi-lane divided highway, US 169 has a long crossing distance and is a major barrier. Median refuge improvements will allow the roadway to be crossed in two stages of only one direction of traffic at a time, and increase the safety and visibility of people crossing.

(Limit 2,800 characters; approximately 400 words)

Is the distance in between signalized intersections increasing (e.g., removing a signal)?

Select one: No

If yes, describe what measures are being used to fill the gap between protected crossing opportunities for pedestrians (e.g., adding High-Intensity Activated Crosswalk beacons to help motorists yield and help pedestrians find a suitable gap for crossing, turning signal into a roundabout to slow motorist speed, etc.).

Response: NA

(Limit 1,400 characters; approximately 200 words)

Will your design increase the crossing distance or crossing time across any leg of an intersection? (e.g., by adding turn or through lanes, widening lanes, using a multi-phase crossing, prohibiting crossing on any leg of an intersection, pedestrian bridge requiring length detour, etc.). This does not include any increases to crossing distances solely due to the addition of bike lanes (i.e., no other through or turn lanes being added or widened).

Select one: Yes

If yes,
How many intersections will likely be affected?

Response: 1

Describe what measures are being used to reduce exposure and delay for pedestrians (e.g., median crossing islands, curb bulb-outs, etc.)

Response:

The addition of dual left-turn lanes on the north and south legs will require pedestrians to cross an additional turn lane. The use of pedestrian median refuges, an FHWA proven safety countermeasure, will allow users to cross the roadway in two stages, increasing visibility and improving safety.

(Limit 1,400 characters; approximately 200 words)

If grade separated pedestrian crossings are being added and increasing crossing time, describe any features that are included that will reduce the detour required of pedestrians and make the separated crossing a more appealing option (e.g., shallow tunnel that doesnt require much elevation change instead of pedestrian bridge with numerous switchbacks).

Response:

NA

(Limit 1,400 characters; approximately 200 words)

If mid-block crossings are restricted or blocked, explain why this is necessary and how pedestrian crossing needs and safety are supported in other ways (e.g., nearest protected or enhanced crossing opportunity).

Response:

NA

(Limit 1,400 characters; approximately 200 words)

2. Describe how motorist speed will be managed in the project design, both for through traffic and turning movements. *Describe any project-related factors that may affect speed directly or indirectly, even if speed is not the intended outcome (e.g., wider lanes and turning radii to facilitate freight movements, adding turn lanes to alleviate peak hour congestion, etc.). Note any strategies or treatments being considered that are intended to help motorists drive slower (e.g., visual narrowing, narrow lanes, truck aprons to mitigate wide turning radii, etc.) or protect pedestrians if increasing motorist speed (e.g., buffers or other separation from moving vehicles, crossing treatments appropriate for higher speed roadways, etc.).*

Response:

The proposed improvements include additional left-turn lanes to increase intersection capacity and improve operations and safety. This may increase vehicle speeds. Right turn lanes were analyzed against freight movements to ensure corner radii were large enough to accommodate these vehicles. The improvements also include a second marked crossing of US 169 with a pedestrian refuge median to allow the roadway to be crossed in two stages. This safety countermeasure will help improve pedestrian safety at the intersection. Additional strategies to improve pedestrian and bicyclist safety, such as narrowed lanes, will be explored in final design.

(Limit 2,800 characters; approximately 400 words)

If known, what are the existing and proposed design, operation, and posted speeds? Is this an increase or decrease from existing conditions?

Response:

The posted speed limits in the project area are 55 mph for US 169 and 45 mph for 109th Avenue N. These posted speeds will not be modified as a result of the proposed improvements.

(Limit 1,400 characters; approximately 200 words)

SUB-MEASURE 2: Existing Location-Based Pedestrian Safety Risk Factors

These factors are based on based on trends and patterns observed in pedestrian crash analysis done for the Regional Pedestrian Safety Action Plan. Check off how many of the following factors are present. Applicants receive more points if more risk factors are present.

Existing road configuration is a One-way, 3+ through lanes or	
Existing road configuration is a Two-way, 4+ through lanes	Yes
Existing road has a design speed, posted speed limit, or speed study/data showing 85th percentile travel speeds in excess of 30 MPH or more	Yes
Existing road has AADT of greater than 15,000 vehicles per day	Yes
List the AADT	47000

SUB-MEASURE 3: Existing Location-Based Pedestrian Safety Exposure Factors

These factors are based on based on trends and patterns observed in pedestrian crash analysis done for the Regional Pedestrian Safety Action Plan. Check off how many of the following existing location exposure factors are present. Applicants receive more points if more risk factors are present.

Existing road has transit running on or across it with 1+ transit stops in the project area (If flag-stop route with no fixed stops, then 1+ locations in the project area where roadside stops are allowed. Do not count portions of transit routes with no stops, such as non-stop freeway sections of express or limited-stop routes. If service was temporarily reduced for the pandemic but is expected to return to 2019 levels, consider 2019 service for this item.)	
Existing road has high-frequency transit running on or across it and 1+ high-frequency stops in the project area (high-frequency defined as service at least every 15 minutes from 6am to 7pm weekdays and 9am to 6pm Saturdays. If service frequency was temporarily reduced for the pandemic but is expected to return to 2019 levels, consider 2019 frequency for this item.)	
Existing road is within 500 of 1+ shopping, dining, or entertainment destinations (e.g., grocery store, restaurant)	
If checked, please describe:	NA

(Limit 1,400 characters; approximately 200 words)

Existing road is within 500 of other known pedestrian generators (e.g., school, civic/community center, senior housing, multifamily housing, regulatorily-designated affordable housing)	
If checked, please describe:	NA

(Limit 1,400 characters; approximately 200 words)

Measure A: Multimodal Elements and Existing Connections

The proposed project will improve the ability of nonmotorized users to cross US 169 and travel along 109th Avenue N by adding additional marked crosswalks, a second median pedestrian refuge, and reconstructing the existing sidewalk and ADA pedestrian infrastructure.

There is an existing shared use path along the north side of 109th Avenue N through the extent of the project area. The existing US 169 & 109th Avenue intersection includes a marked crosswalk on the north leg. Since US 169 is a divided highway, the center median functions as a refuge for nonmotorized users crossing the highway. Pedestrian ramps with truncated domes and APS buttons are provided in the northwest and northeast quadrants and in the median refuge area.

Response:

This intersection was identified as a Tier 3 Expressway Barrier Crossing Area as part of the Metropolitan Council?s Regional Bicycle Barriers Study. There are destinations to the west of US 169 (Jerry Ruppelius Athletic Complex) and east of US 169 (Northwoods Park, Oxbow Creek Elementary School, Jackson Middle School, Champlin Park High School) that are generators of nonmotorized users that may travel through the project area.

The proposed project includes several elements designed to improve multimodal connections, make it easier to cross US 169, and implement a vision for improved walking, biking, and rolling along 109th Avenue N. These include an additional marked crosswalk on the south intersection leg along with a second median refuge, an FHWA proven safety countermeasure. New marked crosswalks will also be added on the east and west legs. New pedestrian ramps, APS push buttons,

countdown timers, and other features to ensure ADA compliance will be provided. The existing shared use path along the north side of 109th Avenue N on the east leg will be reconstructed as a 6? sidewalk along with associated pedestrian ramps. As the vision for 109th Avenue N continues to be implemented, the southeast and southwest intersection quadrants will connect to future trails to improve east-west mobility for nonmotorized users.

There is currently no transit service in the project area.

(Limit 2,800 characters; approximately 400 words)

Transit Projects Not Requiring Construction

If the applicant is completing a transit application that is operations only, check the box and do not complete the remainder of the form. These projects will receive full points for the Risk Assessment.
Park-and-Ride and other transit construction projects require completion of the Risk Assessment below.

Check Here if Your Transit Project Does Not Require Construction

Measure A: Risk Assessment - Construction Projects

1.Public Involvement (20 Percent of Points)

Projects that have been through a public process with residents and other interested public entities are more likely than others to be successful. The project applicant must indicate that events and/or targeted outreach (e.g., surveys and other web-based input) were held to help identify the transportation problem, how the potential solution was selected instead of other options, and the public involvement completed to date on the project. The focus of this section is on the opportunity for public input as opposed to the quality of input. NOTE: A written response is required and failure to respond will result in zero points.

Multiple types of targeted outreach efforts (such as meetings or online/mail outreach) specific to this project with the general public and partner agencies have been used to help identify the project need.

100%

At least one meeting specific to this project with the general public has been used to help identify the project need.

50%

At least online/mail outreach effort specific to this project with the general public has been used to help identify the project need.

50%

No meeting or outreach specific to this project was conducted, but the project was identified through meetings and/or outreach related to a larger planning effort.

Yes

25%

No outreach has led to the selection of this project.

0%

Describe the type(s) of outreach selected for this project (i.e., online or in-person meetings, surveys, demonstration projects), the method(s) used to announce outreach opportunities, and how many people participated. Include any public website links to outreach opportunities.

Response:

The Cities of Brooklyn Park and Champlin worked together to identify a preferred layout for improvements to 109th Avenue between Jefferson Highway and Winnetka Avenue, which encompasses the improvements proposed in this application. A series of public engagement meetings were conducted between 2016 and 2018 to engage community members and property owners in identifying issues and potential solutions. The cities first held a visioning meeting on September 22, 2016, to gather information and identify community concerns prior to the development of initial concepts for the roadway. The meeting included a presentation and small group discussions, and was attended by 22 individuals. The project team also attended meetings of the two city councils to present initial concepts and gather feedback from council members. Initial concepts were presented to the Brooklyn Park City Council on November 28, 2016, and to the Champlin City Council on December 12, 2016.

Following council review, the project team held a public meeting on January 19, 2017, that was attended by 18 people. The purpose of this meeting was to discuss the project purpose and gather feedback on the initial concepts. A second public meeting was held on June 19th, 2018, and was again attended by 18 people. At this meeting, the team discussed the feedback that was received on the initial concepts, shared a number of design recommendations for the corridor, and presented a revised concept based on public and city council feedback. The visioning meeting and subsequent public meetings were advertised to residents and property owners through postcard mailers, online outreach, and other methods.

The proposed improvements were also included in the City of Brooklyn Park?s 2040 Comprehensive plan, which included a robust public engagement process. Throughout 2016 the city engaged community members in a collective visioning effort. Nearly 1,000 people participated in this iterative process. Thirty-one percent of the input came from events where city staff convened community members at community café events. The majority of the input was gathered through city staff meeting community members out where they already gather, including community/civic group meetings, mini-interviews with youth at Zanewood Rec Center, a senior forum, outreach tables at community events, and through online forums and whiteboards posted throughout the city. In addition, 125 staff members gave their input. On July 28th, 2016, a special community engagement gathering provided community members an opportunity to reflect on the conclusions from the community input period. The final plan was adopted by the City Council in February 2017.

(Limit 2,800 characters; approximately 400 words)

2.Layout (25 Percent of Points)

Layout includes proposed geometrics and existing and proposed right-of-way boundaries. A basic layout should include a base map (north arrow; scale; legend; city and/or county limits; existing ROW, labeled; existing signals;* and bridge numbers*) and design data (proposed alignments; bike and/or roadway lane widths; shoulder width;* proposed signals;* and proposed ROW). An aerial photograph with a line showing the projects termini does not suffice and will be awarded zero points. *If applicable*

Layout approved by the applicant and all impacted jurisdictions (i.e., cities/counties/MnDOT. If a MnDOT trunk highway is impacted, approval by MnDOT must have occurred to receive full points. A PDF of the layout must be attached along with letters from each jurisdiction to receive points.

100%

A layout does not apply (signal replacement/signal timing, stand-alone streetscaping, minor intersection improvements). Applicants that are not certain whether a layout is required should contact Colleen Brown at MnDOT Metro State Aid colleen.brown@state.mn.us.

100%

For projects where MnDOT trunk highways are impacted and a MnDOT Staff Approved layout is required. Layout approved by the applicant and all impacted local jurisdictions (i.e., cities/counties), and layout review and approval by MnDOT is pending. A PDF of the layout must be attached along with letters from each jurisdiction to receive points.

75%

Layout completed but not approved by all jurisdictions. A PDF of the layout must be attached to receive points. Yes

50%

Layout has been started but is not complete. A PDF of the layout must be attached to receive points.

25%

Layout has not been started

0%

Attach Layout 1649883389090_3-02190-310_109th_169_8.5x11.pdf

Please upload attachment in PDF form.

Additional Attachments

Please upload attachment in PDF form.

3.Review of Section 106 Historic Resources (15 Percent of Points)

No known historic properties eligible for or listed in the National Register of Historic Places are located in the project area, and project is not located on an identified historic bridge

100%

There are historical/archeological properties present but determination of no historic properties affected is anticipated. Yes

100%

Historic/archeological property impacted; determination of no adverse effect anticipated

80%

Historic/archeological property impacted; determination of adverse effect anticipated

40%

Unsure if there are any historic/archaeological properties in the project area.

0%

Project is located on an identified historic bridge

4.Right-of-Way (25 Percent of Points)

Right-of-way, permanent or temporary easements, and MnDOT agreement/limited-use permit either not required or all have been acquired

100%

Right-of-way, permanent or temporary easements, and/or MnDOT agreement/limited-use permit required - plat, legal descriptions, or official map complete

50%

Right-of-way, permanent or temporary easements, and/or MnDOT agreement/limited-use permit required - parcels identified Yes

25%

Right-of-way, permanent or temporary easements, and/or MnDOT agreement/limited-use permit required - parcels not all identified

0%

5.Railroad Involvement (15 Percent of Points)

No railroad involvement on project or railroad Right-of-Way agreement is executed (include signature page, if applicable) Yes

100%

Signature Page

Please upload attachment in PDF form.

Railroad Right-of-Way Agreement required; negotiations have begun

50%

Railroad Right-of-Way Agreement required; negotiations have not begun.

0%

Measure A: Cost Effectiveness

Total Project Cost (entered in Project Cost Form):	$3,118,500.00
Enter Amount of the Noise Walls:	$0.00
Total Project Cost subtract the amount of the noise walls:	$3,118,500.00
Enter amount of any outside, competitive funding:	$0.00
Attach documentation of award:	
Points Awarded in Previous Criteria	
Cost Effectiveness	$0.00

Other Attachments

File Name	Description	File Size
1-US169&109th_Onepager.pdf	Project One-Pager	381 KB
10-AttachmentA-US169_EJScreen.pdf	Attachment A - Demographic Information	1.2 MB
11-AttachmentB-CompPlan-CIP_Refs.pdf	Local Plan Documents	2.6 MB
2-Existing Condition Photos.pdf	Existing Condition Photos	321 KB
3-02190-310_109th_169_8.5x11.pdf	Project Layout/Concept Drawing	472 KB
4-US169_Fig1_ProjectLocation.pdf	Project Location Map	321 KB
5-US169_Fig2_NearbyBusinesses.pdf	Nearby Businesses Map	12.8 MB
6-US169_Fig3_Housing.pdf	Affordable Housing Map	897 KB
7-RS MnDOT Letter Brooklyn Park US 169 and 109th Ave N update.pdf	MnDOT Letter of Support	117 KB
8-BrooklynPark-US169-Letter.pdf	Brooklyn Park Letter of Support	46 KB
9-Champlin-US169-Letter.pdf	Champlin Letter of Support	86 KB

City of Brooklyn Park Americans with Disabilities Act Transition Plan for Public Right-Of-Way:

Introduction

Transition Plan Need and Purpose

In accordance with the Americans with Disabilities Act of 1990 (ADA), the City of Brooklyn Park (Brooklyn Park) is conducting a self-evaluation to determine if Brooklyn Park's services, policies and practices affecting the public rights-of-way comply with federal and state regulations. This Transition Plan is both the process and the product of the Operations and Maintenance self-evaluation.

The Transition Plan reviews and develops Brooklyn Park's policies, practices and programs involving upgrades to public rights-of-way. Its purpose and intent is to:

1. Assist Brooklyn Park's Operations and Maintenance in understanding its obligations under various state and federal guidelines to provide accessibility for individuals with disabilities to City programs, services and activities.

2. Catalog the relevant federal and state accessibility laws and guidelines Brooklyn Park must adhere to while managing public rights-of-way.

3. Develop a Transition Plan that catalogs existing barriers to accessibility within Brooklyn Park's public rights-of-way as well as outlines a method and timeline for the removal of each barrier.

*This document has been created to specifically cover accessibility within the public rights of way and does not include information on Brooklyn Park programs, practices, or building facilities not related to public rights of way.

ADA Transition Plan Requirements

The Americans with Disabilities Act (ADA), enacted on July 26, 1990, is a civil rights law prohibiting discrimination against individuals based on disability. ADA consists of five titles outlining protections in the following areas:

1. Employment
2. State and local government services
3. Public accommodations
4. Telecommunications
5. Miscellaneous Provisions

Title II of ADA pertains to the programs, activities and services public entities provide. As a provider of public transportation services and programs, Brooklyn Park must comply with this section of the Act as it specifically applies to public service agencies. Title II of ADA provides that, "…no qualified individual with a disability shall, by reason of such disability, be excluded from participation in or be denied the benefits of the services, programs, or activities of a public entity, or be subjected to discrimination by any such entity." (42 USC. Sec. 12132; 28 CFR. Sec. 35.130)

As required by Title II of ADA, 28 CFR. Part 35 Sec. 35.105 and Sec. 35.150, Brooklyn Park has conducted a self-evaluation of its facilities within public rights of way and has developed this Transition Plan detailing how the organization will ensure that all of those facilities are accessible to all individuals. This document serves as a supplement to Brooklyn Park's Transition Plan covering buildings, services, programs and activities.

ADA and its Relationship to Other Laws, Standards, and Guidance

Title II of ADA is companion legislation to two previous federal statutes and regulations: the Architectural Barriers Acts of 1968 and Section 504 of the Rehabilitation Act of 1973.

The Architectural Barriers Act of 1968 is a Federal law that requires facilities designed, built, altered or leased with Federal funds to be accessible. The Architectural Barriers Act marks one of the first efforts to ensure access to the built environment.

Section 504 of the Rehabilitation Act of 1973 is a Federal law that protects qualified individuals from discrimination based on their disability. The nondiscrimination requirements of the law apply to employers and organizations that receive financial assistance from any Federal department or agency. Title II of ADA extended this coverage to all state and local government entities, regardless of whether they receive federal funding or not.

Agency Requirements

Under Title II, Brooklyn Park must meet these general requirements:

- Must operate their programs so that, when viewed in their entirety, the programs are accessible to and useable by individuals with disabilities (28 C.F.R. Sec. 35.150).
- May not refuse to allow a person with a disability to participate in a service, program or activity simply because the person has a disability (28 C.F.R. Sec. 35.130 (a).
- Must make reasonable modifications in policies, practices and procedures that deny equal access to individuals with disabilities unless a fundamental alteration in the program would result (28 C.F.R. Sec. 35.130(b) (7).
- May not provide services or benefits to individuals with disabilities through programs that are separate or different unless the separate or different measures are necessary to ensure that benefits and services are equally effective (28 C.F.R. Sec. 35.130(b)(iv) & (d).
- Must take appropriate steps to ensure that communications with applicants, participants and members of the public with disabilities are as effective as communications with others (29 C.F.R. Sec. 35.160(a).

- Must designate at least one responsible employee to coordinate ADA compliance [28 CFR Sec. 35.107(a)]. This person is often referred to as the "ADA Coordinator." The public entity must provide the ADA coordinator's name, office address, and telephone number to all interested individuals [28 CFR Sec. 35.107(a)].
- Must provide notice of ADA requirements. All public entities, regardless of size, must provide information about the rights and protections of Title II to applicants, participants, beneficiaries, employees, and other interested persons [28 CFR Sec. 35,106]. The notice must include the identification of the employee serving as the ADA coordinator and must provide this information on an ongoing basis [28 CFR Sec. 104.8(a)].
- Must establish a grievance procedure. Public entities must adopt and publish grievance procedures providing for prompt and equitable resolution of complaints [28 CFR Sec. 35.107(b)]. This requirement provides for a timely resolution of all problems or conflicts related to ADA compliance before they escalate to litigation and/or the federal complaint process.

Self-Evaluation

Overview

Brooklyn Park is required, under Title II of the Americans with Disabilities Act (ADA) and 28CFR35.105, to perform a self-evaluation of its current transportation infrastructure policies, practices, and programs. This self-evaluation will identify what policies and practices impact accessibility and examine how Brooklyn Park implements these policies. The goal of the self-evaluation is to verify that, in implementing Brooklyn Park policies and practices, the department is providing accessibility and not adversely affecting the full participation of individuals with disabilities.

The self-evaluation also examines the condition of Brooklyn Park's Pedestrian Circulation Route/Pedestrian Access Route (PCR/PAR) and identifies potential need for PCR/PAR infrastructure improvements. This will include the sidewalks, curb ramps, bicycle/pedestrian trails, traffic control signals and transit facilities that are located within Brooklyn Park's right of way. Any barriers to accessibility identified in the self-evaluation and the remedy to the identified barrier are set out in this transition plan. Activity in the public right-of-way may be considered a program in two different ways:

1. Streets, sidewalks and curb ramps may be part of a continuous path of travel between activities or programs, at various public and private facilities located on adjacent properties, such as public offices, schools, parks and recreational facilities, public service agencies, hospitals and health clinics, and police facilities.

2. Streets, sidewalks and curb ramps may themselves represent a program of public pedestrian activities that are essential to the usage and enjoyment of the City's built environment.

Summary

In 2016-2018, Brooklyn Park conducted an inventory of pedestrian facilities within its public right of way consisting of the evaluation of the following facilities:

- 117 miles of sidewalks
- 1955 curb ramps
- 52 miles of trails
- 84 traffic control signals (Brooklyn Park Controls 12 of the 84)
- 518 bus stops (Controlled by Metropolitan Council)
- 72 parks and recreational services

The sidewalks, trails, APS signals, bus stops, and public facility inspections are not complete and will continue until they are all inspected which is projected to be 2025. A detailed evaluation on how these facilities relate to ADA standards is found in Appendix A and will be updated periodically as the inspections are completed and inventoried.

Policies and Practices

Previous Practices

Since the adoption of the ADA, Brooklyn Park has striven to provide accessible pedestrian features as part of the city's Capital Improvement Plan (CIP). As additional information was made available as to the methods of providing accessible pedestrian features, Brooklyn Park updated their procedures to accommodate these methods.

Policy

Brooklyn Park's goal is to continue to provide accessible pedestrian design features as part of the city's Capital Improvement Plan. Brooklyn Park has adopted MnDOT ADA design standards and procedures as listed in Appendix F. These standards and procedures will be kept up to date with nationwide and local best management practices.

Brooklyn Park will consider and respond to all accessibility improvement requests. All accessibility improvements that have been deemed reasonable will be scheduled consistent with transportation priorities. Brooklyn Park will coordinate with external agencies to ensure that all new or altered pedestrian facilities within the city's jurisdiction are ADA compliant to the maximum extent feasible. Maintenance of pedestrian facilities within the public right of way will continue to follow the policies set forth by Brooklyn Park.

Requests for accessibility improvements can be submitted to Operations and Maintenance. Contact information is located in Appendix E.

Improvement Schedule

Priority Areas

Brooklyn Park identified specific locations as priority areas for planned accessibility improvement projects. These areas were selected due to their proximity to specific land uses such as schools, government offices and medical facilities, maintenance zones and as well as from the receipt of public comments. Brooklyn Park developed a priority area deficiency score based on the criteria for an ADA pedestrian ramp. The following pedestrian ramps have been identified for priority replacement:

Schools:

Name	Address
Excell Academy	6510 Zane Ave N
Hennepin Technical College	9000 Brooklyn Blvd
Intermediate District 287	7008 Northland Dr N
ISD 279 CBVAT Program	7600 Boone Ave N
North Hennepin Community College	7411 85th Ave N
Osseo Area Learning Center	7300 Boone Ave N
Birch Grove Elementary School	4690 Brookdale Dr N
Brooklyn Middle School	7377 Noble Ave N
Champlin Park Senior High School	6025 109th Ave N
Crestview Elementary School	8200 Zane Ave N
Edgewood Education Center	6601 Xylon Ave N
Edinbrook Elementary School	8925 Zane Ave N
Fair Oaks/Oak View Elementary School	5600 65th Ave N
Minnesota Early Learning Academy	6717 85th Ave N
Monroe Elementary School	901 Brookdale Dr N
Northview Middle School	5869 69th Ave N
Northwest Suburban Integration School District	9201 West Broadway N
Oxbow Creek Elementary School	6505 109th Ave N
Palmer Lake Elementary School	7300 Palmer Lake Dr N
Park Brook Elementary School	7400 Hampshire Ave N
Park Center Senior High School	7300 Brooklyn Blvd
Prairie Seeds Academy	6200 West Broadway N
Sage Academy	3900 85th Ave N
Woodland Elementary School	4501 Oak Grove Pkwy
Zanewood Elementary School	7000 Zane Ave N
Athlos Leadership Academy	10100 Noble Pkwy N
Riverview Early Childhood Center	1400 93rd Ave N
HTC Law Enforcement Center	9110 Brooklyn Blvd

Hospitals and Medical Clinics:

Allina Health Brooklyn Park Clinic	9300 Noble Pkwy N
Crown Medical Center	7001 78th Ave N
Fairview Brooklyn Park Clinic	10000 Zane Ave N
Hennepin County Medical Center - Brooklyn Park Clinic	7650 Zane Ave N
North Memorial Clinic	8559 Edinbrook Pkwy N
Under The Weather - Sick Childcare Center	8590 Edinburgh Center Dr
MedExpress Urgent Care	7658 Brooklyn Blvd
Northwest MRI Center	4610 Oak Grove Parkway
Prairie Care	9400 Zane Ave N
Brooklyn Avenues For Youth	7210 76th Ave N

Government Programs and Campuses:

Community Activity Center	5600 85th Ave N
City Hall	5200 85th Ave N
Public Works (Operations and Maintenance)	8300 Noble Ave N
Village Creek Police Department	7608 Brooklyn Blvd
Zanewood Recreation Center	7200 Zane Ave N
Brooklyn Park Police Department	5400 85th Ave N
Department of Motor Vehicles	5200 85th Ave N
National Guard Armory	5500 85th Ave N
Brooklyn Park Library	8500 West Broadway Ave

External Agency Coordination

Many other agencies are responsible for pedestrian facilities within the jurisdiction of Brooklyn Park. Brooklyn Park will coordinate with those agencies to track and assist in the facilitation of the elimination of accessibility barriers along their routes.

Schedule

Brooklyn Park has set the following schedule goals for improving the accessibility of its pedestrian facilities within the city's jurisdiction:

- After 10 years, 25% of curb ramps within the jurisdiction of Brooklyn Park would be ADA compliant.
- After 20 years, 50% of curb ramps within the jurisdiction of Brooklyn Park would be ADA compliant.
- After 30 years, 100% of curb ramps within the jurisdiction of Brooklyn Park would be ADA compliant.

ADA Coordinator

In accordance with 28 CFR 35.107(a), Brooklyn Park has identified an ADA Title II Coordinator to oversee the city policies and procedures. Contact information for this individual is located in Appendix E.

Implementation Schedule

Methodology

Brooklyn Park will utilize two methods for upgrading pedestrian facilities to the current ADA standards. The first and most comprehensive are the scheduled street and utility improvement projects. All pedestrian facilities impacted by these projects will be upgraded to current ADA accessibility standards. The second method is the stand alone sidewalk and ADA accessibility improvement project. These projects will be incorporated into the CIP on a case by case basis as determined by Brooklyn Park staff. The CIP, which includes a detailed schedule and budget for specific improvements, is included in Appendix B.

Public Outreach

Brooklyn Park recognizes that public participation is an important component in the development of this document. Input from the community has been gathered and used to help define priority areas for improvements within the jurisdiction of Brooklyn Park.

Public outreach for the creation of this document consisted of the following activities:

- Public access to the ADA Transition Plan via Brooklyn Park webpage in the public works section (https://www.brooklynpark.org/city-government/public-works/) and a hard copy was placed at the Engineering counter in City Hall
- Letters sent to any public agencies in the jurisdiction of Brooklyn Park

This document was also available for public comment. A summary of comments received and detailed information regarding the public outreach activities are located in Appendix C.

Grievance Procedure

Under the Americans with Disabilities Act, each agency is required to publish its responsibilities in regards to the ADA. A draft of this public notice is provided in Appendix D. If users of Brooklyn Park facilities and services believe the city has not provided reasonable accommodation, they have the right to file a grievance.

In accordance with 28 CFR 35.107(b), Brooklyn Park has developed a grievance procedure for the purpose of the prompt and equitable resolution of citizens' complaints, concerns, comments, and other grievances. This grievance procedure is outlined in Appendix D.

Monitor the Progress

This document will continue to be updated as conditions within Brooklyn Park evolve. The main body and appendices in this document will be updated periodically. With each update, a public comment period will be established to continue the public outreach.

Appendices

A. Self-Evaluation Results

B. Schedule / Budget Information

C. Public Outreach

D. Grievance Procedure

E. Contact Information

F. Agency ADA Design Standards and Procedures

G. Glossary of Terms

Appendix A – Self-Evaluation Results

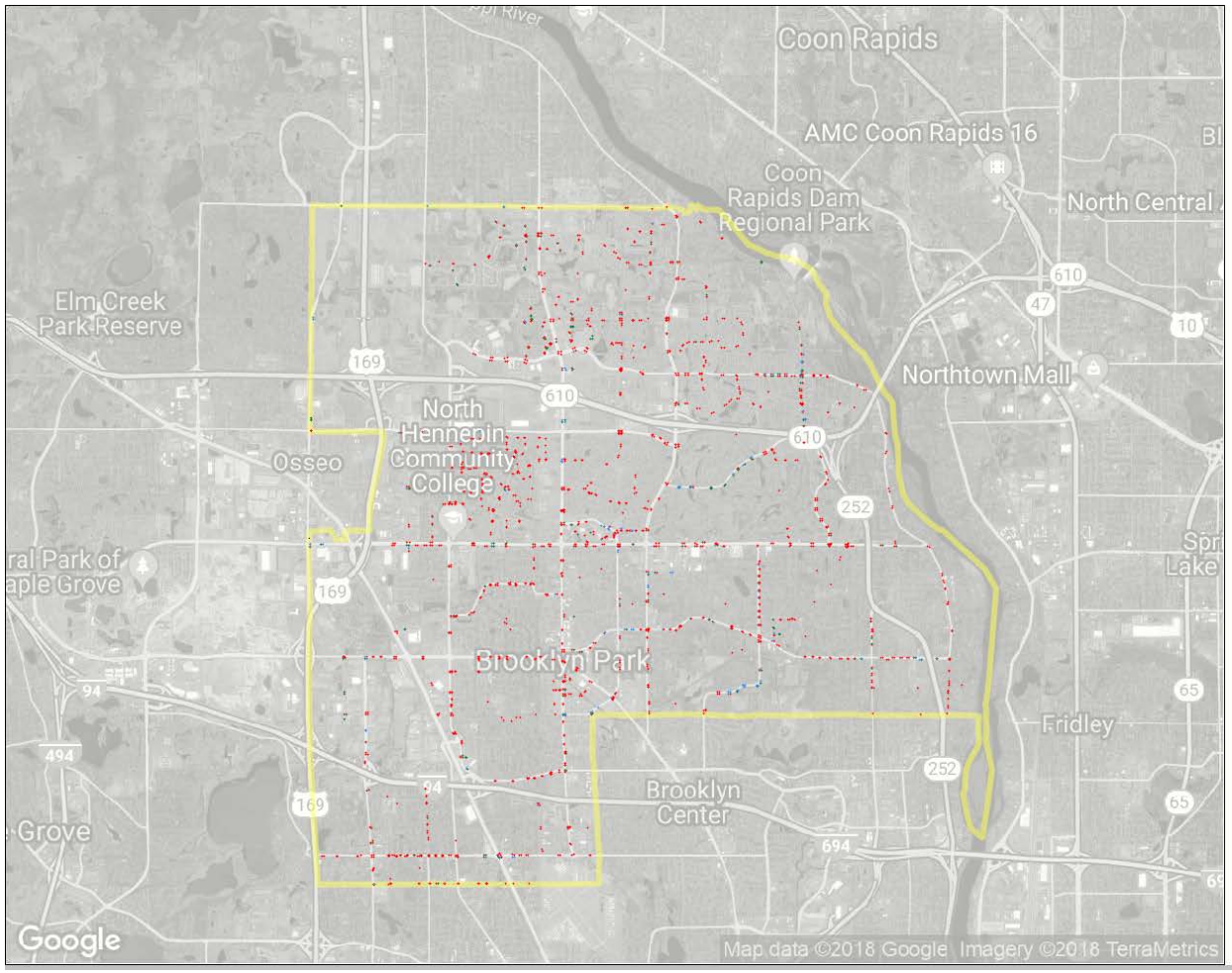
This initial self-evaluation of pedestrian facilities yielded the following results:

- 6.6% of curb ramps met accessibility criteria
- 0.1% intersections did not have any curb ramps
- 21% of traffic control signals had APS

Pedestrian facilities yet to be evaluated:

- Sidewalks and trails
- Traffic control signals with push buttons that are accessible, or have the pedestrian indications on recall
- Bus stops and amenities
- Public facilities

The Self Evaluation is not complete for all right-of-way attributes yet. It is expected to be completed by in 2025.



Summary Status

- Good (130) 6.6%
- Minor Problems (202) 10.3%
- Major Problems (1627) 83.1%

Extract
6/13/2018

Total Ramps (1959)

Slope Status

Major (1014) 51.8%

Minor (530) 27.1%

None (415) 21.2%

Surveyor

1	(658)
2	(635)
3	(0)
4	(302)
5	(364)
6	(0)
7	(0)
8	(0)
9	(0)
10 +	(0)

Year

1969 (80)
2016 (1240)
2017 (639)

Ramp Running Slope Status

Major (88) 4.5%

Minor (405) 20.7%

None (1466) 74.8%

Ramp Running Slope Value (% slope)

14.5 +	(29)
12.6 to 14.6	(56)
10.5 to 12.5	(123)
8.4 to 10.4	(271)
6.3 to 8.3	(383)
4.2 to 6.2	(489)
2.1 to 4.1	(313)
0.0 to 2.0	(295)

Ramp Cross Slope Status

Major (516) 26.3%

Minor (293) 15.0%

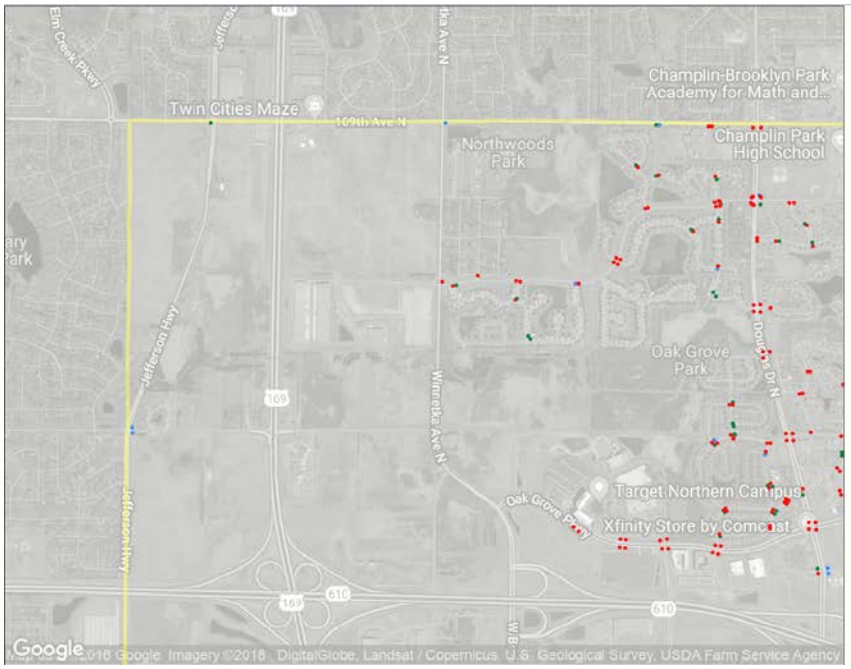
None (1150) 58.7%

Ramp Cross Slope Value (% slope)

3.6 +	(450)
3.1 to 3.5	(89)
2.6 to 3.0	(147)
2.1 to 2.5	(150)
1.6 to 2.0	(226)
1.1 to 1.5	(253)
0.6 to 1.0	(252)
0.0 to 0.5	(392)

Date

1969-12-31	(80)
2016-07-13	(40)
2016-07-15	(59)
2016-07-18	(24)
2016-07-19	(20)
2016-08-02	(73)
2016-08-06	(47)
2016-08-09	(9)
2016-08-11	(13)
2016-08-12	(111)
2016-08-13	(41)
2016-08-15	(58)
2016-08-16	(42)
2016-08-17	(27)
2016-08-18	(19)
2016-08-22	(31)
2017-05-23	(70)
2017-05-24	(21)
2017-06-01	(32)
2017-06-02	(50)
2017-06-06	(32)
2017-06-08	(11)
2017-06-09	(22)
2017-06-12	(23)
2017-06-14	(25)
2017-06-15	(44)
2017-06-16	(43)
2017-06-19	(49)
2017-06-21	(16)
2017-06-22	(4)
2017-06-23	(16)
All other values	(807)



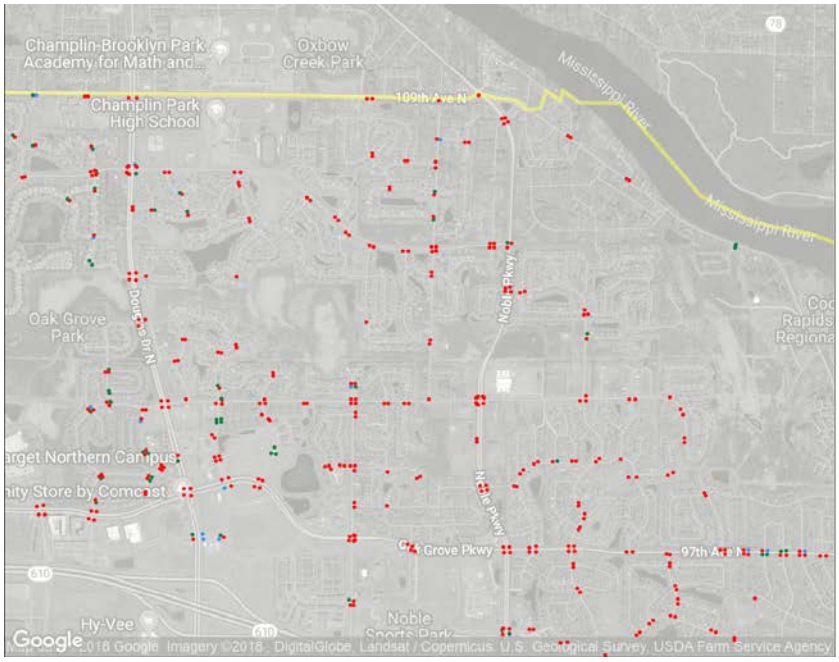
Summary Status

Extract
6/13/2018
Total Ramps (167)

Slope Status	Surveyor	Year
Major (66) 39.5%	1 (64)	1969 (4)
Minor (63) 37.7%	2 (19)	2016 (79)
None (38) 22.8%	3 (0)	2017 (84)
	4 (46)	
	5 (38)	
	6 (0)	
	7 (0)	
	8 (0)	
	9 (0)	
	10 + (0)	

Ramp Running Slope Status	Ramp Running Slope Value (% slope)	Date
Major (5) 3.0%	14.5 + (3)	1969-12-31 (4)
Minor (33) 19.8%	12.6 to 14.6 (2)	2016-08-15 (7)
None (129) 77.2%	10.5 to 12.5 (9)	2016-08-16 (29)
	8.4 to 10.4 (23)	2016-08-17 (12)
	6.3 to 8.3 (31)	2016-08-22 (31)
	4.2 to 6.2 (63)	
	2.1 to 4.1 (27)	
	0.0 to 2.0 (9)	

Ramp Cross Slope Status	Ramp Cross Slope Value (% slope)	Date
Major (18) 10.8%	3.6 + (13)	2017-05-22 (1)
Minor (25) 15.0%	3.1 to 3.5 (9)	2017-05-23 (58)
None (124) 74.3%	2.6 to 3.0 (9)	2017-05-24 (18)
	2.1 to 2.5 (12)	2017-05-30 (7)
	1.6 to 2.0 (27)	
	1.1 to 1.5 (31)	
	0.6 to 1.0 (19)	
	0.0 to 0.5 (47)	



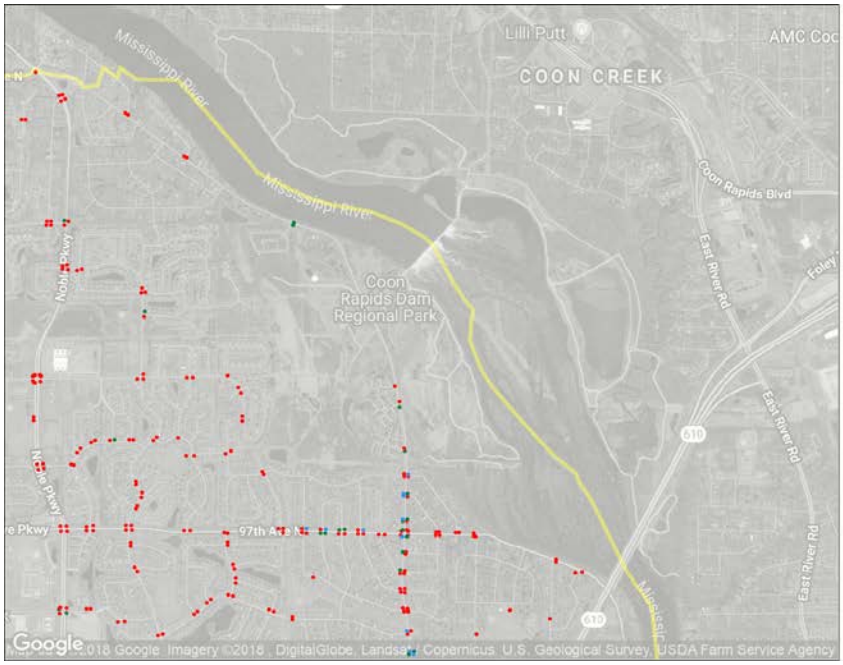
Summary Status

Extract
6/13/2018
Total Ramps (425)

Slope Status	Surveyor	Year
Major (198) 46.6%	1 (87)	1969 (12)
Minor (147) 34.6%	2 (95)	2016 (174)
None (80) 18.8%	3 (0)	2017 (239)
	4 (128)	
	5 (115)	
	6 (0)	
	7 (0)	
	8 (0)	
	9 (0)	
	10 + (0)	

Ramp Running Slope Status	Ramp Running Slope Value (% slope)	Date
Major (11) 2.6%	14.5 + (6)	1969-12-31 (12)
Minor (83) 19.5%	12.6 to 14.6 (5)	2016-08-01 (25)
None (331) 77.9%	10.5 to 12.5 (20)	2016-08-02 (21)
	8.4 to 10.4 (60)	2016-08-03 (64)
	6.3 to 8.3 (101)	2016-08-05 (5)
	4.2 to 6.2 (142)	2016-08-15 (6)
	2.1 to 4.1 (65)	2016-08-16 (29)
	0.0 to 2.0 (26)	2016-08-22 (24)
		2017-05-19 (19)

Ramp Cross Slope Status	Ramp Cross Slope Value (% slope)	Date
Major (78) 18.4%	3.6 + (53)	2017-05-22 (52)
Minor (68) 16.0%	3.1 to 3.5 (33)	2017-05-23 (70)
None (279) 65.6%	2.6 to 3.0 (26)	2017-05-24 (15)
	2.1 to 2.5 (41)	2017-05-30 (31)
	1.6 to 2.0 (63)	2017-05-31 (20)
	1.1 to 1.5 (66)	2017-06-01 (32)
	0.6 to 1.0 (56)	
	0.0 to 0.5 (87)	



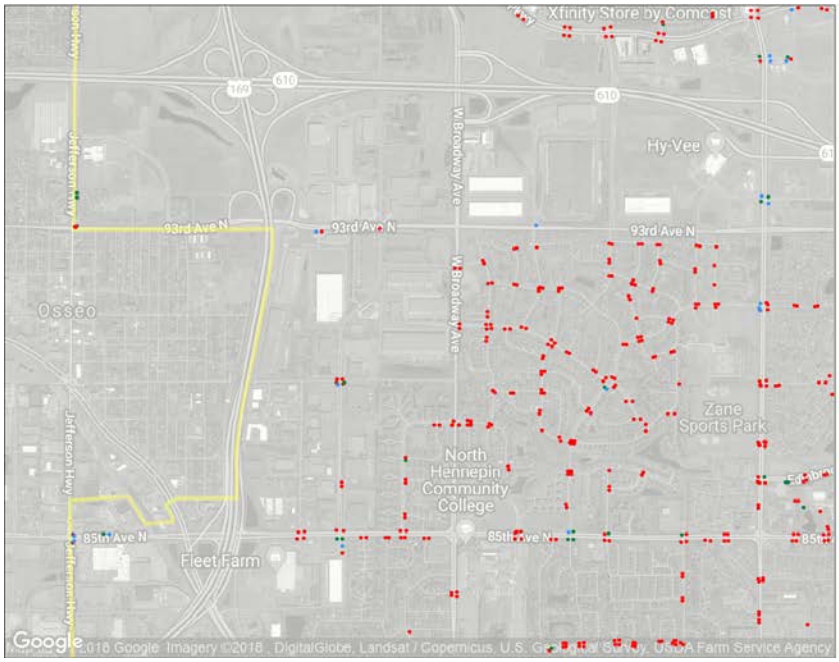
Summary Status

Extract
6/13/2018
Total Ramps (231)

Slope Status	Surveyor	Year
Major (110) 47.6%	1 (89)	1969 (8)
Minor (65) 28.1%	2 (105)	2016 (186)
None (56) 24.2%	3 (0)	2017 (37)
	4 (21)	
	5 (16)	
	6 (0)	
	7 (0)	
	8 (0)	
	9 (0)	
	10 + (0)	

Ramp Running Slope Status	Ramp Running Slope Value (% slope)	Date
Major (7) 3.0%	14.5 + (2)	1969-12-31 (8)
Minor (27) 11.7%	12.6 to 14.6 (5)	2016-08-01 (90)
None (197) 85.3%	10.5 to 12.5 (6)	2016-08-02 (22)
	8.4 to 10.4 (20)	2016-08-03 (69)
	6.3 to 8.3 (37)	2016-08-05 (5)
	4.2 to 6.2 (90)	2017-05-19 (2)
	2.1 to 4.1 (46)	2017-05-22 (8)
	0.0 to 2.0 (25)	2017-05-31 (23)

Ramp Cross Slope Status	Ramp Cross Slope Value (% slope)	2017-06-01 (4)
Major (42) 18.2%	3.6 + (31)	
Minor (38) 16.5%	3.1 to 3.5 (13)	
None (151) 65.4%	2.6 to 3.0 (18)	
	2.1 to 2.5 (22)	
	1.6 to 2.0 (38)	
	1.1 to 1.5 (29)	
	0.6 to 1.0 (31)	
	0.0 to 0.5 (49)	



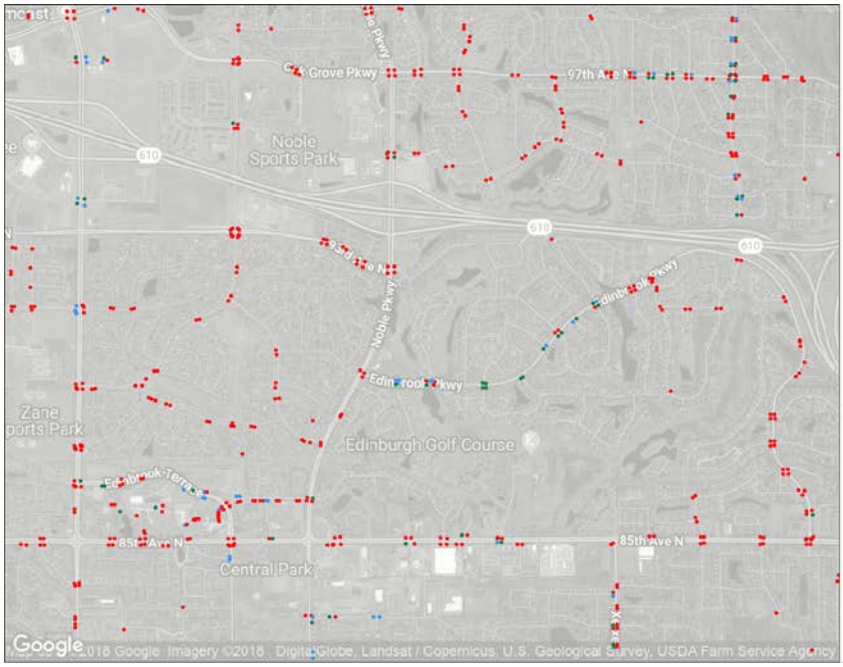
Summary Status

Extract
6/13/2018
Total Ramps (414)

Slope Status	Surveyor	Year
Major (237) 57.2%	1 (102)	1969 (20)
Minor (105) 25.4%	2 (126)	2016 (216)
None (72) 17.4%	3 (0)	2017 (178)
	4 (45)	
	5 (141)	
	6 (0)	
	7 (0)	
	8 (0)	
	9 (0)	
	10 + (0)	

Ramp Running Slope Status	Ramp Running Slope Value (% slope)	Date
Major (11) 2.7%	14.5 + (3)	1969-12-31 (20)
Minor (80) 19.3%	12.6 to 14.6 (7)	2016-08-06 (1)
None (323) 78.0%	10.5 to 12.5 (24)	2016-08-10 (3)
	8.4 to 10.4 (55)	2016-08-12 (87)
	6.3 to 8.3 (86)	2016-08-13 (41)
	4.2 to 6.2 (109)	2016-08-15 (46)
	2.1 to 4.1 (69)	2016-08-16 (4)
	0.0 to 2.0 (61)	2016-08-17 (15)

Ramp Cross Slope Status	Ramp Cross Slope Value (% slope)	2016-08-18 (19)
Major (147) 35.5%	3.6 + (135)	2017-05-23 (6)
Minor (46) 11.1%	3.1 to 3.5 (17)	2017-05-24 (21)
None (221) 53.4%	2.6 to 3.0 (23)	2017-05-30 (4)
	2.1 to 2.5 (23)	2017-06-02 (26)
	1.6 to 2.0 (29)	2017-06-05 (17)
	1.1 to 1.5 (53)	2017-06-09 (6)
	0.6 to 1.0 (59)	2017-06-14 (25)
	0.0 to 0.5 (75)	2017-06-15 (40)
		2017-06-16 (4)
		2017-06-20 (24)
		2017-06-21 (1)
		2017-06-22 (4)



Summary Status

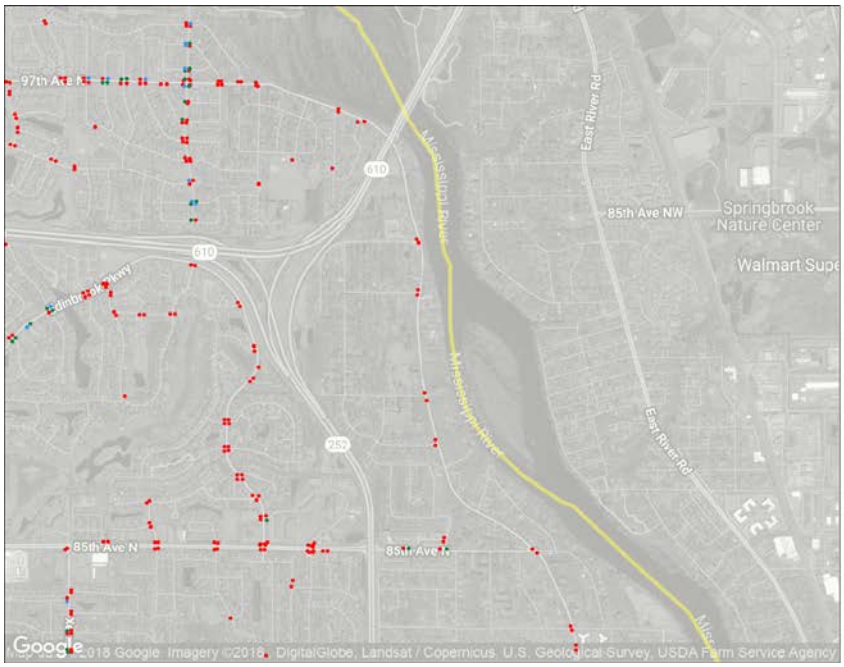
Good (46) 8.0%
Minor Problems (53) 9.2%
Major Problems (476) 82.8%

Extract
6/13/2018
Total Ramps (577)

Slope Status	Surveyor	Year
Major (302) 52.3%	1 (220)	1969 (25)
Minor (161) 27.9%	2 (214)	2016 (420)
None (114) 19.8%	3 (0)	2017 (132)
	4 (51)	
	5 (92)	
	6 (0)	
	7 (0)	
	8 (0)	
	9 (0)	
	10 + (0)	

Ramp Running Slope Status	Ramp Running Slope Value (% slope)	Date
Major (34) 5.9%	14.5 + (15)	1969-12-31 (25)
Minor (137) 23.7%	12.6 to 14.6 (17)	2016-07-11 (18)
None (406) 70.4%	10.5 to 12.5 (42)	2016-07-13 (4)
	8.4 to 10.4 (93)	2016-07-15 (2)
	6.3 to 8.3 (118)	2016-07-19 (2)
	4.2 to 6.2 (145)	2016-07-21 (6)
	2.1 to 4.1 (78)	2016-07-28 (19)
	0.0 to 2.0 (69)	2016-07-29 (43)
		2016-08-01 (118)
		2016-08-02 (73)
		2016-08-03 (23)
		2016-08-05 (38)
		2016-08-06 (4)
		2016-08-10 (19)
		2016-08-12 (47)
		2016-08-16 (4)
		2017-05-23 (4)
		2017-05-24 (7)
		2017-05-30 (4)
		2017-05-31 (13)
		2017-06-01 (21)
		2017-06-05 (22)
		2017-06-09 (6)
		2017-06-14 (11)
		2017-06-15 (8)
		2017-06-16 (4)
		2017-06-20 (32)

Ramp Cross Slope Status	Ramp Cross Slope Value (% slope)
Major (124) 21.5%	3.6 + (107)
Minor (101) 17.5%	3.1 to 3.5 (22)
None (352) 61.0%	2.6 to 3.0 (44)
	2.1 to 2.5 (60)
	1.6 to 2.0 (64)
	1.1 to 1.5 (80)
	0.6 to 1.0 (89)
	0.0 to 0.5 (111)



Summary Status

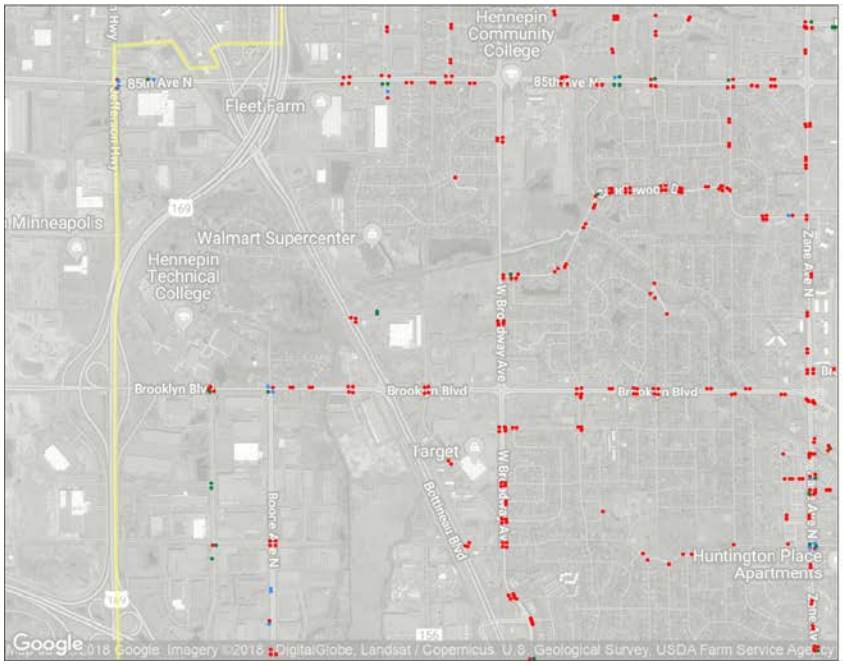
Good (15) 6.1%
Minor Problems (26) 10.7%
Major Problems (203) 83.2%

Extract
6/13/2018
Total Ramps (244)

Slope Status	Surveyor	Year
Major (136) 55.7%	1 (96)	1969 (7)
Minor (69) 28.3%	2 (137)	2016 (226)
None (39) 16.0%	3 (0)	2017 (11)
	4 (6)	
	5 (5)	
	6 (0)	
	7 (0)	
	8 (0)	
	9 (0)	
	10 + (0)	

Ramp Running Slope Status	Ramp Running Slope Value (% slope)	Date
Major (15) 6.1%	14.5 + (5)	1969-12-31 (7)
Minor (61) 25.0%	12.6 to 14.6 (9)	2016-07-22 (18)
None (168) 68.9%	10.5 to 12.5 (25)	2016-07-25 (2)
	8.4 to 10.4 (37)	2016-07-28 (19)
	6.3 to 8.3 (34)	2016-07-29 (54)
	4.2 to 6.2 (65)	2016-08-01 (121)
	2.1 to 4.1 (41)	2016-08-02 (5)
	0.0 to 2.0 (28)	2016-08-03 (7)
		2017-05-31 (11)

Ramp Cross Slope Status	Ramp Cross Slope Value (% slope)
Major (44) 18.0%	3.6 + (34)
Minor (52) 21.3%	3.1 to 3.5 (10)
None (148) 60.7%	2.6 to 3.0 (26)
	2.1 to 2.5 (29)
	1.6 to 2.0 (39)
	1.1 to 1.5 (29)
	0.6 to 1.0 (32)
	0.0 to 0.5 (45)



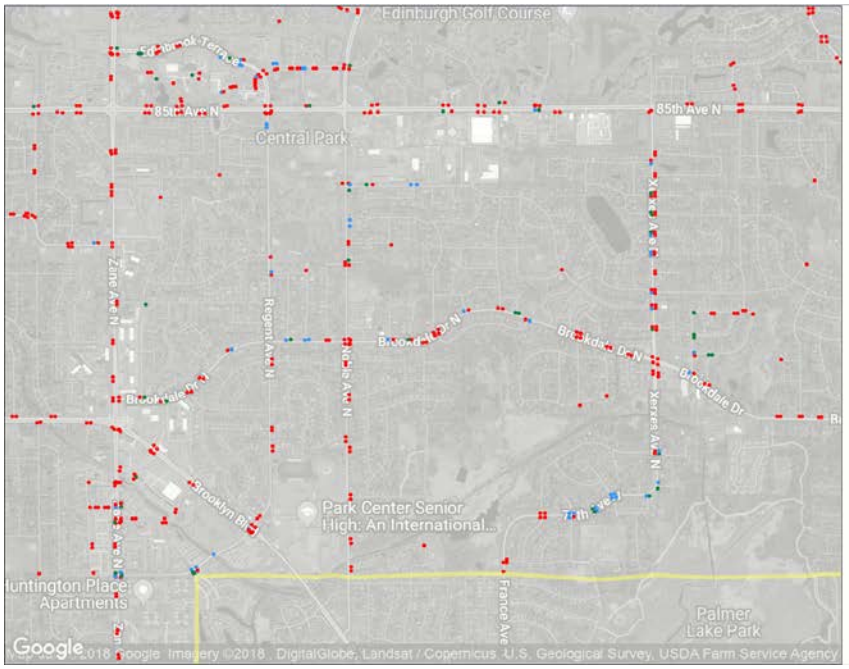
Summary Status

Extract
6/13/2018
Total Ramps (361)

Slope Status	Surveyor	Year
Major (202) 56.0%	1 (36)	1969 (17)
Minor (85) 23.5%	2 (30)	2016 (60)
None (74) 20.5%	3 (0)	2017 (284)
	4 (134)	
	5 (161)	
	6 (0)	
	7 (0)	
	8 (0)	
	9 (0)	
	10 + (0)	

Ramp Running Slope Status	Ramp Running Slope Value (% slope)	Date
Major (11) 3.0%	14.5 + (5)	1969-12-31 (17)
Minor (61) 16.9%	12.6 to 14.6 (6)	2016-07-18 (21)
None (289) 80.1%	10.5 to 12.5 (15)	2016-08-05 (3)
	8.4 to 10.4 (42)	2016-08-06 (2)
	6.3 to 8.3 (71)	2016-08-13 (16)
	4.2 to 6.2 (76)	2016-08-15 (5)
	2.1 to 4.1 (71)	2016-08-18 (13)
	0.0 to 2.0 (75)	2017-06-02 (50)
		2017-06-05 (2)
		2017-06-06 (23)
		2017-06-08 (6)
		2017-06-09 (22)
		2017-06-12 (21)
		2017-06-14 (21)
		2017-06-15 (31)
		2017-06-16 (39)
		2017-06-19 (49)
		2017-06-21 (13)
		2017-06-22 (4)
		2017-06-23 (3)

Ramp Cross Slope Status	Ramp Cross Slope Value (% slope)
Major (117) 32.4%	3.6 + (104)
Minor (57) 15.8%	3.1 to 3.5 (16)
None (187) 51.8%	2.6 to 3.0 (35)
	2.1 to 2.5 (24)
	1.6 to 2.0 (27)
	1.1 to 1.5 (36)
	0.6 to 1.0 (49)
	0.0 to 0.5 (70)



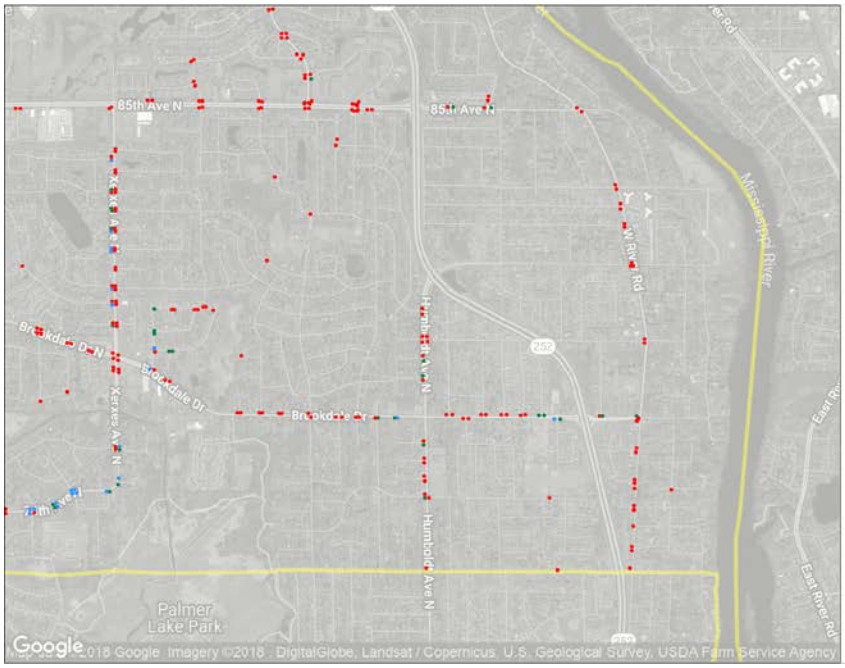
Summary Status

Extract
6/13/2018
Total Ramps (524)

Slope Status	Surveyor	Year
Major (261) 49.8%	1 (144)	1969 (24)
Minor (133) 25.4%	2 (185)	2016 (321)
None (130) 24.8%	3 (0)	2017 (179)
	4 (81)	
	5 (114)	
	6 (0)	
	7 (0)	
	8 (0)	
	9 (0)	
	10 + (0)	

Ramp Running Slope Status	Ramp Running Slope Value (% slope)	Date
Major (22) 4.2%	14.5 + (10)	1969-12-31 (24)
Minor (117) 22.3%	12.6 to 14.6 (10)	2016-07-11 (18)
None (385) 73.5%	10.5 to 12.5 (40)	2016-07-13 (4)
	8.4 to 10.4 (73)	2016-07-15 (2)
	6.3 to 8.3 (81)	2016-07-19 (2)
	4.2 to 6.2 (115)	2016-07-21 (6)
	2.1 to 4.1 (96)	2016-07-26 (10)
	0.0 to 2.0 (99)	2016-07-27 (16)
		2016-07-28 (40)
		2016-07-29 (24)
		2016-08-02 (25)
		2016-08-04 (69)
		2016-08-05 (72)
		2016-08-06 (16)
		2016-08-12 (4)
		2016-08-16 (13)
		2017-05-25 (2)
		2017-06-02 (14)
		2017-06-05 (22)
		2017-06-06 (18)
		2017-06-08 (6)
		2017-06-09 (21)
		2017-06-12 (18)
		2017-06-14 (11)
		2017-06-15 (16)
		2017-06-16 (33)
		2017-06-20 (17)
		2017-06-21 (1)

Ramp Cross Slope Status	Ramp Cross Slope Value (% slope)
Major (124) 23.7%	3.6 + (113)
Minor (81) 15.5%	3.1 to 3.5 (19)
None (319) 60.9%	2.6 to 3.0 (42)
	2.1 to 2.5 (37)
	1.6 to 2.0 (59)
	1.1 to 1.5 (72)
	0.6 to 1.0 (75)
	0.0 to 0.5 (107)



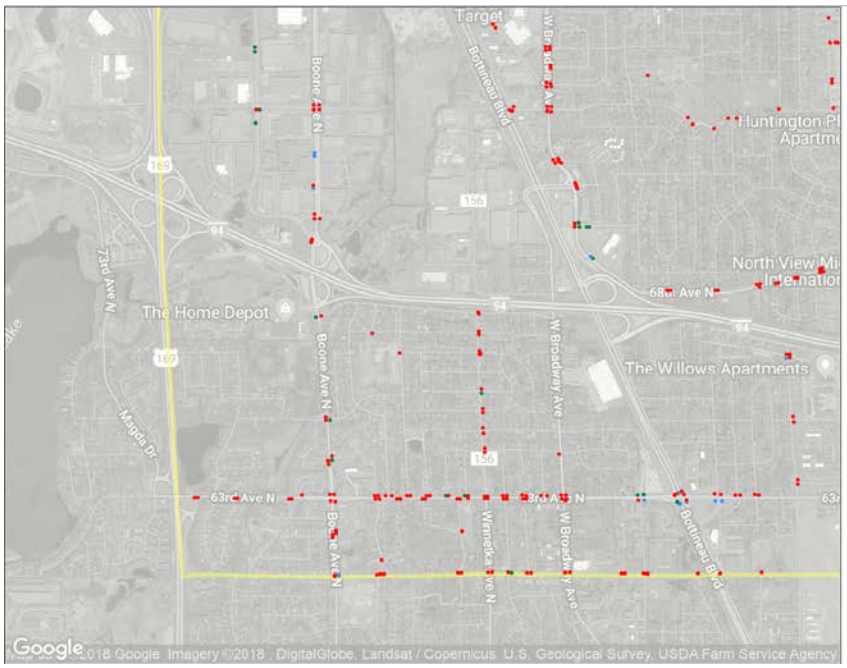
Summary Status

Extract
6/13/2018
Total Ramps (255)

Slope Status	Surveyor	Year
Major (146) 57.3%	1 (120)	1969 (4)
Minor (65) 25.5%	2 (130)	2016 (248)
None (44) 17.3%	3 (0)	2017 (3)
	4 (4)	
	5 (1)	
	6 (0)	
	7 (0)	
	8 (0)	
	9 (0)	
	10 + (0)	

Ramp Running Slope Status	Ramp Running Slope Value (% slope)	Date
Major (19) 7.5%	14.5 + (3)	1969-12-31 (4)
Minor (71) 27.8%	12.6 to 14.6 (15)	2016-07-22 (17)
None (165) 64.7%	10.5 to 12.5 (30)	2016-07-25 (5)
	8.4 to 10.4 (41)	2016-07-26 (75)
	6.3 to 8.3 (38)	2016-07-27 (16)
	4.2 to 6.2 (54)	2016-07-28 (42)
	2.1 to 4.1 (33)	2016-07-29 (46)
	0.0 to 2.0 (41)	2016-08-02 (2)

Ramp Cross Slope Status	Ramp Cross Slope Value (% slope)	2016-08-04 (44)
Major (79) 31.0%	3.6 + (73)	2016-08-05 (1)
Minor (34) 13.3%	3.1 to 3.5 (7)	2017-05-25 (2)
None (142) 55.7%	2.6 to 3.0 (20)	2017-06-21 (1)
	2.1 to 2.5 (18)	
	1.6 to 2.0 (32)	
	1.1 to 1.5 (35)	
	0.6 to 1.0 (32)	
	0.0 to 0.5 (38)	



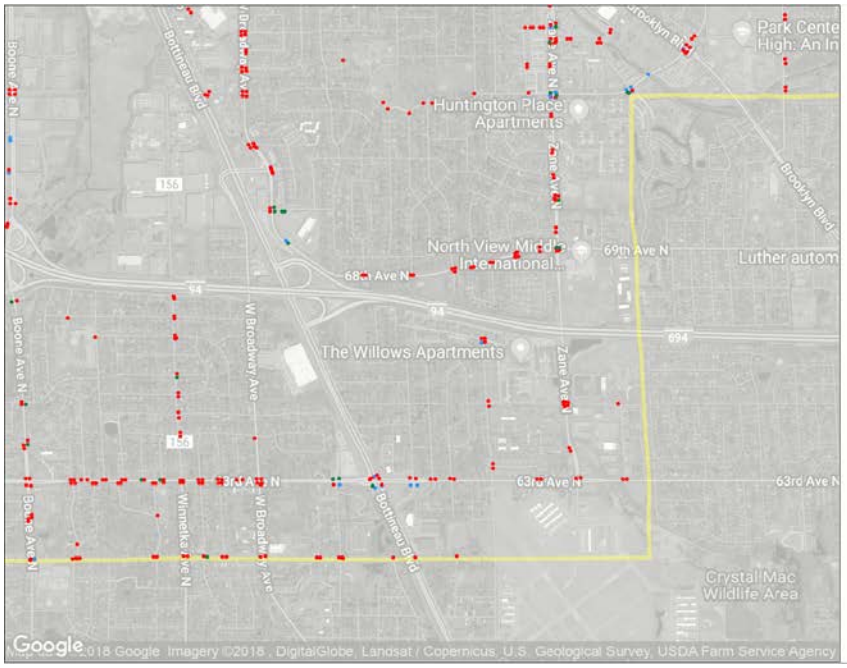
Summary Status

Extract
6/13/2018
Total Ramps (242)

Slope Status	Surveyor	Year
Major (117) 48.3%	1 (113)	1969 (10)
Minor (63) 26.0%	2 (71)	2016 (174)
None (62) 25.6%	3 (0)	2017 (58)
	4 (34)	
	5 (24)	
	6 (0)	
	7 (0)	
	8 (0)	
	9 (0)	
	10 + (0)	

Ramp Running Slope Status	Ramp Running Slope Value (% slope)	Date
Major (16) 6.6%	14.5 + (3)	1969-12-31 (10)
Minor (44) 18.2%	12.6 to 14.6 (12)	2016-07-13 (36)
None (182) 75.2%	10.5 to 12.5 (11)	2016-07-15 (51)
	8.4 to 10.4 (31)	2016-07-18 (19)
	6.3 to 8.3 (47)	2016-07-19 (18)
	4.2 to 6.2 (42)	2016-08-06 (29)
	2.1 to 4.1 (35)	2016-08-08 (8)
	0.0 to 2.0 (61)	2016-08-09 (8)

Ramp Cross Slope Status	Ramp Cross Slope Value (% slope)	2016-08-11 (5)
Major (68) 28.1%	3.6 + (62)	2017-06-06 (3)
Minor (37) 15.3%	3.1 to 3.5 (10)	2017-06-08 (6)
None (137) 56.6%	2.6 to 3.0 (21)	2017-06-09 (1)
	2.1 to 2.5 (15)	2017-06-16 (4)
	1.6 to 2.0 (33)	2017-06-19 (26)
	1.1 to 1.5 (25)	2017-06-21 (2)
	0.6 to 1.0 (25)	2017-06-23 (16)
	0.0 to 0.5 (51)	



Summary Status

Good (25) 7.4%
Minor Problems (27) 8.0%
Major Problems (285) 84.6%

Extract
6/13/2018
Total Ramps (337)

Slope Status

Major (152) 45.1%
Minor (81) 24.0%
None (104) 30.9%

Surveyor

1	(120)
2	(104)
3	(0)
4	(62)
5	(51)
6	(0)
7	(0)
8	(0)
9	(0)
10 +	(0)

Year

1969 (23)
2016 (208)
2017 (106)

Ramp Running Slope Status

Major (18) 5.3%
Minor (53) 15.7%
None (266) 78.9%

Ramp Running Slope Value (% slope)

14.5 +	(3)
12.6 to 14.6	(14)
10.5 to 12.5	(16)
8.4 to 10.4	(36)
6.3 to 8.3	(53)
4.2 to 6.2	(72)
2.1 to 4.1	(54)
0.0 to 2.0	(89)

Date

1969-12-31 (23)
2016-07-13 (31)
2016-07-15 (57)
2016-07-18 (14)
2016-07-19 (18)
2016-08-05 (12)
2016-08-06 (33)
2016-08-08 (8)
2016-08-09 (9)
2016-08-11 (13)
2016-08-16 (13)
2017-06-06 (32)
2017-06-08 (11)
2017-06-09 (11)
2017-06-12 (3)
2017-06-16 (7)
2017-06-19 (26)
2017-06-23 (16)

Ramp Cross Slope Status

Major (86) 25.5%
Minor (50) 14.8%
None (201) 59.6%

Ramp Cross Slope Value (% slope)

3.6 +	(78)
3.1 to 3.5	(12)
2.6 to 3.0	(27)
2.1 to 2.5	(24)
1.6 to 2.0	(38)
1.1 to 1.5	(36)
0.6 to 1.0	(39)
0.0 to 0.5	(83)

Appendix B – Schedule / Budget Information

Cost Information

Unit Prices

Construction costs for upgrading facilities can vary depending on each individual improvement and conditions of each site. Costs can also vary on the type and size of project the improvements are associated with. Listed below are representative 2011 costs for some typical accessibility improvements based on if the improvements are included as part of a retrofit type project, or as part of a larger comprehensive capital improvement project.

Intersection corner ADA improvement retrofit: +/- $4,000 per corner

Intersection corner ADA improvement as part of adjacent capital project: +/- $1,500 per corner

Traffic control signal APS upgrade retrofit: +/-$ 15,000

Traffic control signal APS upgrade as part of full traffic control signal installation: +/- $10,000

Sidewalk / Trail ADA improvement retrofit: +/- $5.00 per SF

Sidewalk / Trail ADA improvement as part of adjacent capital project: +/- $3.50 per SF

Bus Stop ADA improvement retrofit: +/- $400 per stop

Bus Stop ADA improvement as part of adjacent capital project: +/- $250 per stop

Priority Areas

Based on the results of the self-evaluation, the estimated costs associated with eliminating accessibility barriers within the targeted priority areas is as follows:

	Compliant	Lowest Priority	Medium Priority	Highest Priority
Deficiency Range	0	(1-5)	(6-7)	(7+)
Total Pedestrian Ramps	65	996	509	379
Total Percentage	3.30%	50.9%	26.0%	19.4%

The lowest priority category for pedestrian ramps makes up about 50% of the total ramps which would allocate $3,984,000 to rehabilitate completely.

The medium priority category for pedestrian ramps makes up 26% of the total ramps which would allocate $2,036,000 to rehabilitate completely.

The highest priority category for pedestrian ramps makes up 19% of the total ramps which would allocate $1,516,000 to rehabilitate completely.

Entire Jurisdiction

Based on the results of the self-evaluation, the estimate costs associated with providing ADA accessibility within the entire jurisdiction is roughly $9,000,000 not including construction inflation. This amount signifies a significant investment that Brooklyn Park is committed to making in the upcoming years. A systematic approach to providing accessibility will be taken in order to absorb the cost into Brooklyn Park budget for improvements to the public right of way.

All CIP as follows will adhere to the ADA and apply the specifications where needed within the scope of the project. This is a tentative list for the next 5 years of CIP in Brooklyn Park.

2018: Brookdale Dr - Zane Ave to Noble Ave (4,230), Brookdale Dr - Xerxes Ave to Bryant Ave (7,470), Regent Ave-93rd Ave N to Highway 610 bridge (700). Total lineal footage - 12,400

2019: Modern Road - West Broadway to Boone Ave (4,100), Winnetka Ave - Modern Road to 62nd Ave (5,390), 97th Ave - Russell Ave to Newton Ave (1,200), Setzler Parkway - Nedderson Parkway to West Broadway (2,770). Total lineal footage - 13,460

2020: 63rd Ave - Georgia Ave to Brooklyn Center Border (3,620), Boone Ave - 62nd Ave N to Northland Circle (5,900), Xylon Ave - 85th Ave N to 89th Ave N (2,570), Edinbrook Parkway - 85th Ave to trail crossing (1,590). Total lineal footage - 13,680

2021: Edinbrook Parkway - trail crossing to Ashley Terrace (6,740), Xerxes Ave - Brooklyn Center Border to 85th Ave N (9,830). Total lineal footage - 16,570

2022: Noble Ave - 85th Ave to Brooklyn Center border (7,800), Regent Ave - 85th Ave to Brooklyn Blvd (7,200), Total lineal footage - 15,000

Operations and Maintenance local road rehabilitation and annual mill and overlays include reconstructing pedestrian ramps in the jurisdiction as well as any trail/sidewalk improvements or additions.

Appendix C – Public Outreach

Brooklyn Park recognizes that public participation is an important component in the development of this document. Input from the community has been gathered and used to help define priority areas for improvements within the jurisdiction of Brooklyn Park. As a part of the ADA Transition Plan's development process, Brooklyn Park posed the draft plan document on the city's Engineering section of its website, https://www.brooklynpark.org/city-government/public-works/. Additionally, a printed copy of the draft plan was made available at Brooklyn Park Engineering Department. A link to the plan was also distributed via letter to medical centers, school administrators, transit authorities, government buildings, and other public agencies with facilities in Brooklyn Park.

The following is a sample of the letter that was sent to all public agencies within the jurisdiction of Brooklyn Park:

November 1, 2018

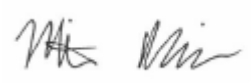
Subject: Brooklyn Park ADA Transition Plan Public Comment

To whom it may concern:

Brooklyn Park is seeking input from the public on its draft plan to support accessibility for people using its facilities. We invite you the review the draft version of the plan, posted on the city's Public Works section https://www.brooklynpark.org/city-government/public-works/, as it is being finalized. Feel free to distribute this letter to your colleagues, or others that may find this plan to be of interest. The purpose of this notice is to introduce the ADA Transition Plan to the public and inform those that work in "priority areas" related to accessibility about the City's work thus far. Any comments you provide may be incorporated into the final version of the plan and help Brooklyn Park to identify key areas for improvement, including curb ramps, sidewalks, and traffic signals. We ask that all comments on the draft plan be provided by Wednesday November 28th, 2018. If you need reasonable accommodation, assistance, or require more information please contact Brooklyn Park ADA Coordinator:

Mitch Robinson
mitchell.robinson@brooklynpark.org
763-493-8291

Sincerely,



Mitch Robinson, E.I.T.
Civil Engineer I
City of Brooklyn Park

No comments were received

Appendix D – Grievance Procedure

As part of the ADA requirements, Brooklyn Park has posted the following notice outlining its ADA requirements:

Brooklyn Park Grievance Procedure under the Americans with Disabilities Act

This Grievance Procedure is established to meet the requirements of the Americans with Disabilities Act of 1990. It may be used by anyone who wishes to file a complaint alleging discrimination on the basis of disability in the provision of services, activities, programs, or benefits by Brooklyn Park. Brooklyn Park's Personnel Policy governs employment-related complaints of disability discrimination.

The complaint should be in writing and contain information about the alleged discrimination such as name, address, phone number of complainant and location, date, and description of the problem. Alternative means of filing complaints, such as personal interviews or a tape recording of the complaint, will be made available for persons with disabilities upon request.

The complaint should be submitted by the grievant and/or his/her designee as soon as possible but no later than 60 calendar days after the alleged violation to:

Name: Mitch Robinson
Phone: 763-493-8291
E-mail: Mitchell.Robinson@BrooklynPark.Org
Brooklyn Park ADA Coordinator

Within 15 calendar days after receipt of the complaint, ***[name]*** or ***[his/her]*** designee will meet with the complainant to discuss the complaint and the possible resolutions. Within 15 calendar days of the meeting, ***[name]*** or ***[his/her]*** designee will respond in writing, and where appropriate, in a format accessible to the complainant, such as large print, Braille, or audio tape. The response will explain the position of Brooklyn Park and offer options for substantive resolution of the complaint.

If the response by ***[name]*** or ***[his/her]*** designee does not satisfactorily resolve the issue, the complainant and/or his/her designee may appeal the decision within 15 calendar days after receipt of the response to the **[City Engineer or other appropriate high-level official]** or ***[his/her]*** designee.

Within 15 calendar days after receipt of the appeal, the **[City Engineer]** or ***[his/her]*** designee will meet with the complainant to discuss the complaint and possible resolutions. Within 15 calendar days after the meeting, the **[City Engineer or other appropriate high-level official]** or ***[his/her]*** designee will respond in writing, and, where appropriate, in a format accessible to the complainant, with a final resolution of the complaint.

All written complaints received by ***[name]*** or ***[his/her]*** designee, appeals to the **[City Engineer or other appropriate high-level official]** or ***[his/her]*** designee, and responses from these two offices will be retained by Brooklyn Park for at least three years.

Public Notice

In accordance with the requirements of Title II of the Americans with Disabilities Act of 1990, Brooklyn Park will not discriminate against qualified individuals with disabilities on the basis of disability in city services, programs, or activities.

Employment: Brooklyn Park does not discriminate on the basis of disability in its hiring or employment practices and complies with all regulations promulgated by the U.S. Equal Employment Opportunity Commission under Title I of the Americans with Disabilities Act (ADA).

Effective Communication: Brooklyn Park will generally, upon request, provide appropriate aids and services leading to effective communication for qualified persons with disabilities so they can participate equally in the city's programs, services, and activities, including qualified sign language interpreters, documents in Braille, and other ways of making information and communications accessible to people who have speech, hearing, or vision impairments.

Modifications to Policies and Procedures: Brooklyn Park will make all reasonable modifications to policies and programs to ensure that people with disabilities have an equal opportunity to enjoy all city programs, services, and activities. For example, individuals with service animals are welcomed in city offices, even where pets are generally prohibited.

Anyone who requires an auxiliary aid or service for effective communication, or a modification of policies or procedures to participate in a city program, service, or activity, should contact the office of Mitch Robinson as soon as possible but no later than 48 hours before the scheduled event.

The ADA does not require Brooklyn Park to take any action that would fundamentally alter the nature of its programs or services or impose an undue financial or administrative burden. Brooklyn Park will not place a surcharge on a particular individual with a disability or any group of individuals with disabilities to cover the cost of providing auxiliary aids/services or reasonable modifications of policy, such as retrieving items from locations that are open to the public but are not accessible to persons who use wheelchairs.

Those wishing to file a formal written grievance with Brooklyn Park may do so by one of the following methods:

Internet

Visit the City of Brooklyn Park website (https://www.brooklynpark.org/) and click the "ADA" link to the ADA Grievance Form. Fill in the form online and click "submit." A copy of The ADA Grievance Form is included in this Appendix.

Telephone

Contact the pertinent Brooklyn Park staff person listed in the **Contact Information** section of Appendix E to submit an oral grievance. The staff person will utilize the Internet method above to submit the grievance on behalf of the person filing the grievance.

Paper Submittal

Contact the pertinent Brooklyn Park staff person listed in the **Contact Information** section of Appendix E to request a paper copy of the county's grievance form, complete the form, and submit it to the ADA coordinator. A staff person will utilize the Internet method above to submit the grievance on behalf of the person filing the grievance.

The ADA Grievance Form will ask for the following information:

The **name, address, telephone number, and email address** for the person filing the grievance

The **name, address, telephone number, and email address** for the person alleging an ADA violation (if different than the person filing the grievance)

A **description and location of the alleged violation and the nature of a remedy sought**, if known by the complainant.

If the complainant has filed the same complaint or grievance with the United States Department of Justice (DOJ), another federal or state civil rights agency, a court, or others, the **name of the agency or court where the complainant filed it and the filing date**.

Brooklyn Park will acknowledge receipt of the grievance to the complainant within 15 working days of its submittal. Brooklyn Park will also provide to the complainant within 15 working days of its submittal; 1) a response or resolution to the grievance or; 2) information on when the complainant can expect a response or resolution to the grievance.

If the grievance filed does not concern a Brooklyn Park facility, the city will work with the complainant to contact the agency that has jurisdiction.

3. Within 60 calendar days of receipt, a Brooklyn Park staff person will conduct an investigation necessary to determine the validity of the alleged violation. As a part of the investigation, the staff person would conduct an engineering study to help determine the city's response. The staff person will take advantage of department resources and use engineering judgment, data collected, and any information submitted by the resident to develop a conclusion. A staff person will be available to meet with the complainant to discuss the matter as a part of the investigation and resolution of the matter. Brooklyn Park will document each resolution of a filed grievance and retain such documentation in the department's ADA Grievance File for a period of seven years.

Brooklyn Park will consider all specific grievances within its particular context or setting. Furthermore, Brooklyn Park will consider many varying circumstances including: 1) the nature of the access to services, programs, or facilities at issue; 2) the specific nature of the disability; 3) the essential eligibility requirements for participation; 4) the health and safety of others: and 5) the degree to which an accommodation would constitute a fundamental alteration to the program, service, or facility, or cause an undue hardship to Brooklyn Park.

Accordingly, the resolution by Brooklyn Park of any one grievance does not constitute a precedent upon which the city is bound or upon which other complaining parties may rely.

File Maintenance

Brooklyn Park shall maintain ADA grievance files for a period of seven years.

Complaints of Title II violations may also be filed with the DOJ within 180 days of the date of discrimination. In certain situations, cases may be referred to a mediation program sponsored by the DOJ. The DOJ may bring a lawsuit where it has investigated a matter and has been unable to resolve violations.
For more information, contact:

U.S. Department of Justice
Civil Rights Division
950 Pennsylvania Avenue, N.W.
Disability Rights Section - NYAV
Washington, D.C. 20530
www.ada.gov
(800) 514-0301 (voice – toll free)
(800) 514-0383 (TTY)

Title II may also be enforced through private lawsuits in Federal court. It is not necessary to file a complaint with the DOJ or any other Federal agency, or to receive a "right-to-sue" letter, before going to court.

The following form is to be used with Grievance Procedure to accommodate and resolve comments, concerns or questions. Once the form is completed, it should be emailed or mailed to the ADA Coordinator. The complaint will then be reviewed in a timely manner and a response given in regards to the steps being taken to correct the grievance.

Brooklyn Park ADA Grievance Form Complainant:

Name: _____
Address: _____
City, State and Zip Code: _____
Telephone: Home: _____ Cell: _____
Email: _____

Person discriminated against (if other than the complainant): Name:

_____
Address: _____
City, State, and Zip Code: _____
Telephone: Home: _____ Cell: _____
Email: _____

Government, or organization, or institution which you believe has discriminated:

Name: _____
Address: _____
City: _____
City, State and Zip Code: _____
Telephone Number: _____
When did the discrimination occur? _____ Date: _____
Have efforts been made to resolve this complaint? Yes _____ No_____

If yes: what is the status of the grievance? Has the complaint been filed with the Department of Justice or any other Federal, State, or local civil rights agency or court? Yes _____ No_____

If yes:

Agency or Court: _____
Contact Person: _____
Address: _____
City, State, and Zip Code: _____
Telephone Number: _____
Date Filed: _____

Do you intend to file with another agency or court? Yes _____ No_____

If yes:

Agency or Court _____

Address: _____
City, State and Zip Code: _____
Telephone Number: _____

Additional space for answers:

Signature: _____

Date: _____

Return to: Mitch Robinson
Address: 5200 85th Avenue North Brooklyn Park, MN
Phone: 763-493-8291
E-mail: Mitchell.Robinson@BrooklynPark.Org
Brooklyn Park ADA Coordinator

Appendix E – Contact Information

ADA Title II Coordinator

Name: Mitch Robinson
Address: 5200 85th Avenue North
Phone: 763-493-8291
E-mail: Mitchell.Robinson@BrooklynPark.Org

Public Right of Ways ADA Implementation Coordinator

Name: Craig Runnakko
Address: 5200 85th Avenue North
Phone: 763-493-8109
E-mail: Craig.Runnakko@BrooklynPark.org

Public Works Streets Superintendent

Name: Steve Nauer
Address: 8300 Noble Ave North
Phone: 763-493-8009
Email: Steve.Nauer@BrooklynPark.org

Public Works Parks Superintendent

Name: Greg Hoag
Address: 8300 Noble Ave North
Phone: 763-493-8350
Email: Greg.Hoag@BrooklynPark.org

Neighborhood Relations Specialist

Name: Claudia Diggs
Address: 5200 85th Avenue North
Phone: 763-493-8106
Email: Claudia.Diggs@BrooklynPark.org

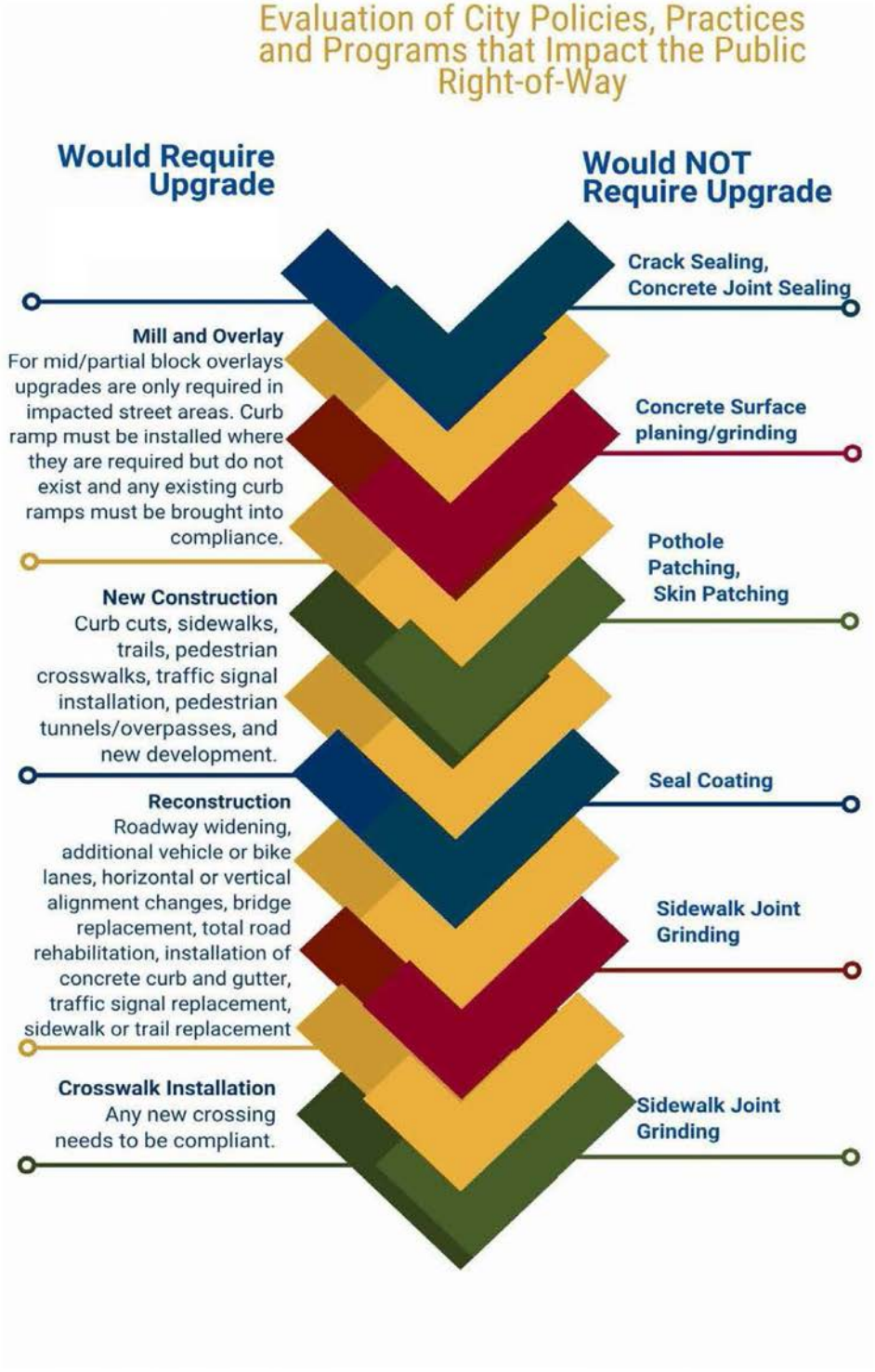
Appendix F – Agency ADA Design Standards and Procedures

Design Procedures

Definition of Maintenance and Alteration Projects

Brooklyn Park follows the guidance provided by the United States Department of Transportation (USDOT) and the United States Department of Justice (US DOJ) on what constitutes a maintenance project and what constitutes an alteration project.

Evaluation of City Policies, Practices and Programs that Impact the Public Right-of-Way



Maintenance projects include the following work types:

- Crack Filling and Sealing
- Surface Sealing
- Slurry Seals
- Fog Seals
- Scrub Sealing
- Joint Crack Seals
- Joint repairs
- Dowel Bar Retrofit
- Spot High-Friction Treatments
- Diamond Grinding
- Pavement Patching

Alteration Projects include the following work types:

- Open-graded Surface Course
- Cape Seals
- Mill & Fill / Mill & Overlay
- Hot In-Place Recycling
- Microsurfacing / Thin Lift Overlay
- Addition of New Layer of Asphalt
- Asphalt and Concrete Rehabilitation and
- Reconstruction
- New Construction

Intersection Corners

Curb ramps or blended transitions will attempt to be constructed or upgraded to achieve compliance within all Capital Improvement Projects. There may be limitations which make it technically infeasible for an intersection corner to achieve full accessibility within the scope of any project. Those limitations will be noted and those intersection corners will remain on the transition plan. As future projects or opportunities arise, those intersection corners shall continue to be incorporated into future work. Regardless if full compliance can be achieved or not, each intersection corner shall be made as compliant as possible in accordance with the judgment of city and, if applicable, county staff or state.

Sidewalks / Trails

Sidewalks and trails will attempt to be constructed or upgraded to achieve compliance within all Capital Improvement Projects. There may be limitations which make it technically infeasible for segments of sidewalks or trails to achieve full accessibility within the scope of any project. Those limitations will be noted and those segments will remain on the transition plan. As future projects or opportunities arise, those segments shall continue to be incorporated into future work. Regardless on if full compliance can be achieved or not, every sidewalk or trail shall be made as compliant as possible in accordance with the judgment of city staff.

Traffic Control Signals

Traffic control signals will attempt to be constructed or upgraded to achieve compliance within Capital Improvement Projects. There may be limitations which make it technically infeasible for individual traffic control signal locations to achieve full accessibility within the scope of any project. Those limitations will be noted and those locations will remain on the transition plan. As future projects or opportunities arise, those locations shall continue to be incorporated into future work. Regardless on if full compliance can be achieved or not, each traffic signal control location shall be made as compliant as possible in accordance with the judgment of city and, if applicable county staff.

Bus Stops

Bus stops will attempt to be constructed or upgraded to achieve compliance within all capital improvement projects. There may be limitations which make it technically infeasible for individual bus stop locations to achieve full accessibility within the scope of any project. Those limitations will be noted and those locations will remain on the transition plan. As future projects or opportunities arise, those locations shall continue to be incorporated into future work. Regardless if full compliance can be achieved or not, each bus stop location shall be made as compliant as possible in accordance with the judgment of city and Metro Transit staff.

Other Transit Facilities

Additional transit facilities are present within the limits of Metro Transit. Those facilities fall under the jurisdiction of Metro Transit. Brooklyn Park will work with Metro Transit to ensure that those facilities meet all appropriate accessibility standards.

Other policies, practices and programs

Policies, practices and programs not identified in this document will follow the applicable ADA standards.

Design Standards

Brooklyn Park has PROWAG, as adopted by the Minnesota Department of Transportation (MnDOT), as its design standard.

Attachments (3):

1. ADA and APS Checklist
2. PROWAG Guidelines
3. Brooklyn Park Snow and Ice Policy

Mn/DOT ADA Compliance Checklist for Curb Ramps

S.P.:_____ Construction Date: _____

Intersection: _____

Quadrant:_____

1) Ramp's Running Slope: _____ _____ _____ _____
2) Ramps comply with Spec 2521.3: YES NO
3) Ramp's Cross Slope: _____ _____
4) Gutter Flow Line Slope: _____ _____
5) Landing Slopes: _____ _____ _____ _____
6) Landing Dimensions are a minimum 4' X 4': YES NO
7) Landing(s) are located at the top of each ramp: YES NO
8) Truncated domes cover the entire curb opening and are properly oriented: YES NO
9) Gutter line and ramps are draining properly and not holding water(check after rain event): YES NO
10) Are there any vertical discontinuities greater than 1/4"? : YES NO
**11) Ramps are compliant?: YES NO if no, circle one of the following reasons why, explain why the ramp didn't
meet compliance, and how the ramp has been improved from the pre-construction condition(attach pages if needed):
A) Surrounding Geography B) Limited Scope of Project C) Contractor Performance D) Other
Printed Name: _____
Signature: _____
Date: _____

***For non-compliant ramps, attach a photograph of the pre-construction facility and documentation of the pre-construction grades.*

Mn/DOT ADA Compliance Checklist for Curb Ramps - Guidance

1) Check the ramps' running slope (slope in the direction of travel). This must be less than or equal to **8.3%** (1 inch per foot). Use a **10 foot** straight edge with a smart level to check this.

2) When checking the running slope with a **10 foot** straight edge, make sure the surface is compliant with **Spec. 2521.3C**, which says "The surface shall not vary more than **3/16"** from a **10 foot** straight edge." Look for any bellies or ridges in the concrete ramp surface greater than **3/16"**. Also, the joints in the walk should be being finished with a **1/4"** radius jointing/edging tool and contraction joints should be approximately **1/8"** wide per **Spec. 2521.3C**.

3 & 4) Check the ramps' cross slope at the midpoint of the ramp. This must be less than or equal to **2.0%.** In cases where the grade of the gutter flow line exceeds 2.0%, the ramp cross slope adjacent to the gutter may exceed 2.0%, but should not exceed the slope of the flow line and should transition to a 2.0% cross slope as soon as is practical. Be sure to document this condition when it exists.

5 & 6) Check the landing dimensions and slopes. The landing must be a minimum 4' X 4' and not have a slope greater than **2.0%** in any direction.

7) Check the landing location. Landings must be located at the top of each ramp.

8) Check truncated dome placement and orientation:
The domes must cover the entire curb opening (anywhere that the curb height = 0). The domes should be oriented in the direction of travel whenever possible, but should be within **1-2 feet** of the back of curb if there is nothing obstructing the pedestrian from entering the street from the side of the ramp. If there is turf or another obstruction next to the ramp that would keep a person from approaching the ramp from the side, then the domes can be placed in the direction of travel with one corner 3 inches from the back of curb and the other corner up to **5 feet** from the back of curb. The grade break for the ramp should occur at the front edge of the dome and any "triangular" shaped concrete area between the front edge of the domes and the back of curb should have a slope of **2%** or less in all directions (except in cases where the flow line grade exceeds 2% as mentioned above).
Note 1: Whenever square domes are placed around a radius, the backs of each section of domes should be touching to form a "continuous" detectable warning around the radius. Radial domes should be used in this case if available.
Note 2: Some corners may have multiple ramps and multiple landings to get from the street elevation up to the adjacent sidewalk elevation. If this is the case be sure to check all ramps, landing areas, and sidewalks for compliance.

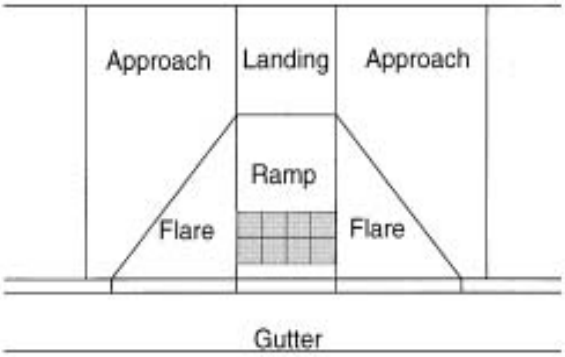
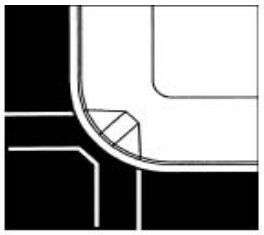
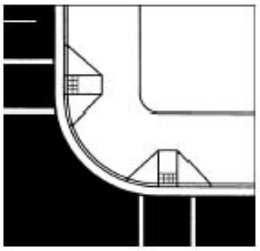
9) After a rain event, check the completed ramps to make sure that neither the ramps nor the gutters are holding water and everything appears to be draining properly.

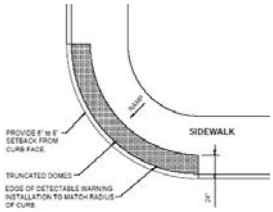
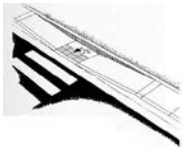
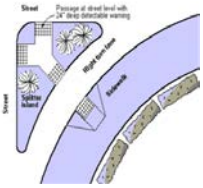
10) Check for vertical discontinuities. Anything greater than **½"**, and the panel should be removed and replaced. Anything between **¼"- ½"** should be beveled at a 1:2 slope.

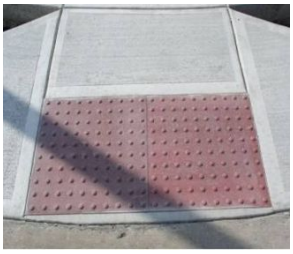
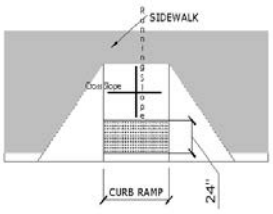
11) If any portion of the ramp is not compliant and cannot be made to be compliant, be sure to document the pre-construction and post-construction ramp conditions and explain why the ramp cannot be constructed so that it is "fully compliant". Also, circle one of the given reasons that best describes why the ramp isn't compliant.
A) Surrounding Geography – The ramp couldn't be constructed to be compliant because of the surrounding geography. For example, having to tie the walkway into nearby doorways/entrances or, the roadways adjacent to the walkway have steep slopes so that it is impossible to construct the ramps using maximum slopes and staying within 30 feet of the back of curb.
B) Limited Scope of Project – Upgrading the ramp to meet standards would have required work that is outside the scope of the project. For example, utilities, such as fire hydrants, street light poles, traffic signal poles, manhole covers, etc., that could not be moved as part of the project.
C) Contractor Performance – The ramp could have been constructed to be compliant but the contractor failed in constructing the ramp.
D) Other – Any reasons that don't fit into the three categories listed above. Include a description of the situation that caused the ramp to be constructed non-compliant.

Curb Ramp Inventory Data Fields

Pedestrian Ramp, Pedestrian Landing, and Curb and Gutter are collected using one GPS point

Pedestrian Ramp			
	Reference Point	Mile marker to the nearest hundredth	
	Intersection ID		Not a required data field
	Pedestrian Activity: Type of Activity occurring at the corner the point is being taken	Residential	
		School	
		Public Building: Post Office, City Hall, Museum, etc	
		Retail: Restaurant, Shops, Gas station, grocery, etc.	
		Business – Other: Dentist, office buildings, etc	
		Recreation: Parks, etc	
		Other	
		None	
	Ramp Type	**Diagonal:** A single curb ramp that is located at the apex of the corner at an intersection. It is aligned so that a straight path of travel down the ramp will lead diagonally into the center of the intersection, the ramp is diagonal to the user's path of travel, and users will be traveling diagonal to the vehicular traffic when they enter the street at the bottom of the ramp.	
		Perpendicular: A curb ramp that is aligned so that the ramp is generally perpendicular to the curb, and users will generally be traveling perpendicular to vehicular traffic when they enter the street at the bottom of the ramp	

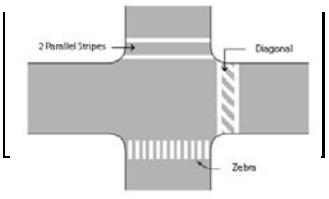
		Blended transition: Blended transitions are also called depressed corners. Depressed corners gradually lower the level of the sidewalk, through an almost undetectable change in slope, to meet the grade of the street. Depressed corners are often designed as an expanded diagonal curb ramp that extends around the entire corner at the intersection.	
		Parallel: A parallel curb ramp has two ramps leading down towards a center level landing at the bottom between both ramps with a level landing at the top of each ramp. A parallel curb ramp is one that is oriented so that the path of travel on the ramp is parallel to the vehicular path of travel on the adjacent street; and the user's path of travel on the sidewalk.	
		Flat landing	
		Other	
		None: If there is a sidewalk or trail leading up to the intersection but no curb ramp	
	Location	**Intersection Corner**	
		Median: The area between two divided roadways measured from edge of traveled way to edge of traveled way	
		Mid-block: Crossing that does not occur at a road intersection	
		Pork Chop: Raised concrete refuge usually found between right turns and through-fare travel lanes	

		Bump-out: An extension of the curb line in a bulb-like rounding radius that incorporates curb ramps	
		Other	
	Truncated Domes: A surface feature built in or applied to the walking surface to indicate an upcoming change from pedestrian to vehicular way. Does the curb ramp have compliant truncated domes?	**Yes:** Domes span the entire width of the ramp, are intact, and are within 2 feet of the curb cut. **No:** If more than 25 % of the domes have failed or if the orientation or width is wrong	
	Ramp Width: (inches to the nearest inch)	Measure the ramp width from one flare to the other	
	Running Slope (% to nearest tenth): The grade that is parallel to the direction of accessible pedestrian travel	Measure the running slope at the midpoint of the curb ramp	
	Cross slope (% to nearest tenth): The grade that is perpendicular to the direction of accessible pedestrian travel	Measure the cross slope at the midpoint of the curb ramp	
	Photos	**Yes** **No**	

	Condition Rating	**1:** No cracks, no obstacles, less than 1/4" lip at curb line **2:** No cracks, no obstacles, lip at curb line between 1/4" & 1/2" **3:** Cracks create unlevel ramp surface, weeds may be present in cracks **4:** Ramp has multiple cracks creating rough terrain, concrete chunks missing or surface is spalling, obstacles create difficult navigation, curb lip is more than 1/2"	
	Comments		

Pedestrian Landing: A level area of walkway at the top or bottom of a ramp that allows wheelchair users space to orient their direction before and after using a ramp.			Cross slope taken parallel to the curb ramp at the mid-point. Running slope taken perpendicular to the curb ramp at the mid-point
	Slope (2% or less): In each direction	Record highest slope	
	4' x 4' Area: Does the landing measure 4' x 4' or greater?	None 4'x4' > 4'x4' < 4'x4'	
	Comments		

Curb and Gutter			
	Gutter Cross Slope (% to nearest tenth)	What is the slope of the gutter measured perpendicular to the middle of the curb cut from the flow line towards the street?	
	Gutter Running Slope (% to nearest tenth)	What is the slope of the gutter flow line measured from one flare to the other flare of the curb ramp?	
	Condition Rating	**1**: Uniform slopes, no noticeable cracks, no vertical discontinuities, no spalling, joints intact **2:** Uniform slopes, some cracks, vertical discontinuities less than 1/4", no spalling, joints intact **3:** Gutter slope beyond flare flows back towards curb ramp at < 1.5%, some large cracks and minor spalling, noticeable vertical discontinuities, joints beginning to deteriorate **4:** Gutter slope beyond flare flows back towards curb ramp at > 1.5%, many cracks, multi-directional, excessive spalling, excessive vertical discontinuities, joints badly deteriorated, > 1/2" vertical discontinuities	
	Comments		

Crosswalk : Take the GPS point for the crosswalk in the middle of the intersection if crossing is permitted.			
	Marked Crosswalk: Is there a painted crosswalk across this leg of the intersection?	Yes No	
	Pedestrian Ramp within Crosswalk	Yes No N/A - Check if there is no marked crosswalk	
	Types of Marking	None	
		2 Parallel Stripes	
		Zebra	
		Diagonal	
		Other	

	Crosswalk Leg: What type of road does the crosswalk cross?	**Mn/DOT Road:** This includes Trunk Highways (TH) and US highways **Non - Mn/DOT road**: This includes city, county, township; and forest roads	
	Width (ft to nearest foot)	What is the width of the marked crosswalk from paint edge to paint edge? Record 0 if there is no marked crosswalk	
	Pavement Condition Rating	**1**: Smooth pavement within crosswalk **2**: Minimal cracking within crosswalk **3**: > 1/4" vertical discontinuity at gutter/pavement joint **4**: Pavement patching needed due to 1/2" horizontal cracks or potholes	
	Comments		
Signal: If this is a signalized intersection, record a GPS point for each direction of travel. If the intersection is not signalized, there is no need to open this attribute. If there are push buttons, record the point at the button and if there are not push buttons, record the point at the signal pole.			
	APS (Accessible Pedestrian Signal: Signal that communicates information about the WALK phase in audible and vibrotactile formats.	Yes No N/A - Check if there is no pedestrian signal head	
	Walk Signal: Does the signal have a pedestrian signal head?	Yes No	
	Countdown: Does the pedestrian signal head display the number of seconds to cross street?	Yes No N/A - Check if there is no pedestrian signal head	

	Pedestrian Phase: Do you need to push the pedestrian button to make the WALK phase begin or does it automatically change to walk when the light turns green?	Automatic Activation required N/A	
	Button Location: Where is the pedestrian push button located?	None	
		Traffic signal pole	
		Pedestal station	
		Pole and pedestal - Do not use. Collect separate points for each button	
		Other	
	Button Accessible	Landings area and slope are compliant: Is there a paved surface within a 10" horizontal reaching distance of the pedestrian button and if so, is the surface a 2-1/2' x 4' landing that has a 2% or less slope in each direction?	
		Yes	
		No- Check if any of the conditions are untrue	
		Button Height: What is the height of the button from the ground to the middle of the button? (inches to nearest 1/2")	
		Button Location coincides with ramp: is the button on the same side of the pole as the ramp?	
		Yes	
		No - Check if you need to walk to the other side of the pole to reach the button	

	Buttons Min 10' Apart: If there are two push buttons, are they at least 10 feet apart? Is the button 6' from the back of the curb? Is the button 5' horizontally from the curb ramp	Yes No N/A - Check if there are not two buttons or if the signal is not APS	
	Comments		
Sign: Record a GPS point only if there is a midblock crossing, otherwise there is no need to open this attribute			
	Intersection ID		Not a required data field
	Flashing Yellow Lights at Midblock Crossings	No	
		Yes-continuous - Are the light continuously flashing?	
		Yes-activated - Do you need to push a button to make the lights flash?	
		N/A	
	Comments		

	Sidewalk Inventory Data Fields
Sidewalk	
Pedestrian Activity: General type of activity occurring along the block being recorded	Residential
	School
	Public Building: Post Office, City Hall, Museum, etc
	Retail: Restaurant, Shops, Gas station, grocery, etc.
	Business – Other: Dentist, office buildings, etc
	Recreation: Parks, etc
	Other
	None
Sidewalk Width	Record to the nearest inch
Sidewalk Material	Concrete
	Asphalt
	Brick
	Pavers
	Pervious Materials
	Other
Boulevard Width: In order for there to be a boulevard, there must be at least 60 inches of clear sidewalk	Record to the nearest inch
Boulevard Material: If there is a boulevard present, record the material.	Grass
	Concrete
	Asphalt
	Brick
	Pavers
	Other
General Condition Rating	1: Sidewalk is smooth with no vertical discontinuities
	2: Sidewalk has vertical discontinuities less than 1/2 inch, and the surface is still passable
	3: Sidewalk has vertical discontinuities more than 1/2 inch
	4: Sidewalk is crumbling, has many cracks, and is unpassable for wheelchairs in many spots
Cross Slope	Take a cross slope measurement to the nearest tenth every 50 feet within the block. Take the first point, at 25 feet.
Driveways	

Type of Driveway	Residential
	Commerical
	Alley
	Other
Width of driveway	Record the width of the driveway to the nearest foot.
Cross Slope	Record the cross slope at the middle point of the driveway
Controlled: Does the driveway have a signal?	No
	Yes
Barriers: Collect a new point for each barrier that narrows the pedestrian walkway to less than 4 feet or creates an unpassable surface.	Traffic Poles
	Light Posts
	Electrical Boxes
	Hydrants
	Signs
	Street Furniture
	Tree Trunk
	Stairs
	Surface narrows to less than 4 feet
	Panel gap less than 20 feet
	Heaves/sunken panels/twists
	Other
Cross Street Sidewalk	Information taken for the first 15 feet of a non-Mn/DOT Road. Take a point for the cross street approximately 5 feet from curb ramp if there is a sidewalk present. If there is no sidewalk, then do not record any information.
Cross Street Name	
Sidewalk Width	Record to the nearest inch
Sidewalk Material	Concrete
	Asphalt
	Brick
	Pavers
	Pervious Materials
	Other
Boulevard Width: In order for there to be a boulevard, there must be at least 60 inches of clear sidewalk	Record to the nearest inch
Boulevard Material: If there is a boulevard present, record the material.	Grass
	Concrete
	Asphalt
	Brick
	Pavers

	Other
Cross Slope	Record a cross slope point to the nearest tenth 5 feet from the curb ramp
General Condition Rating	
	1: Sidewalk is smooth with no vertical discontinuities
	2: Sidewalk has vertical discontinuities less than 1/2 inch, and the surface is still passable
	3: Sidewalk has vertical discontinuities more than 1/2 inch
	4: Sidewalk is crumbling, has many cracks, and is unpassable for wheelchairs in many spots
Fixed Route Bus Stops	
Type	Sign
	Shelter
	Bench
	Other
Boarding Area: Is there a firm, stable, slip resistant surface?	Yes
	No
Boarding Area Width: Measure parallel to the curb	Record to nearest inch
Boarding Area Length: Measure perpendicular to the curb	Record to nearest inch
Slope: Is the slope of the boarding area 2% or less in all directions?	Yes
	No
Connected to PAR	Yes
	No
Condition Rating	1: Landing surface is smooth with no vertical discontinuities
	2: Landing surface has vertical discontinuities less than 1/2 inch, and the surface is still passable
	3: Landing surface has vertical discontinuities more than 1/2 inch
	4: Landing surface is crumbling, has many cracks, and may be unpassable for wheelchairs

Mn/DOT ADA Compliance Checklist for APS

S.P.:_____ Construction Date: _____

Intersection: _____

Quadrant: _____

1) Push button stations are properly placed and the push button faces are oriented properly: YES NO
2) Distance from crosswalk edge to push button face: _____ _____
3) There is a 4' X 4' landing adjacent to the push button: YES NO
4) Distance from the push button to the back of curb: _____ _____ (if greater than 6' justify below)
5) Distance between the push buttons: _____
6) Push button height: _____
7) Is APS system compliant?: YES NO if no, explain why the system isn't compliant and why it cannot be constructed so that it is fully compliant:
Printed Name: _____
Signature: _____
Date: _____

Mn/DOT ADA Compliance Checklist for APS - Guidance

1) When facing the intersection, the push button for the crosswalk on your left should also be located to your left on the outside edge of the crosswalk, and the push button for the crosswalk on your right should be located to your right on the outside edge of the crosswalk. The push button face should also be aligned parallel with the direction of travel.
2) The push button should be within 5 feet of the projected outer crosswalk edge.
3) The push button should have a 4' X 4' landing with less than a 2% cross slope in all directions and should be centered on the landing if possible.
4) The push button should be 1.5 feet to 10 feet from the back of curb and ideally it will approximately 6 feet from the back of curb.
5) The push buttons should have at least 10' of separation between them.
6) The push buttons should be at a height of 42" plus or minus 2".
7) If any of these specifications are violated, provide an explanation describing which parameters were violated and why.

SETBACK

- Between 1.5 and 6 feet from the edge of curb, shoulder, or pavement
- Note: Where there are physical constraints that make it impractical to place the pedestrian pushbutton between

1.5 and 6 feet from the edge of the curb, shoulder, or pavement, it should not be farther than 10 feet from the edge of curb, shoulder, or pavement.

SILENT

Place button up to 10 feet to:

- Keep out of truck turning radius, keep from obstructing walk/trail
- Make use of a mast arm pole located in the vicinity that the button can be mounted on
- Maintain 6' MAR (Maintenance Access Route)
- Center button on landing

OFFSET

- Between the edge of the crosswalk line (extended) farthest from the center of the intersection and the side of a curb ramp (if present), but not greater than 5 feet from said crosswalk line;
- R306.2.1 Location. Accessible pedestrian signals shall be located so that the vibrotactile feature can be contacted from the level landing serving a curb ramp, if provided, or from a clear floor or ground space that is **in line with the crosswalk line adjacent to the vehicle stop line.**

• Commonly move crosswalks away from intersection to use a mast arm pole and meet this requirement or to achieve button separation
• Unobstructed and adjacent to a level all weather surface to provide access from a wheelchair
• Where there is an all-weather surface, a wheelchair accessible route from the pushbutton to the ramp
• **ALSO: Where there are physical constraints that make it impractical to place the pedestrian pushbutton adjacent to a level all-weather surface, the surface should be as level as feasible.**
• R306.2.1 Location. Accessible pedestrian signals shall be located so that the vibrotactile feature can be contacted from the level landing serving a curb ramp, if provided, or from a clear floor or ground space that is in line with the crosswalk line adjacent to the vehicle stop line.
• Surfaces of clear spaces shall comply with R301.5 and shall have a **slope and cross slope of 2 percent maximum.**
• The clear space shall be 760 mm (**30 in**) minimum by 1220 mm (**48 in**) minimum.
• Unless otherwise specified, clear space shall be positioned for either forward or parallel approach to an element.
• One full unobstructed side of the clear space shall adjoin a pedestrian access route or adjoin another clear space.
• Use 4 feet by 4 feet landing that serves the ramp and is connected to the PAR for landing at button and center button on the landing

PROWAG Better Design Recommendations 2009 Federal MUTCD
All MUTCD language in this section uses "should" not "shall" and is italicized indicating that it is guidance

SEPARATION
• Where two pedestrian pushbuttons are provided on the same corner of a signalized location, the pushbuttons should be separated by a distance of at least 10 feet.
• Where there are physical constraints on a particular corner that make it impractical to provide the 10-foot separation between the two pedestrian pushbuttons, the pushbuttons may be placed closer together or on the same pole.
• Accessible pedestrian signal devices shall be 3.0 m (10.0 ft) minimum from other accessible pedestrian signals at a crossing.
• The control face of the accessible pedestrian signal shall be installed to face the intersection and be parallel to the direction of the crosswalk it serves.
• Accessible pedestrian signals located in medians and islands shall be 1.5 m (5.0 ft) minimum from other accessible pedestrian signals.
• This guidance is generally followed, however when a mast arm pole is used the 10 foot separation often pushes the other button further away from the intersection than is ideal. 7-8' separation is fairly common, but is not acceptable.
HEIGHT
At a mounting height of approximately 3.5 feet, but no more than 4 feet above the sidewalk.
Where a clear space allows a parallel approach to an element and the side reach is unobstructed, the high side reach shall be 1220 mm (48 in) maximum and the low side reach shall be 380 mm (15 in) minimum above the finish surface. An obstruction shall be permitted between the clear space and the element where the depth of the obstruction is 255 mm (10 in) maximum.
• Mount at 42 inch height (+/- 2")
• If mounting button on existing mast arm pole, make sure that button height will not exceed 48 inches

OTHER ISSUES

1) Using the mast arm pole often results in odd or nonexistent landings.
2) Using the mast arm pole for both buttons generally results in the buttons being placed on the inside of the crosswalks and no separation.
3) Using the mast arm pole often results in a button face orientation that doesn't parallel the crosswalk.
4) mast arm poles may be in the vicinity (+/- 2') of the requirements so adding a ped station is often undesirable for some groups.
5) Added ped station reduces walkable area/MAR 6) Seems to be a reluctance to "reconstruct" these quadrants, most people want minimal disturbance when installing APS and are willing to violate the criteria to minimize impacts to surrounding area.

Public Rights-of-way Accessibility Guidelines (PROWAG)

Mn/DOT has adopted PROWAG with the following modifications:

R301.7.3 Flangeway Gaps at Non-Freight Rail Crossings – deleted. R301.7.4 Flangeway Gaps at Freight Rail Crossings – deleted.

R305.2.2.1 Crossings with Stop Control – modified to desirable not maximum.

R305.2.2.2 Crossings without Stop Control – modified to desirable not maximum.

R305.6.2 Signals – deleted.

R305.7 Channelized Turn Lanes at Intersections – deleted.

The following version of PROWAG has been revised from its original state to reflect these modifications.

NOTICE OF AVAILABILITY OF DRAFT PUBLIC RIGHTS-OF-WAY ACCESSIBILITY GUIDELINES

The Americans with Disabilities Act (ADA) recognizes and protects the civil rights of people with disabilities and is modeled after earlier landmark laws prohibiting discrimination on the basis of race and gender. To ensure that buildings and facilities are accessible to and usable by people with disabilities, the ADA establishes accessibility requirements for State and local government facilities, places of public accommodation, and commercial facilities. Under the ADA, the Access Board has developed and continues to maintain design guidelines for accessible buildings and facilities known as the ADA Accessibility Guidelines (ADAAG). ADAAG covers a wide variety of facilities and establishes minimum requirements for new construction and alterations.

The Board maintains a similar responsibility for accessibility guidelines under the Architectural Barriers Act (ABA). The ABA requires access to certain facilities designed, built, altered, or leased with Federal funds. Like ADAAG, the Board's ABA accessibility guidelines apply to new construction and alterations.

The Board's guidelines become enforceable when they are adopted by the standard setting agency for the ADA and the ABA. The agencies responsible for standards under the ADA are the Department of Justice (DOJ) and the Department of Transportation (DOT). The agencies responsible for standards under the ABA are the General Services Administration (GSA), the Department of Defense (DOD), the Department of Housing and Urban Development (HUD), and the United States Postal Service (USPS).

The Board plans to undertake rulemaking to supplement its ADA and ABA accessibility guidelines, which primarily cover facilities on sites, by adding new provisions specific to public rights-of-way. The Board's aim is to ensure that access for persons with disabilities is provided wherever a pedestrian way is newly built or altered, and that the same degree of convenience, connection, and safety afforded the public generally is available to pedestrians with disabilities. The guidelines would not require alterations to existing public rights-of-way, but would apply where a pedestrian route or facility is altered as part of a planned project to improve existing public rights-of-way.

BACKGROUND

The Need for Guidelines on Public Rights-of-Way

Local jurisdictions, and other entities covered by the ADA or ABA, must ensure that the facilities they build or alter are accessible to people with disabilities. The Board's ADA and ABA accessibility guidelines specify the minimum level of accessibility in new construction and alteration projects and serve as the basis for enforceable standards maintained by other agencies. Currently, the Board's guidelines, like the industry standards from which they derive, focus mainly on facilities on sites. While they address certain features common to public sidewalks, such as curb ramps, accessible routes, ground and floor surfaces, and bus stops and shelters, further guidance is necessary to address conditions unique to public rights-of-way. Various constraints posed by space limitations at sidewalks, roadway design practices, slope, and terrain raise valid questions on how and to what extent access can be achieved. Access for blind pedestrians at street crossings and wheelchair access to on-street parking are typical of the issues for which additional guidance is needed. In addition, new trends in roadway design, such as the growing use of traffic roundabouts, pose additional challenges to access, while various technological innovations, particularly those pertaining to pedestrian signaling devices, offer new solutions.

The Board previously proposed guidelines for public rights-of-way under the ADA which were published for public comment in 1992 and 1994. Based on the comments received, the Board determined that it should further coordinate with the transportation industry and State and local governments before continuing its rulemaking. Consequently, the Board undertook an outreach and training program on accessible public rights-of-way. Under this program, the Board developed a series of videos, an accessibility checklist, and a design guide on accessible public rights-of-way. In addition, the Board sponsored research on tactile warnings at street crossings, accessible pedestrian signals, and traffic roundabouts. The Board has made this information widely available to the public. The interest in these materials has underscored the need for criteria for public rights-of-way that are definitive and enforceable so that local jurisdictions and others are clear on their obligations when constructing or altering streets and sidewalks.

Public Rights-of-Way Access Advisory Committee

In resuming its rulemaking effort, the Board chartered an advisory committee in 1999 to develop recommendations on guidelines for accessible public rights-of-way. Use of advisory committees has become a standard practice in the Board's process for developing and updating design requirements. Through such committees, interested groups, including those representing designers, industry, and people with disabilities, play a substantive role in recommending to the Board the content of the guidelines to be developed. These committees provide significant sources of expertise while enhancing the level of consensus among stakeholders in advance of proposing a rule for public comment.

The Public Rights-of-Way Access Advisory Committee was composed of 33 members representing disability organizations, public works departments, transportation and traffic engineering groups, design professionals and civil engineers, government agencies, and standards-setting bodies. The committee coordinated its efforts with leading trade organizations represented on the committee, such as the American Association of State Highway and Transportation Officials, and federal agencies, such as the Federal Highway Administration, to ensure that its recommendations were consistent with generally accepted practice among design professionals. The committee organized several subcommittees focused on key issue areas. The subcommittee structure enabled members to continue work on a tight time schedule between meetings of the full committee and allowed for greater public participation in the process.

The advisory committee met regularly over a year's time, usually in Washington, D.C. but also in Austin and San Francisco. Its work culminated in the issuance of a report, "Building a True Community," which was submitted to the Board in January 2001 (http://www.access-board.gov/prowac/commrept/index.htm). The committee's report provides criteria for the construction or alteration of public rights-of-way that reflects the broad spectrum of expertise represented by committee members. The report follows a "toolbox" approach to the establishment of guidelines designed to facilitate implementation and to promote an understanding of the needs of all users of public rights-of-ways. The report comprehensively covers the various components of public streets and sidewalks and provides criteria for sidewalks, street fixtures and furnishings, street crossings, vehicular ways, parking, and other components of public rights-of-way. In addition, the report includes advisory notes, figures, and discussion of issues that merit further study or special attention in the Board's rulemaking.

June 17, 2002 Release of Draft Guidelines

An ad hoc group of Board members reviewed the committee's report in depth and crafted a set of draft guidelines based on the committee's recommendations. Because the draft guidelines departed from the advisory committee's report in several areas, the Board made an advance draft of the guidelines available for comment by the public. The notice of availability of the draft guidelines was published in the Federal Register on June 17, 2002. The Board requested information and feedback on the draft guidelines, including usability and cost data. In addition to seeking written comment, the Board held a public hearing in Portland, Oregon.

Over 1,400 comments were received from the public in response to the publication of the draft. Of this total, almost 900 comments were tabulated from persons with disabilities and groups representing them; the great preponderance of comments in this category came from people who indicated that they were blind or had low vision. Slightly over 200 comments were submitted by respondents from the transportation industry: design engineers and consultants, State and local government departments of transportation, and the organizations and groups that represent them. Another 100 were received from State and local government administrative agencies. Comments are posted on the Board's website at http://www.access-board.gov/prowac/comments/index.htm.

Almost all of the commenters from the two major blindness organizations, the American Council of the Blind (ACB) and the National Federation of the Blind (NFB), and persons who were not affiliated with either organization addressed only the use of detectable warnings and/or
accessible pedestrian signals (APS) and virtually all of them supported the requirement for these features in at least some locations (detectable warnings at islands and medians and at all low- slope sidewalk connections to the street; APS at complex intersections, irregular intersections, intersections with compound turning movements, and intersections with leading pedestrian intervals). Some commenters misunderstood the effect of the scoping provisions for these features, believing that all intersections would have to be retrofitted at tremendous cost. In fact, only future new projects would be subject to these guidelines. With respect to APS in particular, only pedestrian crossings that provide pedestrian signals would be required to include APS. Some commenters, expressing concerns about the noise output of APS, were apparently unfamiliar with the quiet, pedbutton-integrated devices now available in the United States (these devices are installed at the departure curb, near the listening user, rather than overhead).

Ten key issues from comment were identified for detailed analysis: crosswalk width; on-street parking; walking speed and pedestrian signal phase timing; elevators at pedestrian overpasses and underpasses; same-side alternate circulation routes; cross slope in crosswalks; detectable warnings; accessible pedestrian signals; roundabouts and roundabout signalization; and alterations. These issues have been addressed in this second draft. Changes include the following:

- referenced Manual on Uniform Traffic Control Devices (MUTCD) for crosswalk width;
- reduced scoping in on-street parking to be consistent with parking lots;
- set walking speed at 3.5 fps (consistent with new recommendations currently under consideration by the National Committee on Uniform Traffic Control Devices);
- eliminated the provision requiring elevators to provide pedestrian access at overpasses and underpasses (either ramps, lifts, or elevators may be used);
- modified scoping and technical provisions for alternate circulation routes to be consistent with current MUTCD requirements and alterations requirements, which would permit opposite side routes if same-side routes are not feasible;
- provided relief (up to 5%) for maximum cross slope limits in pedestrian crosswalks at midblock and through-street locations where the roadway slope will necessarily exceed 2%;
- clarified the placement of detectable warnings on curb ramps, landings, and blended transitions;
- clarified the scoping in new construction and alterations of accessible pedestrian signals (APS);
- limited pedestrian signalization at roundabouts and channelized turn lanes to pedestrian crossings (to the splitter) of two lanes of traffic or more; and clarified the scope of alterations to include only that work included in the limits, boundaries, or scope of a planned project; clarified that there is no obligation in the guidelines to expand the scope or limits of a project to include other or adjacent work.

Other changes included the addition of significant advisory material throughout the document. Advisory notes are for informational purposes only.

The Board also considered industry recommendations that the guidelines be re-formatted to use transportation metrics and language and to be better coordinated with industry standards and documents, particularly the Manual on Uniform Traffic Control Devices (MUTCD). This draft is now formatted as a stand-alone document that expresses its dimensioning requirements first in international units, as is done in other industry documents. Its provisions have been harmonized with current MUTCD standards, support, options, and guidance. Industry terms and phrases have been adopted, and industry practices recognized where feasible.
The Board is placing the revised draft in the docket to facilitate the gathering of cost data necessary for the next step in this rulemaking which is the preparation of a regulatory assessment for government review and approval prior to issuing a Notice of Proposed Rulemaking (NPRM). In order to develop an accurate picture of the potential costs and benefits of this rulemaking, the Board must work closely with the transportation industry representatives who have data on both current cost and industry practices and the knowledge and skills to assess potential effects.

The Board is not seeking comments on this draft. Readers will have an opportunity to provide input when the NPRM is published. Additional figures will be included in the NPRM.

Rulemaking Process

The Board reviewed the comments received to the draft guidelines and revised the guidelines in accordance with the comments received. The revisions are briefly discussed below in the section-by-section analysis. The proposed rule will provide another opportunity for public comment on the guidelines. The Board will then proceed to finalize the guidelines based on public comments received in response to the proposed rule. The Board's guidelines serve as the basis for enforceable standards maintained by other agencies under the ADA and the ABA. The Department of Justice and the Department of Transportation maintain standards based on the Board's guidelines that apply to facilities covered by the ADA. Design standards for federally funded facilities covered by the ABA are maintained by the Department of Defense, the Department of Housing and Urban Development, the General Services Administration, and the U.S. Postal Service. These enforceable standards must be consistent with the Board's guidelines.

Relationship to ADA and ABA Accessibility Guidelines/Format

On July 23, 2004, the Board completed an update of ADAAG, the first comprehensive revision of the document since its publication in 1991. The revised ADAAG features a new format and numbering system and a host of updated scoping and technical provisions. On the same date, the Board updated its ABA Accessibility Guidelines along similar lines so that both of the documents are more consistent. The revised ADA and ABA Accessibility Guidelines may be found on the Board's website at http://www.access-board.gov/news/ada-aba.htm.

The draft guidelines for public rights-of-way published on June 17, 2002 were formatted to supplement the ADA and ABA guidelines and not as a stand-alone document. The guidelines were intended to ultimately comprise a new chapter on public rights-of-way. The current draft guidelines made available in this document are now formatted as a stand-alone document using transportation industry standards, terms, and measures in response to recommendations in industry comments. The document is identified by the prefix R in its provisions and has four chapters:

Chapter R1: Application and Administration covers purpose, effect on existing facilities, equivalent facilitation, conventions, figures, units of measurement, referenced documents, and definitions, harmonized with transportation industry usage.

Chapter R2: Scoping Requirements address what items of new construction and alteration are covered by this document and references technical sections that follow in Chapters R3 and R4. Key scoping provisions in R2 include: R204 Pedestrian Access Route; R205 Alternate Pedestrian Access Route; R206 Pedestrian Crossings; R207 Curb Ramps and Blended Transitions; R208 Accessible Pedestrian Signals; R209 Protruding Objects; R210 Pedestrian Signs; R211 Street Furniture; R212 Bus Stops; R213 Stairways; R214 Handrails; R215 Vertical Access; R216 On-street Parking; R217 Passenger Loading Zones; R218 Call Boxes; R219 Transit Platforms; R220 Escalators; R221 Detectable Warning Surfaces; and R222 Doors, Doorways, and Gates. Coverage extends to temporary as well as permanent facilities. Chapter R2 also includes

special provisions for historic facilities and contains a limited series of general exemptions from accessibility.

Chapter R3: Technical Provisions contains detailed specifications for new construction and alterations scoping in Chapter R2. Construction detailed in Chapter R3 is specific to public sidewalk, street crossing, and roadway projects, and covers the building blocks of pedestrian accessibility: the pedestrian access route (analogous to the accessible route on a site), curb ramps and blended transitions, pedestrian crossings (including those at roundabouts and channelized turn lanes), pedestrian signals, street furniture, and parking.

Chapter R4: Supplementary Technical Provisions include specifications adapted from the ADA and ABA Accessibility Guidelines (2004) for rights-of-way application, including such features as maneuvering clearances at doorways; drinking fountain, and telephone provisions; reach ranges; operable parts; handrails; and other items of broader application. An alteration is a change in a space or element that affects, or could affect, the accessibility or usability of that space or element. In general, when a feature in the public right-of-way is altered, the requirements for new construction in this document must be applied to the maximum extent feasible within the scope or boundary of the project that has been planned. This document does not contain a 'path of travel' obligation to expand a given scope of work to include other items or elements that are adjacent to the alteration project nor does it cover an agency's obligations to achieve program access in its existing facilities that are not being altered.

In response to the comments received, the Board has developed answers to frequently asked questions regarding the application of the alterations requirements. Those questions and the Board's responses have been included at the end of this discussion.

R204 Pedestrian Access Route (technical provisions at R301). This draft clarifies the requirement for a 1.2-meter-wide (4 ft) accessible route of travel within a pedestrian circulation path, which may be a wider sidewalk, shoulder (if pedestrian use is not prohibited), shared street, or street crossing. A provision requiring periodic passing spaces 1.5 m (5 ft) in width, omitted in the first draft, has been re-instituted. Because of the constraints imposed by right-of-way width, the pedestrian access route (PAR) is relieved of the slope limits that would apply to an accessible route on a site provided it matches the general grade of the adjacent roadway (R301.4). Where the PAR is supported by structure, as in an underpass, overpass, or bridge, this draft requires compliance with ADAAG requirements for ramps.

Technical provisions in the June 2002 draft that would have required a 30-inch separation between changes in level in the PAR have been replaced in this draft with provisions requiring a planar surface (R305.1) and limiting surface discontinuities (R301.5.2). An advisory note discourages the use of heavily textured, rough, or excessively chamfered unit pavings.

Research undertaken by the Research and Rehabilitation Training Center (RRTC) at the University of Pittsburgh, under contract to a group of unit masonry associations, measured the vibration effects of various chamfer spacings on wheeled mobility devices and found that chamfers of less than
1.25 mm (.5 in), if flush, were not distinguishable from cast-in-place concrete sidewalks with a broom finish.

A series of related provisions in the June 2002 draft has been reorganized into R301.7 Horizontal Openings, which now includes walkway joints, gratings, flangeway gaps at rail crossings, and sill gaps at elevators and lifts. (Platform and car gaps at transit facilities are addressed at 36 CFR part 1191).

R205 Alternate Pedestrian Access Route. This draft clarifies that the establishment of an alternate pedestrian route is an alteration that must comply to the maximum extent feasible with technical provisions for the pedestrian access route, including curb ramps or blended transitions. MUTCD requirements and advisory material at Part 6D.01 and 6D.02 are referenced and an advisory note added to highlight the safety benefits of same-side alternate routes. Specifications for pedestrian channelizing devices and barricades at 302.4 include a reference to the MUTCD.

R206 Pedestrian Crossings (technical provisions at R305). This draft omits a provision in the June 2002 draft that would have required 2.4 m-wide (8 ft) markings at crosswalks. The MUTCD minimum of 1.8 m (6 ft) has been proposed at 305.2.1 of this draft.

Measurements on which pedestrian signal phase timing are based have been modified in response to industry comment. Calculations now proposed in R305.3 in the current draft would require the distance to be the full street width and the pedestrian walking speed to be 1.1 m/s (3.5 fps).

The June 2002 draft also proposed that the approaches to overpasses and underpasses be provided with elevators where the grade change was 1.5 m (5 ft) or greater. Both industry and persons with disabilities opposed this requirement with persons with disabilities expressing a preference for ramps, even if lengthy, to ensure the availability of a crossing. Elevators in single installations provide no access at all when out of service. Industry expressed concerns about cost and maintenance requirements. The current draft applies ramp provisions at R305.5 (but permits elevators, LULAs, and lifts).

Newly available research and the comments of both industry and consumer representatives confirm the Access Board's concerns about the usability of pedestrian crossings at roundabouts and channelized turn lanes. However, access to additional data has indicated that well-designed roundabouts and channelized turn lanes with single-lane crossings can

provide cues that make non-visual use possible. Accordingly, this draft (R305.6.2) provides that signals (including accessible pedestrian signal features) be required only at multi-lane pedestrian crossings of roundabouts. The Board does not prescribe the signal operation here and has proposed that FHWA conduct research to identify appropriate technologies. Two-head signals that flash amber, then flash red and go to steady red, are in use in Australia and the United Kingdom. US motorists are familiar with pre-emptive signals installed for emergency vehicles. Utah has at least one roundabout that uses standard railway gates across the roadway when light rail cars pass through the roundabout. The Board believes that the occasional use of a properly-designed pedestrian demand signal may actually reduce delay at pedestrian crossings.

R207 Curb Ramps and Blended Transitions (technical provisions at R303). Additional text, advisory, and illustrations have been added to this draft to describe curb ramp types (perpendicular, parallel, and their combination) and to distinguish them from blended transitions, for which a definition has now been provided at R105. Blended transitions are connections between the PAR and the street that have a running slope of 1:20 or less. Level landings, gently sloped transitions, and raised crosswalks fall into this category. Parallel and perpendicular curb ramps have a running slope between 1:20 and 1:12 (steeper slopes are not permitted in new construction). Non-visual wayfinding cues can be provided by the orientation of curb ramps, particularly if they are in-line with the path of pedestrian travel along a sidewalk. Curb ramps installed at tangent points rather than on the corner radius provide more usable cues and locate the shortest crossing point. The Access Board is collaborating with the Institute of Transportation Engineers (ITE) on a project to standardize sidewalk/ramp/crossing schemes for optimal non-visual cuing based upon a range of corner radii and attached/separated sidewalk configurations. An advisory note (R303.1) in this draft notes the benefits for pedestrians.

Cross slope provisions at midblock curb ramps (R303) have been revised in response to industry comment to permit warping to meet roadway grade. Similar changes have been made to technical provisions at pedestrian crossings (R305.2.2). Crossings of streets without stop control would be permitted a 1:20 maximum cross slope.

Running slope limits at crosswalks (R305.2.3) are maintained at 1:20 maximum in this draft. Many commenters noted that design practices that approach this limit in new construction may have to mill the roadway crown before resurfacing in order to retain usable crossings.

R208 Accessible Pedestrian Signals (technical provisions at R306). APS provisions in this draft differ only slightly from those of the June 2002 draft. Many commenters to the June 2002 draft expressed concerns about the costs of retrofitting intersections with APS, which is not required by these or prior proposals, which guide only new construction and alterations. Where new pedestrian signals are being installed or added, scoping in this document would require that they incorporate audible and vibrotactile features.

Comments from disability organizations and individuals to the June 2002 draft were diverse. Many who believed that retrofitting was required objected to what they understood to be excessive cost. And even those who did not support a general requirement that all future pedestrian signals incorporate audible and vibrotactile formats nevertheless saw the need for them at certain types of intersections including irregular crossings, lengthy crossings, and at complex intersections with multiple vehicle turning phases or leading pedestrian interval phasing. Although many responders noted the utility of non-visual cues, a clear majority of commenters who identified themselves as blind supported universal pedestrian signals.

R209 Protruding Objects (technical provisions at R401). Advisory notes have been added at several places in this document to remind users of the need to consider projections into the pedestrian circulation route when coordinating the placement of improvements, appurtenances, utilities, or street furniture. Comments from disability organizations and individuals identified blocked or compromised pedestrian routes as a major barrier to independent travel. Protruding objects provisions in this draft have been revised only to accommodate the new format and add advisory information.

R210 Pedestrian Signs (technical provisions at R409). An advisory note has been added to clarify requirements for visual legibility in signs that indicate sidewalk closure, pedestrian detour, and tourist route signage covered in MUTCD. Braille street name signage is required only on APS pedbuttons (R306.4.2).

Signage provisions in this draft have been revised only to accommodate the new format and add advisory information.

R211 Street Furniture (technical provisions at R307). Advisory notes have been added at several places in this document to remind users of the need to consider the dimensions and use of pedestrian circulation routes when coordinating the placement of improvements, appurtenances, utilities, or street furniture. Comments from disability organizations and individuals identified blocked or compromised pedestrian routes as a major barrier to independent travel.

Street furniture provisions in this draft have been revised only to accommodate the new format and add advisory information.

R212 Bus Stops (technical provisions at R410.2). An advisory note has been added to clarify the difference between establishing a bus stop by installing signage (signage must comply with R210.2) and constructing a bus stop (boarding/alighting areas, if provided, must comply with R410, bus shelters with R410.2).

Bus stop provisions in this draft have been revised only to accommodate the new format and add advisory information.

R213 Stairways (technical provisions at R407). Stairway provisions in this draft have been revised only to accommodate the new format.

R214 Handrails (technical provisions at R408). Handrail provisions in this draft have been revised only to accommodate the new format and add an advisory note on alterations and protruding objects.

R215 Vertical Access (technical provisions in ADAAG). Vertical access provisions in this draft have been revised only to accommodate the new format and add an advisory note on elevator use in extremes of terrain.

R216 On-Street Parking (scoping at Table R216; technical provisions at R308). Table R216 in this draft has been adapted from the table in ADAAG based upon the overall number of spaces provided within a block (or analog). Commenters strongly objected to scoping based upon the numbers of parking spaces on a block face, which could, in many places, require very high numbers of spaces disproportionate to those required in lots.

Additionally, this draft clarifies when, in new construction or alterations, the presence of a sidewalk or border wider than 4.3 m (14 ft) can accommodate an access aisle that is indented into the curb for protected transfer space, a construction that is similar to that of an on-street loading zone provided at an office, hotel, convention center, arena, or airport (R308.2.1).

Advisory notes have been added at several places in this section to convey additional information about indented, end-of-block, perpendicular or angled spaces, and signage.

R218 Call Boxes (technical provisions at R309). Call box provisions in this draft have been revised only to accommodate the new format and add an advisory note at R309.1 about the applicability of accessible call box technology to other types of communications systems, such as on-street security systems.

R219 Transit Platforms (technical provisions at R414). Transit provisions from the ADA and ABA Accessibility Guidelines (204) have been newly incorporated in this draft.

R220 Escalators. Escalator provisions in this draft have been revised only to accommodate the

new format.

R221 Detectable Warning Surfaces (technical provisions at R304). Transportation industry and State and local government agency commenters expressed concern about the durability, maintainability, and contrast of detectable warning materials required at curb ramps and blended transitions in the June 2002 draft. Recent research by several State departments of transportation and by the Transportation Research Board identified several high-performing products suitable for both new construction and alterations. Approximately 20 manufacturers now produce detectable warning products in metal, concrete, tile, pavers, resilient sheets, and membrane types. The FHWA is currently overseeing human factors research intended to test the contrast effectiveness of 13 different detectable warning colors when viewed by people who have low vision.

Comments from disability organizations and individuals were divided in much the same way as consumer comments on accessible pedestrian signals. Many expressed concern about cost but, valued detectable warnings as a way to provide a cue at certain locations such as pedestrian waiting areas at roadway medians, islands, and roundabout splitter islands and at low-slope blended transitions to street crossings. A majority of these commenters favored the June 2002 draft provision requiring detectable warnings at flush transitions between sidewalks and street crossings.

The rows of domes in the detectable warning material (technical provisions at R304.2.2) must be aligned with the path of wheelchair travel, which is required to be perpendicular to the grade break at the toe of the ramp to permit tracking between dome rows. On blended transitions, dome orientation is not significant.
A new advisory note (R304.1.1) covers the use of radial dome patterns.

Detectable warnings provisions in this draft have also been clarified with respect to their permitted setback from the grade break marking the face of a curb. One corner of the detectable warning must be within 205 mm (8 in) of the grade break; no other point on the leading edge of the detectable warning may be more than 1.5 m (5 ft) from the grade break (R304.2.1).

R222 Doors, Doorways, and Gates (technical provisions at R411). These provisions have been added to this draft from the ADA and ABA Accessibility Guidelines (2004). Because public sidewalks serve the entrances and other facilities of abutters covered by title III of the ADA, coordination of slope, cross slope, and maneuvering space requirements is typically required. In many places, developers provide sidewalk improvements as part of a project. State and local governments must include accessibility compliance in such work.

TECHNICAL ASSISTANCE Q&A FOR ALTERATIONS PROJECTS

Alterations are projects planned for implementation by a jurisdiction. Program access obligations for existing facilities are not a part of the Board's accessibility guidelines, and the Board's responses to the following questions do not address program access issues (see title II of the ADA at 28 CFR 35.149 and 35.151).

CURB RAMPS

Question: A multi-block length of roadway is being resurfaced. The corners have curb ramps that meet some but not all of the current specifications; for example the cross slope may be too steep or the curb ramps do not have detectable warnings. Must the curb ramps be reconstructed as part of the resurfacing project?

Answer: Yes, if it is technically feasible to provide complying features. The work should be done at the same time the resurfacing is being done.

Question: New curb ramps are being installed at an existing developed corner. New construction standards require the curb ramp to be within the crosswalk, but an existing underground utility vault is located where the ramp should be. Must the utility vault be moved?
Answer: The scope of this project will determine the answer. If utilities are being moved for other reasons within the project limits, it may be possible to alter or relocate the vault. If project construction will not involve the vault, it may be technically infeasible to locate the curb ramp optimally. It may be possible to widen the crosswalk markings to include the curb ramp.

Question: What if the curb ramp can be placed over the vault, but the access cover would be located on the curb ramp?
Answer: If the access cover must be located on the curb ramp, it should meet the surface requirements of the pedestrian access route.

Question: One corner of an intersection is being altered by curb and gutter reconstruction and paired curb ramps are being installed as part of this project. The other three corners of the intersection are not being altered. Must curb ramps be provided at the unaltered corners as part of this work?
Answer: No. The scope of the project requires curb ramps only at the altered corner.

SIDEWALKS

Question: A project will be undertaken to connect a series of sidewalk segments near a

school. Must the existing segments of sidewalk be modified if they do not meet width or cross slope provisions?
Answer: Yes, to the maximum extent feasible within the scope of the project. Agencies are not required to expand a planned scope of work to include other items of accessibility.

Question: A new sidewalk is being built along an existing road that contains driveway access points. Must those driveways be modified if their cross slope exceeds 2%?
the
Answer: Yes, to the maximum extent feasible within scope of the project.

Question: A city is rebuilding a sidewalk along Main Street. The distance between the edge of the right-of-way and the existing road does not provide sufficient room for a 4-foot-wide pedestrian access route. Does the municipality have to acquire more right-of-way on private property or narrow the roadway to provide the necessary space?
Answer: No, these guidelines do not require the municipality to obtain right-of-way or to narrow roadways. A municipality may decide to do either for other reasons (for instance, the roadway may be narrowed as a larger traffic calming effort or as part of a larger project in the roadway).

SIGNALS

Question: Curb ramps are being installed at a signalized intersection as part of a roadway improvement project. Existing pedestrian signals are pedestrian actuated but the pushbuttons are not accessible or placed in accessible locations. Must accessible pedestrian signals be installed at the existing pedestrian signals?
Answer: If work on pedestrian pushbuttons is not planned as part of this project, there is no need to expand its scope to include APS.

Question: The pedestrian signals in a corridor are being replaced with new combined count-down signals. Must APS be included in the new system?
Answer: Yes. The installation of a new system is an alteration that requires compliance with the new construction guidelines to the maximum extent feasible. However, the addition of a new feature, such as a countdown face or larger display, to an existing installed system does not require that the scope of work be expanded to include other features.

Question: Count-down signal displays are being added to the existing pedestrian signal heads at an intersection, but the software and signal controller are not being altered. Must APS be installed?
Answer: No, simply adding a display to the existing WALK/DON'T WALK signal would not involve the system changes needed to implement APS.

Question: An intersection is being signalized and will include APS. The installation of stub poles on the existing sidewalks to mount the new pedbuttons will not involve disturbing the roadway or sidewalk. Must curb ramps be installed if none existed?
Answer: No. This is a project to install pedbuttons; it is not an alteration to the sidewalk or street that would require the installation of curb ramps, as required by 28 CFR 35.151(e).

Question: The pushbutton on an existing pedestrian signal is being replaced with a sturdier model. Must APS be installed?
Answer: No, but the new pushbutton must meet applicable requirements (i.e., location, height, operable parts).

Question: An intersection with sidewalks and pedestrian signals is being widened to include a right turn lane. Must APS be installed as a consequence of the widening project?
Answer: No, installing APS is not within scope of the project. Any new pedestrian pushbuttons installed in the course of the work must meet applicable requirements. Note that this project is an alteration to the street and sidewalk and thus must provide compliant curb ramps.

GENERAL

Question: The local public transit agency has designated a bus stop by placing a sign in the ground along a roadway with no sidewalk. Must a concrete or other improved surface be installed?
Answer: No, the placement of a bus stop sign alone does not require other site improvements. When other site improvements are provided they should meet the applicable access requirements.

Minnesota Department of Transportation

Building on the adoption of PROWAG as planning and design guidance for accessible pedestrian facilities, MnDOT has developed additional planning, design, and construction guidance that is available to local agencies. Listed below is information on additional design guidance available. This is not intended to be an exclusive or comprehensive list of ADA guidance, but rather an acknowledgement of guidance staff should consider and a starting point for information on providing accessible pedestrian facilities.

The MnDOT Accessibility webpage, which has good information in a variety of subject areas related to ADA and accessibility, can be found at http://www.dot.state.mn.us/ada/index.html The webpage also provides the ability to sign up for ADA policy and design training classes when available and to review material from previous trainings.

Curb Ramp Guidelines: http://www.dot.state.mn.us/ada/pdf/curbramp.pdf

ADA Project Design Guide Memo:
http://www.dot.state.mn.us/ada/pdf/adaprojectdesignguidememo.pdf

ADA Project Design Guide: http://www.dot.state.mn.us/ada/pdf/adaprojectdesignguide.pdf

Pedestrian Curb Ramp Details Standard Plans 5-297.250 can be found on MnDOT's website at http://standardplans.dot.state.mn.us/

MnDOT's 7000 series Standard Plates, which are approved standards drawings, provide information on standard details of construction and materials related to curbs, gutters, and sidewalks are on MnDOT's website at http://standardplates.dot.state.mn.us/stdplate.aspx

The MnDOT Road Design Manual serves as a uniform design guide for engineers and technicians working on MnDOT projects. The document is available to others (such as Hennepin County) as a technical resource. Chapter 11 – Special Designs, includes information on the design of pedestrian facilities. The Road Design Manual can be found at
http://roaddesign.dot.state.mn.us/roaddesign.aspx

MnDOT's Temporary Pedestrian Access Route (TPAR) webpage,
http://www.dot.state.mn.us/trafficeng/workzone/tpar.html, contains information on providing accessibility during impacts due to maintenance or construction activities.

Last Revision: 10/12/17

Originating Department: Operations & Maintenance

BROOKLYN PARK

SNOW AND ICE CONTROL

I. PURPOSE

1.01 To outline policies and procedures regarding snow removal and ice control on streets, parking lots and sidewalks maintained by Brooklyn Park.

II. POLICIES

2.01 The Operations & Maintenance Department will, in the execution of snow removal and all functions, promote harmonious relations with other departments and the public, and will provide expeditious and cost efficient operations.

2.02 City streets must be passable to allow normal traffic flow and emergency vehicles to respond to all areas within the City. In providing snow and ice control, the City endeavors to maintain adequate traction for vehicles properly equipped for winter driving conditions. The City, however, does not guarantee bare, dry pavement after each snowfall or that streets are totally free of ice and snow or driving hazards common to Minnesota winter weather.

2.03 The Police Department will monitor street conditions and advise the Operations & Maintenance Department of any hazardous or unusual conditions.

2.04 The Operations & Maintenance Department; Street Maintenance Division is responsible for performing snow and ice control of City streets. Snowplowing will generally begin within 24 hours of the start of the snowfall. This requires up to 12 hours of operations for a "normal" snowfall of two (2) to six (6) inches. Ice control will be performed whenever necessary, as per current procedures. The Street Maintenance Division will be augmented by personnel from the Park Maintenance Division and the Public Utilities Division as needs and personnel qualifications allow. Other personnel will be used when necessary to complete route manning.

2.05 The Operations & Maintenance Department; Street Maintenance Division plows snow from a designated public ROW arterial sidewalk and trail system as designated by an annual official map. This system does not include all sidewalks (see official map). In addition, City Code 96.28 requires an owner and/or the

occupant of any property adjacent to a public sidewalk to keep sidewalks free from snow and ice. The City, however, does not guarantee that the designated arterial sidewalks will be free from walking hazards common to Minnesota winter weather.

2.06 The Operations & Maintenance Department; Park Maintenance Division plows snow from designated park trails, primarily to improve schools access and secondarily to allow use of arterial trails, as designated by an annual official map. This does not include all park trails (see official map). Snowplowing will generally begin within 48 hours of the start of the snowfall. The City, however, does not guarantee that the designated park trails will be free from walking hazards common to Minnesota winter weather.

2.07 The Operations & Maintenance Department; Park Maintenance Division is responsible for snow removal of parking lots at City designated snow emergency facilities. These facilities are: City Hall, Police Facility, Fire Stations, Community Activity Center, Park Community Buildings (including sidewalks) and other park facilities (including sidewalks), and Water Treatment Plant.

2.08 The Operations & Maintenance Department; Central Services/General Public Buildings Section is responsible for sidewalk/entrance snow and ice control at designated facilities. These facilities in priority order are: City Hall, Police Facility and Fire Stations.

2.09 The Operations & Maintenance Department; Central Services/Community Activity Center Section is responsible for sidewalk snow removal and ice control and minor snow removal of the parking lot at the CAC.

2.10 The Operations & Maintenance Department; Central Services/Equipment Section is responsible for initial snow plowing, snow removal and cleanup of the Maintenance Facilities parking and fuel system areas. Incidental sidewalk/entrance snow and ice control at Building A will be by Central Services/Equipment and Buildings, at Building B by Park Maintenance and Building C by Public Utilities/ Maintenance.

2.11 The Operations & Maintenance Department; Public Utilities/Water Plant Section is responsible for incidental snow removal of the parking lot and sidewalk/entrance snow and ice control at the Water Treatment Plant.

2.12 The Recreation & Parks Department; Edinburgh Golf Course Division is responsible for parking lot snow removal and sidewalk/entrance snow removal and ice control at the Edinburgh Club House and Maintenance Building.

2.13 The City will make reasonable and good faith efforts to maintain these designated parking lots and sidewalks in useable condition. The City, however, does not guarantee that these parking lots and sidewalks will be free from driving and walking hazards common to Minnesota winter weather.

2.14 City Code 72.11 prohibits parking on any public street after a snowfall of two (2) inches or more in depth (determined by Operations & Maintenance Department personnel) until the snow has been plowed from curb to curb. City Code 72.08 also prohibits parking on any street between 2 AM and 5 AM from October 15 to April 15. Parking ordinance warning signs have been installed at the corporate limits of major thoroughfares and major arterial street intersections. Vehicles may be tagged and towed to allow snow and ice control.

2.15 Minnesota Statutes 160.27 and 169.42 prohibit depositing snow onto public roadways. Placing snow onto a public roadway can subject a person to civil liability if a road hazard, such as a slippery area, frozen rut, or bump occurs and causes a traffic accident.

2.16 MAILBOXES - Individual residential mailboxes damaged during snow removal will not be authorized for repair, unless there is physical evidence that the snow removal vehicle actually hit the mailbox. If, due to snow build-up on the boulevards, mailboxes are tipped or knocked over from the weight of the snow, it shall be the responsibility of the property owner to repair or replace the mailbox. If the City is responsible, the City will reimburse the owner up to $40.00 for materials purchased for repairs (materials only - no labor). Residents are responsible for keeping the mailbox cleared of snow for Post Office deliveries. The Finance & Administrative Services Department will review and administrate damage claims in coordination with the Operations & Maintenance Department.

2.17 SPRINKLER HEADS – Sprinkler heads damaged by direct contact from a city snow plow will reimbursed a maximum of $25.00 per sprinkler head for materials purchased.

2.18 SOD - Sod damaged during snow removal will be repaired the following Spring using the following methods:

- The Street Maintenance Division will repair the damage using black dirt and grass seed.

- The property owner may elect to do the repair work using commercial sod. The City will reimburse the property owner for sod purchased (material only - no labor). The reimbursement must be approved by the Operations

& Maintenance Department prior to the property owner doing any corrective work or purchasing any sod.

2.19 BOULEVARD INTRUSIONS - City Code prohibits intrusions in boulevards on street public right-of-way (R.O.W.) without City approval. This includes structures and items such as landscape boulders, posts and fences, improperly positioned mailboxes, masonry structures, timbers, stakes and other substantial objects or loose materials within the street R.O.W. These intrusions can damage snowplow equipment or become damaged by the weight of snow or equipment contact. Intruding items in the boulevard (R.O.W.) are not replaced or repaired by the City if damaged.

2.20 GARBAGE/RECYCLING - Efficient snow plowing requires that garbage and recycling containers be accessible for pick-up and placed off street to allow snow removal. The container(s) may have to be placed in the driveway to meet both of these requirements. It is the responsibility of the resident to see that the container(s) is not in the way of the street or sidewalk snowplow and is also in a spot accessible to the garbage and recycling truck(s).

2.21 FIRE HYDRANTS - Fire hydrants are critical to minimize the potential losses involved in any fire. After major snow build-up in boulevards, the Operations and Maintenance and Fire Departments attempt to clear access to critical hydrants as personnel availability allows. Residents are encouraged to assist the City by clearing hydrants near their property. If possible, they should be cleared five (5) feet on each side to allow Fire Department access.

III. PROCEDURES

3.01 Street condition monitoring and snow emergency coordination:

a. The Police Department patrol will monitor street conditions and snowfall amount. When conditions warrant, the Police Department will notify the Street Maintenance Superintendent or other designee.

b. The Street Maintenance Superintendent or his designee, after notification by the Police, or by a decision based on weather forecasts or obvious conditions, is responsible for notification of all necessary maintenance personnel to accomplish snow removal and/or ice control.

c. If sand/salt trucks are used, they shall check in and out with Police Department receptionist so that operations can be coordinated.

d. The Street Maintenance Superintendent or his designee will notify the Police Department shift supervisor and/or Police Department receptionist as soon as possible after a decision to plow is made, and will decide which areas should be prioritized for towing if necessary.

e. The Police Department shall arrange for notification of the City towing contractor(s) and coordinate all towing operations, impounding and vehicle release.

f. When snow plow operations overtake the impounding vehicles the Police Department shift supervisor shall contact the Street Maintenance Superintendent or his designee and a joint decision made to continue, change locations, or halt towing operations.

3.02 Street ice control:

a. Ice control will be accomplished by distributing salt or a sand/salt mixture when determined necessary by Police Department patrol or Operations & Maintenance Department. The basic priorities are as follows:

1. All locations where designated City arterial routes intersect with each other or with County or State Highways.

   School pedestrian crossings as required.

   Bridge decks.

2. Local street intersections having higher than average traffic volumes or streets having hills or curves.

3. Stop signs other than the two categories above.

4. Conditions deemed by equipment operators or police patrol to be hazardous.

b. Specific street ice control procedures will be as per Operations & Maintenance Department Directive 91-09.

3.03 Street snow control:

a. Operations & Maintenance Department personnel will be alerted when two (2) inches of snow have accumulated and snow continues to fall. The normal start time for snow emergency plowing operations is 2 a.m., or as soon as the majority of the snow has fallen and following day(s) clean-up as required. Major accumulations will require additional plowing of arterial streets during "rush hours", etc., to allow vehicle travel.

b. Given equal snow conditions, designated arterial routes (see official map) will be plowed first. Arterial routes are established to have an "early-plowed" route within approximately one-fourth mile of each residence. State and County highways are part of the arterial route plan.

c. Specific street snow control procedures will be as per Operations & Maintenance Department Directive 91-09.

3.04 Sidewalk arterial system snow control:

a. Designated arterial sidewalk plowing will normally start approximately one (1) hour after street plowing begins. Snow control will be snow removal only, no salt/sand will be applied. Emphasis will be as per the annual route map; follow-up passes will be made to maintain passable travel.

b. Specific arterial sidewalk snow control procedures will be as per Operations & Maintenance Department Directive 91-09.

3.05 Park designated trails snow control:

a. Designated park trails snowplowing will normally start approximately 48 hours after the start of a “normal” snow fall. Snow control will be snow removal only, no salt/sand will be applied.

b. Specific park trail snow control procedure will be as per Operations & Maintenance Department Directive 98-03.

3.06 City designated facilities snow and ice control:

a. The Operations & Maintenance Department; Park Maintenance Division will plow snow from parking lots and assigned park facilities sidewalks when notified by the Police Department or by a decision based on weather forecasts or obvious conditions. Park Maintenance Division personnel will facilitate sidewalk snow removal in cooperation with Central Services Division, Edinburgh and Police personnel.

b. The Street or Park Maintenance Division will salt/sand parking lots when necessary/requested.

c. Specific designated facilities snow and ice control procedures will be as per Operations & Maintenance Department Directives 91-09, 92-03 and

98-03.

Appendix G – Glossary of Terms

ABA: See Architectural Barriers Act.

ADA: See Americans with Disabilities Act.

ADA Transition Plan: Mn/DOT's transportation system plan that identifies accessibility needs, the process to fully integrate accessibility improvements into the Statewide Transportation Improvement Program (STIP), and ensures all transportation facilities, services, programs, and activities are accessible to all individuals.

ADAAG: See Americans with Disabilities Act Accessibility Guidelines.

Accessible: A facility that provides access to people with disabilities using the design requirements of the ADA.

Accessible Pedestrian Signal (APS): A device that communicates information about the WALK phase in audible and vibrotactile formats.

Alteration: A change to a facility in the public right-of-way that affects or could affect access, circulation, or use. An alteration must not decrease or have the effect of decreasing the accessibility of a facility or an accessible connection to an adjacent building or site.

Americans with Disabilities Act (ADA): The Americans with Disabilities Act; Civil rights legislation passed in 1990 and effective July 1992. The ADA sets design guidelines for accessibility to public facilities, including sidewalks and trails, by individuals with disabilities.

Americans with Disabilities Act Accessibility Guidelines (ADAAG): contains scoping and technical requirements for accessibility to buildings and public facilities by individuals with disabilities under the Americans with Disabilities Act (ADA) of 1990.

APS: See Accessible Pedestrian Signal.

Architectural Barriers Act (ABA): Federal law that requires facilities designed, built, altered or leased with Federal funds to be accessible. The Architectural Barriers Act marks one of the first efforts to ensure access to the built environment.

Capital Improvement Program (CIP): The CIP for the Transportation Department includes an annual capital budget and a five-year plan for funding the new construction and reconstruction projects on the county's transportation system.

Detectable Warning: A surface feature of truncated domes, built in or applied to the walking surface to indicate an upcoming change from pedestrian to vehicular way.

DOJ: See United States Department of Justice

Federal Highway Administration (FHWA): A branch of the US Department of Transportation that administers the federal-aid Highway Program, providing financial assistance to states to construct and improve highways, urban and rural roads, and bridges.

FHWA: See Federal Highway Administration

Pedestrian Access Route (PAR): A continuous and unobstructed walkway within a pedestrian circulation path that provides accessibility.

Pedestrian Circulation Route (PCR): A prepared exterior or interior way of passage provided for pedestrian travel.

PROWAG: An acronym for the *Guidelines for Accessible Public Rights-of-Way* issued in 2005 by the U. S. Access Board. This guidance addresses roadway design practices, slope, and terrain related to pedestrian access to walkways and streets, including crosswalks, curb ramps, street furnishings, pedestrian signals, parking, and other components of public rights-of-way.

Right of Way: A general term denoting land, property, or interest therein, usually in a strip, acquired for the network of streets, sidewalks, and trails creating public pedestrian access within a public entity's jurisdictional limits.

Section 504: The section of the Rehabilitation Act that prohibits discrimination by any program or activity conducted by the federal government.

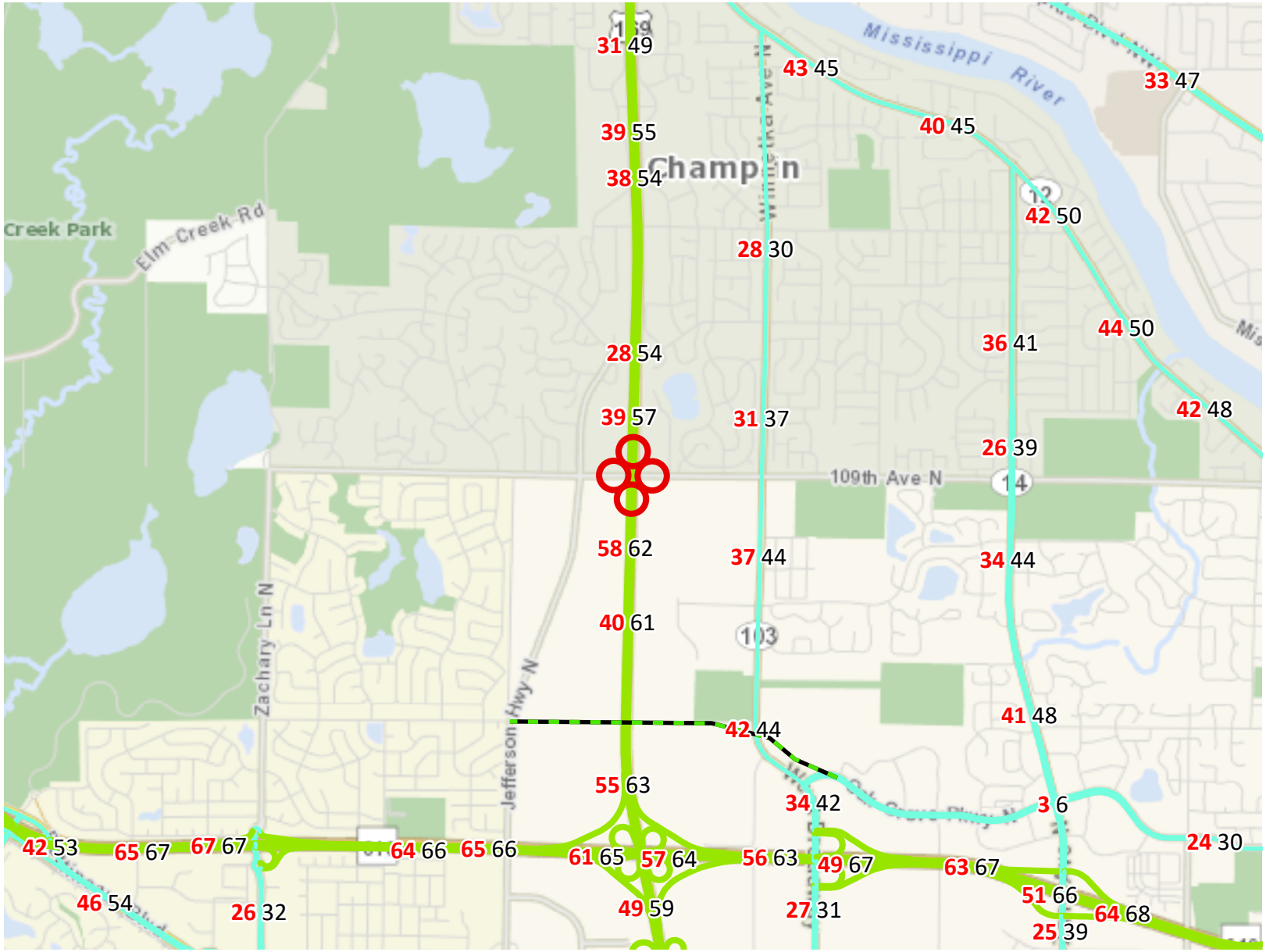
Uniform Accessibility Standards (UFAS): Accessibility standards that all federal agencies are required to meet; includes scoping and technical specifications.

United States Access Board: An independent federal agency that develops and maintains design criteria for buildings and other improvements, transit vehicles, telecommunications equipment, and electronic and information technology. It also enforces accessibility standards that cover federally funded facilities.

United States Department of Justice (DOJ): The United States Department of Justice (often referred to as the Justice Department or DOJ), is the United States federal executive department responsible for the enforcement of the law and administration of justice.

Level of Congestion

Roadway Spot Mobility & Safety Project: 169&109th | Map ID: 1649167593438



Project Points

A Minor Arterials

A Minor Arterials Planned

Principal Arterials

Principal Arterials Planned

0 0.375 0.75 1.5 2.25 3 Miles

Created: 4/5/2022
LandscapeRSA1

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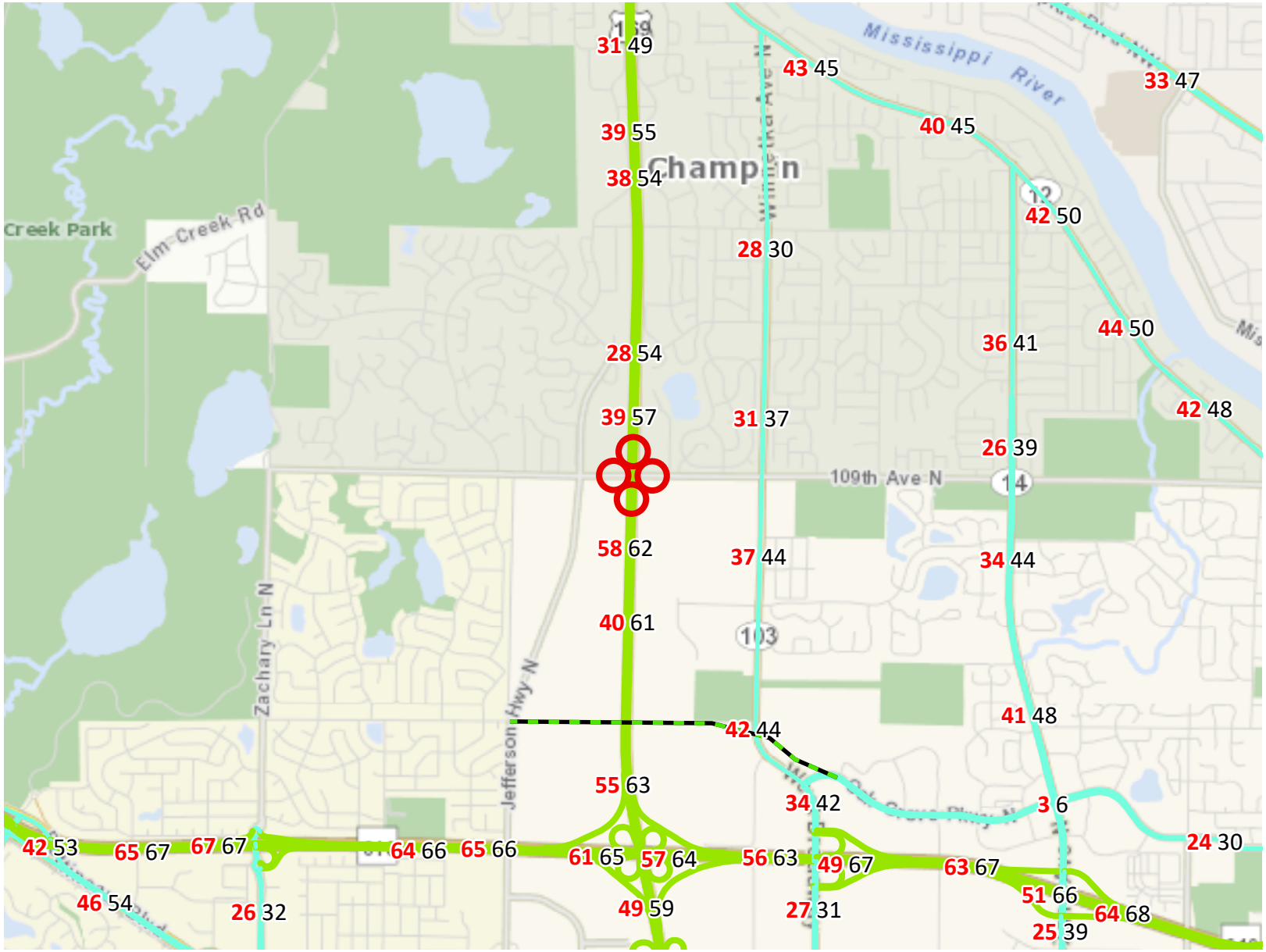
METROPOLITAN COUNCIL

Level of Congestion

Roadway Spot Mobility & Safety Project: 169&109th | Map ID: 1649167593438



Project Points

A Minor Arterials

A Minor Arterials Planned

Principal Arterials

Principal Arterials Planned

0 0.375 0.75 1.5 2.25 3 Miles

Created: 4/5/2022
LandscapeRSA1

For complete disclaimer of accuracy, please visit
https://giswebsite.metc.state.mn.us/gissite/notice.aspx

METROPOLITAN COUNCIL

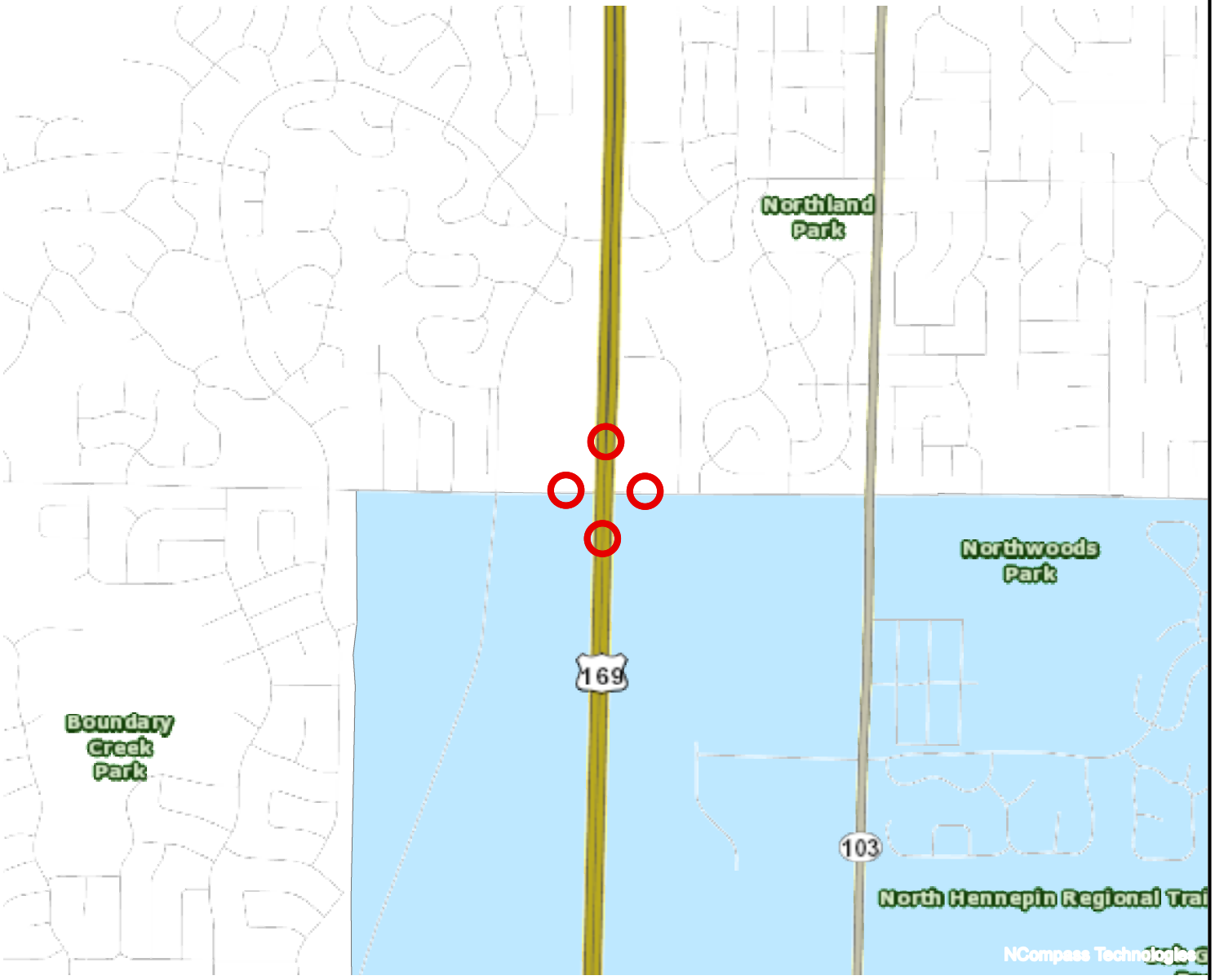
Socio-Economic Conditions

Roadway Spot Mobility & Safety Project: 169&109th | Map ID: 1649167593438

Results

Total of publicly subsidized rental housing units in census tracts within 1/2 mile: 364

Project located in census tract(s) that are ABOVE the regional average for population in poverty or population of color.



Points

Regional Environmental Justice Area

Area of Concentrated Poverty

0 0.175 0.35 0.7 1.05 1.4 Miles

Created: 4/5/2022
LandscapeRSA2

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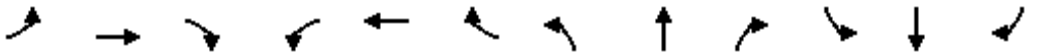
METROPOLITAN COUNCIL

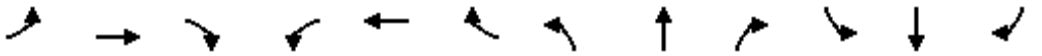


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	137	182	213	60	62	78	965	105	173	2078	104
Future Volume (vph)	45	137	182	213	60	62	78	965	105	173	2078	104
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	85		85	660		50	500		260	250		250
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	1863	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.715			0.450			0.950			0.950		
Satd. Flow (perm)	1332	3539	1583	838	1863	1583	1770	3539	1583	1770	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			109			109			114			76
Link Speed (mph)		45			45			55			55	
Link Distance (ft)		2632			2744			5070			5188	
Travel Time (s)		39.9			41.6			62.9			64.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	49	149	198	232	65	67	85	1049	114	188	2259	113
Shared Lane Traffic (%)												
Lane Group Flow (vph)	49	149	198	232	65	67	85	1049	114	188	2259	113
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	10.0	22.5	22.5	14.2	26.7	26.7	12.3	82.7	82.7	30.6	101.0	101.0
Total Split (%)	6.7%	15.0%	15.0%	9.5%	17.8%	17.8%	8.2%	55.1%	55.1%	20.4%	67.3%	67.3%
Maximum Green (s)	5.5	18.0	18.0	9.7	22.2	22.2	7.8	78.2	78.2	26.1	96.5	96.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	19.1	13.6	13.6	27.6	19.9	19.9	7.8	84.1	84.1	20.2	96.5	96.5
Actuated g/C Ratio	0.13	0.09	0.09	0.19	0.14	0.14	0.05	0.58	0.58	0.14	0.66	0.66
v/c Ratio	0.26	0.45	0.80	1.05	0.26	0.22	0.90	0.51	0.12	0.77	0.96	0.11
Control Delay	52.6	66.6	52.5	128.5	59.9	3.1	135.9	20.8	3.2	80.6	35.5	3.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.6	66.6	52.5	128.5	59.9	3.1	135.9	20.8	3.2	80.6	35.5	3.9
LOS	D	E	D	F	E	A	F	C	A	F	D	A
Approach Delay		57.8			93.2			27.0			37.4	
Approach LOS		E			F			C			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 150			
Actuated Cycle Length: 145.7			
Natural Cycle: 150			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.05			
Intersection Signal Delay: 40.8		Intersection LOS: D	
Intersection Capacity Utilization 92.7%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 1: TH 169 & 109th Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	137	182	213	60	62	78	965	105	173	2078	104
Future Volume (veh/h)	45	137	182	213	60	62	78	965	105	173	2078	104
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	49	149	198	232	65	67	85	1049	114	188	2259	113
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	257	426	190	247	285	241	93	2048	913	212	2286	1020
Arrive On Green	0.03	0.12	0.12	0.06	0.15	0.15	0.05	0.58	0.58	0.12	0.64	0.64
Sat Flow, veh/h	1781	3554	1585	1781	1870	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	49	149	198	232	65	67	85	1049	114	188	2259	113
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1870	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	3.6	5.8	18.0	9.7	4.6	5.6	7.1	26.6	4.9	15.6	93.3	4.1
Cycle Q Clear(g_c), s	3.6	5.8	18.0	9.7	4.6	5.6	7.1	26.6	4.9	15.6	93.3	4.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	257	426	190	247	285	241	93	2048	913	212	2286	1020
V/C Ratio(X)	0.19	0.35	1.04	0.94	0.23	0.28	0.92	0.51	0.12	0.89	0.99	0.11
Avail Cap(c_a), veh/h	264	426	190	247	285	241	93	2048	913	310	2286	1020
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.4	60.6	66.0	60.4	55.8	56.3	70.8	19.1	14.5	65.1	26.2	10.3
Incr Delay (d2), s/veh	0.4	0.5	76.4	40.4	0.4	0.6	67.1	0.9	0.3	18.5	16.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	2.6	11.2	6.8	2.2	2.3	4.9	10.4	1.8	8.0	38.8	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.8	61.1	142.4	100.9	56.3	56.9	137.9	20.0	14.8	83.6	42.4	10.5
LnGrp LOS	E	E	F	F	E	E	F	C	B	F	D	B
Approach Vol, veh/h		396			364			1248			2560	
Approach Delay, s/veh		101.1			84.8			27.6			44.0	
Approach LOS		F			F			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.4	90.9	14.2	22.5	12.3	101.0	9.4	27.3
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	26.1	78.2	9.7	18.0	7.8	96.5	5.5	22.2
Max Q Clear Time (g_c+I1), s	17.6	28.6	11.7	20.0	9.1	95.3	5.6	7.6
Green Ext Time (p_c), s	0.3	8.5	0.0	0.0	0.0	1.1	0.0	0.4

Intersection Summary	
HCM 6th Ctrl Delay	47.7
HCM 6th LOS	D

1: TH 169 & 109th Ave

Direction	EB	WB	NB	SB	All
Future Volume (vph)	364	335	1148	2355	4202
Control Delay / Veh (s/v)	58	93	27	37	41
Queue Delay / Veh (s/v)	0	0	0	0	0
Total Delay / Veh (s/v)	58	93	27	37	41
Total Delay (hr)	6	9	9	24	48
Stops / Veh	0.68	0.70	0.56	0.80	0.71
Stops (#)	247	235	643	1877	3002
Average Speed (mph)	18	14	38	35	32
Total Travel Time (hr)	10	13	29	67	118
Distance Traveled (mi)	181	174	1102	2314	3772
Fuel Consumed (gal)	14	15	55	130	214
Fuel Economy (mpg)	13.4	11.4	20.0	17.8	17.6
CO Emissions (kg)	0.95	1.06	3.85	9.10	14.97
NOx Emissions (kg)	0.18	0.21	0.75	1.77	2.91
VOC Emissions (kg)	0.22	0.25	0.89	2.11	3.47
Unserved Vehicles (#)	0	10	0	0	10
Vehicles in dilemma zone (#)	4	1	29	69	103

2: Winnetka Ave & 109th Ave

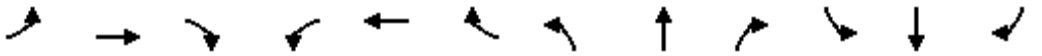
Direction	EB	WB	NB	SB	All
Future Volume (vph)	325	243	107	450	1125
Control Delay / Veh (s/v)	22	15	13	15	17
Queue Delay / Veh (s/v)	0	0	0	0	0
Total Delay / Veh (s/v)	22	15	13	15	17
Total Delay (hr)	2	1	0	2	5
Stops / Veh	0.62	0.62	0.61	0.59	0.61
Stops (#)	200	151	65	266	682
Average Speed (mph)	29	36	36	31	32
Total Travel Time (hr)	6	5	1	6	18
Distance Traveled (mi)	169	190	47	181	587
Fuel Consumed (gal)	10	9	3	11	33
Fuel Economy (mpg)	17.4	20.8	16.5	16.6	18.0
CO Emissions (kg)	0.68	0.64	0.20	0.76	2.28
NOx Emissions (kg)	0.13	0.12	0.04	0.15	0.44
VOC Emissions (kg)	0.16	0.15	0.05	0.18	0.53
Unserved Vehicles (#)	0	0	0	0	0
Vehicles in dilemma zone (#)	24	12	5	30	71

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	137	182	213	60	62	78	965	105	173	2078	104
Future Volume (vph)	45	137	182	213	60	62	78	965	105	173	2078	104
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	190		300	260		520	500		260	285		250
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.712			0.596			0.950			0.950		
Satd. Flow (perm)	2573	3539	1583	2154	3539	1583	3433	3539	1583	3433	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			136			136			136			95
Link Speed (mph)		45			45			55			55	
Link Distance (ft)		2632			2744			5070			5188	
Travel Time (s)		39.9			41.6			62.9			64.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	49	149	198	232	65	67	85	1049	114	188	2259	113
Shared Lane Traffic (%)												
Lane Group Flow (vph)	49	149	198	232	65	67	85	1049	114	188	2259	113
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	71.9	71.9	16.1	78.5	78.5
Total Split (%)	7.9%	18.8%	18.8%	7.9%	18.8%	18.8%	7.9%	59.9%	59.9%	13.4%	65.4%	65.4%
Maximum Green (s)	5.0	18.0	18.0	5.0	18.0	18.0	5.0	67.4	67.4	11.6	74.0	74.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	16.4	11.4	11.4	17.4	13.4	13.4	5.0	67.9	67.9	10.6	75.5	75.5
Actuated g/C Ratio	0.15	0.10	0.10	0.15	0.12	0.12	0.04	0.60	0.60	0.09	0.67	0.67
v/c Ratio	0.12	0.42	0.70	0.60	0.15	0.22	0.56	0.49	0.11	0.59	0.96	0.10
Control Delay	38.4	51.0	30.7	48.5	46.7	1.6	68.6	14.3	1.5	57.5	29.7	2.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.4	51.0	30.7	48.5	46.7	1.6	68.6	14.3	1.5	57.5	29.7	2.6
LOS	D	D	C	D	D	A	E	B	A	E	C	A
Approach Delay		39.3			39.5			16.9			30.6	
Approach LOS		D			D			B			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 112.9			
Natural Cycle: 120			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.96			
Intersection Signal Delay: 28.3		Intersection LOS: C	
Intersection Capacity Utilization 86.9%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 1: TH 169 & 109th Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	137	182	213	60	62	78	965	105	173	2078	104
Future Volume (veh/h)	45	137	182	213	60	62	78	965	105	173	2078	104
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	49	149	198	232	65	67	85	1049	114	188	2259	113
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	565	503	224	476	532	237	137	2107	940	247	2220	990
Arrive On Green	0.03	0.14	0.14	0.04	0.15	0.15	0.04	0.59	0.59	0.07	0.62	0.62
Sat Flow, veh/h	3456	3554	1585	3456	3554	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	49	149	198	232	65	67	85	1049	114	188	2259	113
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	1.4	4.5	14.5	5.0	1.9	4.4	2.9	20.2	3.7	6.3	74.0	3.4
Cycle Q Clear(g_c), s	1.4	4.5	14.5	5.0	1.9	4.4	2.9	20.2	3.7	6.3	74.0	3.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	565	503	224	476	532	237	137	2107	940	247	2220	990
V/C Ratio(X)	0.09	0.30	0.88	0.49	0.12	0.28	0.62	0.50	0.12	0.76	1.02	0.11
Avail Cap(c_a), veh/h	594	540	241	476	540	241	146	2107	940	338	2220	990
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.9	45.6	49.9	43.7	43.6	44.7	56.0	13.9	10.6	54.0	22.2	9.0
Incr Delay (d2), s/veh	0.1	0.3	28.4	0.8	0.1	0.6	7.1	0.8	0.3	6.6	23.6	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	1.9	7.3	0.7	0.8	1.7	1.3	7.2	1.3	2.9	32.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.9	45.9	78.3	44.5	43.7	45.3	63.1	14.8	10.8	60.6	45.8	9.2
LnGrp LOS	D	D	E	D	D	D	E	B	B	E	F	A
Approach Vol, veh/h		396			364			1248			2560	
Approach Delay, s/veh		61.5			44.5			17.7			45.3	
Approach LOS		E			D			B			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	74.7	9.5	21.2	9.2	78.5	8.5	22.2
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	11.6	67.4	5.0	18.0	5.0	74.0	5.0	18.0
Max Q Clear Time (g_c+I1), s	8.3	22.2	7.0	16.5	4.9	76.0	3.4	6.4
Green Ext Time (p_c), s	0.2	8.4	0.0	0.2	0.0	0.0	0.0	0.3

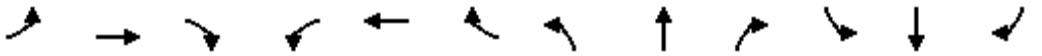
Intersection Summary	
HCM 6th Ctrl Delay	39.1
HCM 6th LOS	D

1: TH 169 & 109th Ave

Direction	EB	WB	NB	SB	All
Future Volume (vph)	364	335	1148	2355	4202
Control Delay / Veh (s/v)	39	39	17	31	28
Queue Delay / Veh (s/v)	0	0	0	0	0
Total Delay / Veh (s/v)	39	39	17	31	28
Total Delay (hr)	4	4	5	20	33
Stops / Veh	0.61	0.78	0.53	0.75	0.68
Stops (#)	223	260	603	1767	2853
Average Speed (mph)	23	23	43	37	37
Total Travel Time (hr)	8	8	25	62	103
Distance Traveled (mi)	181	174	1102	2314	3772
Fuel Consumed (gal)	12	12	52	125	201
Fuel Economy (mpg)	15.2	14.6	21.2	18.5	18.8
CO Emissions (kg)	0.83	0.83	3.64	8.73	14.03
NOx Emissions (kg)	0.16	0.16	0.71	1.70	2.73
VOC Emissions (kg)	0.19	0.19	0.84	2.02	3.25
Unserved Vehicles (#)	0	0	0	0	0
Vehicles in dilemma zone (#)	5	2	40	85	132

2: Winnetka Ave & 109th Ave

Direction	EB	WB	NB	SB	All
Future Volume (vph)	325	243	106	450	1124
Control Delay / Veh (s/v)	14	16	11	13	14
Queue Delay / Veh (s/v)	0	0	0	0	0
Total Delay / Veh (s/v)	14	16	11	13	14
Total Delay (hr)	1	1	0	2	4
Stops / Veh	0.46	0.66	0.57	0.57	0.56
Stops (#)	148	160	60	257	625
Average Speed (mph)	34	36	38	32	34
Total Travel Time (hr)	5	5	1	6	17
Distance Traveled (mi)	169	190	47	181	586
Fuel Consumed (gal)	9	9	3	11	31
Fuel Economy (mpg)	19.8	20.4	17.2	17.1	18.8
CO Emissions (kg)	0.60	0.65	0.19	0.74	2.18
NOx Emissions (kg)	0.12	0.13	0.04	0.14	0.42
VOC Emissions (kg)	0.14	0.15	0.04	0.17	0.51
Unserved Vehicles (#)	0	0	0	0	0
Vehicles in dilemma zone (#)	10	13	5	31	59

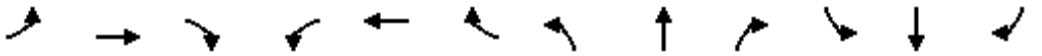


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	137	182	213	60	62	78	965	105	173	2078	104
Future Volume (vph)	45	137	182	213	60	62	78	965	105	173	2078	104
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	85		85	660		50	500		260	250		250
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	1863	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.715			0.450			0.950			0.950		
Satd. Flow (perm)	1332	3539	1583	838	1863	1583	1770	3539	1583	1770	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			109			109			114			76
Link Speed (mph)		45			45			55			55	
Link Distance (ft)		2632			2744			5070			5188	
Travel Time (s)		39.9			41.6			62.9			64.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	49	149	198	232	65	67	85	1049	114	188	2259	113
Shared Lane Traffic (%)												
Lane Group Flow (vph)	49	149	198	232	65	67	85	1049	114	188	2259	113
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	10.0	22.5	22.5	14.2	26.7	26.7	12.3	82.7	82.7	30.6	101.0	101.0
Total Split (%)	6.7%	15.0%	15.0%	9.5%	17.8%	17.8%	8.2%	55.1%	55.1%	20.4%	67.3%	67.3%
Maximum Green (s)	5.5	18.0	18.0	9.7	22.2	22.2	7.8	78.2	78.2	26.1	96.5	96.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	19.1	13.6	13.6	27.6	19.9	19.9	7.8	84.1	84.1	20.2	96.5	96.5
Actuated g/C Ratio	0.13	0.09	0.09	0.19	0.14	0.14	0.05	0.58	0.58	0.14	0.66	0.66
v/c Ratio	0.26	0.45	0.80	1.05	0.26	0.22	0.90	0.51	0.12	0.77	0.96	0.11
Control Delay	52.6	66.6	52.5	128.5	59.9	3.1	135.9	20.8	3.2	80.6	35.5	3.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.6	66.6	52.5	128.5	59.9	3.1	135.9	20.8	3.2	80.6	35.5	3.9
LOS	D	E	D	F	E	A	F	C	A	F	D	A
Approach Delay		57.8			93.2			27.0			37.4	
Approach LOS		E			F			C			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 150			
Actuated Cycle Length: 145.7			
Natural Cycle: 150			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.05			
Intersection Signal Delay: 40.8		Intersection LOS: D	
Intersection Capacity Utilization 92.7%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 1: TH 169 & 109th Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	137	182	213	60	62	78	965	105	173	2078	104
Future Volume (veh/h)	45	137	182	213	60	62	78	965	105	173	2078	104
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	49	149	198	232	65	67	85	1049	114	188	2259	113
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	257	426	190	247	285	241	93	2048	913	212	2286	1020
Arrive On Green	0.03	0.12	0.12	0.06	0.15	0.15	0.05	0.58	0.58	0.12	0.64	0.64
Sat Flow, veh/h	1781	3554	1585	1781	1870	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	49	149	198	232	65	67	85	1049	114	188	2259	113
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1870	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	3.6	5.8	18.0	9.7	4.6	5.6	7.1	26.6	4.9	15.6	93.3	4.1
Cycle Q Clear(g_c), s	3.6	5.8	18.0	9.7	4.6	5.6	7.1	26.6	4.9	15.6	93.3	4.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	257	426	190	247	285	241	93	2048	913	212	2286	1020
V/C Ratio(X)	0.19	0.35	1.04	0.94	0.23	0.28	0.92	0.51	0.12	0.89	0.99	0.11
Avail Cap(c_a), veh/h	264	426	190	247	285	241	93	2048	913	310	2286	1020
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.4	60.6	66.0	60.4	55.8	56.3	70.8	19.1	14.5	65.1	26.2	10.3
Incr Delay (d2), s/veh	0.4	0.5	76.4	40.4	0.4	0.6	67.1	0.9	0.3	18.5	16.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	2.6	11.2	6.8	2.2	2.3	4.9	10.4	1.8	8.0	38.8	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.8	61.1	142.4	100.9	56.3	56.9	137.9	20.0	14.8	83.6	42.4	10.5
LnGrp LOS	E	E	F	F	E	E	F	C	B	F	D	B
Approach Vol, veh/h		396			364			1248			2560	
Approach Delay, s/veh		101.1			84.8			27.6			44.0	
Approach LOS		F			F			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.4	90.9	14.2	22.5	12.3	101.0	9.4	27.3
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	26.1	78.2	9.7	18.0	7.8	96.5	5.5	22.2
Max Q Clear Time (g_c+I1), s	17.6	28.6	11.7	20.0	9.1	95.3	5.6	7.6
Green Ext Time (p_c), s	0.3	8.5	0.0	0.0	0.0	1.1	0.0	0.4

Intersection Summary	
HCM 6th Ctrl Delay	47.7
HCM 6th LOS	D

1: TH 169 & 109th Ave

Direction	EB	WB	NB	SB	All
Future Volume (vph)	364	335	1148	2355	4202
Control Delay / Veh (s/v)	58	93	27	37	41
Queue Delay / Veh (s/v)	0	0	0	0	0
Total Delay / Veh (s/v)	58	93	27	37	41
Total Delay (hr)	6	9	9	24	48
Stops / Veh	0.68	0.70	0.56	0.80	0.71
Stops (#)	247	235	643	1877	3002
Average Speed (mph)	18	14	38	35	32
Total Travel Time (hr)	10	13	29	67	118
Distance Traveled (mi)	181	174	1102	2314	3772
Fuel Consumed (gal)	14	15	55	130	214
Fuel Economy (mpg)	13.4	11.4	20.0	17.8	17.6
CO Emissions (kg)	0.95	1.06	3.85	9.10	14.97
NOx Emissions (kg)	0.18	0.21	0.75	1.77	2.91
VOC Emissions (kg)	0.22	0.25	0.89	2.11	3.47
Unserved Vehicles (#)	0	10	0	0	10
Vehicles in dilemma zone (#)	4	1	29	69	103

2: Winnetka Ave & 109th Ave

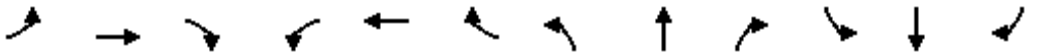
Direction	EB	WB	NB	SB	All
Future Volume (vph)	325	243	107	450	1125
Control Delay / Veh (s/v)	22	15	13	15	17
Queue Delay / Veh (s/v)	0	0	0	0	0
Total Delay / Veh (s/v)	22	15	13	15	17
Total Delay (hr)	2	1	0	2	5
Stops / Veh	0.62	0.62	0.61	0.59	0.61
Stops (#)	200	151	65	266	682
Average Speed (mph)	29	36	36	31	32
Total Travel Time (hr)	6	5	1	6	18
Distance Traveled (mi)	169	190	47	181	587
Fuel Consumed (gal)	10	9	3	11	33
Fuel Economy (mpg)	17.4	20.8	16.5	16.6	18.0
CO Emissions (kg)	0.68	0.64	0.20	0.76	2.28
NOx Emissions (kg)	0.13	0.12	0.04	0.15	0.44
VOC Emissions (kg)	0.16	0.15	0.05	0.18	0.53
Unserved Vehicles (#)	0	0	0	0	0
Vehicles in dilemma zone (#)	24	12	5	30	71

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	137	182	213	60	62	78	965	105	173	2078	104
Future Volume (vph)	45	137	182	213	60	62	78	965	105	173	2078	104
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	190		300	260		520	500		260	285		250
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.712			0.596			0.950			0.950		
Satd. Flow (perm)	2573	3539	1583	2154	3539	1583	3433	3539	1583	3433	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			136			136			136			95
Link Speed (mph)		45			45			55			55	
Link Distance (ft)		2632			2744			5070			5188	
Travel Time (s)		39.9			41.6			62.9			64.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	49	149	198	232	65	67	85	1049	114	188	2259	113
Shared Lane Traffic (%)												
Lane Group Flow (vph)	49	149	198	232	65	67	85	1049	114	188	2259	113
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	71.9	71.9	16.1	78.5	78.5
Total Split (%)	7.9%	18.8%	18.8%	7.9%	18.8%	18.8%	7.9%	59.9%	59.9%	13.4%	65.4%	65.4%
Maximum Green (s)	5.0	18.0	18.0	5.0	18.0	18.0	5.0	67.4	67.4	11.6	74.0	74.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	16.4	11.4	11.4	17.4	13.4	13.4	5.0	67.9	67.9	10.6	75.5	75.5
Actuated g/C Ratio	0.15	0.10	0.10	0.15	0.12	0.12	0.04	0.60	0.60	0.09	0.67	0.67
v/c Ratio	0.12	0.42	0.70	0.60	0.15	0.22	0.56	0.49	0.11	0.59	0.96	0.10
Control Delay	38.4	51.0	30.7	48.5	46.7	1.6	68.6	14.3	1.5	57.5	29.7	2.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.4	51.0	30.7	48.5	46.7	1.6	68.6	14.3	1.5	57.5	29.7	2.6
LOS	D	D	C	D	D	A	E	B	A	E	C	A
Approach Delay		39.3			39.5			16.9			30.6	
Approach LOS		D			D			B			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 112.9			
Natural Cycle: 120			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.96			
Intersection Signal Delay: 28.3		Intersection LOS: C	
Intersection Capacity Utilization 86.9%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 1: TH 169 & 109th Ave



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	137	182	213	60	62	78	965	105	173	2078	104
Future Volume (veh/h)	45	137	182	213	60	62	78	965	105	173	2078	104
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	49	149	198	232	65	67	85	1049	114	188	2259	113
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	565	503	224	476	532	237	137	2107	940	247	2220	990
Arrive On Green	0.03	0.14	0.14	0.04	0.15	0.15	0.04	0.59	0.59	0.07	0.62	0.62
Sat Flow, veh/h	3456	3554	1585	3456	3554	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	49	149	198	232	65	67	85	1049	114	188	2259	113
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	1.4	4.5	14.5	5.0	1.9	4.4	2.9	20.2	3.7	6.3	74.0	3.4
Cycle Q Clear(g_c), s	1.4	4.5	14.5	5.0	1.9	4.4	2.9	20.2	3.7	6.3	74.0	3.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	565	503	224	476	532	237	137	2107	940	247	2220	990
V/C Ratio(X)	0.09	0.30	0.88	0.49	0.12	0.28	0.62	0.50	0.12	0.76	1.02	0.11
Avail Cap(c_a), veh/h	594	540	241	476	540	241	146	2107	940	338	2220	990
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.9	45.6	49.9	43.7	43.6	44.7	56.0	13.9	10.6	54.0	22.2	9.0
Incr Delay (d2), s/veh	0.1	0.3	28.4	0.8	0.1	0.6	7.1	0.8	0.3	6.6	23.6	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	1.9	7.3	0.7	0.8	1.7	1.3	7.2	1.3	2.9	32.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.9	45.9	78.3	44.5	43.7	45.3	63.1	14.8	10.8	60.6	45.8	9.2
LnGrp LOS	D	D	E	D	D	D	E	B	B	E	F	A
Approach Vol, veh/h		396			364			1248			2560	
Approach Delay, s/veh		61.5			44.5			17.7			45.3	
Approach LOS		E			D			B			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	74.7	9.5	21.2	9.2	78.5	8.5	22.2
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	11.6	67.4	5.0	18.0	5.0	74.0	5.0	18.0
Max Q Clear Time (g_c+I1), s	8.3	22.2	7.0	16.5	4.9	76.0	3.4	6.4
Green Ext Time (p_c), s	0.2	8.4	0.0	0.2	0.0	0.0	0.0	0.3

Intersection Summary	
HCM 6th Ctrl Delay	39.1
HCM 6th LOS	D

1: TH 169 & 109th Ave

Direction	EB	WB	NB	SB	All
Future Volume (vph)	364	335	1148	2355	4202
Control Delay / Veh (s/v)	39	39	17	31	28
Queue Delay / Veh (s/v)	0	0	0	0	0
Total Delay / Veh (s/v)	39	39	17	31	28
Total Delay (hr)	4	4	5	20	33
Stops / Veh	0.61	0.78	0.53	0.75	0.68
Stops (#)	223	260	603	1767	2853
Average Speed (mph)	23	23	43	37	37
Total Travel Time (hr)	8	8	25	62	103
Distance Traveled (mi)	181	174	1102	2314	3772
Fuel Consumed (gal)	12	12	52	125	201
Fuel Economy (mpg)	15.2	14.6	21.2	18.5	18.8
CO Emissions (kg)	0.83	0.83	3.64	8.73	14.03
NOx Emissions (kg)	0.16	0.16	0.71	1.70	2.73
VOC Emissions (kg)	0.19	0.19	0.84	2.02	3.25
Unserved Vehicles (#)	0	0	0	0	0
Vehicles in dilemma zone (#)	5	2	40	85	132

2: Winnetka Ave & 109th Ave

Direction	EB	WB	NB	SB	All
Future Volume (vph)	325	243	106	450	1124
Control Delay / Veh (s/v)	14	16	11	13	14
Queue Delay / Veh (s/v)	0	0	0	0	0
Total Delay / Veh (s/v)	14	16	11	13	14
Total Delay (hr)	1	1	0	2	4
Stops / Veh	0.46	0.66	0.57	0.57	0.56
Stops (#)	148	160	60	257	625
Average Speed (mph)	34	36	38	32	34
Total Travel Time (hr)	5	5	1	6	17
Distance Traveled (mi)	169	190	47	181	586
Fuel Consumed (gal)	9	9	3	11	31
Fuel Economy (mpg)	19.8	20.4	17.2	17.1	18.8
CO Emissions (kg)	0.60	0.65	0.19	0.74	2.18
NOx Emissions (kg)	0.12	0.13	0.04	0.14	0.42
VOC Emissions (kg)	0.14	0.15	0.04	0.17	0.51
Unserved Vehicles (#)	0	0	0	0	0
Vehicles in dilemma zone (#)	10	13	5	31	59

Traffic Safety Benefit-Cost Calculation

Highway Safety Improvement Program (HSIP) Reactive Project

DEPARTMENT OF TRANSPORTATION

A. Roadway Description

Route	TH 169 & 109th Ave	**District**	Metro	**County**	Hennepin
Begin RP		**End RP**		**Miles**	N/A (intersection)
Location	TH 169 & 109th Avenue Intersection				

B. Project Description

Proposed Work	Intersection improvements at TH 169 and 109th Avenue		
Project Cost*	$3,118,500	**Installation Year**	2026
Project Service Life	20 years	**Traffic Growth Factor**	1.0%

** exclude Right of Way from Project Cost*

C. Crash Modification Factor

0.85	**Fatal (K) Crashes**	**Reference**	Left turn phase improvement
0.85	**Serious Injury (A) Crashes**		
0.85	**Moderate Injury (B) Crashes**	**Crash Type**	All
0.85	**Possible Injury (C) Crashes**		
0.85	**Property Damage Only Crashes**		www.CMFclearinghouse.org

D. Crash Modification Factor (optional second CMF)

0.81	**Fatal (K) Crashes**	**Reference**	Install a raised median
0.81	**Serious Injury (A) Crashes**		
0.81	**Moderate Injury (B) Crashes**	**Crash Type**	All on 109th
0.81	**Possible Injury (C) Crashes**		
0.74	**Property Damage Only Crashes**		www.CMFclearinghouse.org

E. Crash Data

Begin Date	1/1/2019	**End Date**	12/31/2021	3 years
Data Source	MnCMAT2			

Crash Severity	All	All on 109th
K crashes	0	0
A crashes	0	0
B crashes	2	0
C crashes	13	0
PDO crashes	35	1

F. Benefit-Cost Calculation

$2,569,498	**Benefit (present value)**	**B/C Ratio = 0.83**
$3,118,500	**Cost**	

Proposed project expected to reduce 3 crashes annually, 0 of which involving fatality or serious injury.

F. Analysis Assumptions

Crash Severity	Crash Cost
K crashes	$1,500,000
A crashes	$750,000
B crashes	$230,000
C crashes	$120,000
PDO crashes	$13,000

Link: mndot.gov/planning/program/appendix_a.html

Real Discount Rate:	0.7%	**Revised**
Traffic Growth Rate:	1.0%	**Revised**
Project Service Life:	20 years	**Revised**

G. Annual Benefit

Crash Severity	Crash Reduction	Annual Reduction	Annual Benefit
K crashes	0.00	0.00	$0
A crashes	0.00	0.00	$0
B crashes	0.30	0.10	$23,000
C crashes	1.95	0.65	$78,000
PDO crashes	5.51	1.84	$23,877
			$124,877

H. Amortized Benefit

Year	Crash Benefits	Present Value
2026	$124,877	$124,877
2027	$126,125	$125,249
2028	$127,387	$125,622
2029	$128,661	$125,996
2030	$129,947	$126,371
2031	$131,247	$126,748
2032	$132,559	$127,126
2033	$133,885	$127,504
2034	$135,224	$127,884
2035	$136,576	$128,265
2036	$137,942	$128,647
2037	$139,321	$129,030
2038	$140,714	$129,415
2039	$142,121	$129,800
2040	$143,543	$130,187
2041	$144,978	$130,575
2042	$146,428	$130,964
2043	$147,892	$131,354
2044	$149,371	$131,745
2045	$150,865	$132,138
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0

Total = $2,569,498

NOTE:
This calculation relies on the real discount rate, which accounts for inflation. No further discounting is necessary.

Major Roadway: TH 169
Years 2019-2021
Ending Year: 2021
City: Brooklyn Park

IF INTERSECTION:
Minor Roadway: 109th Ave

IF SEGMENT:
Segment Begin:
Segment End:

Incident	Sys	Route	Ref_Point	Co	City	Township	Dist	State Patrol	Trib	Crash_Num		Month	Day	Year	DyWk	Time	Rd_Dir	Sev	NumKilled	NumVeh	Diag	FirstHarm	Relation	LIT	Wthr1	Wthr2	Surf	WZ	Roadway	Intersection	RouteID	Basic Type
747341		2 169	140.076	27	Brooklyn Park		M	25		19511151	192560208	9	13	2019	Fri	15	N	4	0	2	12	10	2	1	2			1	98	NB USTH 169 AT 109TH A		020000000	7
816524		2 169	140.084	27	Brooklyn Park		M	25		20505091	201780048	6	26	2020	Fri	13	N	5	0	2	12	10	2	1	1			1	98	USTH 169		020000000	7
798523		2 169	140.118	27	Brooklyn Park		M	25		20501966	200480260	2	17	2020	Mon	20	N	5	0	1		32	2	4	4	2	3		98	USTH 169		020000000	3
736074		2 169	140.134	27	Brooklyn Park		M	25		19509064	192060130	7	25	2019	Thu	14	N	4	0	3	12	10	2	1	1			1	98	NB USTH 169 @ 109TH A		020000000	7
905283		2 169	140.139	27	Brooklyn Park		M	25		21503827	211240228	5	4	2021	Tue	12	N	4	0	2	12	10	2	1	1			1	98	USTH 169		020000000	7
805067		2 169	140.17	27	Brooklyn Park		M	25		20503087	200840004	3	24	2020	Tue	4	S	4	0	2	10	10	2	6	1			1	98	SB USTH 169 / 109TH AV		020000000	5
763940		2 169	140.179	27	Brooklyn Park		M	25		19513813	193170554	11	13	2019	Wed	10	N	5	0	2	15	10	2	1	4			3	98	USTH 169		020000000	90
939099		2 169	140.178	27	Brooklyn Park		M	25		21508497	212500147	9	7	2021	Tue	17	N	4	0	4	12	10	2	1	1			1	98	USTH 169		020000000	7
675706		2 169	140.204	27	Brooklyn Park		M	25		19500400	190110198	1	11	2019	Fri	12	N	5	0	2	12	10	2	1	1			1	98	NB USTH 169 AT 109TH		020000000	7
751723		2 169	140.208	27	Brooklyn Park		M	25		19511962	192750170	10	2	2019	Wed	15	N	5	0	2	12	10	2	1	2	3		2	98	NB USTH 169 @ 109TH A		020000000	7
707998		2 169	140.213	27	Brooklyn Park		M	25		19505909	191250091	5	5	2019	Sun	17	N	4	0	2	12	10	2	1	2			1	98	USTH 169		020000000	7
810201		2 169	140.218	27	Brooklyn Park		M	25		20504120	201350049	5	14	2020	Thu	14	N	5	0	2	12	10	10	1	2			1	98	NB USTH 169 @ 109TH A		020000000	7
970675		2 169	140.222	27	Brooklyn Park		M	25		21510169	212960238	10	23	2021	Sat	20	N	5	0	2	12	10	2	6	1			1	98	NB USTH 169 AT 109TH A		020000000	7
982518		2 169	140.222	27	2393429			25		21512217	213490306	12	15	2021	Wed	7	N	5	0	2	12	10	3	2	6			2	98	USTH 169		020000000	7
694713		2 169	140.223	27	Brooklyn Park		M	25		19503623	190630185	3	4	2019	Mon	13	N	4	0	3	12	10	10	1	2			1	98	NB USTH 169 @ 109TH A		020000000	7
822533		2 169	140.224	27	Brooklyn Park		M	25		20506120	202110151	7	29	2020	Wed	13	N	3	0	3	12	10	2	1	1			1	98	NB USTH 169 @ 109TH A		020000000	7
742183		2 169	140.226	27	Brooklyn Park		M	25		19510193	192330228	8	21	2019	Wed	16	N	5	0	2	12	10	2	1	1			1	98	USTH 169		020000000	7
935352		2 169	140.226	27	Brooklyn Park		M	25		21507710	212270189	8	15	2021	Sun	10	N	4	0	4	5	10	3	1	1			1	98	USTH 169 109TH AVENU		020000000	10
735110		2 169	140.228	27	Brooklyn Park		M	25		19508617	191950173	7	14	2019	Sun	19	N	4	0	2	12	10	2	1	1			1	98	N/B USTH 169 AT 109TH		020000000	7
785647		2 169	140.229	27	Brooklyn Park		M	25		20501389	200320183	2	1	2020	Sat	15	N	4	0	4	12	10	2	1	2			1	98	USTH 169		020000000	7
803376		2 169	140.229	27	Brooklyn Park		M	25		20-11353	200700126	3	10	2020	Tue	19	N	5	0	2	12	10	2	4	1			1	98	USTH 169		020000000	7
969484		2 169	140.23	27	2393429			25		21510167	212960212	10	23	2021	Sat	18	W	5	0	1		30	3	1	1			1	98	SB USTH 169 @ 109TH A		020000000	3
780956		2 169	140.237	27	Brooklyn Park		M	25		20500671	200180360	1	18	2020	Sat	8	N	5	0	2	12	10	2	1	2			3	98	USTH 169		020000000	7
799557		2 169	140.239	27	Brooklyn Park		M	25		20502122	200510071	2	20	2020	Thu	11	N	5	0	2	12	10	3	1	1			1	98	NB USTH 169 @ 109TH A		020000000	7
894801		2 169	140.239	27	Brooklyn Park		M	25		21502231	210670083	3	8	2021	Mon	15	N	5	0	2	12	10	2	1	1			1	98	USTH 169		020000000	7
837534		2 169	140.245	27	Brooklyn Park		M	25		20506873	202340201	8	21	2020	Fri	16	S	4	0	4	12	10	2	1	1			1	98	USTH 169		020000000	7
762642		2 169	140.258	27	Champlin		M	25		19513812	193170433	11	13	2019	Wed	10	N	5	0	2	12	10	2	1	4			3	98	USTH 169		020000000	7
860635		2 169	140.259	27	Champlin		M	25		20044498	203040191	10	30	2020	Fri	14	S	5	0	2	12	10	2	1	1			1	98	USTH 169		020000000	7
812827		2 169	140.263	27	Champlin		M	25		20-022870	201560080	6	4	2020	Thu	8	N	5	0	2	12	10	3	1	1			1		USTH 169		020000000	7
797265		2 169	140.265	27	Champlin		M	25		20001672	200430105	2	12	2020	Wed	16		5	0	2	13	10	3	1	1			1	98	USTH 169 109TH N		020000000	9
758725		2 169	140.267	27	Champlin		M	25		19014473	193050035	11	1	2019	Fri	9	S	5	0	2	12	10	3	1	1			1	98	USTH 169 109TH N		020000000	7
809914		2 169	140.267	27	Champlin		M	25		20007102	201320069	5	11	2020	Mon	13	S	3	0	2	11	10	3	1	1			1	98	USTH 169		020000000	6
798014		2 169	140.269	27	Champlin		M	25		20007567	200460070	2	15	2020	Sat	7	N	5	0	2	12	10	3	2	2			1	98	USTH 169		020000000	7
869808		2 169	140.268	27	Champlin		M	25		20019383	203580233	12	23	2020	Wed	19	S	4	0	2	12	10	3	4	4	7	3		98	USTH 169 109TH N		020000000	7
974608		2 169	140.276	27	2393797			25		21511188	213230060	11	19	2021	Fri	7	S	5	0	2	12	10	3	1	2			1	98	SB USTH 169 AT 109TH A		020000000	7
774610		2 169	140.28	27	Champlin		M	25		19515768	193580138	12	24	2019	Tue	20	S	5	0	2	12	10	3	4	1			1	98	USTH 169		020000000	7
982163		2 169	140.293	27	Champlin		M	25		21512162	213470268	12	13	2021	Mon	17	N	4	0	4	12	10	2	4	1			1	98	USTH 169 @109TH AVE		020000000	7
762643		2 169	140.301	27	Champlin		M	25		19513814	193170435	11	13	2019	Wed	10	S	5	0	2	12	10	3	1	4			3	98	USTH 169		020000000	7
798254		2 169	140.314	27	Champlin		M	25		20501777	200430324	2	12	2020	Wed	23	S	5	0	3	10	10	2	4	1			1	98	USTH 169 AT 109TH		020000000	5
900733		2 169	140.315	27	Champlin		M	25		21002984	211040122	4	14	2021	Wed	17	S	5	0	2	12	10	2	1	2			1	98	USTH 169		020000000	7
913970		2 169	140.328	27	Champlin		M	25		21505580	211690312	6	18	2021	Fri	19	S	5	0	2	12	10	3	1	1			1	98	S USTH 169 @ 109TH AV		020000000	7
906350		2 169	140.336	27	Champlin		M	25		21006828	211380062	5	18	2021	Tue	14	S	5	0	2	12	10	2	1	2			1	98	USTH 169		020000000	7
901909		2 169	140.345	27	Champlin		M	25		21503519	211120085	4	22	2021	Thu	15	N	5	0	3	12	10	2	1	1			1	98	USTH 169		020000000	7
678076		2 169	140.347	27	Champlin		M	25		19001014	190220272	1	22	2019	Tue	18	S	5	0	2	12	10	2	4	1			1	98	USTH 169		020000000	7
729870		2 169	140.368	27	Champlin		M	25		19507781	191730174	6	22	2019	Sat	15	N	5	0	2	5	10	2	1	1			1	98	USTH 169		020000000	10
860986		2 169	140.371	27	Champlin		M	25		20509293	203010191	10	27	2020	Tue	9	N	5	0	2	10	10	2	1	1			1	98	USTH 169		020000000	5
982747		2 169	140.374	27	Champlin		M	25		21512509	213550329	12	21	2021	Tue	18	S	5	0	2	12	10	2	4	1			1	98	SB USTH 169 J N OF 109		020000000	7
860298		2 169	140.393	27	Champlin		M	25		20509388	203040085	10	30	2020	Fri	15	S	5	0	2	12	10	2	1	1			1	98	USTH 169		020000000	7
772992		2 169	140.425	27	Champlin		M	25		19515537	193520243	12	18	2019	Wed	17	N	5	0	2	12	10	2	4	1			1	98	USTH 169		020000000	7
941699		5 106	0.928	27	Brooklyn Park		M	25		21011953	212630017	9	20	2021	Mon	7	E	5	0	2	12	10	3	1	1			1	98	109TH N USTH 169		050002390	7

CMF / CRF Details

CMF ID: 3945

Left turn phase improvement

Description: None

Prior Condition: Unknown

Category: Intersection traffic control

Study: *A full Bayes multivariate intervention model with random parameters among matched pairs for before-after safety evaluation*, El-Basyouny and Sayed, 2011

Star Quality Rating:	[View score details]

Crash Modification Factor (CMF)	
Value:	0.85
Adjusted Standard Error:	
Unadjusted Standard Error:	

Crash Reduction Factor (CRF)	
Value:	15 *(This value indicates a **decrease** in crashes)*
Adjusted Standard Error:	
Unadjusted Standard Error:	

Applicability

Crash Type:	All
Crash Severity:	K (fatal),A (serious injury),B (minor injury),C (possible injury)
Roadway Types:	Not Specified
Number of Lanes:	
Road Division Type:	
Speed Limit:	
Area Type:	Urban
Traffic Volume:	
Time of Day:	All

If countermeasure is intersection-based

Intersection Type:	Roadway/roadway (not interchange related)
Intersection Geometry:	Not specified
Traffic Control:	Signalized
Major Road Traffic Volume:	
Minor Road Traffic Volume:	

Development Details

Date Range of Data Used:	2001 to 2008
Municipality:	
State:	
Country:	Canada
Type of Methodology Used:	2

Sample Size Used:	Site-years
Before Sample Size Used:	27 Site-years
After Sample Size Used:	22 Site-years

Other Details

Included in Highway Safety Manual?	No
Date Added to Clearinghouse:	Jun-04-2012
Comments:	The number of crashes in the after period were not reported in this study, however, they have been recorded as 300 to give 10 points as a beneift of doubt for one or more of the following: (1) number of miles/sites in the reference/treatment group, (2) number of crashes in the references/treatment group, (3) reporting AADTs for the aggregate dataset but not for the disaggragate dataset used for CMF development.

This site is funded by the U.S. Department of Transportation Federal Highway Administration and maintained by the University of North Carolina Highway Safety Research Center

CMF / CRF Details

CMF ID: 7789

Install raised median

Description:

Prior Condition: Roadways without raised medians

Category: Access management

Study: *Validation and Application of Highway Safety Manual (Part D) in Florida*, Abdel-Aty et al., 2014

Star Quality Rating:	

Crash Modification Factor (CMF)	
Value:	0.81
Adjusted Standard Error:	
Unadjusted Standard Error:	0.09

Crash Reduction Factor (CRF)	
Value:	19 *(This value indicates a **decrease** in crashes)*
Adjusted Standard Error:	
Unadjusted Standard Error:	9

Applicability

Crash Type:	All
Crash Severity:	K (fatal),A (serious injury),B (minor injury),C (possible injury)
Roadway Types:	Not specified
Number of Lanes:	>2
Road Division Type:	
Speed Limit:	
Area Type:	Urban
Traffic Volume:	1000 to 158000 *Annual Average Daily Traffic (AADT)*
Time of Day:	All

If countermeasure is intersection-based

Intersection Type:	
Intersection Geometry:	
Traffic Control:	
Major Road Traffic Volume:	
Minor Road Traffic Volume:	

Development Details

Date Range of Data Used:	2010 to 2012
Municipality:	
State:	FL
Country:	USA
Type of Methodology Used:	7

Sample Size Used:	

Other Details

Included in Highway Safety Manual?	No
Date Added to Clearinghouse:	Mar-08-2016
Comments:	Crashes at intersections and driveways are excluded for developing CMFs.

This site is funded by the U.S. Department of Transportation Federal Highway Administration and maintained by the University of North Carolina Highway Safety Research Center

CMF / CRF Details

CMF ID: 7790

Install raised median

Description:

Prior Condition: Roadways without raised medians

Category: Access management

Study: *Validation and Application of Highway Safety Manual (Part D) in Florida*, Abdel-Aty et al., 2014

Star Quality Rating:	

Crash Modification Factor (CMF)	
Value:	0.74
Adjusted Standard Error:	
Unadjusted Standard Error:	0.09

Crash Reduction Factor (CRF)	
Value:	26 *(This value indicates a **decrease** in crashes)*
Adjusted Standard Error:	
Unadjusted Standard Error:	9

Applicability

Crash Type:	All
Crash Severity:	O (property damage only)
Roadway Types:	Not specified
Number of Lanes:	>2
Road Division Type:	
Speed Limit:	
Area Type:	Urban
Traffic Volume:	1000 to 158000 *Annual Average Daily Traffic (AADT)*
Time of Day:	All

If countermeasure is intersection-based

Intersection Type:	
Intersection Geometry:	
Traffic Control:	
Major Road Traffic Volume:	
Minor Road Traffic Volume:	

Development Details

Date Range of Data Used:	2010 to 2012
Municipality:	
State:	FL
Country:	USA
Type of Methodology Used:	7

Sample Size Used:	

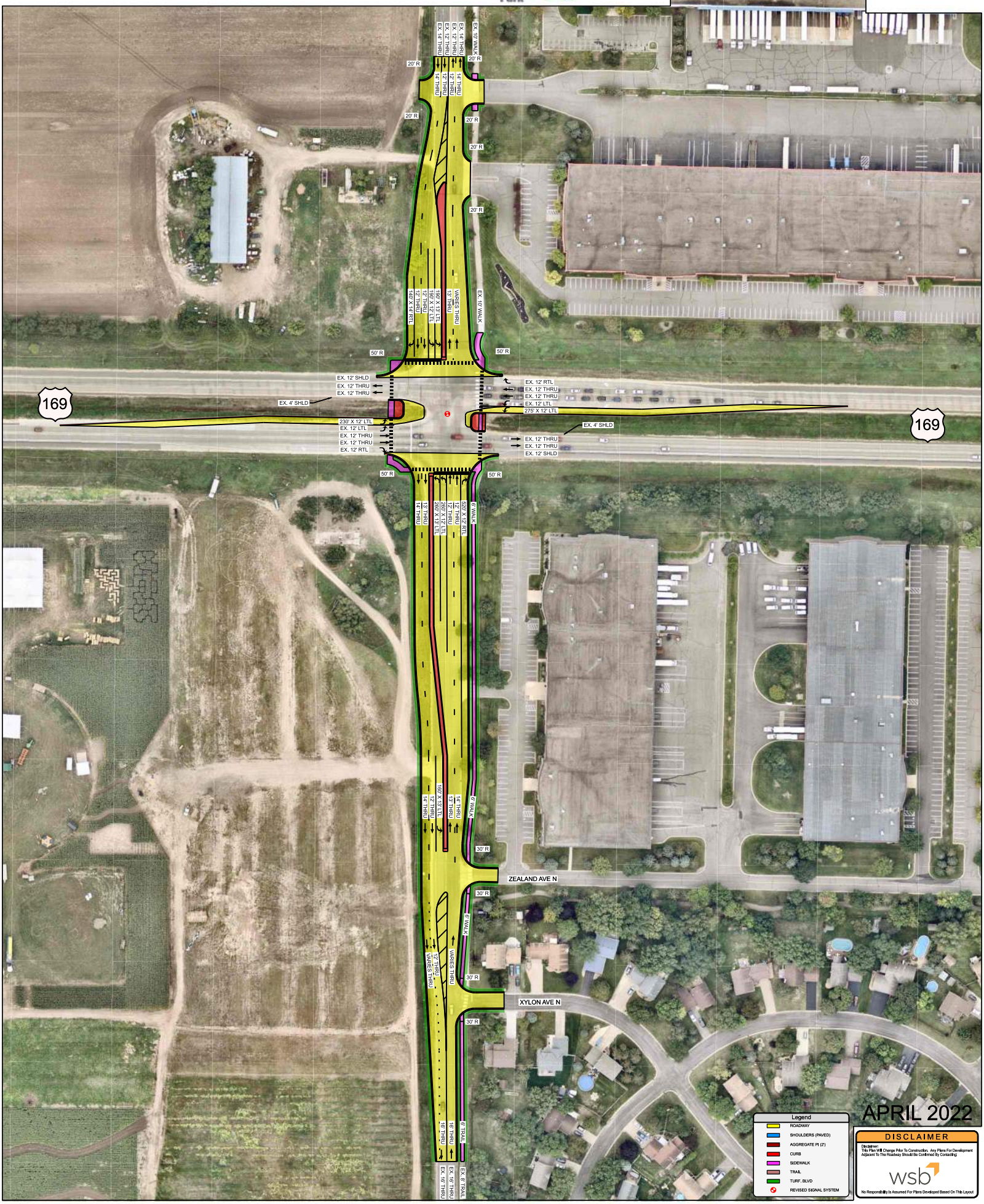
Other Details

Included in Highway Safety Manual?	No
Date Added to Clearinghouse:	Mar-08-2016
Comments:	Crashes at intersections are excluded for developing CMFs.

This site is funded by the U.S. Department of Transportation Federal Highway Administration and maintained by the University of North Carolina Highway Safety Research Center

US Hwy 169 at 109th Avenue N Intersection Improvement

PROJECT LAYOUT



Project Name: US Hwy 169 & 109th Ave N Intersection Improvements

Applicant: City of Brooklyn Park
Project Location: US Hwy 169 & 109th Ave N
Total Project Cost: $3,118,500
Requested Federal Award Amount: $2,494,800
Local Match: $623,700

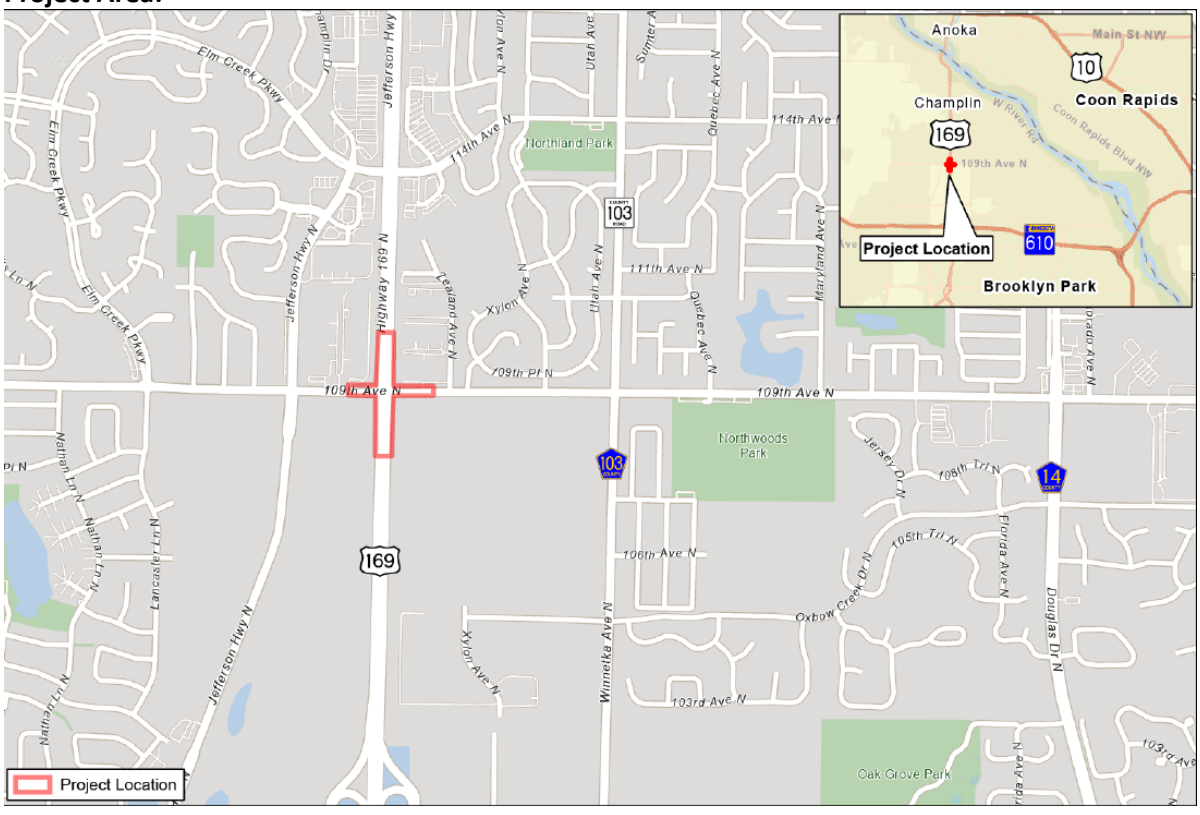
Project Description:
The City of Brooklyn Park is proposing improvements at the intersection of US Highway 169 (US 169) and 109th Ave N. The proposed project would enhance mobility and safety for motorists and non-motorists. US 169 is a principal arterial. 109th Ave N is a B Minor Arterial that serves as the border between Brooklyn Park and Champlin. The proposed project will improve local and regional access to businesses and residents in both cities. Additional turn lanes on each of the four intersection legs would reduce congestion, improve safety, and improve mobility for motorists and non-motorists. The traffic signal would also be upgraded. The project would also provide improved bicycle and pedestrian experiences through reconstructed sidewalk, new trail, and improved crossings at US 169. All non-motorized facilities constructed as part of the proposed project will be ADA compliant.

Project Benefits:
- Reduce risk of crashes and conflicts between bike/peds and vehicles
- Improve mobility and accessibility to local and regional destinations for motorists and non-motorists
- Alleviate congestion through additional dedicated turn lanes
- Upgrade traffic signal, including ADA compliant components

Project Benefits (cont'd):
- Enhance the transportation network to enable safe and efficient delivery of goods and services

Key Connections:
- NorthPark Business Park (southeast intersection quadrant)
- Recreational areas (i.e. Northwoods Park)
- Commercial and industrial clusters along US 169

Project Area:



ATTACHMENT A

EJSCREEN ACS Summary Report

Location: User-specified point center at 45.151944, -93.391861
Ring (buffer): 0.5-miles radius
Description: TH169&109thAve-0.5mi

Summary of ACS Estimates	2015 - 2019
Population	712
Population Density (per sq. mile)	747
People of Color Population	32
% People of Color Population	5%
Households	295
Housing Units	296
Housing Units Built Before 1950	8
Per Capita Income	49,410
Land Area (sq. miles) (Source: SF1)	0.95
% Land Area	100%
Water Area (sq. miles) (Source: SF1)	0.00
% Water Area	0%

	2015 - 2019 ACS Estimates	Percent	MOE (±)
Population by Race			
Total	712	100%	497
Population Reporting One Race	709	100%	1,025
White	681	96%	354
Black	3	0%	152
American Indian	0	0%	9
Asian	24	3%	492
Pacific Islander	0	0%	9
Some Other Race	0	0%	9
Population Reporting Two or More Races	3	0%	118
Total Hispanic Population	2	0%	192
Total Non-Hispanic Population	710		
White Alone	680	95%	344
Black Alone	3	0%	152
American Indian Alone	0	0%	9
Non-Hispanic Asian Alone	23	3%	435
Pacific Islander Alone	0	0%	9
Other Race Alone	0	0%	9
Two or More Races Alone	3	0%	118
Population by Sex			
Male	312	44%	272
Female	400	56%	302
Population by Age			
Age 0-4	56	8%	126
Age 0-17	164	23%	214
Age 18+	548	77%	365
Age 65+	48	7%	110

Data Note: Detail may not sum to totals due to rounding. Hispanic population can be of any race.
N/A means not available. **Source:** U.S. Census Bureau, American Community Survey (ACS) 2015 - 2019 .

EJSCREEN ACS Summary Report

Location: User-specified point center at 45.151944, -93.391861
Ring (buffer): 0.5-miles radius
Description: TH169&109thAve-0.5mi

	2015 - 2019 ACS Estimates	Percent	MOE (±)
Population 25+ by Educational Attainment			
Total	508	100%	356
Less than 9th Grade	1	0%	62
9th - 12th Grade, No Diploma	1	0%	50
High School Graduate	99	20%	155
Some College, No Degree	87	17%	187
Associate Degree	77	15%	152
Bachelor's Degree or more	242	48%	258
Population Age 5+ Years by Ability to Speak English			
Total	656	100%	476
Speak only English	622	95%	345
Non-English at Home[1+2+3+4]	33	5%	381
[1]Speak English "very well"	16	2%	232
[2]Speak English "well"	17	3%	144
[3]Speak English "not well"	1	0%	108
[4]Speak English "not at all"	0	0%	9
[3+4]Speak English "less than well"	1	0%	108
[2+3+4]Speak English "less than very well"	18	3%	180
Linguistically Isolated Households*			
Total	5	100%	23
Speak Spanish	0	0%	9
Speak Other Indo-European Languages	5	100%	21
Speak Asian-Pacific Island Languages	0	0%	9
Speak Other Languages	0	0%	9
Households by Household Income			
Household Income Base	295	100%	153
< $15,000	1	0%	18
$15,000 - $25,000	3	1%	36
$25,000 - $50,000	66	22%	92
$50,000 - $75,000	31	11%	81
$75,000 +	194	66%	198
Occupied Housing Units by Tenure			
Total	295	100%	153
Owner Occupied	279	94%	126
Renter Occupied	17	6%	133
Employed Population Age 16+ Years			
Total	565	100%	420
In Labor Force	473	84%	317
Civilian Unemployed in Labor Force	1	0%	16
Not In Labor Force	92	16%	179

Data Note: Datail may not sum to totals due to rounding. Hispanic population can be of anyrace.
N/A means not available. **Source:** U.S. Census Bureau, American Community Survey (ACS)
*Households in which no one 14 and over speaks English "very well" or speaks English only.

EJSCREEN ACS Summary Report

Location: User-specified point center at 45.151944, -93.391861
Ring (buffer): 0.5-miles radius
Description: TH169&109thAve-0.5mi

	2015 - 2019 ACS Estimates	Percent	MOE (±)
Population by Language Spoken at Home*			
Total (persons age 5 and above)	N/A	N/A	N/A
English	N/A	N/A	N/A
Spanish	N/A	N/A	N/A
French	N/A	N/A	N/A
French Creole	N/A	N/A	N/A
Italian	N/A	N/A	N/A
Portuguese	N/A	N/A	N/A
German	N/A	N/A	N/A
Yiddish	N/A	N/A	N/A
Other West Germanic	N/A	N/A	N/A
Scandinavian	N/A	N/A	N/A
Greek	N/A	N/A	N/A
Russian	N/A	N/A	N/A
Polish	N/A	N/A	N/A
Serbo-Croatian	N/A	N/A	N/A
Other Slavic	N/A	N/A	N/A
Armenian	N/A	N/A	N/A
Persian	N/A	N/A	N/A
Gujarathi	N/A	N/A	N/A
Hindi	N/A	N/A	N/A
Urdu	N/A	N/A	N/A
Other Indic	N/A	N/A	N/A
Other Indo-European	N/A	N/A	N/A
Chinese	N/A	N/A	N/A
Japanese	N/A	N/A	N/A
Korean	N/A	N/A	N/A
Mon-Khmer, Cambodian	N/A	N/A	N/A
Hmong	N/A	N/A	N/A
Thai	N/A	N/A	N/A
Laotian	N/A	N/A	N/A
Vietnamese	N/A	N/A	N/A
Other Asian	N/A	N/A	N/A
Tagalog	N/A	N/A	N/A
Other Pacific Island	N/A	N/A	N/A
Navajo	N/A	N/A	N/A
Other Native American	N/A	N/A	N/A
Hungarian	N/A	N/A	N/A
Arabic	N/A	N/A	N/A
Hebrew	N/A	N/A	N/A
African	N/A	N/A	N/A
Other and non-specified	N/A	N/A	N/A
Total Non-English	N/A	N/A	N/A

Data Note: Detail may not sum to totals due to rounding. Hispanic popultion can be of any race.
N/A meansnot available. **Source:** U.S. Census Bureau, American Community Survey (ACS) 2015 - 2019.
*Population by Language Spoken at Home is available at the census tract summary level and up.

EJSCREEN ACS Summary Report

Location: User-specified point center at 45.151961, -93.391857
Ring (buffer): 1-miles radius
Description: TH169&109thAve-1mi

Summary of ACS Estimates	2015 - 2019
Population	6,363
Population Density (per sq. mile)	2,156
People of Color Population	504
% People of Color Population	8%
Households	2,520
Housing Units	2,526
Housing Units Built Before 1950	36
Per Capita Income	48,015
Land Area (sq. miles) (Source: SF1)	2.95
% Land Area	99%
Water Area (sq. miles) (Source: SF1)	0.02
% Water Area	1%

	2015 - 2019 ACS Estimates	Percent	MOE (±)
Population by Race			
Total	6,363	100%	497
Population Reporting One Race	6,281	99%	1,337
White	5,887	93%	354
Black	162	3%	444
American Indian	5	0%	20
Asian	224	4%	492
Pacific Islander	0	0%	9
Some Other Race	3	0%	18
Population Reporting Two or More Races	82	1%	118
Total Hispanic Population	60	1%	192
Total Non-Hispanic Population	6,303		
White Alone	5,859	92%	344
Black Alone	162	3%	444
American Indian Alone	3	0%	20
Non-Hispanic Asian Alone	205	3%	435
Pacific Islander Alone	0	0%	9
Other Race Alone	0	0%	9
Two or More Races Alone	74	1%	118
Population by Sex			
Male	3,154	50%	272
Female	3,209	50%	302
Population by Age			
Age 0-4	418	7%	126
Age 0-17	1,324	21%	214
Age 18+	5,038	79%	365
Age 65+	796	13%	110

Data Note: Detail may not sum to totals due to rounding. Hispanic population can be of any race.
N/A means not available. **Source:** U.S. Census Bureau, American Community Survey (ACS) 2015 - 2019 .

EJSCREEN ACS Summary Report

Location: User-specified point center at 45.151961, -93.391857
Ring (buffer): 1-miles radius
Description: TH169&109thAve-1mi

	2015 - 2019 ACS Estimates	Percent	MOE (±)
Population 25+ by Educational Attainment			
Total	4,626	100%	356
Less than 9th Grade	24	1%	62
9th - 12th Grade, No Diploma	52	1%	50
High School Graduate	906	20%	155
Some College, No Degree	945	20%	187
Associate Degree	691	15%	152
Bachelor's Degree or more	2,008	43%	258
Population Age 5+ Years by Ability to Speak English			
Total	5,945	100%	476
Speak only English	5,589	94%	345
Non-English at Home[1+2+3+4]	356	6%	381
[1]Speak English "very well"	229	4%	232
[2]Speak English "well"	87	1%	144
[3]Speak English "not well"	40	1%	108
[4]Speak English "not at all"	0	0%	9
[3+4]Speak English "less than well"	40	1%	108
[2+3+4]Speak English "less than very well"	127	2%	180
Linguistically Isolated Households*			
Total	15	100%	31
Speak Spanish	0	0%	9
Speak Other Indo-European Languages	14	88%	30
Speak Asian-Pacific Island Languages	2	12%	17
Speak Other Languages	0	0%	9
Households by Household Income			
Household Income Base	2,520	100%	153
< $15,000	45	2%	66
$15,000 - $25,000	89	4%	84
$25,000 - $50,000	344	14%	92
$50,000 - $75,000	367	15%	89
$75,000 +	1,676	66%	198
Occupied Housing Units by Tenure			
Total	2,520	100%	153
Owner Occupied	2,327	92%	126
Renter Occupied	193	8%	133
Employed Population Age 16+ Years			
Total	5,196	100%	420
In Labor Force	3,889	75%	317
Civilian Unemployed in Labor Force	83	2%	43
Not In Labor Force	1,307	25%	249

Data Note: Datail may not sum to totals due to rounding. Hispanic population can be of anyrace.
N/A means not available. **Source:** U.S. Census Bureau, American Community Survey (ACS)
*Households in which no one 14 and over speaks English "very well" or speaks English only.

EJSCREEN ACS Summary Report

Location: User-specified point center at 45.151961, -93.391857
Ring (buffer): 1-miles radius
Description: TH169&109thAve-1mi

	2015 - 2019 ACS Estimates	Percent	MOE (±)
Population by Language Spoken at Home*			
Total (persons age 5 and above)	5,278	100%	333
English	4,921	93%	436
Spanish	36	1%	48
French	17	0%	50
French Creole	N/A	N/A	N/A
Italian	N/A	N/A	N/A
Portuguese	N/A	N/A	N/A
German	28	1%	41
Yiddish	N/A	N/A	N/A
Other West Germanic	N/A	N/A	N/A
Scandinavian	N/A	N/A	N/A
Greek	N/A	N/A	N/A
Russian	N/A	N/A	N/A
Polish	N/A	N/A	N/A
Serbo-Croatian	N/A	N/A	N/A
Other Slavic	N/A	N/A	N/A
Armenian	N/A	N/A	N/A
Persian	N/A	N/A	N/A
Gujarathi	N/A	N/A	N/A
Hindi	N/A	N/A	N/A
Urdu	N/A	N/A	N/A
Other Indic	N/A	N/A	N/A
Other Indo-European	24	0%	57
Chinese	3	0%	18
Japanese	N/A	N/A	N/A
Korean	3	0%	17
Mon-Khmer, Cambodian	N/A	N/A	N/A
Hmong	N/A	N/A	N/A
Thai	N/A	N/A	N/A
Laotian	N/A	N/A	N/A
Vietnamese	13	0%	43
Other Asian	12	0%	43
Tagalog	0	0%	12
Other Pacific Island	N/A	N/A	N/A
Navajo	N/A	N/A	N/A
Other Native American	N/A	N/A	N/A
Hungarian	N/A	N/A	N/A
Arabic	0	0%	12
Hebrew	N/A	N/A	N/A
African	N/A	N/A	N/A
Other and non-specified	208	4%	279
Total Non-English	357	7%	549

Data Note: Detail may not sum to totals due to rounding. Hispanic popultion can be of any race.
N/A meansnot available. **Source:** U.S. Census Bureau, American Community Survey (ACS) 2015 - 2019.
*Population by Language Spoken at Home is available at the census tract summary level and up.

5.3.13 Recommended (Planned) Roadway Improvements (by 2040)

HIGHER PRIORITY

TH 252 Conversion to Freeway. The city is currently working with the City of Brooklyn Center, MnDOT, Hennepin County, FHWA and the Metropolitan Council on a study to determine the preferred option for converting TH 252 from TH 610 to I-94 to a 6-lane freeway. This project may include managed (MnPASS) lanes and be extended along I-94 to Dowling Avenue. The City of Brooklyn Center has received funding and is planning to upgrade 66th Avenue to a full interchange and remove the signal at 70th Avenue in the 2021/2022 timeframe. This would leave four remaining signalized intersections. The safety and congestion issues along TH 252 are amongst the worst in the state. The preferred option for the remainder of TH 252, may include interchanges at 85th Avenue and Brookdale Drive and closures at 73rd Avenue and Humboldt Avenue/81st Avenue. If and when these locations are upgraded, the city would expect to upgrade 85th Avenue (restripe to 3 lane) to the east to West River Road and Brookdale Drive (restripe to 3 lane) to the west to Humboldt Avenue. In addition, pedestrian improvements consistent with the City's Pedestrian and Bicycle Plan will be required to provide good connections following reconstruction of the roadway." In 2018, this project was selected as a Corridors of Commerce Project and is budgeted at $163 million.

93rd Avenue (CSAH 30) Reconstruction from Louisiana Ave to Zane Ave. This segment is planned to be upgraded to a four-lane divided facility with turn lanes and trails along both sides by both the City and County. It is not currently in either CIP but is expected to be included in both soon. There are several undeveloped sites along this segment of CSAH 30 and to the east and west of this segment that are anticipated to develop soon. This segment serves as a reliever route to TH 610, which is currently experiencing noticeable congestion during the peak periods. The total cost of this upgrade is expected to be in the $10-15 million range.

93rd Avenue Reconstruction from Zane Ave. to Regent Ave. This segment of 93rd Avenue is owned by the city and is just now experiencing adjacent development. The programmed extension of 94th Avenue down to 93rd Avenue in this segment and the pending turn restrictions at Zane Ave/94th Avenue when coupled with this development are expected to warrant the reconstruction of this segment to a 3-lane urban Major Collector roadway with trails along both sides. The timing of this construction may be coordinated with the segment of county owned 93rd Avenue to the immediate west. The total cost of this upgrade is expected to be approximately $2 million.

109th Avenue from Jefferson Hwy. to Winnetka Ave. 109th Avenue to the east of Winnetka Avenue was reconstructed to a 3-lane roadway in 2010 by the cities of

Brooklyn Park and Champlin. The segment between Jefferson Highway and Winnetka is currently being studied by the cities and the preferred option is a four-lane divided roadway with trails along both sides. This would include upgrading the geometry at the TH 169 intersection to add capacity. The total cost of this upgrade is expected to be in the $8-12 million range.

Winnetka Avenue (CSAH 103) from Regional Trail to 109th Ave. This segment of CSAH 103 is expected to be upgraded to a 3-lane urban roadway with trails along both sides by the city and county as development occurs in this area and after the completion of CSAH 103 to the immediate south. This project may include a grade separation of the Rush Creek Regional Trail. The total cost of this segment upgrade, including the grade separation, is roughly $4-7 million.

Candlewood Drive Extension. The area bounded by Brooklyn Boulevard / 85th Avenue/West Broadway Avenue and CSAH 81 does not have any collector roadways to help serve short and medium length trips to/from CSAH 81 and the businesses along this segment of CSAH 81 (Walmart, Menards, etc). As noted in the functional classification section of this study, collector type roadways should be provided approximately every ½ mile. The lack of collector roadways in this area results in more traffic demand and congestion and ultimately more cost to improve 85th Avenue, Brooklyn Boulevard, CSAH 81 and Lakeland Avenue. All of the Transportation Plans since 1993 have recommended the construction of this segment. The segment would be constructed as a 2 lane urban roadway connecting the West Broadway / Candlewood Drive intersection with the 79th Avenue / Jolly Lane intersection. The demand for this connection was proven when the Revive Church (7801 West Broadway) constructed their back driveway connecting to Jolly Lane. The public found this private route through the Church's parking lot and driveways onto West Broadway and Jolly Lane. The resulting use was so high that the church had to construct a gate to eliminate public use. The timing of the roadway construction will be development driven and paid for by the development through which the segment will bisect.

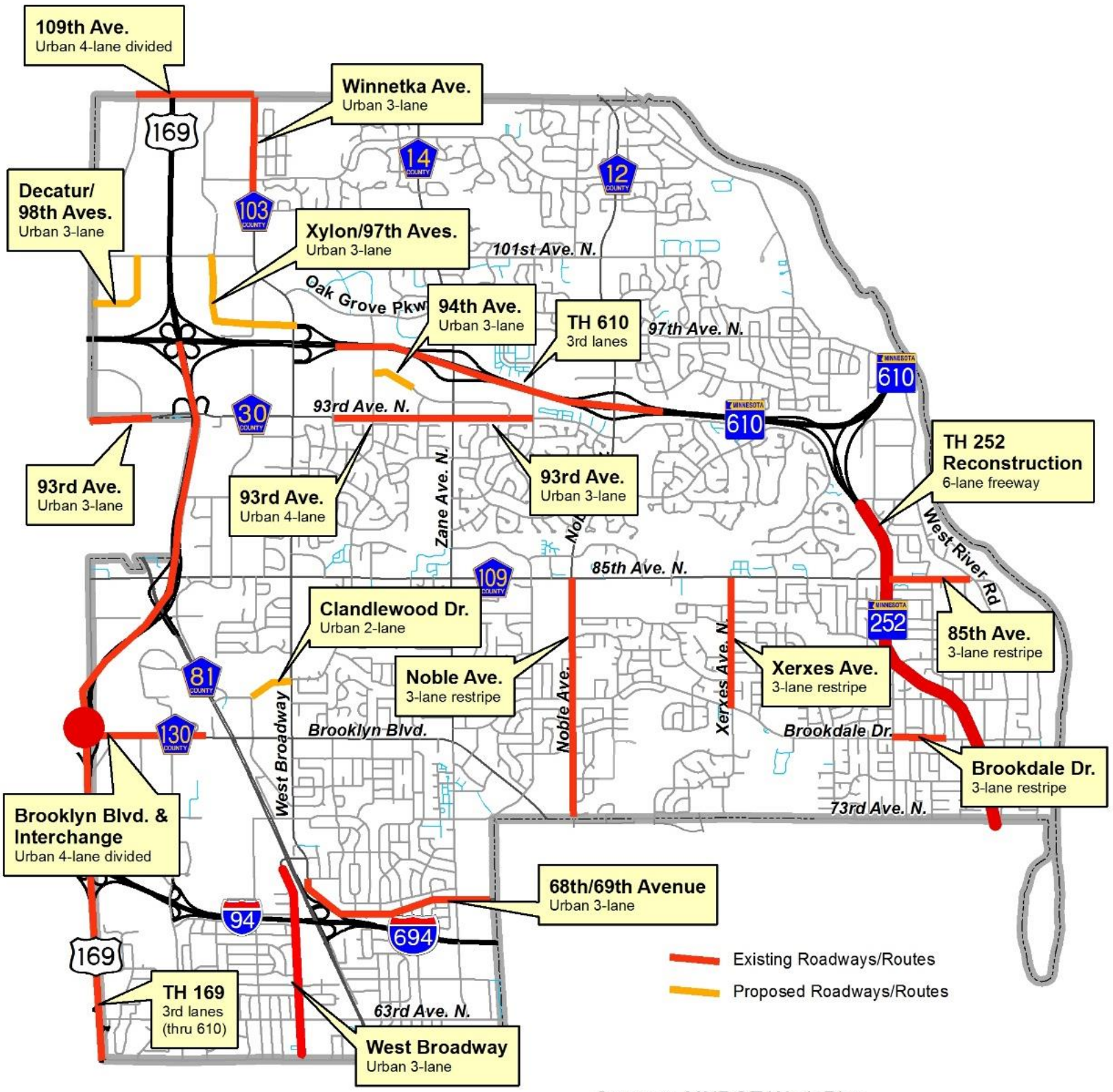
93rd Avenue (CSAH 30) from Decatur Dr. to Jefferson Hwy. This segment is currently planned to be reconstructed to a 3-lane roadway with trails along both sides. The segment serves three cities, Brooklyn Park to the north, Osseo to the south and Maple Grove to the northwest of Jefferson Highway. This project is included in the city and county CIP's as a provisional project. The project is expected to occur as the development of the Gateway site to the north continues over the next 5-10 years. The total cost of this improvement is expected to be approximately $2 million.

Xylon Avenue / 97th Avenue Extension to TH 610/West Broadway Int. This segment is currently planned as a 3-lane urban major collector type facility with

Figure 5.3.14

Recommended (Planned) Roadway Improvements (by 2040)

March 2018



Sources: MNDOT Work Plan,
Hennepin County CIP Provisional Projects,
City of Brooklyn Park CIP provisional projects.

Capital Improvement Plan

2022 *thru* 2026

City of Brooklyn Park, MN

Project # 4014
Project Name 109th Ave. Reconstruction (MSA)

Department Transportation Facilities
Contact Jesse Struve
Type Improvement
Useful Life Unassigned
Category B - Replacement
Priority 3 Important
Status Active

Description

Reconstruction of 109th Ave. from Winnetka Ave. to Jefferson Highway. This would be a joint project with City of Champlin. Total length of the project would be 4,000 L.F. along 109th Ave. and include storm sewer, traffic signal, and lighting and improvements to the intersections of TH 169 and Winnetka Ave. These improvements do not include additional north and southbound thru lanes along TH 169 or Winnetka Ave.

DEPARTMENT: Operations & Maintenance/Engineering Division

Justification

Reconstruction of this segment will require a joint powers agreement with Champlin to share the costs. Advancing this project will likely not occur until a development plan is approved for the adjacent property. Advancement of the project prior to that would eliminate the ability of Brooklyn Park to assess a portion of the project costs to the benefited property. The cost estimate also includes 10% for engineering overhead.

The cities of Champlin and Brooklyn Park will seek MnDOT and Hennepin County cost participation along with any state or federal grants that we are able to secure to fund portions of this project.

Expenditures	2022	2023	2024	2025	2026	Total
Planning/Design			2,000,000			2,000,000
Construction/Maintenance			12,000,000			12,000,000
Total			**14,000,000**			**14,000,000**

Funding Sources	2022	2023	2024	2025	2026	Total
G.R. - Grants			10,000,000			10,000,000
M.S. - Municipal State Aid			2,000,000			2,000,000
O.G. - Other Government Units			2,000,000			2,000,000
Total			**14,000,000**			**14,000,000**

6.3 FUTURE ROADWAY IMPROVEMENTS AND NETWORK PLANNING

6.3.1 Programmed Roadway Improvements

The following improvements are currently programmed in City of Champlin Capital Improvement Plan with anticipated construction years:

- Highway 169 Elm Creek Bridges replacement project from East Hayden Lake Road to the Mississippi River (2017-2018)
- Highway 169 pavement rehabilitation project from Highway 610 to East Hayden Lake Road (2018)
- 109th Avenue reconstruction from Jefferson Highway to Winnetka Avenue (2023)
- East Hayden Lake Road reconstruction from Highway 169 to West River Road (2025)
- French Lake Road reconstruction from West Hayden Lake Road to Dayton Road (2035)

6.3.2 Roadway Studies and Plans

The following previous and recent studies have been completed that discuss long-term transportation needs:

Principal Arterial Intersection Conversion Study

In February 2017, MnDOT and the Metropolitan Council completed the *Principal Arterial Intersection Conversion Study*. The study focused on intersections along non-freeway principal arterial roadways that are priorities for grade separations, and categorized specific locations into low, medium, or high investment priorities for conversion to grade separation. The purpose of the study was to assist in prioritizing investments for these types of projects in the future.

Two intersections along TH 169 between 109th Avenue and the Mississippi River bridge in Champlin were evaluated in the study. The 109th Avenue intersection was rated as a medium priority for grade separation and the Hayden Lake Road intersection was rated as a low priority for grade separation. With several closely-spaced at-grade intersections within Champlin, grade separation north of 109th Avenue is unlikely. Additional dialogue is needed with the City, MnDOT, Metropolitan Council, and Hennepin County on how to proceed with future improvements along the TH 169 corridor.

control. The crashes that do take place are significantly less severe because they typically happen at lower speeds than is the case with signalized intersections. As more roundabouts are built throughout the metropolitan area, drivers will become increasingly familiar and comfortable with their operations.

Future Traffic Signals/Roundabouts

New traffic signals will be installed at the West River Road/Winnetka Avenue and Winnetka Avenue/109th Avenue as noted in the City's 2018-2027 Capital Improvement Plan (CIP) and as traffic volumes warrant.

Other locations where intersection traffic control may be needed in the form of a traffic signal or roundabout are:

- West River Road and 109th Avenue
- West River Road and Winnetka Avenue
- 109th Avenue and Winnetka Avenue
- 109th Avenue and Jefferson Highway
- Champlin Drive and Hayden Lake Road
- 114th Avenue and Winnetka Avenue
- Elm Creek Crossing and French Lake Road
- Dean Avenue and Cartway Road
- 120th Avenue and Champlin Drive
- South Diamond Lake Road and Dayton Road

Decisions on these locations will need to be based on traffic engineering analysis and coordination with other government agencies. Prior to the installation of a signal system or roundabout at any of these locations, an Intersection Control Evaluation (ICE) would have to be prepared evaluating the degree to which warrants prescribed in the *Minnesota Manual on Uniform Traffic Control Devices* are met.

TH 169 Support Projects

As discussed previously, TH 169 is projected to become increasingly congested in the future, and MnDOT does not plan to expand it due to funding constraints. MnDOT intends TH 169 ultimately to be a freeway design all the way north to 109th Avenue, which will bring high traffic volumes into Champlin, where TH 169 will have a non-freeway design.

6.7.3 Roadway Jurisdictional Changes

A. Hennepin County has expressed a desire to transfer Winnetka Avenue (CR 103) to the City.

It is recommended that the City research and consider the merits of such a transfer.

6.7.4 Programmed Projects – Collectors and Arterials

A. 109th Avenue Reconstruction – Jefferson Highway to Winnetka Avenue (2023)

B. East Hayden Lake Road Reconstruction – Trunk Highway 169 to West River Road (2025)

C. French Lake Road Reconstruction from West Hayden Lake Road to Dayton Road (2035)

It is recommended that the City prepare for and set aside resources for these projects.

6.7.5 Non-Programmed Projects

A. Winnetka Avenue from 101st Avenue to 109th Avenue (City of Brooklyn Park)

B. Winnetka Avenue from 109th Avenue to West River Road (Hennepin County)

C. Trunk Highway 169 maintenance/rehabilitation (2040) (MnDOT)

D. Dayton Road from west city limits to Trunk Highway 169 (Hennepin County)

E. West River Road from 109th Avenue to Douglas Drive (Hennepin County)

F. Elm Creek Parkway Reconstruction – Jefferson Highway to Goose Lake Parkway

Department	Project #	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	Total
ENGINEERING												
TRUCK WITH TOPPER	*GEN EQUIP-03*									35,000		*35,000*
TRAFFIC SIGNAL W RIVER RD AND WINNETKA AVE	*SIGNAL LT-01*				1,600,000							*1,600,000*
TRAFFIC SIGNAL WINNETKA AVE 109TH AVE.	*SIGNAL LT-05*			500,000								*500,000*
TRAFFIC SIGNAL W RIVER RD/109TH	*SIGNAL LT-06*						400,000					*400,000*
CONST OF 120TH AVE KENTUCKY AVENUE	*ST & UTIL-07*								295,000			*295,000*
LIGHTING IMPROVEMENTS DOUGLAS DR ROUNDABOUT	*ST & UTIL-14*	50,000										*50,000*
CONST SIDEWALK ON 117TH FR. WRR TO WISC.	*ST CONSTR-04*						1,615,000					*1,615,000*
ELM CREEK RD/GOOD LAKE RD TO JEFFERSON HWY	*ST IMPVT-100*	4,250,000										*4,250,000*
CARTWAY DRIVE - COLLECTOR RD	*ST IMPVT-101*									750,000		*750,000*
JEFFERSON HWY - COLLECTOR RD	*ST IMPVT-102*				1,200,000							*1,200,000*
CHAMPLIN DRIVE - COLLECTOR RD	*ST IMPVT-103*							3,680,000				*3,680,000*
GOOSE LAKE PKWY/ELMCREEK PKWY TO HAZELWOOD	*ST IMPVT-104*					1,650,000						*1,650,000*
GOOSE LAKE PKWY/HAZELWOOD TO CITY LIMITS	*ST IMPVT-105*					660,000						*660,000*
FRENCH LAKE ROAD/BROOKSIDE ROUNDABOUT	*ST IMPVT-106*			830,000								*830,000*
JEFFERSON HWY/WHITE OAKS TRL/COMMERCE DR SIGNALS	*ST IMPVT-107*	100,000										*100,000*
120TH/BUSINESS PARK BLVD PED SIGNAL REVISIONS	*ST IMPVT-108*	20,000										*20,000*
PEDESTRIAN CROSSING IMPROVEMENTS	*ST IMPVT-110*	25,000	25,000	25,000				100,000		100,000	100,000	*375,000*
WEST RIVER ROAD REALIGNMENT/STREETSCAPE	*ST IMPVT-111*										2,000,000	*2,000,000*
BUSINESS PARK BLVD ST M&O IMPRV (120TH TO 117TH)	*ST IMPVT-112*					750,000						*750,000*
LUDWIG/VIRGINIA/WISCONSIN AREA	*ST IMPVT-113*			1,670,000								*1,670,000*
COLORADO AVENUE/110TH AVE	*ST IMPVT-114*					520,000						*520,000*
OXBOW PL/PERRY AVE/SEVEN PINES LN/CREEKVIEW LN	*ST IMPVT-115*								705,000			*705,000*
114TH TO 112TH BETWEEN GEORGIA AND DOUGLAS DR	*ST IMPVT-116*						2,462,000					*2,462,000*
MILL/OVERLAY MISSISSIPPI DRIVE	*ST MILOVR-23*						6,050,000					*6,050,000*
MILL/ OVERLAY WEST RIVER PARKWAY	*ST MILOVR-25*						1,418,800					*1,418,800*

Department	Project #	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	Total
MILL/OVERLAY VALLEY FORGE LANE	*ST MILOVR-28*						1,260,000					*1,260,000*
MILL/OVERLAY HILLSBORO AVE/INDEPENDENCE AVE	*ST MILOVR-31*					1,440,000						*1,440,000*
MILL/OVERLAY 114TH AVENUE	*ST MILOVR-33*							4,020,000				*4,020,000*
MILL/OVERLAY GEORGIA AVE S OF 117TH AVE	*ST MILOVR-34*				3,285,000							*3,285,000*
MILL/OVERLAY HEATHERS ESTATES	*ST MILOVR-35*								1,265,000			*1,265,000*
MILL/OVERLAY ZANE AVENUE AREA E OF DOUGLAS DR	*ST MILOVR-38*					4,700,000						*4,700,000*
MILL/OVERLAY XENIA AVENUE AREA	*ST MILOVR-39*				4,100,000							*4,100,000*
MILL AND OVERLAY ON CARTWAY COURT	*ST MILOVR-40*								235,000			*235,000*
MILL & OVERLAY IN VIRGINIA AVE & 119TH AVE AREA	*ST MILOVR-41*			1,670,000								*1,670,000*
MILL & OVERLAY MARYLAND/OREGON AREA S 114TH AVE	*ST MILOVR-43*		2,414,600									*2,414,600*
AREA S OF 114TH AVE & E OF WINNETKA AVE	*ST MILOVR-44*		1,960,000									*1,960,000*
KIMBALL DR/INDEPENDENCE-CARTWAY	*ST MILOVR-53*								380,000			*380,000*
MILL POND EST, CHAMP DR/ELM CRK/CARTWAY	*ST MILOVR-55*								650,000			*650,000*
XYLON/UTAH/VIRGIINIA/113TH	*ST MILOVR-58*		4,420,000									*4,420,000*
BARTUSCH ADDN, HELMER ADDN	*ST MILOVR-59*		2,332,500									*2,332,500*
CHAMPLIN & NICOLES ESTATES	*ST MILOVR-60*							2,145,000				*2,145,000*
118TH AVENUE AREA	*ST MILOVR-64*									4,015,000		*4,015,000*
HILLSBORO AVE AREA	*ST MILOVR-73*				1,150,000							*1,150,000*
PLEASANT & ZEALAND AREAS	*ST MILOVR-74*			1,899,000								*1,899,000*
RECONST DOWNS RD	*ST RECSTR-12*			650,000								*650,000*
RECONST 109TH AVE, ZEALAND-WINNETKA	*ST RECSTR-15*			12,260,000								*12,260,000*
RECONST STREET LAKESIDE TR/HILLSIDE DRIVE	*ST RECSTR-21*	3,080,000										*3,080,000*
COLBURN ENTRY/CURTIS ROAD	*ST RECSTR-27*			645,000								*645,000*
GHOSTLEY STREET SOUTH OF DEAN AVE	*ST RECSTR-30*								420,000			*420,000*
FRENCH LAKE ROAD	*ST RECSTR-32*								1,000,000			*1,000,000*
ELM CRK TERR/INDEPENDENCE, S TRUSSEL	*ST RECSTR-34*					1,590,000						*1,590,000*
RECONSTRUCT GOODRICH AVENUE	*ST RECSTR-48*							295,000				*295,000*
PARKSIDE TRAIL	*ST RECSTR-56*	2,140,000										*2,140,000*

City of Brooklyn Park: US Hwy 169 at 109th Avenue N Intersection Improvements

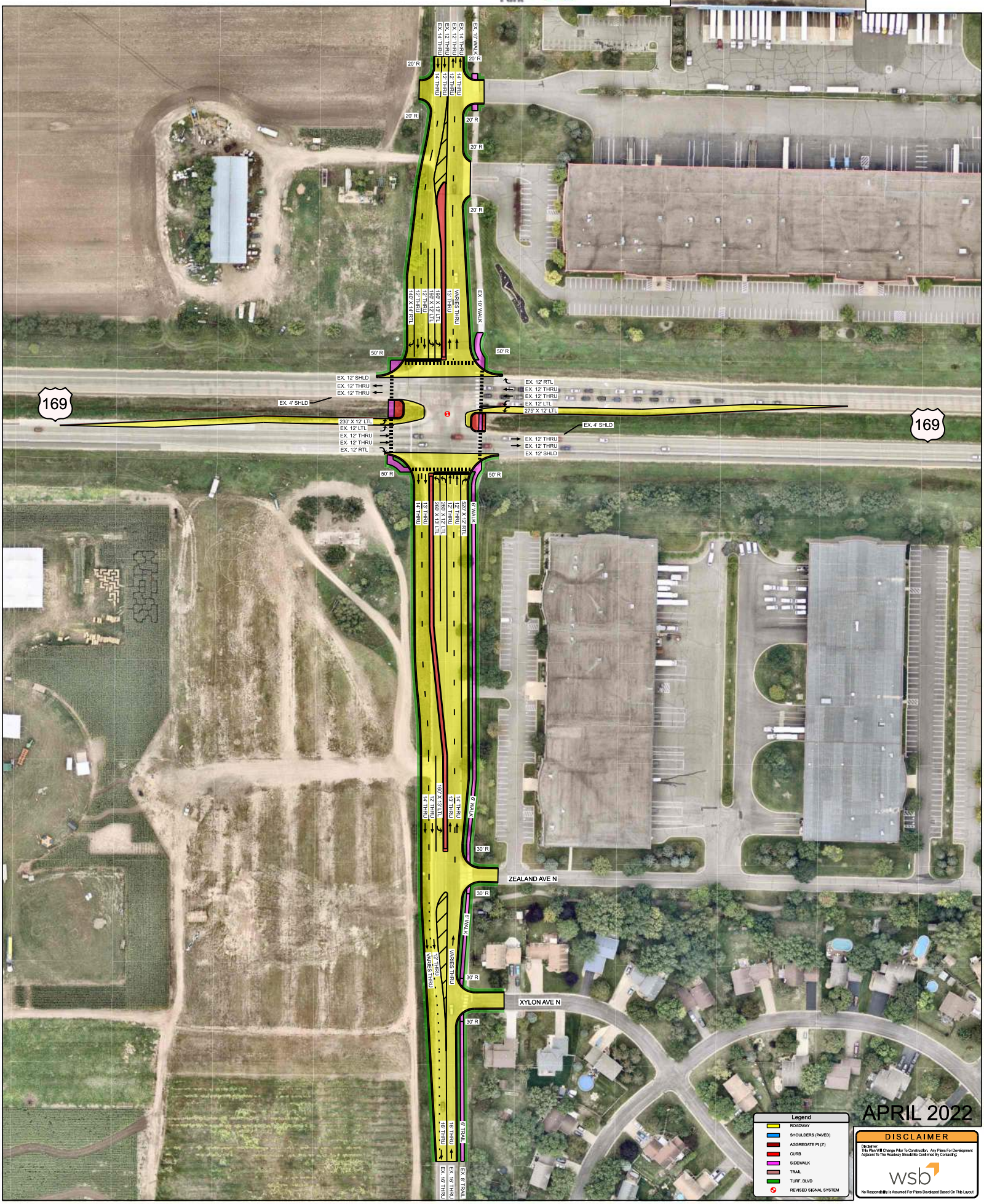
Photo 1: Intersection of US 169 and 109th Avenue N facing southeast (Aug 2021).
Photo Credit: Google Street View

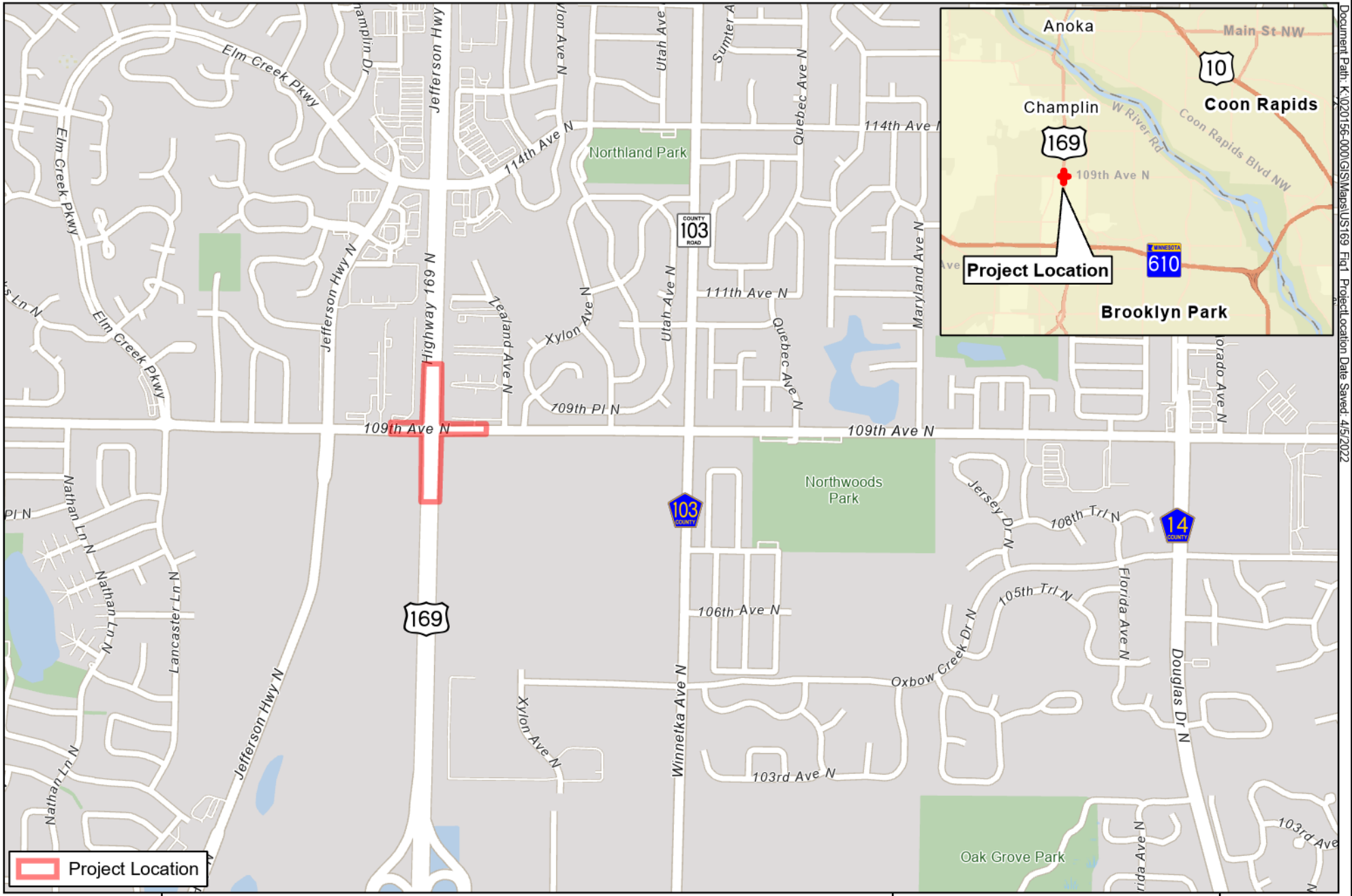
Photo 2: West Leg of US 169 and 109th Avenue N intersection (Aug 2021)
Photo Credit: Google Street View

Photo 3: North Leg of US 169 and 109th Avenue N intersection (Aug 2021)
Photo Credit: Google Street View

US Hwy 169 at 109th Avenue N Intersection Improvement

PROJECT LAYOUT





Document Path: K:\020156-000\GIS\Maps\US169 Fig1 ProjectLocation Date Saved: 4/5/2022

Figure 1 - Project Location

US Hwy 169 at 109th Avenue N Intersection Improvements
2022 Regional Solicitation

N

0 1,500 Feet

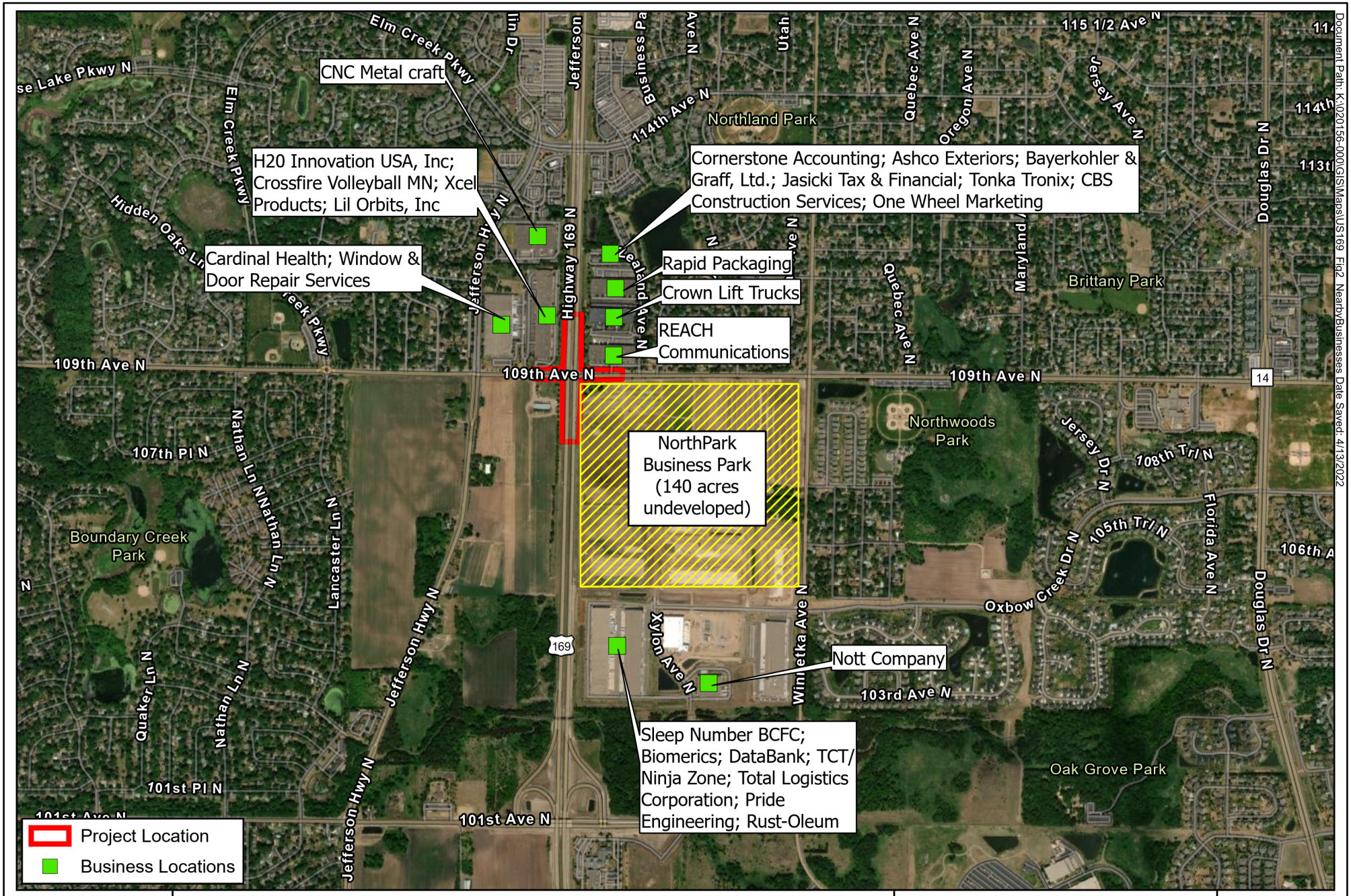


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Figure 2 - Businesses Near Project Area

US Hwy 169 at 109th Avenue N Intersection Improvements
2022 Regional Solicitation

N

0 2,000 Feet

Brooklyn Park

wsb

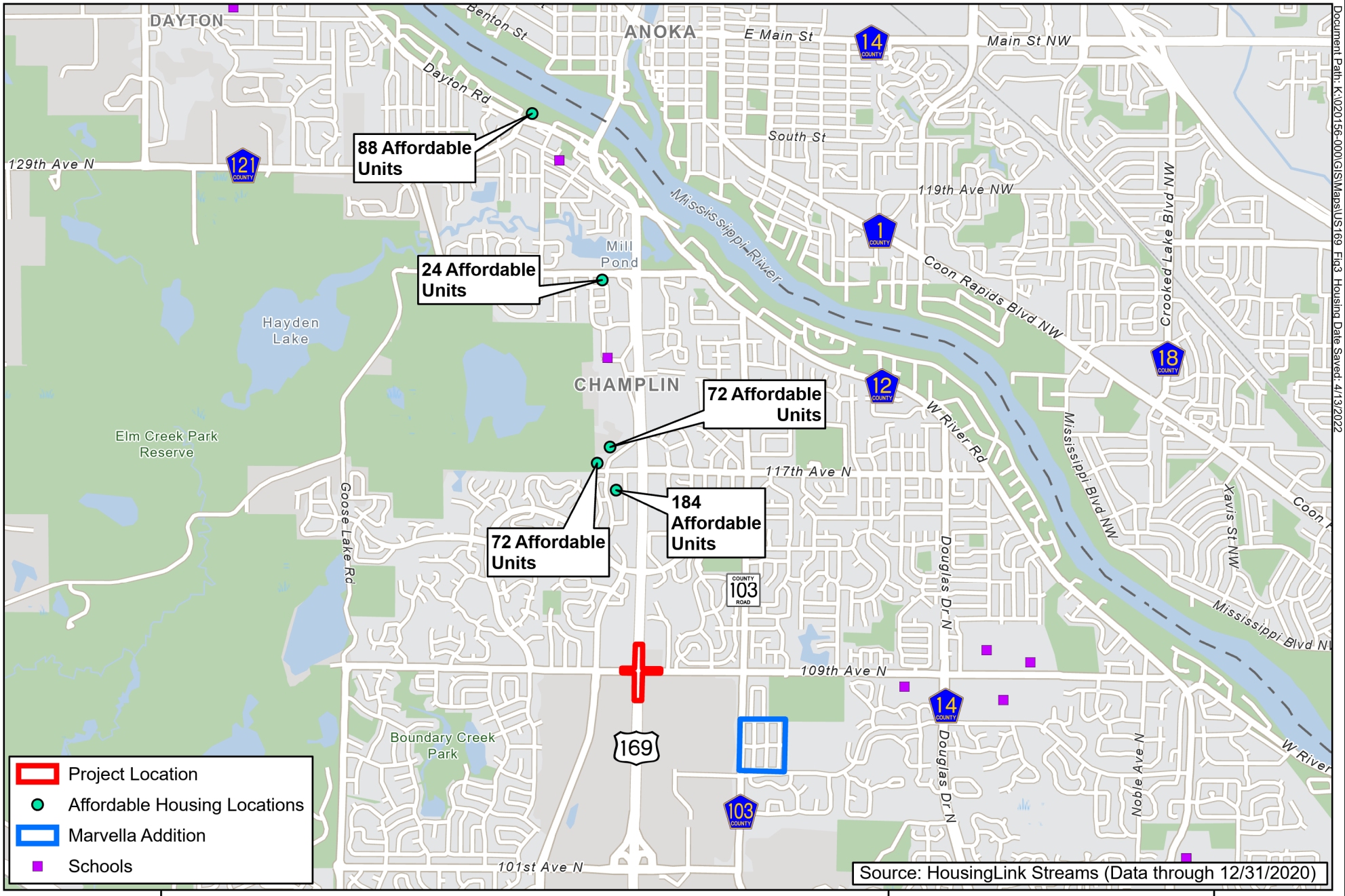

Figure 3 - Affordable Housing Locations

US Hwy 169 at 109th Avenue N Intersection Improvements
2022 Regional Solicitation

N

0 4,500 Feet

Brooklyn Park

wsb

DEPARTMENT OF TRANSPORTATION

MnDOT Metro District
1500 West County Road B-2
Roseville, MN 55113

April 12, 2022

Jesse Struve, PE
City Engineer
City of Brooklyn Park

Re: MnDOT Letter for City of Brooklyn Park's Metropolitan Council/Transportation Advisory Board 2022 Regional Solicitation Funding Request for a project at US Hwy 169 and 109th Avenue North Intersection

Jesse Struve,

This letter documents MnDOT Metro District's recognition for City of Brooklyn Park to pursue funding for the Metropolitan Council/Transportation Advisory Board's (TAB) 2022 Regional Solicitation for a project at US Hwy 169 and 109th Avenue North Intersection.

As proposed, this project impacts MnDOT right-of-way on US 169. As the agency with jurisdiction over US 169, MnDOT will allow the City to seek improvements proposed in the application. Details of any future maintenance agreement will need to be determined during project development to define how the improvements will be maintained for the project's useful life if the project receives funding.

There is no funding from MnDOT currently planned or programmed for this improvement. If your project receives funding, continue to work with MnDOT Area staff to coordinate needs and opportunities for cooperation.

MnDOT Metro District looks forward to continued cooperation with Brooklyn Park as this project moves forward and as we work together to improve safety and travel options within the Metro Area.

If you have questions or require additional information at this time, please reach out to West Area Manager April Crockett at April.Crockett@state.mn.us.

Sincerely,

Michael Barnes

Digitally signed by Michael Barnes
Date: 2022.04.12 09:40:10 -05'00'

Michael Barnes, PE
Metro District Engineer

CC: April Crockett, Metro District Area Manager; Dan Erickson, Metro State Aid Engineer; Molly McCartney, Metro Program Director

April 13, 2022

City of Brooklyn Park
City Hall
5200 85th Ave. N.
Brooklyn Park, MN 55443
763-424-8000
www.brooklynpark.org

Elaine Koutsoukos, TAB Coordinator
Metropolitan Council
390 North Robert Street
St. Paul, MN 55101

RE: US Hwy 169 and 109th Avenue North Intersection in Cities of Brooklyn Park and Champlin
2022 Met Council Regional Solicitation Application

Dear Ms. Koutsoukos:

The City of Brooklyn Park, in cooperation with the City of Champlin, is acting as the legal sponsor for the US Hwy 169 and 109th Avenue North Intersection improvement project and will be submitting a Spot Mobility and Safety application to the Metropolitan Council. The proposed intersection improvement at US Hwy 169 and 109th Avenue North will occur within the Cities of Brooklyn Park and Champlin. This project would enhance safety and mobility at the intersection through the following improvements:

- Additional turn lanes to create dual left turn lanes on all four intersection legs
- Upgraded traffic signal, including ADA compliant components
- Crosswalk and median work on the north and south intersection legs
- Adding median and widening receiving lanes on east and west legs to accommodate dual left lanes

The City of Brooklyn Park is committed to providing the local match requirement in cooperation with the City of Champlin through an approved Joint Powers Agreement. The City of Brooklyn Park will continue to partner with MnDOT, Hennepin County, and the City of Champlin to improve safety and travel options within the Metro Area. Details of a future maintenance agreement with the City of Champlin and MnDOT will be determined during project development to define how the project will be maintained for the project's useful life, including snow and ice removal from pedestrian facilities.

Sincerely,

Jesse Struve, PE
City Engineer
City of Brooklyn Park

City of Champlin

11955 CHAMPLIN DRIVE, CHAMPLIN, MN 55316-2399 • 763.421.8100 • ci.champlin.mn.us

April 8th, 2022

Jesse Struve, PE
City Engineer
City of Brooklyn Park
5200 85th Avenue North
Brooklyn Park, MN 55443

RE: US Hwy 169 and 109th Avenue North Intersection in Cities of Brooklyn Park and Champlin
2022 Met Council Regional Solicitation Application

Dear Mr. Struve:

The City of Champlin extends its support for the 2022 Regional Solicitation application for the proposed intersection improvement at US Hwy 169 and 109th Avenue North in the Cities of Brooklyn Park and Champlin. This project would enhance safety and mobility at the intersection through the following improvements:

- Additional turn lanes to create dual left turn lanes on all four intersection legs
- Upgraded traffic signal, including ADA compliant components
- Crosswalk and median work on the north and south intersection legs
- Adding median and widening receiving lanes on east and west legs to accommodate dual left lanes

The City of Champlin, which borders Brooklyn Park's northern city limit along 109th Avenue, is aware of and understands that the proposed project application is being submitted. Details of a future maintenance agreement with the City of Brooklyn Park will be determined during project development to define how the project will be maintained for the project's useful life, including snow and ice removal from pedestrian facilities.

The City of Champlin appreciates your efforts to secure funding to improve roadway safety within both cities. We support moving forward with plans to apply for the Spot Mobility and Safety application to the Metropolitan Council as part of its 2022 Regional Solicitation. We will work with City of Brooklyn Park staff as plans are developed to ensure that a safe facility is developed for all users.

Sincerely,

Bret Heitkamp
City Administrator