Application

17072 - 2022 Roadway Expansion

17617 - 185th Street Expansion Project

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:	DAKOTA COUNTY

Jurisdictional Agency (if different):

Organization Type: County Government

Organization Website:

Address: TRANSPORTATION DEPT

14955 GALAXIE AVE

*	APPLE VALLEY	Minnesota	55124
	City	State/Province	Postal Code/Zip

County: Dakota

Phone:* 952-891-7100 Ext.

Fax:

PeopleSoft Vendor Number 0000002621A15

Project Information

Project Name 185th Street Expansion Project

Primary County where the Project is Located Dakota

Cities or Townships where the Project is Located: Lakeville

Jurisdictional Agency (If Different than the Applicant): N/A

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

Dakota County and the City of Lakeville are working together to redesign CSAH 60 (185th Street) to improve mobility and safety for all roadway users. CSAH 60 is an A Minor Arterial that plays a key role in the transportation network for the City, County, and the region. The improvement is a full corridor reconstruction and completion of the trail network between CSAH 50 (Kenwood Trail) and Ipava Avenue, with minor roadway work between Ipava Avenue and Dodd Blvd.

This segment of CSAH 60 is different than the redeveloped and modern segment to the west and near-future developments planned to the east. The existing two-lane highway has a rural section with a trail on only portions of the corridor. Numerous access points, poor sightlines, and a lack of dedicated turn lanes combined with increased traffic volumes all contribute to safety issues observed along the corridor. The two-lane cross-section on this segment presents a constraint to local and regional mobility and is the last segment to be improved or constructed to complete the regional arterial connection between I-35W on the west and Cedar Avenue/CSAH 23 on the west.

CSAH 60 already experiences high levels of traffic with 12,500 ADT today, and is expected to increase as the planned extension of the roadway is constructed east of CSAH 9. The number of through lanes varies between segments along the current and planned future corridor based on needs and context. The recently reconstructed CSAH 50/CSAH 60 and Ipava/CSAH 60 intersections each have two through lanes in each direction approaching from the east and west. The section between Ipava and Dodd Boulevard is a four-lane divided section and the expansions east of Dodd will be a two-lane divided section.

The primary objectives of this project are to design a roadway that provides for increasing traffic levels, provide multimodal and pedestrian connectivity to fix gaps in the existing trail network, provide a safe facility for everyone, and engage all parts of the community to ensure the solutions meet their needs.

(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.

CSAH 60, LAKEVILLE, FROM CSAH 50 TO CSAH 9, 1.4 MILES, RECONSTRUCTION

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)

1.4

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

$6,880,000.00

Match Amount

$1,720,000.00

Minimum of 20% of project total

Project Total

$8,600,000.00

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

CSAH, MSA, County/City local funds

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

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

Additional Program Years:

2025

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

Project Information-Roadways

County, City, or Lead Agency	Dakota County
Functional Class of Road	A Minor Expander
Road System *TH, CSAH, MSAS, CO. RD., TWP. RD., CITY STREET*	CSAH
Road/Route No. *i.e., 53 for CSAH 53*	60
Name of Road *Example; 1st ST., MAIN AVE*	185th Street
Zip Code where Majority of Work is Being Performed	55044
(Approximate) Begin Construction Date	04/01/2025
(Approximate) End Construction Date	11/30/2025

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

From: **(Intersection or Address)**	CSAH 50 (Kenwood Trail)
To: **(Intersection or Address)** *DO NOT INCLUDE LEGAL DESCRIPTION*	CSAH 9 (Dodd Boulevard)
Or At	
Miles of Sidewalk (nearest 0.1 miles)	0
Miles of Trail (nearest 0.1 miles)	1.3
Miles of Trail on the Regional Bicycle Transportation Network (nearest 0.1 miles)	2.6
Primary Types of Work *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.*	GRADING, AGG BASE, BIT BASE, BIT SURFACE, TRAILS, PED RAMPS, TRAFFIC SIGNAL, CURB AND GUTTER, STORM SEWER, STORMWATER BEST MANAGEMENT PRACTICES, SIGNI

BRIDGE/CULVERT PROJECTS (IF APPLICABLE)

Old Bridge/Culvert No.:	N/A
New Bridge/Culvert No.:	N/A
Structure is Over/Under **(Bridge or culvert name):**	N/A

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: A. Transportation System Stewardship: Objective: A, Objective: B, Strategy: A1, and Strategy: A2.
Goal: B. Safety and Security: Objective: A, Objective: B Strategy: B1, Strategy: B2, and Strategy: B6.
Goal: C. Access to Destinations: Objective: A., Objective: E, Strategy: C1, Strategy: C2, Strategy: C9, Strategy: C15, Strategy: C16, and Strategy: C17.

Goal: D. Competitive Economy; Objective: A, Objective: B, Strategy: D1, and Strategy: D3.

Goal: E. Healthy Environment: Objective: A, Objective: C, Objective: D, Strategy: E3, Strategy: E4, Strategy: E5, and Strategy: E6.

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.

Dakota County 2022-2026 Capital Improvement Plan (CIP), page TRANS 79 (page 88 of PDF here: https://www.co.dakota.mn.us/Government/BudgetFinance/2022/Documents/2022-2026CIP.pdf)

Project Description:

RESOURCES: Preliminary Engineering Consultant 2023, Design Consultant 2024

EXPANSION: Roadway Expansion

Construction of CSAH 60 (185th Street) to a four-lane divided roadway from CSAH 50 (Kenwood Trail) to CSAH 9 (Dodd Boulevard) in Lakeville. The project will improve CSAH 60 roadway operations, make safety improvements, and provide for the increased traffic levels. City of Lakeville will lead/coordinate this project.

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: 06/01/2018

Link to plan: https://www.co.dakota.mn.us/Transportation/TransportationStudies/Past/Documents/ADATransitionPlan.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

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)	$464,000.00
Removals (approx. 5% of total cost)	$258,000.00
Roadway (grading, borrow, etc.)	$1,620,000.00
Roadway (aggregates and paving)	$1,622,000.00

Subgrade Correction (muck)	$0.00
Storm Sewer	$2,120,000.00
Ponds	$535,000.00
Concrete Items (curb & gutter, sidewalks, median barriers)	$327,000.00
Traffic Control	$216,000.00
Striping	$141,000.00
Signing	$164,000.00
Lighting	$0.00
Turf - Erosion & Landscaping	$346,000.00
Bridge	$0.00
Retaining Walls	$78,000.00
Noise Wall (not calculated in cost effectiveness measure)	$339,000.00
Traffic Signals	$0.00
Wetland Mitigation	$0.00
Other Natural and Cultural Resource Protection	$0.00
RR Crossing	$0.00
Roadway Contingencies	$0.00
Other Roadway Elements	$0.00
Totals	**$8,230,000.00**

Specific Bicycle and Pedestrian Elements

CONSTRUCTION PROJECT ELEMENTS/COST ESTIMATES	**Cost**
Path/Trail Construction	$311,000.00
Sidewalk Construction	$0.00
On-Street Bicycle Facility Construction	$0.00
Right-of-Way	$59,000.00
Pedestrian Curb Ramps (ADA)	$0.00
Crossing Aids (e.g., Audible Pedestrian Signals, HAWK)	$0.00
Pedestrian-scale Lighting	$0.00
Streetscaping	$0.00
Wayfinding	$0.00
Bicycle and Pedestrian Contingencies	$0.00
Other Bicycle and Pedestrian Elements	$0.00
Totals	**$370,000.00**

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	$8,600,000.00
Construction Cost Total	$8,600,000.00
Transit Operating Cost Total	$0.00

Congestion within Project Area:

The measure will analyze the level of congestion within the project area. Council staff will provide travel speed data on the "Level of Congestion" map. The analysis will compare the peak hour travel speed within the project area to fee-flow conditions.

Free-Flow Travel Speed:	41
Peak Hour Travel Speed:	30
Percentage Decrease in Travel Speed in Peak Hour compared to Free-Flow:	26.83%
Upload Level of Congestion map:	

Congestion on adjacent Parallel Routes:

Adjacent Parallel Corridor A-Minor Arterial CSAH 46 (162nd Street)

Adjacent Parallel Corridor Start and End Points:

Start Point: Kenwood Trail (CSAH 50)

End Point: Highview Ave

Free-Flow Travel Speed: 46

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: 32.61%

Upload Level of Congestion Map: 1649955857819_Level of Congestion MAP 185th St.pdf

Principal Arterial Intersection Conversion Study:

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

(80 Points)

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

(60 Points)

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

(50 Points)

Proposed interchange project that reduces delay at a Medium Priority Intersection:

(40 Points)

Proposed interchange project that reduces delay at a Low Priority Intersection:

(0 Points)

Not listed as a priority in the study: Yes

(0 Points)

Measure B: Project Location Relative to Jobs, Manufacturing, and Education

Existing Employment within 1 Mile: 2872

Existing Manufacturing/Distribution-Related Employment within 1 Mile: 100

Existing Post-Secondary Students within 1 Mile: 0

Upload Map 1649955915238_Regional Economy MAP 185th St.pdf

Please upload attachment in PDF form.

Measure C: Current Heavy Commercial Traffic

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

Along Tier 1:

Miles: 0

(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: Yes

Measure A: Current Daily Person Throughput

Location East of CSAH 50 (Kenwod Trail)

Current AADT Volume 12500

Existing Transit Routes on the Project N/A

For New Roadways only, list transit routes that will likely be diverted to the new proposed roadway (if applicable).

Upload Transit Connections Map 1649956008298_Transit Connections MAP 185th St.pdf

Please upload attachment in PDF form.

Response: Current Daily Person Throughput

Average Annual Daily Transit Ridership 0

Current Daily Person Throughput 16250.0

Measure B: 2040 Forecast ADT

Use Metropolitan Council model to determine forecast (2040) ADT volume

If checked, METC Staff will provide Forecast (2040) ADT volume

OR

Identify the approved county or city travel demand model to determine forecast (2040) ADT volume	Dakota County 2040 Travel Demand Model for 2040 Dakota County Transportation Plan
Forecast (2040) ADT volume	28000

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:

Response:

The census tracts that the 185th St Improvement project falls in shows the following demographics:

? 12% of residents identify as Black, Indigenous, and People of Color

? 8% of residents have a family income less than 185% of the federal poverty level

? 8% of residents have a disability

? 13% of residents are 65 or older

? 27% of residents are 17 or younger

Additionally, there are 430 publicly subsidized rental housing units in the census tracts within ½ mile of the project.

Lakeville and Dakota County are implementing a comprehensive public involvement program for the project. The first open house will be held in person on Thursday April 14, 2022, and online for three weeks. The first open house is being held to get community input on issues and needs, prior to the development of alternatives. A second open house will be held this summer to review proposed alternatives. Because this roadway widening and trail project will impact private property frontage and access, two-way communication with affected residents is essential.
Engagement tools:

? Each public open house will be held in person and online. The online component (185thStImprovements.com) includes an interactive comment map, a video, and a survey.

? Public events are being advertised with mailings to reach people without online access, in addition using to social media and notification on the project

web site. Inclusion of telephone and mailing address information in project communications will support communications for those without access to technology.

? The project mailing area includes the Lakeville Pointe Apartments, a 49-unit affordable housing complex on County Road 50 (Kenwood Trail), north of the project.

? Additional efforts are being made to reach school children and their families, who may be more reliant on non-motorized travel in the project area.

Of particular emphasis is providing safe access for school children to Century Middle School, located at the southeast corner of 185th Street and Ipava Avenue. This user demographic is one of the clearest examples of an at-risk population (school children) whose needs are important to consider in the project. At the time of the 2021 Dakota County School Travel Safety Assessment, there were 950 students in grades 6-8. It was estimated that only 10 students regularly walk or bike to school and both CSAH 60 and CSAH 9 (Dodd Blvd) were identified as hazardous roadways. The Dakota County 2040 Transportation Plan identified the section of CSAH 60 without a trail as a medium priority pedestrian and bicycle gap. The project team is conducting specific outreach to the school to make affected parents aware of the project. This includes providing open house invitation to the school and soliciting specific feedback about biking and walking.

(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.

Response:

The new roadway will include turn lanes, improved stormwater management infrastructure, multi-use trails on both sides of the roadway, and access management of city streets. Safety will be improved along the corridor by managing the number of conflict points (access management), providing paved shoulders, and adding multi-use trails to both sides of the road including improving pedestrian infrastructure by filling a trail gap in a Tier 2 RBTN corridor.

With these features, the project will provide improved vehicle mobility and safety to all drivers who use the road. By removing the constricted two-lane cross-section in this segment of 185th Street and modernizing the roadway, the project will improve cross-town traffic flow and in particular will provide improved access to I-35W and Cedar Avenue, both of which are major commuter corridors to metro area jobs. Lakeville, with its lower cost of living compared to some other parts of the Twin Cities region, provides a relatively affordable community in addition to its other assets. However, with its location in the south metro area, many residents drive significant distances to work compared to communities located closer to key job centers. By improving local access to the regional highway network, the 185th Street project provides an economic benefit to commuters through time savings.

The added high-quality bicycle and pedestrian infrastructure will influence neighborhood-level access to destinations such as schools, parks, and local businesses. As a result, people who walk and bike for transportation, recreation, and health are the other demographic who will benefit substantially from the project, which will fill in the gaps in the trail network on this road segment and in so doing, complete the multimodal facility along CSAH 60 identified in Dakota County?s 2040 Comprehensive

Plan. The result will be transformative for those who walk or bike on the facility today (including where there are no facilities) or who will be attracted to the improved facility once it is in place. This improvement will disproportionately benefit BIPOC and other disadvantaged or vulnerable populations who are more likely to rely on non-vehicle mode for transportation and for whom recreation and healthy lifestyles may be more challenging to achieve. Increasing non-vehicular access can reduce the negative health effects of long car trips, such as physical inactivity and high blood pressure. As indicated above, 40% of people in the project area are either 17 or younger or 65 or older, two demographic groups most likely to benefit from improvements to multimodal facilities.

(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:

As indicated elsewhere, 430 affordable housing units are located within the project area. These units have subsidized rents, where household income is limited based on number of occupants. One example of these is the 49-unit Lake Pointe Apartment community located on CR 50 north of the project. Assuming that a higher-than-average percentage of individuals living in affordable units rely on non-motorized transportation, the addition of a trail would close a gap that currently exists for pedestrians and bicyclists and provide residents of this community with an option to walk or bike along 185th Street to get to destinations on the study corridor and beyond.

In addition to Century Middle School located on the study corridor, there are many other important community resources that are close enough to access without a vehicle and/or that serve families and children. There are multiple childcare facilities within a half mile of the study area including a Montessori school for toddlers and preschoolers, an in-home daycare, and childcare for adults exercising at LifeTime. There is a Target grocery store located approximately 0.6 miles to the west of Kenwood Trail. There is one place of worship just west of the Kenwood Trail intersection, and another located 0.6 miles to the west of Kenwood Trail. Near the west end of the corridor there are also multiple healthcare facilities including an urgent care, chiropractic, dental, mental health, and general clinics. On the east end there is a fire station and LifeTime fitness center. King Park is a Lakeville City Park located across 185th Street from the LifeTime. It includes an inclusive playground designed for children of all abilities and a Miracle League baseball facility which provides opportunities for children and adults with cognitive and/or physical challenges to play baseball regardless of ability.
The combination of proximate affordable housing

units, a wide range of community resources and improvements to support safe, comfortable and convenient non-motorized transportation is a distinguishing benefit of the 185th Street improvement project.

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

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):	
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.	1649947420430_Socio-Economic Conditions MAP 185th St.pdf

Measure A: Infrastructure Age

Year of Original Roadway Construction or Most Recent Reconstruction	Segment Length	Calculation	Calculation 2
1982.0	1.4	2774.8	1982.0
	1	**2775**	**1982**

Average Construction Year

Weighted Year	1982.0

Total Segment Length (Miles)

Total Segment Length	1.4

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
24.6	21.7	2.9	3072	3084	8908.8	8943.6	The signal at Ipava Ave was last revised and retimed to incorporate flashing yellow arrow in 2021 in order to implement programming that omits the flashing yellow arrow when a pedestrian pushes the ped button. APS was also updated at Ipava Ave during 2021. The signal at Dodd Blvd was last retimed in 2021. There are no railroad crossings in the study area.	1649947823888_4_OTHER_Synchro reports.pdf

Vehicle Delay Reduced

Total Peak Hour Delay Reduced	8908.8
Total Peak Hour Delay Reduced	8943.6

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):
70.62	70.57	0.05
71	**71**	**0**

Total

Total Emissions Reduced:	0.05
Upload Synchro Report	1649948186815_4_OTHER_Synchro reports.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:	CMF ID 7566: Convert 2 Lane Roadway to 4 Lane Divided Roadway and engineering judgement to assume one Type A head on crash and one Type B bicycle crash would be eliminated entirely with a divided cross-section and multiuse trails along the corridor.

(Limit 700 Characters; approximately 100 words)

Rationale for Crash Modification Selected:	CMF ID 7566 is the most applicable for similar improvements (2 lane to 4 lane conversion) along an urban corridor. Engineering judgment was used to determine that the Type A head on crash and the Type B bicycle crash would be eliminated entirely with a divided cross-section and multiuse trails along the corridor, since the bicycle crash occurred in the part of the corridor without trails. Engineering judgment was also used to remove crashes at Kenwood Trail (Roundabout) from the analysis due to the high number of crashes and lane configurations remaining unchanged.

(Limit 1400 Characters; approximately 200 words)

Project Benefit ($) from B/C Ratio:	$19,553,991.00
Total Fatal (K) Crashes:	0
Total Serious Injury (A) Crashes:	1
Total Non-Motorized Fatal and Serious Injury Crashes:	1
Total Crashes:	46
Total Fatal (K) Crashes Reduced by Project:	0
Total Serious Injury (A) Crashes Reduced by Project:	1
Total Non-Motorized Fatal and Serious Injury Crashes Reduced by Project:	1
Total Crashes Reduced by Project:	31
Worksheet Attachment	1649948450855_rashes, BC worksheet, CMF 185th St.pdf

Please upload attachment in PDF form.

Roadway projects that include railroad grade-separation elements:

Current AADT volume:	0
Average daily trains:	0
Crash Risk Exposure eliminated:	0

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.

The roundabout at 185th Street and Kenwood Trail was recently constructed in 2015 with dedicated facilities for bicycles and pedestrians to safely cross all four legs of the intersection. An anticipated major reconstruction or full replacement of the traffic signal at the Ipava Avenue intersection will provide the opportunity to ensure that the signal system and associated pedestrian ramps are fully accessible and facilitate safe crossing.

In 2021, the signal at Ipava Avenue was revised and retimed to incorporate flashing yellow arrow in order to implement programming that omits the flashing yellow arrow when a pedestrian pushes the ped button. APS was also updated at the Ipava signal during the 2021 overlays.

Response:

The roadway design includes quality bicycle and pedestrian infrastructure. The reconstruction of 185th Street will complete one of the remaining pedestrian facility gaps (tier 2 RBTN corridor) within Dakota County. The proposed construction will implement 10-foot shared-use trails on both the north and south sides of 185th Street for the full length. The 10-foot shared-use trails on both north and south sides of 185th Street with a 15' to 25' boulevards separate pedestrian facility from 8' roadway shoulder.

Pedestrian access is improved with adding multiuse trails to both sides of the road. Safety will be improved along the corridor by managing the number of conflict points (access management), providing paved shoulders, and adding multi-use trails to both sides.

Providing raised medians and pedestrian refuge islands, pedestrian crashes will go down, prevent injuries, and save lives. Raised medians and

pedestrian refuge islands allow pedestrians to cross one direction of traffic at a time. This significantly reduces the complexity of the crossing.

During final design, the project team will maintain and incorporate the recent signal improvements at Ipava Avenue and review the corridor for possible inclusion of high visibility crosswalk markings at the full access uncontrolled intersections as appropriate. In the event that a person does not cross the roadway at the full access intersections, the proposed median will vary in width from 6-18? and would provide refuge to cross one direction of travel at a time.

Extend median nose to provide ramps and refuge within the median crossing area. Provide enhanced visibility and driver awareness with longer raised median segment and lighting. Increase driver sight distance, reduce and enhance warning for pedestrians crossing the roadway. Add lighting.

(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: N/A

(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: No

If yes,
How many intersections will likely be affected?

Response:

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

Response:

(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:

(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:

Given the planned four-lane section, high traffic volume, and posted speed of this facility, mid-block crossings are discouraged, and this will be enforced through the design. This includes the addition of a center median, complete trail facilities on both sides to channel users to the primary intersections, and marked crossings provided the primary intersections. The result will be a facility that is context-sensitive, intuitive to use, and that encourages safe pedestrian usage.

The project includes installation of lighting at and in advance of intersections and crosswalks to improve visibility, safety, and comfort, especially at night. Crosswalk lighting can contribute significantly to safety by providing an advance warning to drivers that they are approaching a point of potential conflict with pedestrians and bicyclists.

Traffic signals assign right-of-way to various traffic movements at intersections and help reduce conflict between different roadway users. Signal design typically focuses on the operating characteristics of motorized vehicles but can also benefit pedestrians and bicyclists by creating gaps in traffic to cross. For example, in areas with pedestrian activity, traffic signals can include features such as countdown timers, leading pedestrian intervals, and exclusive pedestrian signal timings.

(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:

Motorist speed will be managed through a context-sensitive design that incorporates multimodal elements to bring life to the street and provide visual cues to drivers. Due to the nature of the corridor, narrow lanes were determined not to be appropriate but the addition of a median along the entire corridor will make the corridor feel narrower. Urban design with curb and gutter and trails also will help influence speeds and driver awareness. The addition of plantings (especially trees) also will help further narrow the feel of the road for drivers. The addition of a lane in each direction will alleviate peak hour congestion and contribute to more consistent speeds throughout the day. As needed, dynamic speed feedback signs may be used for driver education, with enforcement by police/sheriff as an additional layer as needed.

With respect to specific design details, multiuse10-foot paths are physically separated from motor vehicle traffic by an open space boulevard and paved shoulders. High-visibility crosswalk markings, parking restrictions along the corridor, adequate nighttime lighting levels, and crossing warning signs will be included with the signal design. The advance yield line will allow more time and distance for a collision to be avoided. Intersection design will control the speed of turning vehicles to improve the visibility of bicycles and pedestrians, which force motorists to yield and ensure that if crashes do occur, they are less likely to result in injury.

(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 design speed and posted speeds are 45 miles per hour for both existing and future conditions.

(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

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

List the AADT

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:

(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) Yes

If checked, please describe:

There are three pedestrian generators located within 500?: Century Middle School, LifeTime fitness center, and King Park. Project emphasis is providing safe access for school children to Century Middle School, at southeast corner of 185th St and Ipava Av. This user demographic is one of the clearest examples of an at-risk population (school children) whose needs are important to consider in the project. At the time of the 2021 Dakota County School Travel Safety Assessment, there were 950 students in grades 6-8. The Dakota County 2040 Transportation Plan identified the section of CSAH 60 without a trail as a medium priority pedestrian and bicycle gap. The project team is conducting specific outreach to the school to make affected parents aware of the project. This includes providing open house invitation to the school and soliciting specific feedback about biking and walking.

At LifeTime there are childcare facilities for parents to utilize while they are there. King Park is a Lakeville City Park located across 185th Street from the LifeTime. It includes playground designed for children of all abilities and a Miracle League baseball facility which provides opportunities for children and adults with cognitive and/or physical challenges to play baseball regardless of ability. The park also includes baseball fields, trails, picnic areas, and restrooms.

(Limit 1,400 characters; approximately 200 words)

Measure A: Multimodal Elements and Existing Connections

Response:

The project is a Tier 2 RBTN corridor connection that does not exist today. The project also advances the goals outlined in Dakota County?s ADA Transition Plan by providing a safe off-street facility with appropriate crossings. The construction of a multimodal trail along 185th Street will greatly improve access for non-motorized traffic. Currently, there is a path west of Jasmine Way on the south side and west of Jasper Path on the north side, and on both sides east of Ipava. This leaves a gap of approximately 0.6 miles where pedestrians and bicyclists must use the shoulder if they wish to travel along 185th Street. The shoulders are wide but there are still inherent safety risks without a dedicated space for non-motorized traffic.
The addition of a multi-use trail would connect the neighborhoods along 185th Street to each other and to community resources including Century Middle School, LifeTime, King Park, a church, daycare facilities and various health services near the Kenwood Trail intersection. This gap is specifically called out as a medium priority pedestrian and bicycle gap to fill in Dakota County?s 2040 Transportation Plan and would be one key step in a broader goal of connecting facilities throughout the region. As described elsewhere, the trail gap is also identified as a need in the 2021 Dakota County School Travel Safety Assessment.

Transit is not included along 185th Street, but the trail improves connectivity for those walking or biking. The corridor is on the border of two transit market areas: the north is classified as Market Area III and the south is classified as Market Area IV. As discussed in the 2040 TPP, transit service in Transit Market Area III is primarily commuter express bus with some fixed-route local service, and dial-a-ride wherever fixed route service is not viable. Transit Market Area IV can support peak-period express bus services if there is sufficient

ridership but there are challenges to fixed-route transit. CSAH 60 is not currently identified for transit but the design of 185th Street supports the possibility of future transit service.

(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.

Yes

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.

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 census tracts that the 185th St Improvement project falls in shows the following demographics:

? 12% of residents identify as Black, Indigenous, and People of Color

? 8% of residents have a family income less than 185% of the federal poverty level

? 8% of residents have a disability

? 13% of residents are 65 or older

? 27% of residents are 17 or younger

There are 430 publicly subsidized rental housing units in the census tracts within ½ mile of the project.

Lakeville and Dakota County are implementing a comprehensive public involvement program for the project. The first open house will be held in person on Thursday April 14, 2022, and online for three weeks. The first open house is being held to get community input on issues and needs, prior to the development of alternatives. A second open house will be held this summer to review proposed alternatives. Because this roadway widening and trail project will impact private property frontage and access, two-way communication with affected residents is essential.
Engagement tools:

? Each public open house will be held in person and online. The online component (185thStImprovements.com) includes an interactive comment map, a video, and a survey.

? Public events are being advertised with mailings to reach people without online access, in addition using to social media and notification on the project

web site. Inclusion of telephone and mailing address information in project communications will support communications for those without access to technology.

? The project mailing area includes the Lakeville Pointe Apartments, a 49-unit affordable housing complex on County Road 50 (Kenwood Trail), north of the project.

? Additional efforts are being made to reach school children and their families, who may be more reliant on non-motorized travel in the project area.

Of particular emphasis is providing safe access for school children to Century Middle School, located at the southeast corner of 185th St and Ipava Av. This user demographic is one of the clearest examples of an at-risk population (school children) whose needs are important to consider in the project. At the time of the 2021 Dakota County School Travel Safety Assessment, there were 950 students in grades 6-8. The Dakota County 2040 Transportation Plan identified the section of CSAH 60 without a trail as a medium priority pedestrian and bicycle gap. The project team is conducting specific outreach to the school to make affected parents aware of the project. This includes providing open house invitation to the school and soliciting specific feedback about biking and walking. Filling in the trail gap also provides improved access and safety to King Park at the northeast quadrant of 185th Street and Dodd Blvd.

(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

1649955650341_2_MAPS_185th Street Concept.pdf

Please upload attachment in PDF form.

Additional Attachments

1649955650332_3_COORDINATION_City of Lakeville Letter of Support 185th Street Expansion.pdf

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

Yes

100%

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

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):	$8,600,000.00
Enter Amount of the Noise Walls:	$0.00
Total Project Cost subtract the amount of the noise walls:	$8,600,000.00
Enter amount of any outside, competitive funding:	$0.00
Attach documentation of award:	
Points Awarded in Previous Criteria	

Cost Effectiveness	$0.00

Other Attachments

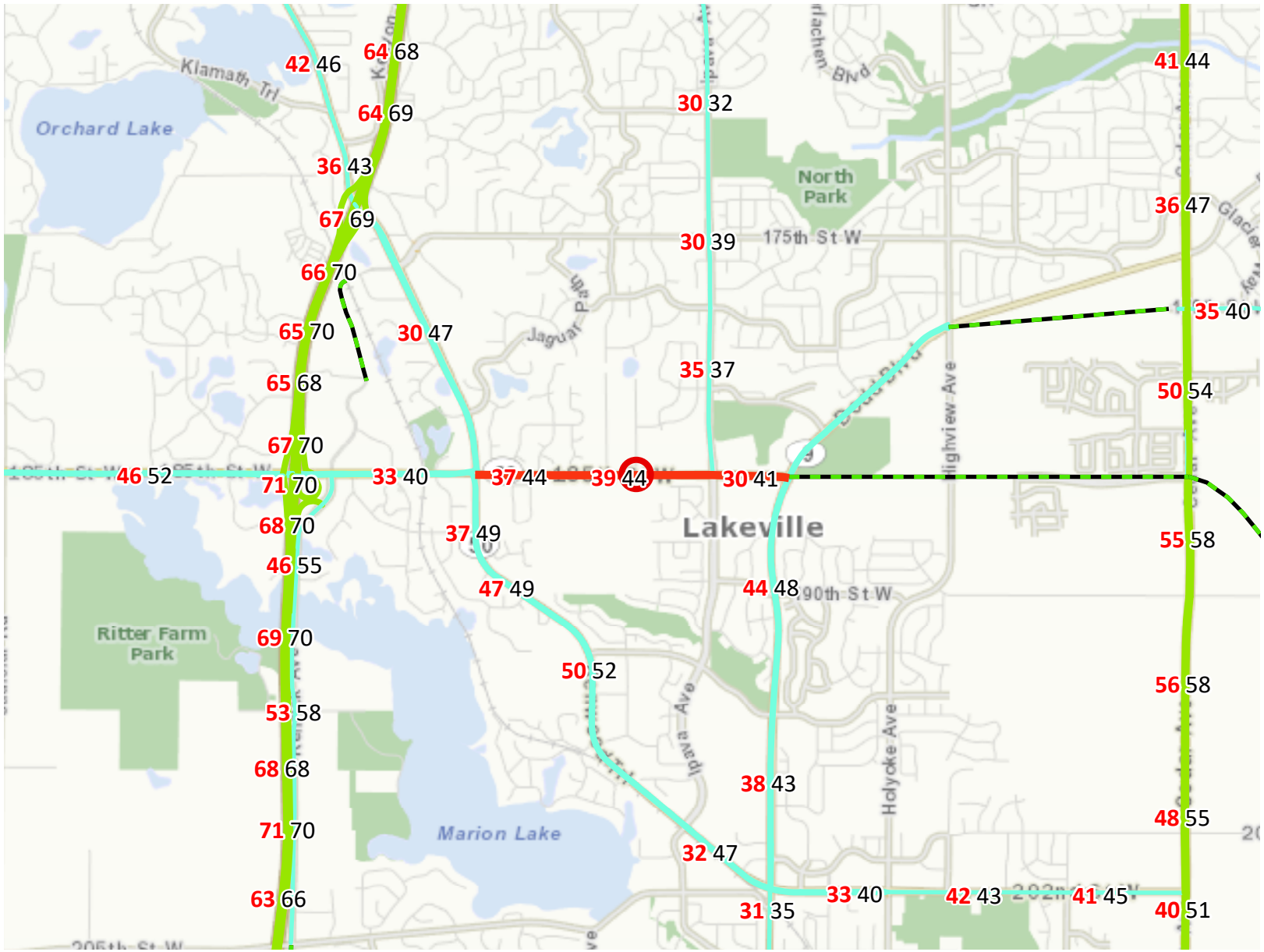
SUMMARY_One Pager

3.0 MB

File Name	Description	File Size
17617_1Pager.pdf	One Pager	264 KB
17617_Photo.pdf	Photo	554 KB
185th Street Layout.pdf	Layout	1.5 MB
1_SUMMARY_One Pager.docx	Existing conditions photograph	750 KB
BRD Resolution GRANT APPLICATION SUBMITTALS FOR 2022 REGIONAL.pdf	Resolution No. 22-144	26 KB

Level of Congestion

Strategic Capacity Project: 185th Street Expansion Project | Map ID: 1649799509647



Project Points
Project
Principal Arterials
A Minor Arterials
Principal Arterials Planned
A Minor Arterials Planned

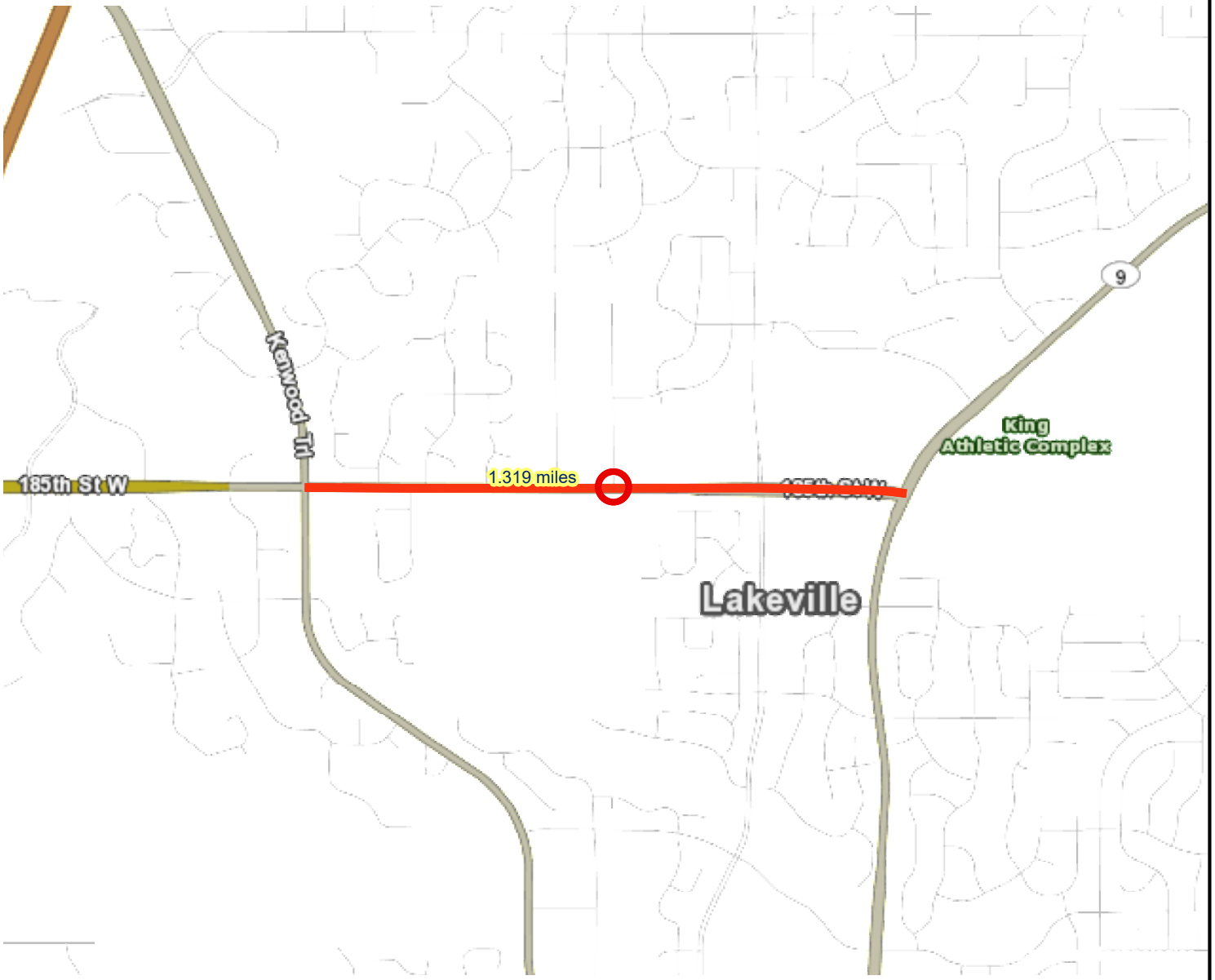
0 0.4 0.8 1.6 2.4 3.2 Miles

Created: 4/12/2022
LandscapeRSA1

METROPOLITAN COUNCIL

Regional Economy

Strategic Capacity Project: 185th Street Expansion Project | Map ID: 1649799509647



Results

WITHIN ONE MI of project:
Postsecondary Students: 0

Totals by City:
Lakeville
Population: 12725
Employment: 2872
Mfg and Dist Employment: 100

Project Points
Project
Manfacturing/Distribution Centers
Job Concentration Centers

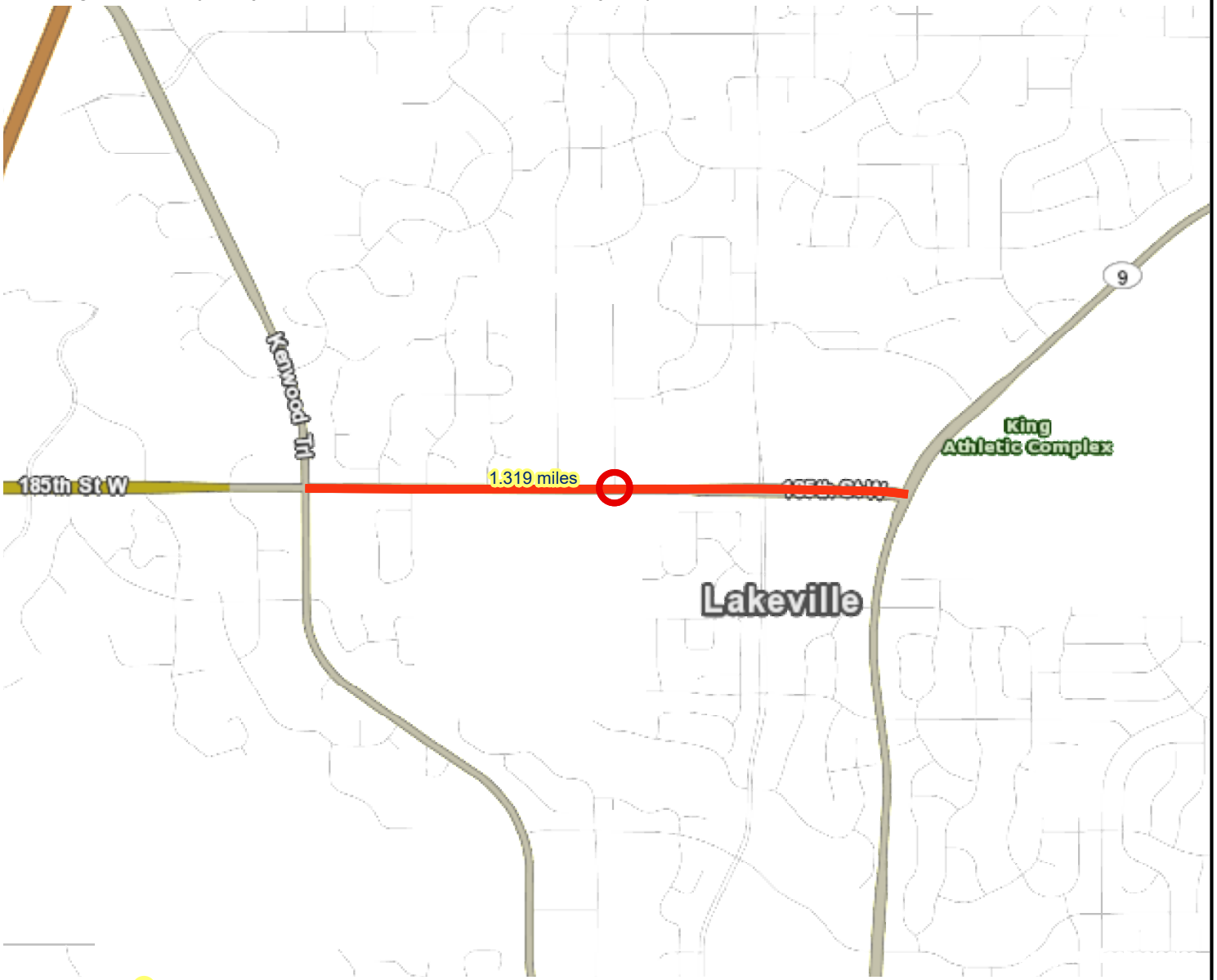
0 0.2 0.4 0.8 1.2 1.6 Miles

Created: 4/12/2022
LandscapeRSA5

METROPOLITAN COUNCIL

Transit Connections

Strategic Capacity Project: 185th Street Expansion Project | Map ID: 1649799509647



Results

Transit with a Direct Connection to project:
-- NONE --

**indicates Planned Alignments*

Transit Market areas: 3

Project Points
Project
Project Area
Active Stop
Arterial Bus Rapid Transit

Commuter Rail
Dedicated Bus Rapid Transit
Highway Bus Rapid Transit
Light Rail
Arterial Bus Rapid Transit

Commuter Rail
Dedicated Bus Rapid Transit
Highway Bus Rapid Transit
Light Rail
Arterial Bus Rapid Transit

Dedicated Bus Rapid Transit
Highway Bus Rapid Transit
Light Rail
Modern Streetcar
Undetermined

Arterial Bus Rapid Transit
Commuter Rail
Dedicated Bus Rapid Transit
Highway Bus Rapid Transit
Light Rail

Modern Streetcar
Undetermined

0 0.2 0.4 0.8 1.2 1.6 Miles

Created: 4/12/2022
LandscapeRSA3

METROPOLITAN COUNCIL

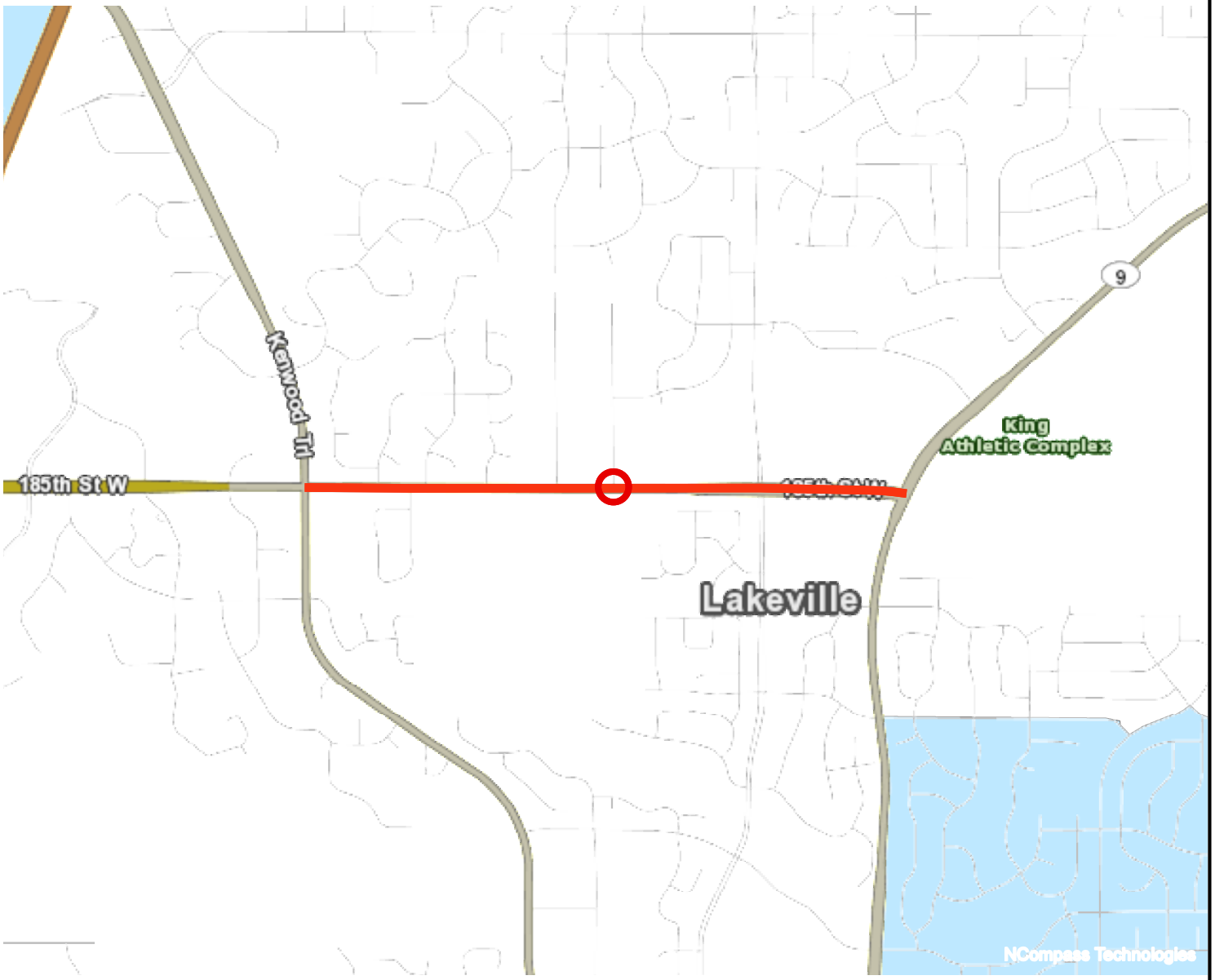
Socio-Economic Conditions

Strategic Capacity Project: 185th Street Expansion Project | Map ID: 1649799509647

Results

Total of publicly subsidized rental housing units in census tracts within 1/2 mile: 430

Project located in census tracts that are BELOW the regional average for population in poverty or population of color.



Points
Lines
Area of Concentrated Poverty
Regional Environmental Justice Area

0 0.2 0.4 0.8 1.2 1.6 Miles

Created: 4/12/2022
LandscapeRSA2

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

METROPOLITAN COUNCIL

Phase Number	1	2	3	4	5	6	7	8
Movement	WBL	EBWB	NBL	NBSB	EBL	EBWB	SBL	NBSB
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize								
Recall Mode	None	Min	None	None	None	Min	None	None
Maximum Split (s)	25	45	25	50	25	45	25	50
Maximum Split (%)	17.2%	31.0%	17.2%	34.5%	17.2%	31.0%	17.2%	34.5%
Minimum Split (s)	10	19	10	18.5	10	19	11.5	18.5
Yellow Time (s)	3	5	3	4.5	3	5	3	4.5
All-Red Time (s)	2	2	2	2	2	2	2	2
Minimum Initial (s)	5	12	5	12	5	12	5	12
Vehicle Extension (s)	2	5.5	2	4.5	2	5.5	2	4.5
Minimum Gap (s)	0.2	2.5	0.2	2.5	0.2	2.5	0.2	2.5
Time Before Reduce (s)	0	20	0	20	0	20	0	20
Time To Reduce (s)	0	20	0	20	0	20	0	20
Walk Time (s)		7		7		7		7
Flash Dont Walk (s)		25		29		25		29
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	No	No	No	No	No	No	No	No
Start Time (s)	0	25	70	95	0	25	70	95
End Time (s)	25	70	95	0	25	70	95	0
Yield/Force Off (s)	20	63	90	138.5	20	63	90	138.5
Yield/Force Off 170(s)	20	63	90	109.5	20	63	90	109.5
Local Start Time (s)	120	0	45	70	120	0	45	70
Local Yield (s)	140	38	65	113.5	140	38	65	113.5
Local Yield 170(s)	140	38	65	84.5	140	38	65	84.5

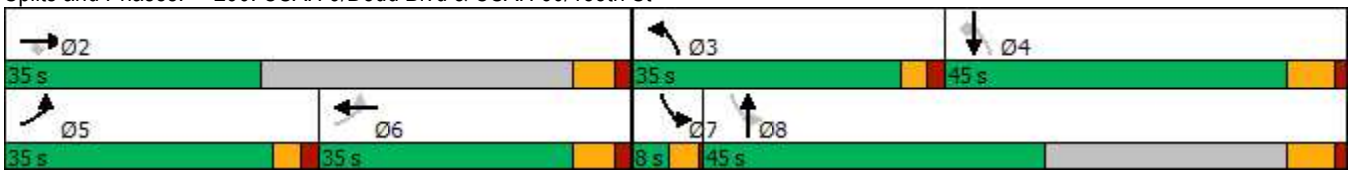
Intersection Summary	
Cycle Length	145
Control Type	Actuated-Uncoordinated
Natural Cycle	60

Splits and Phases: 280: Ipava Ave & CSAH 60/185th St

Phase Number	2	3	4	5	6	7	8
Movement	EBT	NBL	NBSB	EBL	EBWB	SBL	NBSB
Lead/Lag		Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize						Yes	
Recall Mode	None	None	Min	None	None	None	Min
Maximum Split (s)	35	35	45	35	35	8	45
Maximum Split (%)	23.3%	23.3%	30.0%	23.3%	23.3%	5.3%	30.0%
Minimum Split (s)	16.5	10	22	10	16.5	8	22
Yellow Time (s)	4.5	3	5.5	3	4.5	3.5	5.5
All-Red Time (s)	2	2	1.5	2	2	0.5	1.5
Minimum Initial (s)	10	5	15	5	10	4	15
Vehicle Extension (s)	4.5	2	6	2	4.5	3	6
Minimum Gap (s)	0.2	0.2	2.5	0.2	0.2	3	2.5
Time Before Reduce (s)	0	0	20	0	0	0	20
Time To Reduce (s)	0	0	20	0	0	0	20
Walk Time (s)	7		7		7		7
Flash Dont Walk (s)	27		26		24		26
Dual Entry	No	No	Yes	No	No	No	Yes
Inhibit Max	No	No	No	No	No	Yes	No
Start Time (s)	0	70	105	0	35	70	78
End Time (s)	70	105	0	35	70	78	0
Yield/Force Off (s)	63.5	100	143	30	63.5	74	143
Yield/Force Off 170(s)	36.5	100	143	30	39.5	74	143
Local Start Time (s)	115	35	70	115	0	35	43
Local Yield (s)	28.5	65	108	145	28.5	39	108
Local Yield 170(s)	1.5	65	108	145	4.5	39	108

Intersection Summary	
Cycle Length	150
Control Type	Actuated-Uncoordinated
Natural Cycle	60

Splits and Phases: 290: CSAH 9/Dodd Blvd & CSAH 60/185th St



Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	4:15	4:15	4:15	4:15	4:15	4:15
End Time	5:30	5:30	5:30	5:30	5:30	5:30
Total Time (min)	75	75	75	75	75	75
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	5	5	5	5	5	5
# of Recorded Intervals	4	4	4	4	4	4
Volume counts from "S:\2022\220001\TRAFFIC ANALYSIS\SYNCHRO\CSV\PM_2021.csv" data file(s)						
Volume date = 11/16/2021						
Vehs Entered	3042	3094	3077	3104	3065	3072
Vehs Exited	3065	3115	3055	3100	3078	3082
Starting Vehs	101	105	73	96	104	94
Ending Vehs	78	84	95	100	91	89
Denied Entry Before	2	1	3	0	0	0
Denied Entry After	1	0	0	0	0	0
Travel Distance (mi)	2716	2753	2718	2682	2760	2726
Travel Time (hr)	89.1	92.1	90.0	88.9	92.2	90.5
Total Delay (hr)	21.7	23.7	22.3	22.0	23.6	22.7
Total Stops	2385	2542	2466	2558	2572	2507
Fuel Used (gal)	96.2	96.9	95.5	95.0	97.1	96.1

Interval #0 Information Seeding

Start Time	4:15
End Time	4:30
Total Time (min)	15
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

Interval #1 Information

Start Time	4:30
End Time	4:45
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	761	816	778	809	764	783
Vehs Exited	785	838	764	808	777	793
Starting Vehs	101	105	73	96	104	94
Ending Vehs	77	83	87	97	91	86
Denied Entry Before	2	1	3	0	0	0
Denied Entry After	0	1	1	0	0	0
Travel Distance (mi)	672	719	634	685	675	677
Travel Time (hr)	21.7	24.0	20.6	22.5	22.6	22.3
Total Delay (hr)	5.1	6.2	4.9	5.4	5.8	5.5
Total Stops	590	660	560	644	618	612
Fuel Used (gal)	23.6	25.5	22.1	24.3	23.6	23.8

Interval #2 Information

Start Time	4:45
End Time	5:00
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	800	769	769	775	793	781
Vehs Exited	784	753	752	789	805	776
Starting Vehs	77	83	87	97	91	86
Ending Vehs	93	99	104	83	79	88
Denied Entry Before	0	1	1	0	0	0
Denied Entry After	0	1	4	1	2	1
Travel Distance (mi)	722	672	697	669	715	695
Travel Time (hr)	24.0	22.1	23.0	21.7	23.3	22.8
Total Delay (hr)	6.0	5.4	5.6	5.1	5.5	5.5
Total Stops	627	593	623	617	623	618
Fuel Used (gal)	25.9	23.4	24.5	23.6	25.0	24.5

Interval #3 Information

Start Time	5:00
End Time	5:15
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	724	754	795	721	742	747
Vehs Exited	737	756	810	719	722	747
Starting Vehs	93	99	104	83	79	88
Ending Vehs	80	97	89	85	99	85
Denied Entry Before	0	1	4	1	2	1
Denied Entry After	1	1	0	1	2	1
Travel Distance (mi)	637	662	701	628	640	653
Travel Time (hr)	20.7	21.8	23.4	21.0	21.7	21.7
Total Delay (hr)	4.9	5.3	6.0	5.3	5.7	5.4
Total Stops	534	617	639	626	654	615
Fuel Used (gal)	22.4	23.3	25.0	22.4	22.6	23.2

Interval #4 Information Recording

Start Time	5:15
End Time	5:30
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	757	755	735	799	766	763
Vehs Exited	759	768	729	784	774	764
Starting Vehs	80	97	89	85	99	85
Ending Vehs	78	84	95	100	91	89
Denied Entry Before	1	1	0	1	2	1
Denied Entry After	1	0	0	0	0	0
Travel Distance (mi)	685	700	686	699	730	700
Travel Time (hr)	22.7	24.2	23.0	23.7	24.6	23.6
Total Delay (hr)	5.7	6.7	5.8	6.2	6.6	6.2
Total Stops	634	672	644	671	677	660
Fuel Used (gal)	24.2	24.6	23.9	24.6	25.8	24.6

210: Professional Plaza & CSAH 60 Performance by movement

Movement	EBT	EBR	WBT	NBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.2	0.0	0.2	0.1
Total Delay (hr)	0.4	0.0	0.1	0.1	0.6
Total Del/Veh (s)	1.7	0.8	0.5	9.8	1.4
Stop Delay (hr)	0.0	0.0	0.0	0.1	0.1
Stop Del/Veh (s)	0.0	0.0	0.0	9.7	0.3
Total Stops	0	0	0	52	52
Stop/Veh	0.00	0.00	0.00	0.98	0.03
Travel Dist (mi)	113.9	2.5	46.8	5.5	168.7
Travel Time (hr)	3.0	0.1	1.2	0.4	4.6
Avg Speed (mph)	39	33	40	15	37
Fuel Used (gal)	3.8	0.1	1.8	0.2	5.8
Fuel Eff. (mpg)	30.3	39.1	25.3	31.8	28.9
HC Emissions (g)	77	2	33	2	114
CO Emissions (g)	2559	61	1386	56	4063
NOx Emissions (g)	268	6	117	6	396
Vehicles Entered	777	17	719	53	1566
Vehicles Exited	777	17	720	53	1567
Hourly Exit Rate	777	17	720	53	1567
Input Volume	772	16	705	52	1545
% of Volume	101	106	102	102	101
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0
Density (ft/veh)					613
Occupancy (veh)	3	0	1	0	5

220: CSAH 60 & Jasper Path Performance by movement

Movement	EBL	EBT	WBT	WBR	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.0
Total Delay (hr)	0.1	0.1	0.1	0.0	0.0	0.4
Total Del/Veh (s)	5.2	0.7	0.8	0.1	2.3	0.9
Stop Delay (hr)	0.1	0.0	0.0	0.0	0.0	0.1
Stop Del/Veh (s)	3.9	0.0	0.0	0.0	2.3	0.2
Total Stops	38	0	0	0	16	54
Stop/Veh	0.58	0.00	0.00	0.00	1.00	0.04
Travel Dist (mi)	4.5	51.7	45.1	0.5	1.6	103.4
Travel Time (hr)	0.3	1.4	1.2	0.0	0.1	2.9
Avg Speed (mph)	17	38	38	26	21	36
Fuel Used (gal)	0.1	2.1	1.4	0.0	0.0	3.7
Fuel Eff. (mpg)	38.4	24.2	31.7	69.2	40.9	27.8
HC Emissions (g)	1	47	23	0	1	72
CO Emissions (g)	47	1668	716	1	17	2448
NOx Emissions (g)	4	159	87	0	3	253
Vehicles Entered	66	763	674	7	16	1526
Vehicles Exited	66	764	674	7	16	1527
Hourly Exit Rate	66	764	674	7	16	1527
Input Volume	64	760	662	6	15	1507
% of Volume	103	100	102	117	107	101
Denied Entry Before	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0
Density (ft/veh)						529
Occupancy (veh)	0	1	1	0	0	3

230: Jasmine Way & CSAH 60 Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.2	0.0	0.1	0.1	0.0
Total Delay (hr)	0.1	0.0	0.0	0.1	0.0	0.0	0.3
Total Del/Veh (s)	0.6	0.1	3.2	0.4	20.1	8.6	0.6
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Stop Del/Veh (s)	0.0	0.0	1.6	0.0	18.3	8.6	0.1
Total Stops	0	0	3	0	6	1	10
Stop/Veh	0.00	0.00	0.75	0.00	1.00	1.00	0.01
Travel Dist (mi)	50.4	0.9	0.1	25.5	0.6	0.1	77.7
Travel Time (hr)	1.3	0.0	0.0	0.7	0.1	0.0	2.0
Avg Speed (mph)	40	27	15	38	11	15	38
Fuel Used (gal)	1.5	0.0	0.0	0.7	0.0	0.0	2.2
Fuel Eff. (mpg)	34.7	82.3	41.8	34.8	31.2	38.9	34.9
HC Emissions (g)	33	0	0	11	0	0	44
CO Emissions (g)	870	3	0	287	2	0	1162
NOx Emissions (g)	115	0	0	44	0	0	160
Vehicles Entered	763	13	4	679	6	1	1466
Vehicles Exited	763	13	4	679	6	1	1466
Hourly Exit Rate	763	13	4	679	6	1	1466
Input Volume	762	11	3	667	7	1	1451
% of Volume	100	118	133	102	86	100	101
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0
Density (ft/veh)							606
Occupancy (veh)	1	0	0	1	0	0	2

240: CSAH 60 & Jamaica Path Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.1	0.1	0.0
Total Delay (hr)	0.0	0.1	0.2	0.0	0.0	0.0	0.3
Total Del/Veh (s)	5.4	0.3	1.2	0.4	12.9	6.6	0.9
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Stop Del/Veh (s)	4.1	0.0	0.0	0.0	11.5	6.4	0.1
Total Stops	11	0	0	0	2	12	25
Stop/Veh	0.52	0.00	0.00	0.00	1.00	1.00	0.02
Travel Dist (mi)	0.8	27.8	85.8	0.5	0.2	1.2	116.3
Travel Time (hr)	0.1	0.7	2.2	0.0	0.0	0.1	3.0
Avg Speed (mph)	12	41	40	29	13	17	38
Fuel Used (gal)	0.0	0.9	2.2	0.0	0.0	0.0	3.1
Fuel Eff. (mpg)	37.6	32.0	38.9	43.6	32.5	36.7	37.0
HC Emissions (g)	0	18	33	0	0	1	53
CO Emissions (g)	5	518	775	4	0	15	1318
NOx Emissions (g)	1	66	136	0	0	2	205
Vehicles Entered	21	734	670	4	2	12	1443
Vehicles Exited	21	734	670	4	2	12	1443
Hourly Exit Rate	21	734	670	4	2	12	1443
Input Volume	22	733	658	3	3	10	1429
% of Volume	95	100	102	133	67	120	101
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0
Density (ft/veh)							521
Occupancy (veh)	0	1	2	0	0	0	3

250: CSAH 60 & Jaeger Path Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.9	0.1	0.1	0.0
Total Delay (hr)	0.0	0.2	0.2	0.0	0.0	0.0	0.5
Total Del/Veh (s)	2.7	0.9	1.1	0.5	20.3	8.1	1.2
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Stop Del/Veh (s)	1.6	0.0	0.0	0.0	18.5	8.2	0.2
Total Stops	4	2	0	0	7	12	25
Stop/Veh	0.40	0.00	0.00	0.00	1.00	1.00	0.02
Travel Dist (mi)	1.2	92.7	101.4	0.7	0.7	1.2	197.8
Travel Time (hr)	0.0	2.3	2.5	0.0	0.1	0.1	5.0
Avg Speed (mph)	28	41	41	32	10	15	40
Fuel Used (gal)	0.0	2.5	2.7	0.0	0.0	0.0	5.3
Fuel Eff. (mpg)	51.0	37.7	37.7	43.6	26.5	34.7	37.7
HC Emissions (g)	0	54	42	0	0	0	96
CO Emissions (g)	4	1220	1009	4	4	8	2249
NOx Emissions (g)	1	197	171	0	0	1	371
Vehicles Entered	10	727	691	5	7	12	1452
Vehicles Exited	10	727	691	5	7	12	1452
Hourly Exit Rate	10	727	691	5	7	12	1452
Input Volume	8	731	680	5	5	10	1439
% of Volume	125	99	102	100	140	120	101
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0
Density (ft/veh)							556
Occupancy (veh)	0	2	2	0	0	0	5

260: Ixonia Avenue (Ext)/Ixonia Avenue & CSAH 60 Performance by movement

Movement	EBL	EBT	WBT	WBR	NBR	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0		0.1	0.0
Total Delay (hr)	0.0	0.2	0.2	0.0	0.0	0.0	0.4
Total Del/Veh (s)	4.6	1.1	0.9	0.3		4.7	1.0
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Stop Del/Veh (s)	3.2	0.0	0.0	0.0		4.6	0.0
Total Stops	2	2	0	0	0	4	8
Stop/Veh	0.50	0.00	0.00	0.00		1.00	0.01
Travel Dist (mi)	0.6	111.0	80.9	0.2	0.0	0.4	193.1
Travel Time (hr)	0.0	2.7	2.0	0.0	0.0	0.0	4.8
Avg Speed (mph)	27	41	40	33	15	18	40
Fuel Used (gal)	0.0	3.0	2.3	0.0	0.0	0.0	5.3
Fuel Eff. (mpg)	44.6	37.3	35.9	48.6	37.7	42.1	36.7
HC Emissions (g)	0	61	37	0	0	0	98
CO Emissions (g)	2	1404	948	1	0	1	2357
NOx Emissions (g)	0	229	147	0	0	0	377
Vehicles Entered	4	760	691	1	0	4	1460
Vehicles Exited	4	759	692	1	0	4	1460
Hourly Exit Rate	4	759	692	1	0	4	1460
Input Volume	4	764	679	1	1	3	1452
% of Volume	100	99	102	100	0	133	101
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0
Density (ft/veh)							490
Occupancy (veh)	0	3	2	0	0	0	5

270: CSAH 60 & Italy Avenue Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.0	0.1	0.1	0.1	0.1	0.1
Total Delay (hr)	0.0	0.3	0.3	0.0	0.0	0.0	0.6
Total Del/Veh (s)	3.6	1.3	1.5	1.4	30.1	6.1	1.5
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Stop Del/Veh (s)	2.5	0.0	0.0	0.0	27.4	6.1	0.1
Total Stops	6	7	0	0	2	8	23
Stop/Veh	0.43	0.01	0.00	0.00	1.00	0.89	0.02
Travel Dist (mi)	1.7	86.3	137.4	0.4	0.2	0.9	227.0
Travel Time (hr)	0.1	2.2	3.4	0.0	0.0	0.1	5.8
Avg Speed (mph)	26	39	41	33	9	17	40
Fuel Used (gal)	0.0	2.3	3.9	0.0	0.0	0.0	6.3
Fuel Eff. (mpg)	46.8	37.2	35.6	39.2	23.0	37.7	36.2
HC Emissions (g)	0	49	68	0	0	0	117
CO Emissions (g)	6	1118	1713	3	2	2	2844
NOx Emissions (g)	1	179	269	0	0	0	449
Vehicles Entered	14	741	696	2	2	8	1463
Vehicles Exited	14	741	697	2	2	9	1465
Hourly Exit Rate	14	741	697	2	2	9	1465
Input Volume	14	749	684	1	1	10	1459
% of Volume	100	99	102	200	200	90	100
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0
Density (ft/veh)							407
Occupancy (veh)	0	2	3	0	0	0	6

280: Ipava Ave & CSAH 60/185th St Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.0	0.1
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	3.3	0.1	3.3	3.3	0.2	3.1
Total Delay (hr)	0.5	2.0	0.0	0.2	2.6	0.1	0.4	1.2	0.1	0.6	1.1	0.1
Total Del/Veh (s)	18.1	12.8	1.7	13.9	18.8	2.1	23.3	29.7	5.4	23.0	26.3	4.1
Stop Delay (hr)	0.5	1.3	0.0	0.1	1.8	0.1	0.3	1.0	0.1	0.5	0.9	0.1
Stop Del/Veh (s)	15.8	8.6	1.5	11.9	12.8	1.9	20.7	23.6	4.7	20.1	20.7	2.8
Total Stops	92	229	30	30	268	53	46	106	48	78	102	80
Stop/Veh	0.85	0.41	0.41	0.77	0.54	0.51	0.79	0.73	0.73	0.81	0.68	0.73
Travel Dist (mi)	11.0	55.4	7.6	4.2	53.5	11.3	16.4	41.3	18.8	29.0	44.8	33.2
Travel Time (hr)	0.9	3.2	0.3	0.3	3.8	0.4	0.9	2.1	0.7	1.5	2.1	1.1
Avg Speed (mph)	12	17	26	15	14	26	20	19	31	21	21	33
Fuel Used (gal)	0.3	1.7	0.2	0.1	1.7	0.2	0.6	1.4	0.6	0.9	1.4	1.0
Fuel Eff. (mpg)	33.1	32.2	43.0	32.6	31.1	47.4	29.2	29.7	32.7	31.2	31.4	32.5
HC Emissions (g)	5	27	3	2	21	4	8	20	11	17	17	23
CO Emissions (g)	155	835	137	79	705	138	304	725	370	534	642	759
NOx Emissions (g)	13	83	9	4	61	11	27	70	37	57	65	75
Vehicles Entered	107	553	74	38	495	102	58	144	66	95	147	108
Vehicles Exited	108	555	74	38	495	103	57	144	65	95	146	109
Hourly Exit Rate	108	555	74	38	495	103	57	144	65	95	146	109
Input Volume	112	556	77	43	484	96	61	153	66	90	149	109
% of Volume	96	100	96	88	102	107	93	94	98	106	98	100
Denied Entry Before	0	0	0	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0	0	0	0
Density (ft/veh)												
Occupancy (veh)	1	3	0	0	4	0	1	2	1	1	2	1

280: Ipava Ave & CSAH 60/185th St Performance by movement

Movement	All
Denied Delay (hr)	0.3
Denied Del/Veh (s)	0.6
Total Delay (hr)	8.9
Total Del/Veh (s)	15.9
Stop Delay (hr)	6.7
Stop Del/Veh (s)	12.0
Total Stops	1162
Stop/Veh	0.58
Travel Dist (mi)	326.5
Travel Time (hr)	17.3
Avg Speed (mph)	19
Fuel Used (gal)	10.2
Fuel Eff. (mpg)	31.9
HC Emissions (g)	158
CO Emissions (g)	5383
NOx Emissions (g)	510
Vehicles Entered	1987
Vehicles Exited	1989
Hourly Exit Rate	1989
Input Volume	1996
% of Volume	100
Denied Entry Before	0
Denied Entry After	0
Density (ft/veh)	986
Occupancy (veh)	17

290: CSAH 9/Dodd Blvd & CSAH 60/185th St Performance by movement

Movement	EBL	EBT	EBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.2	0.0	0.0	0.3	0.6
Denied Del/Veh (s)	0.0	0.0	0.0	3.3	0.2	0.3	3.2	1.1
Total Delay (hr)	2.6	0.0	0.7	1.1	0.5	1.5	0.5	6.9
Total Del/Veh (s)	24.1	0.4	7.8	14.7	6.6	16.2	5.3	12.9
Stop Delay (hr)	2.2	0.0	0.5	0.8	0.2	0.9	0.3	4.8
Stop Del/Veh (s)	20.1	0.0	5.5	10.9	3.0	9.0	2.9	9.0
Total Stops	285	0	246	202	67	157	186	1143
Stop/Veh	0.74	0.00	0.81	0.76	0.25	0.46	0.52	0.59
Travel Dist (mi)	76.1	0.5	59.5	51.1	51.5	48.7	50.5	338.1
Travel Time (hr)	4.7	0.0	2.4	2.7	1.4	2.5	2.4	16.1
Avg Speed (mph)	16	42	25	21	36	20	24	22
Fuel Used (gal)	2.2	0.0	1.2	1.6	1.7	1.8	1.4	9.9
Fuel Eff. (mpg)	34.8	42.3	48.9	32.9	29.8	26.9	35.0	34.0
HC Emissions (g)	34	0	26	23	34	35	22	175
CO Emissions (g)	867	6	525	1014	1461	1526	1083	6482
NOx Emissions (g)	103	1	80	68	112	94	59	517
Vehicles Entered	380	5	299	263	264	340	353	1904
Vehicles Exited	381	5	300	265	265	342	355	1913
Hourly Exit Rate	381	5	300	265	265	342	355	1913
Input Volume	385	7	294	250	266	337	358	1897
% of Volume	99	71	102	106	100	101	99	101
Denied Entry Before	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0
Density (ft/veh)								691
Occupancy (veh)	5	0	2	2	1	2	2	15

Total Network Performance

Denied Delay (hr)	1.0
Denied Del/Veh (s)	1.2
Total Delay (hr)	21.7
Total Del/Veh (s)	24.6
Stop Delay (hr)	12.2
Stop Del/Veh (s)	13.9
Total Stops	2507
Stop/Veh	0.79
Travel Dist (mi)	2725.6
Travel Time (hr)	90.5
Avg Speed (mph)	30
Fuel Used (gal)	96.1
Fuel Eff. (mpg)	28.4
HC Emissions (g)	1813
CO Emissions (g)	62645
NOx Emissions (g)	6161
Vehicles Entered	3072
Vehicles Exited	3082
Hourly Exit Rate	3082
Input Volume	19558
% of Volume	16
Denied Entry Before	0
Denied Entry After	0
Density (ft/veh)	533
Occupancy (veh)	89

Intersection: 210: Professional Plaza & CSAH 60

Movement	NB
Directions Served	R
Maximum Queue (ft)	78
Average Queue (ft)	22
95th Queue (ft)	52
Link Distance (ft)	547
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 220: CSAH 60 & Jasper Path

Movement	EB	SB
Directions Served	L	R
Maximum Queue (ft)	74	58
Average Queue (ft)	23	13
95th Queue (ft)	57	39
Link Distance (ft)		526
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	250	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 230: Jasmine Way & CSAH 60

Movement	WB	NB
Directions Served	L	LR
Maximum Queue (ft)	30	31
Average Queue (ft)	2	6
95th Queue (ft)	16	26
Link Distance (ft)		547
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	25	
Storage Blk Time (%)	0	
Queuing Penalty (veh)	1	

Intersection: 240: CSAH 60 & Jamaica Path

Movement	EB	SB
Directions Served	L	LR
Maximum Queue (ft)	49	41
Average Queue (ft)	10	11
95th Queue (ft)	35	36
Link Distance (ft)		564
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	25	
Storage Blk Time (%)	2	
Queuing Penalty (veh)	17	

Intersection: 250: CSAH 60 & Jaeger Path

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (ft)	66	50
Average Queue (ft)	6	12
95th Queue (ft)	33	37
Link Distance (ft)	626	518
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 260: Ixonia Avenue (Ext)/Ixonia Avenue & CSAH 60

Movement	EB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	60	12	30
Average Queue (ft)	4	1	4
95th Queue (ft)	28	8	19
Link Distance (ft)	759	347	540
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 270: CSAH 60 & Italy Avenue

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (ft)	102	37
Average Queue (ft)	11	9
95th Queue (ft)	54	32
Link Distance (ft)	593	577
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 280: Ipava Ave & CSAH 60/185th St

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	T	T	R
Maximum Queue (ft)	121	185	145	42	68	256	201	49	84	133	100	55
Average Queue (ft)	48	83	65	13	20	135	46	18	29	56	20	17
95th Queue (ft)	98	156	122	32	52	220	137	39	69	104	61	42
Link Distance (ft)		494	494			526	526			1502	1502	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	300			300	340			340	300			300
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 280: Ipava Ave & CSAH 60/185th St

Movement	SB	SB	SB	SB
Directions Served	L	T	T	R
Maximum Queue (ft)	125	97	78	65
Average Queue (ft)	49	46	23	21
95th Queue (ft)	94	85	58	47
Link Distance (ft)		1600	1600	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	240			240
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 290: CSAH 9/Dodd Blvd & CSAH 60/185th St

Movement	EB	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	R	L	T	T	T	T	R
Maximum Queue (ft)	159	188	157	143	79	49	168	100	151
Average Queue (ft)	79	101	74	73	24	13	80	24	52
95th Queue (ft)	142	161	124	123	60	37	137	66	100
Link Distance (ft)			1004		1013	1013	750	750	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	300	300		300					300
Storage Blk Time (%)									
Queuing Penalty (veh)									

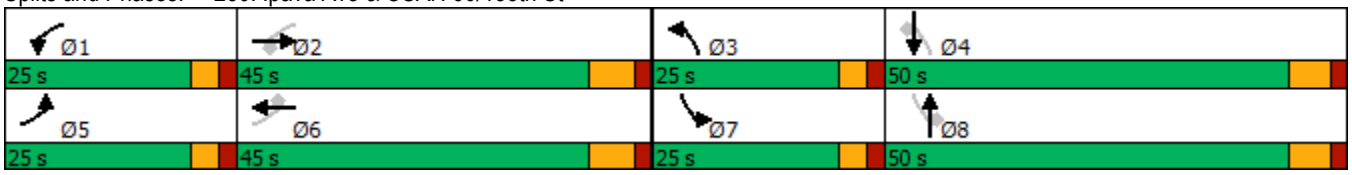
Network Summary

Network wide Queuing Penalty: 18

Phase Number	1	2	3	4	5	6	7	8
Movement	WBL	EBWB	NBL	NBSB	EBL	EBWB	SBL	NBSB
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize								
Recall Mode	None	Min	None	None	None	Min	None	None
Maximum Split (s)	25	45	25	50	25	45	25	50
Maximum Split (%)	17.2%	31.0%	17.2%	34.5%	17.2%	31.0%	17.2%	34.5%
Minimum Split (s)	10	19	10	18.5	10	19	11.5	18.5
Yellow Time (s)	3	5	3	4.5	3	5	3	4.5
All-Red Time (s)	2	2	2	2	2	2	2	2
Minimum Initial (s)	5	12	5	12	5	12	5	12
Vehicle Extension (s)	2	5.5	2	4.5	2	5.5	2	4.5
Minimum Gap (s)	0.2	2.5	0.2	2.5	0.2	2.5	0.2	2.5
Time Before Reduce (s)	0	20	0	20	0	20	0	20
Time To Reduce (s)	0	20	0	20	0	20	0	20
Walk Time (s)		7		7		7		7
Flash Dont Walk (s)		25		29		25		29
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	No	No	No	No	No	No	No	No
Start Time (s)	0	25	70	95	0	25	70	95
End Time (s)	25	70	95	0	25	70	95	0
Yield/Force Off (s)	20	63	90	138.5	20	63	90	138.5
Yield/Force Off 170(s)	20	63	90	109.5	20	63	90	109.5
Local Start Time (s)	120	0	45	70	120	0	45	70
Local Yield (s)	140	38	65	113.5	140	38	65	113.5
Local Yield 170(s)	140	38	65	84.5	140	38	65	84.5

Intersection Summary	
Cycle Length	145
Control Type	Actuated-Uncoordinated
Natural Cycle	60

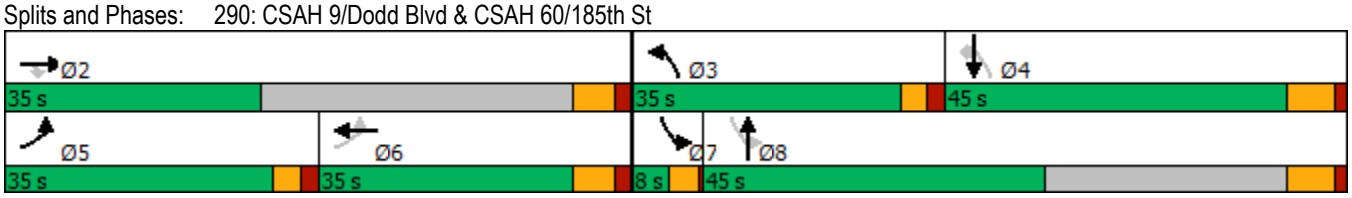
Splits and Phases: 280: Ipava Ave & CSAH 60/185th St



Phase Number	2	3	4	5	6	7	8
Movement	EBT	NBL	NBSB	EBL	EBWB	SBL	NBSB
Lead/Lag		Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize						Yes	
Recall Mode	None	None	Min	None	None	None	Min
Maximum Split (s)	35	35	45	35	35	8	45
Maximum Split (%)	23.3%	23.3%	30.0%	23.3%	23.3%	5.3%	30.0%
Minimum Split (s)	16.5	10	22	10	16.5	8	22
Yellow Time (s)	4.5	3	5.5	3	4.5	3.5	5.5
All-Red Time (s)	2	2	1.5	2	2	0.5	1.5
Minimum Initial (s)	10	5	15	5	10	4	15
Vehicle Extension (s)	4.5	2	6	2	4.5	3	6
Minimum Gap (s)	0.2	0.2	2.5	0.2	0.2	3	2.5
Time Before Reduce (s)	0	0	20	0	0	0	20
Time To Reduce (s)	0	0	20	0	0	0	20
Walk Time (s)	7		7		7		7
Flash Dont Walk (s)	27		26		24		26
Dual Entry	No	No	Yes	No	No	No	Yes
Inhibit Max	No	No	No	No	No	Yes	No
Start Time (s)	0	70	105	0	35	70	78
End Time (s)	70	105	0	35	70	78	0
Yield/Force Off (s)	63.5	100	143	30	63.5	74	143
Yield/Force Off 170(s)	36.5	100	143	30	39.5	74	143
Local Start Time (s)	115	35	70	115	0	35	43
Local Yield (s)	28.5	65	108	145	28.5	39	108
Local Yield 170(s)	1.5	65	108	145	4.5	39	108

Intersection Summary	
Cycle Length	150
Control Type	Actuated-Uncoordinated
Natural Cycle	60

Splits and Phases: 290: CSAH 9/Dodd Blvd & CSAH 60/185th St



Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	4:15	4:15	4:15	4:15	4:15	4:15
End Time	5:30	5:30	5:30	5:30	5:30	5:30
Total Time (min)	75	75	75	75	75	75
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	5	5	5	5	5	5
# of Recorded Intervals	4	4	4	4	4	4
Volume counts from "S:\2022\220001\TRAFFIC ANALYSIS\SYNCHRO\CSV\PM_2021.csv" data file(s)						
Volume date = 11/16/2021						
Vehs Entered	3124	3107	3030	3074	3089	3084
Vehs Exited	3136	3110	3013	3062	3106	3086
Starting Vehs	105	96	81	94	95	93
Ending Vehs	93	93	98	106	78	91
Denied Entry Before	1	0	3	0	1	1
Denied Entry After	1	0	1	3	1	0
Travel Distance (mi)	2820	2804	2692	2740	2770	2765
Travel Time (hr)	90.7	91.5	85.7	87.7	88.5	88.8
Total Delay (hr)	20.8	21.7	19.0	19.3	19.5	20.1
Total Stops	2491	2520	2368	2363	2460	2442
Fuel Used (gal)	96.5	97.0	92.9	93.8	95.7	95.2

Interval #0 Information Seeding

Start Time	4:15
End Time	4:30
Total Time (min)	15
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

Interval #1 Information

Start Time	4:30
End Time	4:45
Total Time (min)	15
Volumes adjusted by Growth Factors.	

Run Number	1	2	3	4	5	Avg
Vehs Entered	781	808	772	751	731	767
Vehs Exited	795	819	771	762	739	777
Starting Vehs	105	96	81	94	95	93
Ending Vehs	91	85	82	83	87	83
Denied Entry Before	1	0	3	0	1	1
Denied Entry After	1	2	1	0	0	0
Travel Distance (mi)	688	735	660	653	663	679
Travel Time (hr)	21.9	24.1	20.7	20.9	20.9	21.7
Total Delay (hr)	4.8	5.8	4.3	4.7	4.4	4.8
Total Stops	584	655	572	570	580	589
Fuel Used (gal)	23.2	25.5	22.6	22.4	22.6	23.3

Interval #2 Information

Start Time	4:45
End Time	5:00
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	758	753	699	785	802	759
Vehs Exited	763	750	700	771	790	754
Starting Vehs	91	85	82	83	87	83
Ending Vehs	86	88	81	97	99	89
Denied Entry Before	1	2	1	0	0	0
Denied Entry After	1	0	0	0	2	0
Travel Distance (mi)	707	695	631	712	714	692
Travel Time (hr)	22.2	22.4	19.6	22.1	22.6	21.8
Total Delay (hr)	4.7	5.2	4.0	4.4	5.0	4.7
Total Stops	590	608	545	596	644	596
Fuel Used (gal)	23.9	23.9	21.4	23.9	24.8	23.6

Interval #3 Information

Start Time	5:00
End Time	5:15
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	777	753	744	728	753	752
Vehs Exited	774	762	737	742	770	757
Starting Vehs	86	88	81	97	99	89
Ending Vehs	89	79	88	83	82	83
Denied Entry Before	1	0	0	0	2	0
Denied Entry After	0	1	0	2	0	0
Travel Distance (mi)	692	672	661	649	682	671
Travel Time (hr)	22.4	21.8	21.4	20.9	21.7	21.6
Total Delay (hr)	5.2	5.0	4.9	4.6	4.7	4.9
Total Stops	624	600	610	578	612	605
Fuel Used (gal)	24.1	23.0	23.2	22.7	23.7	23.3

Interval #4 Information Recording

Start Time	5:15
End Time	5:30
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	808	793	815	810	803	805
Vehs Exited	804	779	805	787	807	796
Starting Vehs	89	79	88	83	82	83
Ending Vehs	93	93	98	106	78	91
Denied Entry Before	0	1	0	2	0	0
Denied Entry After	1	0	1	3	1	0
Travel Distance (mi)	734	702	741	726	712	723
Travel Time (hr)	24.2	23.2	24.1	23.7	23.2	23.7
Total Delay (hr)	6.0	5.7	5.8	5.6	5.5	5.7
Total Stops	693	657	641	619	624	647
Fuel Used (gal)	25.3	24.6	25.6	24.8	24.6	25.0

210: Professional Plaza & CSAH 60 Performance by movement

Movement	EBT	EBR	WBT	NBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.2	0.2	0.0	0.1	0.1
Total Delay (hr)	0.1	0.0	0.1	0.1	0.2
Total Del/Veh (s)	0.5	0.3	0.3	4.2	0.6
Stop Delay (hr)	0.0	0.0	0.0	0.1	0.1
Stop Del/Veh (s)	0.0	0.0	0.0	4.1	0.1
Total Stops	0	0	0	49	49
Stop/Veh	0.00	0.00	0.00	1.00	0.03
Travel Dist (mi)	136.8	3.2	45.9	5.1	191.0
Travel Time (hr)	3.2	0.1	1.1	0.3	4.7
Avg Speed (mph)	43	36	41	19	41
Fuel Used (gal)	3.8	0.1	1.4	0.1	5.4
Fuel Eff. (mpg)	36.1	41.6	31.9	36.6	35.1
HC Emissions (g)	67	2	29	2	99
CO Emissions (g)	1908	50	865	50	2873
NOx Emissions (g)	263	5	105	6	380
Vehicles Entered	782	18	706	49	1555
Vehicles Exited	781	18	707	49	1555
Hourly Exit Rate	781	18	707	49	1555
Input Volume	772	16	705	52	1545
% of Volume	101	112	100	94	101
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0
Density (ft/veh)					858
Occupancy (veh)	3	0	1	0	5

220: CSAH 60 & Jasper Path Performance by movement

Movement	EBL	EBT	WBT	WBR	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.0
Total Delay (hr)	0.1	0.1	0.1	0.0	0.0	0.2
Total Del/Veh (s)	3.3	0.3	0.4	0.1	3.6	0.5
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.1
Stop Del/Veh (s)	2.2	0.0	0.0	0.0	3.6	0.1
Total Stops	29	0	0	0	13	42
Stop/Veh	0.48	0.00	0.00	0.00	1.00	0.03
Travel Dist (mi)	4.0	52.3	44.4	0.3	1.2	102.3
Travel Time (hr)	0.2	1.3	1.1	0.0	0.1	2.7
Avg Speed (mph)	20	40	41	28	19	38
Fuel Used (gal)	0.1	1.7	1.4	0.0	0.0	3.2
Fuel Eff. (mpg)	48.2	30.9	32.1	71.8	41.8	32.1
HC Emissions (g)	1	32	26	0	0	60
CO Emissions (g)	24	1022	829	1	4	1879
NOx Emissions (g)	2	118	98	0	1	219
Vehicles Entered	60	772	663	4	12	1511
Vehicles Exited	60	772	663	4	13	1512
Hourly Exit Rate	60	772	663	4	13	1512
Input Volume	64	760	662	6	15	1507
% of Volume	94	102	100	67	87	100
Denied Entry Before	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0
Density (ft/veh)						848
Occupancy (veh)	0	1	1	0	0	3

230: Jasmine Way & CSAH 60 Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.1	0.0
Total Delay (hr)	0.1	0.0	0.0	0.0	0.0	0.0	0.1
Total Del/Veh (s)	0.3	0.0	4.8	0.2	14.6	2.4	0.3
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Stop Del/Veh (s)	0.0	0.0	3.6	0.0	12.8	2.3	0.1
Total Stops	0	0	2	1	6	1	10
Stop/Veh	0.00	0.00	0.67	0.00	1.00	1.00	0.01
Travel Dist (mi)	51.0	0.8	0.1	25.0	0.6	0.1	77.7
Travel Time (hr)	1.2	0.0	0.0	0.6	0.0	0.0	1.9
Avg Speed (mph)	42	29	13	40	13	21	40
Fuel Used (gal)	1.5	0.0	0.0	0.7	0.0	0.0	2.2
Fuel Eff. (mpg)	34.6	87.0	42.7	35.0	31.3	46.4	34.9
HC Emissions (g)	28	0	0	13	0	0	42
CO Emissions (g)	836	1	0	347	2	0	1186
NOx Emissions (g)	106	0	0	52	0	0	158
Vehicles Entered	772	13	3	668	6	1	1463
Vehicles Exited	771	13	3	667	6	1	1461
Hourly Exit Rate	771	13	3	667	6	1	1461
Input Volume	762	11	3	667	7	1	1451
% of Volume	101	118	100	100	86	100	101
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0
Density (ft/veh)							846
Occupancy (veh)	1	0	0	1	0	0	2

240: CSAH 60 & Jamaica Path Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.1	0.0
Total Delay (hr)	0.0	0.0	0.1	0.0	0.0	0.0	0.2
Total Del/Veh (s)	3.2	0.2	0.6	0.2	13.1	4.4	0.5
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Stop Del/Veh (s)	2.0	0.0	0.0	0.0	11.5	4.2	0.1
Total Stops	10	0	0	0	4	10	24
Stop/Veh	0.48	0.00	0.00	0.00	1.00	1.00	0.02
Travel Dist (mi)	0.8	28.2	84.1	0.5	0.4	1.0	115.0
Travel Time (hr)	0.1	0.7	2.0	0.0	0.0	0.1	2.8
Avg Speed (mph)	15	42	42	33	13	19	41
Fuel Used (gal)	0.0	0.8	2.3	0.0	0.0	0.0	3.1
Fuel Eff. (mpg)	44.0	34.0	37.3	60.4	33.6	37.3	36.5
HC Emissions (g)	0	16	43	0	0	0	59
CO Emissions (g)	5	460	1037	1	1	5	1508
NOx Emissions (g)	1	60	167	0	0	1	228
Vehicles Entered	21	746	657	4	4	10	1442
Vehicles Exited	21	746	657	4	4	10	1442
Hourly Exit Rate	21	746	657	4	4	10	1442
Input Volume	22	733	658	3	3	10	1429
% of Volume	95	102	100	133	133	100	101
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0
Density (ft/veh)							858
Occupancy (veh)	0	1	2	0	0	0	3

250: CSAH 60 & Jaeger Path Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.1	0.0
Total Delay (hr)	0.0	0.1	0.1	0.0	0.0	0.0	0.2
Total Del/Veh (s)	3.0	0.4	0.6	0.2	14.7	4.7	0.6
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Stop Del/Veh (s)	2.1	0.0	0.0	0.0	12.8	4.3	0.1
Total Stops	3	0	0	0	7	11	21
Stop/Veh	0.50	0.00	0.00	0.00	1.00	1.00	0.01
Travel Dist (mi)	0.7	95.2	99.9	0.8	0.7	1.1	198.5
Travel Time (hr)	0.0	2.2	2.4	0.0	0.1	0.1	4.8
Avg Speed (mph)	27	43	42	35	13	18	42
Fuel Used (gal)	0.0	2.6	2.7	0.0	0.0	0.0	5.4
Fuel Eff. (mpg)	49.6	36.6	37.4	54.8	30.1	37.4	37.1
HC Emissions (g)	0	48	51	0	0	0	99
CO Emissions (g)	2	1263	1211	3	3	4	2485
NOx Emissions (g)	0	188	200	0	0	0	389
Vehicles Entered	6	745	681	6	7	11	1456
Vehicles Exited	6	747	681	6	7	11	1458
Hourly Exit Rate	6	747	681	6	7	11	1458
Input Volume	8	731	680	5	5	10	1439
% of Volume	75	102	100	120	140	110	101
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0
Density (ft/veh)							741
Occupancy (veh)	0	2	2	0	0	0	5

260: Ixonia Avenue (Ext)/Ixonia Avenue & CSAH 60 Performance by movement

Movement	EBL	EBT	WBT	WBR	NBR	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.1	0.0
Total Delay (hr)	0.0	0.1	0.1	0.0	0.0	0.0	0.2
Total Del/Veh (s)	2.4	0.5	0.5	0.1	2.5	6.8	0.5
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Stop Del/Veh (s)	1.4	0.0	0.0	0.0	2.5	6.7	0.0
Total Stops	2	1	0	0	1	3	7
Stop/Veh	0.40	0.00	0.00	0.00	1.00	1.00	0.00
Travel Dist (mi)	0.7	114.0	79.7	0.1	0.1	0.3	194.8
Travel Time (hr)	0.0	2.7	1.9	0.0	0.0	0.0	4.6
Avg Speed (mph)	30	42	42	33	17	17	42
Fuel Used (gal)	0.0	3.1	2.2	0.0	0.0	0.0	5.4
Fuel Eff. (mpg)	49.1	36.6	35.7	52.7	48.2	39.1	36.3
HC Emissions (g)	0	57	45	0	0	0	102
CO Emissions (g)	2	1507	1160	0	0	1	2670
NOx Emissions (g)	0	224	169	0	0	0	393
Vehicles Entered	5	783	680	1	1	3	1473
Vehicles Exited	5	784	682	1	1	3	1476
Hourly Exit Rate	5	784	682	1	1	3	1476
Input Volume	4	764	679	1	1	3	1452
% of Volume	125	103	100	100	100	100	102
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0
Density (ft/veh)							819
Occupancy (veh)	0	3	2	0	0	0	5

270: CSAH 60 & Italy Avenue Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.1	0.0
Total Delay (hr)	0.0	0.1	0.1	0.0	0.0	0.0	0.3
Total Del/Veh (s)	3.9	0.6	0.8	0.7	18.9	4.8	0.8
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Stop Del/Veh (s)	2.8	0.1	0.0	0.0	16.8	4.7	0.1
Total Stops	6	5	0	0	1	7	19
Stop/Veh	0.43	0.01	0.00	0.00	1.00	1.00	0.01
Travel Dist (mi)	1.7	88.7	135.6	0.4	0.1	0.8	227.3
Travel Time (hr)	0.1	2.1	3.2	0.0	0.0	0.0	5.5
Avg Speed (mph)	25	42	43	35	12	19	42
Fuel Used (gal)	0.0	2.5	3.6	0.0	0.0	0.0	6.2
Fuel Eff. (mpg)	50.6	36.0	37.4	55.5	31.1	41.9	36.9
HC Emissions (g)	0	45	74	0	0	0	119
CO Emissions (g)	10	1216	1738	1	0	1	2966
NOx Emissions (g)	1	174	281	0	0	0	457
Vehicles Entered	14	760	682	2	1	7	1466
Vehicles Exited	14	761	682	2	1	7	1467
Hourly Exit Rate	14	761	682	2	1	7	1467
Input Volume	14	749	684	1	1	10	1459
% of Volume	100	102	100	200	100	70	101
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0
Density (ft/veh)							752
Occupancy (veh)	0	2	3	0	0	0	5

280: Ipava Ave & CSAH 60/185th St Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.0	0.1
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	3.2	0.1	3.2	3.3	0.2	3.1
Total Delay (hr)	0.5	2.1	0.0	0.2	2.2	0.1	0.3	1.2	0.1	0.6	1.0	0.2
Total Del/Veh (s)	17.0	13.1	2.0	13.6	16.2	2.7	20.0	26.6	5.7	22.1	23.4	5.8
Stop Delay (hr)	0.4	1.4	0.0	0.1	1.6	0.1	0.3	0.9	0.1	0.5	0.7	0.1
Stop Del/Veh (s)	14.5	8.6	1.7	12.3	11.6	2.3	17.3	20.8	4.9	19.3	18.3	4.5
Total Stops	90	240	33	30	242	58	42	108	48	72	95	69
Stop/Veh	0.81	0.42	0.45	0.75	0.49	0.57	0.70	0.68	0.73	0.78	0.65	0.64
Travel Dist (mi)	11.3	56.8	7.7	4.3	53.5	11.2	16.7	44.1	18.6	27.8	44.1	32.2
Travel Time (hr)	0.9	3.3	0.3	0.3	3.4	0.5	0.8	2.2	0.7	1.4	2.0	1.1
Avg Speed (mph)	13	17	25	15	16	24	22	20	31	22	23	31
Fuel Used (gal)	0.3	1.7	0.2	0.1	1.6	0.3	0.6	1.5	0.6	0.9	1.4	1.0
Fuel Eff. (mpg)	34.2	33.8	47.6	37.3	34.2	43.8	29.9	29.8	32.7	32.0	32.0	32.7
HC Emissions (g)	4	22	3	1	24	6	10	30	9	14	25	19
CO Emissions (g)	129	674	99	48	650	224	354	919	336	441	759	659
NOx Emissions (g)	10	70	7	3	71	15	32	95	31	48	84	66
Vehicles Entered	110	567	74	39	493	101	58	155	65	91	145	105
Vehicles Exited	111	567	74	39	493	102	60	154	65	91	143	106
Hourly Exit Rate	111	567	74	39	493	102	60	154	65	91	143	106
Input Volume	112	556	77	43	484	96	61	153	66	90	149	109
% of Volume	99	102	96	91	102	106	98	101	98	101	96	97
Denied Entry Before	0	0	0	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0	0	0	0
Density (ft/veh)												
Occupancy (veh)	1	3	0	0	3	0	1	2	1	1	2	1

280: Ipava Ave & CSAH 60/185th St Performance by movement

Movement	All
Denied Delay (hr)	0.3
Denied Del/Veh (s)	0.5
Total Delay (hr)	8.4
Total Del/Veh (s)	14.9
Stop Delay (hr)	6.3
Stop Del/Veh (s)	11.2
Total Stops	1127
Stop/Veh	0.56
Travel Dist (mi)	328.4
Travel Time (hr)	16.8
Avg Speed (mph)	20
Fuel Used (gal)	9.9
Fuel Eff. (mpg)	33.0
HC Emissions (g)	166
CO Emissions (g)	5294
NOx Emissions (g)	533
Vehicles Entered	2003
Vehicles Exited	2005
Hourly Exit Rate	2005
Input Volume	1996
% of Volume	100
Denied Entry Before	0
Denied Entry After	0
Density (ft/veh)	1012
Occupancy (veh)	17

290: CSAH 9/Dodd Blvd & CSAH 60/185th St Performance by movement

Movement	EBL	EBT	EBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.2	0.0	0.0	0.3	0.6
Denied Del/Veh (s)	0.0	0.0	0.0	3.3	0.2	0.3	3.1	1.1
Total Delay (hr)	2.5	0.0	0.6	1.1	0.5	1.6	0.5	6.9
Total Del/Veh (s)	22.0	0.6	7.2	15.5	7.0	16.8	5.1	12.7
Stop Delay (hr)	2.0	0.0	0.4	0.9	0.2	0.9	0.3	4.7
Stop Del/Veh (s)	17.9	0.0	4.8	11.7	3.2	9.6	2.9	8.7
Total Stops	280	0	229	207	73	165	189	1143
Stop/Veh	0.69	0.00	0.78	0.78	0.27	0.47	0.52	0.59
Travel Dist (mi)	79.4	0.7	57.6	50.7	52.4	45.6	47.3	333.7
Travel Time (hr)	4.7	0.0	2.3	2.7	1.5	2.5	2.3	16.0
Avg Speed (mph)	17	43	25	21	35	18	23	22
Fuel Used (gal)	2.2	0.0	1.2	1.6	1.8	1.7	1.4	9.9
Fuel Eff. (mpg)	36.0	47.2	49.6	32.5	29.5	26.5	33.6	33.9
HC Emissions (g)	28	0	19	32	36	32	23	169
CO Emissions (g)	784	2	417	1150	1509	1391	1069	6323
NOx Emissions (g)	89	1	63	86	116	85	62	502
Vehicles Entered	398	7	290	261	269	347	359	1931
Vehicles Exited	400	7	290	262	269	344	357	1929
Hourly Exit Rate	400	7	290	262	269	344	357	1929
Input Volume	385	7	294	250	266	337	358	1897
% of Volume	104	100	99	105	101	102	100	102
Denied Entry Before	0	0	0	0	0	0	1	1
Denied Entry After	0	0	0	0	0	0	0	0
Density (ft/veh)								680
Occupancy (veh)	5	0	2	2	1	2	2	15

Total Network Performance

Denied Delay (hr)	1.0
Denied Del/Veh (s)	1.1
Total Delay (hr)	19.1
Total Del/Veh (s)	21.7
Stop Delay (hr)	11.6
Stop Del/Veh (s)	13.1
Total Stops	2442
Stop/Veh	0.77
Travel Dist (mi)	2765.2
Travel Time (hr)	88.8
Avg Speed (mph)	31
Fuel Used (gal)	95.2
Fuel Eff. (mpg)	29.1
HC Emissions (g)	1838
CO Emissions (g)	62449
NOx Emissions (g)	6283
Vehicles Entered	3084
Vehicles Exited	3086
Hourly Exit Rate	3086
Input Volume	19558
% of Volume	16
Denied Entry Before	1
Denied Entry After	0
Density (ft/veh)	634
Occupancy (veh)	88

Intersection: 210: Professional Plaza & CSAH 60

Movement	NB
Directions Served	R
Maximum Queue (ft)	73
Average Queue (ft)	20
95th Queue (ft)	45
Link Distance (ft)	535
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 220: CSAH 60 & Jasper Path

Movement	EB	SB
Directions Served	L	R
Maximum Queue (ft)	49	34
Average Queue (ft)	20	12
95th Queue (ft)	46	36
Link Distance (ft)		528
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	150	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 230: Jasmine Way & CSAH 60

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	41	31
Average Queue (ft)	3	6
95th Queue (ft)	21	26
Link Distance (ft)	145	535
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 240: CSAH 60 & Jamaica Path

Movement	EB	WB	SB
Directions Served	L	TR	LR
Maximum Queue (ft)	40	4	39
Average Queue (ft)	9	0	11
95th Queue (ft)	33	3	36
Link Distance (ft)		626	552
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	25		
Storage Blk Time (%)	1		
Queuing Penalty (veh)	4		

Intersection: 250: CSAH 60 & Jaeger Path

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (ft)	32	52
Average Queue (ft)	3	13
95th Queue (ft)	17	40
Link Distance (ft)	626	518
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 260: Ixonia Avenue (Ext)/Ixonia Avenue & CSAH 60

Movement	EB	EB	NB	SB
Directions Served	LT	TR	LTR	LTR
Maximum Queue (ft)	37	15	24	30
Average Queue (ft)	3	1	1	4
95th Queue (ft)	18	11	9	19
Link Distance (ft)	759	759	335	528
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 270: CSAH 60 & Italy Avenue

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (ft)	90	31
Average Queue (ft)	9	8
95th Queue (ft)	48	30
Link Distance (ft)	593	565
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 280: Ipava Ave & CSAH 60/185th St

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	T	T	R
Maximum Queue (ft)	114	190	150	50	64	140	164	57	91	113	92	56
Average Queue (ft)	45	85	62	13	19	65	84	19	28	52	22	16
95th Queue (ft)	93	151	118	34	45	121	143	43	64	94	61	40
Link Distance (ft)		494	494			526	526			1502	1502	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	300			300	340			340	300			300
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 280: Ipava Ave & CSAH 60/185th St

Movement	SB	SB	SB	SB
Directions Served	L	T	T	R
Maximum Queue (ft)	116	106	80	78
Average Queue (ft)	45	48	18	23
95th Queue (ft)	88	89	53	56
Link Distance (ft)		1600	1600	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	240			240
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 290: CSAH 9/Dodd Blvd & CSAH 60/185th St

Movement	EB	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	R	L	T	T	T	T	R
Maximum Queue (ft)	169	177	176	162	66	60	194	141	123
Average Queue (ft)	77	100	71	79	23	15	83	32	53
95th Queue (ft)	135	152	128	137	56	44	151	89	95
Link Distance (ft)			1004		1013	1013	691	691	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	300	300		300					300
Storage Blk Time (%)									
Queuing Penalty (veh)									

Network Summary

Network wide Queuing Penalty: 4

Phase Number	1	2	3	4	5	6	7	8
Movement	WBL	EBWB	NBL	NBSB	EBL	EBWB	SBL	NBSB
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize								
Recall Mode	None	Min	None	None	None	Min	None	None
Maximum Split (s)	25	45	25	50	25	45	25	50
Maximum Split (%)	17.2%	31.0%	17.2%	34.5%	17.2%	31.0%	17.2%	34.5%
Minimum Split (s)	10	19	10	18.5	10	19	11.5	18.5
Yellow Time (s)	3	5	3	4.5	3	5	3	4.5
All-Red Time (s)	2	2	2	2	2	2	2	2
Minimum Initial (s)	5	12	5	12	5	12	5	12
Vehicle Extension (s)	2	5.5	2	4.5	2	5.5	2	4.5
Minimum Gap (s)	0.2	2.5	0.2	2.5	0.2	2.5	0.2	2.5
Time Before Reduce (s)	0	20	0	20	0	20	0	20
Time To Reduce (s)	0	20	0	20	0	20	0	20
Walk Time (s)		7		7		7		7
Flash Dont Walk (s)		25		29		25		29
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	No	No	No	No	No	No	No	No
Start Time (s)	0	25	70	95	0	25	70	95
End Time (s)	25	70	95	0	25	70	95	0
Yield/Force Off (s)	20	63	90	138.5	20	63	90	138.5
Yield/Force Off 170(s)	20	63	90	109.5	20	63	90	109.5
Local Start Time (s)	120	0	45	70	120	0	45	70
Local Yield (s)	140	38	65	113.5	140	38	65	113.5
Local Yield 170(s)	140	38	65	84.5	140	38	65	84.5

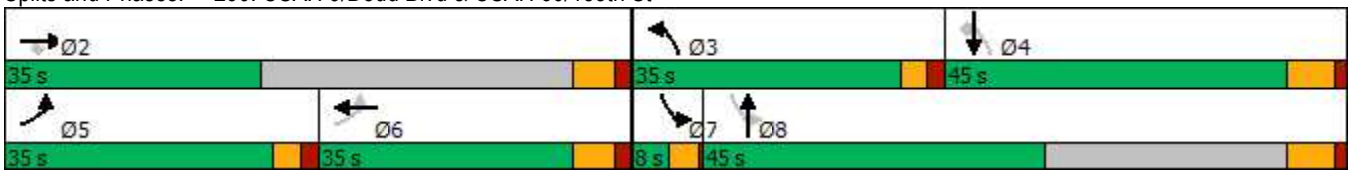
Intersection Summary	
Cycle Length	145
Control Type	Actuated-Uncoordinated
Natural Cycle	60

Splits and Phases: 280: Ipava Ave & CSAH 60/185th St

Phase Number	2	3	4	5	6	7	8
Movement	EBT	NBL	NBSB	EBL	EBWB	SBL	NBSB
Lead/Lag		Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize						Yes	
Recall Mode	None	None	Min	None	None	None	Min
Maximum Split (s)	35	35	45	35	35	8	45
Maximum Split (%)	23.3%	23.3%	30.0%	23.3%	23.3%	5.3%	30.0%
Minimum Split (s)	16.5	10	22	10	16.5	8	22
Yellow Time (s)	4.5	3	5.5	3	4.5	3.5	5.5
All-Red Time (s)	2	2	1.5	2	2	0.5	1.5
Minimum Initial (s)	10	5	15	5	10	4	15
Vehicle Extension (s)	4.5	2	6	2	4.5	3	6
Minimum Gap (s)	0.2	0.2	2.5	0.2	0.2	3	2.5
Time Before Reduce (s)	0	0	20	0	0	0	20
Time To Reduce (s)	0	0	20	0	0	0	20
Walk Time (s)	7		7		7		7
Flash Dont Walk (s)	27		26		24		26
Dual Entry	No	No	Yes	No	No	No	Yes
Inhibit Max	No	No	No	No	No	Yes	No
Start Time (s)	0	70	105	0	35	70	78
End Time (s)	70	105	0	35	70	78	0
Yield/Force Off (s)	63.5	100	143	30	63.5	74	143
Yield/Force Off 170(s)	36.5	100	143	30	39.5	74	143
Local Start Time (s)	115	35	70	115	0	35	43
Local Yield (s)	28.5	65	108	145	28.5	39	108
Local Yield 170(s)	1.5	65	108	145	4.5	39	108

Intersection Summary	
Cycle Length	150
Control Type	Actuated-Uncoordinated
Natural Cycle	60

Splits and Phases: 290: CSAH 9/Dodd Blvd & CSAH 60/185th St



Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	4:15	4:15	4:15	4:15	4:15	4:15
End Time	5:30	5:30	5:30	5:30	5:30	5:30
Total Time (min)	75	75	75	75	75	75
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	5	5	5	5	5	5
# of Recorded Intervals	4	4	4	4	4	4
Volume counts from "S:\2022\220001\TRAFFIC ANALYSIS\SYNCHRO\CSV\PM_2021.csv" data file(s)						
Volume date = 11/16/2021						
Vehs Entered	3042	3094	3077	3104	3065	3072
Vehs Exited	3065	3115	3055	3100	3078	3082
Starting Vehs	101	105	73	96	104	94
Ending Vehs	78	84	95	100	91	89
Denied Entry Before	2	1	3	0	0	0
Denied Entry After	1	0	0	0	0	0
Travel Distance (mi)	2716	2753	2718	2682	2760	2726
Travel Time (hr)	89.1	92.1	90.0	88.9	92.2	90.5
Total Delay (hr)	21.7	23.7	22.3	22.0	23.6	22.7
Total Stops	2385	2542	2466	2558	2572	2507
Fuel Used (gal)	96.2	96.9	95.5	95.0	97.1	96.1

Interval #0 Information Seeding

Start Time	4:15
End Time	4:30
Total Time (min)	15
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

Interval #1 Information

Start Time	4:30
End Time	4:45
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	761	816	778	809	764	783
Vehs Exited	785	838	764	808	777	793
Starting Vehs	101	105	73	96	104	94
Ending Vehs	77	83	87	97	91	86
Denied Entry Before	2	1	3	0	0	0
Denied Entry After	0	1	1	0	0	0
Travel Distance (mi)	672	719	634	685	675	677
Travel Time (hr)	21.7	24.0	20.6	22.5	22.6	22.3
Total Delay (hr)	5.1	6.2	4.9	5.4	5.8	5.5
Total Stops	590	660	560	644	618	612
Fuel Used (gal)	23.6	25.5	22.1	24.3	23.6	23.8

Interval #2 Information

Start Time	4:45
End Time	5:00
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	800	769	769	775	793	781
Vehs Exited	784	753	752	789	805	776
Starting Vehs	77	83	87	97	91	86
Ending Vehs	93	99	104	83	79	88
Denied Entry Before	0	1	1	0	0	0
Denied Entry After	0	1	4	1	2	1
Travel Distance (mi)	722	672	697	669	715	695
Travel Time (hr)	24.0	22.1	23.0	21.7	23.3	22.8
Total Delay (hr)	6.0	5.4	5.6	5.1	5.5	5.5
Total Stops	627	593	623	617	623	618
Fuel Used (gal)	25.9	23.4	24.5	23.6	25.0	24.5

Interval #3 Information

Start Time	5:00
End Time	5:15
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	724	754	795	721	742	747
Vehs Exited	737	756	810	719	722	747
Starting Vehs	93	99	104	83	79	88
Ending Vehs	80	97	89	85	99	85
Denied Entry Before	0	1	4	1	2	1
Denied Entry After	1	1	0	1	2	1
Travel Distance (mi)	637	662	701	628	640	653
Travel Time (hr)	20.7	21.8	23.4	21.0	21.7	21.7
Total Delay (hr)	4.9	5.3	6.0	5.3	5.7	5.4
Total Stops	534	617	639	626	654	615
Fuel Used (gal)	22.4	23.3	25.0	22.4	22.6	23.2

Interval #4 Information Recording

Start Time	5:15
End Time	5:30
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	757	755	735	799	766	763
Vehs Exited	759	768	729	784	774	764
Starting Vehs	80	97	89	85	99	85
Ending Vehs	78	84	95	100	91	89
Denied Entry Before	1	1	0	1	2	1
Denied Entry After	1	0	0	0	0	0
Travel Distance (mi)	685	700	686	699	730	700
Travel Time (hr)	22.7	24.2	23.0	23.7	24.6	23.6
Total Delay (hr)	5.7	6.7	5.8	6.2	6.6	6.2
Total Stops	634	672	644	671	677	660
Fuel Used (gal)	24.2	24.6	23.9	24.6	25.8	24.6

210: Professional Plaza & CSAH 60 Performance by movement

Movement	EBT	EBR	WBT	NBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.2	0.0	0.2	0.1
Total Delay (hr)	0.4	0.0	0.1	0.1	0.6
Total Del/Veh (s)	1.7	0.8	0.5	9.8	1.4
Stop Delay (hr)	0.0	0.0	0.0	0.1	0.1
Stop Del/Veh (s)	0.0	0.0	0.0	9.7	0.3
Total Stops	0	0	0	52	52
Stop/Veh	0.00	0.00	0.00	0.98	0.03
Travel Dist (mi)	113.9	2.5	46.8	5.5	168.7
Travel Time (hr)	3.0	0.1	1.2	0.4	4.6
Avg Speed (mph)	39	33	40	15	37
Fuel Used (gal)	3.8	0.1	1.8	0.2	5.8
Fuel Eff. (mpg)	30.3	39.1	25.3	31.8	28.9
HC Emissions (g)	77	2	33	2	114
CO Emissions (g)	2559	61	1386	56	4063
NOx Emissions (g)	268	6	117	6	396
Vehicles Entered	777	17	719	53	1566
Vehicles Exited	777	17	720	53	1567
Hourly Exit Rate	777	17	720	53	1567
Input Volume	772	16	705	52	1545
% of Volume	101	106	102	102	101
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0
Density (ft/veh)					613
Occupancy (veh)	3	0	1	0	5

220: CSAH 60 & Jasper Path Performance by movement

Movement	EBL	EBT	WBT	WBR	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.0
Total Delay (hr)	0.1	0.1	0.1	0.0	0.0	0.4
Total Del/Veh (s)	5.2	0.7	0.8	0.1	2.3	0.9
Stop Delay (hr)	0.1	0.0	0.0	0.0	0.0	0.1
Stop Del/Veh (s)	3.9	0.0	0.0	0.0	2.3	0.2
Total Stops	38	0	0	0	16	54
Stop/Veh	0.58	0.00	0.00	0.00	1.00	0.04
Travel Dist (mi)	4.5	51.7	45.1	0.5	1.6	103.4
Travel Time (hr)	0.3	1.4	1.2	0.0	0.1	2.9
Avg Speed (mph)	17	38	38	26	21	36
Fuel Used (gal)	0.1	2.1	1.4	0.0	0.0	3.7
Fuel Eff. (mpg)	38.4	24.2	31.7	69.2	40.9	27.8
HC Emissions (g)	1	47	23	0	1	72
CO Emissions (g)	47	1668	716	1	17	2448
NOx Emissions (g)	4	159	87	0	3	253
Vehicles Entered	66	763	674	7	16	1526
Vehicles Exited	66	764	674	7	16	1527
Hourly Exit Rate	66	764	674	7	16	1527
Input Volume	64	760	662	6	15	1507
% of Volume	103	100	102	117	107	101
Denied Entry Before	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0
Density (ft/veh)						529
Occupancy (veh)	0	1	1	0	0	3

230: Jasmine Way & CSAH 60 Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.2	0.0	0.1	0.1	0.0
Total Delay (hr)	0.1	0.0	0.0	0.1	0.0	0.0	0.3
Total Del/Veh (s)	0.6	0.1	3.2	0.4	20.1	8.6	0.6
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Stop Del/Veh (s)	0.0	0.0	1.6	0.0	18.3	8.6	0.1
Total Stops	0	0	3	0	6	1	10
Stop/Veh	0.00	0.00	0.75	0.00	1.00	1.00	0.01
Travel Dist (mi)	50.4	0.9	0.1	25.5	0.6	0.1	77.7
Travel Time (hr)	1.3	0.0	0.0	0.7	0.1	0.0	2.0
Avg Speed (mph)	40	27	15	38	11	15	38
Fuel Used (gal)	1.5	0.0	0.0	0.7	0.0	0.0	2.2
Fuel Eff. (mpg)	34.7	82.3	41.8	34.8	31.2	38.9	34.9
HC Emissions (g)	33	0	0	11	0	0	44
CO Emissions (g)	870	3	0	287	2	0	1162
NOx Emissions (g)	115	0	0	44	0	0	160
Vehicles Entered	763	13	4	679	6	1	1466
Vehicles Exited	763	13	4	679	6	1	1466
Hourly Exit Rate	763	13	4	679	6	1	1466
Input Volume	762	11	3	667	7	1	1451
% of Volume	100	118	133	102	86	100	101
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0
Density (ft/veh)							606
Occupancy (veh)	1	0	0	1	0	0	2

240: CSAH 60 & Jamaica Path Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.1	0.1	0.0
Total Delay (hr)	0.0	0.1	0.2	0.0	0.0	0.0	0.3
Total Del/Veh (s)	5.4	0.3	1.2	0.4	12.9	6.6	0.9
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Stop Del/Veh (s)	4.1	0.0	0.0	0.0	11.5	6.4	0.1
Total Stops	11	0	0	0	2	12	25
Stop/Veh	0.52	0.00	0.00	0.00	1.00	1.00	0.02
Travel Dist (mi)	0.8	27.8	85.8	0.5	0.2	1.2	116.3
Travel Time (hr)	0.1	0.7	2.2	0.0	0.0	0.1	3.0
Avg Speed (mph)	12	41	40	29	13	17	38
Fuel Used (gal)	0.0	0.9	2.2	0.0	0.0	0.0	3.1
Fuel Eff. (mpg)	37.6	32.0	38.9	43.6	32.5	36.7	37.0
HC Emissions (g)	0	18	33	0	0	1	53
CO Emissions (g)	5	518	775	4	0	15	1318
NOx Emissions (g)	1	66	136	0	0	2	205
Vehicles Entered	21	734	670	4	2	12	1443
Vehicles Exited	21	734	670	4	2	12	1443
Hourly Exit Rate	21	734	670	4	2	12	1443
Input Volume	22	733	658	3	3	10	1429
% of Volume	95	100	102	133	67	120	101
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0
Density (ft/veh)							521
Occupancy (veh)	0	1	2	0	0	0	3

250: CSAH 60 & Jaeger Path Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.9	0.1	0.1	0.0
Total Delay (hr)	0.0	0.2	0.2	0.0	0.0	0.0	0.5
Total Del/Veh (s)	2.7	0.9	1.1	0.5	20.3	8.1	1.2
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Stop Del/Veh (s)	1.6	0.0	0.0	0.0	18.5	8.2	0.2
Total Stops	4	2	0	0	7	12	25
Stop/Veh	0.40	0.00	0.00	0.00	1.00	1.00	0.02
Travel Dist (mi)	1.2	92.7	101.4	0.7	0.7	1.2	197.8
Travel Time (hr)	0.0	2.3	2.5	0.0	0.1	0.1	5.0
Avg Speed (mph)	28	41	41	32	10	15	40
Fuel Used (gal)	0.0	2.5	2.7	0.0	0.0	0.0	5.3
Fuel Eff. (mpg)	51.0	37.7	37.7	43.6	26.5	34.7	37.7
HC Emissions (g)	0	54	42	0	0	0	96
CO Emissions (g)	4	1220	1009	4	4	8	2249
NOx Emissions (g)	1	197	171	0	0	1	371
Vehicles Entered	10	727	691	5	7	12	1452
Vehicles Exited	10	727	691	5	7	12	1452
Hourly Exit Rate	10	727	691	5	7	12	1452
Input Volume	8	731	680	5	5	10	1439
% of Volume	125	99	102	100	140	120	101
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0
Density (ft/veh)							556
Occupancy (veh)	0	2	2	0	0	0	5

260: Ixonia Avenue (Ext)/Ixonia Avenue & CSAH 60 Performance by movement

Movement	EBL	EBT	WBT	WBR	NBR	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0		0.1	0.0
Total Delay (hr)	0.0	0.2	0.2	0.0	0.0	0.0	0.4
Total Del/Veh (s)	4.6	1.1	0.9	0.3		4.7	1.0
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Stop Del/Veh (s)	3.2	0.0	0.0	0.0		4.6	0.0
Total Stops	2	2	0	0	0	4	8
Stop/Veh	0.50	0.00	0.00	0.00		1.00	0.01
Travel Dist (mi)	0.6	111.0	80.9	0.2	0.0	0.4	193.1
Travel Time (hr)	0.0	2.7	2.0	0.0	0.0	0.0	4.8
Avg Speed (mph)	27	41	40	33	15	18	40
Fuel Used (gal)	0.0	3.0	2.3	0.0	0.0	0.0	5.3
Fuel Eff. (mpg)	44.6	37.3	35.9	48.6	37.7	42.1	36.7
HC Emissions (g)	0	61	37	0	0	0	98
CO Emissions (g)	2	1404	948	1	0	1	2357
NOx Emissions (g)	0	229	147	0	0	0	377
Vehicles Entered	4	760	691	1	0	4	1460
Vehicles Exited	4	759	692	1	0	4	1460
Hourly Exit Rate	4	759	692	1	0	4	1460
Input Volume	4	764	679	1	1	3	1452
% of Volume	100	99	102	100	0	133	101
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0
Density (ft/veh)							490
Occupancy (veh)	0	3	2	0	0	0	5

270: CSAH 60 & Italy Avenue Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.0	0.1	0.1	0.1	0.1	0.1
Total Delay (hr)	0.0	0.3	0.3	0.0	0.0	0.0	0.6
Total Del/Veh (s)	3.6	1.3	1.5	1.4	30.1	6.1	1.5
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Stop Del/Veh (s)	2.5	0.0	0.0	0.0	27.4	6.1	0.1
Total Stops	6	7	0	0	2	8	23
Stop/Veh	0.43	0.01	0.00	0.00	1.00	0.89	0.02
Travel Dist (mi)	1.7	86.3	137.4	0.4	0.2	0.9	227.0
Travel Time (hr)	0.1	2.2	3.4	0.0	0.0	0.1	5.8
Avg Speed (mph)	26	39	41	33	9	17	40
Fuel Used (gal)	0.0	2.3	3.9	0.0	0.0	0.0	6.3
Fuel Eff. (mpg)	46.8	37.2	35.6	39.2	23.0	37.7	36.2
HC Emissions (g)	0	49	68	0	0	0	117
CO Emissions (g)	6	1118	1713	3	2	2	2844
NOx Emissions (g)	1	179	269	0	0	0	449
Vehicles Entered	14	741	696	2	2	8	1463
Vehicles Exited	14	741	697	2	2	9	1465
Hourly Exit Rate	14	741	697	2	2	9	1465
Input Volume	14	749	684	1	1	10	1459
% of Volume	100	99	102	200	200	90	100
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0
Density (ft/veh)							407
Occupancy (veh)	0	2	3	0	0	0	6

280: Ipava Ave & CSAH 60/185th St Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.0	0.1
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	3.3	0.1	3.3	3.3	0.2	3.1
Total Delay (hr)	0.5	2.0	0.0	0.2	2.6	0.1	0.4	1.2	0.1	0.6	1.1	0.1
Total Del/Veh (s)	18.1	12.8	1.7	13.9	18.8	2.1	23.3	29.7	5.4	23.0	26.3	4.1
Stop Delay (hr)	0.5	1.3	0.0	0.1	1.8	0.1	0.3	1.0	0.1	0.5	0.9	0.1
Stop Del/Veh (s)	15.8	8.6	1.5	11.9	12.8	1.9	20.7	23.6	4.7	20.1	20.7	2.8
Total Stops	92	229	30	30	268	53	46	106	48	78	102	80
Stop/Veh	0.85	0.41	0.41	0.77	0.54	0.51	0.79	0.73	0.73	0.81	0.68	0.73
Travel Dist (mi)	11.0	55.4	7.6	4.2	53.5	11.3	16.4	41.3	18.8	29.0	44.8	33.2
Travel Time (hr)	0.9	3.2	0.3	0.3	3.8	0.4	0.9	2.1	0.7	1.5	2.1	1.1
Avg Speed (mph)	12	17	26	15	14	26	20	19	31	21	21	33
Fuel Used (gal)	0.3	1.7	0.2	0.1	1.7	0.2	0.6	1.4	0.6	0.9	1.4	1.0
Fuel Eff. (mpg)	33.1	32.2	43.0	32.6	31.1	47.4	29.2	29.7	32.7	31.2	31.4	32.5
HC Emissions (g)	5	27	3	2	21	4	8	20	11	17	17	23
CO Emissions (g)	155	835	137	79	705	138	304	725	370	534	642	759
NOx Emissions (g)	13	83	9	4	61	11	27	70	37	57	65	75
Vehicles Entered	107	553	74	38	495	102	58	144	66	95	147	108
Vehicles Exited	108	555	74	38	495	103	57	144	65	95	146	109
Hourly Exit Rate	108	555	74	38	495	103	57	144	65	95	146	109
Input Volume	112	556	77	43	484	96	61	153	66	90	149	109
% of Volume	96	100	96	88	102	107	93	94	98	106	98	100
Denied Entry Before	0	0	0	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0	0	0	0
Density (ft/veh)												
Occupancy (veh)	1	3	0	0	4	0	1	2	1	1	2	1

280: Ipava Ave & CSAH 60/185th St Performance by movement

Movement	All
Denied Delay (hr)	0.3
Denied Del/Veh (s)	0.6
Total Delay (hr)	8.9
Total Del/Veh (s)	15.9
Stop Delay (hr)	6.7
Stop Del/Veh (s)	12.0
Total Stops	1162
Stop/Veh	0.58
Travel Dist (mi)	326.5
Travel Time (hr)	17.3
Avg Speed (mph)	19
Fuel Used (gal)	10.2
Fuel Eff. (mpg)	31.9
HC Emissions (g)	158
CO Emissions (g)	5383
NOx Emissions (g)	510
Vehicles Entered	1987
Vehicles Exited	1989
Hourly Exit Rate	1989
Input Volume	1996
% of Volume	100
Denied Entry Before	0
Denied Entry After	0
Density (ft/veh)	986
Occupancy (veh)	17

290: CSAH 9/Dodd Blvd & CSAH 60/185th St Performance by movement

Movement	EBL	EBT	EBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.2	0.0	0.0	0.3	0.6
Denied Del/Veh (s)	0.0	0.0	0.0	3.3	0.2	0.3	3.2	1.1
Total Delay (hr)	2.6	0.0	0.7	1.1	0.5	1.5	0.5	6.9
Total Del/Veh (s)	24.1	0.4	7.8	14.7	6.6	16.2	5.3	12.9
Stop Delay (hr)	2.2	0.0	0.5	0.8	0.2	0.9	0.3	4.8
Stop Del/Veh (s)	20.1	0.0	5.5	10.9	3.0	9.0	2.9	9.0
Total Stops	285	0	246	202	67	157	186	1143
Stop/Veh	0.74	0.00	0.81	0.76	0.25	0.46	0.52	0.59
Travel Dist (mi)	76.1	0.5	59.5	51.1	51.5	48.7	50.5	338.1
Travel Time (hr)	4.7	0.0	2.4	2.7	1.4	2.5	2.4	16.1
Avg Speed (mph)	16	42	25	21	36	20	24	22
Fuel Used (gal)	2.2	0.0	1.2	1.6	1.7	1.8	1.4	9.9
Fuel Eff. (mpg)	34.8	42.3	48.9	32.9	29.8	26.9	35.0	34.0
HC Emissions (g)	34	0	26	23	34	35	22	175
CO Emissions (g)	867	6	525	1014	1461	1526	1083	6482
NOx Emissions (g)	103	1	80	68	112	94	59	517
Vehicles Entered	380	5	299	263	264	340	353	1904
Vehicles Exited	381	5	300	265	265	342	355	1913
Hourly Exit Rate	381	5	300	265	265	342	355	1913
Input Volume	385	7	294	250	266	337	358	1897
% of Volume	99	71	102	106	100	101	99	101
Denied Entry Before	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0
Density (ft/veh)								691
Occupancy (veh)	5	0	2	2	1	2	2	15

Total Network Performance

Denied Delay (hr)	1.0
Denied Del/Veh (s)	1.2
Total Delay (hr)	21.7
Total Del/Veh (s)	24.6
Stop Delay (hr)	12.2
Stop Del/Veh (s)	13.9
Total Stops	2507
Stop/Veh	0.79
Travel Dist (mi)	2725.6
Travel Time (hr)	90.5
Avg Speed (mph)	30
Fuel Used (gal)	96.1
Fuel Eff. (mpg)	28.4
HC Emissions (g)	1813
CO Emissions (g)	62645
NOx Emissions (g)	6161
Vehicles Entered	3072
Vehicles Exited	3082
Hourly Exit Rate	3082
Input Volume	19558
% of Volume	16
Denied Entry Before	0
Denied Entry After	0
Density (ft/veh)	533
Occupancy (veh)	89

Intersection: 210: Professional Plaza & CSAH 60

Movement	NB
Directions Served	R
Maximum Queue (ft)	78
Average Queue (ft)	22
95th Queue (ft)	52
Link Distance (ft)	547
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 220: CSAH 60 & Jasper Path

Movement	EB	SB
Directions Served	L	R
Maximum Queue (ft)	74	58
Average Queue (ft)	23	13
95th Queue (ft)	57	39
Link Distance (ft)		526
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	250	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 230: Jasmine Way & CSAH 60

Movement	WB	NB
Directions Served	L	LR
Maximum Queue (ft)	30	31
Average Queue (ft)	2	6
95th Queue (ft)	16	26
Link Distance (ft)		547
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	25	
Storage Blk Time (%)	0	
Queuing Penalty (veh)	1	

Intersection: 240: CSAH 60 & Jamaica Path

Movement	EB	SB
Directions Served	L	LR
Maximum Queue (ft)	49	41
Average Queue (ft)	10	11
95th Queue (ft)	35	36
Link Distance (ft)		564
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	25	
Storage Blk Time (%)	2	
Queuing Penalty (veh)	17	

Intersection: 250: CSAH 60 & Jaeger Path

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (ft)	66	50
Average Queue (ft)	6	12
95th Queue (ft)	33	37
Link Distance (ft)	626	518
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 260: Ixonia Avenue (Ext)/Ixonia Avenue & CSAH 60

Movement	EB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	60	12	30
Average Queue (ft)	4	1	4
95th Queue (ft)	28	8	19
Link Distance (ft)	759	347	540
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 270: CSAH 60 & Italy Avenue

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (ft)	102	37
Average Queue (ft)	11	9
95th Queue (ft)	54	32
Link Distance (ft)	593	577
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 280: Ipava Ave & CSAH 60/185th St

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	T	T	R
Maximum Queue (ft)	121	185	145	42	68	256	201	49	84	133	100	55
Average Queue (ft)	48	83	65	13	20	135	46	18	29	56	20	17
95th Queue (ft)	98	156	122	32	52	220	137	39	69	104	61	42
Link Distance (ft)		494	494			526	526			1502	1502	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	300			300	340			340	300			300
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 280: Ipava Ave & CSAH 60/185th St

Movement	SB	SB	SB	SB
Directions Served	L	T	T	R
Maximum Queue (ft)	125	97	78	65
Average Queue (ft)	49	46	23	21
95th Queue (ft)	94	85	58	47
Link Distance (ft)		1600	1600	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	240			240
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 290: CSAH 9/Dodd Blvd & CSAH 60/185th St

Movement	EB	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	R	L	T	T	T	T	R
Maximum Queue (ft)	159	188	157	143	79	49	168	100	151
Average Queue (ft)	79	101	74	73	24	13	80	24	52
95th Queue (ft)	142	161	124	123	60	37	137	66	100
Link Distance (ft)			1004		1013	1013	750	750	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	300	300		300					300
Storage Blk Time (%)									
Queuing Penalty (veh)									

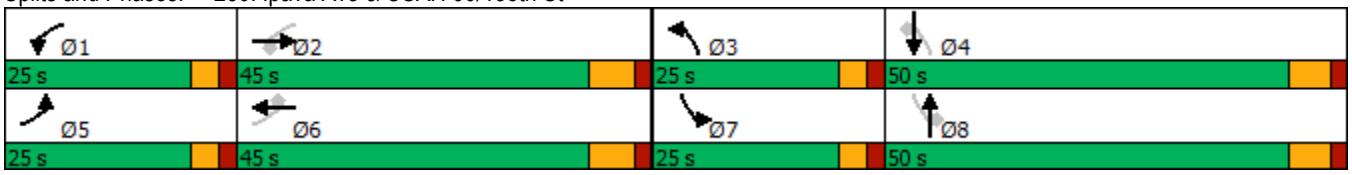
Network Summary

Network wide Queuing Penalty: 18

Phase Number	1	2	3	4	5	6	7	8
Movement	WBL	EBWB	NBL	NBSB	EBL	EBWB	SBL	NBSB
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize								
Recall Mode	None	Min	None	None	None	Min	None	None
Maximum Split (s)	25	45	25	50	25	45	25	50
Maximum Split (%)	17.2%	31.0%	17.2%	34.5%	17.2%	31.0%	17.2%	34.5%
Minimum Split (s)	10	19	10	18.5	10	19	11.5	18.5
Yellow Time (s)	3	5	3	4.5	3	5	3	4.5
All-Red Time (s)	2	2	2	2	2	2	2	2
Minimum Initial (s)	5	12	5	12	5	12	5	12
Vehicle Extension (s)	2	5.5	2	4.5	2	5.5	2	4.5
Minimum Gap (s)	0.2	2.5	0.2	2.5	0.2	2.5	0.2	2.5
Time Before Reduce (s)	0	20	0	20	0	20	0	20
Time To Reduce (s)	0	20	0	20	0	20	0	20
Walk Time (s)		7		7		7		7
Flash Dont Walk (s)		25		29		25		29
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	No	No	No	No	No	No	No	No
Start Time (s)	0	25	70	95	0	25	70	95
End Time (s)	25	70	95	0	25	70	95	0
Yield/Force Off (s)	20	63	90	138.5	20	63	90	138.5
Yield/Force Off 170(s)	20	63	90	109.5	20	63	90	109.5
Local Start Time (s)	120	0	45	70	120	0	45	70
Local Yield (s)	140	38	65	113.5	140	38	65	113.5
Local Yield 170(s)	140	38	65	84.5	140	38	65	84.5

Intersection Summary	
Cycle Length	145
Control Type	Actuated-Uncoordinated
Natural Cycle	60

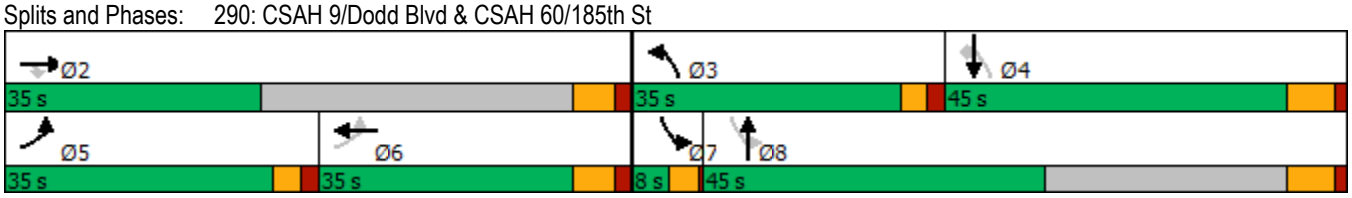
Splits and Phases: 280: Ipava Ave & CSAH 60/185th St



Phase Number	2	3	4	5	6	7	8
Movement	EBT	NBL	NBSB	EBL	EBWB	SBL	NBSB
Lead/Lag		Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize						Yes	
Recall Mode	None	None	Min	None	None	None	Min
Maximum Split (s)	35	35	45	35	35	8	45
Maximum Split (%)	23.3%	23.3%	30.0%	23.3%	23.3%	5.3%	30.0%
Minimum Split (s)	16.5	10	22	10	16.5	8	22
Yellow Time (s)	4.5	3	5.5	3	4.5	3.5	5.5
All-Red Time (s)	2	2	1.5	2	2	0.5	1.5
Minimum Initial (s)	10	5	15	5	10	4	15
Vehicle Extension (s)	4.5	2	6	2	4.5	3	6
Minimum Gap (s)	0.2	0.2	2.5	0.2	0.2	3	2.5
Time Before Reduce (s)	0	0	20	0	0	0	20
Time To Reduce (s)	0	0	20	0	0	0	20
Walk Time (s)	7		7		7		7
Flash Dont Walk (s)	27		26		24		26
Dual Entry	No	No	Yes	No	No	No	Yes
Inhibit Max	No	No	No	No	No	Yes	No
Start Time (s)	0	70	105	0	35	70	78
End Time (s)	70	105	0	35	70	78	0
Yield/Force Off (s)	63.5	100	143	30	63.5	74	143
Yield/Force Off 170(s)	36.5	100	143	30	39.5	74	143
Local Start Time (s)	115	35	70	115	0	35	43
Local Yield (s)	28.5	65	108	145	28.5	39	108
Local Yield 170(s)	1.5	65	108	145	4.5	39	108

Intersection Summary	
Cycle Length	150
Control Type	Actuated-Uncoordinated
Natural Cycle	60

Splits and Phases: 290: CSAH 9/Dodd Blvd & CSAH 60/185th St



Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	4:15	4:15	4:15	4:15	4:15	4:15
End Time	5:30	5:30	5:30	5:30	5:30	5:30
Total Time (min)	75	75	75	75	75	75
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	5	5	5	5	5	5
# of Recorded Intervals	4	4	4	4	4	4
Volume counts from "S:\2022\220001\TRAFFIC ANALYSIS\SYNCHRO\CSV\PM_2021.csv" data file(s)						
Volume date = 11/16/2021						
Vehs Entered	3124	3107	3030	3074	3089	3084
Vehs Exited	3136	3110	3013	3062	3106	3086
Starting Vehs	105	96	81	94	95	93
Ending Vehs	93	93	98	106	78	91
Denied Entry Before	1	0	3	0	1	1
Denied Entry After	1	0	1	3	1	0
Travel Distance (mi)	2820	2804	2692	2740	2770	2765
Travel Time (hr)	90.7	91.5	85.7	87.7	88.5	88.8
Total Delay (hr)	20.8	21.7	19.0	19.3	19.5	20.1
Total Stops	2491	2520	2368	2363	2460	2442
Fuel Used (gal)	96.5	97.0	92.9	93.8	95.7	95.2

Interval #0 Information Seeding

Start Time	4:15
End Time	4:30
Total Time (min)	15
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

Interval #1 Information

Start Time	4:30
End Time	4:45
Total Time (min)	15
Volumes adjusted by Growth Factors.	

Run Number	1	2	3	4	5	Avg
Vehs Entered	781	808	772	751	731	767
Vehs Exited	795	819	771	762	739	777
Starting Vehs	105	96	81	94	95	93
Ending Vehs	91	85	82	83	87	83
Denied Entry Before	1	0	3	0	1	1
Denied Entry After	1	2	1	0	0	0
Travel Distance (mi)	688	735	660	653	663	679
Travel Time (hr)	21.9	24.1	20.7	20.9	20.9	21.7
Total Delay (hr)	4.8	5.8	4.3	4.7	4.4	4.8
Total Stops	584	655	572	570	580	589
Fuel Used (gal)	23.2	25.5	22.6	22.4	22.6	23.3

Interval #2 Information

Start Time	4:45
End Time	5:00
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	758	753	699	785	802	759
Vehs Exited	763	750	700	771	790	754
Starting Vehs	91	85	82	83	87	83
Ending Vehs	86	88	81	97	99	89
Denied Entry Before	1	2	1	0	0	0
Denied Entry After	1	0	0	0	2	0
Travel Distance (mi)	707	695	631	712	714	692
Travel Time (hr)	22.2	22.4	19.6	22.1	22.6	21.8
Total Delay (hr)	4.7	5.2	4.0	4.4	5.0	4.7
Total Stops	590	608	545	596	644	596
Fuel Used (gal)	23.9	23.9	21.4	23.9	24.8	23.6

Interval #3 Information

Start Time	5:00
End Time	5:15
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	777	753	744	728	753	752
Vehs Exited	774	762	737	742	770	757
Starting Vehs	86	88	81	97	99	89
Ending Vehs	89	79	88	83	82	83
Denied Entry Before	1	0	0	0	2	0
Denied Entry After	0	1	0	2	0	0
Travel Distance (mi)	692	672	661	649	682	671
Travel Time (hr)	22.4	21.8	21.4	20.9	21.7	21.6
Total Delay (hr)	5.2	5.0	4.9	4.6	4.7	4.9
Total Stops	624	600	610	578	612	605
Fuel Used (gal)	24.1	23.0	23.2	22.7	23.7	23.3

Interval #4 Information Recording

Start Time	5:15
End Time	5:30
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	808	793	815	810	803	805
Vehs Exited	804	779	805	787	807	796
Starting Vehs	89	79	88	83	82	83
Ending Vehs	93	93	98	106	78	91
Denied Entry Before	0	1	0	2	0	0
Denied Entry After	1	0	1	3	1	0
Travel Distance (mi)	734	702	741	726	712	723
Travel Time (hr)	24.2	23.2	24.1	23.7	23.2	23.7
Total Delay (hr)	6.0	5.7	5.8	5.6	5.5	5.7
Total Stops	693	657	641	619	624	647
Fuel Used (gal)	25.3	24.6	25.6	24.8	24.6	25.0

210: Professional Plaza & CSAH 60 Performance by movement

Movement	EBT	EBR	WBT	NBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.2	0.2	0.0	0.1	0.1
Total Delay (hr)	0.1	0.0	0.1	0.1	0.2
Total Del/Veh (s)	0.5	0.3	0.3	4.2	0.6
Stop Delay (hr)	0.0	0.0	0.0	0.1	0.1
Stop Del/Veh (s)	0.0	0.0	0.0	4.1	0.1
Total Stops	0	0	0	49	49
Stop/Veh	0.00	0.00	0.00	1.00	0.03
Travel Dist (mi)	136.8	3.2	45.9	5.1	191.0
Travel Time (hr)	3.2	0.1	1.1	0.3	4.7
Avg Speed (mph)	43	36	41	19	41
Fuel Used (gal)	3.8	0.1	1.4	0.1	5.4
Fuel Eff. (mpg)	36.1	41.6	31.9	36.6	35.1
HC Emissions (g)	67	2	29	2	99
CO Emissions (g)	1908	50	865	50	2873
NOx Emissions (g)	263	5	105	6	380
Vehicles Entered	782	18	706	49	1555
Vehicles Exited	781	18	707	49	1555
Hourly Exit Rate	781	18	707	49	1555
Input Volume	772	16	705	52	1545
% of Volume	101	112	100	94	101
Denied Entry Before	0	0	0	0	0
Denied Entry After	0	0	0	0	0
Density (ft/veh)					858
Occupancy (veh)	3	0	1	0	5

220: CSAH 60 & Jasper Path Performance by movement

Movement	EBL	EBT	WBT	WBR	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.0
Total Delay (hr)	0.1	0.1	0.1	0.0	0.0	0.2
Total Del/Veh (s)	3.3	0.3	0.4	0.1	3.6	0.5
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.1
Stop Del/Veh (s)	2.2	0.0	0.0	0.0	3.6	0.1
Total Stops	29	0	0	0	13	42
Stop/Veh	0.48	0.00	0.00	0.00	1.00	0.03
Travel Dist (mi)	4.0	52.3	44.4	0.3	1.2	102.3
Travel Time (hr)	0.2	1.3	1.1	0.0	0.1	2.7
Avg Speed (mph)	20	40	41	28	19	38
Fuel Used (gal)	0.1	1.7	1.4	0.0	0.0	3.2
Fuel Eff. (mpg)	48.2	30.9	32.1	71.8	41.8	32.1
HC Emissions (g)	1	32	26	0	0	60
CO Emissions (g)	24	1022	829	1	4	1879
NOx Emissions (g)	2	118	98	0	1	219
Vehicles Entered	60	772	663	4	12	1511
Vehicles Exited	60	772	663	4	13	1512
Hourly Exit Rate	60	772	663	4	13	1512
Input Volume	64	760	662	6	15	1507
% of Volume	94	102	100	67	87	100
Denied Entry Before	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0
Density (ft/veh)						848
Occupancy (veh)	0	1	1	0	0	3

230: Jasmine Way & CSAH 60 Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.1	0.0
Total Delay (hr)	0.1	0.0	0.0	0.0	0.0	0.0	0.1
Total Del/Veh (s)	0.3	0.0	4.8	0.2	14.6	2.4	0.3
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Stop Del/Veh (s)	0.0	0.0	3.6	0.0	12.8	2.3	0.1
Total Stops	0	0	2	1	6	1	10
Stop/Veh	0.00	0.00	0.67	0.00	1.00	1.00	0.01
Travel Dist (mi)	51.0	0.8	0.1	25.0	0.6	0.1	77.7
Travel Time (hr)	1.2	0.0	0.0	0.6	0.0	0.0	1.9
Avg Speed (mph)	42	29	13	40	13	21	40
Fuel Used (gal)	1.5	0.0	0.0	0.7	0.0	0.0	2.2
Fuel Eff. (mpg)	34.6	87.0	42.7	35.0	31.3	46.4	34.9
HC Emissions (g)	28	0	0	13	0	0	42
CO Emissions (g)	836	1	0	347	2	0	1186
NOx Emissions (g)	106	0	0	52	0	0	158
Vehicles Entered	772	13	3	668	6	1	1463
Vehicles Exited	771	13	3	667	6	1	1461
Hourly Exit Rate	771	13	3	667	6	1	1461
Input Volume	762	11	3	667	7	1	1451
% of Volume	101	118	100	100	86	100	101
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0
Density (ft/veh)							846
Occupancy (veh)	1	0	0	1	0	0	2

240: CSAH 60 & Jamaica Path Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.1	0.0
Total Delay (hr)	0.0	0.0	0.1	0.0	0.0	0.0	0.2
Total Del/Veh (s)	3.2	0.2	0.6	0.2	13.1	4.4	0.5
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Stop Del/Veh (s)	2.0	0.0	0.0	0.0	11.5	4.2	0.1
Total Stops	10	0	0	0	4	10	24
Stop/Veh	0.48	0.00	0.00	0.00	1.00	1.00	0.02
Travel Dist (mi)	0.8	28.2	84.1	0.5	0.4	1.0	115.0
Travel Time (hr)	0.1	0.7	2.0	0.0	0.0	0.1	2.8
Avg Speed (mph)	15	42	42	33	13	19	41
Fuel Used (gal)	0.0	0.8	2.3	0.0	0.0	0.0	3.1
Fuel Eff. (mpg)	44.0	34.0	37.3	60.4	33.6	37.3	36.5
HC Emissions (g)	0	16	43	0	0	0	59
CO Emissions (g)	5	460	1037	1	1	5	1508
NOx Emissions (g)	1	60	167	0	0	1	228
Vehicles Entered	21	746	657	4	4	10	1442
Vehicles Exited	21	746	657	4	4	10	1442
Hourly Exit Rate	21	746	657	4	4	10	1442
Input Volume	22	733	658	3	3	10	1429
% of Volume	95	102	100	133	133	100	101
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0
Density (ft/veh)							858
Occupancy (veh)	0	1	2	0	0	0	3

250: CSAH 60 & Jaeger Path Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.1	0.0
Total Delay (hr)	0.0	0.1	0.1	0.0	0.0	0.0	0.2
Total Del/Veh (s)	3.0	0.4	0.6	0.2	14.7	4.7	0.6
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Stop Del/Veh (s)	2.1	0.0	0.0	0.0	12.8	4.3	0.1
Total Stops	3	0	0	0	7	11	21
Stop/Veh	0.50	0.00	0.00	0.00	1.00	1.00	0.01
Travel Dist (mi)	0.7	95.2	99.9	0.8	0.7	1.1	198.5
Travel Time (hr)	0.0	2.2	2.4	0.0	0.1	0.1	4.8
Avg Speed (mph)	27	43	42	35	13	18	42
Fuel Used (gal)	0.0	2.6	2.7	0.0	0.0	0.0	5.4
Fuel Eff. (mpg)	49.6	36.6	37.4	54.8	30.1	37.4	37.1
HC Emissions (g)	0	48	51	0	0	0	99
CO Emissions (g)	2	1263	1211	3	3	4	2485
NOx Emissions (g)	0	188	200	0	0	0	389
Vehicles Entered	6	745	681	6	7	11	1456
Vehicles Exited	6	747	681	6	7	11	1458
Hourly Exit Rate	6	747	681	6	7	11	1458
Input Volume	8	731	680	5	5	10	1439
% of Volume	75	102	100	120	140	110	101
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0
Density (ft/veh)							741
Occupancy (veh)	0	2	2	0	0	0	5

260: Ixonia Avenue (Ext)/Ixonia Avenue & CSAH 60 Performance by movement

Movement	EBL	EBT	WBT	WBR	NBR	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.1	0.0
Total Delay (hr)	0.0	0.1	0.1	0.0	0.0	0.0	0.2
Total Del/Veh (s)	2.4	0.5	0.5	0.1	2.5	6.8	0.5
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Stop Del/Veh (s)	1.4	0.0	0.0	0.0	2.5	6.7	0.0
Total Stops	2	1	0	0	1	3	7
Stop/Veh	0.40	0.00	0.00	0.00	1.00	1.00	0.00
Travel Dist (mi)	0.7	114.0	79.7	0.1	0.1	0.3	194.8
Travel Time (hr)	0.0	2.7	1.9	0.0	0.0	0.0	4.6
Avg Speed (mph)	30	42	42	33	17	17	42
Fuel Used (gal)	0.0	3.1	2.2	0.0	0.0	0.0	5.4
Fuel Eff. (mpg)	49.1	36.6	35.7	52.7	48.2	39.1	36.3
HC Emissions (g)	0	57	45	0	0	0	102
CO Emissions (g)	2	1507	1160	0	0	1	2670
NOx Emissions (g)	0	224	169	0	0	0	393
Vehicles Entered	5	783	680	1	1	3	1473
Vehicles Exited	5	784	682	1	1	3	1476
Hourly Exit Rate	5	784	682	1	1	3	1476
Input Volume	4	764	679	1	1	3	1452
% of Volume	125	103	100	100	100	100	102
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0
Density (ft/veh)							819
Occupancy (veh)	0	3	2	0	0	0	5

270: CSAH 60 & Italy Avenue Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.1	0.0
Total Delay (hr)	0.0	0.1	0.1	0.0	0.0	0.0	0.3
Total Del/Veh (s)	3.9	0.6	0.8	0.7	18.9	4.8	0.8
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Stop Del/Veh (s)	2.8	0.1	0.0	0.0	16.8	4.7	0.1
Total Stops	6	5	0	0	1	7	19
Stop/Veh	0.43	0.01	0.00	0.00	1.00	1.00	0.01
Travel Dist (mi)	1.7	88.7	135.6	0.4	0.1	0.8	227.3
Travel Time (hr)	0.1	2.1	3.2	0.0	0.0	0.0	5.5
Avg Speed (mph)	25	42	43	35	12	19	42
Fuel Used (gal)	0.0	2.5	3.6	0.0	0.0	0.0	6.2
Fuel Eff. (mpg)	50.6	36.0	37.4	55.5	31.1	41.9	36.9
HC Emissions (g)	0	45	74	0	0	0	119
CO Emissions (g)	10	1216	1738	1	0	1	2966
NOx Emissions (g)	1	174	281	0	0	0	457
Vehicles Entered	14	760	682	2	1	7	1466
Vehicles Exited	14	761	682	2	1	7	1467
Hourly Exit Rate	14	761	682	2	1	7	1467
Input Volume	14	749	684	1	1	10	1459
% of Volume	100	102	100	200	100	70	101
Denied Entry Before	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0
Density (ft/veh)							752
Occupancy (veh)	0	2	3	0	0	0	5

280: Ipava Ave & CSAH 60/185th St Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.0	0.1
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	3.2	0.1	3.2	3.3	0.2	3.1
Total Delay (hr)	0.5	2.1	0.0	0.2	2.2	0.1	0.3	1.2	0.1	0.6	1.0	0.2
Total Del/Veh (s)	17.0	13.1	2.0	13.6	16.2	2.7	20.0	26.6	5.7	22.1	23.4	5.8
Stop Delay (hr)	0.4	1.4	0.0	0.1	1.6	0.1	0.3	0.9	0.1	0.5	0.7	0.1
Stop Del/Veh (s)	14.5	8.6	1.7	12.3	11.6	2.3	17.3	20.8	4.9	19.3	18.3	4.5
Total Stops	90	240	33	30	242	58	42	108	48	72	95	69
Stop/Veh	0.81	0.42	0.45	0.75	0.49	0.57	0.70	0.68	0.73	0.78	0.65	0.64
Travel Dist (mi)	11.3	56.8	7.7	4.3	53.5	11.2	16.7	44.1	18.6	27.8	44.1	32.2
Travel Time (hr)	0.9	3.3	0.3	0.3	3.4	0.5	0.8	2.2	0.7	1.4	2.0	1.1
Avg Speed (mph)	13	17	25	15	16	24	22	20	31	22	23	31
Fuel Used (gal)	0.3	1.7	0.2	0.1	1.6	0.3	0.6	1.5	0.6	0.9	1.4	1.0
Fuel Eff. (mpg)	34.2	33.8	47.6	37.3	34.2	43.8	29.9	29.8	32.7	32.0	32.0	32.7
HC Emissions (g)	4	22	3	1	24	6	10	30	9	14	25	19
CO Emissions (g)	129	674	99	48	650	224	354	919	336	441	759	659
NOx Emissions (g)	10	70	7	3	71	15	32	95	31	48	84	66
Vehicles Entered	110	567	74	39	493	101	58	155	65	91	145	105
Vehicles Exited	111	567	74	39	493	102	60	154	65	91	143	106
Hourly Exit Rate	111	567	74	39	493	102	60	154	65	91	143	106
Input Volume	112	556	77	43	484	96	61	153	66	90	149	109
% of Volume	99	102	96	91	102	106	98	101	98	101	96	97
Denied Entry Before	0	0	0	0	0	0	0	0	0	0	0	0
Denied Entry After	0	0	0	0	0	0	0	0	0	0	0	0
Density (ft/veh)												
Occupancy (veh)	1	3	0	0	3	0	1	2	1	1	2	1

280: Ipava Ave & CSAH 60/185th St Performance by movement

Movement	All
Denied Delay (hr)	0.3
Denied Del/Veh (s)	0.5
Total Delay (hr)	8.4
Total Del/Veh (s)	14.9
Stop Delay (hr)	6.3
Stop Del/Veh (s)	11.2
Total Stops	1127
Stop/Veh	0.56
Travel Dist (mi)	328.4
Travel Time (hr)	16.8
Avg Speed (mph)	20
Fuel Used (gal)	9.9
Fuel Eff. (mpg)	33.0
HC Emissions (g)	166
CO Emissions (g)	5294
NOx Emissions (g)	533
Vehicles Entered	2003
Vehicles Exited	2005
Hourly Exit Rate	2005
Input Volume	1996
% of Volume	100
Denied Entry Before	0
Denied Entry After	0
Density (ft/veh)	1012
Occupancy (veh)	17

290: CSAH 9/Dodd Blvd & CSAH 60/185th St Performance by movement

Movement	EBL	EBT	EBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.2	0.0	0.0	0.3	0.6
Denied Del/Veh (s)	0.0	0.0	0.0	3.3	0.2	0.3	3.1	1.1
Total Delay (hr)	2.5	0.0	0.6	1.1	0.5	1.6	0.5	6.9
Total Del/Veh (s)	22.0	0.6	7.2	15.5	7.0	16.8	5.1	12.7
Stop Delay (hr)	2.0	0.0	0.4	0.9	0.2	0.9	0.3	4.7
Stop Del/Veh (s)	17.9	0.0	4.8	11.7	3.2	9.6	2.9	8.7
Total Stops	280	0	229	207	73	165	189	1143
Stop/Veh	0.69	0.00	0.78	0.78	0.27	0.47	0.52	0.59
Travel Dist (mi)	79.4	0.7	57.6	50.7	52.4	45.6	47.3	333.7
Travel Time (hr)	4.7	0.0	2.3	2.7	1.5	2.5	2.3	16.0
Avg Speed (mph)	17	43	25	21	35	18	23	22
Fuel Used (gal)	2.2	0.0	1.2	1.6	1.8	1.7	1.4	9.9
Fuel Eff. (mpg)	36.0	47.2	49.6	32.5	29.5	26.5	33.6	33.9
HC Emissions (g)	28	0	19	32	36	32	23	169
CO Emissions (g)	784	2	417	1150	1509	1391	1069	6323
NOx Emissions (g)	89	1	63	86	116	85	62	502
Vehicles Entered	398	7	290	261	269	347	359	1931
Vehicles Exited	400	7	290	262	269	344	357	1929
Hourly Exit Rate	400	7	290	262	269	344	357	1929
Input Volume	385	7	294	250	266	337	358	1897
% of Volume	104	100	99	105	101	102	100	102
Denied Entry Before	0	0	0	0	0	0	1	1
Denied Entry After	0	0	0	0	0	0	0	0
Density (ft/veh)								680
Occupancy (veh)	5	0	2	2	1	2	2	15

Total Network Performance

Denied Delay (hr)	1.0
Denied Del/Veh (s)	1.1
Total Delay (hr)	19.1
Total Del/Veh (s)	21.7
Stop Delay (hr)	11.6
Stop Del/Veh (s)	13.1
Total Stops	2442
Stop/Veh	0.77
Travel Dist (mi)	2765.2
Travel Time (hr)	88.8
Avg Speed (mph)	31
Fuel Used (gal)	95.2
Fuel Eff. (mpg)	29.1
HC Emissions (g)	1838
CO Emissions (g)	62449
NOx Emissions (g)	6283
Vehicles Entered	3084
Vehicles Exited	3086
Hourly Exit Rate	3086
Input Volume	19558
% of Volume	16
Denied Entry Before	1
Denied Entry After	0
Density (ft/veh)	634
Occupancy (veh)	88

Intersection: 210: Professional Plaza & CSAH 60

Movement	NB
Directions Served	R
Maximum Queue (ft)	73
Average Queue (ft)	20
95th Queue (ft)	45
Link Distance (ft)	535
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 220: CSAH 60 & Jasper Path

Movement	EB	SB
Directions Served	L	R
Maximum Queue (ft)	49	34
Average Queue (ft)	20	12
95th Queue (ft)	46	36
Link Distance (ft)		528
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	150	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 230: Jasmine Way & CSAH 60

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	41	31
Average Queue (ft)	3	6
95th Queue (ft)	21	26
Link Distance (ft)	145	535
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 240: CSAH 60 & Jamaica Path

Movement	EB	WB	SB
Directions Served	L	TR	LR
Maximum Queue (ft)	40	4	39
Average Queue (ft)	9	0	11
95th Queue (ft)	33	3	36
Link Distance (ft)		626	552
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	25		
Storage Blk Time (%)	1		
Queuing Penalty (veh)	4		

Intersection: 250: CSAH 60 & Jaeger Path

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (ft)	32	52
Average Queue (ft)	3	13
95th Queue (ft)	17	40
Link Distance (ft)	626	518
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 260: Ixonia Avenue (Ext)/Ixonia Avenue & CSAH 60

Movement	EB	EB	NB	SB
Directions Served	LT	TR	LTR	LTR
Maximum Queue (ft)	37	15	24	30
Average Queue (ft)	3	1	1	4
95th Queue (ft)	18	11	9	19
Link Distance (ft)	759	759	335	528
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 270: CSAH 60 & Italy Avenue

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (ft)	90	31
Average Queue (ft)	9	8
95th Queue (ft)	48	30
Link Distance (ft)	593	565
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 280: Ipava Ave & CSAH 60/185th St

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	T	T	R
Maximum Queue (ft)	114	190	150	50	64	140	164	57	91	113	92	56
Average Queue (ft)	45	85	62	13	19	65	84	19	28	52	22	16
95th Queue (ft)	93	151	118	34	45	121	143	43	64	94	61	40
Link Distance (ft)		494	494			526	526			1502	1502	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	300			300	340			340	300			300
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 280: Ipava Ave & CSAH 60/185th St

Movement	SB	SB	SB	SB
Directions Served	L	T	T	R
Maximum Queue (ft)	116	106	80	78
Average Queue (ft)	45	48	18	23
95th Queue (ft)	88	89	53	56
Link Distance (ft)		1600	1600	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	240			240
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 290: CSAH 9/Dodd Blvd & CSAH 60/185th St

Movement	EB	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	R	L	T	T	T	T	R
Maximum Queue (ft)	169	177	176	162	66	60	194	141	123
Average Queue (ft)	77	100	71	79	23	15	83	32	53
95th Queue (ft)	135	152	128	137	56	44	151	89	95
Link Distance (ft)			1004		1013	1013	691	691	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	300	300		300					300
Storage Blk Time (%)									
Queuing Penalty (veh)									

Network Summary

Network wide Queuing Penalty: 4

INCIDENT ID	INTERSECTION	SEGMENT	INCLUDE	NOTES	MONTH	DAY	YEAR	DAY OF WEEK	HOUR	SEVERITY	COLLISION - ALLIANT	DIRECTION 1	CRASH MANUEVER 1	DIRECTION 2	CRASH MANUEVER 2	UTM X	UTM Y	LATITUDE	LONGITUDE	DATE & TIME	COLLISION DIAGRAM
564950	INT 2		YES		2	10	2018	Sat	11	PDO	REAR END	Westbound	Moving Forward	Westbound	Moving Forward	478372.424	4947584.792	44.68131437	-93.27290748	2018/02/10-11:40	2018/02/10-11:40-L-C-D
659403	INT 4		YES		11	12	2018	Mon	8	PDO	REAR END	Westbound	Slowing	Westbound	Moving Forward	478407.988	4947589.839	44.68136088	-93.27245894	2018/11/12-08:30	2018/11/12-08:30-L-C-D
685210		SEG D	YES	SLIDE ON ICE	2	8	2019	Fri	7	PDO	REAR END	Westbound	Moving Forward	Eastbound	Moving Forward	478419.1753	4947589.717	44.68136011	-93.27231777	2019/02/08-07:30	2019/02/08-07:30-L-C-S
768509	INT 4		YES		12	6	2019	Fri	7	PDO	REAR END	Westbound	Moving Forward	Westbound	Moving Forward	478451.6902	4947589.362	44.68135789	-93.27190749	2019/12/06-07:06	2019/12/06-07:06-L-C-D
598953	INT 5		YES	DISTRACTED/HIGH SPEED	5	22	2018	Tue	16	B	REAR END	Eastbound	Moving Forward	Eastbound	Moving Forward	478485.2951	4947588.995	44.6813556	-93.27148344	2018/05/22-16:55	2018/05/22-16:55-L-C-D
654746	INT 5		YES		10	26	2018	Fri	17	PDO	REAR END	Westbound	Moving Forward	Westbound	Slowing	478559.891	4947588.18	44.68135049	-93.27054216	2018/10/26-17:46	2018/10/26-17:46-Du-R-W
594540	INT 5		YES		5	1	2018	Tue	15	B	REAR END	Eastbound	Vehicle Stopped or Stalled in Roadway	Eastbound	Vehicle Stopped or Stalled in Roadway	478582.6656	4947587.931	44.68134894	-93.27025478	2018/05/01-15:30	2018/05/01-15:30-L-C-D
595902	INT 5		YES		5	7	2018	Mon	17	C	REAR END	Eastbound	Vehicle Stopped or Stalled in Roadway	Eastbound	Vehicle Stopped or Stalled in Roadway	478609.1095	4947587.681	44.68134747	-93.2699211	2018/05/07-17:30	2018/05/07-17:30-L-C-D
651247	INT 6		YES		10	11	2018	Thu	15	PDO	REAR END	Westbound	Vehicle Stopped or Stalled in Roadway	Westbound	Vehicle Stopped or Stalled in Roadway	478839.8252	4947587.51	44.68135277	-93.26700992	2018/10/11-15:07	2018/10/11-15:07-L-C-D
808398	INT 6		YES		4	28	2020	Tue	8	PDO	RUN OFF ROAD	Eastbound	Moving Forward	-	-	478848.6945	4947587.503	44.68135298	-93.266898	2020/04/28-08:44	2020/04/28-08:44-L-R-W
781568	INT 6		YES	VEERED TO AVOID REAR END	1	20	2020	Mon	14	C	RUN OFF ROAD	Eastbound	Slowing	-	-	478852.9285	4947587.499	44.68135306	-93.26684458	2020/01/20-14:00	2020/01/20-14:00-L-C-S
597498		SEG F	YES		5	15	2018	Tue	18	PDO	REAR END	Eastbound	Moving Forward	Eastbound	Slowing	478866.748	4947587.395	44.68135253	-93.2666702	2018/05/15-18:00	2018/05/15-18:00-L-C-D
538619	INT 7		YES		1	19	2018	Fri	16	PDO	REAR END	Eastbound	Vehicle Stopped or Stalled in Roadway	Eastbound	Vehicle Stopped or Stalled in Roadway	479045.835	4947586.048	44.68134566	-93.26441042	2018/01/19-16:58	2018/01/19-16:58-Du-C-W
623291	INT 7		YES		7	25	2018	Wed	11	C	REAR END	Eastbound	Moving Forward	Eastbound	Vehicle Stopped or Stalled in Roadway	479051.498	4947586.005	44.68134545	-93.26433896	2018/07/25-11:28	2018/07/25-11:28-L-C-D
589514	INT 7		YES	ALCOHOL INVOLVED	4	8	2018	Sun	21	C	OTHER	Eastbound	Moving Forward	-	-	479056.7836	4947585.989	44.68134545	-93.26427227	2018/04/08-21:37	2018/04/08-21:37-Dl-S-S
598618		SEG G	YES	STOPPED FOR DEER	5	21	2018	Mon	6	PDO	REAR END	Westbound	Moving Forward	Westbound	Swerved to Avoid Object in Roadway	479193.129	4947585.686	44.6813467	-93.26255185	2018/05/21-06:07	2018/05/21-06:07-Dn-C-D
657403		SEG G	YES	HIT DEER	11	6	2018	Tue	17	PDO	Animal	Eastbound	Moving Forward	-	-	479365.8351	4947585.303	44.68134823	-93.26037262	2018/11/06-17:09	2018/11/06-17:09-Dl-C-W
720400		SEG G	YES	MERGING	5	16	2019	Thu	17	PDO	SIDESWIPE	Westbound	Moving Forward	Westbound	Moving Forward	479418.9577	4947584.899	44.68134612	-93.25970231	2019/05/16-17:24	2019/05/16-17:24-L-C-D
847673	INT 6		YES	SLIDE ON ICE	10	20	2020	Tue	16	PDO	ANGLE	Southbound	Slowing	Eastbound	Moving Forward	478852.737	4947588.611	44.68136307	-93.26684704	2020/10/20-16:10	2020/10/20-16:10-L-S-S
723700	INT 6		YES		6	1	2019	Sat	11	PDO	REAR END	Eastbound	Vehicle Stopped or Stalled in Roadway	Eastbound	Moving Forward	478852.7223	4947589.871	44.68137441	-93.26684728	2019/06/01-11:35	2019/06/01-11:35-L-C-D
595240	INT 6		YES		5	4	2018	Fri	17	C	REAR END	Westbound	Moving Forward	Westbound	Vehicle Stopped or Stalled in Roadway	478852.7098	4947590.939	44.68138403	-93.26684748	2018/05/04-17:37	2018/05/04-17:37-L-C-D
632875	INT 3		YES		9	6	2018	Thu	7	PDO	REAR END	Westbound	Slowing	Westbound	Slowing	478334.7771	4947584.766	44.681313	-93.2733825	2018/09/06-07:51	2018/09/06-07:51-L-C-D
677069	INT 5		YES	TURNING RIGHT	1	18	2019	Fri	22	PDO	RUN OFF ROAD	Westbound	Slowing	-	-	478605.273	4947591.403	44.68138086	-93.26996966	2019/01/18-22:55	2019/01/18-22:55-Dl-S-S
600570	INT 8		YES		5	29	2018	Tue	15	PDO	LEFT-TURN	Eastbound	Moving Forward	Westbound	Turning Left	479557.3818	4947577.209	44.68128085	-93.25795536	2018/05/29-15:11	2018/05/29-15:11-L-C-D
567298	INT 8		YES		2	19	2018	Mon	18	PDO	LEFT-TURN	Eastbound	Moving Forward	Westbound	Turning Left	479559.4938	4947577.213	44.68128095	-93.25792871	2018/02/19-18:00	2018/02/19-18:00-Dl-S-S
603198	INT 8		YES		6	9	2018	Sat	20	A	LEFT-TURN	Westbound	Turning Left	Westbound	Moving Forward	479558.6084	4947577.211	44.68128091	-93.25793988	2018/06/09-20:30	2018/06/09-20:30-L-C-D
594515	INT 8		YES		5	1	2018	Tue	10	PDO	LEFT-TURN	Northbound	Moving Forward	Northbound	Turning Left	479561.8873	4947594.752	44.68143891	-93.25789921	2018/05/01-10:30	2018/05/01-10:30-L-C-D
671161	INT 8		YES		12	26	2018	Wed	20	B	LEFT-TURN	Eastbound	Turning Left	Eastbound	Moving Forward	479568.4872	4947577.132	44.68128048	-93.25781523	2018/12/26-20:05	2018/12/26-20:05-Dl-S-S
568686	INT 8		YES		2	23	2018	Fri	14	B	LEFT-TURN	Northbound	Turning Left	Southbound	Moving Forward	479572.3128	4947577.089	44.6812802	-93.25776696	2018/02/23-14:39	2018/02/23-14:39-L-C-D
683121	INT 8		YES		2	4	2019	Mon	10	PDO	ANGLE	Southbound	Swerved to Avoid Object in Roadway	Eastbound	Moving Forward	479569.4444	4947595.09	44.68144216	-93.25780387	2019/02/04-10:37	2019/02/04-10:37-L-C-S
624662	INT 8		YES		7	31	2018	Tue	19	PDO	LEFT-TURN	Northbound	Turning Left	Southbound	Moving Forward	479573.9998	4947577.071	44.68128008	-93.25774567	2018/07/31-19:55	2018/07/31-19:55-L-C-D
625241	INT 8		YES	DRIVER RAN RED AND ARRESTED FOR DWI	8	3	2018	Fri	9	PDO	ANGLE	Westbound	Moving Forward	Westbound	Turning Left	479571.7113	4947595.191	44.68144314	-93.25777527	2018/08/03-09:50	2018/08/03-09:50-X-C-W
667668	INT 8		YES		12	12	2018	Wed	8	PDO	REAR END	Westbound	Slowing	Westbound	Vehicle Stopped or Stalled in Roadway	479586.4433	4947595.665	44.68144783	-93.2575894	2018/12/12-08:43	2018/12/12-08:43-L-S-S
721376	INT 8		YES		5	21	2019	Tue	8	C	LEFT-TURN	Eastbound	Moving Forward	Westbound	Turning Left	479590.5166	4947576.942	44.68127939	-93.25753726	2019/05/21-08:16	2019/05/21-08:16-L-C-D
707747	INT 8		YES		5	4	2019	Sat	13	PDO	REAR END	Westbound	Moving Forward	Westbound	Vehicle Stopped or Stalled in Roadway	479590.876	4947595.648	44.6814478	-93.25753347	2019/05/04-13:19	2019/05/04-13:19-L-C-D
869324	INT 8		YES		12	21	2020	Mon	17	PDO	LEFT-TURN	Westbound	Turning Left	Eastbound	Moving Forward	479591.6876	4947595.645	44.68144779	-93.25752322	2020/12/21-17:45	2020/12/21-17:45-Dl-C-D
604424	INT 8		YES		6	15	2018	Fri	7	PDO	REAR END	Westbound	Moving Forward	Westbound	Vehicle Stopped or Stalled in Roadway	479601.8668	4947576.906	44.68127939	-93.25739404	2018/06/15-07:35	2018/06/15-07:35-L-C-D
676159	INT 8		YES		1	15	2019	Tue	9	PDO	ANGLE	Eastbound	Moving Forward	Northbound	Moving Forward	479583.6779	4947551.008	44.68104573	-93.25762251	2019/01/15-09:20	2019/01/15-09:20-L-S-S
756402	INT 8		YES		10	22	2019	Tue	6	C	LEFT-TURN	Northbound	Moving Forward	Southbound	Moving Forward	479560.07	4947586.534	44.68136488	-93.25792181	2019/10/22-06:50	2019/10/22-06:50-Dl-R-W
821034	INT 8		YES		7	22	2020	Wed	12	PDO	LEFT-TURN	Southbound	Turning Left	Southbound	Moving Forward	479583.6165	4947572.58	44.68123993	-93.25762415	2020/07/22-12:15	2020/07/22-12:15-L-C-D
621244	INT 8		YES		7	16	2018	Mon	16	PDO	LEFT-TURN	Eastbound	Turning Left	Eastbound	Moving Forward	479559.7642	4947589.905	44.68139521	-93.25792581	2018/07/16-16:06	2018/07/16-16:06-L-C-D
736199	INT 8		YES	RAN RED; DON'T KNOW WHICH FOR SURE	7	26	2019	Fri	10	PDO	ANGLE	Eastbound	Moving Forward	Northbound	Moving Forward	479583.612	4947574.154	44.68125409	-93.25762427	2019/07/26-10:31	2019/07/26-10:31-L-C-D
584359	INT 8		YES		3	19	2018	Mon	7	PDO	LEFT-TURN	Northbound	Turning Left	Southbound	Moving Forward	479559.459	4947593.269	44.68142549	-93.25792979	2018/03/19-07:05	2018/03/19-07:05-L-C-D
660940	INT 8		YES		11	17	2018	Sat	12	C	ANGLE	Eastbound	Moving Forward	Northbound	Moving Forward	479583.601	4947577.026	44.68127995	-93.25762452	2018/11/17-12:25	2018/11/17-12:25-L-C-W
588300	INT 8		YES	EBR VEH HIT NB VEH WAITING	4	4	2018	Wed	7	PDO	RUN OFF ROAD	Eastbound	Turning Right	Northbound	Vehicle Stopped or Stalled in Roadway	479583.4255	4947580.583	44.68131197	-93.25762688	2018/04/04-07:35	2018/04/04-07:35-Dn-C-S
757076	INT 8		YES		10	23	2019	Wed	18	PDO	ANGLE	Northbound	Moving Forward	Eastbound	Moving Forward	479583.185	4947585.459	44.68135586	-93.25763011	2019/10/23-18:09	2019/10/23-18:09-L-C-D
654859	INT 8		YES		10	26	2018	Fri	22	PDO	LEFT-TURN	Westbound	Turning Left	Eastbound	Moving Forward	479583.0289	4947588.623	44.68138433	-93.2576322	2018/10/26-22:04	2018/10/26-22:04-Dl-C-W
677086	INT 8		YES		1	18	2019	Fri	17	C	REAR END	Southbound	Vehicle Stopped or Stalled in Roadway	Southbound	Slowing	479558.4609	4947606.268	44.68154248	-93.2579429	2019/01/18-17:24	2019/01/18-17:24-Dl-S-S

CMF / CRF Details

CMF ID: 7566

Convert 2 lane roadway to 4 lane divided roadway

Description: Conversion of urban and rural two-lane roadways to four-lane divided roadways

Prior Condition: 2 lane roadway

Category: Roadway

Study: *Evaluation of the Safety Effectiveness of the Conversion of Two-Lane Roadways to Four-Lane Divided Roadways: Bayesian vs. Empirical Bayes*, Ahmed et al., 2015

Star Quality Rating:	★★★★☆ [View score details]

Crash Modification Factor (CMF)	
Value:	0.341
Adjusted Standard Error:	
Unadjusted Standard Error:	0.091

Crash Reduction Factor (CRF)	
Value:	65.88 *(This value indicates a **decrease** in crashes)*

Adjusted Standard Error:	
Unadjusted Standard Error:	9.05

Applicability

Crash Type:	All
Crash Severity:	All
Roadway Types:	Not specified
Number of Lanes:	2
Road Division Type:	Undivided
Speed Limit:	
Area Type:	Urban
Traffic Volume:	
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:	2002 to 2012
Municipality:	

State:	FL
Country:	USA
Type of Methodology Used:	2
Sample Size Used:	

Other Details

Included in Highway Safety Manual?	No
Date Added to Clearinghouse:	Nov-01-2015
Comments:	

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

Traffic Safety Benefit-Cost Calculation

Highway Safety Improvement Program (HSIP) Reactive Project

DEPARTMENT OF TRANSPORTATION

A. Roadway Description

Route	CSAH 60	**District**	n/a	**County**	Dakota County
Begin RP	n/a	**End RP**	n/a	**Miles**	1.3
Location	185th Street (CSAH 60) between Kenwood Trail (CSAH 50) and Dodd Boulevard (CSAH 9)				

B. Project Description

Proposed Work	Convert 2 Lane Roadway to 4 Lane Divided Roadway, Access & Signal Improvements		
Project Cost*	$8,600,000	**Installation Year**	2025
Project Service Life	20 years	**Traffic Growth Factor**	3.3%

** exclude Right of Way from Project Cost*

C. Crash Modification Factor

0.34	**Fatal (K) Crashes**	**Reference**	CMF ID 7566: Convert 2 Lane to 4 Lane Divided
0.34	**Serious Injury (A) Crashes**		
0.34	**Moderate Injury (B) Crashes**	**Crash Type**	ALL
0.34	**Possible Injury (C) Crashes**		
0.34	**Property Damage Only Crashes**		www.CMFclearinghouse.org

D. Crash Modification Factor (optional second CMF)

0.00	**Fatal (K) Crashes**	**Reference**	Addition of Divided Cross-Section & Multiuse Trails
0.00	**Serious Injury (A) Crashes**		
0.00	**Moderate Injury (B) Crashes**	**Crash Type**	Head On & Bicycle
0.00	**Possible Injury (C) Crashes**		
0.00	**Property Damage Only Crashes**		www.CMFclearinghouse.org

E. Crash Data

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

Data Source Minnesota Crash Mapping Analysis Tool (MnCMAT2)

Crash Severity	ALL	Head On & Bicycle
K crashes	0	0
A crashes	0	1
B crashes	2	1
C crashes	9	0
PDO crashes	33	0

F. Benefit-Cost Calculation

$19,553,991	**Benefit (present value)**	**B/C Ratio = 2.28**
$8,600,000	**Cost**	

Proposed project expected to reduce 11 crashes annually, 1 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%
Traffic Growth Rate	3.3%
Project Service Life	20 years

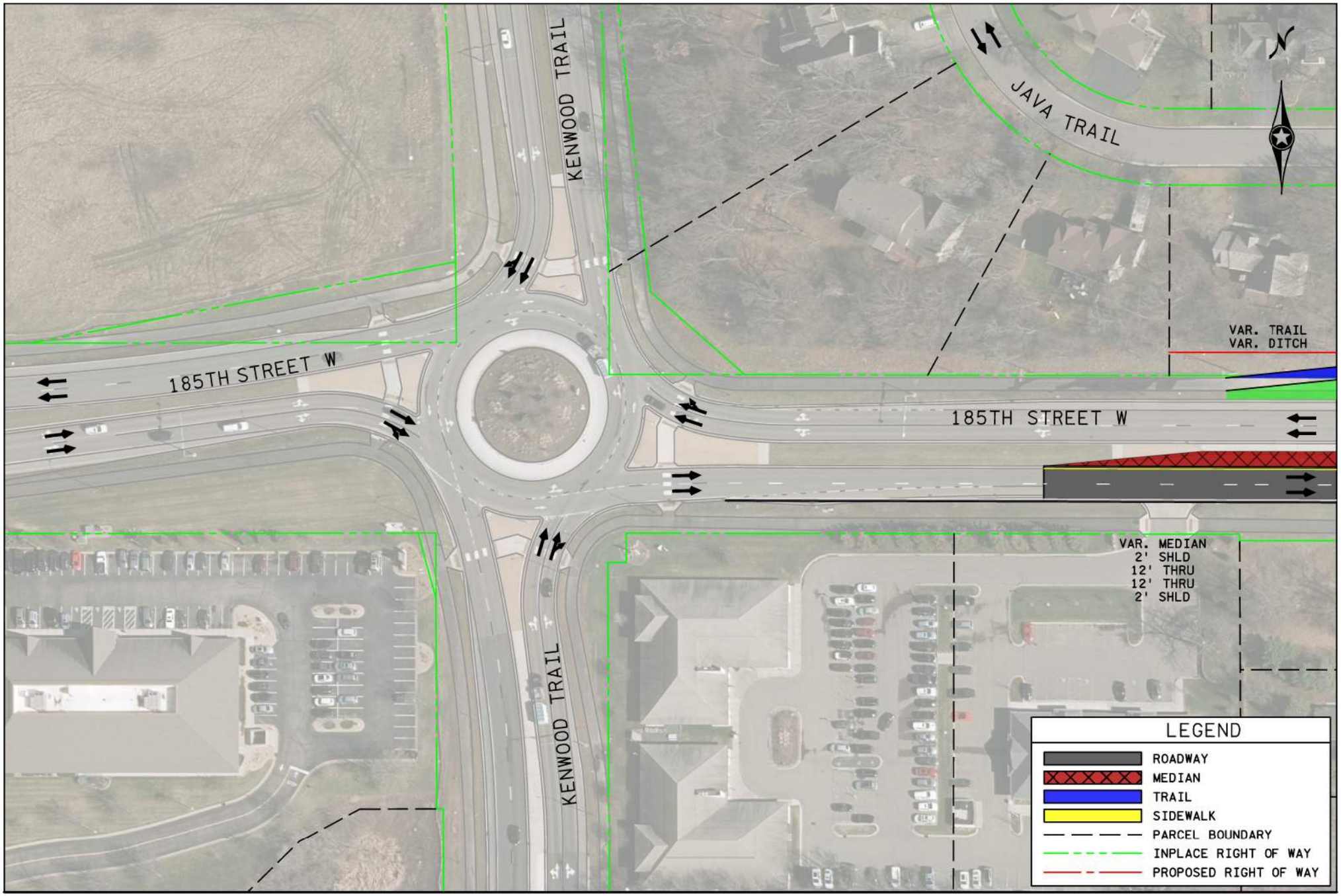
G. Annual Benefit

Crash Severity	Crash Reduction	Annual Reduction	Annual Benefit
K crashes	0.00	0.00	$0
A crashes	1.00	0.33	$250,000
B crashes	2.32	0.77	$177,713
C crashes	5.93	1.98	$237,240
PDO crashes	21.75	7.25	$94,237
			$759,190

H. Amortized Benefit

Year	Crash Benefits	Present Value
2025	$759,190	$759,190
2026	$784,244	$778,792
2027	$810,124	$798,900
2028	$836,858	$819,527
2029	$864,474	$840,687
2030	$893,002	$862,392
2031	$922,471	$884,659
2032	$952,912	$907,500
2033	$984,358	$930,931
2034	$1,016,842	$954,967
2035	$1,050,398	$979,623
2036	$1,085,061	$1,004,917
2037	$1,120,868	$1,030,863
2038	$1,157,857	$1,057,479
2039	$1,196,066	$1,084,782
2040	$1,235,536	$1,112,791
2041	$1,276,309	$1,141,522
2042	$1,318,427	$1,170,995
2043	$1,361,935	$1,201,229
2044	$1,406,879	$1,232,244
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
0	$0	$0

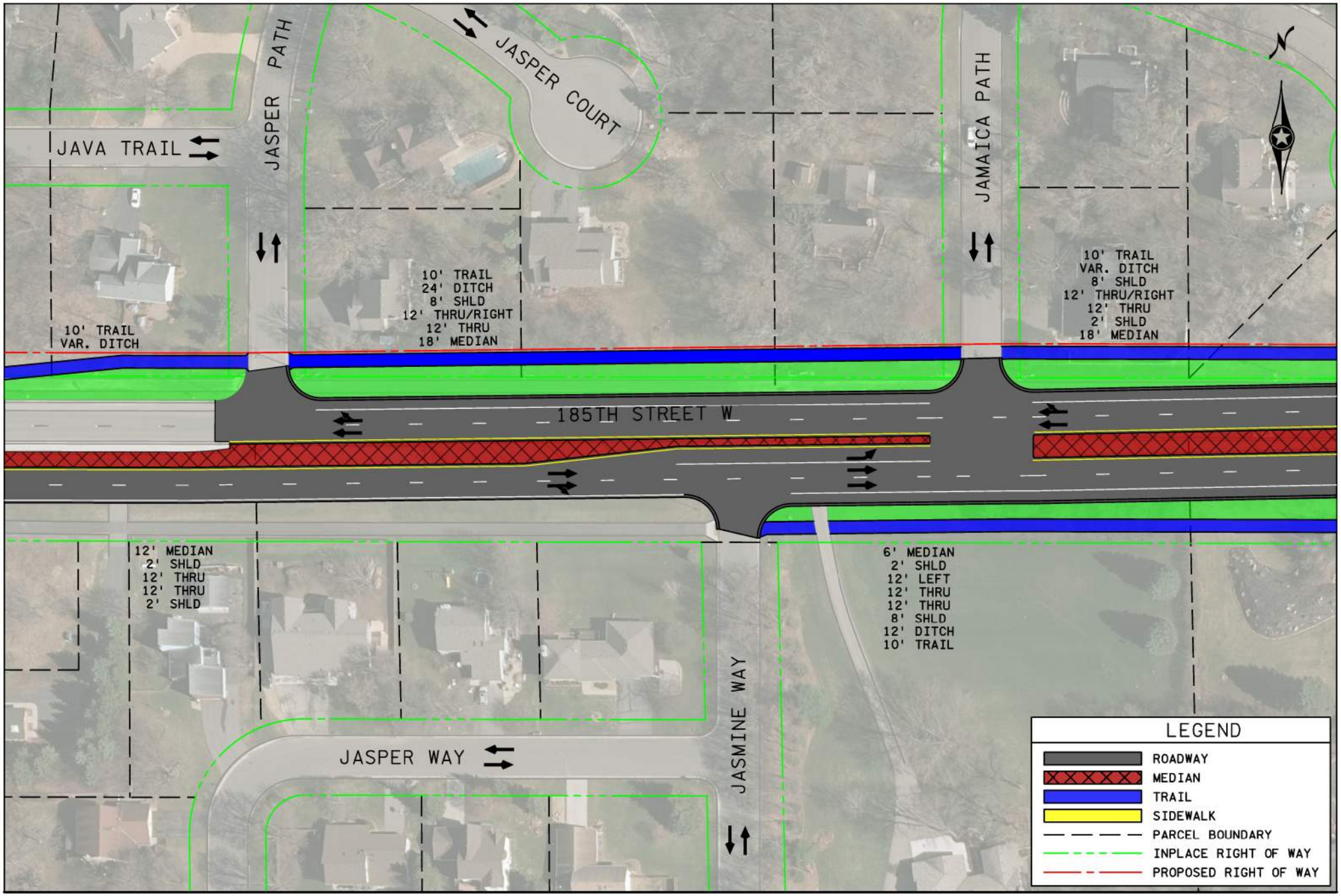
Total = $19,553,991



185TH STREET W – KENWOOD TRAIL TO IPAVA AVENUE
RECOMMENDED IMPROVEMENTS

Dakota COUNTY

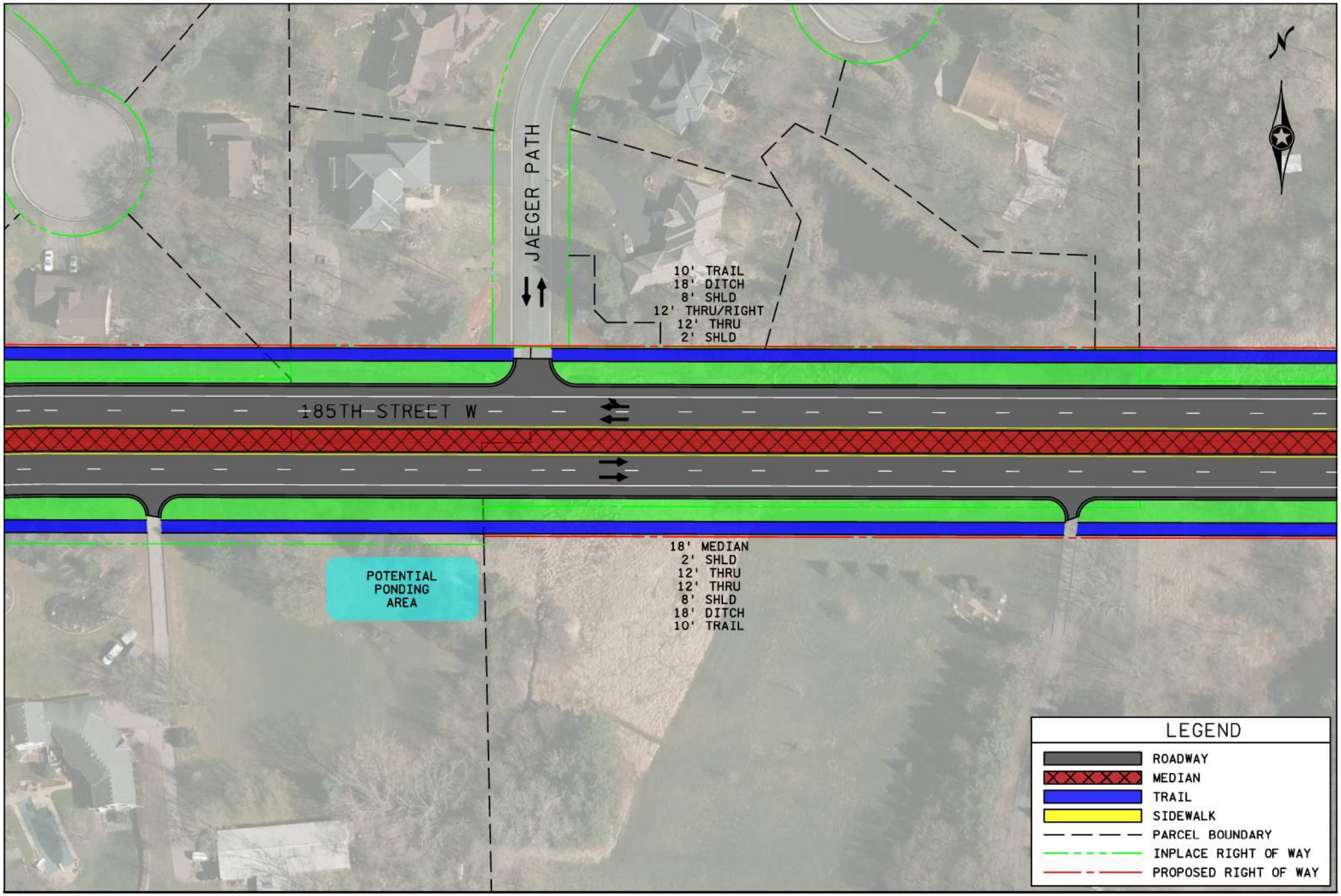
ALLIANT



Dakota COUNTY

185TH STREET W – KENWOOD TRAIL TO IPAVA AVENUE
RECOMMENDED IMPROVEMENTS

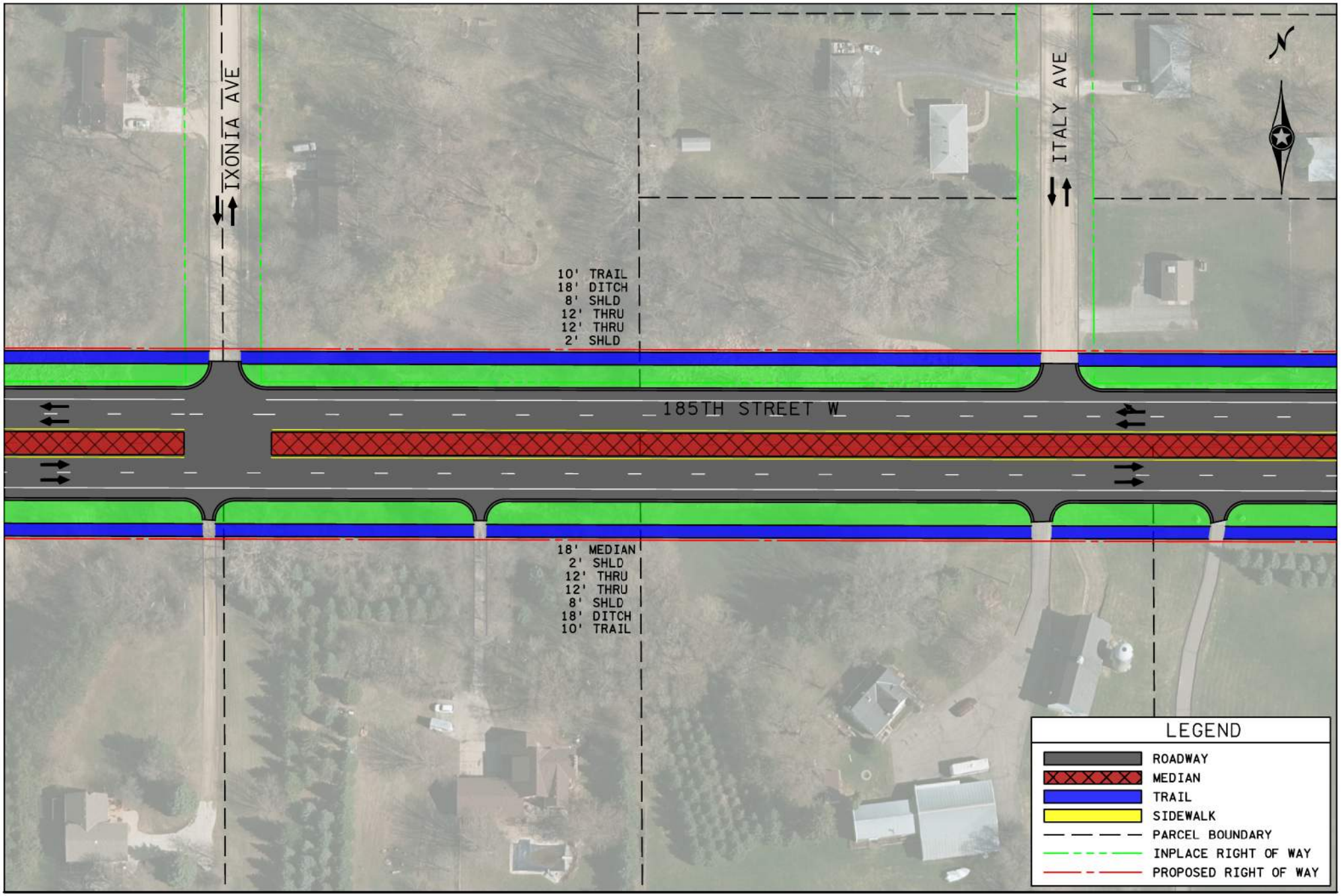
ALLIANT



185TH STREET W – KENWOOD TRAIL TO IPAVA AVENUE
RECOMMENDED IMPROVEMENTS

Dakota COUNTY

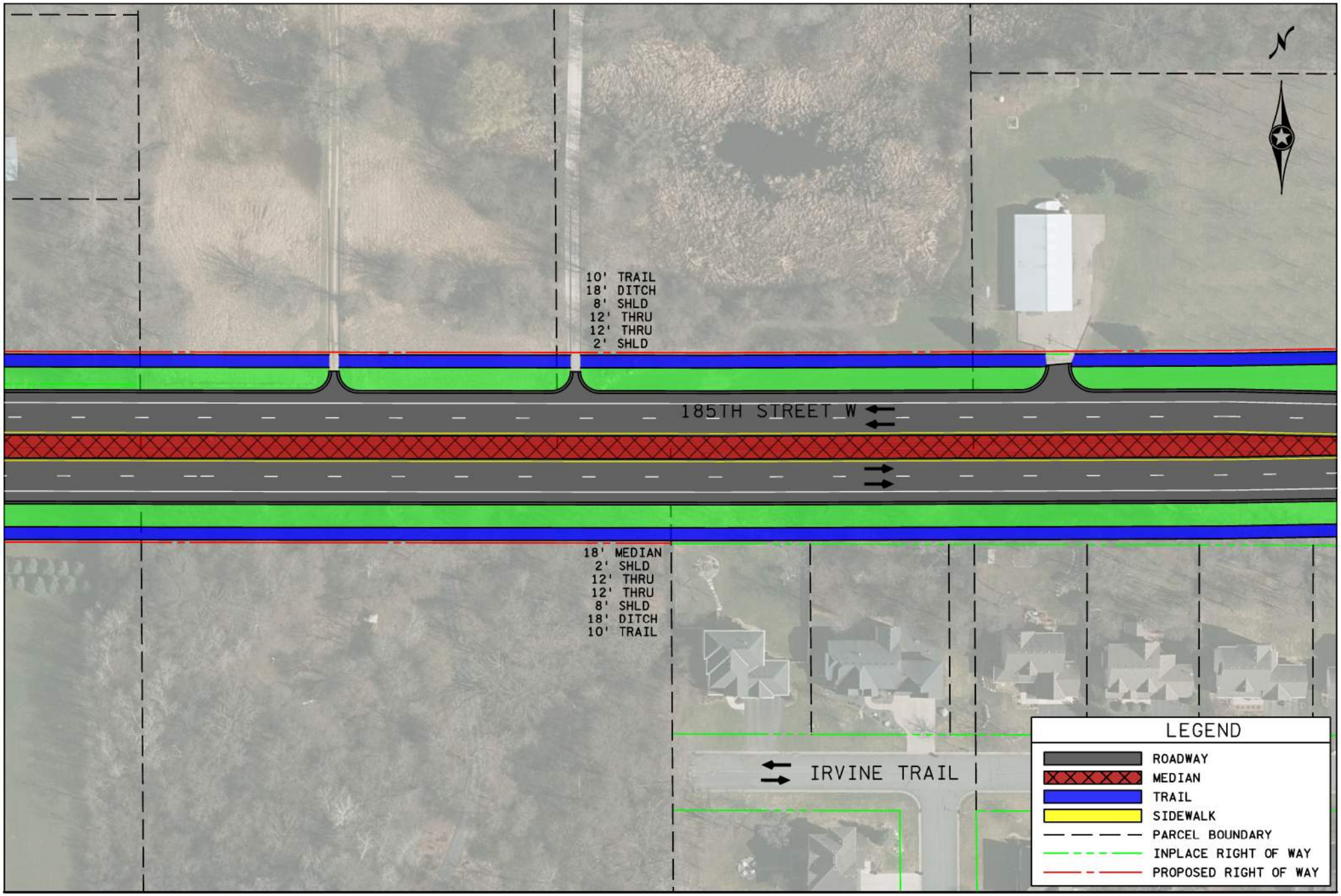
ALLIANT



185TH STREET W – KENWOOD TRAIL TO IPAVA AVENUE
RECOMMENDED IMPROVEMENTS

Dakota COUNTY

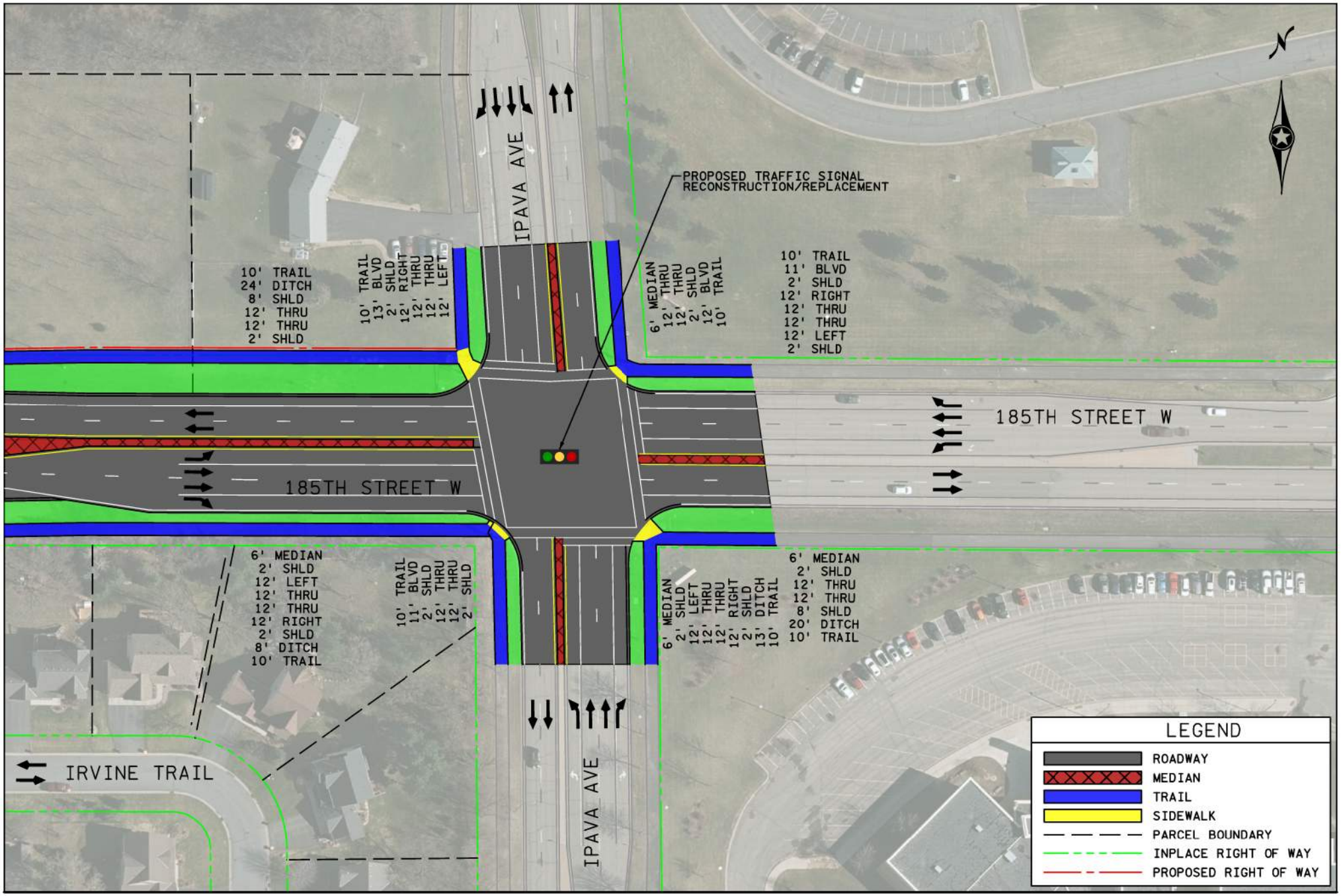
ALLIANT



185TH STREET W – KENWOOD TRAIL TO IPAVA AVENUE
RECOMMENDED IMPROVEMENTS

Dakota COUNTY

ALLIANT



Dakota COUNTY

185TH STREET W – KENWOOD TRAIL TO IPAVA AVENUE
RECOMMENDED IMPROVEMENTS

ALLIANT

City of Lakeville
Positioned to Thrive

March 25, 2022

Erin Laberee
Acting Dakota County Engineer
14955 Galaxie Avenue 3rd Floor
Apple Valley, MN 55124

RE: 2022 Regional Solicitation Letter of Support for CSAH 60 Expansion Project (Dakota County Project No. 60-26)

Dear Mrs. Laberee:

The City of Lakeville supports Dakota County's federal funding application for the County State Aid Highway (CSAH) 60 (185th Street) Expansion Project from CSAH 50 (Kenwood Trail) to CSAH 9 (Dodd Boulevard). The project will expand a critical local and regional corridor connecting Interstate 35 to CSAH 23 (Cedar Avenue) and create important multi-modal opportunities in the rapidly growing center of Lakeville. CSAH 60 is currently an undivided 2-lane rural highway with narrow shoulders, deficient turn lanes, and inadequate bicyclist/pedestrian facilities. The project purpose is to improve highway operations, accommodate existing/future traffic volumes, and make safety improvements for vehicles and bicyclists/pedestrians. The highway expansion and bicyclist/pedestrian enhancements provide great value by strengthening local and regional economic development, and providing connectivity/access to natural amenities and recreation opportunities. Improving this County highway segment is a top City priority.

The project is a joint effort between the County and City. Both parties actively participated in the corridor study and preliminary design, developing a geometric layout that supports transportation needs and compatibility with adjacent land uses. The City agrees with the improvements shown in the geometric layout and supports implementation of the project. The City also supports this project for federal funding and agrees to provide a financial commitment for the improvements.

Thank you for the opportunity to share the City of Lakeville's support for this project.

Zachary Johnson, City Engineer

20195 Holyoke Avenue, Lakeville, MN 55044
952-985-4400
lakevillemn.gov

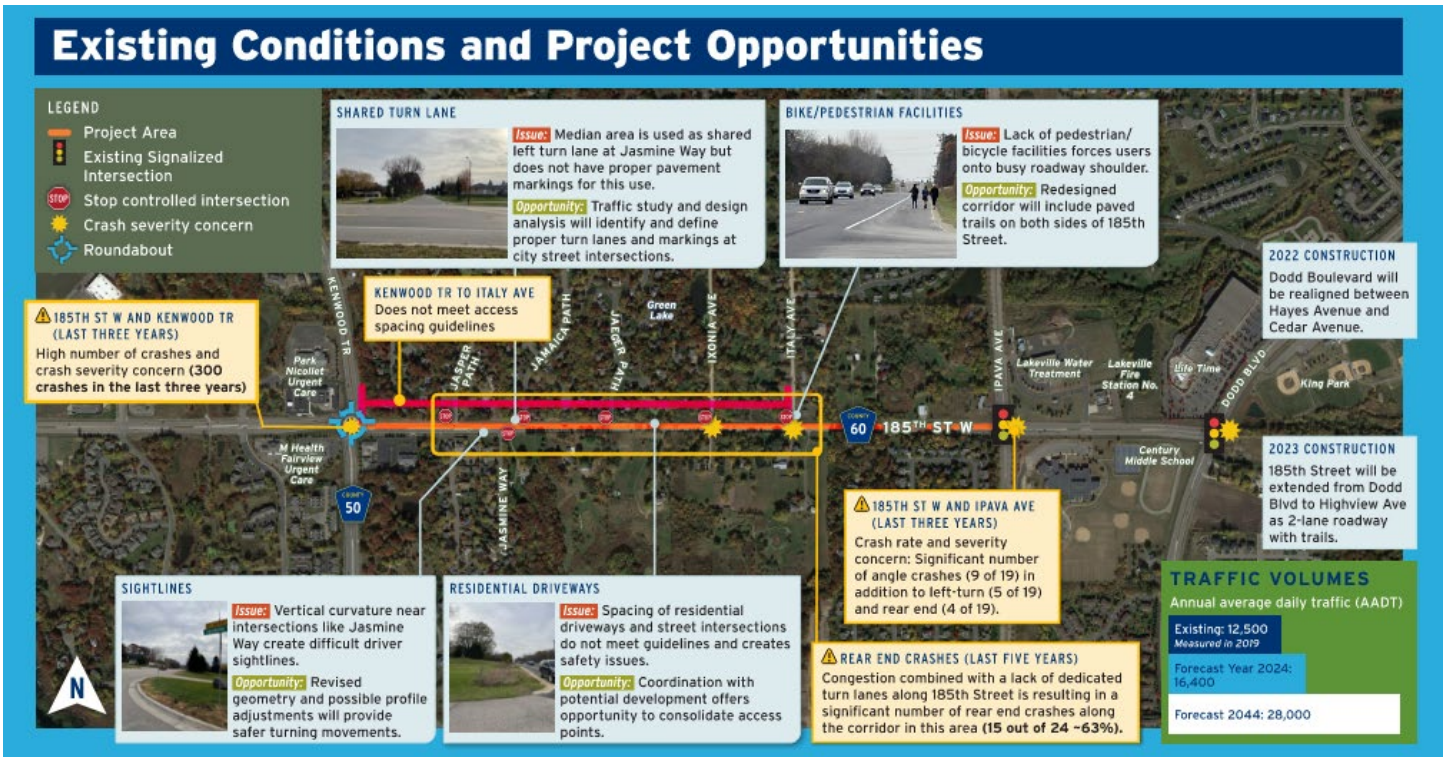
Dakota County 185th Street Expansion Project

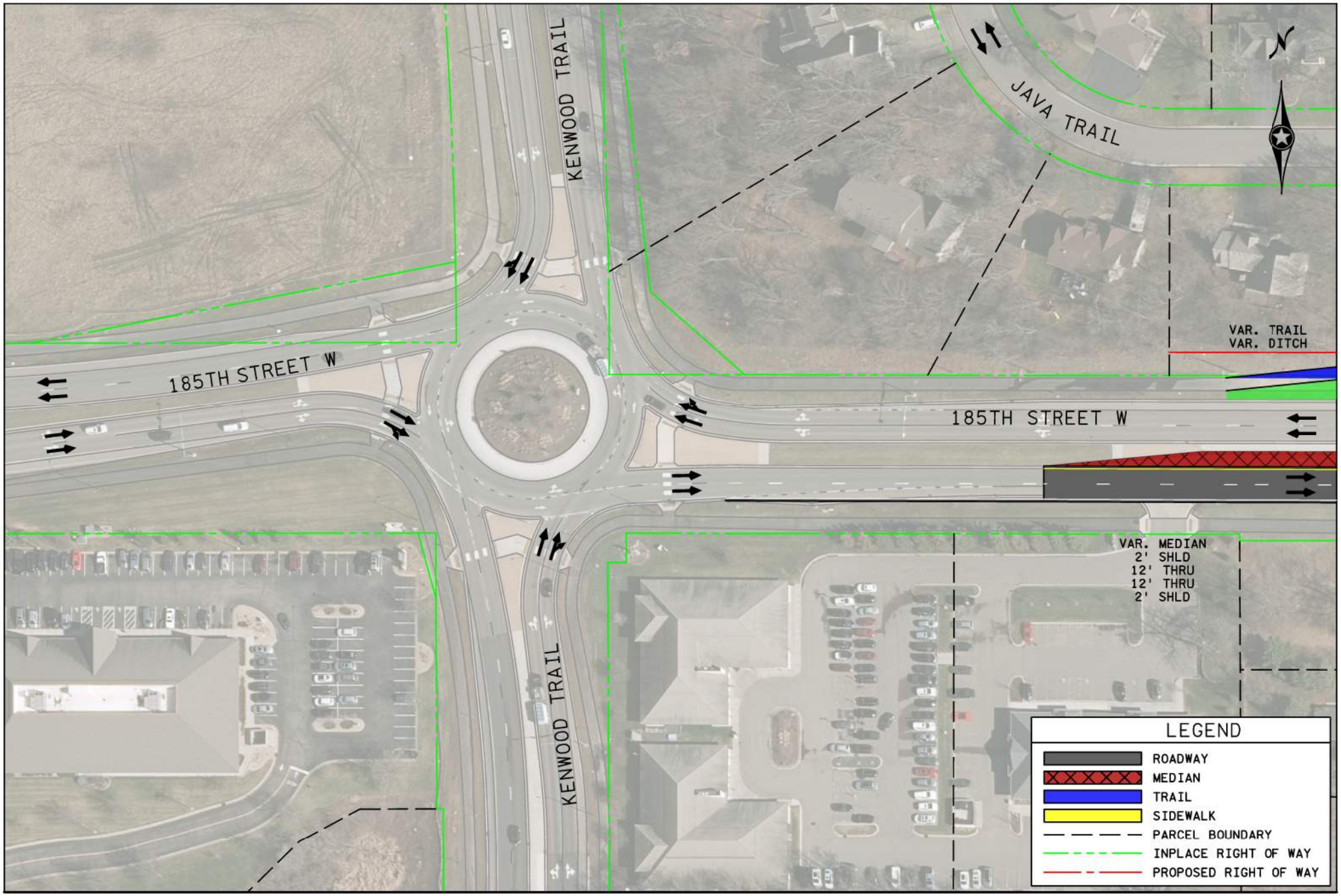
Dakota County and the City of Lakeville are working together to redesign CSAH 60 (185th Street) to improve mobility and safety for all roadway users. CSAH 60 is an A Minor Arterial that plays a key role in the transportation network for the City, County, and the region. The improvement is a full corridor reconstruction and completion of the trail network between CSAH 50 (Kenwood Trail) and Ipava Avenue, with minor roadway work between Ipava Avenue and Dodd Blvd.

This segment of CSAH 60 is different than the redeveloped and modern segment to the west and near-future developments planned to the east. The existing two-lane highway has a rural section with a trail on only portions of the corridor. Numerous access points, poor sightlines, and a lack of dedicated turn lanes in the face of increased traffic volumes all contribute to safety issues observed along the corridor. The two-lane cross-section on this segment presents a constraint to local and regional mobility and is the last segment to be improved or constructed to complete the regional arterial connection between I-35W on the west and Cedar Avenue/CSAH 23 on the west.

The primary objectives of this project are to design a roadway that provides for increasing traffic levels, provide multimodal and pedestrian connectivity to fix gaps in the existing trail network, provide a safe facility for everyone, and engage all parts of the community to ensure the solutions meet their needs. Of particular emphasis is providing safe access for school children to Century Middle School, located at the southeast corner of 185th Street and Ipava Avenue. This user demographic is one of the clearest examples of an at-risk population (school children) whose needs are important to consider in the project.

By removing the constricted two-lane cross-section in this segment of 185th Street and modernizing the roadway, the project will improve cross-town traffic flow and will provide improved access to I-35W and Cedar Avenue, both of which are major commuter corridors to metro area jobs. People who walk and bike for transportation, recreation, and health are the other demographic who will benefit substantially from the project, which will fill in the gaps in the trail network on this road segment and in so doing, complete the multimodal facility along CSAH 60 identified in Dakota County's 2040 Comprehensive Plan.





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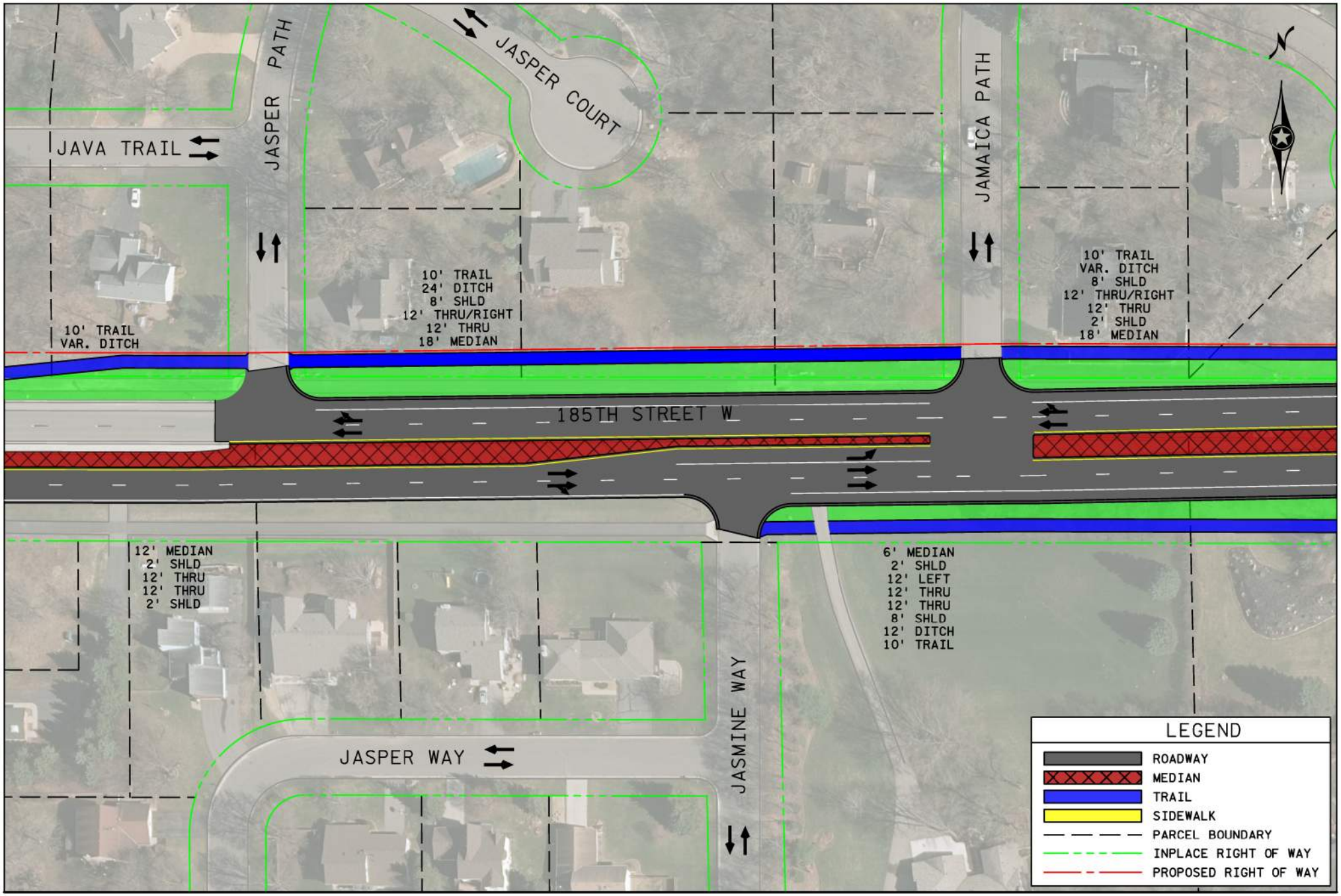

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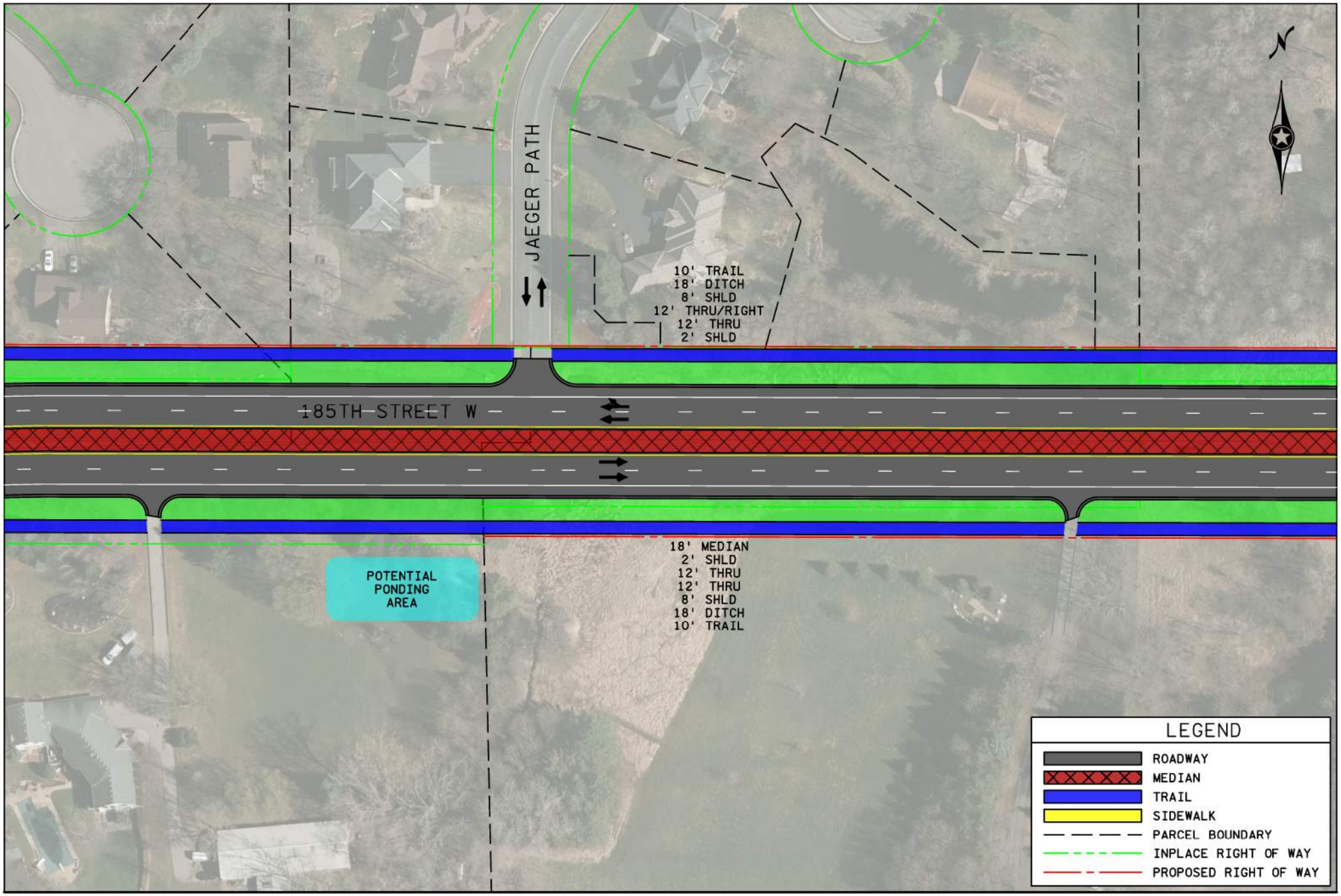

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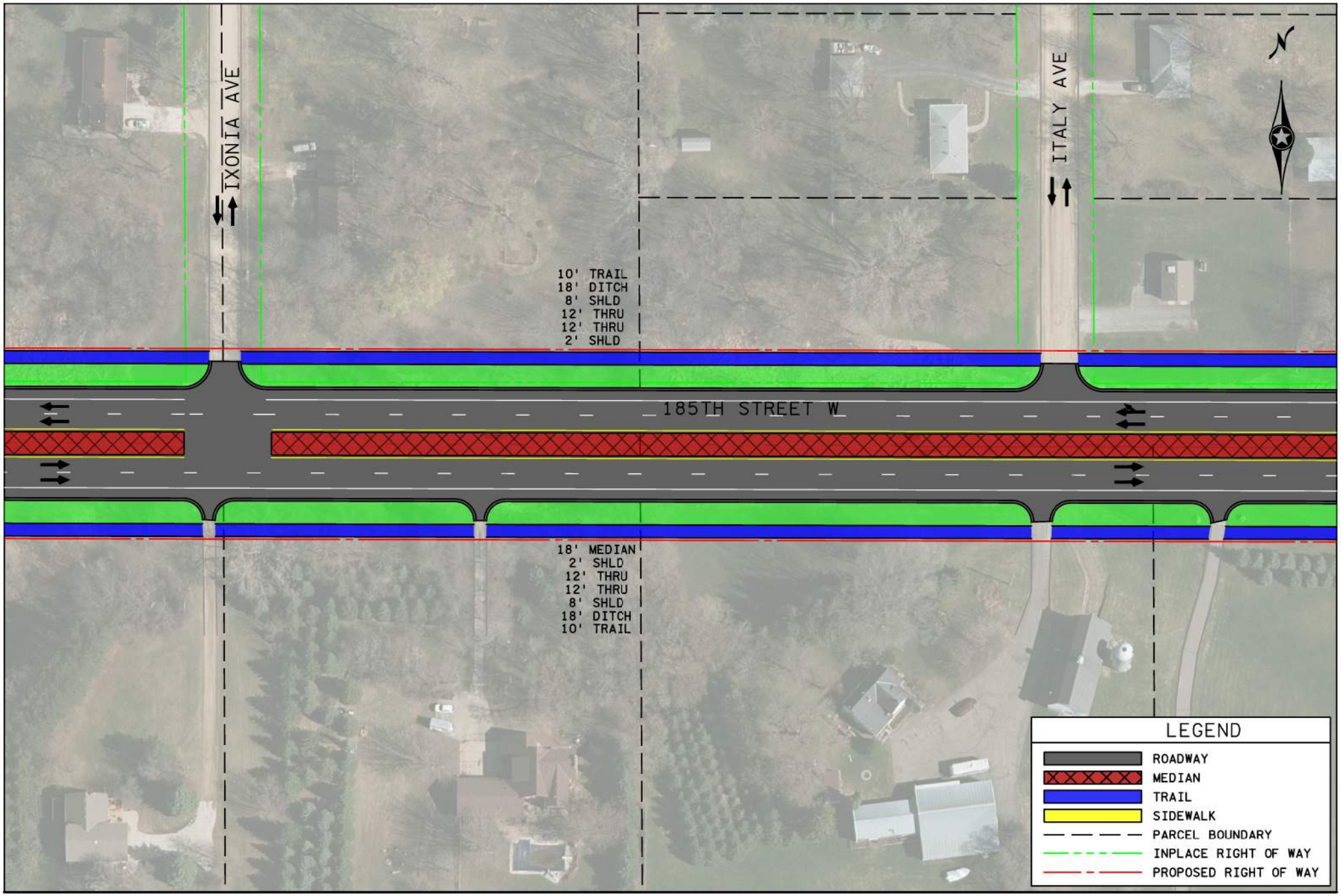

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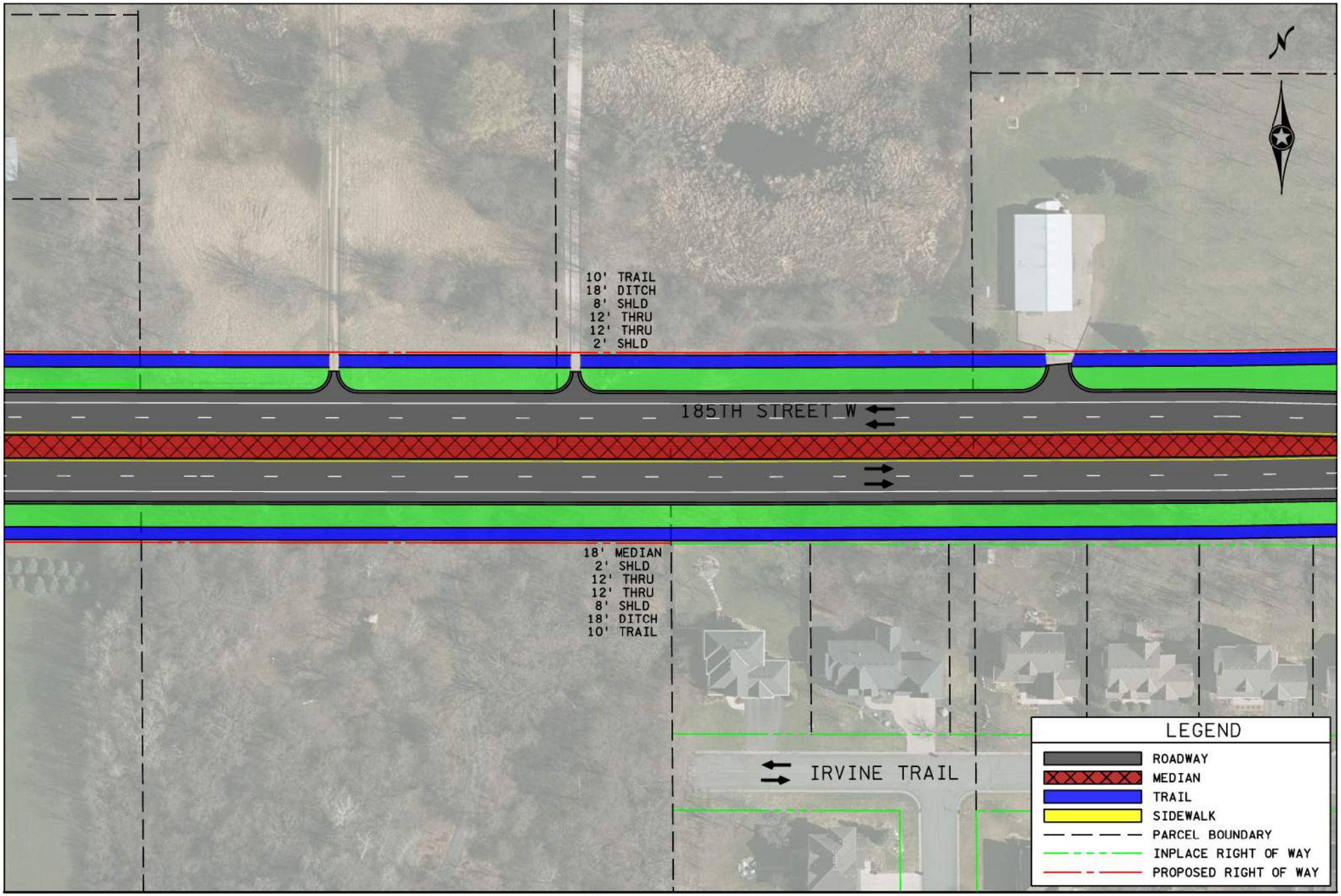

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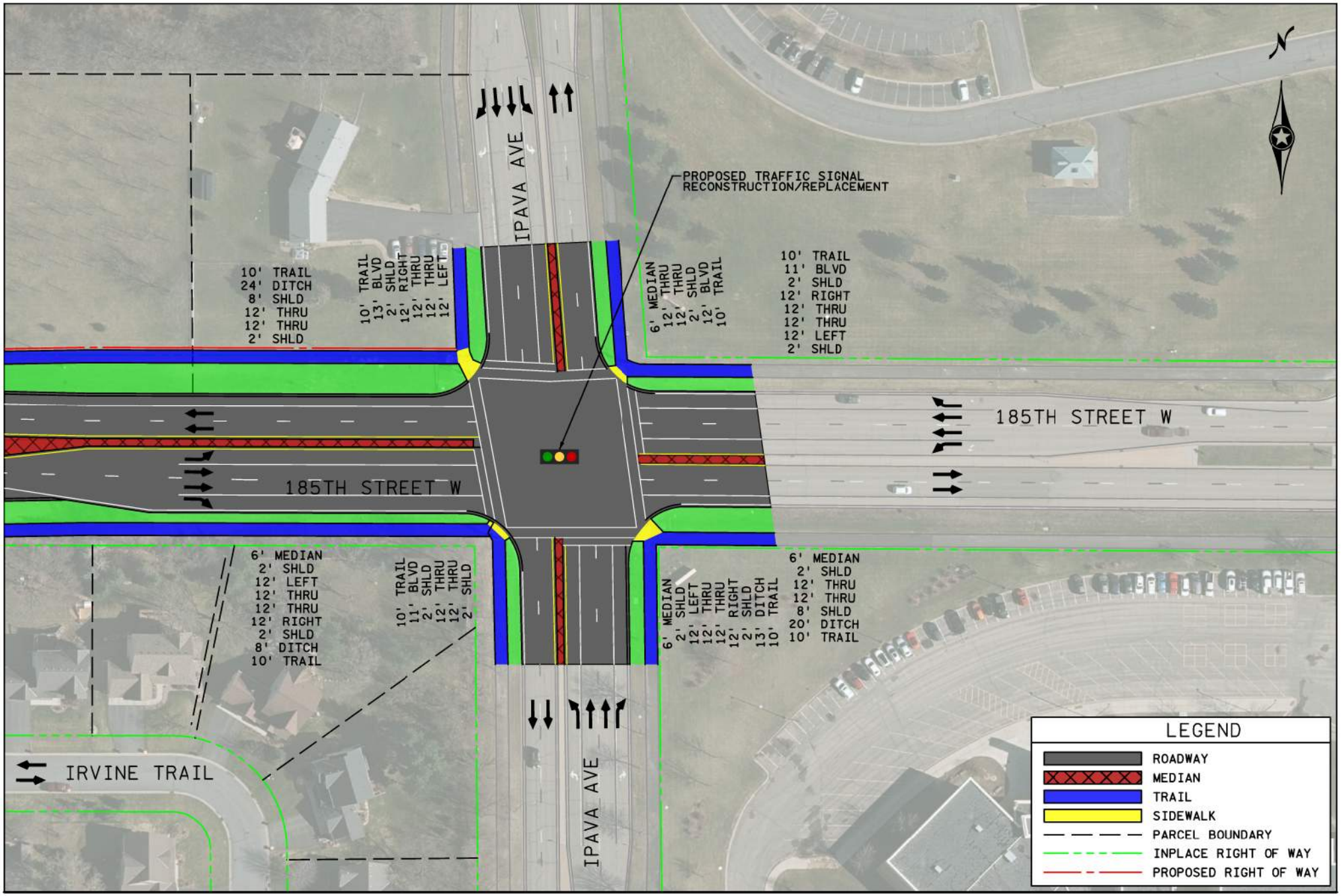

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185TH STREET W – KENWOOD TRAIL TO IPAVA AVENUE
RECOMMENDED IMPROVEMENTS

ALLIANT

BOARD OF COUNTY COMMISSIONERS
DAKOTA COUNTY, MINNESOTA

April 5, 2022 — Resolution No. 22-144

Motion by Commissioner Hamann-Roland — Second by Commissioner Atkins

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Approval Of Grant Application Submittals For 2022 Regional Federal Funding Solicitation And Rebuilding American Infrastructure With Sustainability And Equity Grant Program

WHEREAS, the Transportation Advisory Board (TAB) is requesting project submittals for federal funding under the Fixing America's Surface Transportation (FAST) Act; and

WHEREAS, the U.S. Department of Transportation is requesting project submittals for Rebuilding American Infrastructure with Sustainability and Equity (RAISE) grant program; and

WHEREAS, the FAST federal programs fund up to 80 percent of project construction costs; and

WHEREAS, the RAISE federal grant program in rural areas funds up to 100 percent of project costs and 80 percent of project costs in urban areas; and

WHEREAS, federal funding of projects reduces the burden, local taxpayers, for regional improvements; and

WHEREAS, project submittals are due on April 14, 2022; and

WHEREAS, all projects proposed are consistent with the adopted Dakota County Comprehensive Plan; and

WHEREAS, subject to federal funding award, the Dakota County Board of Commissioners would be asked to consider authorization to execute a grant agreement at a future meeting.

NOW, THEREFORE, BE IT RESOLVED, That the Dakota County Board of Commissioners hereby approves the following County led projects for submittal to TAB for federal funding:

1) County State Aid Highway (CSAH) 46 (160th Street/Brandel Drive) from Trunk Highway (TH) 3 to TH 52 in Coates, Empire Township and Rosemount
2) CSAH 46 (160th Street) from 1,300 feet west of General Sieben Drive to Highway 61 in Hastings
3) CSAH 42 (150th Street) from Redwood Drive to 147th Street in Apple Valley
4) CSAH 26 (Lone Oak Road) from TH 13 to Interstate 35E in Eagan
5) CSAH 46 (160th Street) at CSAH 85 (Goodwin Avenue) in Nininger and Vermillion Townships
6) CSAH 60 (185th Street) from CSAH 50 (Kenwood Trail) to Ipava Avenue in Lakeville
7) CSAH 63 (Delaware Avenue) Trail from TH 62 to Marie Avenue in Mendota Heights and West St. Paul – Safe Routes To School

STATE OF MINNESOTA
County of Dakota

	YES		NO
Slavik	X	**Slavik**	
Gaylord	X	**Gaylord**	
Halverson	X	**Halverson**	
Atkins	X	**Atkins**	
Workman	Absent	**Workman**	
Holberg	X	**Holberg**	
Hamann-Roland	X	**Hamann-Roland**	

I, Jeni Reynolds, Clerk to the Board of the County of Dakota, State of Minnesota, do hereby certify that I have compared the foregoing copy of a resolution with the original minutes of the proceedings of the Board of County Commissioners, Dakota County, Minnesota, at their session held on the 5th day of April 2022, now on file in the County Administration Department, and have found the same to be a true and correct copy thereof.

Witness my hand and official seal of Dakota County this 5th day of April 2022.

Jeni Reynolds

Clerk to the Board

8) CSAH 63 (Delaware Avenue) Trail from Marie Avenue to TH 149 (Dodd Road) in Mendota Heights and West St. Paul
9) Minnesota River Greenway – Railroad Overpass in Eagan
10) River to River Greenway from TH 149 trail and TH 149 underpass in Mendota Heights
11) Mendota to Lebanon Hills Greenway - TH 149 South in Mendota Heights
12) Veterans Memorial Greenway from TH 3 to CSAH 32 (Cliff Road) in Eagan and Inver Grove Heights
13) CSAH 23 (Cedar Avenue) pedestrian overpass at 140th Street in Apple Valley
14) CSAH 42 Trail and Underpass from 145th Street to Dakota County Technical College in Rosemount

; and

BE IT FURTHER RESOLVED, That the Dakota County Board of Commissioners hereby supports the following city led submittals to TAB for federal funding:

1) Nicollet Avenue and TH 13 interchange in Burnsville
2) CSAH 23 (Cedar Avenue) pedestrian overpass at 147th Street in Apple Valley – Transit Modernization
3) CSAH 9 (Dodd Boulevard) Trail from 210th Street to CSAH 50 (Kenwood Trail) in Lakeville
4) CSAH 73 (Babcock Trail) Trail from Upper 55th St. to I-494 in Inver Grove Heights
5) Lake Marion Greenway from Sunset Park to Rose Bluffs in Burnsville
6) Lake Marion Greenway from Ritter Farm to downtown in Lakeville
7) North Creek Greenway from 199th St. W to Rambling River Park in Farmington

; and

BE IT FURTHER RESOLVED, That the Dakota County Board of Commissioners hereby approves the following County led project for submittal to U.S. Department of Transportation for the RAISE grant program:

1) County State Aid Highway (CSAH) 46 (160th Street/Brandel Drive) from Trunk Highway (TH) 3 to TH 52 in Coates, Empire Township, and Rosemount
2) Mississippi River Greenway Trail, Rosemount east segment

; and

BE IT FURTHER RESOLVED, That the Dakota County Board of Commissioners hereby supports the following city led submittal to U.S. Department of Transportation for the RAISE grant program:

1) TH 13 and Nicollet Avenue grade-separated intersection in Burnsville

; and

BE IT FURTHER RESOLVED, That, subject to federal funding award of the city-led projects, the Dakota County Board of Commissioners will provide the local match for regional greenway projects and for non-greenway projects will provide Dakota County's share of the matching funds consistent with Dakota County transportation cost-share policies.

STATE OF MINNESOTA
County of Dakota

	YES		NO
Slavik	X	**Slavik**	
Gaylord	X	**Gaylord**	
Halverson	X	**Halverson**	
Atkins	X	**Atkins**	
Workman	Absent	**Workman**	
Holberg	X	**Holberg**	
Hamann-Roland	X	**Hamann-Roland**	

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