Application

19837 - 2024 Roadway Spot Mobility
20494 - Highway 61 and County Road 50 Intersection in Forest Lake
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: WASHINGTON CTY

Jurisdictional Agency (if different):

Organization Type:

Organization Website:

Address: PUBLIC WORKS
11660 MYERON RD

* STILLWATER (City) Minnesota (State/Province) 55082 (Postal Code/Zip)

County: Washington

Phone:* 651-430-4325 (Ext.)

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PeopleSoft Vendor Number 0000028637A10

Project Information

Project Name Highway 61 and County Road 50 Intersection in Forest Lake

Primary County where the Project is Located Washington

Cities or Townships where the Project is Located: Forest Lake

Jurisdictional Agency (If Different than the Applicant):

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

The proposed project will reconstruct the intersection of US 61, an A-Minor Arterial, and CR 50 Major Collector, as a signalized intersection within the City of Forest Lake. The existing intersection is two-way stop controlled. The US 61 pedestrian crossing includes crosswalk markings and an RRFB, despite FHWA recommending RRFBs for roadways with speeds 40 mph or less (US 61 is 55 mph). Land uses near the intersection are diverse, with residential to the east and west, Forest Lake High School and downtown Forest Lake to the north, and Shadow Creek Stables directly east. The US 61/CR 50 intersection is at a key link to the Hardwood Creek Regional Trail, which runs parallel to US 61.

The new signalized intersection will include high-visibility crossings on the north and west legs. All crossings will include high-visibility signage and be ADA-compliant with appropriate ramp slopes and tactile paving. The new intersection will provide a safe and accessible link across US 61 to connect with the Hardwood Creek Trail.

The new crossing will provide a key link to larger multimodal networks. The project is located on the Hardwood Creek Trail running 12 miles from the Ramsey County to the Chisago County lines within Washington County. A Hardwood Creek Trail extension is being planned to link the Bruce Vento Regional Trail in Ramsey County and the Sunrise Prairie Regional Trail in Chisago County. The project is located on the US 61 RBTN Tier 2 Alignment, signifying that this corridor will remain a high-priority multimodal route as the region develops.

(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.

Signalization of the US 61 and CR 50 Intersection in Washington County

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

Project Length (Miles)

0.1

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

$1,674,880.00

Match Amount

$418,720.00

Minimum of 20% of project total

Project Total

$2,093,600.00

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

Washington County

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:

2029

Select 2026 or 2027 for TDM and Unique projects only. For all other applications, select 2028 or 2029.

Additional Program Years:

2026, 2027

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

Project Information: Roadway Projects

NOTE: If your project has already been assigned a State Aid Project # (SAP or SP), please Indicate SAP# here

SAP#:

County, City, or Lead Agency

Washington County

Functional Class of Road

A-Minor Arterial

Road System

TH

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

Road/Route No.

61

i.e., 53 for CSAH 53

Name of Road	U.S. 61
Example; 1st ST., MAIN AVE	
TERMINI:(Termini listed must be within 0.3 miles of any work)	
From:	
Road System	
Road/Route No.	
i.e., 53 for CSAH 53	
Name of Road	
Example; 1st ST., MAIN AVE	
To:	
Road System	
DO NOT INCLUDE LEGAL DESCRIPTION	
Road/Route No.	
i.e., 53 for CSAH 53	
Name of Road	
Example; 1st ST., MAIN AVE	
In the City/Cities of:	
(List all cities within project limits)	
OR:	
At:	
Road System	CR
(TH, CSAH, MSAS, CO. RD., TWP. RD., City Street)	
Road/Route No.	50
i.e., 53 for CSAH 53	
Name of Road	CR 50
Example; 1st ST., MAIN AVE	
In the City/Cities of:	Forest Lake
(List all cities within project limits)	
PROJECT LENGTH	
Miles	0.10
(nearest 0.1 miles)	
Primary Types of Work (check all the apply)	
New Construction	
Reconstruction	Yes
Resurfacing	
Bituminous Pavement	
Concrete Pavement	
Roundabout	
New Bridge	
Bridge Replacement	
Bridge Rehab	
New Signal	Yes
Signal Replacement/Revision	
Bike Trail	
Other (do not include incidental items)	
BRIDGE/CULVERT PROJECTS (IF APPLICABLE)	
Old Bridge/Culvert No.:	
New Bridge/Culvert No.:	
Structure is Over/Under (Bridge or culvert name):	
OTHER INFORMATION:	
Zip Code where Majority of Work is Being Performed	55025
Approximate Begin Construction Date	03/01/2029
Approximate End Construction Date	12/23/2029
Miles of Trail (nearest 0.1 miles)	0.1
Miles of Sidewalk (nearest 0.1 miles)	0
Miles of trail on the Regional Bicycle Transportation Network (nearest 0.1 miles):	0.1
Is this a new trail?	No

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:

The project aligns with the 2040 Transportation Policy Plan by prioritizing the following goals and strategies:

Goal B: Safety and Security (p.2.5). Objective A (p.2.5), Strategy B1 (p.2.5), Strategy B3 (p.2.6).

Goal C: Access to Destinations (p.2.10). Objective B (p.2.10), Objective E (p.2.10), Strategy C9 (p. 2.17), Strategy C15 (p. 2.22), Strategy C16 (p. 2.23).

Goal D: Competitive Economy (p.2.26). Objective B (p.2.26), Objective C (p.2.26), Strategy D2 (p. p.2.27).

Goal E: Healthy and Equitable Communities (p.2.30). Objective C (p.2.30), Objective D (p.2.30), Strategy E3 (p.2.31).

Goal F: Leveraging Transportation Investment to Guide Land Use (p.2.35). Objective B p.2.35), Objective C (p.2.35), Strategy F2 (p.2.36), Strategy F6 (p.2.38).

Limit 2,800 characters, approximately 400 words

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

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

City of Forest Lake 2040 Comprehensive Plan (2020) (p.78)

2024-2028 Capital Improvement Plan (Project RB-2682) (p.108)

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 2024 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 future Regional Solicitation funding cycles, this requirement may include that the plan has undergone a recent update, e.g., within five years prior to application.

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: 06/18/2015

Link to plan: https://www.co.washington.mn.us/DocumentCenter/View/7981/Cover-page?bidId=

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. This includes assurance of year-round use of bicycle, pedestrian, and transit facilities, per FHWA direction established 8/27/2008 and updated 4/15/2019. 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 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. Bridge Rehabilitation/Replacement projects must be located on a minor collector and above functionally classified roadway in the urban areas or a major collector and above in the rural areas.

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 MnDOT?s ?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 in-place structure is 20 feet or longer.

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

6. The bridge must have a Local Planning Index (LPI) of less than 60 OR a National Bridge Inventory (NBI) Rating of 3 or less for either Deck Geometry, Approach Roadway, or Waterway Adequacy as reported on the most recent Minnesota Structure Inventory Report.

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 David Elvin at MnDOT (David.Elvin@state.mn.us or 651-234-7795) 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)	$73,000.00
Removals (approx. 5% of total cost)	$41,400.00
Roadway (grading, borrow, etc.)	$117,600.00
Roadway (aggregates and paving)	$289,700.00
Subgrade Correction (muck)	$0.00
Storm Sewer	$116,000.00
Ponds	$58,000.00

Concrete Items (curb & gutter, sidewalks, median barriers)	$153,500.00
Traffic Control	$73,000.00
Striping	$26,000.00
Signing	$26,000.00
Lighting	$44,000.00
Turf - Erosion & Landscaping	$35,000.00
Bridge	$0.00
Retaining Walls	$0.00
Noise Wall (not calculated in cost effectiveness measure)	$0.00
Traffic Signals	$500,000.00
Wetland Mitigation	$0.00
Other Natural and Cultural Resource Protection	$0.00
RR Crossing	$0.00
Roadway Contingencies	$470,000.00
Other Roadway Elements	$0.00
Totals	**$2,023,200.00**

Specific Bicycle and Pedestrian Elements

CONSTRUCTION PROJECT ELEMENTS/COST ESTIMATES	Cost
Path/Trail Construction	$40,320.00
Sidewalk Construction	$0.00
On-Street Bicycle Facility Construction	$0.00
Right-of-Way	$0.00
Pedestrian Curb Ramps (ADA)	$10,080.00
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	$20,000.00
Other Bicycle and Pedestrian Elements	$0.00
Totals	**$70,400.00**

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

PROTECT Funds Eligibility

One of the new federal funding sources is Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation (PROTECT). Please describe which specific elements of your project and associated costs out of the Total TAB-Eligible Costs are eligible to receive PROTECT funds. Examples of potential eligible items may include: storm sewer, ponding, erosion control/landscaping, retaining walls, new bridges over floodplains, and road realignments out of floodplains.

INFORMATION: Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation (PROTECT) Formula Program Implementation Guidance (dot.gov).

Response:	Several elements of the proposed project are eligible to receive PROTECT funds, with a combined $209,000 of eligible project costs. These include: ? Storm Sewer ($116,000) ? Ponds ($58,000) ? Turf - Erosion & Landscaping ($35,000) These improvements will increase the resilience of the US 61/CR 50 intersection, the Hardwood Creek Regional Trail, and adjacent communities through improved stormwater management, which will help decrease the magnitude and duration of flood events at this location.

Totals

Total Cost	$2,093,600.00
Construction Cost Total	$2,093,600.00
Transit Operating Cost Total	$0.00

Congestion within Project Area:

Free-Flow Travel Speed:	55
The free-flow travel speed is the black number	
Peak Hour Travel Speed:	53
The peak hour travel speed is the red number	
Percentage Decrease in Travel Speed in Peak Hour Compared to Free-Flow (calculation):	3.64%
Upload the "Level of Congestion" map:	1702502310943_Attachment D_Make-a-Map Level of Congestion.pdf

Congestion on adjacent Parallel Routes:

Adjacent Parallel Corridor	I-35
Adjacent Parallel Corridor Start and End Points:	
Start Point:	147th Ave
End Point:	TH 97 exit ramp
Free-Flow Travel Speed:	70
The Free-Flow Travel Speed is black number.	
Peak Hour Travel Speed:	74
The Peak-Hour Travel Speed is red number.	
Percentage Decrease in Travel Speed in Peak Hour Compared to Free-Flow (calculation):	-5.71%
Upload the "Level of Congestion" map:	1702502310943_Attachment D_Make-a-Map Level of Congestion.pdf

Principal Arterial Intersection Conversion Study:

Proposed at-grade project that reduces delay at a High Priority Intersection:	
(70 Points)	
Proposed at-grade project that reduces delay at a Medium Priority Intersection:	
(65 Points)	
Proposed at-grade project that reduces delay at a Low Priority Intersection:	
(60 Points)	
Not listed as a priority in the study:	Yes
(0 Points)	

Congestion Management and Safety Plan IV:

Proposed at-grade project that reduces delay at a CMSP opportunity area:	
(70 Points)	
Not listed as a CMSP priority location:	Yes
(0 Points)	

Measure C: Current Heavy Commercial Traffic

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

Along Tier 1:	
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: Yes

None of the tiers:

Measure A: Engagement

i. Describe any Black, Indigenous, and People of Color populations, low-income populations, disabled populations, youth, or older adults within a ½ mile of the proposed project. Describe how these populations relate to regional context. Location of affordable housing will be addressed in Measure C.

ii. Describe how Black, Indigenous, and People of Color populations, low-income populations, persons with disabilities, youth, older adults, and residents in affordable housing were engaged, whether through community planning efforts, project needs identification, or during the project development process.

iii. Describe the progression of engagement activities in this project. A full response should answer these questions:

1. *What engagement methods and tools were used?*
2. *How did you engage specific communities and populations likely to be directly impacted by the project?*
3. *What techniques did you use to reach populations traditionally not involved in community engagement related to transportation projects?*
4. *How were the project?s purpose and need identified?*
5. *How was the community engaged as the project was developed and designed?*
6. *How did you provide multiple opportunities for of Black, Indigenous, and People of Color populations, low-income populations, persons with disabilities, youth, older adults, and residents in affordable housing to engage at different points of project development?*
7. *How did engagement influence the project plans or recommendations? How did you share back findings with community and re-engage to assess responsiveness of these changes?*
8. *If applicable, how will NEPA or Title VI regulations will guide engagement activities?*

Response:

This project is located in a census tract that is above the regional average for population in poverty or population of color, and the census tract on the west side of Hwy 61 is identified as a Regional Environmental Justice Area. According to the MPCA, this is because at least 35% of people in the census tract west of Hwy 61 reported income less than 200% of the federal poverty level. There are 187 publicly subsidized rental housing units (4 different buildings) within a 1/2 mile of the intersection.

There is a YMCA, library, transit center, and county service center within the ½ mile boundary. All of these are community assets and provide important basic services to people in the community, including county services that low income and vulnerable populations rely on. That includes educational programing at the YMCA and library and county services including access to social workers and public health nurses.

FHWA?s Screening Tool for Equity Analysis of Projects estimates a high proportion of youth within a 1/2-mile of the project (29%, compared to 23% statewide). Trailside Senior Living Apartments is located near the intersection and is income-restricted.

The County is currently leading the TH61 Visioning Study, which includes this intersection. At an open house held on April 5, 2023, multiple attendees commented that this intersection is dangerous for pedestrians and that vehicles do not typically yield to the RRFB. 109 people also took an online survey, where safety was the most-discussed issue.

Forest Lake has been involved in numerous discussions about this intersection related to a potential development on the northeast quadrant. With or without development, based on these discussions, analysis of traffic volumes and RRFB usage and compliance, it is clear that signalization will enhance safety for all users of this intersection, especially for non-motorized users, among whom vulnerable users and those meeting a range of equity characteristics are likely to be overrepresented.

The project?s purpose and need was identified through engineering analysis and supported through planning and engagement efforts. Future public engagement will expand on the conversations to date and provide more targeted opportunities to underrepresented populations. The County has an approved Title VI plan which serves as a guide and a resource for nondiscrimination in County practices. The County will facilitate engagement to ensure final design is informed by a community-driven process. Engagement strategies will include a range of channels to reach multiple audiences, including those who may not typically participate. These include open houses, maintaining a project website, surveys, online comment maps, and pop-up meetings.

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

Measure B: Disadvantaged Communities Benefits and Impacts

Describe the project?s benefits to Black, Indigenous, and People of Color populations, low-income populations, children, people with disabilities, youth, and older adults. Benefits could relate to:

? pedestrian and bicycle safety improvements;
? public health benefits;
? direct access improvements for residents or improved access to destinations such as jobs, school, health care, or other;
? travel time improvements;
? gap closures;
? new transportation services or modal options;
? leveraging of other beneficial projects and investments;
? and/or community connection and cohesion improvements.

This is not an exhaustive list. A full response will support the benefits claimed, identify benefits specific to Disadvantaged communities residing or engaged in activities near the project area, identify benefits addressing a transportation issue affecting Disadvantaged communities 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.

? Decreased pedestrian access through sidewalk removal / narrowing, placement of barriers along the walking path, increase in auto-oriented curb cuts, etc.
? Increased speed and/or ?cut-through? traffic.
? Removed or diminished safe bicycle access.
? Inclusion of some other barrier to access to jobs and other destinations.

Response:

Signalizing this intersection and including a median crossing island provides numerous benefits to low-income populations, children, people with disabilities, youth, and older adults, and provides a safe connection between existing trails. In particular, this project supports transportation-vulnerable populations who are likely to be overrepresented among non-motorized travelers through the replacement of an RRFB that had compliance concerns with a fully signalized intersection, particularly with youth and people with low/no sight. FHWA recommends that RRFBs be used at crossings with speed limits less than 40 mph (US 61 is 55 mph), given that they can provide pedestrians a sense of protection even as drivers fail to expect and slow for them.

This project promotes active transportation and furthers the goals of the Regional Bicycle Network by providing a comfortable and safe connection and removing a barrier between the Hardwood Creek Trail (a Tier 2 RBTN Alignment) and neighborhoods to the east across the busy high-speed Hwy 61. This connection also enables comfortable and safe non-motorized travel between neighborhoods and a variety of destinations. Key destinations near the intersection include a YMCA, senior living, apartments, and the Washington County Service Center which includes Harwood Creek Library, CareerForce, and a License Center ? services which are critical to the people living in this area. There is also a transit center that is not currently utilized but could service the future Purple Line or other future transit service.

This project also improves safety for people who must travel through the area in a vehicle by providing a signal. This will in particular improve safety for those turning onto or off of Hwy 61, or traveling along CR 50 to reach the various destinations listed above.

There are no known negative impacts.

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

Measure C: Affordable Housing Access

Describe any affordable housing developments?existing, under construction, or planned?within 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 project?s benefits to current and future affordable housing residents within ½ mile of the project. Benefits must relate to affordable housing residents. Examples may include:

? specific direct access improvements for residents
? improved access to destinations such as jobs, school, health care or other;
? new transportation services or modal options;
? and/or community connection and cohesion improvements.

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:

There are currently 187 publicly subsidized rental housing units in census tracts within a 1/2 mile of the intersection, described below and shown on the attached map:

-Trailside Senior Living (70 units). This building is for residents 55 years or older and has income restrictions.

- Forest Oak Apartments and Forest Oak Apartments II (36 units each, 72 total). These buildings target 60% of Area Median Income.

- Headwaters Landing (45 units).

- An additional apartment building not identified on Housing Link is Fitzgerald Flats, which consists of 53 units and has seven units designated for people experiencing homelessness and four units for persons with disabilities.

As discussed above, this project provides safety benefits to non-motorized traffic through signalization. Residents of affordable housing often are transportation-vulnerable and rely on non-motorized transportation at times. Although many service destinations are located on the east side of Hwy 61 (the same side as the affordable housing locations), residents must travel through the project intersection to reach numerous other destinations. Forest Lake High School and Middle school are located across Hwy 61 only 1.5 miles away, so it is highly likely that some residents of the identified affordable housing units travel to school on foot or bicycle. The improved crossing allows these students to cross Hwy 61 safely and travel through the more pedestrian-friendly neighborhood on the east side of Hwy 61 and continue east on the trail adjacent to CR 50. The project intersection is a key access point to Hwy 61 and other destinations, and the improved pedestrian crossing provides access between the neighborhoods east and west of Hwy 61 and key destinations.

These intersection improvements also provide benefits for any potential future affordable housing residents on the east side of the trail. If new developments are to include affordable housing, this safe crossing would allow for convenient access to the Hardwood Creek Trail and the various services and key destinations identified on the attached map.

This project also improves safety for people who must travel through the area in a vehicle by providing a signal. This will in particular improve safety for those turning onto or off of Hwy 61 or traveling along CR 50 to reach the various destinations listed above.

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

Measure D: BONUS POINTS

Project is located in an Area of Concentrated Poverty:	
Project?s census tracts are above the regional average for population in poverty or population of color (Regional Environmental Justice Area):	Yes
Project located in a census tract that is below the regional average for population in poverty or populations of color (Regional Environmental Justice Area):	
Upload the ?Socio-Economic Conditions? map used for this measure.	1702503061133_Attachment C_Make-a-Map Socio-Economic Conditions.pdf

Measure A: Congestion Reduction/Air Quality

Total Peak Hour Delay Per Vehicle Without The Project (Seconds/Vehicle)	Total Peak Hour Delay Per Vehicle With The Project (Seconds/Vehicle)	Total Peak Hour Delay Per Vehicle Reduced by Project (Seconds/Vehicle)	Volume without the Project (Vehicles per hour)	Volume with the Project (Vehicles Per Hour):	Total Peak Hour Delay without the Project:	Total Peak Hour Delay by the Project:	Total Peak hour Delay Reduced by project	EXPLANATION of methodology used to calculate railroad crossing delay, if applicable.	Synchro or HCM Reports
5.0	9.7	-4.7	1327	1327	6635.0	12871.9	-6236.9	Synchro or HCM Report	1702503407537_Attachment F_US 61 CR 50_Traffic Packet.pdf

Vehicle Delay Reduced

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

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):
7.3	7.5	-0.2
7	**8**	**0**

Total

Total Emissions Reduced:	-0.2
Upload Synchro Report	1702503886054_Attachment F_US 61 CR 50_Traffic Packet.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):
7.3	7.5	-0.2
7	**8**	**0**

Total Parallel Roadway

Emissions Reduced on Parallel Roadways	-0.2
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):	-0.2

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

Cruise speed in miles per hour without the project:	0
Vehicle miles traveled without the project:	0

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

Measure A: Benefit of Crash Reduction

Crash Modification Factor Used: *(Limit 700 Characters; approximately 100 words)*	CMF ID 325: Install a traffic signal
Rationale for Crash Modification Selected: *(Limit 1400 Characters; approximately 200 words)*	The above crash modification factor was selected as it was directly related to the proposed improvement and installation of a traffic signal and was highly rated (5-stars) compared to other crash modification factors reviewed.
Project Benefit ($) from B/C Ratio	$1.65
Total Fatal (K) Crashes:	0
Total Serious Injury (A) Crashes:	0
Total Non-Motorized Fatal and Serious Injury Crashes:	0
Total Crashes:	11
Total Fatal (K) Crashes Reduced by Project:	0
Total Serious Injury (A) Crashes Reduced by Project:	0
Total Non-Motorized Fatal and Serious Injury Crashes Reduced by Project:	0
Total Crashes Reduced by Project:	5
Worksheet Attachment *Upload Crash Modification Factors and B/C Worksheet in PDF form*	1702504057898_Attachment H_Crash_BC.pdf

Measure B: 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 doesn?t 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 howthese 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 roadway?s context (e.g., appropriate for the speed, volume, crossing distance, and other location attributes). Refer to the Regional Solicitation Resources web page for guidance links.

Response:

The US 61/CR 50 intersection has a diverse land use context including adjacent residential, educational, commercial, and community/institutional destinations. Given the intersection?s critical role for non-motorized travelers, including school children and elderly residents and the many affordable housing residents, the project has been developed to provide a safer, more convenient, and more accessible crossing of US 61 as a primary design criterion.

At present, the intersection is two-way stop controlled with a marked crossing on the west leg and a marked crossing with a Rectangular Rapid Flashing Beacon (RRFB) on the north leg. FHWA recommends that RRFBs be used at crossings with speed limits less than 40 mph (US 61 is 55 mph), given that they can provide pedestrians a sense of protection even as drivers fail to expect and slow for them. These conditions are particularly concerning for school children given the intersection?s role as a popular crossing location for children traveling to Forest Lake High School from the west, traveling to Forest Lake Sports Center from the east, and traveling between the two. The intersection is a key link for access to the Hardwood Creek Regional Trail and will become even more utilized as planned developments adjacent to the project are completed.

The project will reconstruct the US 61/CR 50 intersection to provide geometric improvements and add signalized traffic control. The new signalized intersection will maintain the north- and west-leg crossings and include a range of pedestrian safety features such as pedestrian signal heads with countdown timers, audible tones and/or speech messages to indicate crossing status, high-visibility crosswalk markings, and leading pedestrian interval. All crossings will be ADA-compliant with appropriate ramp slopes, tactile paving at ramps, and push buttons.

These improvements will provide crucial enhancements at the CR 50 crossing to create a safer, more accessible, and more convenient connection to the local destinations and regional networks within this growing area of the community.

(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:

(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 doesn?t require much elevation change instead of pedestrian bridge with numerous switchbacks).

Response: No grade-separated crossings are being proposed.

(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: No mid-block crossings will be restricted or blocked.

(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:

Conversion of US 61 at CR 50 from a two-way stop-controlled intersection to a signalized intersection will have a variety of effects on motorist speed and pedestrian safety. The new traffic signals will require motorists to adhere to signal timing cycles, minimizing the less predictable, high-speed movements often seen at stop-controlled intersections and addressing the pedestrian visibility concerns associated with the existing RRFB. This regulation will lead to more consistent traffic flow, reducing speed differentials between vehicles and creating a smoother driving environment. Signals will provide pedestrians a regular, designated crossing phase as well as features such as leading pedestrian intervals to give them a head start before vehicular traffic. The more predictable traffic patterns and reduced speed variability, in addition to fully ADA-compliant infrastructure, will provide for greatly enhanced pedestrian safety at the project intersection.

(Limit 2,800 characters; approximately 400 words)

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

Response:

The posted speed along the corridor is 50 mph. No change in posted speed is proposed as part of the project.

(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	9405

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.)	
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.)	
Existing road is within 500? of 1+ shopping, dining, or entertainment destinations (e.g., grocery store, restaurant)	Yes

If checked, please describe:

The project intersection is located within 500' of Shadow Creek Stables, a popular horse boarding farm providing lessons and other services. The project is located within ½ mile of a YMCA and county library which provide enjoyment activities for a variety of community members. The project is located approximately 1.5 miles south of downtown Forest Lake, which can be reached conveniently using the existing Hardwood Creek Trail. Downtown Forest Lake is a bustling entertainment and business district offering a variety of dining, shopping, hotels, bars and breweries, healthcare and other services, and parks, churches, and other community spaces. The improved crossing at CR 50 will provide a safe and accessible link to the Hardwood Creek Trail and enhance multimodal access to the destinations located downtown.

(Limit 1,400 characters; approximately 200 words)

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

If checked, please describe:

While not within 500?, the project is located within ¼ - ½ mile of several pedestrian generators. The Forest Lake YMCA, Washington County License Center, Trailside Senior Living facility, Forest Lake Transit Center, and various multifamily residential developments are located less that half a mile to the south and accessible using the Hardwood Creek Trail. Forest Lake High School, with nearly 2,000 students, is located one mile to the north. The Forest Lake Sports Center, owned and operated by the Forest Lake School District, is located half a mile west of the intersection at Fenway Park. Fenway Park also offers several baseball diamonds and tennis courts. With the CR 50 intersection serving as a key crossing point to access these locations, the proposed improvements will be effective in enhancing the safety and accessibility of travel for a wide range of residents.

(Limit 1,400 characters; approximately 200 words)

Measure A: Multimodal Elements and Existing Connections

Response:

The US 61/CR 50 intersection serves a critical multimodal purpose for residents, granting one of few crossing opportunities along the busy US 61 corridor and providing a direct link to regional multimodal networks. The project will reconstruct the US 61/CR 50 intersection as a signalized intersection and provide safe and accessible pedestrian crossings on the north and west legs. Given the intersection?s nearby pedestrian generators, planned development, and location relative to the Hardwood Creek Trail, these improvements will enhance the safety, accessibility, and convenience of travel to local destinations while supporting regional connectivity.

As a high-volume, high-speed trunk highway with few crossing opportunities, US 61 represents a significant barrier for residents. This includes school children traveling to the Forest Lake High School and residents of the Trailside Senior Living Apartments. The existing crossing treatment at CR 50 includes striping and an RRFB, which is typically recommended for roadways with speeds 40 mph or less (US 61 is 55 mph).

The new signalized CR 50 crossing will provide a safer and more accessible link across US 61 that connects with the Hardwood Creek Trail on the west. Half a mile to the south, the trail passes the Forest Lake YMCA, Hardwood Creek Library, Washington County License Center, Trailside Senior Living Apartments, and other destinations. To the north, the trail enters downtown Forest Lake. Importantly, the project will enhance safety along a key school route, improving crossing conditions for children accessing Forest Lake High School from the west, Forest Lake Sports Center from the east, and traveling between the two.

Various investments are being planned adjacent to the project intersection. These include a new residential development and the new Forest Lakes Public Works building in the northeast and southeast quadrants, respectively. The popular Shadow Creek Stables is located 750? east of the intersection. The new crossing will connect with the existing trail to the east on the north of CR 50.

The new crossing will provide a key link to larger multimodal networks. The project is located on the Hardwood Creek Trail running 12 miles from the Ramsey County to the Chisago County lines within Washington County. A Hardwood Creek Trail extension is being planned to link the Bruce Vento Regional Trail in Ramsey County and the Sunrise Prairie Regional Trail in Chisago County. The project is located on the US 61 RBTN Tier 2 Alignment, signifying that this corridor will remain a high-priority multimodal route as the region develops.

(Limit 2,800 characters; approximately 400 words)

Transit Projects Not Requiring Construction

If the applicant is completing a transit application that is operations only, check the box and do not complete the remainder of the form. These projects will receive full points for the Risk Assessment.

Park-and-Ride and other transit construction projects require completion of the Risk Assessment below.

Check Here if Your Transit Project Does Not Require Construction

Measure A: Risk Assessment - Construction Projects

1. Public Involvement (20 Percent of Points)

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

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

100%

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

50%

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

50%

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

25%

No outreach has led to the selection of this project.

0%

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

Response:

Engagement to date has primarily focused on more broad outreach efforts that include this intersection and have supported the identification of needs for this intersection in the context of the greater Hwy 61 corridor. As mentioned above, the County is currently leading the TH61 Visioning and Jurisdictional Transfer Study and held an open house earlier this year in April 2023. Multiple attendees commented that this intersection is dangerous for pedestrians and that vehicles do not typically yield to the RRFB. In addition to the in-person open house, an online survey was distributed and showed safety as the most-discussed issue.

The City of Forest Lake has also been involved in numerous discussions about this intersection related to a potential development on the northeast quadrant. As this project is still in the early stages of design, future public engagement will expand on the planning-level and development-focused conversations held to date.

(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 project?s 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 1702570574090_Attachment B_US 61 CR 50_Layout.pdf

Please upload attachment in PDF form

Additional Attachments

Please upload attachment in PDF form

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

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

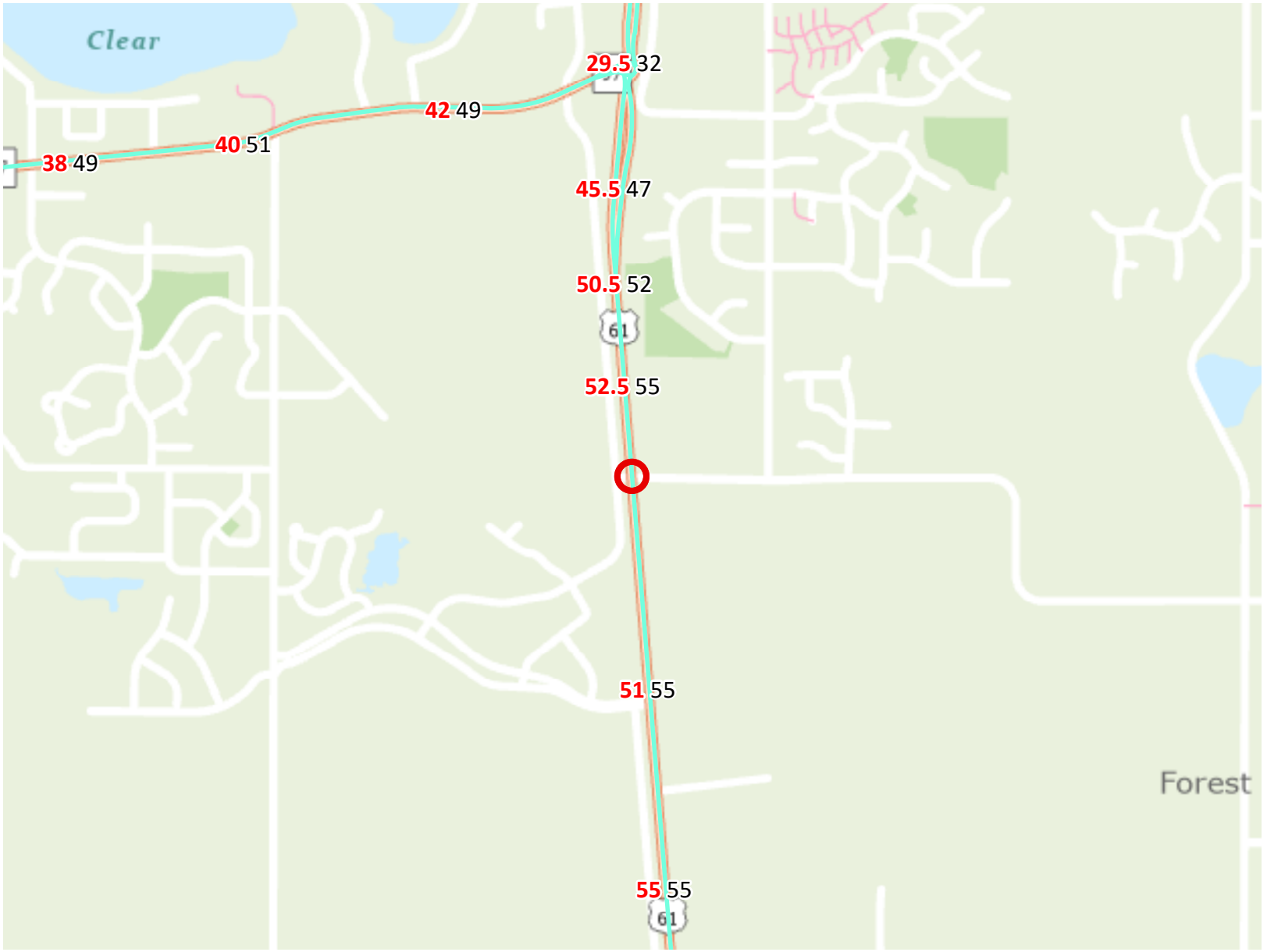
Total Project Cost (entered in Project Cost Form):	$2,093,600.00
Enter Amount of the Noise Walls:	$0.00
Total Project Cost subtract the amount of the noise walls:	$2,093,600.00
Enter amount of any outside, competitive funding:	$0.00
Attach documentation of award:	
Points Awarded in Previous Criteria	
Cost Effectiveness	$0.00

Other Attachments

File Name	Description	File Size
Attachment A_One-Pager.pdf	One-Page Summary	5.2 MB
Attachment E_ Self-Generated Affordable Housing Map.pdf	Affordable Housing Map	1.4 MB
Attachment G_Crash Summary.pdf	Crash Summary	57 KB
Attachment H_Crash_BC.pdf	Crash BC	660 KB
Attachment I_CMF Documentation.pdf	CMF Documentaiton	142 KB
Attachment J1_2023-141 Reg Sol_Wash Co Resolution of Support SIGNED.pdf	Washington County Resolution of Support	253 KB
Attachment J2_2024 Regional Solicitation_WCTH61.pdf	MnDOT Letter of Support	209 KB
Attachment J3_Forest Lake LOS.pdf	Forest Lake Letter of Support	347 KB
Attachment K_Existing Conditions_HWY 61 CR 50.pdf	Existing Conditions Photos	903 KB

Level of Congestion

Roadway Spot Mobility & Safety Project: Highway 61 and County Road 50 Intersection Improvements in F | Map ID: 1698674979216



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

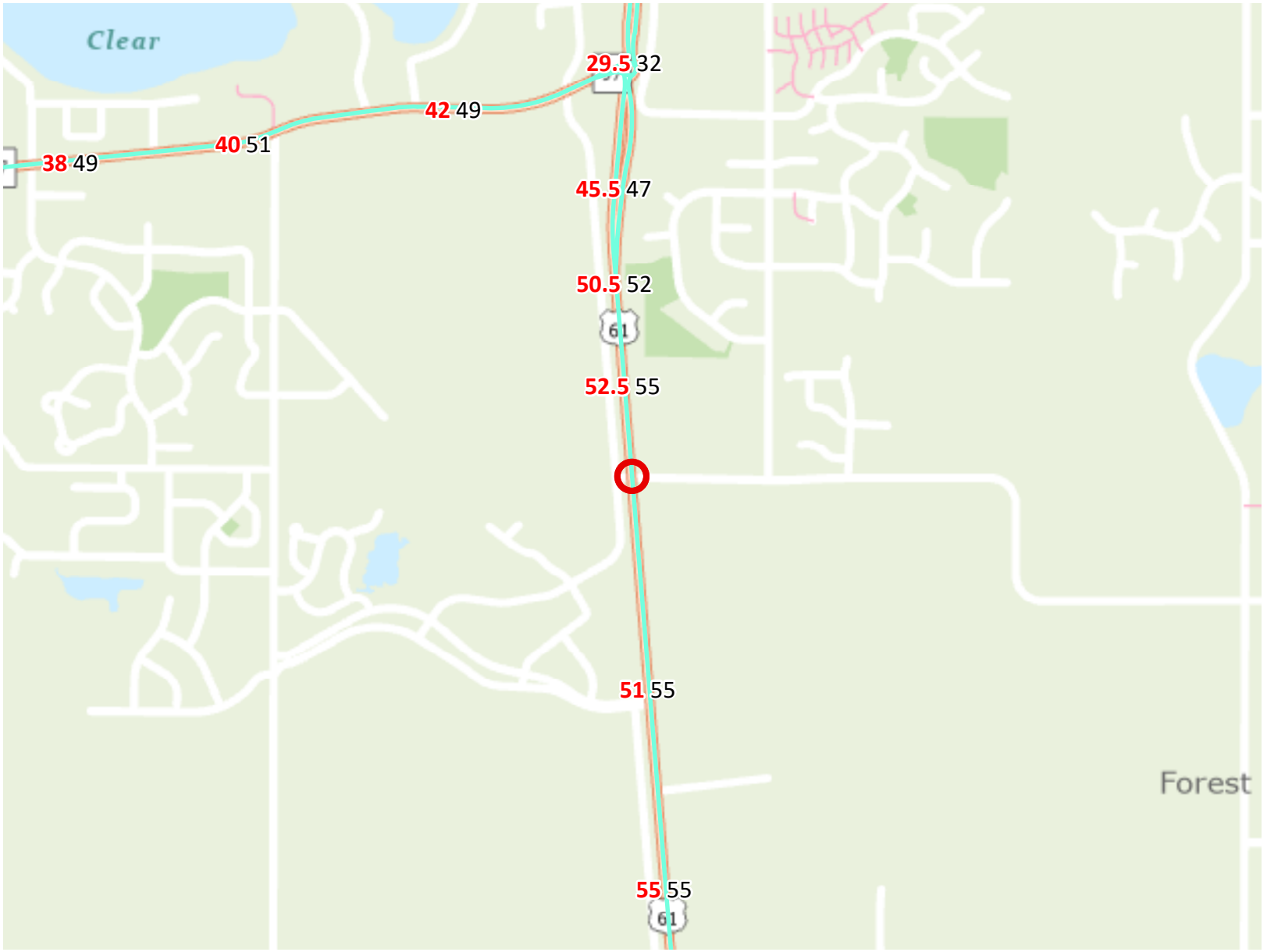
0 0.175 0.35 0.7 1.05 1.4 Miles

Created: 10/30/2023
LandscapeRSA1

METROPOLITAN COUNCIL

Level of Congestion

Roadway Spot Mobility & Safety Project: Highway 61 and County Road 50 Intersection Improvements in F | Map ID: 1698674979216



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

0 0.175 0.35 0.7 1.05 1.4 Miles

Created: 10/30/2023
LandscapeRSA1

METROPOLITAN COUNCIL

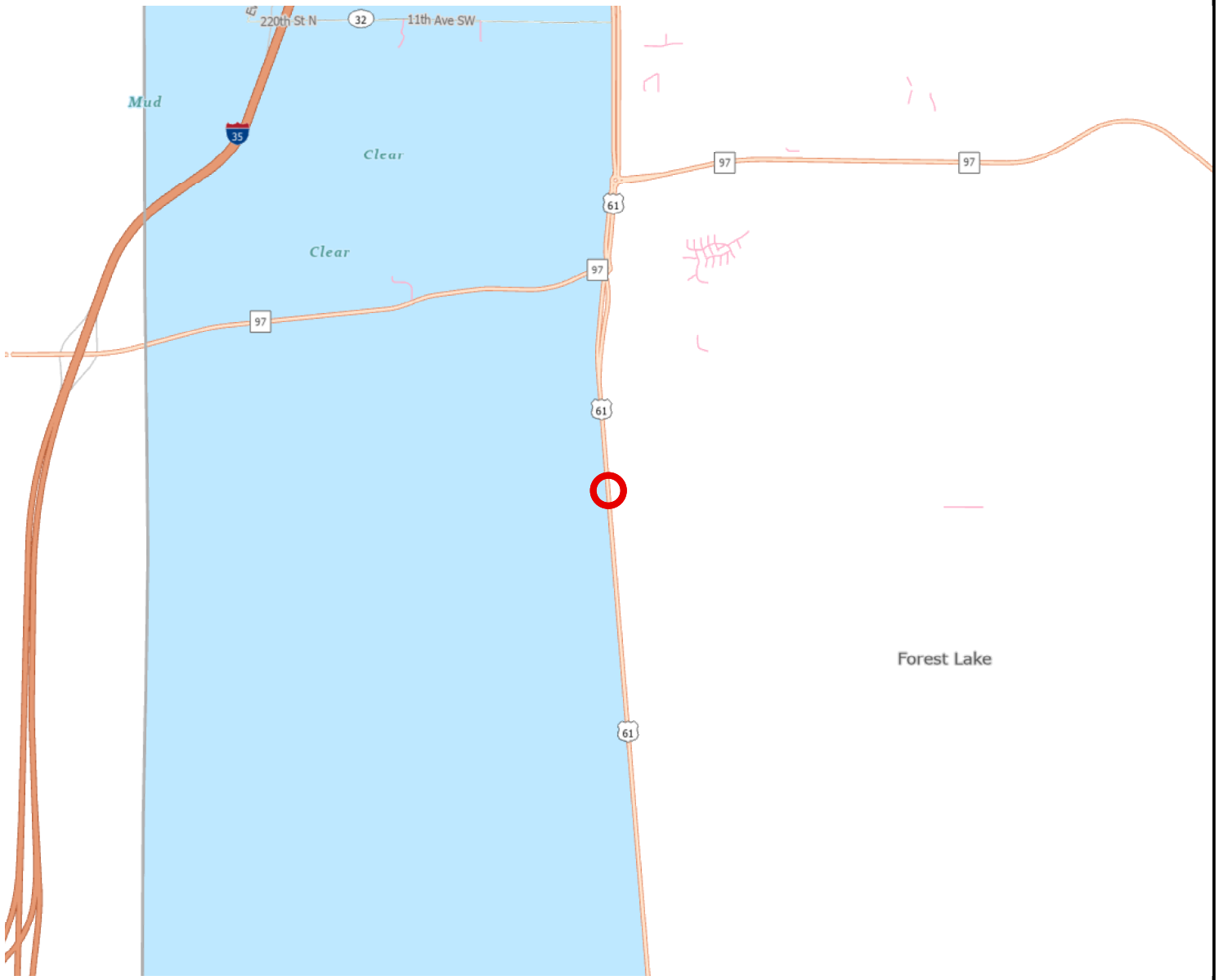
Socio-Economic Conditions

Roadway Spot Mobility & Safety Project: Highway 61 and County Road 50 Intersection Improvements in F | Map ID: 1698674

Results

Total of publicly subsidized rental housing units in census tracts within 1/2 mile: 187

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



Points

Regional Environmental Justice Area

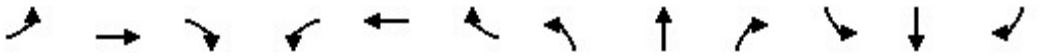
Area of Concentrated Poverty

0 0.35 0.7 1.4 2.1 2.8 Miles

Created: 10/30/2023
LandscapeRSA2

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

METROPOLITAN COUNCIL

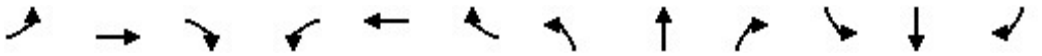


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	16	6	31	13	27	5	432	70	51	355	77
Future Volume (vph)	46	16	6	31	13	27	5	432	70	51	355	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		290	300		300	285		285
Storage Lanes	1		1	0		1	1		1	1		1
Taper Length (ft)	25			25			190			185		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950				0.968		0.950			0.950		
Satd. Flow (prot)	1752	1845	1568	0	1786	1568	1752	1845	1568	1752	1845	1568
Flt Permitted	0.950				0.968		0.950			0.950		
Satd. Flow (perm)	1752	1845	1568	0	1786	1568	1752	1845	1568	1752	1845	1568
Link Speed (mph)		30			50			50			50	
Link Distance (ft)		163			1330			1527			1038	
Travel Time (s)		3.7			18.1			20.8			14.2	
Peak Hour Factor	0.77	0.36	0.75	0.97	0.81	0.68	0.63	0.94	0.73	0.91	0.95	0.74
Adj. Flow (vph)	60	44	8	32	16	40	8	460	96	56	374	104
Shared Lane Traffic (%)												
Lane Group Flow (vph)	60	44	8	0	48	40	8	460	96	56	374	104
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	45.3%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	48	47	0	33	35	0
Future Volume (vph)	48	47	0	33	35	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.933		0.865			
Flt Protected	0.975					0.950
Satd. Flow (prot)	1678	0	1596	0	0	1752
Flt Permitted	0.975					0.950
Satd. Flow (perm)	1678	0	1596	0	0	1752
Link Speed (mph)	30		30			30
Link Distance (ft)	163		678			824
Travel Time (s)	3.7		15.4			18.7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	52	51	0	36	38	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	103	0	36	0	0	38
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Free		Stop			Stop

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 20.8%		ICU Level of Service A	
Analysis Period (min) 15			

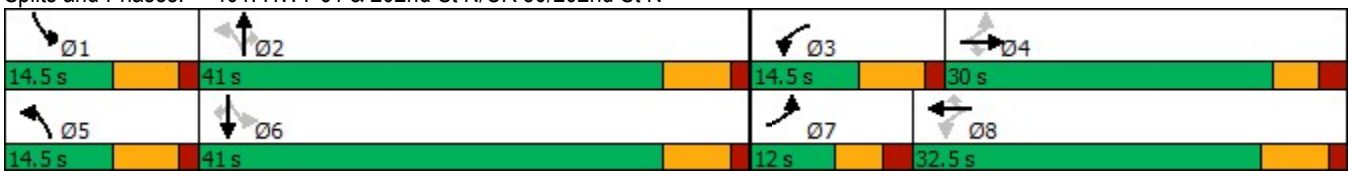


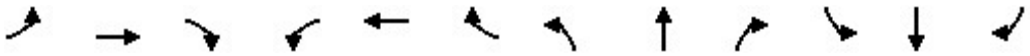
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	16	6	31	13	27	5	432	70	51	355	77
Future Volume (vph)	46	16	6	31	13	27	5	432	70	51	355	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		290	300		300	285		285
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			190			185		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.714			0.909			0.531			0.397		
Satd. Flow (perm)	1330	1863	1583	1693	1863	1583	989	1863	1583	740	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			171			171			171			171
Link Speed (mph)		30			50			50			50	
Link Distance (ft)		163			1330			1527			1038	
Travel Time (s)		3.7			18.1			20.8			14.2	
Peak Hour Factor	0.77	0.36	0.75	0.97	0.81	0.68	0.63	0.94	0.73	0.91	0.95	0.74
Adj. Flow (vph)	60	44	8	32	16	40	8	460	96	56	374	104
Shared Lane Traffic (%)												
Lane Group Flow (vph)	60	44	8	32	16	40	8	460	96	56	374	104
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		22			22			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	15.0	15.0	5.0	15.0	15.0
Minimum Split (s)	12.0	23.0	23.0	14.5	32.5	32.5	14.5	27.5	27.5	14.5	40.5	40.5
Total Split (s)	12.0	30.0	30.0	14.5	32.5	32.5	14.5	41.0	41.0	14.5	41.0	41.0
Total Split (%)	12.0%	30.0%	30.0%	14.5%	32.5%	32.5%	14.5%	41.0%	41.0%	14.5%	41.0%	41.0%
Maximum Green (s)	6.3	24.3	24.3	8.0	26.0	26.0	8.0	34.5	34.5	8.0	34.5	34.5
Yellow Time (s)	3.5	3.5	3.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.2	2.2	2.2	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.7	5.7	5.7	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	5.0	5.0	1.0	5.0	5.0
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Walk Time (s)					7.0	7.0					7.0	7.0
Flash Dont Walk (s)					18.0	18.0					26.0	26.0
Pedestrian Calls (#/hr)					0	0					0	0
Act Effct Green (s)	11.1	10.7	10.7	9.4	8.4	8.4	33.8	36.1	36.1	36.1	40.0	40.0
Actuated g/C Ratio	0.20	0.19	0.19	0.17	0.15	0.15	0.60	0.64	0.64	0.64	0.71	0.71
v/c Ratio	0.19	0.13	0.02	0.11	0.06	0.11	0.01	0.39	0.09	0.10	0.28	0.09
Control Delay	21.9	28.9	0.0	22.2	31.8	0.6	7.2	14.9	0.4	7.3	10.0	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.9	28.9	0.0	22.2	31.8	0.6	7.2	14.9	0.4	7.3	10.0	0.7
LOS	C	C	A	C	C	A	A	B	A	A	B	A
Approach Delay		23.1			14.1			12.3			7.9	
Approach LOS		C			B			B			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 56.5			
Natural Cycle: 100			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.39			
Intersection Signal Delay: 11.6		Intersection LOS: B	
Intersection Capacity Utilization 51.7%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 401: HWY 61 & 202nd St N/CR 50/202nd St N





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	15.0	15.0	5.0	15.0	15.0
Minimum Split (s)	12.0	23.0	23.0	14.5	32.5	32.5	14.5	27.5	27.5	14.5	40.5	40.5
Total Split (s)	12.0	30.0	30.0	14.5	32.5	32.5	14.5	41.0	41.0	14.5	41.0	41.0
Total Split (%)	12.0%	30.0%	30.0%	14.5%	32.5%	32.5%	14.5%	41.0%	41.0%	14.5%	41.0%	41.0%
Maximum Green (s)	6.3	24.3	24.3	8.0	26.0	26.0	8.0	34.5	34.5	8.0	34.5	34.5
Yellow Time (s)	3.5	3.5	3.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.2	2.2	2.2	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	5.0	5.0	1.0	5.0	5.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Walk Time (s)					7.0	7.0					7.0	7.0
Flash Dont Walk (s)					18.0	18.0					26.0	26.0
Pedestrian Calls (#/hr)					0	0					0	0
90th %ile Green (s)	6.3	7.5	7.5	6.1	7.3	7.3	5.0	34.5	34.5	5.7	35.2	35.2
90th %ile Term Code	Max	Gap	Gap	Gap	Hold	Hold	Min	Max	Max	Gap	Hold	Hold
70th %ile Green (s)	6.3	8.3	8.3	5.0	7.0	7.0	0.0	29.0	29.0	5.0	40.5	40.5
70th %ile Term Code	Max	Hold	Hold	Min	Min	Min	Skip	Gap	Gap	Min	Hold	Hold
50th %ile Green (s)	5.8	19.3	19.3	0.0	7.0	7.0	0.0	24.3	24.3	5.0	35.8	35.8
50th %ile Term Code	Gap	Hold	Hold	Skip	Min	Min	Skip	Gap	Gap	Min	Hold	Hold
30th %ile Green (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.9	20.9	0.0	20.9	20.9
30th %ile Term Code	Skip	Skip	Skip	Skip	Skip	Skip	Skip	Dwell	Dwell	Skip	Dwell	Dwell
10th %ile Green (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	30.0	30.0	0.0	30.0	30.0
10th %ile Term Code	Skip	Skip	Skip	Skip	Skip	Skip	Skip	Dwell	Dwell	Skip	Dwell	Dwell

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 56.5
Control Type: Actuated-Uncoordinated
90th %ile Actuated Cycle: 79
70th %ile Actuated Cycle: 72.5
50th %ile Actuated Cycle: 67.3
30th %ile Actuated Cycle: 27.4
10th %ile Actuated Cycle: 36.5

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	48	47	0	33	35	0
Future Volume (vph)	48	47	0	33	35	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.935		0.865			
Flt Protected	0.975					0.950
Satd. Flow (prot)	1698	0	1611	0	0	1770
Flt Permitted	0.975					0.950
Satd. Flow (perm)	1698	0	1611	0	0	1770
Link Speed (mph)	30		30			30
Link Distance (ft)	163		678			824
Travel Time (s)	3.7		15.4			18.7
Peak Hour Factor	0.75	0.78	1.00	0.69	0.67	1.00
Adj. Flow (vph)	64	60	0	48	52	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	124	0	48	0	0	52
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	22		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Free		Stop			Stop

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 20.8%		ICU Level of Service A	
Analysis Period (min) 15			

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	3:30	3:30	3:30	3:30	3:30	3:30
End Time	4:45	4:45	4:45	4:45	4:45	4:45
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:\2023\230170 - 2024 Washington County Regional Solicitation Applications\TRAFFIC ANALYSIS\SYNCHRO\CSV\400_PM_2023.C						
Volume date = 11/06/2023						
Vehs Entered	1196	1185	1160	1190	1195	1184
Vehs Exited	1195	1180	1160	1186	1186	1181
Starting Vehs	16	16	14	15	12	13
Ending Vehs	17	21	14	19	21	17
Denied Entry Before	1	0	0	1	0	0
Denied Entry After	1	1	0	1	0	0
Travel Distance (mi)	558	549	540	556	557	552
Travel Time (hr)	18.1	17.7	17.4	17.8	17.8	17.8
Total Delay (hr)	2.1	2.0	2.1	1.9	1.9	2.0
Total Stops	283	279	268	253	278	272
Fuel Used (gal)	16.2	15.5	15.3	15.6	15.8	15.7

Interval #0 Information Seeding

Start Time	3:30
End Time	3:45
Total Time (min)	15

Volumes adjusted by Growth Factors.
No data recorded this interval.

Interval #1 Information Recording

Start Time	3:45
End Time	4:00
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	292	296	299	298	285	295
Vehs Exited	293	303	288	300	284	294
Starting Vehs	16	16	14	15	12	13
Ending Vehs	15	9	25	13	13	13
Denied Entry Before	1	0	0	1	0	0
Denied Entry After	0	0	1	0	0	0
Travel Distance (mi)	136	139	139	140	134	137
Travel Time (hr)	4.3	4.4	4.3	4.4	4.2	4.3
Total Delay (hr)	0.4	0.5	0.4	0.4	0.4	0.4
Total Stops	52	56	48	44	48	49
Fuel Used (gal)	3.9	3.9	3.8	3.9	3.8	3.9

Interval #2 Information Recording

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

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	306	270	268	282	289	283
Vehs Exited	302	270	273	282	294	284
Starting Vehs	15	9	25	13	13	13
Ending Vehs	19	9	20	13	8	12
Denied Entry Before	0	0	1	0	0	0
Denied Entry After	0	1	0	0	0	0
Travel Distance (mi)	142	125	125	133	135	132
Travel Time (hr)	4.6	4.0	4.1	4.2	4.3	4.3
Total Delay (hr)	0.5	0.4	0.5	0.4	0.5	0.5
Total Stops	75	71	67	51	83	68
Fuel Used (gal)	4.1	3.5	3.6	3.7	3.9	3.7

Interval #3 Information Recording

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

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	298	290	313	286	299	297
Vehs Exited	299	279	309	279	281	289
Starting Vehs	19	9	20	13	8	12
Ending Vehs	18	20	24	20	26	21
Denied Entry Before	0	1	0	0	0	0
Denied Entry After	0	0	0	1	0	0
Travel Distance (mi)	139	132	144	133	138	137
Travel Time (hr)	4.6	4.3	4.8	4.3	4.4	4.5
Total Delay (hr)	0.6	0.5	0.7	0.5	0.5	0.6
Total Stops	88	93	83	88	80	87
Fuel Used (gal)	4.1	3.8	4.1	3.8	3.8	3.9

Interval #4 Information Recording

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	300	329	280	324	322	310
Vehs Exited	301	328	290	325	327	314
Starting Vehs	18	20	24	20	26	21
Ending Vehs	17	21	14	19	21	17
Denied Entry Before	0	0	0	1	0	0
Denied Entry After	1	1	0	1	0	0
Travel Distance (mi)	141	153	132	150	151	145
Travel Time (hr)	4.5	4.9	4.2	4.8	4.8	4.7
Total Delay (hr)	0.5	0.6	0.5	0.5	0.5	0.5
Total Stops	68	59	70	70	67	66
Fuel Used (gal)	4.1	4.3	3.8	4.2	4.3	4.1

401: HWY 61 & 202nd St N/CR 50/202nd St N 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	0.0	0.1	0.1	0.0	0.1	0.1
Denied Del/Veh (s)	0.0	0.0	0.0	0.3	0.3	4.0	2.9	0.6	3.0	3.2	0.6	3.4
Total Delay (hr)	0.2	0.1	0.0	0.2	0.1	0.1	0.0	0.3	0.0	0.1	0.2	0.0
Total Del/Veh (s)	17.1	20.2	3.5	19.9	24.6	6.8	3.7	2.4	0.5	4.6	1.9	0.3
Stop Delay (hr)	0.2	0.1	0.0	0.2	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.0
Stop Del/Veh (s)	16.5	18.9	3.9	18.1	17.9	6.5	2.7	0.0	0.0	3.6	0.0	0.0
Total Stops	42	18	6	31	15	30	2	0	1	27	0	0
Stop/Veh	1.00	0.95	1.00	1.00	1.00	0.97	0.40	0.00	0.01	0.53	0.00	0.00
Travel Dist (mi)	1.1	0.5	0.2	7.6	3.6	7.4	1.5	122.5	19.2	9.5	71.0	14.5
Travel Time (hr)	0.3	0.1	0.0	0.4	0.2	0.3	0.0	2.8	0.5	0.4	1.7	0.4
Avg Speed (mph)	4	4	9	21	21	30	36	44	42	31	44	40
Fuel Used (gal)	0.1	0.0	0.0	0.2	0.1	0.2	0.0	2.9	0.5	0.3	1.6	0.4
Fuel Eff. (mpg)	11.1	10.3	16.3	31.2	32.4	32.7	38.8	41.9	38.2	35.9	43.3	37.9
HC Emissions (g)	1	0	0	2	1	5	0	44	10	2	28	8
CO Emissions (g)	18	12	2	118	50	155	17	1487	329	135	1011	290
NOx Emissions (g)	3	2	0	10	4	15	2	171	34	10	95	24
Vehicles Entered	41	19	6	31	15	30	5	434	68	50	374	76
Vehicles Exited	42	19	6	31	15	30	5	434	68	51	373	76
Hourly Exit Rate	42	19	6	31	15	30	5	434	68	51	373	76
Input Volume	46	17	6	31	13	27	5	432	70	51	355	77
% of Volume	91	113	100	100	115	111	100	100	97	100	105	99
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)	0	0	0	0	0	0	0	3	0	0	2	0

401: HWY 61 & 202nd St N/CR 50/202nd St N Performance by movement

Movement	All
Denied Delay (hr)	0.3
Denied Del/Veh (s)	1.1
Total Delay (hr)	1.2
Total Del/Veh (s)	3.8
Stop Delay (hr)	0.6
Stop Del/Veh (s)	2.0
Total Stops	172
Stop/Veh	0.15
Travel Dist (mi)	258.6
Travel Time (hr)	7.1
Avg Speed (mph)	38
Fuel Used (gal)	6.5
Fuel Eff. (mpg)	39.9
HC Emissions (g)	100
CO Emissions (g)	3624
NOx Emissions (g)	368
Vehicles Entered	1149
Vehicles Exited	1150
Hourly Exit Rate	1150
Input Volume	1130
% of Volume	102
Denied Entry Before	0
Denied Entry After	0
Density (ft/veh)	1533
Occupancy (veh)	7

402: Forest Rd N & 202nd St N Performance by movement

Movement	WBL	WBT	WBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0		0.0	0.1	0.1	0.1	0.1	0.1
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Total Del/Veh (s)	0.4		0.3	6.0	2.8	5.0	6.0	2.6
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Stop Del/Veh (s)	0.1		0.1	2.6	2.4	3.0	2.6	1.4
Total Stops	0	0	0	7	32	33	28	100
Stop/Veh	0.00		0.00	1.00	1.00	1.00	0.97	0.51
Travel Dist (mi)	1.2	0.0	1.2	0.8	3.8	5.0	4.3	16.3
Travel Time (hr)	0.1	0.0	0.1	0.0	0.2	0.2	0.2	0.8
Avg Speed (mph)	15	16	14	21	21	22	22	20
Fuel Used (gal)	0.1	0.0	0.1	0.0	0.1	0.1	0.1	0.5
Fuel Eff. (mpg)	18.4	8.8	22.5	37.3	37.7	37.5	37.6	33.3
HC Emissions (g)	1	0	1	0	1	1	1	5
CO Emissions (g)	32	0	20	4	26	22	30	136
NOx Emissions (g)	4	0	3	0	3	2	4	16
Vehicles Entered	48	0	48	7	32	33	29	197
Vehicles Exited	48	0	48	7	32	33	28	196
Hourly Exit Rate	48	0	48	7	32	33	28	196
Input Volume	48	0	47	8	33	35	27	198
% of Volume	100	0	102	88	97	94	104	99
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)								1961
Occupancy (veh)	0	0	0	0	0	0	0	1

Total Network Performance

Denied Delay (hr)	0.3
Denied Del/Veh (s)	1.1
Total Delay (hr)	1.6
Total Del/Veh (s)	5.0
Stop Delay (hr)	0.7
Stop Del/Veh (s)	2.3
Total Stops	272
Stop/Veh	0.23
Travel Dist (mi)	552.0
Travel Time (hr)	17.8
Avg Speed (mph)	32
Fuel Used (gal)	15.7
Fuel Eff. (mpg)	35.2
HC Emissions (g)	216
CO Emissions (g)	6358
NOx Emissions (g)	703
Vehicles Entered	1184
Vehicles Exited	1181
Hourly Exit Rate	1181
Input Volume	2492
% of Volume	47
Denied Entry Before	0
Denied Entry After	0
Density (ft/veh)	688
Occupancy (veh)	17

Intersection: 401: HWY 61 & 202nd St N/CR 50/202nd St N

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	LT	R	L	R	L	R
Maximum Queue (ft)	65	52	23	80	55	21	4	46	8
Average Queue (ft)	24	10	3	26	16	2	0	17	0
95th Queue (ft)	53	34	15	62	39	11	3	40	4
Link Distance (ft)	85	85	85	1281					
Upstream Blk Time (%)	0								
Queuing Penalty (veh)	0								
Storage Bay Dist (ft)					290	300	300	285	285
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 402: Forest Rd N & 202nd St N

Movement	NB	SB
Directions Served	TR	LT
Maximum Queue (ft)	52	57
Average Queue (ft)	23	30
95th Queue (ft)	49	52
Link Distance (ft)	620	803
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	3:30	3:30	3:30	3:30	3:30	3:30
End Time	4:45	4:45	4:45	4:45	4:45	4:45
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:\2023\230170 - 2024 Washington County Regional Solicitation Applications\TRAFFIC ANALYSIS\SYNCHRO\CSV\400_PM_2023.C						
Volume date = 11/06/2023						
Vehs Entered	1197	1189	1181	1188	1089	1169
Vehs Exited	1197	1190	1185	1190	1096	1172
Starting Vehs	21	18	25	21	28	21
Ending Vehs	21	17	21	19	21	19
Denied Entry Before	0	1	0	0	0	0
Denied Entry After	0	1	0	2	0	0
Travel Distance (mi)	553	552	555	555	507	544
Travel Time (hr)	20.1	19.5	19.6	19.6	17.7	19.3
Total Delay (hr)	4.0	3.5	3.7	3.6	3.0	3.6
Total Stops	560	502	504	516	458	509
Fuel Used (gal)	17.3	17.1	17.0	17.1	15.6	16.8

Interval #0 Information Seeding

Start Time	3:30
End Time	3:45
Total Time (min)	15

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	3:45
End Time	4:00
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	252	328	274	275	264	278
Vehs Exited	253	318	283	279	277	281
Starting Vehs	21	18	25	21	28	21
Ending Vehs	20	28	16	17	15	18
Denied Entry Before	0	1	0	0	0	0
Denied Entry After	0	0	0	0	1	0
Travel Distance (mi)	117	151	131	131	124	131
Travel Time (hr)	4.0	5.2	4.6	4.3	4.3	4.5
Total Delay (hr)	0.6	0.8	0.8	0.6	0.7	0.7
Total Stops	91	104	107	81	101	96
Fuel Used (gal)	3.6	4.6	3.9	3.9	3.7	4.0

Interval #2 Information Recording

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

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	323	276	281	303	274	291
Vehs Exited	316	288	284	299	275	292
Starting Vehs	20	28	16	17	15	18
Ending Vehs	27	16	13	21	14	16
Denied Entry Before	0	0	0	0	1	0
Denied Entry After	0	1	0	0	0	0
Travel Distance (mi)	149	132	132	140	125	136
Travel Time (hr)	5.5	4.6	4.7	5.0	4.4	4.9
Total Delay (hr)	1.2	0.8	0.9	1.0	0.8	0.9
Total Stops	168	101	120	148	118	130
Fuel Used (gal)	4.7	4.0	4.1	4.3	3.9	4.2

Interval #3 Information Recording

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

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	291	276	299	301	281	290
Vehs Exited	295	275	290	302	265	285
Starting Vehs	27	16	13	21	14	16
Ending Vehs	23	17	22	20	30	20
Denied Entry Before	0	1	0	0	0	0
Denied Entry After	0	0	1	0	0	0
Travel Distance (mi)	133	126	138	139	128	133
Travel Time (hr)	5.1	4.7	4.9	4.9	4.4	4.8
Total Delay (hr)	1.2	0.9	1.0	0.9	0.8	1.0
Total Stops	175	150	139	135	116	145
Fuel Used (gal)	4.3	4.0	4.3	4.3	3.9	4.1

Interval #4 Information Recording

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	331	309	327	309	270	308
Vehs Exited	333	309	328	310	279	313
Starting Vehs	23	17	22	20	30	20
Ending Vehs	21	17	21	19	21	19
Denied Entry Before	0	0	1	0	0	0
Denied Entry After	0	1	0	2	0	0
Travel Distance (mi)	154	143	154	144	129	145
Travel Time (hr)	5.5	5.1	5.4	5.2	4.6	5.2
Total Delay (hr)	1.0	0.9	1.0	1.0	0.8	1.0
Total Stops	126	147	138	152	123	137
Fuel Used (gal)	4.7	4.4	4.7	4.6	4.1	4.5

401: HWY 61 & 202nd St N/CR 50/202nd St N 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	0.0	0.1	0.1	0.0	0.1	0.1
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.2	4.0	3.2	0.6	3.3	3.4	0.6	3.4
Total Delay (hr)	0.3	0.1	0.0	0.2	0.1	0.0	0.0	1.0	0.0	0.1	0.6	0.0
Total Del/Veh (s)	20.5	18.6	4.9	18.9	24.3	5.9	10.1	8.9	2.2	8.6	6.1	1.4
Stop Delay (hr)	0.3	0.1	0.0	0.2	0.1	0.0	0.0	0.4	0.0	0.1	0.2	0.0
Stop Del/Veh (s)	19.6	17.3	5.3	17.7	19.2	5.4	8.6	3.2	1.2	7.0	1.8	0.7
Total Stops	43	12	5	27	11	22	4	121	26	40	73	19
Stop/Veh	0.88	0.75	0.83	0.87	0.85	0.88	0.80	0.28	0.35	0.78	0.20	0.24
Travel Dist (mi)	1.3	0.4	0.2	7.4	3.2	6.1	1.3	118.1	21.0	9.4	68.6	15.0
Travel Time (hr)	0.4	0.1	0.0	0.3	0.2	0.2	0.0	3.5	0.6	0.4	2.1	0.5
Avg Speed (mph)	4	4	8	22	21	31	28	34	37	26	34	35
Fuel Used (gal)	0.1	0.0	0.0	0.2	0.1	0.2	0.0	3.0	0.6	0.3	1.8	0.5
Fuel Eff. (mpg)	10.0	10.2	15.2	32.2	37.1	31.0	35.7	39.2	35.3	31.4	37.8	33.2
HC Emissions (g)	1	0	0	2	0	2	0	37	9	3	24	7
CO Emissions (g)	20	10	2	97	21	119	17	1484	410	187	1104	365
NOx Emissions (g)	3	1	0	10	3	9	1	143	31	11	85	22
Vehicles Entered	48	16	6	31	13	25	5	421	75	50	364	79
Vehicles Exited	48	16	6	30	13	25	5	421	75	51	365	79
Hourly Exit Rate	48	16	6	30	13	25	5	421	75	51	365	79
Input Volume	46	17	6	31	13	27	5	432	70	51	355	77
% of Volume	104	96	100	97	100	93	100	97	107	100	103	103
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)	0	0	0	0	0	0	0	3	1	0	2	0

401: HWY 61 & 202nd St N/CR 50/202nd St N Performance by movement

Movement	All
Denied Delay (hr)	0.4
Denied Del/Veh (s)	1.1
Total Delay (hr)	2.5
Total Del/Veh (s)	8.0
Stop Delay (hr)	1.3
Stop Del/Veh (s)	4.2
Total Stops	403
Stop/Veh	0.35
Travel Dist (mi)	252.0
Travel Time (hr)	8.4
Avg Speed (mph)	31
Fuel Used (gal)	6.9
Fuel Eff. (mpg)	36.5
HC Emissions (g)	86
CO Emissions (g)	3835
NOx Emissions (g)	319
Vehicles Entered	1133
Vehicles Exited	1134
Hourly Exit Rate	1134
Input Volume	1130
% of Volume	100
Denied Entry Before	0
Denied Entry After	0
Density (ft/veh)	1449
Occupancy (veh)	8

402: Forest Rd N & 202nd St N Performance by movement

Movement	WBL	WBT	WBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.0	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	0.1	0.1
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
Total Del/Veh (s)	0.5	0.3	0.3	6.1	2.7	4.9	6.0	2.6
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Stop Del/Veh (s)	0.3	0.3	0.2	2.9	2.4	2.8	2.6	1.5
Total Stops	0	0	0	7	35	34	30	106
Stop/Veh	0.00	0.00	0.00	1.00	1.00	1.00	0.97	0.52
Travel Dist (mi)	1.2	0.0	1.2	0.8	4.0	5.1	4.6	17.0
Travel Time (hr)	0.1	0.0	0.1	0.0	0.2	0.2	0.2	0.8
Avg Speed (mph)	14	14	13	21	21	22	22	20
Fuel Used (gal)	0.1	0.0	0.1	0.0	0.1	0.1	0.1	0.5
Fuel Eff. (mpg)	16.0	10.7	20.8	38.3	40.0	38.3	36.7	32.9
HC Emissions (g)	1	0	1	0	1	1	1	4
CO Emissions (g)	27	1	20	4	23	21	20	116
NOx Emissions (g)	3	0	3	0	3	2	2	14
Vehicles Entered	48	1	48	7	34	33	31	202
Vehicles Exited	47	1	48	7	35	34	30	202
Hourly Exit Rate	47	1	48	7	35	34	30	202
Input Volume	48	1	47	8	33	35	27	199
% of Volume	98	133	102	88	106	97	111	102
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)								1869
Occupancy (veh)	0	0	0	0	0	0	0	1

Total Network Performance

Denied Delay (hr)	0.4
Denied Del/Veh (s)	1.1
Total Delay (hr)	3.2
Total Del/Veh (s)	9.7
Stop Delay (hr)	1.5
Stop Del/Veh (s)	4.4
Total Stops	509
Stop/Veh	0.43
Travel Dist (mi)	544.3
Travel Time (hr)	19.3
Avg Speed (mph)	29
Fuel Used (gal)	16.8
Fuel Eff. (mpg)	32.4
HC Emissions (g)	188
CO Emissions (g)	6651
NOx Emissions (g)	642
Vehicles Entered	1169
Vehicles Exited	1172
Hourly Exit Rate	1172
Input Volume	2492
% of Volume	47
Denied Entry Before	0
Denied Entry After	0
Density (ft/veh)	699
Occupancy (veh)	19

Intersection: 401: HWY 61 & 202nd St N/CR 50/202nd St N

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	R	L	T	R
Maximum Queue (ft)	74	42	18	57	34	34	25	161	40	56	122	34
Average Queue (ft)	26	7	2	18	8	10	3	68	12	22	42	9
95th Queue (ft)	61	27	12	43	26	25	16	133	32	49	91	26
Link Distance (ft)	84	84	84	1280	1280			1476			988	
Upstream Blk Time (%)	0											
Queuing Penalty (veh)	0											
Storage Bay Dist (ft)						290	300		300	285		285
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 402: Forest Rd N & 202nd St N

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	3	48	50
Average Queue (ft)	0	24	28
95th Queue (ft)	2	46	48
Link Distance (ft)	84	614	798
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 0

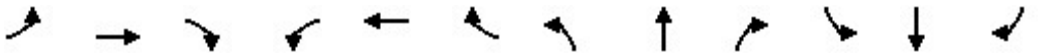
Intersection: 401: HWY 61 & 202nd St N/CR 50/202nd St N

Phase	1	2	3	4	5	6	7	8
Movement(s) Served	SBL	NBTL	WBL	EBTL	NBL	SBTL	EBL	WBTL
Maximum Green (s)	8.0	34.5	8.0	24.3	8.0	34.5	6.3	26.0
Minimum Green (s)	5.0	15.0	5.0	7.0	5.0	15.0	5.0	7.0
Recall	None	Min	None	None	None	Min	None	None
Avg. Green (s)	5.3	32.0	7.2	8.8	9.0	41.4	6.9	7.9
g/C Ratio	-0.01	NA	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	63	0	62	44	98	13	54	48
Cycles @ Minimum (%)	31	6	5	24	2	3	5	44
Cycles Maxed Out (%)	0	32	3	0	0	40	37	0
Cycles with Peds (%)	0	0	0	0	0	0	0	0

Controller Summary

Average Cycle Length (s): NA

Number of Complete Cycles : 0

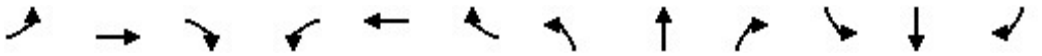


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	16	6	31	13	27	5	432	70	51	355	77
Future Volume (vph)	46	16	6	31	13	27	5	432	70	51	355	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		290	300		300	285		285
Storage Lanes	1		1	0		1	1		1	1		1
Taper Length (ft)	25			25			190			185		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950				0.968		0.950			0.950		
Satd. Flow (prot)	1752	1845	1568	0	1786	1568	1752	1845	1568	1752	1845	1568
Flt Permitted	0.950				0.968		0.950			0.950		
Satd. Flow (perm)	1752	1845	1568	0	1786	1568	1752	1845	1568	1752	1845	1568
Link Speed (mph)		30			50			50			50	
Link Distance (ft)		163			1330			1527			1038	
Travel Time (s)		3.7			18.1			20.8			14.2	
Peak Hour Factor	0.77	0.36	0.75	0.97	0.81	0.68	0.63	0.94	0.73	0.91	0.95	0.74
Adj. Flow (vph)	60	44	8	32	16	40	8	460	96	56	374	104
Shared Lane Traffic (%)												
Lane Group Flow (vph)	60	44	8	0	48	40	8	460	96	56	374	104
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	45.3%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	48	47	0	33	35	0
Future Volume (vph)	48	47	0	33	35	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.933		0.865			
Flt Protected	0.975					0.950
Satd. Flow (prot)	1678	0	1596	0	0	1752
Flt Permitted	0.975					0.950
Satd. Flow (perm)	1678	0	1596	0	0	1752
Link Speed (mph)	30		30			30
Link Distance (ft)	163		678			824
Travel Time (s)	3.7		15.4			18.7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	52	51	0	36	38	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	103	0	36	0	0	38
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Free		Stop			Stop

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 20.8%		ICU Level of Service A	
Analysis Period (min) 15			

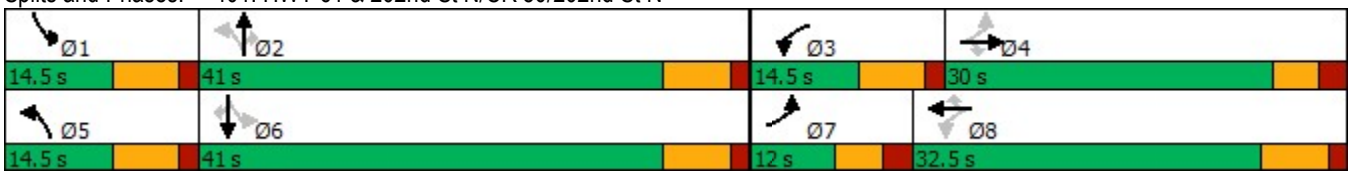


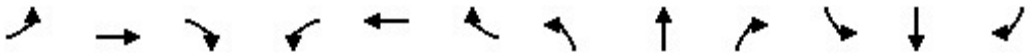
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	16	6	31	13	27	5	432	70	51	355	77
Future Volume (vph)	46	16	6	31	13	27	5	432	70	51	355	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		290	300		300	285		285
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			190			185		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.714			0.909			0.531			0.397		
Satd. Flow (perm)	1330	1863	1583	1693	1863	1583	989	1863	1583	740	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			171			171			171			171
Link Speed (mph)		30			50			50			50	
Link Distance (ft)		163			1330			1527			1038	
Travel Time (s)		3.7			18.1			20.8			14.2	
Peak Hour Factor	0.77	0.36	0.75	0.97	0.81	0.68	0.63	0.94	0.73	0.91	0.95	0.74
Adj. Flow (vph)	60	44	8	32	16	40	8	460	96	56	374	104
Shared Lane Traffic (%)												
Lane Group Flow (vph)	60	44	8	32	16	40	8	460	96	56	374	104
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		22			22			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	15.0	15.0	5.0	15.0	15.0
Minimum Split (s)	12.0	23.0	23.0	14.5	32.5	32.5	14.5	27.5	27.5	14.5	40.5	40.5
Total Split (s)	12.0	30.0	30.0	14.5	32.5	32.5	14.5	41.0	41.0	14.5	41.0	41.0
Total Split (%)	12.0%	30.0%	30.0%	14.5%	32.5%	32.5%	14.5%	41.0%	41.0%	14.5%	41.0%	41.0%
Maximum Green (s)	6.3	24.3	24.3	8.0	26.0	26.0	8.0	34.5	34.5	8.0	34.5	34.5
Yellow Time (s)	3.5	3.5	3.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.2	2.2	2.2	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.7	5.7	5.7	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	5.0	5.0	1.0	5.0	5.0
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Walk Time (s)					7.0	7.0					7.0	7.0
Flash Dont Walk (s)					18.0	18.0					26.0	26.0
Pedestrian Calls (#/hr)					0	0					0	0
Act Effct Green (s)	11.1	10.7	10.7	9.4	8.4	8.4	33.8	36.1	36.1	36.1	40.0	40.0
Actuated g/C Ratio	0.20	0.19	0.19	0.17	0.15	0.15	0.60	0.64	0.64	0.64	0.71	0.71
v/c Ratio	0.19	0.13	0.02	0.11	0.06	0.11	0.01	0.39	0.09	0.10	0.28	0.09
Control Delay	21.9	28.9	0.0	22.2	31.8	0.6	7.2	14.9	0.4	7.3	10.0	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.9	28.9	0.0	22.2	31.8	0.6	7.2	14.9	0.4	7.3	10.0	0.7
LOS	C	C	A	C	C	A	A	B	A	A	B	A
Approach Delay		23.1			14.1			12.3			7.9	
Approach LOS		C			B			B			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 56.5			
Natural Cycle: 100			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.39			
Intersection Signal Delay: 11.6		Intersection LOS: B	
Intersection Capacity Utilization 51.7%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 401: HWY 61 & 202nd St N/CR 50/202nd St N





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	15.0	15.0	5.0	15.0	15.0
Minimum Split (s)	12.0	23.0	23.0	14.5	32.5	32.5	14.5	27.5	27.5	14.5	40.5	40.5
Total Split (s)	12.0	30.0	30.0	14.5	32.5	32.5	14.5	41.0	41.0	14.5	41.0	41.0
Total Split (%)	12.0%	30.0%	30.0%	14.5%	32.5%	32.5%	14.5%	41.0%	41.0%	14.5%	41.0%	41.0%
Maximum Green (s)	6.3	24.3	24.3	8.0	26.0	26.0	8.0	34.5	34.5	8.0	34.5	34.5
Yellow Time (s)	3.5	3.5	3.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.2	2.2	2.2	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	5.0	5.0	1.0	5.0	5.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Walk Time (s)					7.0	7.0					7.0	7.0
Flash Dont Walk (s)					18.0	18.0					26.0	26.0
Pedestrian Calls (#/hr)					0	0					0	0
90th %ile Green (s)	6.3	7.5	7.5	6.1	7.3	7.3	5.0	34.5	34.5	5.7	35.2	35.2
90th %ile Term Code	Max	Gap	Gap	Gap	Hold	Hold	Min	Max	Max	Gap	Hold	Hold
70th %ile Green (s)	6.3	8.3	8.3	5.0	7.0	7.0	0.0	29.0	29.0	5.0	40.5	40.5
70th %ile Term Code	Max	Hold	Hold	Min	Min	Min	Skip	Gap	Gap	Min	Hold	Hold
50th %ile Green (s)	5.8	19.3	19.3	0.0	7.0	7.0	0.0	24.3	24.3	5.0	35.8	35.8
50th %ile Term Code	Gap	Hold	Hold	Skip	Min	Min	Skip	Gap	Gap	Min	Hold	Hold
30th %ile Green (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.9	20.9	0.0	20.9	20.9
30th %ile Term Code	Skip	Skip	Skip	Skip	Skip	Skip	Skip	Dwell	Dwell	Skip	Dwell	Dwell
10th %ile Green (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	30.0	30.0	0.0	30.0	30.0
10th %ile Term Code	Skip	Skip	Skip	Skip	Skip	Skip	Skip	Dwell	Dwell	Skip	Dwell	Dwell

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 56.5
Control Type: Actuated-Uncoordinated
90th %ile Actuated Cycle: 79
70th %ile Actuated Cycle: 72.5
50th %ile Actuated Cycle: 67.3
30th %ile Actuated Cycle: 27.4
10th %ile Actuated Cycle: 36.5

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	48	47	0	33	35	0
Future Volume (vph)	48	47	0	33	35	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.935		0.865			
Flt Protected	0.975					0.950
Satd. Flow (prot)	1698	0	1611	0	0	1770
Flt Permitted	0.975					0.950
Satd. Flow (perm)	1698	0	1611	0	0	1770
Link Speed (mph)	30		30			30
Link Distance (ft)	163		678			824
Travel Time (s)	3.7		15.4			18.7
Peak Hour Factor	0.75	0.78	1.00	0.69	0.67	1.00
Adj. Flow (vph)	64	60	0	48	52	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	124	0	48	0	0	52
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	22		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Free		Stop			Stop

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 20.8%		ICU Level of Service A	
Analysis Period (min) 15			

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	3:30	3:30	3:30	3:30	3:30	3:30
End Time	4:45	4:45	4:45	4:45	4:45	4:45
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:\2023\230170 - 2024 Washington County Regional Solicitation Applications\TRAFFIC ANALYSIS\SYNCHRO\CSV\400_PM_2023.C						
Volume date = 11/06/2023						
Vehs Entered	1196	1185	1160	1190	1195	1184
Vehs Exited	1195	1180	1160	1186	1186	1181
Starting Vehs	16	16	14	15	12	13
Ending Vehs	17	21	14	19	21	17
Denied Entry Before	1	0	0	1	0	0
Denied Entry After	1	1	0	1	0	0
Travel Distance (mi)	558	549	540	556	557	552
Travel Time (hr)	18.1	17.7	17.4	17.8	17.8	17.8
Total Delay (hr)	2.1	2.0	2.1	1.9	1.9	2.0
Total Stops	283	279	268	253	278	272
Fuel Used (gal)	16.2	15.5	15.3	15.6	15.8	15.7

Interval #0 Information Seeding

Start Time	3:30
End Time	3:45
Total Time (min)	15

Volumes adjusted by Growth Factors.
No data recorded this interval.

Interval #1 Information Recording

Start Time	3:45
End Time	4:00
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	292	296	299	298	285	295
Vehs Exited	293	303	288	300	284	294
Starting Vehs	16	16	14	15	12	13
Ending Vehs	15	9	25	13	13	13
Denied Entry Before	1	0	0	1	0	0
Denied Entry After	0	0	1	0	0	0
Travel Distance (mi)	136	139	139	140	134	137
Travel Time (hr)	4.3	4.4	4.3	4.4	4.2	4.3
Total Delay (hr)	0.4	0.5	0.4	0.4	0.4	0.4
Total Stops	52	56	48	44	48	49
Fuel Used (gal)	3.9	3.9	3.8	3.9	3.8	3.9

Interval #2 Information Recording

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

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	306	270	268	282	289	283
Vehs Exited	302	270	273	282	294	284
Starting Vehs	15	9	25	13	13	13
Ending Vehs	19	9	20	13	8	12
Denied Entry Before	0	0	1	0	0	0
Denied Entry After	0	1	0	0	0	0
Travel Distance (mi)	142	125	125	133	135	132
Travel Time (hr)	4.6	4.0	4.1	4.2	4.3	4.3
Total Delay (hr)	0.5	0.4	0.5	0.4	0.5	0.5
Total Stops	75	71	67	51	83	68
Fuel Used (gal)	4.1	3.5	3.6	3.7	3.9	3.7

Interval #3 Information Recording

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

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	298	290	313	286	299	297
Vehs Exited	299	279	309	279	281	289
Starting Vehs	19	9	20	13	8	12
Ending Vehs	18	20	24	20	26	21
Denied Entry Before	0	1	0	0	0	0
Denied Entry After	0	0	0	1	0	0
Travel Distance (mi)	139	132	144	133	138	137
Travel Time (hr)	4.6	4.3	4.8	4.3	4.4	4.5
Total Delay (hr)	0.6	0.5	0.7	0.5	0.5	0.6
Total Stops	88	93	83	88	80	87
Fuel Used (gal)	4.1	3.8	4.1	3.8	3.8	3.9

Interval #4 Information Recording

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	300	329	280	324	322	310
Vehs Exited	301	328	290	325	327	314
Starting Vehs	18	20	24	20	26	21
Ending Vehs	17	21	14	19	21	17
Denied Entry Before	0	0	0	1	0	0
Denied Entry After	1	1	0	1	0	0
Travel Distance (mi)	141	153	132	150	151	145
Travel Time (hr)	4.5	4.9	4.2	4.8	4.8	4.7
Total Delay (hr)	0.5	0.6	0.5	0.5	0.5	0.5
Total Stops	68	59	70	70	67	66
Fuel Used (gal)	4.1	4.3	3.8	4.2	4.3	4.1

401: HWY 61 & 202nd St N/CR 50/202nd St N 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	0.0	0.1	0.1	0.0	0.1	0.1
Denied Del/Veh (s)	0.0	0.0	0.0	0.3	0.3	4.0	2.9	0.6	3.0	3.2	0.6	3.4
Total Delay (hr)	0.2	0.1	0.0	0.2	0.1	0.1	0.0	0.3	0.0	0.1	0.2	0.0
Total Del/Veh (s)	17.1	20.2	3.5	19.9	24.6	6.8	3.7	2.4	0.5	4.6	1.9	0.3
Stop Delay (hr)	0.2	0.1	0.0	0.2	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.0
Stop Del/Veh (s)	16.5	18.9	3.9	18.1	17.9	6.5	2.7	0.0	0.0	3.6	0.0	0.0
Total Stops	42	18	6	31	15	30	2	0	1	27	0	0
Stop/Veh	1.00	0.95	1.00	1.00	1.00	0.97	0.40	0.00	0.01	0.53	0.00	0.00
Travel Dist (mi)	1.1	0.5	0.2	7.6	3.6	7.4	1.5	122.5	19.2	9.5	71.0	14.5
Travel Time (hr)	0.3	0.1	0.0	0.4	0.2	0.3	0.0	2.8	0.5	0.4	1.7	0.4
Avg Speed (mph)	4	4	9	21	21	30	36	44	42	31	44	40
Fuel Used (gal)	0.1	0.0	0.0	0.2	0.1	0.2	0.0	2.9	0.5	0.3	1.6	0.4
Fuel Eff. (mpg)	11.1	10.3	16.3	31.2	32.4	32.7	38.8	41.9	38.2	35.9	43.3	37.9
HC Emissions (g)	1	0	0	2	1	5	0	44	10	2	28	8
CO Emissions (g)	18	12	2	118	50	155	17	1487	329	135	1011	290
NOx Emissions (g)	3	2	0	10	4	15	2	171	34	10	95	24
Vehicles Entered	41	19	6	31	15	30	5	434	68	50	374	76
Vehicles Exited	42	19	6	31	15	30	5	434	68	51	373	76
Hourly Exit Rate	42	19	6	31	15	30	5	434	68	51	373	76
Input Volume	46	17	6	31	13	27	5	432	70	51	355	77
% of Volume	91	113	100	100	115	111	100	100	97	100	105	99
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)	0	0	0	0	0	0	0	3	0	0	2	0

401: HWY 61 & 202nd St N/CR 50/202nd St N Performance by movement

Movement	All
Denied Delay (hr)	0.3
Denied Del/Veh (s)	1.1
Total Delay (hr)	1.2
Total Del/Veh (s)	3.8
Stop Delay (hr)	0.6
Stop Del/Veh (s)	2.0
Total Stops	172
Stop/Veh	0.15
Travel Dist (mi)	258.6
Travel Time (hr)	7.1
Avg Speed (mph)	38
Fuel Used (gal)	6.5
Fuel Eff. (mpg)	39.9
HC Emissions (g)	100
CO Emissions (g)	3624
NOx Emissions (g)	368
Vehicles Entered	1149
Vehicles Exited	1150
Hourly Exit Rate	1150
Input Volume	1130
% of Volume	102
Denied Entry Before	0
Denied Entry After	0
Density (ft/veh)	1533
Occupancy (veh)	7

402: Forest Rd N & 202nd St N Performance by movement

Movement	WBL	WBT	WBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0		0.0	0.1	0.1	0.1	0.1	0.1
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Total Del/Veh (s)	0.4		0.3	6.0	2.8	5.0	6.0	2.6
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Stop Del/Veh (s)	0.1		0.1	2.6	2.4	3.0	2.6	1.4
Total Stops	0	0	0	7	32	33	28	100
Stop/Veh	0.00		0.00	1.00	1.00	1.00	0.97	0.51
Travel Dist (mi)	1.2	0.0	1.2	0.8	3.8	5.0	4.3	16.3
Travel Time (hr)	0.1	0.0	0.1	0.0	0.2	0.2	0.2	0.8
Avg Speed (mph)	15	16	14	21	21	22	22	20
Fuel Used (gal)	0.1	0.0	0.1	0.0	0.1	0.1	0.1	0.5
Fuel Eff. (mpg)	18.4	8.8	22.5	37.3	37.7	37.5	37.6	33.3
HC Emissions (g)	1	0	1	0	1	1	1	5
CO Emissions (g)	32	0	20	4	26	22	30	136
NOx Emissions (g)	4	0	3	0	3	2	4	16
Vehicles Entered	48	0	48	7	32	33	29	197
Vehicles Exited	48	0	48	7	32	33	28	196
Hourly Exit Rate	48	0	48	7	32	33	28	196
Input Volume	48	0	47	8	33	35	27	198
% of Volume	100	0	102	88	97	94	104	99
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)								1961
Occupancy (veh)	0	0	0	0	0	0	0	1

Total Network Performance

Denied Delay (hr)	0.3
Denied Del/Veh (s)	1.1
Total Delay (hr)	1.6
Total Del/Veh (s)	5.0
Stop Delay (hr)	0.7
Stop Del/Veh (s)	2.3
Total Stops	272
Stop/Veh	0.23
Travel Dist (mi)	552.0
Travel Time (hr)	17.8
Avg Speed (mph)	32
Fuel Used (gal)	15.7
Fuel Eff. (mpg)	35.2
HC Emissions (g)	216
CO Emissions (g)	6358
NOx Emissions (g)	703
Vehicles Entered	1184
Vehicles Exited	1181
Hourly Exit Rate	1181
Input Volume	2492
% of Volume	47
Denied Entry Before	0
Denied Entry After	0
Density (ft/veh)	688
Occupancy (veh)	17

Intersection: 401: HWY 61 & 202nd St N/CR 50/202nd St N

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	LT	R	L	R	L	R
Maximum Queue (ft)	65	52	23	80	55	21	4	46	8
Average Queue (ft)	24	10	3	26	16	2	0	17	0
95th Queue (ft)	53	34	15	62	39	11	3	40	4
Link Distance (ft)	85	85	85	1281					
Upstream Blk Time (%)	0								
Queuing Penalty (veh)	0								
Storage Bay Dist (ft)					290	300	300	285	285
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 402: Forest Rd N & 202nd St N

Movement	NB	SB
Directions Served	TR	LT
Maximum Queue (ft)	52	57
Average Queue (ft)	23	30
95th Queue (ft)	49	52
Link Distance (ft)	620	803
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	3:30	3:30	3:30	3:30	3:30	3:30
End Time	4:45	4:45	4:45	4:45	4:45	4:45
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:\2023\230170 - 2024 Washington County Regional Solicitation Applications\TRAFFIC ANALYSIS\SYNCHRO\CSV\400_PM_2023.C						
Volume date = 11/06/2023						
Vehs Entered	1197	1189	1181	1188	1089	1169
Vehs Exited	1197	1190	1185	1190	1096	1172
Starting Vehs	21	18	25	21	28	21
Ending Vehs	21	17	21	19	21	19
Denied Entry Before	0	1	0	0	0	0
Denied Entry After	0	1	0	2	0	0
Travel Distance (mi)	553	552	555	555	507	544
Travel Time (hr)	20.1	19.5	19.6	19.6	17.7	19.3
Total Delay (hr)	4.0	3.5	3.7	3.6	3.0	3.6
Total Stops	560	502	504	516	458	509
Fuel Used (gal)	17.3	17.1	17.0	17.1	15.6	16.8

Interval #0 Information Seeding

Start Time	3:30
End Time	3:45
Total Time (min)	15

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	3:45
End Time	4:00
Total Time (min)	15

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	252	328	274	275	264	278
Vehs Exited	253	318	283	279	277	281
Starting Vehs	21	18	25	21	28	21
Ending Vehs	20	28	16	17	15	18
Denied Entry Before	0	1	0	0	0	0
Denied Entry After	0	0	0	0	1	0
Travel Distance (mi)	117	151	131	131	124	131
Travel Time (hr)	4.0	5.2	4.6	4.3	4.3	4.5
Total Delay (hr)	0.6	0.8	0.8	0.6	0.7	0.7
Total Stops	91	104	107	81	101	96
Fuel Used (gal)	3.6	4.6	3.9	3.9	3.7	4.0

Interval #2 Information Recording

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

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	323	276	281	303	274	291
Vehs Exited	316	288	284	299	275	292
Starting Vehs	20	28	16	17	15	18
Ending Vehs	27	16	13	21	14	16
Denied Entry Before	0	0	0	0	1	0
Denied Entry After	0	1	0	0	0	0
Travel Distance (mi)	149	132	132	140	125	136
Travel Time (hr)	5.5	4.6	4.7	5.0	4.4	4.9
Total Delay (hr)	1.2	0.8	0.9	1.0	0.8	0.9
Total Stops	168	101	120	148	118	130
Fuel Used (gal)	4.7	4.0	4.1	4.3	3.9	4.2

Interval #3 Information Recording

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

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	Avg
Vehs Entered	291	276	299	301	281	290
Vehs Exited	295	275	290	302	265	285
Starting Vehs	27	16	13	21	14	16
Ending Vehs	23	17	22	20	30	20
Denied Entry Before	0	1	0	0	0	0
Denied Entry After	0	0	1	0	0	0
Travel Distance (mi)	133	126	138	139	128	133
Travel Time (hr)	5.1	4.7	4.9	4.9	4.4	4.8
Total Delay (hr)	1.2	0.9	1.0	0.9	0.8	1.0
Total Stops	175	150	139	135	116	145
Fuel Used (gal)	4.3	4.0	4.3	4.3	3.9	4.1

Interval #4 Information Recording

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	331	309	327	309	270	308
Vehs Exited	333	309	328	310	279	313
Starting Vehs	23	17	22	20	30	20
Ending Vehs	21	17	21	19	21	19
Denied Entry Before	0	0	1	0	0	0
Denied Entry After	0	1	0	2	0	0
Travel Distance (mi)	154	143	154	144	129	145
Travel Time (hr)	5.5	5.1	5.4	5.2	4.6	5.2
Total Delay (hr)	1.0	0.9	1.0	1.0	0.8	1.0
Total Stops	126	147	138	152	123	137
Fuel Used (gal)	4.7	4.4	4.7	4.6	4.1	4.5

401: HWY 61 & 202nd St N/CR 50/202nd St N 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	0.0	0.1	0.1	0.0	0.1	0.1
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.2	4.0	3.2	0.6	3.3	3.4	0.6	3.4
Total Delay (hr)	0.3	0.1	0.0	0.2	0.1	0.0	0.0	1.0	0.0	0.1	0.6	0.0
Total Del/Veh (s)	20.5	18.6	4.9	18.9	24.3	5.9	10.1	8.9	2.2	8.6	6.1	1.4
Stop Delay (hr)	0.3	0.1	0.0	0.2	0.1	0.0	0.0	0.4	0.0	0.1	0.2	0.0
Stop Del/Veh (s)	19.6	17.3	5.3	17.7	19.2	5.4	8.6	3.2	1.2	7.0	1.8	0.7
Total Stops	43	12	5	27	11	22	4	121	26	40	73	19
Stop/Veh	0.88	0.75	0.83	0.87	0.85	0.88	0.80	0.28	0.35	0.78	0.20	0.24
Travel Dist (mi)	1.3	0.4	0.2	7.4	3.2	6.1	1.3	118.1	21.0	9.4	68.6	15.0
Travel Time (hr)	0.4	0.1	0.0	0.3	0.2	0.2	0.0	3.5	0.6	0.4	2.1	0.5
Avg Speed (mph)	4	4	8	22	21	31	28	34	37	26	34	35
Fuel Used (gal)	0.1	0.0	0.0	0.2	0.1	0.2	0.0	3.0	0.6	0.3	1.8	0.5
Fuel Eff. (mpg)	10.0	10.2	15.2	32.2	37.1	31.0	35.7	39.2	35.3	31.4	37.8	33.2
HC Emissions (g)	1	0	0	2	0	2	0	37	9	3	24	7
CO Emissions (g)	20	10	2	97	21	119	17	1484	410	187	1104	365
NOx Emissions (g)	3	1	0	10	3	9	1	143	31	11	85	22
Vehicles Entered	48	16	6	31	13	25	5	421	75	50	364	79
Vehicles Exited	48	16	6	30	13	25	5	421	75	51	365	79
Hourly Exit Rate	48	16	6	30	13	25	5	421	75	51	365	79
Input Volume	46	17	6	31	13	27	5	432	70	51	355	77
% of Volume	104	96	100	97	100	93	100	97	107	100	103	103
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)	0	0	0	0	0	0	0	3	1	0	2	0

401: HWY 61 & 202nd St N/CR 50/202nd St N Performance by movement

Movement	All
Denied Delay (hr)	0.4
Denied Del/Veh (s)	1.1
Total Delay (hr)	2.5
Total Del/Veh (s)	8.0
Stop Delay (hr)	1.3
Stop Del/Veh (s)	4.2
Total Stops	403
Stop/Veh	0.35
Travel Dist (mi)	252.0
Travel Time (hr)	8.4
Avg Speed (mph)	31
Fuel Used (gal)	6.9
Fuel Eff. (mpg)	36.5
HC Emissions (g)	86
CO Emissions (g)	3835
NOx Emissions (g)	319
Vehicles Entered	1133
Vehicles Exited	1134
Hourly Exit Rate	1134
Input Volume	1130
% of Volume	100
Denied Entry Before	0
Denied Entry After	0
Density (ft/veh)	1449
Occupancy (veh)	8

402: Forest Rd N & 202nd St N Performance by movement

Movement	WBL	WBT	WBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.0	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	0.1	0.1
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
Total Del/Veh (s)	0.5	0.3	0.3	6.1	2.7	4.9	6.0	2.6
Stop Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Stop Del/Veh (s)	0.3	0.3	0.2	2.9	2.4	2.8	2.6	1.5
Total Stops	0	0	0	7	35	34	30	106
Stop/Veh	0.00	0.00	0.00	1.00	1.00	1.00	0.97	0.52
Travel Dist (mi)	1.2	0.0	1.2	0.8	4.0	5.1	4.6	17.0
Travel Time (hr)	0.1	0.0	0.1	0.0	0.2	0.2	0.2	0.8
Avg Speed (mph)	14	14	13	21	21	22	22	20
Fuel Used (gal)	0.1	0.0	0.1	0.0	0.1	0.1	0.1	0.5
Fuel Eff. (mpg)	16.0	10.7	20.8	38.3	40.0	38.3	36.7	32.9
HC Emissions (g)	1	0	1	0	1	1	1	4
CO Emissions (g)	27	1	20	4	23	21	20	116
NOx Emissions (g)	3	0	3	0	3	2	2	14
Vehicles Entered	48	1	48	7	34	33	31	202
Vehicles Exited	47	1	48	7	35	34	30	202
Hourly Exit Rate	47	1	48	7	35	34	30	202
Input Volume	48	1	47	8	33	35	27	199
% of Volume	98	133	102	88	106	97	111	102
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)								1869
Occupancy (veh)	0	0	0	0	0	0	0	1

Total Network Performance

Denied Delay (hr)	0.4
Denied Del/Veh (s)	1.1
Total Delay (hr)	3.2
Total Del/Veh (s)	9.7
Stop Delay (hr)	1.5
Stop Del/Veh (s)	4.4
Total Stops	509
Stop/Veh	0.43
Travel Dist (mi)	544.3
Travel Time (hr)	19.3
Avg Speed (mph)	29
Fuel Used (gal)	16.8
Fuel Eff. (mpg)	32.4
HC Emissions (g)	188
CO Emissions (g)	6651
NOx Emissions (g)	642
Vehicles Entered	1169
Vehicles Exited	1172
Hourly Exit Rate	1172
Input Volume	2492
% of Volume	47
Denied Entry Before	0
Denied Entry After	0
Density (ft/veh)	699
Occupancy (veh)	19

Intersection: 401: HWY 61 & 202nd St N/CR 50/202nd St N

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	R	L	T	R
Maximum Queue (ft)	74	42	18	57	34	34	25	161	40	56	122	34
Average Queue (ft)	26	7	2	18	8	10	3	68	12	22	42	9
95th Queue (ft)	61	27	12	43	26	25	16	133	32	49	91	26
Link Distance (ft)	84	84	84	1280	1280			1476			988	
Upstream Blk Time (%)	0											
Queuing Penalty (veh)	0											
Storage Bay Dist (ft)						290	300		300	285		285
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 402: Forest Rd N & 202nd St N

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	3	48	50
Average Queue (ft)	0	24	28
95th Queue (ft)	2	46	48
Link Distance (ft)	84	614	798
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 0

Intersection: 401: HWY 61 & 202nd St N/CR 50/202nd St N

Phase	1	2	3	4	5	6	7	8
Movement(s) Served	SBL	NBTL	WBL	EBTL	NBL	SBTL	EBL	WBTL
Maximum Green (s)	8.0	34.5	8.0	24.3	8.0	34.5	6.3	26.0
Minimum Green (s)	5.0	15.0	5.0	7.0	5.0	15.0	5.0	7.0
Recall	None	Min	None	None	None	Min	None	None
Avg. Green (s)	5.3	32.0	7.2	8.8	9.0	41.4	6.9	7.9
g/C Ratio	-0.01	NA	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01
Cycles Skipped (%)	63	0	62	44	98	13	54	48
Cycles @ Minimum (%)	31	6	5	24	2	3	5	44
Cycles Maxed Out (%)	0	32	3	0	0	40	37	0
Cycles with Peds (%)	0	0	0	0	0	0	0	0

Controller Summary

Average Cycle Length (s): NA

Number of Complete Cycles : 0

Traffic Safety Benefit-Cost Calculation

Highway Safety Improvement Program (HSIP) Reactive Project

DEPARTMENT OF TRANSPORTATION

A. Roadway Description

Route	TH 61	**District**	Metro	**County**	Washington
Begin RP	n/a	**End RP**	n/a	**Miles**	n/a
Location	Highway 61 & CR 50				

B. Project Description

Proposed Work	Design Signalized Intersection and Extend Median East		
Project Cost*	$2,093,600	**Installation Year**	2029
Project Service Life	20 years	**Traffic Growth Factor**	1.4%

** exclude Right of Way from Project Cost*

C. Crash Modification Factor

0.56	**Fatal (K) Crashes**	**Reference**	CMF ID 325:
0.56	**Serious Injury (A) Crashes**		INSTALL A TRAFFIC SIGNAL
0.56	**Moderate Injury (B) Crashes**	**Crash Type**	All
0.56	**Possible Injury (C) Crashes**		
0.56	**Property Damage Only Crashes**		www.CMFclearinghouse.org

D. Crash Modification Factor (optional second CMF)

	Fatal (K) Crashes	**Reference**	
	Serious Injury (A) Crashes		
	Moderate Injury (B) Crashes	**Crash Type**	
	Possible Injury (C) Crashes		
	Property Damage Only Crashes		www.CMFclearinghouse.org

E. Crash Data

Begin Date	1/1/2020	**End Date**	12/31/2022	3 years
Data Source	Minnesota Crash Mapping Analysis Tool (MnCMAT2)			

Crash Severity	All	< optional 2nd CMF >
K crashes	0	
A crashes	0	
B crashes	4	
C crashes	0	
PDO crashes	7	

F. Benefit-Cost Calculation

$3,434,622	**Benefit (present value)**	**B/C Ratio = 1.65**
$2,093,600	**Cost**	

Proposed project expected to reduce 2 crashes annually, 0 of which involving fatality or serious injury.

F. Analysis Assumptions

Crash Severity	Crash Cost
K crashes	$1,600,000
A crashes	$800,000
B crashes	$250,000
C crashes	$130,000
PDO crashes	$15,000

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

Real Discount Rate:	0.8%	Default
Traffic Growth Rate:	1.4%	**Revised**
Project Service Life:	20 years	**Revised**

G. Annual Benefit

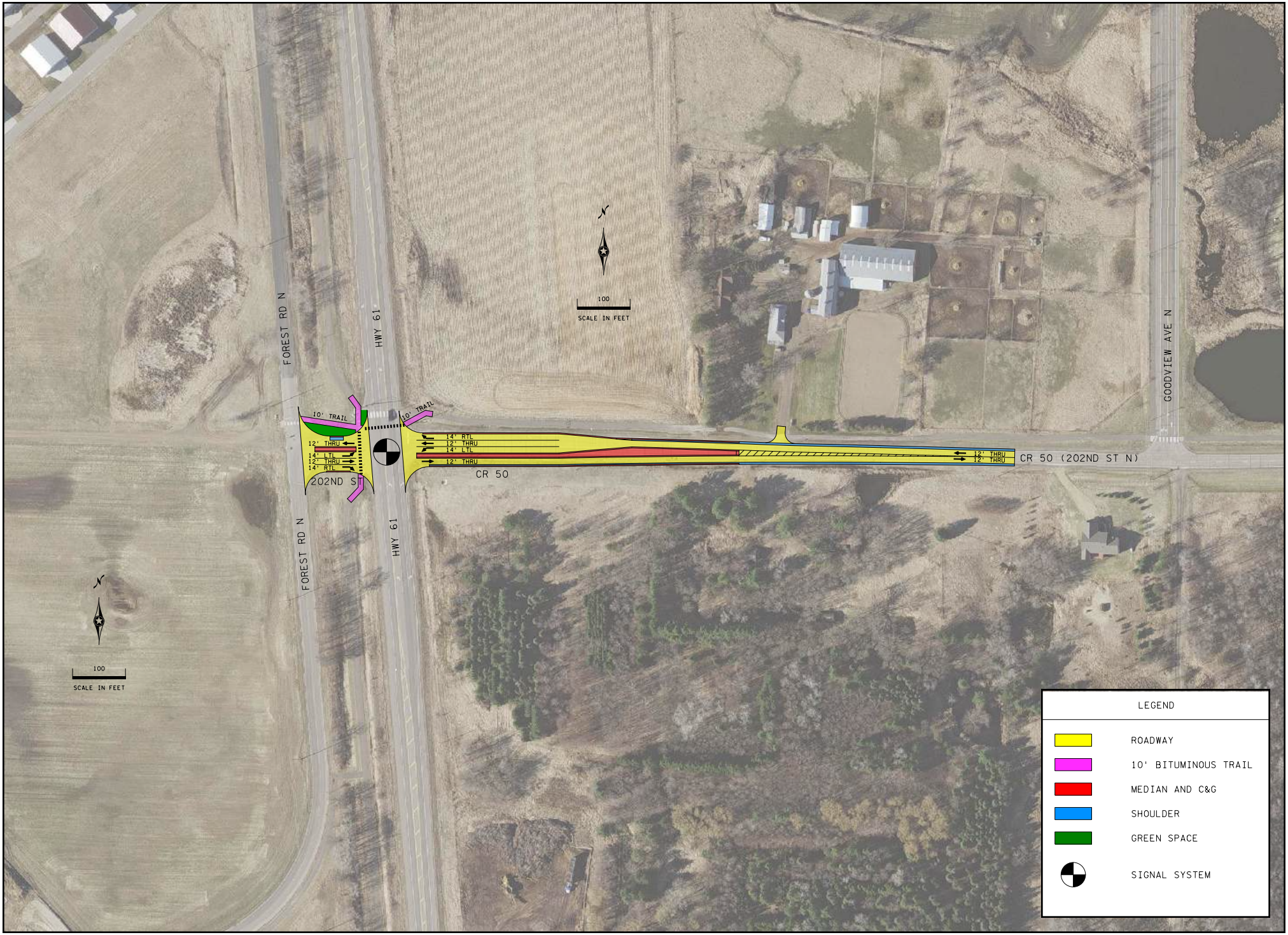
Crash Severity	Crash Reduction	Annual Reduction	Annual Benefit
K crashes	0.00	0.00	$0
A crashes	0.00	0.00	$0
B crashes	1.76	0.59	$146,667
C crashes	0.00	0.00	$0
PDO crashes	3.08	1.03	$15,400
			$162,067

H. Amortized Benefit

Year	Crash Benefits	Present Value
2029	$162,067	$162,067
2030	$164,352	$163,047
2031	$166,669	$164,034
2032	$169,019	$165,027
2033	$171,402	$166,025
2034	$173,819	$167,030
2035	$176,270	$168,041
2036	$178,755	$169,058
2037	$181,276	$170,081
2038	$183,832	$171,110
2039	$186,424	$172,146
2040	$189,052	$173,187
2041	$191,718	$174,236
2042	$194,421	$175,290
2043	$197,163	$176,351
2044	$199,943	$177,418
2045	$202,762	$178,492
2046	$205,621	$179,572
2047	$208,520	$180,658
2048	$211,460	$181,752
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 = $3,434,622

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

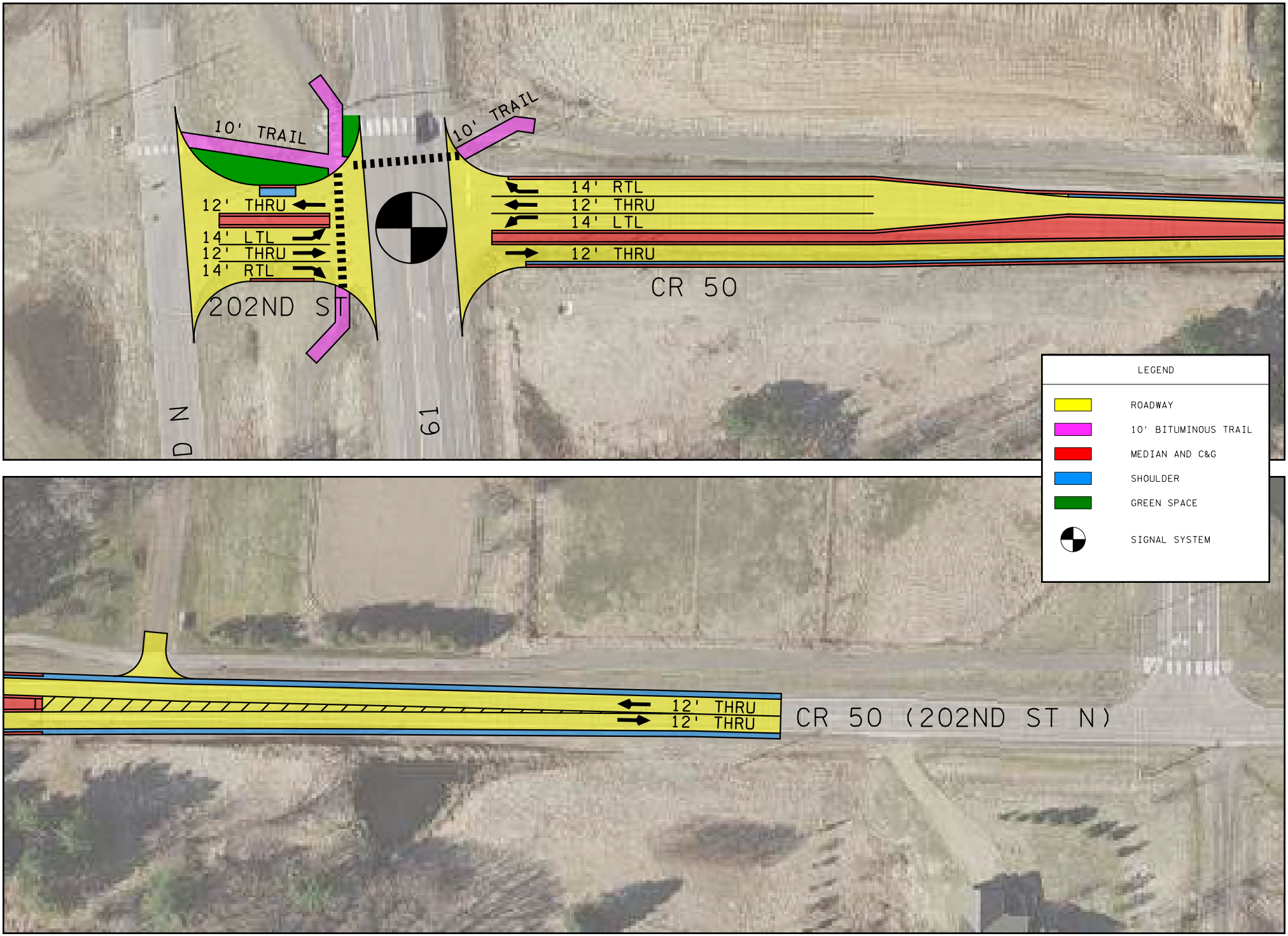


Washington County

HIGHWAY 61 AND COUNTY ROAD 50 INTERSECTION

IN FOREST LAKE

ALLIANT



Washington County

HIGHWAY 61 AND COUNTY ROAD 50 INTERSECTION

IN FOREST LAKE

ALLIANT

Highway 61 and County Road 50 Intersection in Forest Lake

Spot Mobility & Safety

Project Location

The intersection of US Highway 61 and County Road 50 in the City of Forest Lake

Funding Request

Federal: $1,674,880

Local Match: $418,720 (20%)

Project Total: $2,093,600

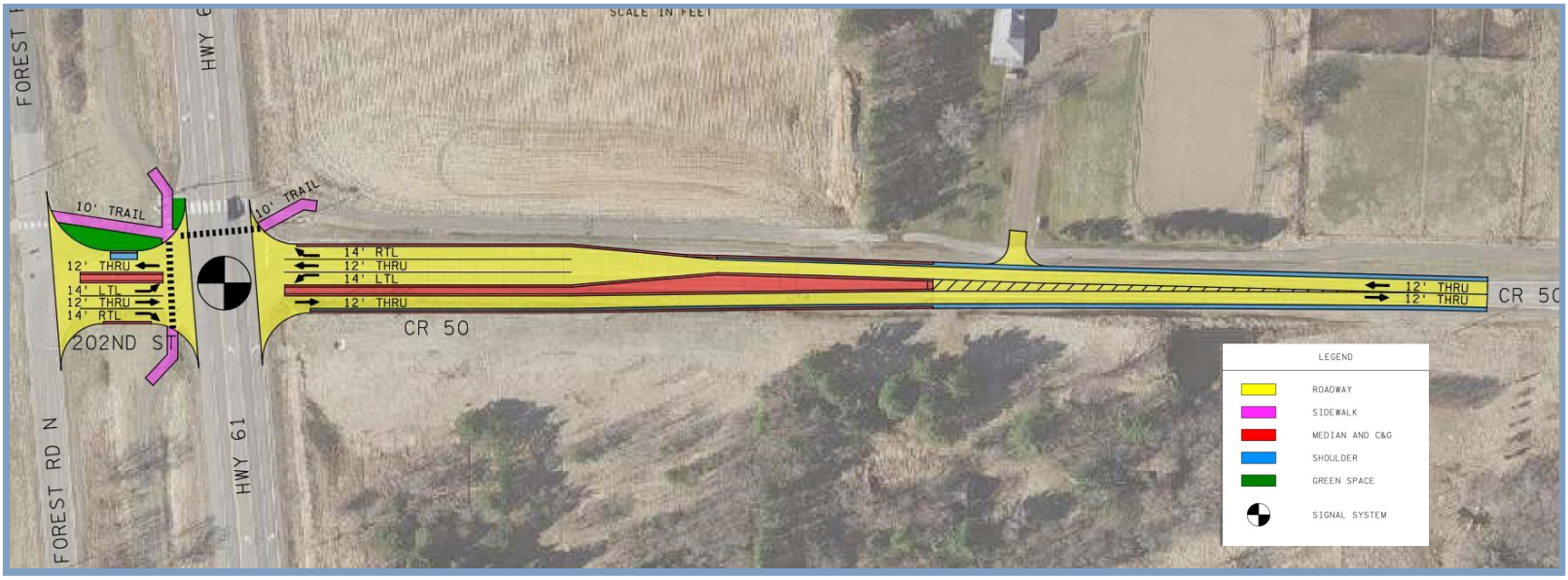
Project Summary

Located adjacent to the Hardwood Creek Trail, the US 61/CR 50 intersection is a critical crossing location and an area of rapid development in Forest Lake. Under existing conditions, non-motorized users rely on an RRFB to cross the 55-mph US 61 and westbound vehicles share a combined left-turn and through lane. Both vehicle and non-motorized traffic will increase as adjacent and nearby development continues.

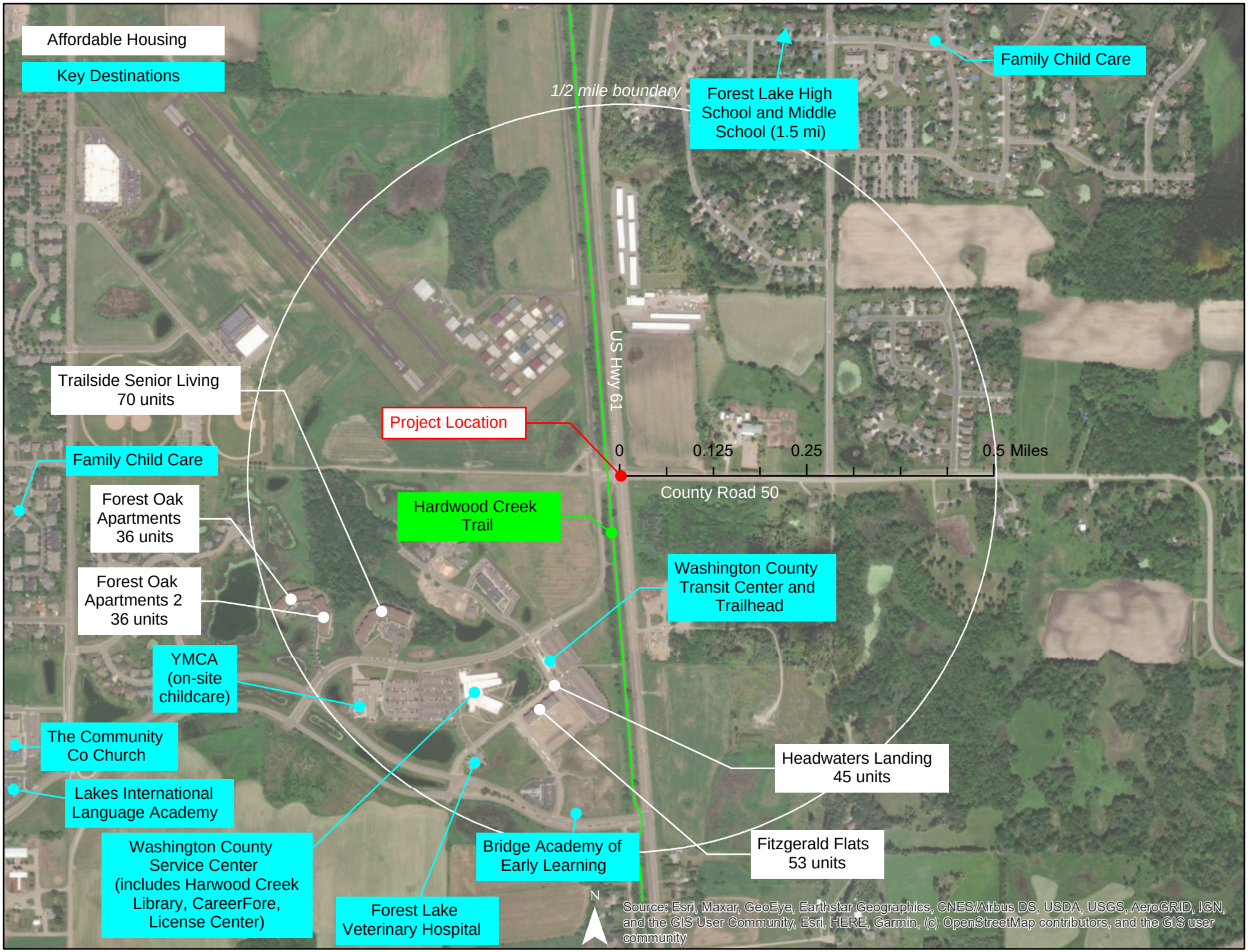
The project will reconstruct the intersection for increased safety and efficiency, including a dedicated westbound left turn lane, a raised median on CR 50, and signalized traffic control. The new signalized intersection will provide a range of crossing safety features including pedestrian signal heads with countdown timers, audible signals, high-visibility markings, and leading pedestrian interval—replacing the RRFB that exists today.

Summary of Project Benefits

- ⇒ Provides a safe and accessible crossing of US 61 for community members and trail users, including children, the elderly, and people with mobility impairments
- ⇒ Enhances access to Forest Lake High School, Forest Lake Sports Center, Trailside Senior Living Apartments, Forest Lake YMCA, Hardwood Creek Library, and other local destinations
- ⇒ Improves a highly-utilized, direct link to the Hardwood Creek Regional Trail, which will eventually connect the Bruce Vento Regional Trail in Ramsey County with the Sunrise Prairie Regional Trail
- ⇒ Anticipates future development and enhances safety and efficiency at the US 61/CR 50 intersection by adding a dedicated westbound left-turn lane, raised median on CR 50, and signalized traffic control with a crossing safety



Washington County


Affordable Housing
Key Destinations
1/2 mile boundary
Forest Lake High School and Middle School (1.5 mi)
Family Child Care
US Hwy 61
Trailside Senior Living 70 units
Project Location
Family Child Care
0
0.125
0.25
0.5 Miles
County Road 50
Forest Oak Apartments 36 units
Hardwood Creek Trail
Forest Oak Apartments 2 36 units
Washington County Transit Center and Trailhead
YMCA (on-site childcare)
The Community Co Church
Headwaters Landing 45 units
Lakes International Language Academy
Washington County Service Center (includes Harwood Creek Library, CareerFore, License Center)
Bridge Academy of Early Learning
Fitzgerald Flats 53 units
Forest Lake Veterinary Hospital
N
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community

INCIDENT ID	INTERSECTION	SEGMENT	INCLUDE	NOTES	ACCIDENT #	MONTH	DAY	YEAR	DAY OF WEEK	HOUR	SEVERITY	MANNER OF COLLISION	COLLISION - ALLIANT	LIGHTING	WEATHER 1	WEATHER 2	SURFACE	UTM X	UTM Y	LATITUDE	LONGITUDE	DATE & TIME	STATUS	COLLISION DIAGRAM
835876	INT 1		YES	distracted	202280175	8	15	2020	Sat	12	B	Front to Front	Head On	Daylight	Clear	-	Dry	501268.0547	5009909.833	45.24268858	-92.98385041	2020/08/15-12:21	Accepted	2020/08/15-12:21-L-C-D
1063391	INT 1		YES	WB failed to yield ROW to NB	223400007	12	6	2022	Tue	7	PDO	Angle	Angle	Daylight	Clear	-	Dry	501268.6826	5009902.105	45.24261902	-92.98384243	2022/12/06-07:44	Accepted	2022/12/06-07:44-L-C-D
1022018	INT 1		YES	failed to see traffic stopped for ped	221290176	5	9	2022	Mon	17	PDO	Front to Rear	Rear End	Daylight	Rain	-	Wet	501266.9047	5009923.987	45.24281599	-92.98386503	2022/05/09-17:00	Accepted	2022/05/09-17:00-L-R-W
777780	INT 1		YES	phantom vehicle caused run off road	200020204	1	2	2020	Thu	18	PDO	-	Run Off Road	Dark (Str Lights On)	Clear	-	Dry	501266.7617	5009925.747	45.24283183	-92.98386685	2020/01/02-18:04	Accepted	2020/01/02-18:04-DI-C-D
1007382	INT 1		YES	WB failed to yield ROW to SB	220490164	2	18	2022	Fri	2	PDO	Angle	Angle	Daylight	‡ Sand/Soil/Dir	-	Wet	501266.3757	5009930.499	45.24287461	-92.98387175	2022/02/18-02:10	Accepted	2022/02/18-02:10-L-B-W
1005384	INT 1		YES	EB failed to yield ROW to SB	220400161	2	9	2022	Wed	18	B	Angle	Angle	Dark (Str Lights On)	Cloudy	-	Dry	501265.7253	5009938.504	45.24294666	-92.98388002	2022/02/09-18:09	Accepted	2022/02/09-18:09-DI-C-D
931944	INT 1		YES	failed to see pedestrian in crosswalk	212140130	8	2	2021	Mon	14	B	-	Other	Daylight	Clear	-	Dry	501264.589	5009952.489	45.24307256	-92.98389447	2021/08/02-14:30	Accepted	2021/08/02-14:30-L-C-D
778189	INT 1		YES	conflicting "at-fault" statements; aggressing driving overtake	200090100	1	9	2020	Thu	17	PDO	Sideswipe - Same Direction	Sideswipe	Dark (Str Lights On)	Clear	-	Dry	501264.1485	5009957.911	45.24312136	-92.98390006	2020/01/09-17:45	Accepted	2020/01/09-17:45-DI-C-D
814798	INT 1		YES	conflicting "at-fault" statements	201680055	6	16	2020	Tue	15	B	Angle	Angle	Daylight	Clear	-	Dry	501209.6808	5009941.33	45.24297221	-92.98459413	2020/06/16-15:45	Accepted	2020/06/16-15:45-L-C-D
813397	INT 1		YES	failed to see traffic stopped for ped	201600022	6	8	2020	Mon	10	PDO	Front to Rear	Rear End	Daylight	Clear	-	Dry	501232.0089	5009940.999	45.24296919	-92.98430963	2020/06/08-10:49	Accepted	2020/06/08-10:49-L-C-D
1055275	INT 1		YES	medical episode; backed into on WB approach	223060016	11	2	2022	Wed	7	PDO	Rear to Side	Other	Sunrise	Clear	-	Dry	501273.6202	5009940.373	45.24296348	-92.98377942	2022/11/02-07:30	Accepted	2022/11/02-07:30-Dn-C-D

Traffic Safety Benefit-Cost Calculation

Highway Safety Improvement Program (HSIP) Reactive Project

DEPARTMENT OF TRANSPORTATION

A. Roadway Description

Route	TH 61	**District**	Metro	**County**	Washington
Begin RP	n/a	**End RP**	n/a	**Miles**	n/a
Location	Highway 61 & CR 50				

B. Project Description

Proposed Work	Design Signalized Intersection and Extend Median East		
Project Cost*	$2,093,600	**Installation Year**	2029
Project Service Life	20 years	**Traffic Growth Factor**	1.4%

** exclude Right of Way from Project Cost*

C. Crash Modification Factor

0.56	**Fatal (K) Crashes**	**Reference**	CMF ID 325:
0.56	**Serious Injury (A) Crashes**		INSTALL A TRAFFIC SIGNAL
0.56	**Moderate Injury (B) Crashes**	**Crash Type**	All
0.56	**Possible Injury (C) Crashes**		
0.56	**Property Damage Only Crashes**		www.CMFclearinghouse.org

D. Crash Modification Factor (optional second CMF)

	Fatal (K) Crashes	**Reference**	
	Serious Injury (A) Crashes		
	Moderate Injury (B) Crashes	**Crash Type**	
	Possible Injury (C) Crashes		
	Property Damage Only Crashes		www.CMFclearinghouse.org

E. Crash Data

Begin Date	1/1/2020	**End Date**	12/31/2022	3 years
Data Source	Minnesota Crash Mapping Analysis Tool (MnCMAT2)			

Crash Severity	All	< optional 2nd CMF >
K crashes	0	
A crashes	0	
B crashes	4	
C crashes	0	
PDO crashes	7	

F. Benefit-Cost Calculation

$3,434,622	**Benefit (present value)**	**B/C Ratio = 1.65**
$2,093,600	**Cost**	

Proposed project expected to reduce 2 crashes annually, 0 of which involving fatality or serious injury.

F. Analysis Assumptions

Crash Severity	Crash Cost
K crashes	$1,600,000
A crashes	$800,000
B crashes	$250,000
C crashes	$130,000
PDO crashes	$15,000

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

Real Discount Rate:	0.8%	Default
Traffic Growth Rate:	1.4%	**Revised**
Project Service Life:	20 years	**Revised**

G. Annual Benefit

Crash Severity	Crash Reduction	Annual Reduction	Annual Benefit
K crashes	0.00	0.00	$0
A crashes	0.00	0.00	$0
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H. Amortized Benefit

Year	Crash Benefits	Present Value
2029	$162,067	$162,067
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2031	$166,669	$164,034
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0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0

Total = $3,434,622

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

CRASH MODIFICATION FACTORS CLEARINGHOUSE

CMF / CRF DETAILS

CMF ID: 325

INSTALL A TRAFFIC SIGNAL

DESCRIPTION:

PRIOR CONDITION: STOP CONTROLLED

CATEGORY: INTERSECTION TRAFFIC CONTROL

STUDY: *ACCIDENT MODIFICATION FACTORS FOR TRAFFIC ENGINEERING AND ITS IMPROVEMENTS*, HARKEY ET AL., 2008

Star Quality Rating:	★★★★★ [VIEW SCORE DETAILS]
Rating Points Total:	145

Crash Modification Factor (CMF)

Value:	0.56
Adjusted Standard Error:	0.03
Unadjusted Standard Error:	

Crash Reduction Factor (CRF)

Value:	44 *(This value indicates a **decrease** in crashes)*
Adjusted Standard Error:	3
Unadjusted Standard Error:	

Applicability

Crash Type:	All
Crash Severity:	All
Roadway Types:	Not specified
Street Type:	
Minimum Number of Lanes:	
Maximum Number of Lanes:	
Number of Lanes Direction:	
Number of Lanes Comment:	

Crash Weather:	Not specified
Road Division Type:	
Minimum Speed Limit:	
Maximum Speed Limit:	
Speed Unit:	
Speed Limit Comment:	
Area Type:	Rural
Traffic Volume:	
Average Traffic Volume:	
Time of Day:	

If countermeasure is intersection-based

Intersection Type:	Roadway/roadway (not interchange related)
Intersection Geometry:	3-leg,4-leg
Traffic Control:	Stop-controlled
Major Road Traffic Volume:	Minimum of 3261 to Maximum of 29926 Annual Average Daily Traffic (AADT)
Minor Road Traffic Volume:	Minimum of 101 to Maximum of 10300 Annual Average Daily Traffic (AADT)
Average Major Road Volume :	
Average Minor Road Volume :	

Development Details

Date Range of Data Used:	
Municipality:	
State:	
Country:	
Type of Methodology Used:	Before/after using empirical Bayes or full Bayes

Other Details

Included in Highway Safety Manual?	Yes. HSM lists this CMF in **bold** font to indicate that it has the highest reliability since it has an adjusted standard erro less.
Date Added to Clearinghouse:	Dec 01, 2009
Comments:	Countermeasure name has been slightly modified for consistency across Clearinghouse

VIEW THE FULL STUDY DETA

EXPORT DETAIL PAGE AS PDF

BOARD OF COUNTY COMMISSIONERS
WASHINGTON COUNTY, MINNESOTA

RESOLUTION NO. 2023-141

DATE November 28, 2023

DEPARTMENT Public Works

MOTION BY COMMISSIONER Karwoski

SECONDED BY COMMISSIONER Clasen

RESOLUTION AUTHORIZING SUBMITTAL OF APPLICATIONS TO THE METROPOLITAN COUNCIL FOR FUNDING UNDER THE 2024 REGIONAL SOLICITATION PROGRAM

WHEREAS, the Regional Solicitation process started with the passage of the Intermodal Surface Transportation Efficiency Act (ISTEA) in 1991; and

WHEREAS, as authorized by the most recent federal surface transportation funding act, FAST ACT, projects will be selected for funding as part of three federal programs: Surface Transportation Program (STP), Congestion Mitigation and Air Quality Improvement (CMAQ) Program, and Transportation Alternatives Program (TAP); and

WHEREAS, pursuant to the Regional Solicitation and the regulations promulgated thereunder, eligible project sponsors wishing to receive federal grants for a project shall submit an application first with the appropriate metropolitan planning organization (MPO) for review and inclusion in the MPO's Transportation Improvement Program (TIP); and

WHEREAS, the Metropolitan Council and the Transportation Advisory Board (TAB) act as the MPO for the seven county Twin Cities region and have released the Regional Solicitation for federal transportation funds for 2028 and 2029; and

WHEREAS, Washington County is an eligible project sponsor for Regional Solicitation funds; and

WHEREAS, Washington County is proposing to submit grant applications to Metropolitan Council as part of the 2024 Regional Solicitation for the following projects:

1. CSAH 15/Manning Avenue Corridor Improvements: CSAH 14 to Stillwater High School (Strategic Capacity)

2. CSAH 16/Valley Creek Road and Settlers Ridge Parkway Intersection in Woodbury (Spot Mobility)

3. CSAH 17 Corridor Improvements in Lake Elmo: CSAH 14 to 43rd St. (Roadway Reconstruction and Modernization)

4. Highway 61 and County Road 50 Intersection in Forest Lake (Spot Mobility)

5. Hardwood Creek Trail Extension in Hugo (Multiuse Trail and Bike Facilities)

6. Traffic Signal Battery Backup Systems in the Cities of Lake Elmo, Oakdale, and Woodbury (Traffic Management Technology)

7. Electric Vehicle (EV) Carshare at Suburban METRO Gold Line BRT Stations (Unique Projects Category); and

WHEREAS, the projects will be of mutual benefit to the Metropolitan Council, Washington County, and the Cities and Townships of Baytown, Forest Lake, Hugo, Lake Elmo, Oakdale, Oak Park Heights, St Paul, and Woodbury; and

WHEREAS, Washington County is committed to providing the county share of the costs if the projects are selected as part of the 2024 Regional Solicitation; and

WHEREAS, Washington County is committed to completing the project, if selected, and funding is provided as part of the 2024 Regional Solicitation.

NOW, THEREFORE, BE IT RESOLVED, that Washington County is requesting funding from the federal government through the Metropolitan Council's 2024 Regional Solicitation and the county is committed to completing the projects identified above and providing the county share of funding.

ATTEST: Kevin Corbid

COUNTY ADMINISTRATOR

Gary Kriesel

COUNTY BOARD CHAIR

	YES	NO
MIRON	X	
KARWOSKI	X	
KRIESEL	X	
BIGHAM	X	
CLASEN	X	

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

11/29/2023

Lyssa Leitner, AICP
Planning Director
Washington County Public Works Department
11660 Myeron Road North, Stillwater, MN 55082

Re: MnDOT Letter for Washington County
Metropolitan Council/Transportation Advisory Board 2024 Regional Solicitation Funding Request for Spot Mobility Project at TH 61 and CR 50 (202nd St N)

Dear Lyssa Leitner,

This letter documents MnDOT Metro District's recognition for Washington County to pursue funding for the Metropolitan Council/Transportation Advisory Board's (TAB) 2024 Regional Solicitation for the Spot Mobility Project at TH 61 and CR 50 (202nd St N).

The proposed project will improve the intersection of TH 61 and CR 50 that has no stop control. It will also improve the pedestrian and bike crossing to the Hardwood Creek Trail. As the agency with jurisdiction over TH 61 MnDOT will allow Washington County to seek improvements proposed in the application. If funded, details of how the project is delivered and any future maintenance agreement with the County will need to be determined during the project's development to define how the improvements will be maintained for the project's useful life.

MnDOT does not anticipate partnering on local projects beyond current agreements. If your project receives funding, continue to work with MnDOT Area staff to coordinate and review needs and opportunities for cooperation.

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

If you have questions or require additional information at this time, please reach out to your Area Manager at adam.josephson@state.mn.us or 651-775-4087.

Sincerely,

Sheila Kauppi
Digitally signed by Sheila Kauppi
Date: 2023.11.29 13:56:12 -06'00'

Sheila Kauppi, PE
Metro District Engineer

CC:
Adam Josephson, Area Manager
Aaron Tag, Metro Program Director
Dan Erickson, Metro State Aid Engineer

Forest Lake
AS GOOD AS IT SOUNDS

Office of Administration
1408 Lake Street S.
Forest Lake, MN 55025
651.325.5066
651.464.6874 fax
www.ci.forest-lake.mn.us

November 27, 2023

Wayne Sandberg
Public Works Director/County Engineer
Washington County Public Works
11660 Myeron Road
Stillwater, MN 55082

RE: **Support for Washington County's Regional Solicitation application for Spot Mobility at TH 61 and CR 50 in the City of Forest Lake.**

Dear Mr. Sandberg,

The purpose of this letter is to express the City of Forest Lake's support for Washington County's 2024 solicitation of Federal funds through the Metropolitan Council's Regional Solicitation program for Spot Mobility at TH 61 and CR 50 in the City of Forest Lake.

The proposed project will add a traffic signal to the intersection that has no stop control and improve the pedestrian and bike crossing to the Hardwood Creek Trail. The area of this intersection is identified in both the City's and the County's 2040 comprehensive plans. The area is also a key connection for bikers and walkers to get to the Hardwood Creek Regional Trail.

Thank you for your consideration. If you have any questions, please contact me at 651-209-9750 or at patrick.casey@ci.forest-lake.mn.us.

Sincerely,

Patrick Casey
Forest Lake City Administrator

Highway 61 and CR 50

Spot Mobility and Safety

Existing Conditions Photographs

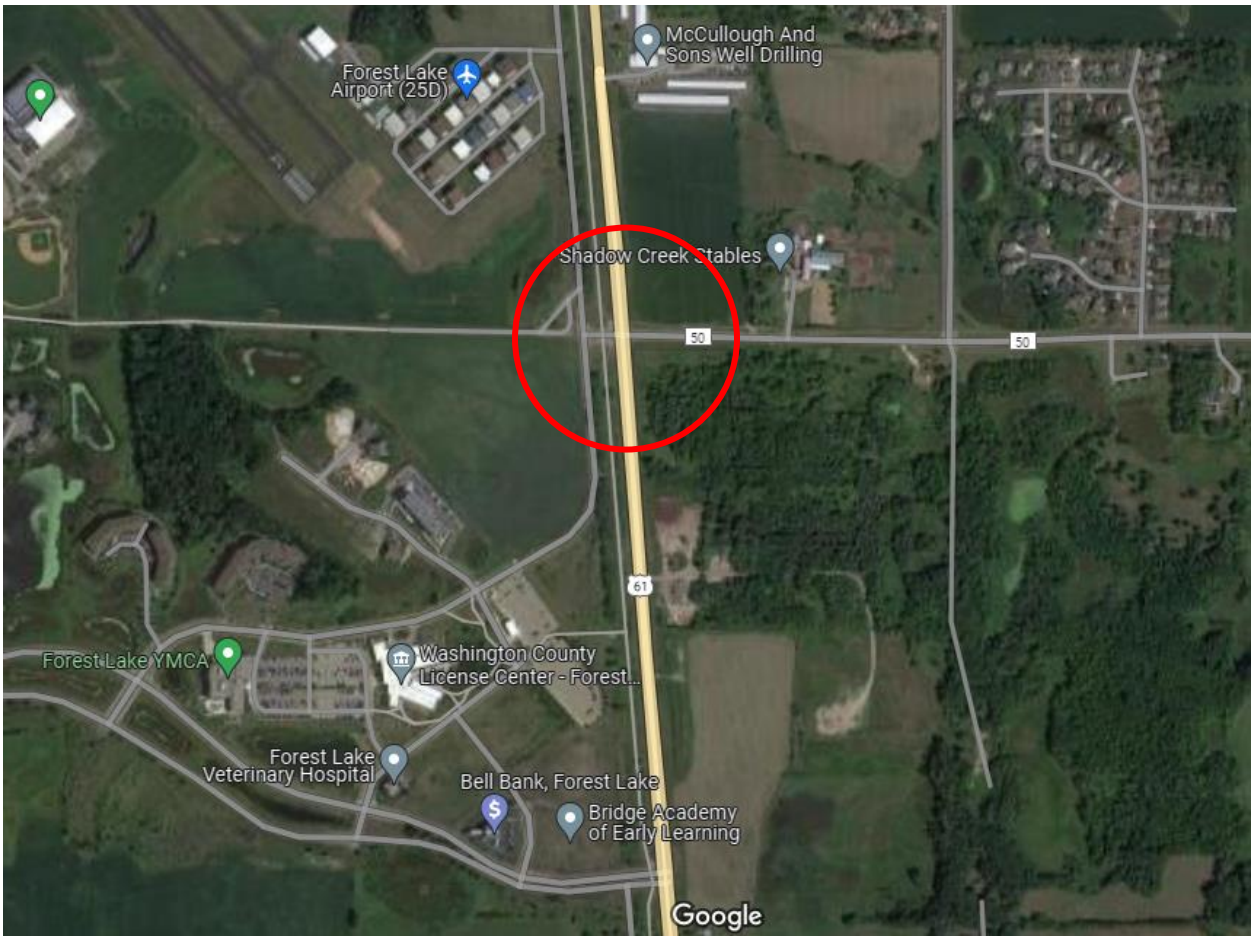

Image 1. Aerial of project area

- Intersection treatment needed.
- RRFB is inadequate for high-speed crossing.
- Development in final approval stages for north east of intersection.
- Low-income, high density of housing and community resources (YMCA and library) within ½ mile of the intersection (south west quadrant).

Image 2. Highway 61 at CR 50, facing north

- Intersection treatment needed.
- RRFB is inadequate for high-speed crossing.
- Development in final approval stages for north east quadrant of intersection.

Image 3. CSAH 5 just past Hemlock Street, facing east

- High density development (including low-income housing) adjacent to the intersection with a library and YMCA. Development is in final stages of approval for parcels immediately adjacent to the intersection.
- Misaligned lanes across CR 50