



Application

17063 - 2022 Roadway Modernization

17682 - TH 5 Phase 2 Reconstruction

Regional Solicitation - Roadways Including Multimodal Elements

Status: Submitted

Submitted Date: 04/14/2022 11:53 AM

Primary Contact

Name:*
Pronouns First Name Middle Name Last Name

Title:

Department:

Email:

Address:

City State/Province Postal Code/Zip

Phone:*
Phone Ext.

Fax:

What Grant Programs are you most interested in?

Organization Information

Name:

Jurisdictional Agency (if different):

Organization Type:

City

Organization Website:

Address:

1250 S HWY #284

*

WACONIA

Minnesota

55387

City

State/Province

Postal Code/Zip

County:

Carver

Phone:*

612-442-2184

Ext.

Fax:

PeopleSoft Vendor Number

000021008A1

Project Information

Project Name

TH 5 Phase 2 Reconstruction

Primary County where the Project is Located

Carver

Cities or Townships where the Project is Located:

Waconia

Jurisdictional Agency (If Different than the Applicant):

The City of Waconia is seeking funds to fully reconstruct highway 5, a project that represents several decades of community effort to improve and modernize the roadway for all users. TH 5 is an A Minor Arterial, which the City will reconstruct from Olive to Main Streets. Phase 2 will finish a reconstruction effort that was first started in 2015 with the completion of Phase 1, which modernized a segment of TH 5 directly west of project limits.

This final phase trunk highway project will address decades of studies recognizing Highway 5 as one of the highest crash rate corridors in Carver County (Carver County 2040 Comprehensive Plan). The project will address both safety and mobility issues by adding dedicated turn lanes, eliminating conflict points along the corridor, and reducing the severity of crashes through significant access management planning. The project will bring TH 5 closer into compliance with numerous MnDOT standards as the corridor is converted from a rural to an urban section.

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

Waconia's 2040 Comprehensive Plan, and the 2030 plan before it, specifically identified access management on Highway 5 and pedestrian and bicycle network improvements as priorities. This project will build on the city's recent investments to reconstruct the East Frontage Road to the south that provided new access points to the existing highway commercial businesses from the frontage road and allowing this project to close all private driveway access points onto the trunk highway.

Improvements to roadway geometry and access management will result in a safer roadway with improved capacity. This is of specific importance as TH 5 is a critical connection for emergency services to Ridgeview Medical Center. Such improvements will also add to the reliability of TH 5 as a freight corridor, for which it is already designated as a tier

3 regional freight route.

Dedicated pedestrian and bicycle facilities do not currently exist along Highway 5. This project will significantly advance transportation goals by incorporating a multiuse trail the entire length of the Highway 5 project from Olive to Main Streets. This is a critical connection that will link Waconia Public Schools, Ridgeview's regional Health Center, and historic Downtown Waconia to Lake Waconia Regional Park and quickly developing neighborhoods in the southeast area of the city. This connection will also link to both Tier 1 and 2 alignments of the Met Councils Regional Bike Trail Network and create the possibility to extend the Tier 1 alignment through the City along TH 5.

(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.](#)

MN TH 5, WACONIA, FROM CSAH 284 TO E. MAIN STREET, 0.8 MILES, FULL RECONSTRUCTION

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

Project Length (Miles) 0.8

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 \$7,000,000.00

Match Amount \$4,275,900.00

Minimum of 20% of project total

Project Total \$11,275,900.00

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

Match Percentage 37.92%

Minimum of 20%

Compute the match percentage by dividing the match amount by the project total

Source of Match Funds City Funds

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

Preferred Program Year

Select one: 2026

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

Additional Program Years:

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

Project Information-Roadways

County, City, or Lead Agency	City of Waconia
Functional Class of Road	A Minor Aterial
Road System	TH
<i>TH, CSAH, MSAS, CO. RD., TWP. RD., CITY STREET</i>	
Road/Route No.	5
<i>i.e., 53 for CSAH 53</i>	
Name of Road	Augie Mueller Memorial Highway
<i>Example; 1st ST., MAIN AVE</i>	
Zip Code where Majority of Work is Being Performed	55387
(Approximate) Begin Construction Date	04/01/2026
(Approximate) End Construction Date	10/31/2027
TERMINI:(Termini listed must be within 0.3 miles of any work)	
From:	Olive Street
(Intersection or Address)	
To:	Main Street
(Intersection or Address)	
<i>DO NOT INCLUDE LEGAL DESCRIPTION</i>	
Or At	
Miles of Sidewalk (nearest 0.1 miles)	0.4
Miles of Trail (nearest 0.1 miles)	1.3
Miles of Trail on the Regional Bicycle Transportation Network (nearest 0.1 miles)	0.4
Primary Types of Work	GRADE, AGG BASE, BIT BASE, BIT SURF, SIDEWALK, CURB AND GUTTER, SIGNALS, LIGHTING, BIKE PATH, PED RAMPS, MEDIAN
<i>Examples: GRADE, AGG BASE, BIT BASE, BIT SURF, SIDEWALK, CURB AND GUTTER,STORM SEWER, SIGNALS, LIGHTING, GUARDRAIL, BIKE PATH, PED RAMPS, BRIDGE, PARK AND RIDE, ETC.</i>	
BRIDGE/CULVERT PROJECTS (IF APPLICABLE)	
Old Bridge/Culvert No.:	

New Bridge/Culvert No.:

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

Requirements - All Projects

All Projects

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

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

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

Goal A: Transportation System Stewardship

- Objective A.A (pg 2.2)
- Objective A.B (pg 2.3)
- Strategy A.1 (pg 2.2)
- Strategy A.2 (pg 2.3)

Goal B: Safety and Security

- Objective B.A (pg 2.5)
- Objective B.B (pg 2.5)
- Strategy B.1 (pg 2.5)
- Strategy B.6 (pg 2.8)

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

Goal C: Access to Destinations

- Objective C.A (pg 2.10)
- Objective C.B (pg 2.10)
- Objective C.D (pg 2.10)
- Objective C.E (pg 2.10)
- Strategy C.1 (pg 2.10)
- Strategy C.2 (pg 2.11)
- Strategy C.3 (pg 2.12)
- Strategy C.8 (pg 2.16)

- Strategy C.9 (pg 2.17)
- Strategy C.15 (pg 2.22)
- Strategy C.16 (pg 2.23)
- Strategy C.17 (pg 2.24)

Goal D: Competitive Economy

- Objective D.A (pg 2.26)
- Objective D.B (pg 2.26)
- Objective D.C (pg 2.26)
- Strategy D.1 (pg 2.26)
- Strategy D.3 (pg 2.27)
- Strategy D.5 (pg 2.28)

Goal E: Healthy and Equitable Communities

- Objective E.A (pg 2.30)
- Objective E.C (pg 2.30)
- Objective E.D (pg 2.30)
- Strategy E.1 (pg 2.30)
- Strategy E.2 (pg 2.31)
- Strategy E.3 (pg 2.31)
- Strategy E.7 (pg 2.34)

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.

City of Waconia 2040 Comprehensive Plan

- Problem: Existing Traffic Volumes and Crash Data (pg 4.3)
- Problem: Highway 5 Access Management (pg 4.6)
- Need: Pedestrian and Bicycle Network Improvements (pg 4.6)
- Problem: MNDOT Hwy 5 Corridor Study ? TH 5 access Management Improvements (pg 4.7)
- Goal: Support the development and maintenance of a balanced multimodal system of transportation alternatives. (pg 4.31)
- Goal: Manage and maintain the existing street and highway system according to established standards. (pg 4.31)
- Goal: Adequately control access points to the regional roadway system. (pg 4.31)
- Goal: Create pedestrian and bicycle network that connects major destinations and amenities. (pg 4.31)
- Goal: Incorporate pedestrian and bicycle access planning into new and upgraded roadways and bridges. (pg 4.31)
- Goal: Encourage pedestrian and bicycle safety and accessibility. (pg 4.31)
- Goal: Accommodate safe and efficient freight movement on the arterial and collector road system. (pg 4.31)

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

Carver County 2040 Comprehensive Plan

- COUNTY GOAL TR? 1 Develop, manage, and maintain a roadway network that supports and promotes modern infrastructure conditions and standards. (pg 4.3)
- COUNTY GOAL TR? 2 Develop a roadway network that promotes traffic safety and healthy, livable communities (pg 4.3)
- COUNTY GOAL TR? 3 Strive to ensure that the roadway network promotes the efficient movement of people and goods and regional mobility (pf 4.3)
- COUNTY GOAL TR? 4 Maintain and manage traffic demands and levels of service to meet the challenges and opportunities resulting from growth and development (pg 4.3)
- COUNTY GOAL TR-13 Develop a roadway network that supports heavy commercial vehicles and removes bottlenecks to freight to reduce truck impacts on the highway system. (pg 4.91)
- Need: Reconstruction of TH 5 from TH 41 to US 212, including intersection and shoulder improvements. (pg 4.7)

Limit 2,800 characters, approximately 400 words

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

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

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

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

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

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

7. The requested funding amount must be more than or equal to the minimum award and less than or equal to the maximum award. The cost of preparing a project for funding authorization can be substantial. For that reason, minimum federal amounts apply. Other federal funds may be combined with the requested funds for projects exceeding the maximum award, but the source(s) must be identified in the application. Funding amounts by application category are listed below in Table 1. For unique projects, the minimum award is \$500,000 and the maximum award is the total amount available each funding cycle (approximately \$4,000,000 for the 2022 funding cycle).

Strategic Capacity (Roadway Expansion): \$1,000,000 to \$10,000,000

Roadway Reconstruction/Modernization: \$1,000,000 to \$7,000,000

Traffic Management Technologies (Roadway System Management): \$500,000 to \$3,500,000

Spot Mobility and Safety: \$1,000,000 to \$3,500,000

Bridges Rehabilitation/Replacement: \$1,000,000 to \$7,000,000

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

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

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

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

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

(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:

Link to plan:

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. Yes

Date self-evaluation completed: 02/28/2022

Link to plan: <https://www.waconia.org/DocumentCenter/View/3014/Waconia-Transition-Plan-DRAFT?bidId=>

Upload plan or self-evaluation if there is no link

Upload as PDF

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

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

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

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

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

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

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

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

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

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

Roadways Including Multimodal Elements

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

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

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

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

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

Bridge Rehabilitation/Replacement and Strategic Capacity projects only:

3. Projects requiring a grade-separated crossing of a principal arterial freeway must be limited to the federal share of those project costs identified as local (non-MnDOT) cost responsibility using 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 bridge clear span must exceed 20 feet.

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

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

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

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

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

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

Requirements - Roadways Including Multimodal Elements

Specific Roadway Elements

CONSTRUCTION PROJECT ELEMENTS/COST ESTIMATES	Cost
Mobilization (approx. 5% of total cost)	\$404,200.00
Removals (approx. 5% of total cost)	\$468,900.00
Roadway (grading, borrow, etc.)	\$721,000.00
Roadway (aggregates and paving)	\$1,952,100.00
Subgrade Correction (muck)	\$0.00
Storm Sewer	\$940,000.00
Ponds	\$260,000.00
Concrete Items (curb & gutter, sidewalks, median barriers)	\$1,138,500.00
Traffic Control	\$404,200.00
Striping	\$80,850.00
Signing	\$80,850.00
Lighting	\$60,000.00
Turf - Erosion & Landscaping	\$485,000.00
Bridge	\$0.00
Retaining Walls	\$1,617,200.00
Noise Wall (not calculated in cost effectiveness measure)	\$0.00
Traffic Signals	\$550,000.00
Wetland Mitigation	\$0.00
Other Natural and Cultural Resource Protection	\$0.00
RR Crossing	\$0.00
Roadway Contingencies	\$1,616,600.00
Other Roadway Elements	\$100,000.00
Totals	\$10,879,400.00

Specific Bicycle and Pedestrian Elements

CONSTRUCTION PROJECT ELEMENTS/COST ESTIMATES	Cost
Path/Trail Construction	\$146,500.00
Sidewalk Construction	\$125,000.00
On-Street Bicycle Facility Construction	\$0.00
Right-of-Way	\$0.00
Pedestrian Curb Ramps (ADA)	\$85,000.00

Crossing Aids (e.g., Audible Pedestrian Signals, HAWK)	\$40,000.00
Pedestrian-scale Lighting	\$0.00
Streetscaping	\$0.00
Wayfinding	\$0.00
Bicycle and Pedestrian Contingencies	\$0.00
Other Bicycle and Pedestrian Elements	\$0.00
Totals	\$396,500.00

Specific Transit and TDM Elements

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

Transit Operating Costs

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

Totals

Total Cost	\$11,275,900.00
Construction Cost Total	\$11,275,900.00
Transit Operating Cost Total	\$0.00

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

Existing Employment within 1 Mile:	6113
Existing Manufacturing/Distribution-Related Employment within 1 Mile:	1363
Existing Post-Secondary Students within 1 Mile:	0
Upload Map	1649777633728_Regional_Economy.pdf

Please upload attachment in PDF form.

Measure C: Current Heavy Commercial Traffic

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

Along Tier 1:

Miles: 0

(to the nearest 0.1 miles)

Along Tier 2:

Miles: 0

(to the nearest 0.1 miles)

Along Tier 3: Yes

Miles: 0.8

(to the nearest 0.1 miles)

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

None of the tiers:

Measure A: Current Daily Person Throughput

Location NE OF TH284 IN WACONIA

Current AADT Volume 14815

Existing Transit Routes on the Project N/A

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

Upload Transit Connections Map 1649777767899_Tranist_Connections.pdf

Please upload attachment in PDF form.

Response: Current Daily Person Throughput

Average Annual Daily Transit Ridership 0

Current Daily Person Throughput 19260.0

Measure B: 2040 Forecast ADT

Use Metropolitan Council model to determine forecast (2040) ADT volume No

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

OR

Identify the approved county or city travel demand model to determine forecast (2040) ADT volume

Carver County 2040 Travel Demand Forecast
(Carver County 2040 Comprehensive Plan)

Forecast (2040) ADT volume

16550

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:

Waconia's population is an estimated 12,131 residents (2015-2019 ACS Estimates). Of that population, 4,928 residents (or 40.8% of the city) live within the ½ mile buffer area surrounding the TH 5 Phase 2 project limits. Many of these residents belong to equity populations whose use of TH 5 is currently limited due to existing conditions. Around 27% of residents in the area are children who attend the schools and care centers in the project area. Of these same residents, 17.2% are seniors over age 64, many of whom live in assisted living or nursing home communities at the project's western terminus. Additionally, 6.9% of individuals living in the project area have a reported disability. Approximately 7% of all residents in the buffer area have a household income below 200% of the Federal poverty level. In the project area, around 5% of residents are Black, Indigenous, or People of Color. These project-area demographic compositions are consistent with those in the City of Waconia and of Carver County using the same estimation data.

Response:

Residents in the project area have had the opportunity to participate in the public engagement process over the nearly 20 years these improvements have been discussed. Discussion about TH 5 improvements was first catalyzed by the TH 5 Corridor study completed by MnDOT in 2008 which identified critical safety issues along the corridor. Using public and stakeholder input, MnDOT provided an initial vision for a 4-lane, urban arterial corridor with a separated, mixed-use trail for bicyclists and pedestrians. To refine this vision for current and future residents, the City and Carver County expanded and deepened engagement for the phased reconstruction of TH 5. The Phase 2 project has been evaluated and identified for prioritization as a result of community engagement activities for other efforts. This includes the 2013 Carver County Roadway Safety Plan (by MnDOT),

and the 2040 Comprehensive Plans for both the City of Waconia and Carver County.

Beyond traditional public hearing notices, comment periods, and presentations at city meetings, extended engagement efforts have included a campaign of public workshops, newsletters, and virtual engagement on the city's website. Elsewhere, stakeholders were engaged directly in programming and concept design. These stakeholders include staff and leaders at Ridgeview Medical Center, local schools, the Chamber of Commerce, and individual business owners, some of whom are also equity populations. The engagement process has continued to evolve and has benefited from the visibility of previous projects including the first phase of TH 5 reconstruction and planning efforts to construct a frontage road supporting the TH 5 Phase 2 project.

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

Measure B: Equity Population Benefits and Impacts

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

This is not an exhaustive list. A full response will support the benefits claimed, identify benefits specific to Equity populations residing or engaged in activities near the project area, identify benefits addressing a transportation issue affecting Equity populations specifically identified through engagement, and substantiate benefits with data.

Acknowledge and describe any negative project impacts to Black, Indigenous, and People of Color populations, low-income populations, children, people with disabilities, youth, and older adults. Describe measures to mitigate these impacts. Unidentified or unmitigated negative impacts may result in a reduction in points.

Below is a list of potential negative impacts. This is not an exhaustive list.

This project will benefit mobility, safety, and quality of life for residents (including the previously identified equity populations in Section 3.A of this application), as well as workers, students, and visitors in the project area. Using the US Census Bureau's On the Map application, a worker demographics profile (attached) was generated for individuals employed in the ½ mile buffer of the proposed TH 5 project. In total, more than 5,187 individuals work in the project area; this is equal to 5.1% of the entire population of Carver County. Many of these workers (1,272 or 24.5%) are employed in health care or social assistance careers, deeply reflecting the significance of Ridgeview Medical Center as a crucial employment hub for the region. In addition, notable sectors in the project area include manufacturing, educational services, and accommodation and food service, comprising 21.1%, 8.3%, and 10.0% of the workforce, respectively.

Response:

Concerning educational services, the ½ mile buffer around the TH 5 project also contains three elementary/middle schools, two pre-schools, and a special education school serving more than 1450 students combined who are served by 432 staff members. Enhancements to the roadway are designed to provide safer conditions and reduce travel times through access management, eliminating left-hand turning movements onto the roadway, incorporating a median, and reducing lane widths. As demonstrated in Phase 1, these improvements are expected to reduce speeds while maintaining capacity. This will add to the reliability of the TH 5 corridor for those who travel it daily for work and school.

Phase 2 improvements will encourage more residents to choose active and sustainable transportation options by eliminating barriers for multimodal travel. This project intentionally

prioritizes pedestrians and bicyclists by extending the mixed-use trail from its current terminus at Olive St. toward Main St. and further into Lake Waconia Regional Park. According to 2015-2019 ACS estimates, 10.2% of residents in the project area already walk, roll, or bike to work, or they work from home. These individuals will experience safer travel while walking and biking between key employment, education, and service centers in addition to community open space, like the regional park.

By any reasonable measure, no potentially negative impacts to equity populations identified in planning for this project. Benefits will be realized by all modes of travel through and across the corridor. Reductions in crashes and air quality benefits are expected to benefit those living in the immediate areas surrounding the project, and Waconia's businesses will remain highly visible with safe controlled access to TH 5 through an improved East Frontage Road.

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

Measure C: Affordable Housing Access

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

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

As shown in the attached Socio-Economic Conditions map, there are currently 301 publicly subsidized rental housing units in the census tracts within ½ mile of the project. Additionally, the Carver County Community Development Agency has recently broken ground on Trail's Edge South, a new affordable housing community located 0.34 miles from the project area near Laketown Elementary School. This 60-unit apartment complex is anticipated to welcome its first occupants in November 2022.

Beyond publicly subsidized units, a large share of Waconia's housing stock is within the area immediately surrounding the Phase 2 project. This area contains historic housing stock which is more dense and more affordable than anywhere else in Waconia (2040 Comprehensive Plan). The Minnesota Housing Partnership identified 36 naturally occurring affordable housing units in the project area for 2015, these units lease at 50% AMI. Assuming 2.7 persons per household (the 2016-2020 ACS Estimate for Waconia, MN), these 397 units will provide affordable housing to over 1,000 residents in the project area by November 2022.

Response:

The new multi-modal facilities proposed within the TH 5 reconstruction project will better serve these residents, and others in the community, by establishing a safe, dignified corridor for all abilities. As it exists today, this segment of TH 5 benefits individuals traveling solely by car. Without compromising safety or efficiency, TH 5 Phase 2 is designed to provide equitable and safe space in the public right of way for individuals and families who cannot afford a vehicle, those who cannot drive, or those who would simply prefer to walk, roll, or bike to their destination.

The positive impacts proposed in Phase 2 are

considerable. Student-residents, living in affordable housing, and without, would be freer to travel to school without dependence on a car or a bus. Senior residents at the nursing home and assisted living facility at the, and the patients, visitors, and staff at the medical center campus will enjoy direct connectivity to the beautiful Lake Waconia Regional Park at the eastern end of this project.

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

Measure D: BONUS POINTS

Project is located in an Area of Concentrated Poverty:

Projects census tracts are above the regional average for population in poverty or population of color (Regional Environmental Justice Area):

Project located in a census tract that is below the regional average for population in poverty or populations of color (Regional Environmental Justice Area):

Yes

Upload the Socio-Economic Conditions map used for this measure.

1649778290630_Socio_Economic.pdf

Measure A: Year of Roadway Construction

Year of Original Roadway Construction or Most Recent Reconstruction	Segment Length	Calculation	Calculation 2
1926	0.8	1540.8	1926.0
	1	1541	1926

Total Project Length

Total Project Length (as entered in "Project Information" form) 0.8

Average Construction Year

Weighted Year 1926

Total Segment Length (Miles)

Measure B: Geometric, Structural, or Infrastructure Improvements

Improved roadway to better accommodate freight movements:

Yes

Truck turning movements will be greatly improved due to improvements in intersection geometry.

Significant changes will be made through access management planning at all intersections along the corridor. This will increase safety and capacity, therefore improving reliability of this tier 3 freight corridor.

Response:

Added turn lanes will provide for easier and safer turning movements for all vehicles off of TH5.

Existing shoulder deficiencies will be addressed by increasing width or constructing shoulders where they don't currently exist.

(Limit 700 characters; approximately 100 words)

Improved clear zones or sight lines:

Yes

Clear zone standards are not currently met on the roadway due to its construction prior to implementation of current MnDOT standards. The project will bring this stretch of TH5 into compliance by increasing clear zones to meet MnDOT's requirements for an urban section.

Response:

Access management will greatly improve sight lines. This will primarily be accomplished through a significant reduction in turning movements. Implementation of right in right out turns will reduce the sight line issues present in existing conditions.

(Limit 700 characters; approximately 100 words)

Improved roadway geometrics:

Yes

TH 5 is a century old rural highway that has not ever been fully reconstructed. This project seeks to address noncompliance with many of MnDOT's current design standards.

Ditch grades within clear zones will be brought into conformance with MnDOT requirements.

Response:

A narrow right of way will be redesigned to incorporate pedestrian facilities. This project will simultaneously calm traffic through design and incorporate currently nonexistent pedestrian and bike facilities.

Turn lane lengths and access spacing are both substandard for a roadway with this speed and volume. These issues will be addressed through roadway geometry.

(Limit 700 characters; approximately 100 words)

Access management enhancements:

Yes

Access management will be enhanced at each intersection along the project corridor.

A median will restrict turning movements for vehicles turning on to TH 5 to right turns. Left turns off TH 5 on to local streets will also be reduced. This will greatly reduce the number of possible conflict points in the project area.

Response:

Uncontrolled access against high volumes creates notable safety concerns. Carver County has also documented numerous concerns regarding the need for access management.

The City has already made significant investments in a frontage road to make possible the planned access reductions proposed in this project.

(Limit 700 characters; approximately 100 words)

Vertical/horizontal alignment improvements:

Yes

Horizontal alignments on the roadway do not currently meet current MnDOT standards. This project proposed adjustments to meet MnDOT Urban 40 mph standards.

Response:

An existing horizontal curve and crest vertical curve will be corrected at the existing 4 way intersection of Elm St. and TH 5. This intersection is being converted into Right-in Right-out.

Vertical profile of the roadway does not meet current MnDOT standards. The project proposes to adjust this to meet current standards and to improve local road connections to TH 5.

(Limit 700 characters; approximately 100 words)

Improved stormwater mitigation:

Yes

Existing flood risks in this area will be addressed though this project by implementation of urban storm sewer system enhancements.

Connections do not extend local storm sewer to TH 5 This project will create connections to Elm St to Birch St. extending storm sewer to the project area.

Response:

Runoff currently drains onto properties south of TH 5 due to lack of stormwater planning. This project will redirect stormwater into dedicated facilities through a swale.

City investment in a stormwater basin at the SW corner of Main/TH 5 will be leveraged by storm sewer enhancements which will outlet to this basin.

(Limit 700 characters; approximately 100 words)

Signals/lighting upgrades:

Yes

ADA enhancements will be made to the existing Olive Street and Main Street signalized intersections

Existing Olive Street Signal only has 1 Westbound Thru head. Second for the new thru lane can be added.

Response:

Potential signal replacement at TH 5/Main Street due to the additional trail connection, which would upgrade the signal and lighting system. Left turns signals upgraded to flashing yellow arrow indications on all legs.

(Limit 700 characters; approximately 100 words)

Other Improvements

Yes

The project will significantly enhance multimodal facilities throughout the corridor. A trail will be implemented on the north side of TH 5 from Olive Street through Main Street. This is a critical connection because it will eventually extend to the Lake Waconia Regional park.

Response:

The project will specifically also add sidewalks to portions of the frontage road. This will add connectivity between commercial uses and reduce instances where pedestrians must cross driveway access points onto TH5.

(Limit 700 characters; approximately 100 words)

Measure A: Congestion Reduction/Air Quality

Total Peak Hour Delay Per Vehicle Without The Project (Seconds/Vehicle)	Total Peak Hour Delay Per Vehicle With The Project (Seconds/Vehicle)	Total Peak Hour Delay Per Vehicle Reduced by Project (Seconds/Vehicle)	Volume without the Project (Vehicles per hour)	Volume with the Project (Vehicles Per Hour):	Total Peak Hour Delay Reduced by the Project:	Total Peak Hour Delay Reduced by the Project:	EXPLANATION of methodology used to calculate railroad crossing delay, if applicable.	Synchro or HCM Reports

32.7	25.1	7.6	8	1305	60.8	9918.0	N/A
------	------	-----	---	------	------	--------	-----

164995328
 3521_5.
 Congestion
 Waconia
 TH
 5_BUILD +
 EXISTING
 PM -
 Report.pdf

9918

Vehicle Delay Reduced

Total Peak Hour Delay Reduced	60.8
Total Peak Hour Delay Reduced	9918.0

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

Total (CO, NOX, and VOC) Peak Hour Emissions without the Project (Kilograms):	Total (CO, NOX, and VOC) Peak Hour Emissions with the Project (Kilograms):	Total (CO, NOX, and VOC) Peak Hour Emissions Reduced by the Project (Kilograms):
7.46	6.97	0.49
7	7	0

Total

Total Emissions Reduced: 0.49

Upload Synchro Report

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

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

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

Total Parallel Roadway

Emissions Reduced on Parallel Roadways 0

Upload Synchro Report

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

New Roadway Portion:

Cruise speed in miles per hour with the project: 0

Vehicle miles traveled with the project: 0

Total delay in hours with the project: 0

Total stops in vehicles per hour with the project: 0

Fuel consumption in gallons: 0

Total (CO, NOX, and VOC) Peak Hour Emissions Reduced or Produced on New Roadway (Kilograms): 0

EXPLANATION of methodology and assumptions used:(Limit 1,400 characters; approximately 200 words)

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

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

Cruise speed in miles per hour without the project: 0

Vehicle miles traveled without the project: 0

Total delay in hours without the project: 0

Total stops in vehicles per hour without the project: 0

Cruise speed in miles per hour with the project: 0

Vehicle miles traveled with the project: 0

Total delay in hours with the project: 0

Total stops in vehicles per hour with the project: 0

Fuel consumption in gallons (F1) 0

Fuel consumption in gallons (F2) 0

Fuel consumption in gallons (F3) 0

Total (CO, NOX, and VOC) Peak Hour Emissions Reduced by the Project (Kilograms): 0

EXPLANATION of methodology and assumptions used:(Limit 1,400 characters; approximately 200 words)

Measure A: Roadway Projects that do not Include Railroad Grade-Separation Elements

Crash Modification Factor Used:

(Limit 700 Characters; approximately 100 words)

CMF ID: 2219 - Install raised median

Rationale for Crash Modification Selected:

(Limit 1400 Characters; approximately 200 words)

CMF ID 2219 was selected since the project will add a median along TH 5 from TH 284 (Olive St) to Main St. This crash modification factor shows a 70.77% crash reduction and applies to all crash types and severities.

Project Benefit (\$) from B/C Ratio

\$8,080,386.00

Total Fatal (K) Crashes:

1

Total Serious Injury (A) Crashes:

0

Total Non-Motorized Fatal and Serious Injury Crashes:

0

Total Crashes:

8

Total Fatal (K) Crashes Reduced by Project:

1

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:

6

Worksheet Attachment

1649953537602_6. Combined Safety_benefit-cost-worksheet + Safety_cmf_TH 5 Waconia.pdf

Please upload attachment in PDF form.

Roadway projects that include railroad grade-separation elements:

Current AADT volume:

0

Average daily trains:

0

Crash Risk Exposure eliminated:

0

Measure A: Pedestrian Safety

Determine if these measures do not apply to your project. Does the project match either of the following descriptions?

*If either of the items are checked yes, then **score for entire pedestrian safety measure is zero**. Applicant does not need to respond to the sub-measures and can proceed to the next section.*

Project is primarily a freeway (or transitioning to a freeway) and does not provide safe and comfortable pedestrian facilities and crossings.

No

Existing location lacks any pedestrian facilities (e.g., sidewalks, marked crossings, wide shoulders in rural contexts) and project does not add pedestrian elements (e.g., reconstruction of a roadway without sidewalks, that doesnt also add pedestrian crossings and sidewalk or sidepath on one or both sides).

No

SUB-MEASURE 1: Project-Based Pedestrian Safety Enhancements and Risk Elements

To receive maximum points in this category, pedestrian safety countermeasures selected for implementation in projects should be, to the greatest extent feasible, consistent with the countermeasure recommendations in the Regional Pedestrian Safety Action Plan and state and national best practices. Links to resources are provided on the Regional Solicitation Resources web page.

Please answer the following two questions with as much detail as possible based on the known attributes of the proposed design. If any aspect referenced in this section is not yet determined, describe the range of options being considered, to the greatest extent available. If there are project elements that may increase pedestrian risk, describe how these risks are being mitigated.

1. Describe how this project will address the safety needs of people crossing the street at signalized intersections, unsignalized intersections, midblock locations, and roundabouts.

Treatments and countermeasures should be well-matched to the roadway 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.

Existing conditions do not include any sidewalks, paths, or other multimodal facilities. In the absence of any dignified paths, people who do chose to walk, bike, or roll along this corridor must brave the shoulders on either side of TH 5 with high traffic volumes and speeds. The present lack of a comfortable path between signalized intersections increases the likelihood that pedestrians choose to cross at uncontrolled locations.

The TH 5 Phase 2 project will provide a comfortable multimodal connection where one does not presently exist. This will directly address issues at unsignalized intersections by adding a trail on the north side of TH 5 connecting signalized crossings at Olive and Main Streets. The width of the trail, paired with its separation from the roadway will provide a more comfortable connection between signalized crossings. Medians will also help to deter pedestrians and cyclists from crossing at midblock locations where vehicles move at highway speeds and signalization is not an option.

The consolidation of travel lanes from 4 to 3 will help to ensure that vehicles on the roadway do not screen pedestrians or cyclists who do attempt to cross at unmarked intersections. Planned crossings at intersections along TH 5 will ensure that the safety for pedestrians and cyclists is considered at each intersection. Lastly, roadway design will visually narrow the roadway serving as a traffic calming measure and improving safety for those who walk or bike.

Response:

(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:

(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).

TH 5 is a high-volume roadway relative to the surrounding transportation network in the City of Waconia. Allowing for pedestrians to cross at mid-block crossings is detrimental for the safety of not only people walking, but all roadway users. Mid-block locations are not candidates for signalization or other controls. The addition of a multimodal path along the north side of TH 5, and a mix of sidewalk and multimodal path to the south, will provide comfortable, safe linkages to intersections with signaled controls and marked crossings.

Response:

A median is being incorporated into the project's design to help address several safety concerns. This improvement will simultaneously reduce turning movements, calm traffic, and discourage pedestrians to cross at intersections that are near controlled crossings. Instead, pedestrians are encouraged to travel to intersections where appropriate signalization and markings can ensure safer crossing.

Signalized intersections will also be improved during the project by adding new pavement markings and improving traffic signals to account for pedestrian crossings. Bumpouts will restrict vehicle turning movements while shortening pedestrian crossing distances

(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.).

The improvements in the TH 5 Phase 2 project will complement the significant traffic calming investments implemented in Phase 1 in Waconia. Motorist speed will be managed and reduced in the Phase 2 project by a reduction in vehicle lane width, incorporation of a median, access management planning, and improved turning radii.

Phase 1 of the TH 5 Reconstruction project served as a MnDOT pilot project which ultimately demonstrated a modest reduction in vehicle speeds through roadway design. Phase 2 will narrow the lane widths to 11' as in the previous phase. Visual narrowing of the roadway through lane width reduction, paired with introduction of a median will visually narrow the roadway and act as a traffic calming measure.

Response:

As evidenced in the MnDOT pilot project, no loss is expected to roadway capacity with a reduction in speed. Conversely, roadway capacity is expected to increase. This will be accomplished with a reduction in left turning movements onto the roadway and addition of turning lanes for vehicles turning off the roadway. Turning radii will also be reinforced through curbed medians which will better control turning movements.

Freight movement and peak hour traffic is expected to benefit from the corridor improvements completed in Phase 2. Roadway capacity and safety improvements will add to the reliability of the corridor during peak hours.

(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?

Existing design and posted speed along TH 5 is 50 MPH. This would remain the post construction posted speed, although the introduction of a divided urban section will help control motorists operation speed, which has often been observed in excess of 50 MPH.

Response:

(Limit 1,400 characters; approximately 200 words)

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

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

Existing road configuration is a One-way, 3+ through lanes
or

Existing road configuration is a Two-way, 4+ through lanes Yes

Existing road has a design speed, posted speed limit, or speed study/data showing 85th percentile travel speeds in excess of 30 MPH or more Yes

Existing road has AADT of greater than 15,000 vehicles per day

List the AADT

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

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

Existing road has transit running on or across it with 1+ transit stops in the project area (If flag-stop route with no fixed stops, then 1+ locations in the project area where roadside stops are allowed. Do not count portions of transit routes with no stops, such as non-stop freeway sections of express or limited-stop routes. If service was temporarily reduced for the pandemic but is expected to return to 2019 levels, consider 2019 service for this item.)

Existing road has high-frequency transit running on or across it and 1+ high-frequency stops in the project area (high-frequency defined as service at least every 15 minutes from 6am to 7pm weekdays and 9am to 6pm Saturdays. If service frequency was temporarily reduced for the pandemic but is expected to return to 2019 levels, consider 2019 frequency for this item.)

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

There are many commercial businesses within close proximity to the project area. These businesses include local and chain restaurants and stores, a fitness center, veterinarian, gas station, a hotel. In addition to auto oriented service uses, there are a mix of manufacturing and industrial land uses in close proximity. City land use policies guide the TH 5 corridor in Waconia to include a mix of primarily auto oriented land uses (zoning districts and 2040 Future Land Uses).

If checked, please describe:

(Limit 1,400 characters; approximately 200 words)

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

Significant pedestrian generators exist within 500 feet of the roadway along the TH 5 corridor. Ridgeview Medical Center is one of the largest employers in the region with visitors and employees arriving at the campus during all hours of the day.

If checked, please describe:

Other pedestrian traffic generators include Alphabet Junction childcare, Language of Love immersion school, and Trinity Lutheran Church and School. These organizations offer preschool through middle school educational opportunities.

(Limit 1,400 characters; approximately 200 words)

Measure A: Multimodal Elements and Existing Connections

This project introduces pedestrian and bicycle facilities into a critical stretch of the TH5 corridor. It is the last segment of TH5 within Waconia that does not yet provide multimodal access to the adjacent commercial and residential uses and will create a vital connection to the City's multimodal network.

Access management at intersections along the length of the project will reduce the number of turning movements and increase safety for people walking, biking, and rolling along the corridor. Currently, there is no fixed route or other transit service in Waconia. The absence of plans for such services increases the importance of safe, dignified, multimodal connections, specifically to Ridgeview Medical Center and Waconia Public Schools. Enhancements to walking and biking network are prioritized in the community's 2040 Comprehensive Plan.

Response:

North of TH5, a wide mixed-use path will run the length of the Phase 2 project to provide a safe, separated, connection to those traveling between signaled intersections with marked crossings. The trail will provide a continuous paved path, with few road accesses. Within the city, this will ultimately connect educational, employment, and residential uses to Lake Waconia Regional Park (see map attached).

South of TH5, a new sidewalk facility will transition into a mixed-use trail. Currently, no pedestrian facilities exist in the city's industrial district within the project area. Transitioning to the east, the sidewalk connects to a mixed-use trail which runs along the south of TH5. This will create an important multimodal connection, particularly to the southeast area of Waconia where a significant amount of the City's future growth will occur. Planned future land uses include both commercial

and mid to high density residential development (2040 Comprehensive Plan). Creating linkages to such areas now will only add to future connectivity of the City's multimodal network.

The project will provide key connections to future Tier 1 and 2 alignments of the RBTN (Carver County 2040 Comprehensive Plan). A direct connection is provided to the Tier 1 alignment along TH 5 which will link Waconia and its residents to the Lake Minnetonka Regional Trail. This connection will extend the overall length of the Tier 1 alignment through the City of Waconia (Met Council Thrive 2040 Plan).

One connection to a Tier 2 alignment north of the project is through Lake Waconia Regional Park linking to the Dakota Rail Trail. The second connection to a Tier 2 alignment is south of the project area where alignment along CSAH 10 will link to Carver. In both cases, a future linking trail is planned by Carver County connecting Waconia to destination regional trails (Carver County 2040 Comprehensive Plan).

(Limit 2,800 characters; approximately 400 words)

Transit Projects Not Requiring Construction

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

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

Check Here if Your Transit Project Does Not Require Construction

Measure A: Risk Assessment - Construction Projects

1. Public Involvement (20 Percent of Points)

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

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

Yes

100%

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

50%

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

50%

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

25%

No outreach has led to the selection of this project.

0%

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

Phase 2 of the TH 5 reconstruction project is a continuation of decades of public meetings, hearings, newsletters, surveys, and planning in the City of Waconia. The project is referenced in the City's 2040 Comprehensive Plan (page 4-6) and included in the City's Capital Improvement Plan. The City's 2030 Comprehensive Plan also mentions the need for improvements that are now being included in the Phase 2 project. (page 4-14).

Response:

Targeted public outreach for TH 5 improvements first occurred prior to, and during, the City's construction of Phase 1 in 2015. Before that project could even take place, local businesses were engaged one-on-one ultimately leading to plans for a frontage road, the East Frontage Road, which will be fully completed in the Phase 2 project. The East frontage road was also shown in the City's 2030 Comprehensive Plan (page 4-16) and will ultimately allow for the access management which is a well-documented need on this corridor.

(Limit 2,800 characters; approximately 400 words)

2.Layout (25 Percent of Points)

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

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

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.

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

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 Yes

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

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)

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): \$11,275,900.00

Enter Amount of the Noise Walls: \$0.00

Total Project Cost subtract the amount of the noise walls: \$11,275,900.00

Enter amount of any outside, competitive funding: \$0.00

Attach documentation of award:

Points Awarded in Previous Criteria

Cost Effectiveness

\$0.00

Other Attachments



Existing Conditions Image

1.6 MB

File Name	Description	File Size
2022 TH 5 Reg Sol Figures.pdf	Waconia TH 5 Phase 2 Layout Figures	6.7 MB
Level_Congestion.pdf	Met Council Make-A-Map - Level of Congestion	5.0 MB
LOS - Carver County.pdf	Letter of Support - Carver County	277 KB
LOS - City of Waconia.pdf	Letter of Support - City of Waconia	75 KB
LOS - MnDOT.pdf	Letter of Support - MnDOT	264 KB
LOS - Rep. Tom Emmer.pdf	Letter of Support - Representative Tom Emmer	248 KB
LOS - Ridgeview.pdf	Letter of Support - Ridgeview Medical Center	133 KB
LOS - Waconia Chamber of Commerce.pdf	Letter of Support - Waconia Chamber of Commerce	315 KB
LOS - Waconia Public Schools.pdf	Letter of Support - Waconia Public Schools	149 KB
One Page Summary_Waconia TH 5 Phase 2.pdf	One Page Summary - Waconia TH 5 Phase 2	390 KB
Regional_Economy.pdf	Met Council Make-A-Map - Regional Economy	2.5 MB
Socio_Economic.pdf	Met Council Make-A-Map - Socio-Economic Conditions	2.4 MB
Transit_Connections.pdf	Met Council Make-A-Map - Transit Connections	2.5 MB

Regional Economy

Results

WITHIN ONE MI of project:
Postsecondary Students: 0

Totals by City:

Laketown Twp.

Population: 583

Employment: 15

Mfg and Dist Employment: 0

Waconia

Population: 6267

Employment: 5748

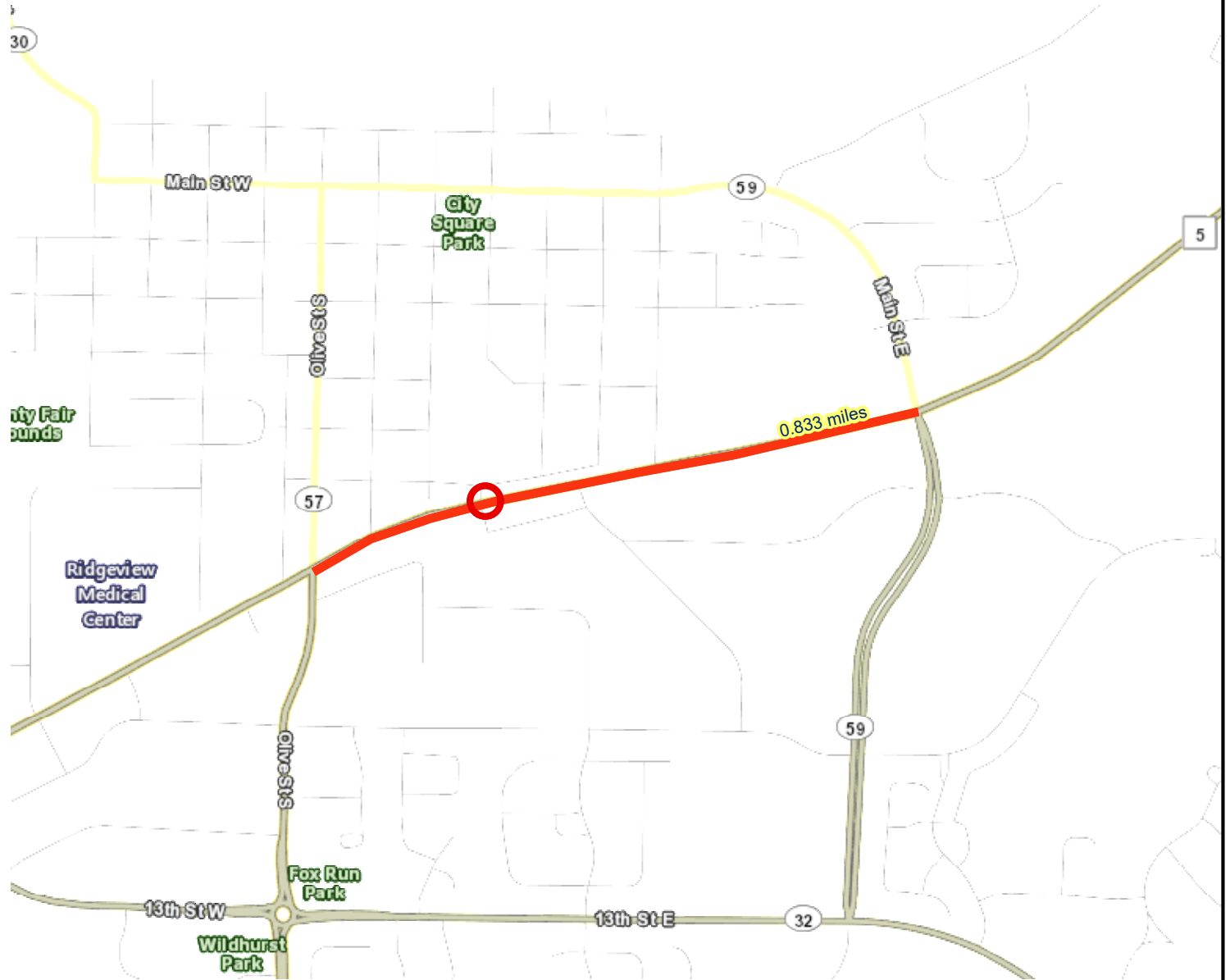
Mfg and Dist Employment: 1343





Waconia Twp.

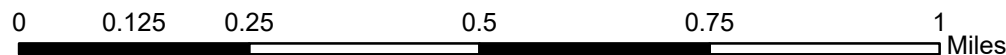
Population: 4091

Employment: 350

Mfg and Dist Employment: 20



-  Project Points
-  Project
-  Manufacturing/Distribution Centers
-  Job Concentration Centers



Created: 3/31/2022
LandscapeRSA5



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



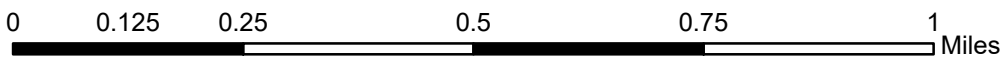
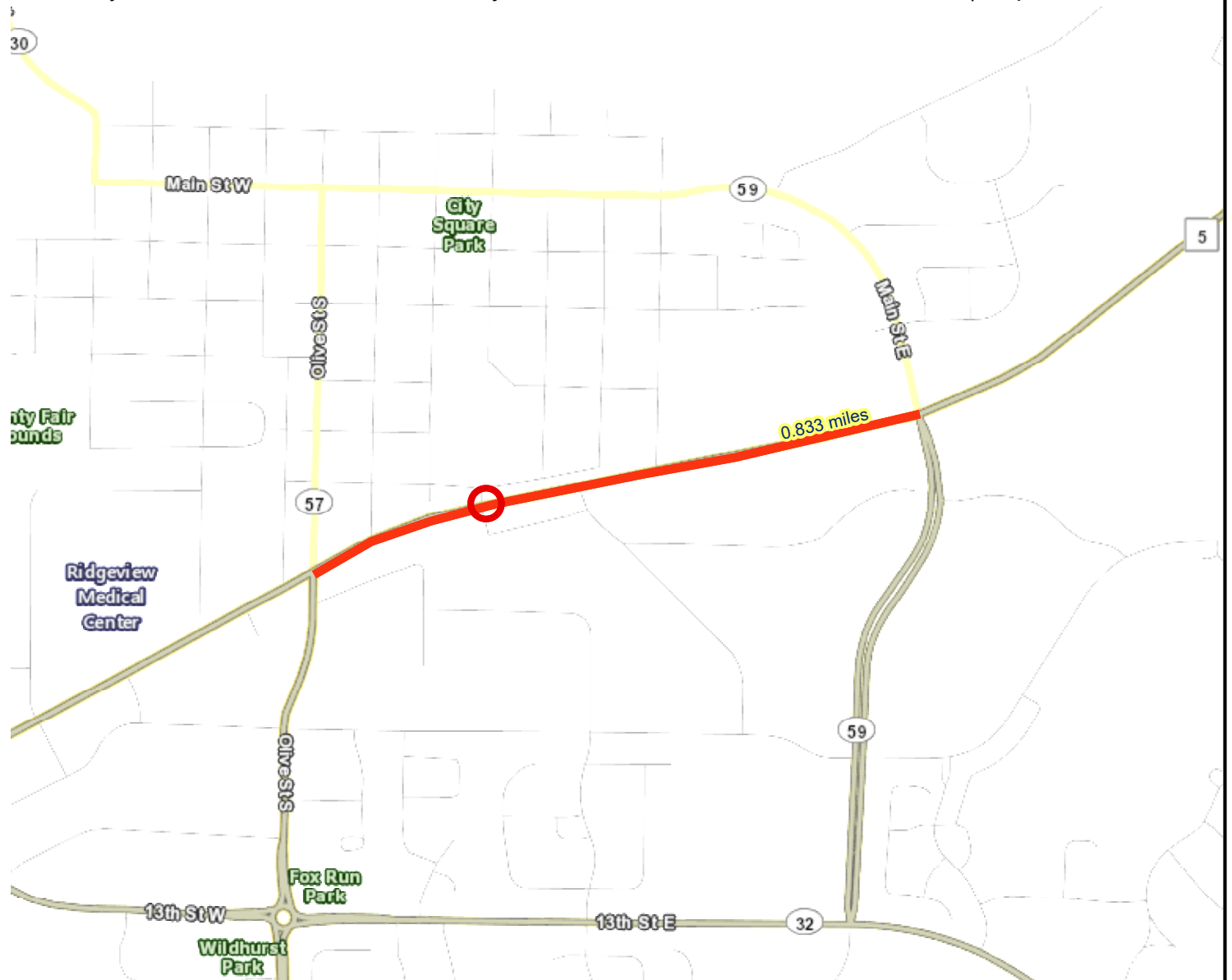
Transit Connections

Results

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

*indicates Planned Alignments

Transit Market areas: 4



Created: 3/31/2022
LandscapeRSA3



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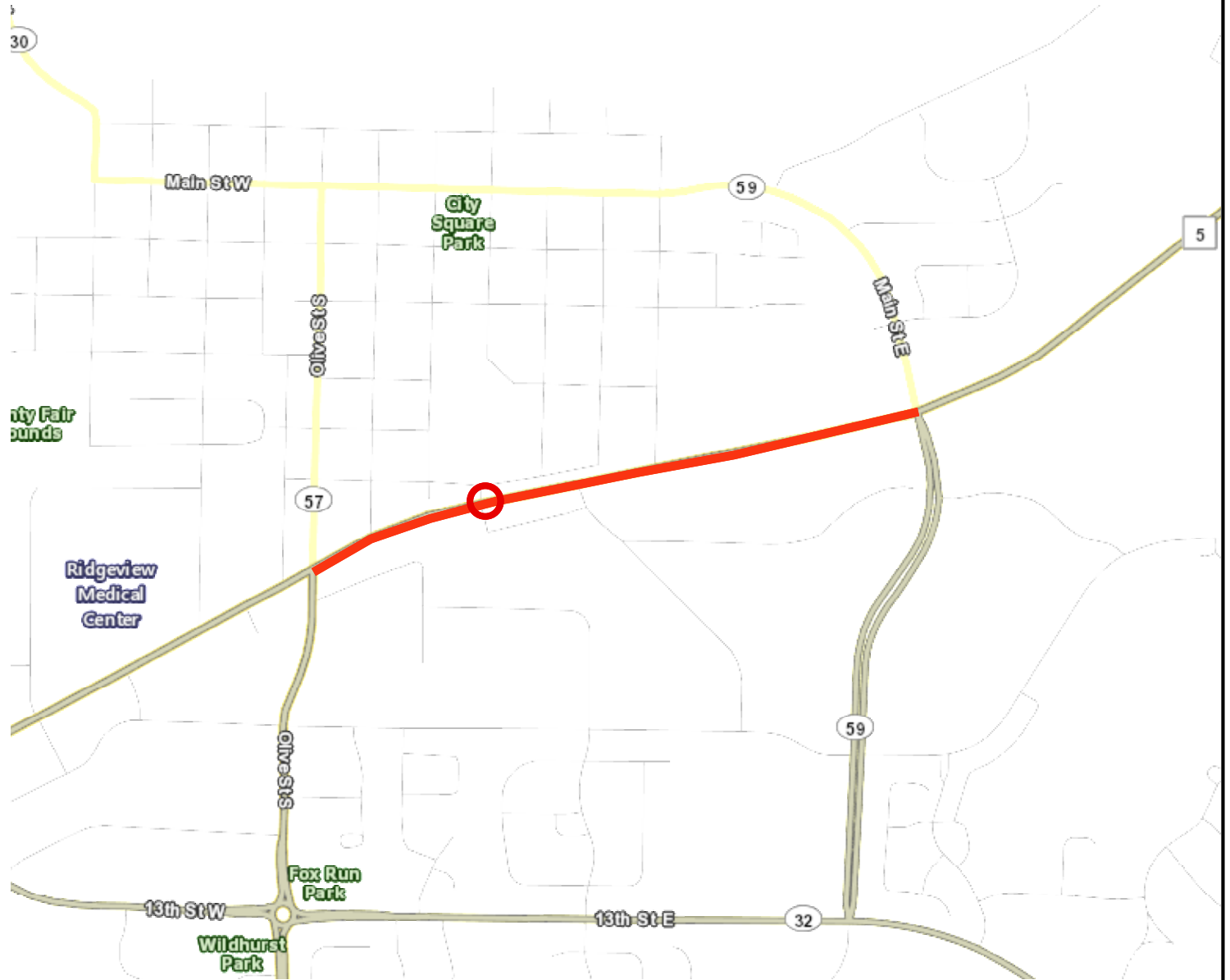




Socio-Economic Conditions

Results

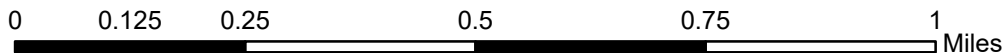
Total of publicly subsidized rental housing units in census tracts within 1/2 mile: 301

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



 Points  Area of Concentrated Poverty

 Lines



BUILD PM REPORT

Lanes, Volumes, Timings
3: TH 284/Olive St & TH 5

Existing PM Peak
03/30/2022

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	102	428	61	114	524	29	120	148	97	8	137	85
Future Volume (vph)	102	428	61	114	524	29	120	148	97	8	137	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	260		260	285		285	155		150	160		140
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	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	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			104			104			105			104
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		3049			459			1111			974	
Travel Time (s)		69.3			10.4			25.3			22.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	111	465	66	124	570	32	130	161	105	9	149	92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	111	465	66	124	570	32	130	161	105	9	149	92
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)		18			24			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	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4

Lanes, Volumes, Timings
3: TH 284/Olive St & TH 5

Existing PM Peak
03/30/2022

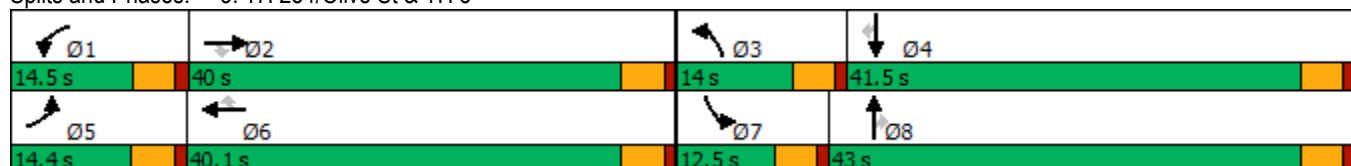


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	8.0	20.0	20.0	8.0	20.0	20.0	8.0	10.0	10.0	8.0	10.0	10.0
Minimum Split (s)	12.5	39.5	39.5	14.5	39.5	39.5	12.5	41.5	41.5	12.5	41.5	41.5
Total Split (s)	14.4	40.0	40.0	14.5	40.1	40.1	14.0	43.0	43.0	12.5	41.5	41.5
Total Split (%)	13.1%	36.4%	36.4%	13.2%	36.5%	36.5%	12.7%	39.1%	39.1%	11.4%	37.7%	37.7%
Maximum Green (s)	9.9	35.5	35.5	10.0	35.6	35.6	9.5	38.5	38.5	8.0	37.0	37.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min	Min	None	Min	Min	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		28.0	28.0		28.0	28.0		30.0	30.0		30.0	30.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	9.3	20.7	20.7	9.5	21.0	21.0	9.4	23.3	23.3	8.0	11.7	11.7
Actuated g/C Ratio	0.13	0.30	0.30	0.14	0.30	0.30	0.14	0.34	0.34	0.12	0.17	0.17
v/c Ratio	0.47	0.44	0.12	0.51	0.53	0.06	0.55	0.26	0.17	0.04	0.47	0.26
Control Delay	35.9	21.7	2.3	36.8	22.7	0.2	38.9	20.1	5.9	30.0	31.8	7.1
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	35.9	21.7	2.3	36.8	22.7	0.2	38.9	20.1	5.9	30.0	31.8	7.1
LOS	D	C	A	D	C	A	D	C	A	C	C	A
Approach Delay		22.1			24.1			22.5			22.6	
Approach LOS		C			C			C			C	

Intersection Summary

Area Type:	Other
Cycle Length:	110
Actuated Cycle Length:	69.4
Natural Cycle:	110
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.55
Intersection Signal Delay:	23.0
Intersection LOS:	C
Intersection Capacity Utilization:	53.3%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 3: TH 284/Olive St & TH 5



Lanes, Volumes, Timings
6: TH 5 & Elm St

Existing PM Peak
03/30/2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑	↗		↗
Traffic Volume (vph)	0	602	623	17	0	56
Future Volume (vph)	0	602	623	17	0	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125			315	0	0
Storage Lanes	0			1	0	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt				0.850	0.865	0.865
Flt Protected						
Satd. Flow (prot)	0	3539	3539	1583	0	1611
Flt Permitted						
Satd. Flow (perm)	0	3539	3539	1583	0	1611
Link Speed (mph)		30	30		30	
Link Distance (ft)		459	805		758	
Travel Time (s)		10.4	18.3		17.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	654	677	18	0	61
Shared Lane Traffic (%)						10%
Lane Group Flow (vph)	0	654	677	18	6	55
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		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	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	27.4%
ICU Level of Service	A
Analysis Period (min)	15

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑	↑		↑
Traffic Vol, veh/h	0	602	623	17	0	56
Future Vol, veh/h	0	602	623	17	0	56
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	315	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	654	677	18	0	61





















Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	-	0	-	0	339
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	657
Stage 1	0	-	-	-	-
Stage 2	0	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	657
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	11
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	657
HCM Lane V/C Ratio	-	-	-	0.093
HCM Control Delay (s)	-	-	-	11
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.3

Lanes, Volumes, Timings
8: E Frontage Rd & TH 5

Existing PM Peak
03/30/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	514	4	17	597	32	0	0	0	0	0	27
Future Volume (vph)	35	514	4	17	597	32	0	0	0	0	0	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		225	300		400	0		0	0		0
Storage Lanes	1		1	1		1	0		1	0		1
Taper Length (ft)	25			25			25			25		
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						0.865
Flt Protected	0.950			0.950								
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	0	0	1863	0	0	1611
Flt Permitted	0.950			0.950								
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	0	0	1863	0	0	1611
Link Speed (mph)		30			30			30				30
Link Distance (ft)		805			695			260				495
Travel Time (s)		18.3			15.8			5.9				11.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	559	4	18	649	35	0	0	0	0	0	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	38	559	4	18	649	35	0	0	0	0	0	29
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
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		Free			Free			Stop				Stop

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	41.4%
ICU Level of Service	A
Analysis Period (min)	15

Intersection												
Int Delay, s/veh	0.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↗	↗	↘	↗	↗			↗			↗
Traffic Vol, veh/h	35	514	4	17	597	32	0	0	0	0	0	27
Future Vol, veh/h	35	514	4	17	597	32	0	0	0	0	0	27
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	300	-	225	300	-	400	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	38	559	4	18	649	35	0	0	0	0	0	29

Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	684	0	0	563	0	0	-	-	559	-	-	649
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.12	-	-	4.12	-	-	-	-	6.22	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	-	-	3.318	-	-	3.318
Pot Cap-1 Maneuver	909	-	-	1008	-	-	0	0	529	0	0	470
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	909	-	-	1008	-	-	-	-	529	-	-	470
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.2	0	13.2
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	909	-	-	1008	-	-	470
HCM Lane V/C Ratio	-	0.042	-	-	0.018	-	-	0.062
HCM Control Delay (s)	0	9.1	-	-	8.6	-	-	13.2
HCM Lane LOS	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	-	0.1	-	-	0.1	-	-	0.2



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗		↑		↗
Traffic Volume (vph)	507	18	0	652	0	10
Future Volume (vph)	507	18	0	652	0	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		300	200		0	0
Storage Lanes		1	0		0	1
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.865
Flt Protected						
Satd. Flow (prot)	1863	1583	0	1863	0	1611
Flt Permitted						
Satd. Flow (perm)	1863	1583	0	1863	0	1611
Link Speed (mph)	30			30	30	
Link Distance (ft)	695			567	768	
Travel Time (s)	15.8			12.9	17.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	551	20	0	709	0	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	551	20	0	709	0	11
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	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)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	37.6%
	ICU Level of Service A
Analysis Period (min)	15

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗		↑		↗
Traffic Vol, veh/h	507	18	0	652	0	10
Future Vol, veh/h	507	18	0	652	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	300	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	551	20	0	709	0	11

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	-	-	551
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	-	0	-	534
Stage 1	-	-	0	-	-
Stage 2	-	-	0	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	534
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	534	-	-	-
HCM Lane V/C Ratio	0.02	-	-	-
HCM Control Delay (s)	11.9	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-

Lanes, Volumes, Timings
14: TH 5 & Birch St

Existing PM Peak
03/30/2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	34	539	558	51	0	50
Future Volume (vph)	34	539	558	51	0	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300			265	0	0
Storage Lanes	1			1	0	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt				0.850		0.865
Flt Protected	0.950					
Satd. Flow (prot)	1770	1863	1863	1583	0	1611
Flt Permitted	0.950					
Satd. Flow (perm)	1770	1863	1863	1583	0	1611
Link Speed (mph)		30	30		30	
Link Distance (ft)		567	1776		602	
Travel Time (s)		12.9	40.4		13.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	37	586	607	55	0	54
Shared Lane Traffic (%)						
Lane Group Flow (vph)	37	586	607	55	0	54
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		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	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	39.4%
ICU Level of Service	A
Analysis Period (min)	15

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↗	↗	↘		↘
Traffic Vol, veh/h	34	539	558	51	0	50
Future Vol, veh/h	34	539	558	51	0	50
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	300	-	-	265	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	37	586	607	55	0	54

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	662	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.12	-	6.22
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.218	-	3.318
Pot Cap-1 Maneuver	927	-	0
Stage 1	-	-	0
Stage 2	-	-	0
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	927	-	496
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	13.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	927	-	-	-	496
HCM Lane V/C Ratio	0.04	-	-	-	0.11
HCM Control Delay (s)	9	-	-	-	13.1
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4

Network Totals

Number of Intersections	5
Control Delay / Veh (s/v)	7
Queue Delay / Veh (s/v)	0
Total Delay / Veh (s/v)	7
Total Delay (hr)	13
Stops / Veh	0.24
Stops (#)	1611
Average Speed (mph)	23
Total Travel Time (hr)	55
Distance Traveled (mi)	1261
Fuel Consumed (gal)	70
Fuel Economy (mpg)	18.0
CO Emissions (kg)	4.89
NOx Emissions (kg)	0.95
VOC Emissions (kg)	1.13
Unserviced Vehicles (#)	0
Vehicles in dilemma zone (#)	0
Performance Index	17.0

EXISTING PM REPORT

Lanes, Volumes, Timings
3: TH 284/Olive St & TH 5

Existing PM Peak
03/30/2022

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	67	463	61	114	563	29	81	147	97	39	136	85
Future Volume (vph)	67	463	61	114	563	29	81	147	97	39	136	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	260		0	175		225	155		150	160		140
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
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	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			104			104			105			104
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		3049			459			1111			974	
Travel Time (s)		69.3			10.4			25.3			22.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	73	503	66	124	612	32	88	160	105	42	148	92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	73	503	66	124	612	32	88	160	105	42	148	92
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4

Lanes, Volumes, Timings
3: TH 284/Olive St & TH 5

Existing PM Peak
03/30/2022

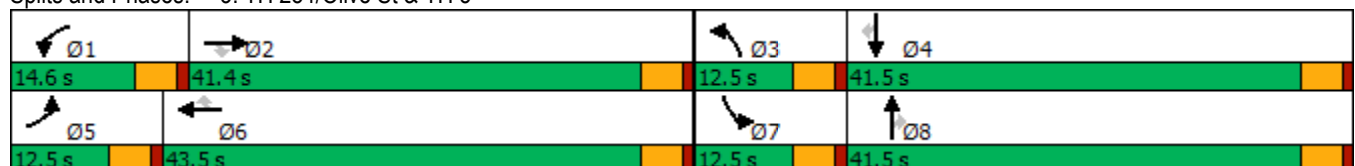


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	8.0	20.0	20.0	8.0	20.0	20.0	8.0	10.0	10.0	8.0	10.0	10.0
Minimum Split (s)	12.5	39.5	39.5	14.5	39.5	39.5	12.5	41.5	41.5	12.5	41.5	41.5
Total Split (s)	12.5	41.4	41.4	14.6	43.5	43.5	12.5	41.5	41.5	12.5	41.5	41.5
Total Split (%)	11.4%	37.6%	37.6%	13.3%	39.5%	39.5%	11.4%	37.7%	37.7%	11.4%	37.7%	37.7%
Maximum Green (s)	8.0	36.9	36.9	10.1	39.0	39.0	8.0	37.0	37.0	8.0	37.0	37.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min	Min	None	Min	Min	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		28.0	28.0		28.0	28.0		30.0	30.0		30.0	30.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	8.3	31.0	31.0	9.9	36.3	36.3	8.3	15.6	15.6	8.3	13.0	13.0
Actuated g/C Ratio	0.11	0.40	0.40	0.13	0.47	0.47	0.11	0.20	0.20	0.11	0.17	0.17
v/c Ratio	0.38	0.67	0.09	0.55	0.70	0.04	0.46	0.43	0.26	0.22	0.47	0.26
Control Delay	43.4	25.2	1.6	46.2	24.3	0.1	46.1	34.6	8.9	39.8	37.6	7.8
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	43.4	25.2	1.6	46.2	24.3	0.1	46.1	34.6	8.9	39.8	37.6	7.8
LOS	D	C	A	D	C	A	D	C	A	D	D	A
Approach Delay		24.8			26.8			29.8			28.2	
Approach LOS		C			C			C			C	

Intersection Summary






















Area Type:	Other
Cycle Length:	110
Actuated Cycle Length:	77.2
Natural Cycle:	110
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.70
Intersection Signal Delay:	26.9
Intersection LOS:	C
Intersection Capacity Utilization:	66.3%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 3: TH 284/Olive St & TH 5



Lanes, Volumes, Timings
6: Elm St & TH 5

Existing PM Peak
03/30/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	561	0	0	662	17	0	0	0	24	0	56
Future Volume (vph)	35	561	0	0	662	17	0	0	0	24	0	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		150	150		315	0		0	0		0
Storage Lanes	1		1	1		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
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						0.905
Flt Protected	0.950											0.985
Satd. Flow (prot)	1770	1863	1863	1863	1863	1583	0	1863	0	0	1660	0
Flt Permitted	0.950											0.985
Satd. Flow (perm)	1770	1863	1863	1863	1863	1583	0	1863	0	0	1660	0
Link Speed (mph)		30			30			30				30
Link Distance (ft)		459			514			197				758
Travel Time (s)		10.4			11.7			4.5				17.2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	610	0	0	720	18	0	0	0	26	0	61
Shared Lane Traffic (%)												
Lane Group Flow (vph)	38	610	0	0	720	18	0	0	0	0	87	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
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		Free			Free			Stop				Stop

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	46.3%
ICU Level of Service	A
Analysis Period (min)	15

Intersection												
Int Delay, s/veh	2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↖	↖	↗	↖		↕			↕	
Traffic Vol, veh/h	35	561	0	0	662	17	0	0	0	24	0	56
Future Vol, veh/h	35	561	0	0	662	17	0	0	0	24	0	56
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	125	-	150	150	-	315	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	38	610	0	0	720	18	0	0	0	26	0	61

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	738	0	0	610	0	0	1446	1424	610	1406	1406	720
Stage 1	-	-	-	-	-	-	686	686	-	720	720	-
Stage 2	-	-	-	-	-	-	760	738	-	686	686	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	868	-	-	969	-	-	109	136	494	117	139	428
Stage 1	-	-	-	-	-	-	438	448	-	419	432	-
Stage 2	-	-	-	-	-	-	398	424	-	438	448	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	868	-	-	969	-	-	90	130	494	113	133	428
Mov Cap-2 Maneuver	-	-	-	-	-	-	90	130	-	113	133	-
Stage 1	-	-	-	-	-	-	419	428	-	401	432	-
Stage 2	-	-	-	-	-	-	341	424	-	419	428	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0	0	29.4
HCM LOS			A	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	868	-	-	969	-	-	233
HCM Lane V/C Ratio	-	0.044	-	-	-	-	-	0.373
HCM Control Delay (s)	0	9.3	-	-	0	-	-	29.4
HCM Lane LOS	A	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	-	0.1	-	-	0	-	-	1.6

Lanes, Volumes, Timings
7: Hardware-Vet Clinic Access & TH 5

Existing PM Peak
03/30/2022



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗		↖	↘	
Traffic Volume (vph)	542	0	0	684	0	0
Future Volume (vph)	542	0	0	684	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		225	0		0	0
Storage Lanes		1	0		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1863	1863	0	1863	1863	0
Flt Permitted						
Satd. Flow (perm)	1863	1863	0	1863	1863	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	514			288	329	
Travel Time (s)	11.7			6.5	7.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	589	0	0	743	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	589	0	0	743	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
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)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	39.3%
	ICU Level of Service A
Analysis Period (min)	15

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑		↑	↑	
Traffic Vol, veh/h	542	0	0	684	0	0
Future Vol, veh/h	542	0	0	684	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	225	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	589	0	0	743	0	0



















Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	589	0	1332 589
Stage 1	-	-	-	-	589 -
Stage 2	-	-	-	-	743 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	986	-	170 508
Stage 1	-	-	-	-	554 -
Stage 2	-	-	-	-	470 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	986	-	170 508
Mov Cap-2 Maneuver	-	-	-	-	170 -
Stage 1	-	-	-	-	554 -
Stage 2	-	-	-	-	470 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	986	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Lanes, Volumes, Timings
8: E Frontage Rd & TH 5

Existing PM Peak
03/30/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	497	4	1	622	32	14	1	0	17	1	27
Future Volume (vph)	35	497	4	1	622	32	14	1	0	17	1	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		350	0		0	0		0
Storage Lanes	0		1	0		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
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						0.918
Flt Protected		0.997						0.955				0.982
Satd. Flow (prot)	0	1857	1583	0	1863	1583	0	1779	0	0	1679	0
Flt Permitted		0.997						0.955				0.982
Satd. Flow (perm)	0	1857	1583	0	1863	1583	0	1779	0	0	1679	0
Link Speed (mph)		30			30			30				30
Link Distance (ft)		288			695			260				495
Travel Time (s)		6.5			15.8			5.9				11.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	540	4	1	676	35	15	1	0	18	1	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	578	4	0	677	35	0	16	0	0	48	0
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)		0			0			0				0
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		Free			Free			Stop				Stop

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	64.9%
ICU Level of Service	C
Analysis Period (min)	15

Intersection												
Int Delay, s/veh	1.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕	↗		↕			↕	
Traffic Vol, veh/h	35	497	4	1	622	32	14	1	0	17	1	27
Future Vol, veh/h	35	497	4	1	622	32	14	1	0	17	1	27
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	350	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	38	540	4	1	676	35	15	1	0	18	1	29

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	711	0	0	544	0	0	1327	1329	540	1297	1298	676
Stage 1	-	-	-	-	-	-	616	616	-	678	678	-
Stage 2	-	-	-	-	-	-	711	713	-	619	620	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	888	-	-	1025	-	-	132	155	542	139	162	453
Stage 1	-	-	-	-	-	-	478	482	-	442	452	-
Stage 2	-	-	-	-	-	-	424	435	-	476	480	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	888	-	-	1025	-	-	117	145	542	132	152	453
Mov Cap-2 Maneuver	-	-	-	-	-	-	117	145	-	132	152	-
Stage 1	-	-	-	-	-	-	449	453	-	415	451	-
Stage 2	-	-	-	-	-	-	395	434	-	446	451	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.6			0			40			24.7		
HCM LOS							E			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	119	888	-	-	1025	-	-	231
HCM Lane V/C Ratio	0.137	0.043	-	-	0.001	-	-	0.212
HCM Control Delay (s)	40	9.2	0	-	8.5	0	-	24.7
HCM Lane LOS	E	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.5	0.1	-	-	0	-	-	0.8

Lanes, Volumes, Timings
11: Hartmann Dr & TH 5

Existing PM Peak
03/30/2022



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	
Traffic Volume (vph)	507	18	16	636	25	10
Future Volume (vph)	507	18	16	636	25	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		350	200		0	0
Storage Lanes		1	1		1	0
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.961	
Flt Protected			0.950		0.966	
Satd. Flow (prot)	1863	1583	1770	1863	1729	0
Flt Permitted			0.950		0.966	
Satd. Flow (perm)	1863	1583	1770	1863	1729	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	695			567	768	
Travel Time (s)	15.8			12.9	17.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	551	20	17	691	27	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	551	20	17	691	38	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
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)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	43.5%
ICU Level of Service	A
Analysis Period (min)	15

Intersection						
Int Delay, s/veh	0.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↖	↑	↘	↙
Traffic Vol, veh/h	507	18	16	636	25	10
Future Vol, veh/h	507	18	16	636	25	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	350	200	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	551	20	17	691	27	11

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	571	0	1276
Stage 1	-	-	-	-	551
Stage 2	-	-	-	-	725
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1002	-	184
Stage 1	-	-	-	-	577
Stage 2	-	-	-	-	479
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1002	-	181
Mov Cap-2 Maneuver	-	-	-	-	181
Stage 1	-	-	-	-	577
Stage 2	-	-	-	-	471

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	24.4
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	223	-	-	1002	-
HCM Lane V/C Ratio	0.171	-	-	0.017	-
HCM Control Delay (s)	24.4	-	-	8.7	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.6	-	-	0.1	-

Lanes, Volumes, Timings
14: TH 5 & Birch St

Existing PM Peak
03/30/2022



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	34	539	558	51	23	50
Future Volume (vph)	34	539	558	51	23	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150			300	0	0
Storage Lanes	1			1	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt				0.850	0.908	
Flt Protected	0.950				0.984	
Satd. Flow (prot)	1770	1863	1863	1583	1664	0
Flt Permitted	0.950				0.984	
Satd. Flow (perm)	1770	1863	1863	1583	1664	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		567	1776		602	
Travel Time (s)		12.9	40.4		13.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	37	586	607	55	25	54
Shared Lane Traffic (%)						
Lane Group Flow (vph)	37	586	607	55	79	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
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	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	40.4%
ICU Level of Service	A
Analysis Period (min)	15

Intersection						
Int Delay, s/veh	1.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	34	539	558	51	23	50
Future Vol, veh/h	34	539	558	51	23	50
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	300	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	37	586	607	55	25	54

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	662	0	-	0	1267 607
Stage 1	-	-	-	-	607 -
Stage 2	-	-	-	-	660 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	927	-	-	-	186 496
Stage 1	-	-	-	-	544 -
Stage 2	-	-	-	-	514 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	927	-	-	-	179 496
Mov Cap-2 Maneuver	-	-	-	-	179 -
Stage 1	-	-	-	-	522 -
Stage 2	-	-	-	-	514 -

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	20
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	927	-	-	-	318
HCM Lane V/C Ratio	0.04	-	-	-	0.25
HCM Control Delay (s)	9	-	-	-	20
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	1

Network Totals

Number of Intersections	6
Control Delay / Veh (s/v)	7
Queue Delay / Veh (s/v)	0
Total Delay / Veh (s/v)	7
Total Delay (hr)	16
Stops / Veh	0.23
Stops (#)	1850
Average Speed (mph)	22
Total Travel Time (hr)	59
Distance Traveled (mi)	1278
Fuel Consumed (gal)	75
Fuel Economy (mpg)	17.1
CO Emissions (kg)	5.23
NOx Emissions (kg)	1.02
VOC Emissions (kg)	1.21
Unserviced Vehicles (#)	0
Vehicles in dilemma zone (#)	0
Performance Index	21.5

Traffic Safety Benefit-Cost Calculation

Highway Safety Improvement Program (HSIP) Reactive Project



A. Roadway Description

Route	TH 5	District	Metro	County	Carver
Begin RP	TH 284	End RP	Main St	Miles	0.800
Location	City of Waconia				

B. Project Description

Proposed Work	Install raised median, curb & gutter, and pedestrian/bike facilities		
Project Cost*	\$11,275,900	Installation Year	2024
Project Service Life	20 years	Traffic Growth Factor	1.4%

* exclude Right of Way from Project Cost

C. Crash Modification Factor

0.29	Fatal (K) Crashes	Reference	CMF ID: 2219
0.29	Serious Injury (A) Crashes		
0.29	Moderate Injury (B) Crashes	Crash Type	All
0.29	Possible Injury (C) Crashes		
0.29	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	1/1/2019	End Date	12/31/2021	3 years
Data Source				
Crash Severity	All	< optional 2nd CMF >		
K crashes	1			
A crashes				
B crashes				
C crashes				
PDO crashes	7			

F. Benefit-Cost Calculation

\$8,080,386	Benefit (present value)	B/C Ratio = 0.72
\$11,275,900	Cost	

Proposed project expected to reduce 2 crashes annually, 1 of which involving fatality or serious injury.

F. Analysis Assumptions

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

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

Real Discount Rate: 0.7% Revised
 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	0.71	0.24	\$355,000
A crashes	0.00	0.00	\$0
B crashes	0.00	0.00	\$0
C crashes	0.00	0.00	\$0
PDO crashes	4.97	1.66	\$21,537
			\$376,537

H. Amortized Benefit

Year	Crash Benefits	Present Value
2024	\$376,537	\$376,537
2025	\$381,959	\$379,304
2026	\$387,459	\$382,091
2027	\$393,038	\$384,899
2028	\$398,698	\$387,727
2029	\$404,439	\$390,577
2030	\$410,263	\$393,447
2031	\$416,171	\$396,338
2032	\$422,164	\$399,250
2033	\$428,243	\$402,184
2034	\$434,410	\$405,140
2035	\$440,665	\$408,117
2036	\$447,011	\$411,116
2037	\$453,448	\$414,137
2038	\$459,978	\$417,181
2039	\$466,601	\$420,246
2040	\$473,320	\$423,334
2041	\$480,136	\$426,445
2042	\$487,050	\$429,579
2043	\$494,064	\$432,736
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
0	\$0	\$0
0	\$0	\$0
0	\$0	\$0
0	\$0	\$0

Total = \$8,080,386

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



CMF / CRF Details

CMF ID: 2219

Install raised median

Description:

Prior Condition: *No Prior Condition(s)*

Category: Access management

Study: [Correlating Access Management to Crash Rate, Severity, and Collision Type, Schultz et al., 2008](#)

Star Quality Rating:	
	<input type="text" value="X"/>

Crash Modification Factor (CMF)	
Value:	0.29
Adjusted Standard Error:	
Unadjusted Standard Error:	0.184

Crash Reduction Factor (CRF)	
Value:	70.77 (This value indicates a decrease in crashes)
Adjusted Standard Error:	
Unadjusted Standard Error:	18.37

Applicability

Crash Type:

All

Crash Severity:

All

Roadway Types:

Principal Arterial Other

Number of Lanes:

Road Division Type:

Speed Limit:

Area Type:

Urban

Traffic Volume:

1390 to 51200 *Average Daily Traffic (ADT)*

Time of Day:

All

If countermeasure is intersection-based

Intersection Type:

Intersection Geometry:

Traffic Control:

Major Road Traffic Volume:

Minor Road Traffic Volume:

Development Details

Date Range of Data Used:

2002 to 2004

Municipality:

State:

UT

Country:

Type of Methodology Used:

7

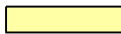







Sample Size Used:	525
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Other Details	
Included in Highway Safety Manual?	No
Date Added to Clearinghouse:	Dec-01-2009
Comments:	

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

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LEGEND

-  BITUMINOUS ROADWAY
-  CONCRETE MEDIANS, CURB & GUTTER
-  TURF
-  SIDEWALK
-  TRAIL
-  SHOULDER
-  POND
-  SIGNAL

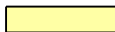






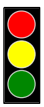


150
SCALE IN FEET



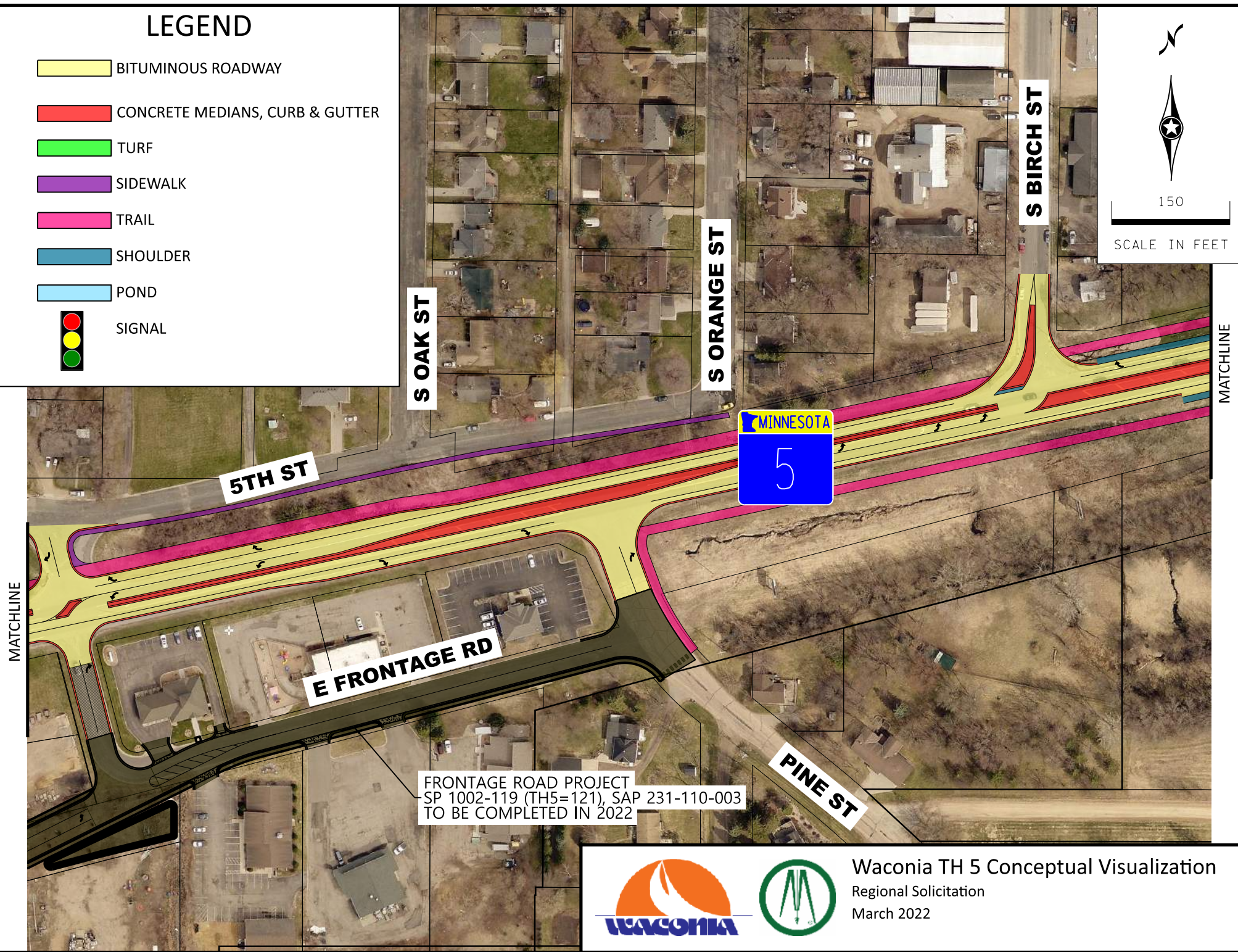
FRONTAGE ROAD PROJECT
SP 1002-119 (TH5=121)
SAP 231-110-003
TO BE COMPLETED IN 2022



Waconia TH 5 Conceptual Visualization
Regional Solicitation
March 2022

LEGEND

-  BITUMINOUS ROADWAY
-  CONCRETE MEDIANS, CURB & GUTTER
-  TURF
-  SIDEWALK
-  TRAIL
-  SHOULDER
-  POND
-  SIGNAL

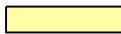









150
SCALE IN FEET

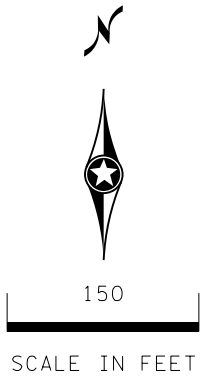
FRONTAGE ROAD PROJECT
SP 1002-119 (TH5=121), SAP 231-110-003
TO BE COMPLETED IN 2022



Waconia TH 5 Conceptual Visualization
Regional Solicitation
March 2022

LEGEND

-  BITUMINOUS ROADWAY
-  CONCRETE MEDIANS, CURB & GUTTER
-  TURF
-  SIDEWALK
-  TRAIL
-  SHOULDER
-  POND
-  SIGNAL





150
SCALE IN FEET

MATCHLINE



MAIN ST



Waconia TH 5 Conceptual Visualization
Regional Solicitation
March 2022



MINNESOTA
5

MAIN ST

HARTMANN DR

10TH ST

POTENTIAL ALIGNMENT
FRONTAGE ROAD EXTENSION TO MAIN ST.



400

SCALE IN FEET

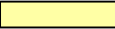






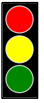
LEGEND

- BITUMINOUS ROADWAY
- CONCRETE MEDIANS, CURB & GUTTER
- TURF
- SIDEWALK
- TRAIL
- SHOULDER
- POND
- SIGNAL



Waconia TH 5 Conceptual Visualization
Future Improvements
March 2022

LEGEND

-  BITUMINOUS ROADWAY
-  CONCRETE MEDIANS, CURB & GUTTER
-  TURF
-  SIDEWALK
-  TRAIL
-  SHOULDER
-  POND
-  SIGNAL

LAKE WACONIA

PARADISE LN

MAIN ST



ALIGNMENT TRAIL EXTENSION
TO REGIONAL PARK



500

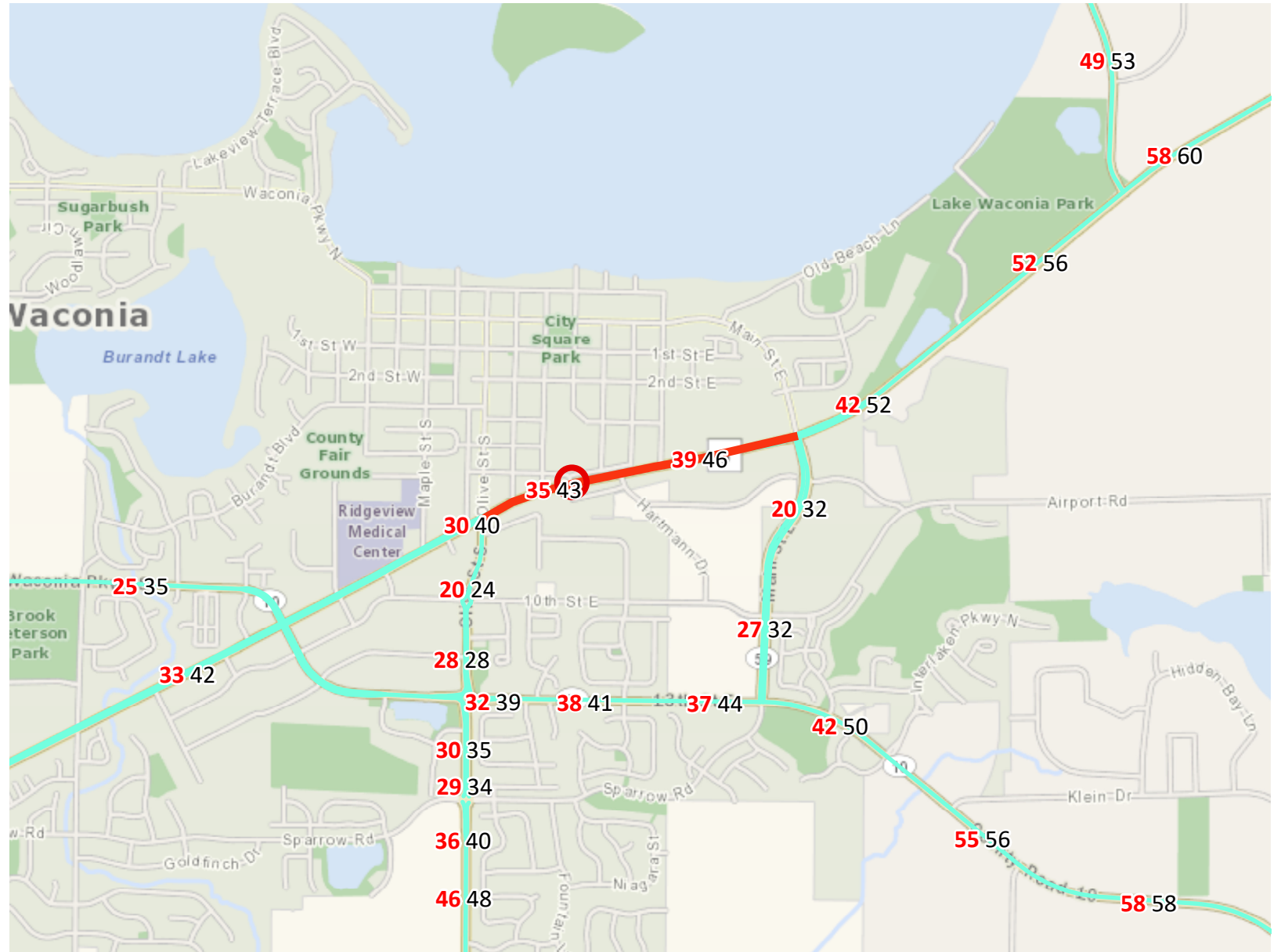
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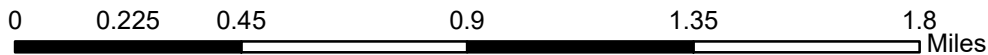
Waconia TH 5 Conceptual Visualization
Future Improvements
March 2022

Level of Congestion

Roadway Reconstruction/Modernization Project: Waconia TH 5 Phase 2 Reconstruction | Map ID: 1648754012624



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



Created: 3/31/2022
LandscapeRSA1



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Office of County Commissioners
Carver County Government Center
Human Services Building
602 East Fourth Street
Chaska, MN 55318-1202
Phone: 952 361-1510
Fax: 952 361-1581

April 12, 2022

Craig Eldred
Public Service Director
City of Waconia
310 East 10th Street

RE: Letter of Support for City of Waconia TH 5 Phase 2 Reconstruction Project 2022 Regional Solicitation Application

Dear Mr. Eldred,

Carver County supports the City of Waconia's pursuit for competitive funds through the Metropolitan Council's Regional Solicitation for the Highway 5 Phase 2 Reconstruction Project, which will reconstruct Highway 5 from east of Olive Street to Main Street. The proposed project will modernize the Trunk Highway by adding significant safety, incorporating access management, and constructing multimodal improvements for local and regional users.

This project will address roadway safety and condition to improve traffic and provide a modernized highway facility. Highway 5 is a route of regional significance for freight traffic and a critical connection to and from regional medical services. Multimodal improvements will also be regional in nature. This corridor is part of the Metropolitan Council's Regional Bicycle Transportation Network (RBTN) Tier 1 Alignment and identified in the County Comprehensive Plan as a future regional trail. Multimodal improvements will provide connectivity to the Dakota Rail Regional Trail, as well as additional Tier 1 and 2 RBTN alignments.

Carver County appreciates and supports the City of Waconia's efforts to secure funding and advance necessary improvements for Highway 5 reconstruction. The County recognizes the regional importance of this corridor, and it is eligible, per Board adopted list, to use County transportation sales tax funding to contribute towards the funding gap. We will continue to work closely with the City of Waconia through the development of this project.

Sincerely,

Commissioner Gayle Degler, Chair
Carver County Board of Commissioners



City of Waconia

April 4th, 2022

Craig Eldred
Public Service Director
City of Waconia
310 East 10th Street

Subject: Support for City of Waconia TH 5 Phase 2 Reconstruction Project

Dear Mr Eldred,

The purpose of this letter is to express strong support for the City of Waconia's pursuit for competitive funds. The City is pursuing funds for the Highway 5 Phase 2 Reconstruction Project which will reconstruct Highway 5 from east of Olive Street to Main Street.

At present, significant concerns exist for the safety of those who travel to, from, and around our community along this section of Highway 5. If successfully funded, this final phase trunk highway project will address decades of studies recognizing Highway 5 as one of the highest crash rate corridors in Carver County. Related to the safety issue is a mobility issue. We will address both safety and mobility by adding dedicated turn lanes, eliminating conflict points along the corridor, and reducing the severity of crashes through access management planning.

Our community's 2040 Comprehensive Plan, and the 2030 plan before it, specifically identified access management on Highway 5 and pedestrian and bicycle network improvements as priorities. As such this project will build of recent investments made by the city to reconstruct the East Frontage Road to the south which provides new access point to the existing highway commercial businesses from the frontage road and allows this project to close all private driveway access points onto the trunk highway. In addition, this project will balance roadway capacity improvement with multimodal transportation goals by incorporating a multiuse trail the entire length of the Highway 5 project from Olive to Main Streets. This will add dedicated pedestrian and bicycle facilities where none currently exist along Highway 5, creating critical connections to both existing and planned multi modal facilities.

City Hall
201 South Vine Street
Waconia, MN 55387
952-442-2184

Public Services
310 10th Street East
Waconia, MN 55387
952-442-2615

Fire Station
26 Maple Street South
Waconia, MN 55387
952-442-2316

Safari Island Community Center
1600 Community Drive
Waconia, MN 55387
952-442-0695

Ice Arena
1250 Oak Avenue
Waconia, MN 55387
952-442-RINK (7465)

Page 2

This project is our community's top transportation priority. If funded, the improvements will benefit residents of Waconia and the entire region. On behalf of the City of Waconia, we greatly appreciate your consideration of the City's funding request.

Sincerely,

A handwritten signature in black ink, appearing to read 'Kent Bloudek', with a long horizontal flourish extending to the right.

Kent Bloudek

Mayor,
City of Waconia



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

April 12, 2022

Daniel Lonnes, P.E.
Bolton & Menk, Inc, on behalf of,
City of Waconia

**Re: MnDOT Letter for Waconia's Metropolitan Council/Transportation Advisory Board
2022 Regional Solicitation Funding Request for TH 5 Phase 2 Reconstruction Project**

Daniel Lonnes,

This letter documents MnDOT Metro District's recognition for the City of Waconia to pursue funding for the Metropolitan Council/Transportation Advisory Board's (TAB) 2022 Regional Solicitation for TH 5 Phase 2 Reconstruction Project.

As proposed, this project impacts MnDOT right-of-way on TH 5. As the agency with jurisdiction over TH 5, MnDOT will allow Waconia to seek improvements proposed in the application. Details of any future maintenance agreement with the City will need to be determined during the project development to define how the improvements will be maintained for the project's useful life if the project receives funding.

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

MnDOT Metro District looks forward to continued cooperation with Waconia 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 South Area Manager Ryan Wilson at ryan.wilson@state.mn.us or 651-234-7718.

Sincerely,

Michael Barnes, PE
Metro District Engineer

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

TOM EMMER
6TH DISTRICT, MINNESOTA

COMMITTEES
FINANCIAL SERVICES
SUBCOMMITTEES
INVESTOR PROTECTION,
ENTREPRENEURSHIP AND
CAPITAL MARKETS

NATIONAL SECURITY, INTERNATIONAL
DEVELOPMENT AND MONETARY POLICY

Congress of the United States
House of Representatives
Washington, DC 20515-2306

315 CANNON HOUSE OFFICE BUILDING
WASHINGTON, DC 20515
(202) 225-2331

DISTRICT OFFICE
9201 QUADAY AVENUE NE
SUITE 206
OTSEGO, MN 55330
(763) 241-6848

HOUSE REPUBLICAN STEERING

REPUBLICAN WHIP TEAM

DEPUTY WHIP TEAM

April 14, 2022,

Shane Fineran
City Administrator
City of Waconia
310 East 10th Street

Subject: Support for City of Waconia TH 5 Phase 2 Reconstruction Project

Dear Shane,

I am pleased to offer my support for the Highway 5 Phase 2 Reconstruction Project in the City of Waconia. In a time of much change, there is a great need for modern, safe, multimodal transportation facilities to serve public interests. The Highway 5 Phase 2 Reconstruction Project effort by the City of Waconia, in conjunction with MnDOT, Carver County, and local businesses, is a necessary and critical improvement in this region.

The project will address significant safety concerns and mobility constraints along the Highway 5 corridor. I understand that Highway 5 is a highly travelled route providing critical access to Ridgeview Medical Center, a regional destination park, area schools, emergency services, and regional freight routes. The current access conditions, crash history, and capacity limits continue to challenge the significant growth potential in the area. This second phase of improvement along Highway 5 in Waconia will continue a decade-long effort to facilitate job growth, reduce dangerous crashes, and improve highway function for the public.

In addition to improving the roadway for people traveling by car, the Highway 5 Phase 2 Reconstruction Project will add important local and regional connections for people who walk and bike. The trail proposed along the length of this project will add dedicated pedestrian and bicycle facilities where none currently exist along Highway 5. Destinations such as work, school, services, and recreation will be made accessible by creating critical connections to the greater multimodal transportation system.

I would like to offer my full support to the City of Waconia and all project partners for the Highway 5 Phase 2 Reconstruction Project and offer my assistance in helping make these improvements a reality.

Sincerely,



Tom Emmer
Member of Congress

April 4, 2022

Ridgeview Medical Center
500 South Maple Street
Waconia, MN 55387

Craig Eldred
Public Service Director
City of Waconia
310 East 10th Street

Subject: Support for City of Waconia TH 5 Phase 2 Reconstruction Project

Dear Mr. Eldred,

Ridgeview fully supports the City of Waconia's pursuit for competitive funds regarding the Highway 5 Phase 2 Reconstruction Project between Olive and Main Streets.

Ridgeview is an independent, regional health care network, serving the west-metro area and beyond. Its network includes the 109 bed Waconia-based acute care hospital, primary and specialty care clinics, emergency services and specialty programs located on the north side of Highway 5 near the project area. Ridgeview has and continues to expand its mission to provide high quality healthcare for the local community as well as the region by providing services not available in smaller neighboring communities.

Ridgeview is the largest employer in Carver County with over 2300 employees. As a result of regional growth and associated healthcare needs, Ridgeview continues to develop facilities and programming to support the demand. Ridgeview's latest expansion was completed in 2019 which included significant capital investment in the medical campus.

The proposed Highway 5 Phase 2 Reconstruction Project will improve the efficiency and safety for local and regional employees, patients, and visitors traveling to or from our facility. We know Highway 5 has one of the highest crash rate corridors in Carver County. Consequently, this impacts the reliability of access to our facilities when in need.

Ridgeview also recognizes the importance of the separated bike and pedestrian facility proposed with this project and acknowledges the positive health impacts that this can bring residents and visitors in the community.

We appreciate the opportunity to express our support for the City of Waconia's efforts to secure funding for Highway 5 Phase 2 Reconstruction and strongly support the funding request.

Sincerely,



Mike Phelps
President/CEO Ridgeview



209 South Vine Street • Waconia MN 55387 • 952.442.5812 • DestinationWaconia.org

March 30, 2022

Craig Eldred
Public Service Director
City of Waconia

Re: Support for City of Waconia TH 5 Phase 2 Reconstruction Project

Dear Mr. Eldred,

The Waconia Chamber of Commerce strongly supports the City of Waconia's funding request for the Highway 5 Phase 2 Reconstruction Project. This project is critical to the continued economic growth and retention of existing businesses in Waconia. Highway 5 serves as a primary connection to and between commercial and industrial in the city along with Ridgeview Medical Center. Businesses in Waconia don't just provide wonderful amenities to local residents, they rely on this corridor to serve the wider region.

Concerns exist for the safety of those who travel to, from, and around our community along Highway 5. In addition, safety and mobility issues reduce the ability of this corridor to provide a safe and efficient connection for those looking to do business, or grow their business, in our community. The proposed project will address the existing issues for all who drive, walk, and bike.

The Highway 5 Phase 2 Project will also allow for future realignment and build out of the adjacent local road network in support of continued commercial and industrial growth in areas south of the project that are prime for development. We expect that this will improve the comfort and aesthetics for travel within our community, thereby continuing to increase the potential for economic development.

The Chamber is aware and supportive of businesses that have partnered with the City to discuss access management in support of this project. We feel that this project balances the local and regional need for safety and mobility improvements with access for our local businesses.

The City of Waconia has the Chamber's full support in its efforts to deliver the proposed Highway 5 Phase 2 improvements.

Sincerely,

Christine Fenner
President, Waconia Chamber of Commerce



March 31, 2022

Attn: Craig Eldred
Public Service Director
City of Waconia
310 East 10th St.

Re: Support for City of Waconia TH 5 Phase 2 Reconstruction Project

Dear Mr Eldred,

The Waconia School District strongly supports the City's effort to obtain funding for the Highway 5 Phase 2 Reconstruction Project. Highway 5 is a corridor of critical importance in terms of getting students, teachers, parents, and visitors to and from our schools. As Superintendent of Waconia Public Schools, I understand the importance of ensuring safe travel to and from our schools. Our students depend on safe travel in order to attend school and complete their education.

We strongly support the City's effort for increased safety and mobility improvements proposed. The project will support safe, efficient travel for parents, students, and buses to our schools by adding dedicated turn lanes, eliminating conflict points, and reducing the severity of crashes through access management planning. Many students, faculty, and visitors utilize Highway 5 every day. The improvements of both the roadway and pedestrian facilities along Highway 5 will greatly improve the mobility of students and their families while safely traveling to and from school each day.

We are dedicated to our supportive partnership with the City of Waconia in implementing changes that will improve our community and provide opportunities to increase the safety and mobility of our students. We are very excited to see continued effort to improve pedestrian and bike connectivity in the community. This will be accomplished by incorporating a multi-use trail the entire length of the Highway 5 project from Olive to Main Streets where no such connection presently exists. More bike and pedestrian options will provide additional opportunities for non-motorized travel to school and promote active lifestyle choices to benefit students of all ages.

We thank the City of Waconia for their efforts to improve this vital corridor within our community and for the opportunity to express our support.

Sincerely,

Patrick O. Devine
Superintendent of Schools
ISD 110, Waconia Public Schools
Cell #: 612-208-5507



TH 5 Reconstruction CITY OF WACONIA

Project Name: TH 5 Reconstruction

Applicant: City of Waconia

Primary Contact:

Craig Eldred
Public Services Director
310 10th Street East,
Waconia, MN 55381
celdred@waconia.org
952-442-4265



Location & Route:

TH 5 from Olive St. to Main St.



Application Category:

Roadway Reconstruction/Modernization



Funding Information:

Requested Award Amount: \$7,000,000

Local Match: \$4,275,900

Total Project Cost: \$11,275,900



Additional Funding Sources:

- City of Waconia Local Funds



Project Area Fast Facts:

- 6113 jobs
- 5 schools serving 1450 students
- 10.2% of residents already walk, roll, or bike to work
- 397 units of publicly subsidized or naturally occurring affordable housing for over 1,000 residents

Project Description

The City of Waconia is seeking funds to fully reconstruct highway 5, a project that represents several decades of community effort to improve and modernize the roadway for all users. TH 5 is an A Minor Arterial, which the City will reconstruct from Olive to Main Streets. Phase 2 will finish a reconstruction effort that was first started in 2015 with the completion of Phase 1, which modernized a segment of TH 5 directly west of project limits.

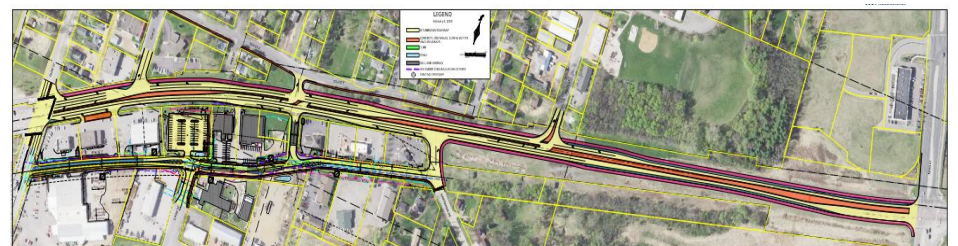
This final phase of the trunk highway project will address decades of studies recognizing Highway 5 as one of the highest crash rate corridors in Carver County (Carver County 2040 Comprehensive Plan). The project will address both safety and mobility issues by adding dedicated turn lanes, eliminating conflict points along the corridor, and reducing the severity of crashes through significant access management planning and the completion of a multiuse trail for pedestrians and cyclists. The project will bring TH 5 closer into compliance with numerous MnDOT standards as the corridor is converted from a rural to an urban section.



Benefits to the Community

Enhancements to the roadway are designed to provide safer conditions and reduce travel times through access management, eliminating left-hand turning movements onto the roadway, incorporating a median, reducing lane widths. As demonstrated in Phase 1, these improvements are expected to reduce speeds while maintaining roadway capacity. This will add to the reliability of the TH 5 corridor for those who travel it daily for work and school.

The project will significantly advance transportation goals by incorporating a multiuse trail the entire length of the Highway 5 project from Olive to Main Streets. This is a critical connection that will link Waconia Public Schools, Ridgeview's regional Health Center, and historic Downtown Waconia to Lake Waconia Regional Park and quickly developing neighborhoods in the southeast area of the city.



<https://www.waconia.org/151/Public-Services>

Regional Economy

Results

WITHIN ONE MI of project:
Postsecondary Students: 0

Totals by City:

Laketown Twp.

Population: 583

Employment: 15

Mfg and Dist Employment: 0

Waconia

Population: 6267

Employment: 5748

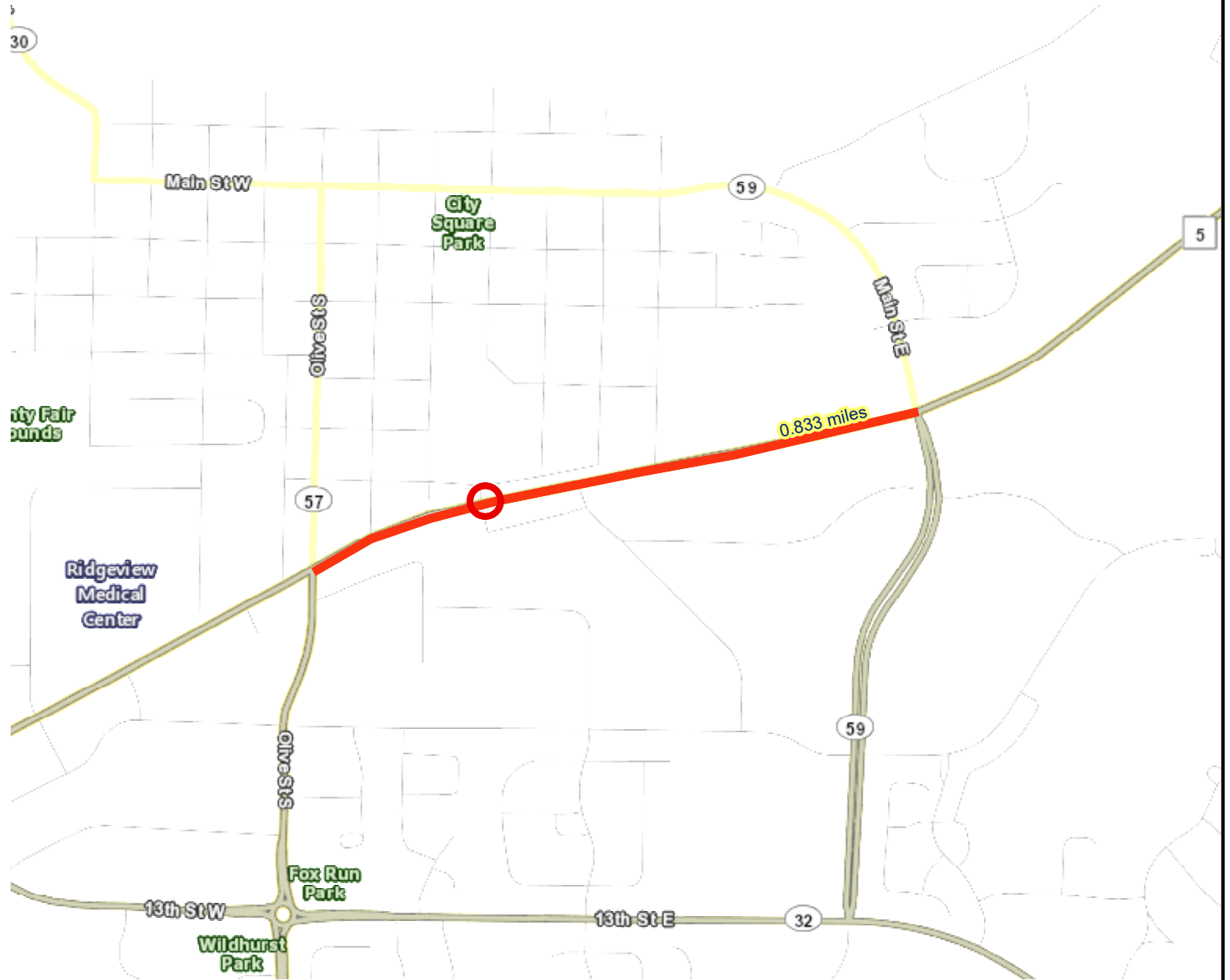
Mfg and Dist Employment: 1343

Waconia Twp.

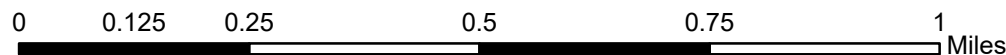
Population: 4091

Employment: 350

Mfg and Dist Employment: 20



- Project Points
- Manufacturing/Distribution Centers
- Job Concentration Centers
- Project



Created: 3/31/2022
LandscapeRSA5



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

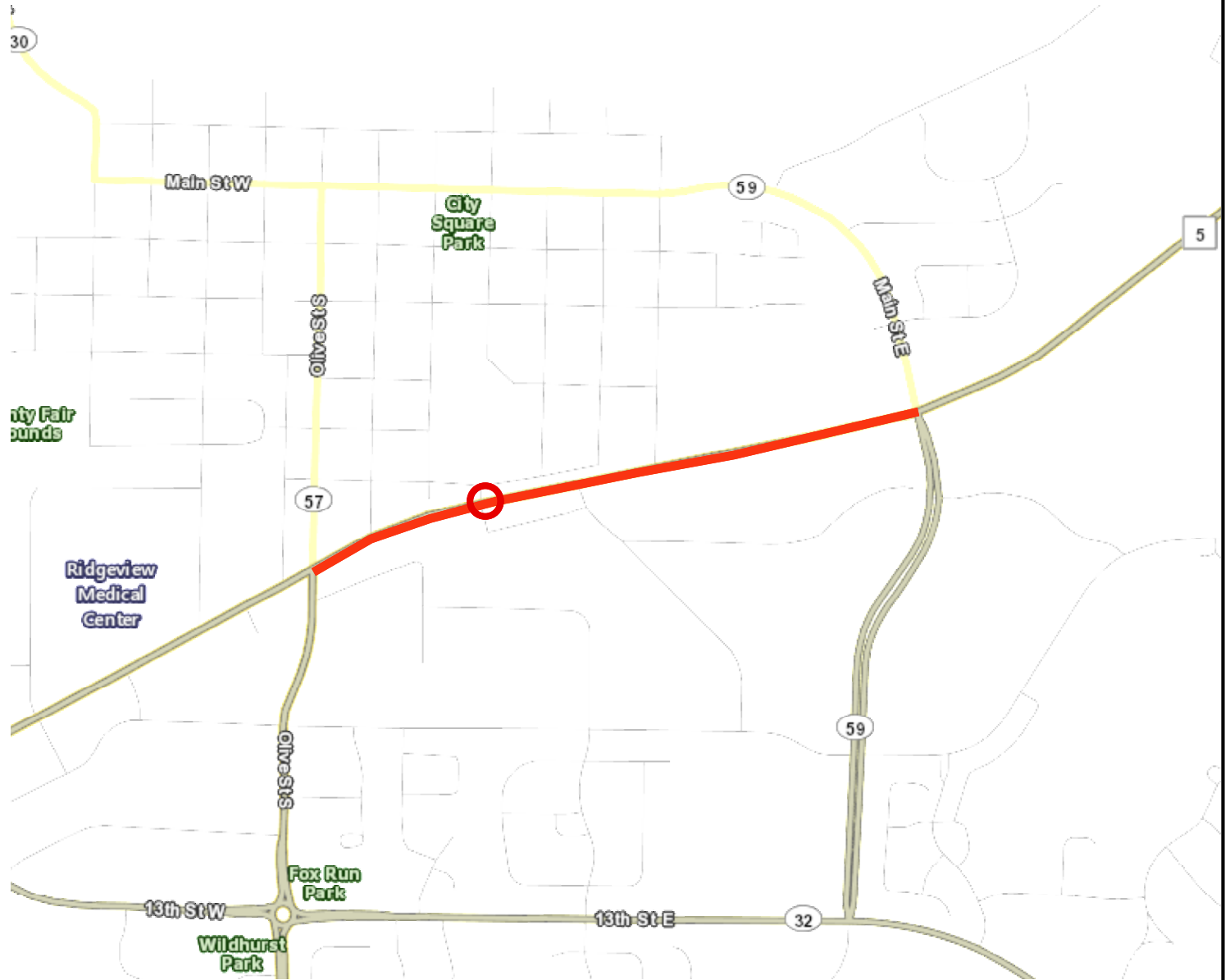


Socio-Economic Conditions

Results

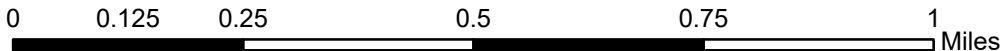
Total of publicly subsidized rental housing units in census tracts within 1/2 mile: 301

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



○ Points ■ Area of Concentrated Poverty

— Lines



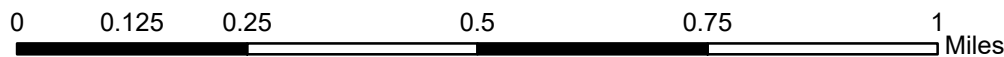
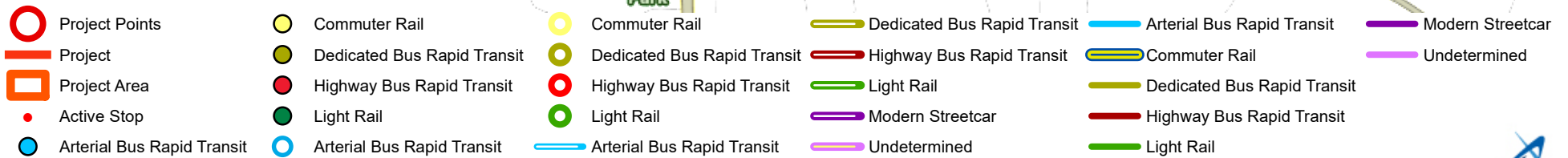
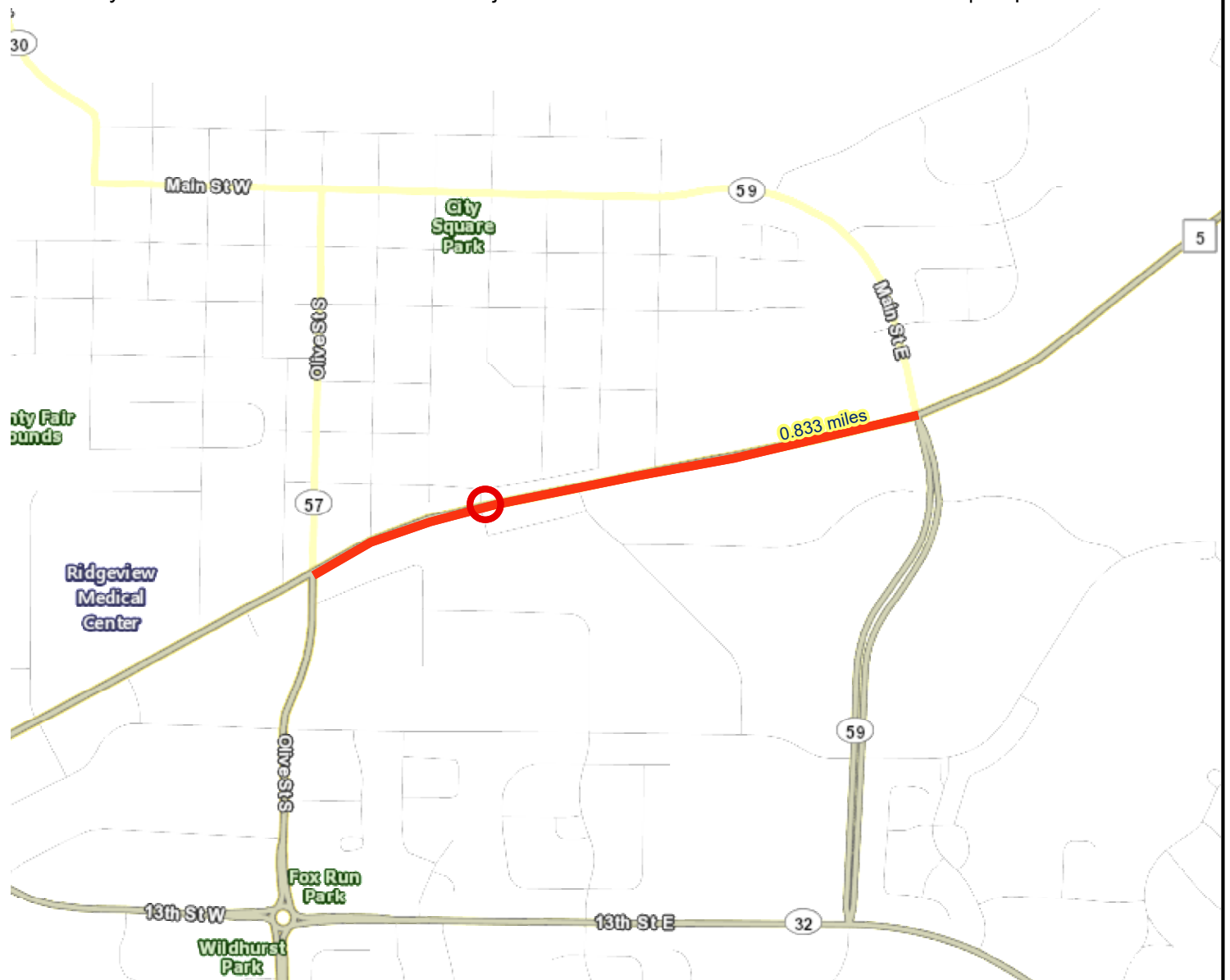
Transit Connections

Results

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

*indicates Planned Alignments

Transit Market areas: 4



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LandscapeRSA3



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