Application

13862 - 2020 Roadway Spot Mobility

14292 - Signal and Intersection Geometric Improvements at Hennepin County 13 and 144

Regional Solicitation - Roadways Including Multimodal Elements

Status:	Submitted
Submitted Date:	05/15/2020 1:00 PM

Primary Contact

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

Organization Information

Name:	ROGERS, CITY OF

Jurisdictional Agency (if different):	
Organization Type:	City
Organization Website:	
Address:	22350 S DIAMOND LAKE RD
*	ROGERS (City) Minnesota (State/Province) 55374 (Postal Code/Zip)
County:	Hennepin
Phone:*	763-428-8580 Ext.
Fax:	
PeopleSoft Vendor Number	0000006587A3

Project Information

Project Name	CSAH 144 and CSAH 13 Signal & Intersection Geometric Improvements
Primary County where the Project is Located	Hennepin
Cities or Townships where the Project is Located:	City of Rogers
Jurisdictional Agency (If Different than the Applicant):	Hennepin County

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

The City of Rogers is proposing signal and geometric improvements at the intersection of CSAH 144 and CSAH 13 and turn lane improvements at Savannah Drive and Harmony Avenue to the immediate west and south of CSAH 144/CSAH 13.

The proposed project will replace the existing four way stop control at CSAH 144/CSAH 13 with a traffic signal, raised center median and dedicated left, right and thru lanes for all intersection approaches. Left and right turn lanes will also be constructed at Harmony Avenue to the south and right turn lanes will be constructed Savannah Drive to the west.

The intersection improvements will also include a 10-foot multiuse trail on the south side of CSAH 144 from Mallard Drive to Monarch Lane and 10-foot shoulders to accommodate bicycle and pedestrian traffic along CSAH 144 and CSAH 13.

CSAH 144 is an east-west B Minor Arterial road that carries 5,300 vehicles per day (vpd). CSAH 13, a north-south A Minor Arterial, carries up to 4,650 vpd. Both CSAH 144 and CSAH 13 are 2-lane undivided rural roadways in the City of Rogers. In the City's 2040 Comprehensive Plan, the City is expecting vpd to increase drastically on both of the roadways. CSAH 144's 2040 traffic forecast is expected to reach 8,600 vpd while CSAH 13's 2040 traffic forecast is expected to reach 10,100 vpd by 2040, more than double the current vpd. With these drastic increases in traffic volumes, the proposed project's intersection improvement will enhance safety, mobility, and accessibility for all roadways users.

Commuters frequently use this route as a bypass of I-94 congestion. In the process, when they come to the 4 way stop, if it is tied up, they cut through adjacent neighborhoods, which is extremely unsafe.

Non-motorist will also benefit from the intersection improvement. The 10-foot multiuse trail will enhance safety for pedestrians and bicyclists. The striped pedestrian crossing across the south leg of CSAH 13 will improve access and trail connections while ensuring the safety of non-motorists.

(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. Signal and Intersection Geometric Improvements

Project Length (Miles) 0.79

to the nearest one-tenth of a mile

Project Funding

Are you applying for competitive funds from another source(s) to implement this project? No

If yes, please identify the source(s)

Federal Amount $1,747,512.00

Match Amount $436,878.00

Minimum of 20% of project total

Project Total $2,184,390.00

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

Match Percentage 20.0%

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

Source of Match Funds City of Rogers

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: 2025

Select 2022 or 2023 for TDM projects only. For all other applications, select 2024 or 2025.

Additional Program Years:

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

Project Information: Roadway Projects

County, City, or Lead Agency	City of Rogers
Functional Class of Road	B Minor Arterial (CSAH 144) and A Minor Arterial (CSAH 13)
Road System	CSAH
TH, CSAH, MSAS, CO. RD., TWP. RD., CITY STREET	
Road/Route No.	144
i.e., 53 for CSAH 53	
Name of Road	141st Avenue (CSAH 144) and Brockton Lane (CSAH 13)
Example; 1st ST., MAIN AVE	
Zip Code where Majority of Work is Being Performed	55374
(Approximate) Begin Construction Date	05/01/2025
(Approximate) End Construction Date	11/01/2025

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

From: **(Intersection or Address)**	
To: **(Intersection or Address)**	
DO NOT INCLUDE LEGAL DESCRIPTION	
Or At	Intersection of CSAH 144 and CSAH 13
Miles of Sidewalk (nearest 0.1 miles)	0
Miles of Trail (nearest 0.1 miles)	0.3
Miles of Trail on the Regional Bicycle Transportation Network (nearest 0.1 miles)	0
Primary Types of Work	GRADE, AGG BASE, BIT SURF, BIKE TRAIL, CURB, GUTTER, STORM SEWER, TRAFFIC SIGNALS, LIGHTING

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

BRIDGE/CULVERT PROJECTS (IF APPLICABLE)

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

Requirements - All Projects

All Projects

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

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

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

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

B1-Regional transportation partners will incorporate safety and security considerations for all modes and users throughout the processes of planning, funding, construction, and operation.

B6-Regional transportation partners will use best practices to provide and improve facilities for safe walking and bicycling, since pedestrians and bicyclists are the most vulnerable users of the transportation system.

C9-The Metropolitan Council will support investments in A-minor arterials that build, manage, or improve the system's ability to supplement the capacity of the Principal Arterial system and support access to the region's job, activity and industrial and manufacturing concentrations.

C16-Regional transportation partners should fund projects that improve key regional bicycle barrier crossing locations, provide for pedestrian travel across barriers, and/or improve continuity of bicycle and pedestrian facilities between jurisdictions.

Limit 2,800 characters, approximately 400 words

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

-City's 2040 Comprehensive Plan (Chapter 9, page 142): identified the need to address over capacity on CSAH 144 and manage access and traffic due to over capacity (attached)

List the applicable documents and pages:

-City of Rogers Capital Improvement Program (attached)

-Northwest Hennepin County I-94 Sub-Area Transportation Study (attached)

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.

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

5.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.
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): *$250,000 to $3,500,000*
Spot Mobility and Safety: *$1,000,000 to $3,500,000*
Bridges Rehabilitation/Replacement: *$1,000,000 to $7,000,000*

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

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

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

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

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

Date plan completed: 04/02/2020

Link to plan: https://static1.squarespace.com/static/5c54bb97d74562fede1b6ab4/t/5e9f0542e7e6c265a74ed094/1587479878121/Rogers_ADA_Transition_Plan.pdf

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

Date self-evaluation completed:

Link to plan:

Upload plan or self-evaluation if there is no link

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.

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 Expansion and Reconstruction/Modernization and Spot Mobility projects only:

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

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

Bridge Rehabilitation/Replacement and Strategic Capacity projects only:

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

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

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

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

Bridge Rehabilitation/Replacement projects only:

5.The length of the bridge must equal or 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)	$131,350.00
Removals (approx. 5% of total cost)	$88,600.00
Roadway (grading, borrow, etc.)	$323,200.00
Roadway (aggregates and paving)	$603,100.00
Subgrade Correction (muck)	$122,000.00
Storm Sewer	$200,000.00
Ponds	$0.00
Concrete Items (curb & gutter, sidewalks, median barriers)	$68,600.00
Traffic Control	$60,000.00
Striping	$14,035.00
Signing	$42,105.00
Lighting	$0.00
Turf - Erosion & Landscaping	$85,000.00
Bridge	$0.00
Retaining Walls	$0.00

Noise Wall (not calculated in cost effectiveness measure)	$0.00
Traffic Signals	$225,000.00
Wetland Mitigation	$0.00
Other Natural and Cultural Resource Protection	$0.00
RR Crossing	$0.00
Roadway Contingencies	$104,100.00
Other Roadway Elements	$0.00
Totals	**$2,067,090.00**

Specific Bicycle and Pedestrian Elements

CONSTRUCTION PROJECT ELEMENTS/COST ESTIMATES	**Cost**
Path/Trail Construction	$117,300.00
Sidewalk Construction	$0.00
On-Street Bicycle Facility Construction	$0.00
Right-of-Way	$0.00
Pedestrian Curb Ramps (ADA)	$0.00
Crossing Aids (e.g., Audible Pedestrian Signals, HAWK)	$0.00
Pedestrian-scale Lighting	$0.00
Streetscaping	$0.00
Wayfinding	$0.00
Bicycle and Pedestrian Contingencies	$0.00
Other Bicycle and Pedestrian Elements	$0.00
Totals	**$117,300.00**

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	$2,184,390.00
Construction Cost Total	$2,184,390.00
Transit Operating Cost Total	$0.00

Congestion within Project Area:

Free-Flow Travel Speed: 42

The free-flow travel speed is the black number

Peak Hour Travel Speed: 30

The peak hour travel speed is the red number

Percentage Decrease in Travel Speed in Peak Hour Compared to Free-Flow (calculation): 28.57%

Upload the "Level of Congestion" map: 1588957613797_CSAH144-CSAH13_LevelofCongestion.pdf

Congestion on adjacent Parallel Routes:

Adjacent Parallel Corridor TH 101

Adjacent Parallel Corridor Start and End Points:

Start Point: CSAH 144

End Point: Marie Avenue

Free-Flow Travel Speed: 62

The Free-Flow Travel Speed is black number.

Peak Hour Travel Speed: 57

The Peak-Hour Travel Speed is red number.

Percentage Decrease in Travel Speed in Peak Hour Compared to Free-Flow (calculation): 8.06%

Upload the "Level of Congestion" map: 1588957613784_CSAH144-CSAH13_LevelofCongestionParallelRoute.pdf

Principal Arterial Intersection Conversion Study:

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

(100 Points)

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

(90 Points)

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

(80 Points)

Not listed as a priority in the study: Yes

(0 Points)

Congestion Management and Safety Plan IV:

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

(100 Points)

Not listed as a CMSP priority location: Yes

(0 Points)

Measure C: Current Heavy Commercial Traffic

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

Along Tier 1:

Miles: 0

(to the nearest 0.1 miles)

Along Tier 2:

Miles: 0

(to the nearest 0.1 miles)

Along Tier 3:

Miles: 0

(to the nearest 0.1 miles)

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

None of the tiers: Yes

Measure A: Connection to disadvantaged populations and projects benefits, impacts, and mitigation

*1.**Sub-measure**: Equity Population Engagement: A successful project is one that is the result of active engagement of low-income populations, people of color, persons with disabilities, youth and the elderly. Engagement should occur prior to and during a projects development, with the intent to provide direct benefits to, or solve, an expressed transportation issue, while also limiting and mitigating any negative impacts. Describe and map the location of any low-income populations, people of color, disabled populations, youth or the elderly within a ½ mile of the proposed project. Describe how these specific populations were engaged and provided outreach to, whether through community planning efforts, project needs identification, or during the project development process. Describe what engagement methods and tools were used and how the input is reflected in the projects purpose and need and design. Elements of quality engagement include: outreach and engagement to specific communities and populations that are likely to be directly impacted by the project; techniques to reach out to populations traditionally not involved in community engagement related to transportation projects; feedback from these populations identifying potential positive and negative elements of the proposed project through engagement, study recommendations, or plans that provide feedback from populations that may be impacted by the proposed project. If relevant, describe how NEPA or Title VI regulations will guide engagement activities.*

Response:

Although the proposed project is located in a census tract that is below the regional average for the populations identified above, these individuals are still present in the project area. According to ACS 2013-2017 5-year estimates, the population within ½ mile of the proposed project is approximately 11 percent minority, 33 percent younger than age 18, 12 percent age 65 and older, and 6 percent with household income of $25,000 or less (Attachment A). As outlined in the 2040 Comprehensive Plan, the Community Vision for the City of Rogers is as follows:

-Rogers is a community of choice for living and learning with attainable housing for all persons, vibrant neighborhoods, and academically inclusive schools.

-Rogers is a community of equal economic opportunity with a creative workforce and diverse employment options, and linked transport systems that enable job mobility for workers close to home.

-Rogers is a community of quality environments with treasured places and distinct open spaces that enrich our heritage and life experiences and contribute to our physical health and shape our social connections.

(Limit 2,800 characters; approximately 400 words)

*2.**Sub-measure**: Equity Population Benefits and Impacts: A successful project is one that has been designed to provide direct benefits to low-income populations, people of color, persons with disabilities, youth and the elderly. All projects must mitigate potential negative benefits as required under federal law. Projects that are designed to provide benefits go beyond the mitigation requirement to proactively provide transportation benefits and solve transportation issues experienced by Equity populations.*

a.Describe the projects benefits to low-income populations, people of color, children, people with disabilities, and the elderly. Benefits could relate to pedestrian and bicycle safety improvements; public health benefits; direct access improvements for residents or improved access to destinations such as jobs, school, health care or other; travel time improvements; gap closures; new transportation services or modal options, leveraging of other beneficial projects and investments; and/or community connection and cohesion improvements. Note that this is not an exhaustive list.

Response:

Although the proposed project is located in a census tract that is below the regional average for the populations identified above, these individuals are still present in the project area, as shown in the ACS data provided previously. These groups will see several benefits from the proposed project.

As described in the "Multimodal Elements" section, the proposed project includes a 10-foot bituminous trail along the south side of CSAH 144 from Mallard Dr to Monarch Ln as well as six-foot roadway shoulders. These project elements will improve non-motorized accessibility and safety for populations that rely on walking and biking.

The existing bituminous trail along the south side of CSAH 144 beginning at Mallard Dr provides a non-motorized connection west to Rogers Middle School, Rogers High School, North Community Park, and commercial and industrial areas near TH 101 (see Attachment B). Implementation of the proposed trail will create a fully separated facility that improves non-motorized access to these key destinations for the residential areas on the south side of CSAH 144 in the project area.

Full separation provides the safest and most comfortable experience for the largest number of potential non-motorized users. This is especially important for vulnerable users such as children, who may use the proposed facility to walk or bike to the schools identified above. In addition to the proposed trail, the intersection improvements will include six-foot shoulders to accommodate bicycle and pedestrian traffic along CSAH 144 and CSAH 13 in the project area. These roadways do not currently provide paved shoulders of a sufficient width to safely accommodate non-motorized users.

The population groups identified above are disproportionately affected by crashes as well as poor air quality. The proposed project will provide traffic safety and emissions reduction benefits to the project area. Installation of a traffic signal and raised median will reduce crashes by 0.88 crashes annually. This will provide a safety benefit to individuals passing through the intersection to access the park and school destinations noted above. Roughly 86% of Rogers residents travel to work using a car, truck, or van (Minnesota Compass). Given the number of residents that rely on motor vehicles for transportation, safety improvements are key to reducing traffic impacts to equity populations. In addition to safety benefits, emissions will be reduced by 38 percent due to a reduction in the number of stops made by vehicles passing through the intersection.

(Limit 2,800 characters; approximately 400 words)

b. Describe any negative impacts to low-income populations, people of color, children, people with disabilities, and the elderly created by the project, along with measures that will be taken to mitigate them. Negative impacts that are not adequately mitigated can result in a reduction in points.

Below is a list of negative impacts. Note that this is not an exhaustive list.

Increased difficulty in street crossing caused by increased roadway width, increased traffic speed, wider turning radii, or other elements that negatively impact pedestrian access.

Increased noise.

Decreased pedestrian access through sidewalk removal / narrowing, placement of barriers along the walking path, increase in auto-oriented curb cuts, etc.

Project elements that are detrimental to location-based air quality by increasing stop/start activity at intersections, creating vehicle idling areas, directing an increased number of vehicles to a particular point, etc.

Increased speed and/or cut-through traffic.

Removed or diminished safe bicycle access.

Inclusion of some other barrier to access to jobs and other destinations.

Displacement of residents and businesses.

Mitigation of temporary construction/implementation impacts such as dust; noise; reduced access for travelers and to businesses; disruption of utilities; and eliminated street crossings.

Other

Response:

The proposed project will not disproportionately impact disadvantaged populations. Access to residential and commercial properties adjacent to the proposed project will be maintained during construction. Temporary impacts related to additional noise, dust and traffic during construction will be mitigated to the maximum extent feasible. The City will require the contractor to utilize best management practices for dust, erosion, and traffic control and follow local ordinances to ensure all relevant noise regulations are met. The City will use detours to discourage cut-through traffic on local neighborhood streets that could impact the residential areas near the proposed project.

Project construction is expected to require a small amount of additional right of way from adjacent properties. However, no businesses or residences will be displaced. The project will be designed to minimize property impacts as much as possible. The City will work directly with property owners whose properties may potentially be impacted by the project. Owners will be compensated consistent with federal requirements. Property impacts are not expected to disproportionately affect disadvantaged populations.

(Limit 2,800 characters; approximately 400 words)

Select one:

*3.**Sub-measure: Bonus Points** Those projects that score at least 80% of the maximum total points available through sub-measures 1 and 2 will be awarded bonus points based on the geographic location of the project. These points will be assigned as follows, based on the highest-scoring geography the project contacts:*

a.25 points to projects within an Area of Concentrated Poverty with 50% or more people of color

b.20 points to projects within an Area of Concentrated Poverty

c.15 points to projects within census tracts with the percent of population in poverty or population of color above the regional average percent

d.10 points for all other areas

Project is located in an Area of Concentrated Poverty where 50% or more of residents are people of color (ACP50):

Project located in Area of Concentrated Poverty:

Projects census tracts are above the regional average for population in poverty or population of color:

Project located in a census tract that is below the regional average for population in poverty or populations of color or includes children, people with disabilities, or the elderly:	Yes

(up to 40% of maximum score)

Upload the "Socio-Economic Conditions" map used for this measure. The second map created for sub measure A1 can be uploaded on the Other Attachments Form, or can be combined with the "Socio-Economic Conditions" map into a single PDF and uploaded here.

Upload Map	1588958443497_CSAH144-CSAH13_Socio-Economic.pdf

Measure B: Part 1: Housing Performance Score

City	Segment Length (For stand-alone projects, enter population from Regional Economy map) within each City/Township	Segment Length/Total Project Length	Score	Housing Score Multiplied by Segment percent
Rogers	2589.0	0.76	20.0	15.101
Dayton	840.0	0.24	44.0	10.779

Total Project Length

Total Project Length	0.79

Project length entered on the Project Information - General form.

Housing Performance Score

Total Project Length (Miles) or Population	3429.0
Total Housing Score	25.88

Affordable Housing Scoring

Part 2: Affordable Housing Access

Reference Access to Affordable Housing Guidance located under Regional Solicitation Resources for information on how to respond to this measure and create the map.
If text box is not showing, click Edit or "Add" in top right of page.

Response:	There are no existing, planned, or under construction affordable housing developments within ½ mile of the proposed project.

(Limit 2,100 characters; approximately 300 words)

Upload map:

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
47.0	13.0	34.0	1074	1074	36516.0	36516.0	N/A	1589228547819_CSAH 144 & CSAH 13 - Synchro Report.pdf
						36516		

Vehicle Delay Reduced

Total Peak Hour Delay Reduced 36516.0

Total Peak Hour Delay Reduced 36516.0

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):
3.99	2.47	1.52
4	**2**	**2**

Total

Total Emissions Reduced: 1.52

Upload Synchro Report 1589381316810_Existing and Build Signal PM - Synchro Report.pdf

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

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

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

Total Parallel Roadway

Emissions Reduced on Parallel Roadways 0

Upload Synchro Report

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

New Roadway Portion:

Cruise speed in miles per hour with the project: 0

Vehicle miles traveled with the project: 0

Total delay in hours with the project: 0

Total stops in vehicles per hour with the project: 0

Fuel consumption in gallons: 0

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

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

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

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

Cruise speed in miles per hour without the project: 0

Vehicle miles traveled without the project: 0

Total delay in hours without the project: 0

Total stops in vehicles per hour without the project: 0

Cruise speed in miles per hour with the project: 0

Vehicle miles traveled with the project: 0

Total delay in hours with the project:	0
Total stops in vehicles per hour with the project:	0
Fuel consumption in gallons (F1)	0
Fuel consumption in gallons (F2)	0
Fuel consumption in gallons (F3)	0
Total (CO, NOX, and VOC) Peak Hour Emissions Reduced by the Project (Kilograms):	0
EXPLANATION of methodology and assumptions used:(Limit 1,400 characters; approximately 200 words)	

Measure A: Benefit of Crash Reduction

Crash Modification Factor Used:	Install a traffic signal;install raised median
(Limit 700 Characters; approximately 100 words)	
Rationale for Crash Modification Selected:	The project is removing the stop control from all approaches and replacing it with a traffic signal that includes a raised median on all approaches to separate traffic.
(Limit 1400 Characters; approximately 200 words)	
Project Benefit ($) from B/C Ratio	$168,982.00
Total Fatal (K) Crashes:	0
Total Serious Injury (A) Crashes:	0
Total Non-Motorized Fatal and Serious Injury Crashes:	0
Total Crashes:	4
Total Fatal (K) Crashes Reduced by Project:	0
Total Serious Injury (A) Crashes Reduced by Project:	0
Total Non-Motorized Fatal and Serious Injury Crashes Reduced by Project:	0
Total Crashes Reduced by Project:	12
Worksheet Attachment	1589392686766_benefitcost2020.pdf
Upload Crash Modification Factors and B/C Worksheet in PDF form.	

Measure A: Multimodal Elements and Existing Connections

Response:

CSAH 144 has a posted speed limit of 50 mph and CSAH 13 has a posted speed limit of 55 mph. There are currently no dedicated pedestrian facilities along either roadway in the project area. The proposed project includes several elements that will improve pedestrian safety.

The first element is a 10-foot bituminous trail along the south side of CSAH 144 from Mallard Drive (west of CSAH 13) to Monarch Lane (east of CSAH 13). The trail will connect to an existing bituminous trail at Mallard Drive and an existing sidewalk at Monarch Lane, and include crossing facilities as part of the proposed intersection improvements. The trail will also connect to existing sidewalks at Mallard Trail and Savanna Drive (west of CSAH 13). In addition to the proposed trail, the intersection improvements will include six-foot shoulders to accommodate bicycle and pedestrian traffic along CSAH 144 and CSAH 13 in the project area. These roadways do not currently provide paved shoulders of a sufficient width to safely accommodate non-motorized users.

Pedestrian walkways, including both paved shoulders and separated trail facilities, are an FHWA Proven Safety Countermeasure and will improve safety and comfort for pedestrians traveling through the project area. The trail crossing at CSAH 13 will be striped and coordinated with the new signalized intersection, and a 6-foot wide raised median will be provided. Crosswalks are one of Minnesota's Best Practices for Pedestrian/Bicycle Safety, and medians are both a Minnesota Best Practice as well as an FHWA Proven Safety Countermeasure. Together, these improvements will improve safety for pedestrians.

(Limit 2,800 characters; approximately 400 words)

Measure A: Multimodal Elements and Existing Connections

Response:

There are currently no dedicated bicycle or pedestrian facilities along CSAH 144 or CSAH 13 in the project area. Commuters frequently utilize this intersection as a short-cut to bypass I-94 congestion, which adds to the danger of this intersection for bicyclists and pedestrians. The proposed project includes two main elements focused on improving non-motorized accessibility and safety.

The first element is a 10-foot bituminous trail along the south side of CSAH 144 from Mallard Drive (west of CSAH 13) to Monarch Lane (east of CSAH 13). The trail will connect to an existing bituminous trail at Mallard Drive and an existing sidewalk at Monarch Lane, and include crossing facilities as part of the proposed intersection improvements. The trail will also connect to existing sidewalks at Mallard Trail and Savanna Drive (west of CSAH 13). The segment west of CSAH 13 is identified as a proposed local trail and the full segment is identified as a proposed Hennepin County Bikeway. When constructed, the trail will also intersect with a proposed Hennepin County Bikeway along CSAH 13 (see Attachment B).

The existing bituminous trail along the south side of CSAH 144 beginning at Mallard Drive provides a non-motorized connection west to Rogers Middle School, Rogers High School, North Community Park, and commercial and industrial areas near TH 101. Implementation of the proposed trail will create a fully separated facility that improves non-motorized access to these key destinations for the residential areas on the south side of CSAH 144 in the project area. Full separation provides the safest and most comfortable experience for the largest number of potential non-motorized users. This is especially important for vulnerable users such as children, who may use the proposed facility to walk or bike to the schools identified above.

In addition to the proposed trail, the intersection improvements will include six-foot shoulders to accommodate bicycle and pedestrian traffic along CSAH 144 and CSAH 13 in the project area. These roadways do not currently provide paved shoulders of a sufficient width to safely accommodate non-motorized users. While the proposed trail will serve east-west travel for non-motorized users, the widened shoulders will improve safety and comfort for north-south travelers in the project area until the Hennepin County Bikeway noted above is implemented.

The project is located in Transit Market Area V as identified in Metropolitan Council's 2040 Transportation Policy Plan (see attachment). Transit Market Area V is generally rural and agricultural. With low-density development in the area, TPP notes that Transit Market Area V is not suitable for regular transit services. However, dial-a-ride service is still available.

(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)Layout (25 Percent of Points)

Layout should include proposed geometrics and existing and proposed right-of-way boundaries.

Layout approved by the applicant and all impacted jurisdictions (i.e., cities/counties that the project goes through or agencies that maintain the roadway(s)). A PDF of the layout must be attached along with letters from each jurisdiction to receive points. Yes

100%

Attach Layout 1589492078857_CSAH 144 & CSAH 13 Layout_ALL.pdf

Please upload attachment in PDF form.

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

50%

Attach Layout

Please upload attachment in PDF form.

Layout has not been started

0%

Anticipated date or date of completion

2)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

3)Right-of-Way (25 Percent of Points)

Right-of-way, permanent or temporary easements either not required or all have been acquired

100%

Right-of-way, permanent or temporary easements required, plat, legal descriptions, or official map complete

50%

Right-of-way, permanent or temporary easements required, parcels identified Yes

25%

Right-of-way, permanent or temporary easements required, parcels not all identified

0%

Anticipated date or date of acquisition

4)Railroad Involvement (15 Percent of Points)

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

100%

Signature Page

Please upload attachment in PDF form.

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

50%

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

0%

Anticipated date or date of executed Agreement

5) 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. List Dates of most recent meetings and outreach specific to this project:

Meeting with general public:

Meeting with partner agencies:

Targeted online/mail outreach:

Number of respondents:

Meetings specific to this project with the general public and partner agencies have been used to help identify the project need.

100%

Targeted outreach to this project with the general public and partner agencies have been used to help identify the project need.

75%

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

50%

At least one meeting specific to this project with key partner agencies has been used to help identify the project need.

50%

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

25%

No outreach has led to the selection of this project.

0%

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

General public involvement discussing the proposed project was completed as part of the City's 2040 Comprehensive Plan process. However, due to restrictions on public meetings prompted by COVID-19, no in-person public engagement for the project has been conducted to date. The project in included in the City of Rogers current CIP. Coordination with Hennepin County has taken place to determine the need for the project. A letter of support for the project from Hennepin County is attached.

Future public engagement related to the project may include sending mailers to residents and businesses in and near the project area, providing project information and seeking comments online, and holding in-person or virtual public meetings to discuss project details and gather public input.

A small amount of right of way acquisition may be required for the project. The City will work directly with property owners whose properties may potentially be impacted by the project. Owners will be compensated consistent with federal requirements. Property impacts are not expected to disproportionately affect disadvantaged populations.

Measure A: Cost Effectiveness

Total Project Cost (entered in Project Cost Form):	$2,184,390.00
Enter Amount of the Noise Walls:	$0.00
Total Project Cost subtract the amount of the noise walls:	$2,184,390.00
Enter amount of any outside, competitive funding:	$0.00

Attach documentation of award:

Points Awarded in Previous Criteria

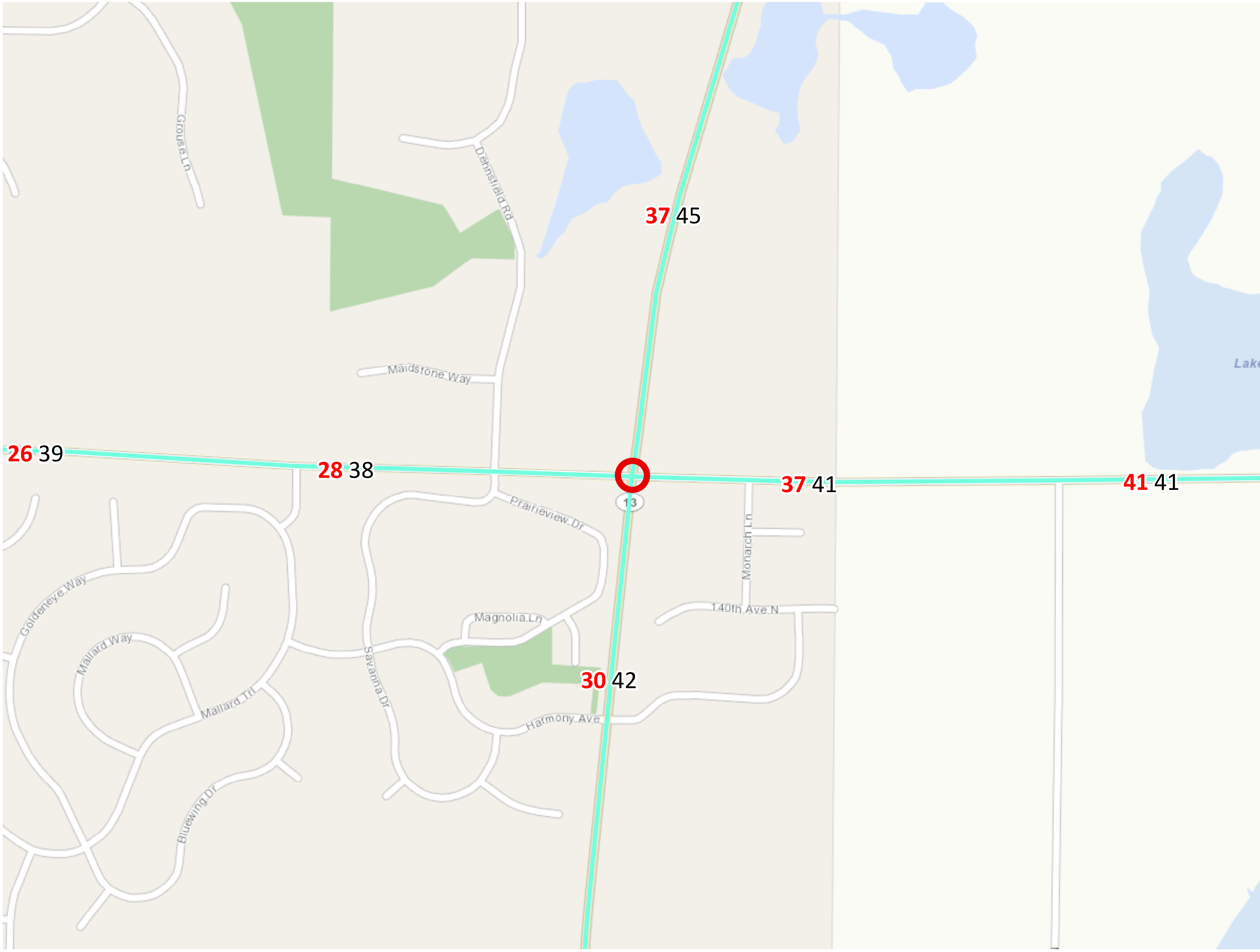
Cost Effectiveness	$0.00

Other Attachments

File Name	Description	File Size
1-Figure1_ProjectLocation.pdf	Project Location Map	952 KB
10-City Resolution.pdf	City of Rogers Resolution of Support	177 KB
11-Crash_Detail_Report_-_Short_Form_20200415.pdf	Crash Detail Report	126 KB
12-MetCouncil_TPP Transit Section.pdf	Met Council TPP Transit Service Area	394 KB
13-Cost estimate signalized intersection.pdf	Cost estimate for signalized intersection	86 KB
15-Delay, Emissions, and Safety Memo.pdf	Delay, Emissions and Safety Technical Memorandum	90 KB
2-Figure2_ProjectLocationAerial.pdf	Project Location Aerial Map	2.9 MB
2020 Transportation CIP Final - City of Rogers.pdf	2020 Transportation CIP Final - City of Rogers	76 KB
3-AttachmentA_ACS2017_report.pdf	American Community Survey Demographics Report	1.5 MB
4-AttachmentB_BikePedFacilities.pdf	City, County and Regional Bike/Pedestrian Facilities Map (Existing and Planned)	1.8 MB
5-NWHennepinCountyStudy(2008).pdf	NW Hennepin County I-94 Sub-Area Transportation Study - Crashes 2002-2006	168 KB
7-Hennepin County Letter of Support.pdf	Hennepin County Letter of Support	98 KB
8-CSAH 144-CSAH 13 existing conditions images.pdf	Existing Conditions Photos	829 KB
9-City Resolution Cover Letter.pdf	City of Rogers Resolution of Support Cover Letter	174 KB
Rogers Transportation Plan Excerpts.pdf	Rogers Transportation Plan Excerpts	11.2 MB
Signalized Intersection CSAH 144&CSAH 13 One-page Summary.pdf	One Page Project Summary	265 KB

Level of Congestion

Roadway Spot Mobility & Safety Project: CSAH 144-CSAH 13 Intersection Improvements | Map ID: 1587496736768



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

0 0.075 0.15 0.3 0.45 0.6 Miles

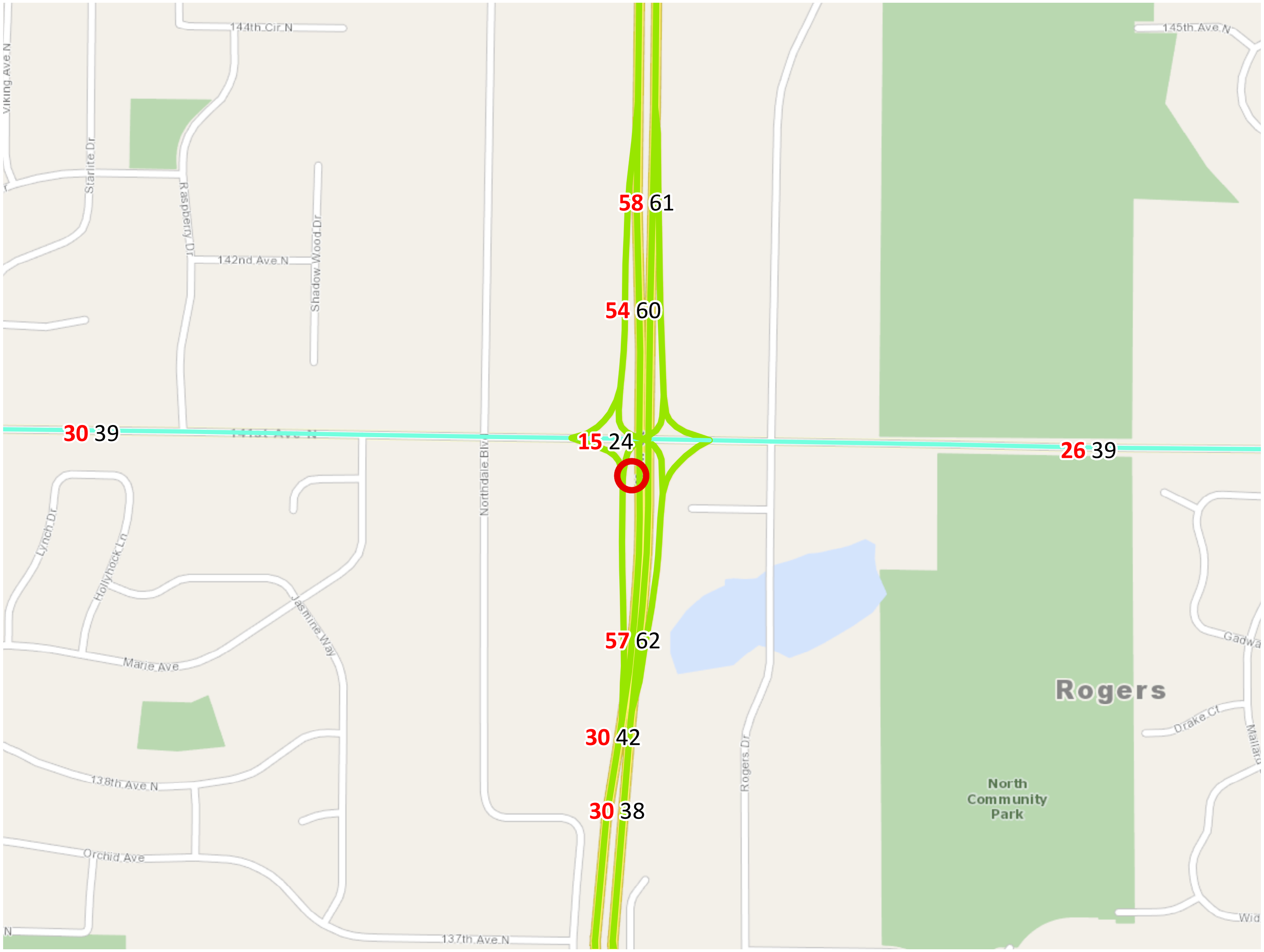
Created: 4/21/2020
LandscapeRSA1

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

METROPOLITAN COUNCIL

Level of Congestion

Roadway Spot Mobility & Safety Project: CSAH 144-CSAH 13 Intersection Improvement Parallel Route | Map ID: 1588957347241



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

0 0.075 0.15 0.3 0.45 0.6 Miles

Created: 5/8/2020
LandscapeRSA1

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

METROPOLITAN COUNCIL

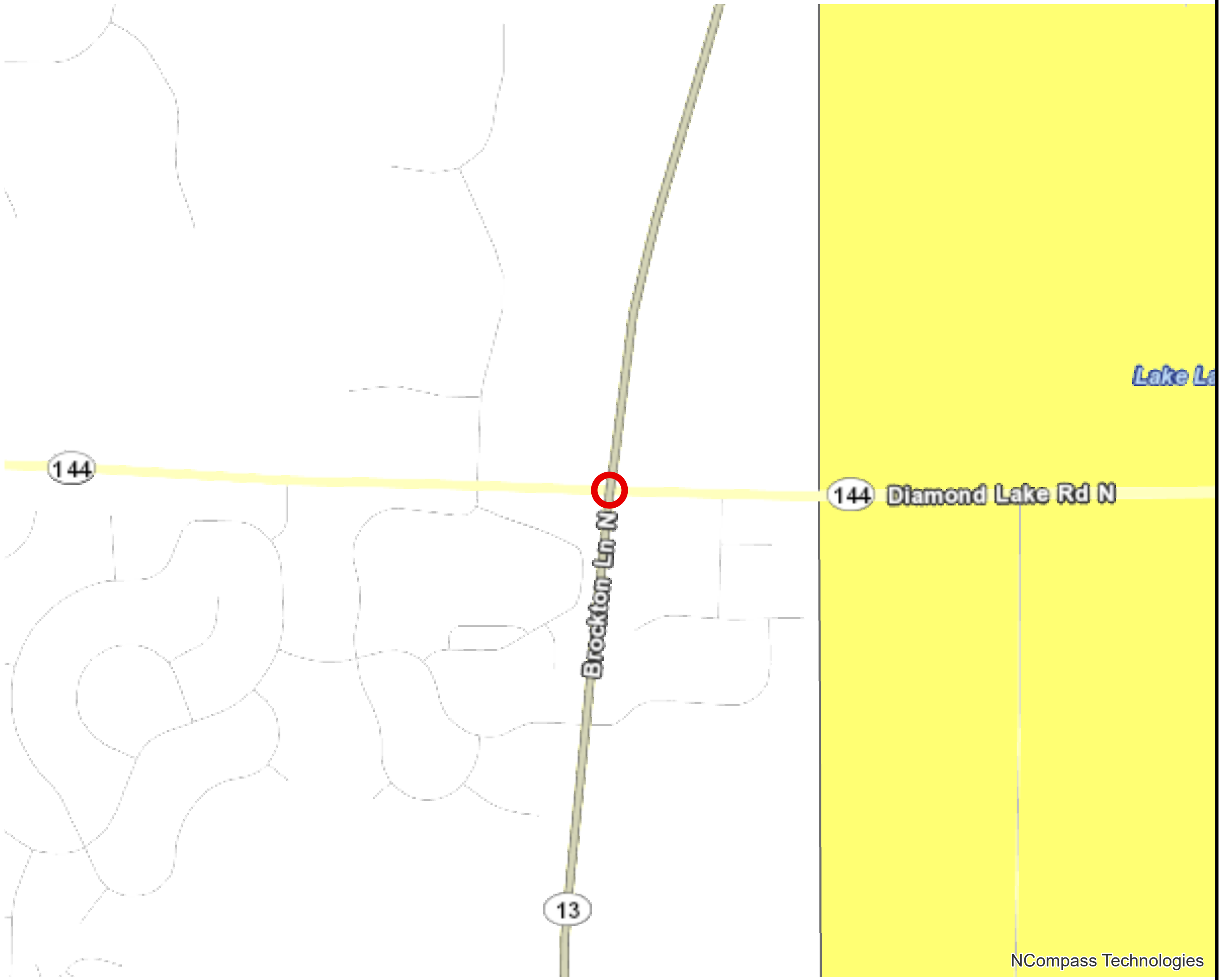
Socio-Economic Conditions

Roadway Spot Mobility & Safety Project: CSAH 144-CSAH 13 Intersection Improvements | Map ID: 1587496736768

Results

Project located in
a census tract that is below
the regional average for
population in poverty
or populations of color,
or includes children,
people with disabilities,
or the elderly:
(0 to 12 Points)

Tracts within half-mile:
26909 26910



Points

Area of Concentrated Povertry > 50% residents of color

Area of Concentrated Poverty

Above reg'l avg conc of race/poverty

0 0.1 0.2 0.4 0.6 0.8 Miles

Created: 4/21/2020
LandscapeRSA2

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http://giswebsite.metc.state.mn.us/gissite/notice.aspx

METROPOLITAN COUNCIL

Existing PM Synchro

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	106	35	27	134	20	268	339	24	7	25	33
Future Volume (vph)	56	106	35	27	134	20	268	339	24	7	25	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		0.976			0.985			0.995			0.932	
Flt Protected		0.986			0.993			0.979			0.994	
Satd. Flow (prot)	0	1793	0	0	1822	0	0	1815	0	0	1726	0
Flt Permitted		0.986			0.993			0.979			0.994	
Satd. Flow (perm)	0	1793	0	0	1822	0	0	1815	0	0	1726	0
Link Speed (mph)		50			50			55			55	
Link Distance (ft)		2021			1816			1511			1178	
Travel Time (s)		27.6			24.8			18.7			14.6	
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)	61	115	38	29	146	22	291	368	26	8	27	36
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	214	0	0	197	0	0	685	0	0	71	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		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type: Other	
Control Type: Unsignalized	
Intersection Capacity Utilization 66.4%	ICU Level of Service C
Analysis Period (min) 15	

Intersection	
Intersection Delay, s/veh	45.5
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Vol, veh/h	56	106	35	27	134	20	268	339	24	7	25	33
Future Vol, veh/h	56	106	35	27	134	20	268	339	24	7	25	33
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	61	115	38	29	146	22	291	368	26	8	27	36
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	13.5	13.2	68.4	10.2
HCM LOS	B	B	F	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	42%	28%	15%	11%
Vol Thru, %	54%	54%	74%	38%
Vol Right, %	4%	18%	11%	51%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	631	197	181	65
LT Vol	268	56	27	7
Through Vol	339	106	134	25
RT Vol	24	35	20	33
Lane Flow Rate	686	214	197	71
Geometry Grp	1	1	1	1
Degree of Util (X)	1.038	0.379	0.351	0.12
Departure Headway (Hd)	5.446	6.579	6.634	6.311
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	665	550	545	572
Service Time	3.49	4.579	4.634	4.311
HCM Lane V/C Ratio	1.032	0.389	0.361	0.124
HCM Control Delay	68.4	13.5	13.2	10.2
HCM Lane LOS	F	B	B	B
HCM 95th-tile Q	17.6	1.8	1.6	0.4

3: CSAH 13 & CSAH 144

Direction	EB	WB	NB	SB	All
Future Volume (vph)	197	181	630	65	1073
Control Delay / Veh (s/v)	13	13	71	10	47
Queue Delay / Veh (s/v)	0	0	0	0	0
Total Delay / Veh (s/v)	13	13	71	10	47
Total Delay (hr)	1	1	12	0	14
Stops / Veh	1.00	1.00	1.00	1.00	1.00
Stops (#)	197	181	630	65	1073
Average Speed (mph)	34	33	12	33	16
Total Travel Time (hr)	2	2	16	0	20
Distance Traveled (mi)	75	62	180	15	332
Fuel Consumed (gal)	6	5	27	2	40
Fuel Economy (mpg)	12.4	11.7	6.7	7.9	8.3
CO Emissions (kg)	0.43	0.37	1.87	0.13	2.80
NOx Emissions (kg)	0.08	0.07	0.36	0.02	0.54
VOC Emissions (kg)	0.10	0.09	0.43	0.03	0.65
Unserved Vehicles (#)	0	0	0	0	0
Vehicles in dilemma zone (#)	0	0	0	0	0

Network Totals

Number of Intersections	1
Control Delay / Veh (s/v)	47
Queue Delay / Veh (s/v)	0
Total Delay / Veh (s/v)	47
Total Delay (hr)	14
Stops / Veh	1.00
Stops (#)	1073
Average Speed (mph)	16
Total Travel Time (hr)	20
Distance Traveled (mi)	332
Fuel Consumed (gal)	40
Fuel Economy (mpg)	8.3
CO Emissions (kg)	2.80
NOx Emissions (kg)	0.54
VOC Emissions (kg)	0.65
Unserved Vehicles (#)	0
Vehicles in dilemma zone (#)	0
Performance Index	16.9

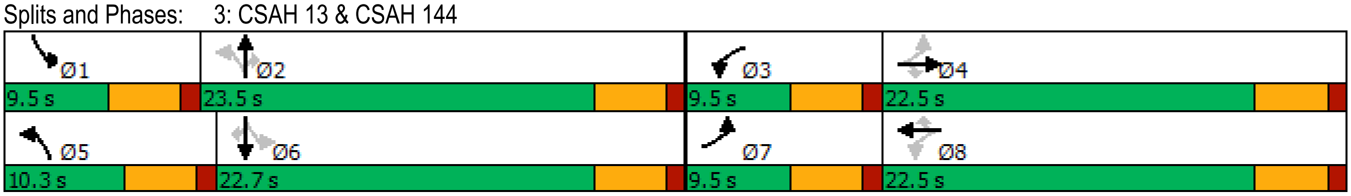
Build PM Synchro

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	106	35	27	134	20	268	339	24	7	25	33
Future Volume (vph)	56	106	35	27	134	20	268	339	24	7	25	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		250	180		180	190		190	200		200
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	0.600			0.683			0.619			0.542		
Satd. Flow (perm)	1118	1863	1583	1272	1863	1583	1153	1863	1583	1010	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			176			176			176			176
Link Speed (mph)		50			50			55			55	
Link Distance (ft)		2021			1816			1511			1178	
Travel Time (s)		27.6			24.8			18.7			14.6	
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)	61	115	38	29	146	22	291	368	26	8	27	36
Shared Lane Traffic (%)												
Lane Group Flow (vph)	61	115	38	29	146	22	291	368	26	8	27	36
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	10.3	23.5	23.5	9.5	22.7	22.7
Total Split (%)	14.6%	34.6%	34.6%	14.6%	34.6%	34.6%	15.8%	36.2%	36.2%	14.6%	34.9%	34.9%
Maximum Green (s)	5.0	18.0	18.0	5.0	18.0	18.0	5.8	19.0	19.0	5.0	18.2	18.2
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	12.6	11.1	11.1	11.8	9.5	9.5	29.5	29.9	29.9	24.6	19.3	19.3
Actuated g/C Ratio	0.25	0.22	0.22	0.23	0.19	0.19	0.58	0.59	0.59	0.48	0.38	0.38
v/c Ratio	0.18	0.28	0.08	0.08	0.42	0.05	0.39	0.34	0.03	0.01	0.04	0.05
Control Delay	14.2	20.4	0.3	13.1	24.3	0.2	10.8	12.0	0.0	8.4	14.6	0.1
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	14.2	20.4	0.3	13.1	24.3	0.2	10.8	12.0	0.0	8.4	14.6	0.1
LOS	B	C	A	B	C	A	B	B	A	A	B	A
Approach Delay		15.0			19.9			11.1			6.6	
Approach LOS		B			B			B			A	

Intersection Summary	
Area Type: Other	
Cycle Length: 65	
Actuated Cycle Length: 50.9	
Natural Cycle: 65	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.42	
Intersection Signal Delay: 13.0	Intersection LOS: B
Intersection Capacity Utilization 44.0%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 3: CSAH 13 & CSAH 144



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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	

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	56	106	35	27	134	20	268	339	24	7	25	33
Future Volume (veh/h)	56	106	35	27	134	20	268	339	24	7	25	33
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	61	115	38	29	146	22	291	368	26	8	27	36
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	300	273	232	311	229	194	806	858	727	482	665	564
Arrive On Green	0.06	0.15	0.15	0.03	0.12	0.12	0.11	0.46	0.46	0.01	0.36	0.36
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	61	115	38	29	146	22	291	368	26	8	27	36
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	1.5	2.9	1.1	0.7	3.8	0.6	4.9	6.8	0.5	0.1	0.5	0.8
Cycle Q Clear(g_c), s	1.5	2.9	1.1	0.7	3.8	0.6	4.9	6.8	0.5	0.1	0.5	0.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	300	273	232	311	229	194	806	858	727	482	665	564
V/C Ratio(X)	0.20	0.42	0.16	0.09	0.64	0.11	0.36	0.43	0.04	0.02	0.04	0.06
Avail Cap(c_a), veh/h	373	658	558	426	658	558	806	858	727	637	665	564
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.0	19.9	19.1	18.6	21.4	20.0	7.5	9.3	7.6	10.3	10.8	10.9
Incr Delay (d2), s/veh	0.3	1.0	0.3	0.1	2.9	0.3	0.3	1.6	0.1	0.0	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	1.1	0.3	0.3	1.6	0.2	1.1	2.1	0.1	0.0	0.2	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.3	20.9	19.4	18.7	24.3	20.2	7.7	10.9	7.7	10.4	10.9	11.1
LnGrp LOS	B	C	B	B	C	C	A	B	A	B	B	B
Approach Vol, veh/h		214			197			685			71	
Approach Delay, s/veh		19.9			23.0			9.4			10.9	
Approach LOS		B			C			A			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	5.0	28.0	6.2	12.0	10.3	22.7	7.4	10.8				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	5.0	19.0	5.0	18.0	5.8	18.2	5.0	18.0				
Max Q Clear Time (g_c+I1), s	2.1	8.8	2.7	4.9	6.9	2.8	3.5	5.8				
Green Ext Time (p_c), s	0.0	1.4	0.0	0.4	0.0	0.1	0.0	0.5				

Intersection Summary			
HCM 6th Ctrl Delay			13.7
HCM 6th LOS			B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	56	106	35	27	134	20	268	339	24	7	25	33
Future Volume (veh/h)	56	106	35	27	134	20	268	339	24	7	25	33
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj (A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	61	115	38	29	146	22	291	368	26	8	27	36
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	300	273	232	311	229	194	806	858	727	482	665	564
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.06	0.15	0.15	0.03	0.12	0.12	0.11	0.46	0.46	0.01	0.36	0.36
Unsig. Movement Delay												
Ln Grp Delay, s/veh	18.3	20.9	19.4	18.7	24.3	20.2	7.7	10.9	7.7	10.4	10.9	11.1
Ln Grp LOS	B	C	B	B	C	C	A	B	A	B	B	B
Approach Vol, veh/h		214			197			685			71	
Approach Delay, s/veh		19.9			23.0			9.4			10.9	
Approach LOS		B			C			A			B	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Case No	1.1	3.0	1.1	3.0	1.1	3.0	1.1	3.0
Phs Duration (G+Y+Rc), s	5.0	28.0	6.2	12.0	10.3	22.7	7.4	10.8
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green (Gmax), s	5.0	19.0	5.0	18.0	5.8	18.2	5.0	18.0
Max Allow Headway (MAH), s	3.6	4.7	3.7	4.6	3.6	4.3	3.7	4.7
Max Q Clear (g_c+I1), s	2.1	8.8	2.7	4.9	6.9	2.8	3.5	5.8
Green Ext Time (g_e), s	0.0	1.4	0.0	0.4	0.0	0.1	0.0	0.5
Prob of Phs Call (p_c)	0.11	1.00	0.34	1.00	0.98	1.00	0.58	0.99
Prob of Max Out (p_x)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.01
Left-Turn Movement Data								
Assigned Mvmt	1		3		5		7	
Mvmt Sat Flow, veh/h	1781		1781		1781		1781	
Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		1870		1870		1870		1870
Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		1585		1585		1585		1585
Left Lane Group Data								
Assigned Mvmt	1	0	3	0	5	0	7	0
Lane Assignment	L (Pr/Pm)		L (Pr/Pm)		L (Pr/Pm)		L (Pr/Pm)	

Lanes in Grp	1	0	1	0	1	0	1	0
Grp Vol (v), veh/h	8	0	29	0	291	0	61	0
Grp Sat Flow (s), veh/h/ln	1781	0	1781	0	1781	0	1781	0
Q Serve Time (g_s), s	0.1	0.0	0.7	0.0	4.9	0.0	1.5	0.0
Cycle Q Clear Time (g_c), s	0.1	0.0	0.7	0.0	4.9	0.0	1.5	0.0
Perm LT Sat Flow (s_l), veh/h/ln	990	0	1234	0	1339	0	1217	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	18.2	0.0	6.3	0.0	20.2	0.0	6.3	0.0
Perm LT Serve Time (g_u), s	16.7	0.0	4.6	0.0	17.7	0.0	2.5	0.0
Perm LT Q Serve Time (g_ps), s	0.0	0.0	0.0	0.0	0.7	0.0	0.2	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Lane Grp Cap (c), veh/h	482	0	311	0	806	0	300	0
V/C Ratio (X)	0.02	0.00	0.09	0.00	0.36	0.00	0.20	0.00
Avail Cap (c_a), veh/h	637	0	426	0	806	0	373	0
Upstream Filter (I)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Uniform Delay (d1), s/veh	10.3	0.0	18.6	0.0	7.5	0.0	18.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.1	0.0	0.3	0.0	0.3	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	10.4	0.0	18.7	0.0	7.7	0.0	18.3	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.2	0.0	1.0	0.0	0.5	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.3	0.0	1.1	0.0	0.5	0.0
%ile Storage Ratio (RQ%)	0.01	0.00	0.04	0.00	0.14	0.00	0.05	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment		T		T		T		T
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	368	0	115	0	27	0	146
Grp Sat Flow (s), veh/h/ln	0	1870	0	1870	0	1870	0	1870
Q Serve Time (g_s), s	0.0	6.8	0.0	2.9	0.0	0.5	0.0	3.8
Cycle Q Clear Time (g_c), s	0.0	6.8	0.0	2.9	0.0	0.5	0.0	3.8
Lane Grp Cap (c), veh/h	0	858	0	273	0	665	0	229
V/C Ratio (X)	0.00	0.43	0.00	0.42	0.00	0.04	0.00	0.64
Avail Cap (c_a), veh/h	0	858	0	658	0	665	0	658
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	9.3	0.0	19.9	0.0	10.8	0.0	21.4
Incr Delay (d2), s/veh	0.0	1.6	0.0	1.0	0.0	0.1	0.0	2.9
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	10.9	0.0	20.9	0.0	10.9	0.0	24.3
1st-Term Q (Q1), veh/ln	0.0	1.7	0.0	1.0	0.0	0.1	0.0	1.4
2nd-Term Q (Q2), veh/ln	0.0	0.4	0.0	0.1	0.0	0.0	0.0	0.2

3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	2.1	0.0	1.1	0.0	0.2	0.0	1.6
%ile Storage Ratio (RQ%)	0.00	0.04	0.00	0.01	0.00	0.00	0.00	0.02
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		R		R		R		R
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	26	0	38	0	36	0	22
Grp Sat Flow (s), veh/h/ln	0	1585	0	1585	0	1585	0	1585
Q Serve Time (g_s), s	0.0	0.5	0.0	1.1	0.0	0.8	0.0	0.6
Cycle Q Clear Time (g_c), s	0.0	0.5	0.0	1.1	0.0	0.8	0.0	0.6
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Lane Grp Cap (c), veh/h	0	727	0	232	0	564	0	194
V/C Ratio (X)	0.00	0.04	0.00	0.16	0.00	0.06	0.00	0.11
Avail Cap (c_a), veh/h	0	727	0	558	0	564	0	558
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	7.6	0.0	19.1	0.0	10.9	0.0	20.0
Incr Delay (d2), s/veh	0.0	0.1	0.0	0.3	0.0	0.2	0.0	0.3
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	7.7	0.0	19.4	0.0	11.1	0.0	20.2
1st-Term Q (Q1), veh/ln	0.0	0.1	0.0	0.3	0.0	0.2	0.0	0.2
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.1	0.0	0.3	0.0	0.2	0.0	0.2
%ile Storage Ratio (RQ%)	0.00	0.02	0.00	0.04	0.00	0.03	0.00	0.03
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	13.7
HCM 6th LOS	B

Network Totals

Number of Intersections	1
Total Delay (hr)	4
Stops (#)	623
Average Speed (mph)	33
Total Travel Time (hr)	10
Distance Traveled (mi)	333
Fuel Consumed (gal)	25
Fuel Economy (mpg)	13.4
Unserved Vehicles (#)	0
Vehicles in dilemma zone (#)	45
Performance Index	5.6

3: CSAH 13 & CSAH 144

Direction	EB	WB	NB	SB	All
Future Volume (vph)	197	181	631	65	1074
Control Delay / Veh (s/v)	15	20	11	7	13
Queue Delay / Veh (s/v)	0	0	0	0	0
Total Delay / Veh (s/v)	15	20	11	7	13
Total Delay (hr)	1	1	2	0	4
Stops / Veh	0.61	0.70	0.56	0.38	0.58
Stops (#)	120	127	351	25	623
Average Speed (mph)	32	28	35	38	33
Total Travel Time (hr)	2	2	5	0	10
Distance Traveled (mi)	75	62	181	15	333
Fuel Consumed (gal)	5	5	14	1	25
Fuel Economy (mpg)	15.2	13.1	12.9	14.0	13.4
CO Emissions (kg)	0.35	0.33	0.98	0.07	1.73
NOx Emissions (kg)	0.07	0.06	0.19	0.01	0.34
VOC Emissions (kg)	0.08	0.08	0.23	0.02	0.40
Unserved Vehicles (#)	0	0	0	0	0
Vehicles in dilemma zone (#)	8	10	25	2	45

Existing PM Synchro

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	106	35	27	134	20	268	339	24	7	25	33
Future Volume (vph)	56	106	35	27	134	20	268	339	24	7	25	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		0.976			0.985			0.995			0.932	
Flt Protected		0.986			0.993			0.979			0.994	
Satd. Flow (prot)	0	1793	0	0	1822	0	0	1815	0	0	1726	0
Flt Permitted		0.986			0.993			0.979			0.994	
Satd. Flow (perm)	0	1793	0	0	1822	0	0	1815	0	0	1726	0
Link Speed (mph)		50			50			55			55	
Link Distance (ft)		2021			1816			1511			1178	
Travel Time (s)		27.6			24.8			18.7			14.6	
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)	61	115	38	29	146	22	291	368	26	8	27	36
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	214	0	0	197	0	0	685	0	0	71	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		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 66.4% ICU Level of Service C

Analysis Period (min) 15

Intersection	
Intersection Delay, s/veh	45.5
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	56	106	35	27	134	20	268	339	24	7	25	33
Future Vol, veh/h	56	106	35	27	134	20	268	339	24	7	25	33
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
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	61	115	38	29	146	22	291	368	26	8	27	36
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	13.5	13.2	68.4	10.2
HCM LOS	B	B	F	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	42%	28%	15%	11%
Vol Thru, %	54%	54%	74%	38%
Vol Right, %	4%	18%	11%	51%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	631	197	181	65
LT Vol	268	56	27	7
Through Vol	339	106	134	25
RT Vol	24	35	20	33
Lane Flow Rate	686	214	197	71
Geometry Grp	1	1	1	1
Degree of Util (X)	1.038	0.379	0.351	0.12
Departure Headway (Hd)	5.446	6.579	6.634	6.311
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	665	550	545	572
Service Time	3.49	4.579	4.634	4.311
HCM Lane V/C Ratio	1.032	0.389	0.361	0.124
HCM Control Delay	68.4	13.5	13.2	10.2
HCM Lane LOS	F	B	B	B
HCM 95th-tile Q	17.6	1.8	1.6	0.4

3: CSAH 13 & CSAH 144

Direction	EB	WB	NB	SB	All
Future Volume (vph)	197	181	630	65	1073
Control Delay / Veh (s/v)	13	13	71	10	47
Queue Delay / Veh (s/v)	0	0	0	0	0
Total Delay / Veh (s/v)	13	13	71	10	47
Total Delay (hr)	1	1	12	0	14
Stops / Veh	1.00	1.00	1.00	1.00	1.00
Stops (#)	197	181	630	65	1073
Average Speed (mph)	34	33	12	33	16
Total Travel Time (hr)	2	2	16	0	20
Distance Traveled (mi)	75	62	180	15	332
Fuel Consumed (gal)	6	5	27	2	40
Fuel Economy (mpg)	12.4	11.7	6.7	7.9	8.3
CO Emissions (kg)	0.43	0.37	1.87	0.13	2.80
NOx Emissions (kg)	0.08	0.07	0.36	0.02	0.54
VOC Emissions (kg)	0.10	0.09	0.43	0.03	0.65
Unserved Vehicles (#)	0	0	0	0	0
Vehicles in dilemma zone (#)	0	0	0	0	0

Network Totals

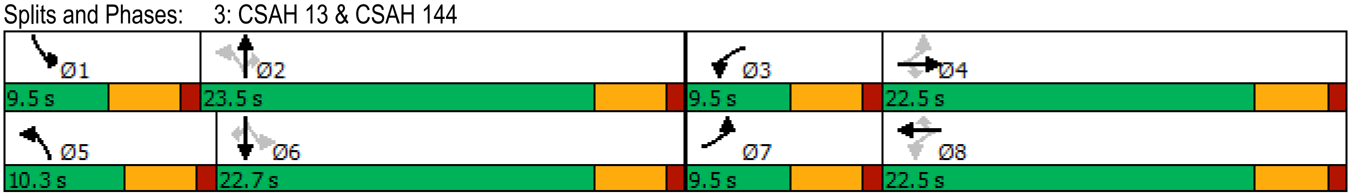
Number of Intersections	1
Control Delay / Veh (s/v)	47
Queue Delay / Veh (s/v)	0
Total Delay / Veh (s/v)	47
Total Delay (hr)	14
Stops / Veh	1.00
Stops (#)	1073
Average Speed (mph)	16
Total Travel Time (hr)	20
Distance Traveled (mi)	332
Fuel Consumed (gal)	40
Fuel Economy (mpg)	8.3
CO Emissions (kg)	2.80
NOx Emissions (kg)	0.54
VOC Emissions (kg)	0.65
Unserved Vehicles (#)	0
Vehicles in dilemma zone (#)	0
Performance Index	16.9

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	106	35	27	134	20	268	339	24	7	25	33
Future Volume (vph)	56	106	35	27	134	20	268	339	24	7	25	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		250	180		180	190		190	200		200
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	0.600			0.683			0.619			0.542		
Satd. Flow (perm)	1118	1863	1583	1272	1863	1583	1153	1863	1583	1010	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			176			176			176			176
Link Speed (mph)		50			50			55			55	
Link Distance (ft)		2021			1816			1511			1178	
Travel Time (s)		27.6			24.8			18.7			14.6	
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)	61	115	38	29	146	22	291	368	26	8	27	36
Shared Lane Traffic (%)												
Lane Group Flow (vph)	61	115	38	29	146	22	291	368	26	8	27	36
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	10.3	23.5	23.5	9.5	22.7	22.7
Total Split (%)	14.6%	34.6%	34.6%	14.6%	34.6%	34.6%	15.8%	36.2%	36.2%	14.6%	34.9%	34.9%
Maximum Green (s)	5.0	18.0	18.0	5.0	18.0	18.0	5.8	19.0	19.0	5.0	18.2	18.2
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	12.6	11.1	11.1	11.8	9.5	9.5	29.5	29.9	29.9	24.6	19.3	19.3
Actuated g/C Ratio	0.25	0.22	0.22	0.23	0.19	0.19	0.58	0.59	0.59	0.48	0.38	0.38
v/c Ratio	0.18	0.28	0.08	0.08	0.42	0.05	0.39	0.34	0.03	0.01	0.04	0.05
Control Delay	14.2	20.4	0.3	13.1	24.3	0.2	10.8	12.0	0.0	8.4	14.6	0.1
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	14.2	20.4	0.3	13.1	24.3	0.2	10.8	12.0	0.0	8.4	14.6	0.1
LOS	B	C	A	B	C	A	B	B	A	A	B	A
Approach Delay		15.0			19.9			11.1			6.6	
Approach LOS		B			C			B			A	

Intersection Summary	
Area Type: Other	
Cycle Length: 65	
Actuated Cycle Length: 50.9	
Natural Cycle: 65	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.42	
Intersection Signal Delay: 13.0	Intersection LOS: B
Intersection Capacity Utilization 44.0%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 3: CSAH 13 & CSAH 144



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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	

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	56	106	35	27	134	20	268	339	24	7	25	33
Future Volume (veh/h)	56	106	35	27	134	20	268	339	24	7	25	33
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	61	115	38	29	146	22	291	368	26	8	27	36
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	300	273	232	311	229	194	806	858	727	482	665	564
Arrive On Green	0.06	0.15	0.15	0.03	0.12	0.12	0.11	0.46	0.46	0.01	0.36	0.36
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	61	115	38	29	146	22	291	368	26	8	27	36
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	1.5	2.9	1.1	0.7	3.8	0.6	4.9	6.8	0.5	0.1	0.5	0.8
Cycle Q Clear(g_c), s	1.5	2.9	1.1	0.7	3.8	0.6	4.9	6.8	0.5	0.1	0.5	0.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	300	273	232	311	229	194	806	858	727	482	665	564
V/C Ratio(X)	0.20	0.42	0.16	0.09	0.64	0.11	0.36	0.43	0.04	0.02	0.04	0.06
Avail Cap(c_a), veh/h	373	658	558	426	658	558	806	858	727	637	665	564
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.0	19.9	19.1	18.6	21.4	20.0	7.5	9.3	7.6	10.3	10.8	10.9
Incr Delay (d2), s/veh	0.3	1.0	0.3	0.1	2.9	0.3	0.3	1.6	0.1	0.0	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	1.1	0.3	0.3	1.6	0.2	1.1	2.1	0.1	0.0	0.2	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.3	20.9	19.4	18.7	24.3	20.2	7.7	10.9	7.7	10.4	10.9	11.1
LnGrp LOS	B	C	B	B	C	C	A	B	A	B	B	B
Approach Vol, veh/h		214			197			685			71	
Approach Delay, s/veh		19.9			23.0			9.4			10.9	
Approach LOS		B			C			A			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.0	28.0	6.2	12.0	10.3	22.7	7.4	10.8
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	19.0	5.0	18.0	5.8	18.2	5.0	18.0
Max Q Clear Time (g_c+I1), s	2.1	8.8	2.7	4.9	6.9	2.8	3.5	5.8
Green Ext Time (p_c), s	0.0	1.4	0.0	0.4	0.0	0.1	0.0	0.5

Intersection Summary	
HCM 6th Ctrl Delay	13.7
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	56	106	35	27	134	20	268	339	24	7	25	33
Future Volume (veh/h)	56	106	35	27	134	20	268	339	24	7	25	33
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj (A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	61	115	38	29	146	22	291	368	26	8	27	36
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	300	273	232	311	229	194	806	858	727	482	665	564
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.06	0.15	0.15	0.03	0.12	0.12	0.11	0.46	0.46	0.01	0.36	0.36
Unsig. Movement Delay												
Ln Grp Delay, s/veh	18.3	20.9	19.4	18.7	24.3	20.2	7.7	10.9	7.7	10.4	10.9	11.1
Ln Grp LOS	B	C	B	B	C	C	A	B	A	B	B	B
Approach Vol, veh/h		214			197			685			71	
Approach Delay, s/veh		19.9			23.0			9.4			10.9	
Approach LOS		B			C			A			B	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Case No	1.1	3.0	1.1	3.0	1.1	3.0	1.1	3.0
Phs Duration (G+Y+Rc), s	5.0	28.0	6.2	12.0	10.3	22.7	7.4	10.8
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green (Gmax), s	5.0	19.0	5.0	18.0	5.8	18.2	5.0	18.0
Max Allow Headway (MAH), s	3.6	4.7	3.7	4.6	3.6	4.3	3.7	4.7
Max Q Clear (g_c+I1), s	2.1	8.8	2.7	4.9	6.9	2.8	3.5	5.8
Green Ext Time (g_e), s	0.0	1.4	0.0	0.4	0.0	0.1	0.0	0.5
Prob of Phs Call (p_c)	0.11	1.00	0.34	1.00	0.98	1.00	0.58	0.99
Prob of Max Out (p_x)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.01

Left-Turn Movement Data								
Assigned Mvmt	1		3		5		7	
Mvmt Sat Flow, veh/h	1781		1781		1781		1781	

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		1870		1870		1870		1870

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		1585		1585		1585		1585

Left Lane Group Data								
Assigned Mvmt	1	0	3	0	5	0	7	0
Lane Assignment	L (Pr/Pm)		L (Pr/Pm)		L (Pr/Pm)		L (Pr/Pm)	

Lanes in Grp	1	0	1	0	1	0	1	0
Grp Vol (v), veh/h	8	0	29	0	291	0	61	0
Grp Sat Flow (s), veh/h/ln	1781	0	1781	0	1781	0	1781	0
Q Serve Time (g_s), s	0.1	0.0	0.7	0.0	4.9	0.0	1.5	0.0
Cycle Q Clear Time (g_c), s	0.1	0.0	0.7	0.0	4.9	0.0	1.5	0.0
Perm LT Sat Flow (s_l), veh/h/ln	990	0	1234	0	1339	0	1217	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	18.2	0.0	6.3	0.0	20.2	0.0	6.3	0.0
Perm LT Serve Time (g_u), s	16.7	0.0	4.6	0.0	17.7	0.0	2.5	0.0
Perm LT Q Serve Time (g_ps), s	0.0	0.0	0.0	0.0	0.7	0.0	0.2	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Lane Grp Cap (c), veh/h	482	0	311	0	806	0	300	0
V/C Ratio (X)	0.02	0.00	0.09	0.00	0.36	0.00	0.20	0.00
Avail Cap (c_a), veh/h	637	0	426	0	806	0	373	0
Upstream Filter (I)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Uniform Delay (d1), s/veh	10.3	0.0	18.6	0.0	7.5	0.0	18.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.1	0.0	0.3	0.0	0.3	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	10.4	0.0	18.7	0.0	7.7	0.0	18.3	0.0
1st-Term Q (Q1), veh/ln	0.0	0.0	0.2	0.0	1.0	0.0	0.5	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.3	0.0	1.1	0.0	0.5	0.0
%ile Storage Ratio (RQ%)	0.01	0.00	0.04	0.00	0.14	0.00	0.05	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment		T		T		T		T
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	368	0	115	0	27	0	146
Grp Sat Flow (s), veh/h/ln	0	1870	0	1870	0	1870	0	1870
Q Serve Time (g_s), s	0.0	6.8	0.0	2.9	0.0	0.5	0.0	3.8
Cycle Q Clear Time (g_c), s	0.0	6.8	0.0	2.9	0.0	0.5	0.0	3.8
Lane Grp Cap (c), veh/h	0	858	0	273	0	665	0	229
V/C Ratio (X)	0.00	0.43	0.00	0.42	0.00	0.04	0.00	0.64
Avail Cap (c_a), veh/h	0	858	0	658	0	665	0	658
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	9.3	0.0	19.9	0.0	10.8	0.0	21.4
Incr Delay (d2), s/veh	0.0	1.6	0.0	1.0	0.0	0.1	0.0	2.9
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	10.9	0.0	20.9	0.0	10.9	0.0	24.3
1st-Term Q (Q1), veh/ln	0.0	1.7	0.0	1.0	0.0	0.1	0.0	1.4
2nd-Term Q (Q2), veh/ln	0.0	0.4	0.0	0.1	0.0	0.0	0.0	0.2

3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	2.1	0.0	1.1	0.0	0.2	0.0	1.6
%ile Storage Ratio (RQ%)	0.00	0.04	0.00	0.01	0.00	0.00	0.00	0.02
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		R		R		R		R
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	26	0	38	0	36	0	22
Grp Sat Flow (s), veh/h/ln	0	1585	0	1585	0	1585	0	1585
Q Serve Time (g_s), s	0.0	0.5	0.0	1.1	0.0	0.8	0.0	0.6
Cycle Q Clear Time (g_c), s	0.0	0.5	0.0	1.1	0.0	0.8	0.0	0.6
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Lane Grp Cap (c), veh/h	0	727	0	232	0	564	0	194
V/C Ratio (X)	0.00	0.04	0.00	0.16	0.00	0.06	0.00	0.11
Avail Cap (c_a), veh/h	0	727	0	558	0	564	0	558
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	7.6	0.0	19.1	0.0	10.9	0.0	20.0
Incr Delay (d2), s/veh	0.0	0.1	0.0	0.3	0.0	0.2	0.0	0.3
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	7.7	0.0	19.4	0.0	11.1	0.0	20.2
1st-Term Q (Q1), veh/ln	0.0	0.1	0.0	0.3	0.0	0.2	0.0	0.2
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.1	0.0	0.3	0.0	0.2	0.0	0.2
%ile Storage Ratio (RQ%)	0.00	0.02	0.00	0.04	0.00	0.03	0.00	0.03
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Intersection Summary								
HCM 6th Ctrl Delay		13.7						
HCM 6th LOS		B						

Network Totals

Number of Intersections	1
Total Delay (hr)	4
Stops (#)	623
Average Speed (mph)	33
Total Travel Time (hr)	10
Distance Traveled (mi)	333
Fuel Consumed (gal)	25
Fuel Economy (mpg)	13.4
Unserved Vehicles (#)	0
Vehicles in dilemma zone (#)	45
Performance Index	5.6

3: CSAH 13 & CSAH 144

Direction	EB	WB	NB	SB	All
Future Volume (vph)	197	181	631	65	1074
Control Delay / Veh (s/v)	15	20	11	7	13
Queue Delay / Veh (s/v)	0	0	0	0	0
Total Delay / Veh (s/v)	15	20	11	7	13
Total Delay (hr)	1	1	2	0	4
Stops / Veh	0.61	0.70	0.56	0.38	0.58
Stops (#)	120	127	351	25	623
Average Speed (mph)	32	28	35	38	33
Total Travel Time (hr)	2	2	5	0	10
Distance Traveled (mi)	75	62	181	15	333
Fuel Consumed (gal)	5	5	14	1	25
Fuel Economy (mpg)	15.2	13.1	12.9	14.0	13.4
CO Emissions (kg)	0.35	0.33	0.98	0.07	1.73
NOx Emissions (kg)	0.07	0.06	0.19	0.01	0.34
VOC Emissions (kg)	0.08	0.08	0.23	0.02	0.40
Unserved Vehicles (#)	0	0	0	0	0
Vehicles in dilemma zone (#)	8	10	25	2	45

Traffic Safety Benefit-Cost Calculation

Highway Safety Improvement Program (HSIP) Reactive Project

DEPARTMENT OF TRANSPORTATION

A. Roadway Description

Route	CSAH 144 & 13	**District**	Metro	**County**	Hennepin
Begin RP		**End RP**		**Miles**	
Location	CSAH 144 & CSAH 13				

B. Project Description

Proposed Work	Conversion from All-Way Stop to a Traffic Signal		
Project Cost*	$2,184,390	**Installation Year**	2024
Project Service Life	20 years	**Traffic Growth Factor**	3.1%

** exclude Right of Way from Project Cost*

C. Crash Modification Factor

0.56	**Fatal (K) Crashes**	**Reference**	Install a traffic signal
0.56	**Serious Injury (A) Crashes**		
0.56	**Moderate Injury (B) Crashes**	**Crash Type**	All
0.56	**Possible Injury (C) Crashes**		
0.56	**Property Damage Only Crashes**		www.CMFclearinghouse.org

D. Crash Modification Factor (optional second CMF)

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

E. Crash Data

Begin Date	1/1/2016	**End Date**	12/31/2018	3 years
Data Source	MnCMAT 2			

Crash Severity	All	All
K crashes	0	
A crashes	0	
B crashes	0	
C crashes	0	
PDO crashes	4	

F. Benefit-Cost Calculation

$168,982	**Benefit (present value)**
$2,184,390	**Cost**

B/C Ratio = 0.08

Proposed project expected to reduce 1 crashes annually, 0 of which involving fatality or serious injury.

F. Analysis Assumptions

Crash Severity	Crash Cost
K crashes	$1,360,000
A crashes	$680,000
B crashes	$210,000
C crashes	$110,000
PDO crashes	$12,000

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

Real Discount Rate 1.2%

Traffic Growth Rate 3.1%

Project Service Life 20 years

G. Annual Benefit

Crash Severity	Crash Reduction	Annual Reduction	Annual Benefit
K crashes	0.00	0.00	$0
A crashes	0.00	0.00	$0
B crashes	0.00	0.00	$0
C crashes	0.00	0.00	$0
PDO crashes	1.76	0.59	$7,040
			$7,040

H. Amortized Benefit

Year	Crash Benefits	Present Value
2024	$7,040	$7,040
2025	$7,258	$7,172
2026	$7,483	$7,307
2027	$7,715	$7,444
2028	$7,954	$7,584
2029	$8,201	$7,726
2030	$8,455	$7,871
2031	$8,717	$8,019
2032	$8,988	$8,170
2033	$9,266	$8,323
2034	$9,553	$8,479
2035	$9,850	$8,638
2036	$10,155	$8,801
2037	$10,470	$8,966
2038	$10,794	$9,134
2039	$11,129	$9,306
2040	$11,474	$9,480
2041	$11,830	$9,658
2042	$12,196	$9,840
2043	$12,574	$10,024
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 = $168,982

ROGERS MN

CSAH 144 AND CSAH 13 INTERSECTION

City of Rogers, Hennepin County, Minnesota

SIGNALIZED INTERSECTION

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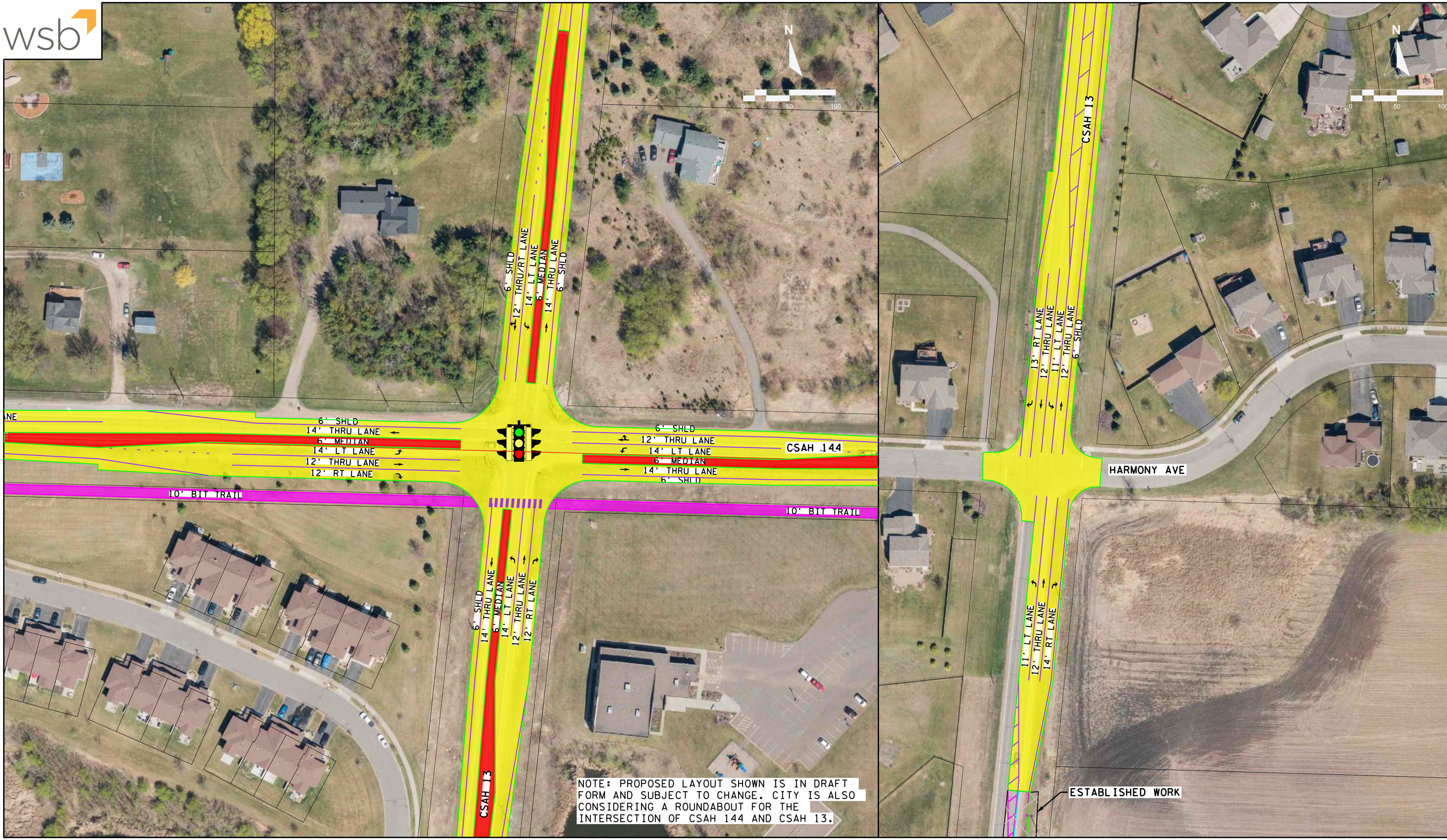

CSAH 144 AND CSAH 13 INTERSECTION

City of Rogers, Hennepin County, Minnesota

INTERSECTION INSETS

Date Printed: 5/14/2020
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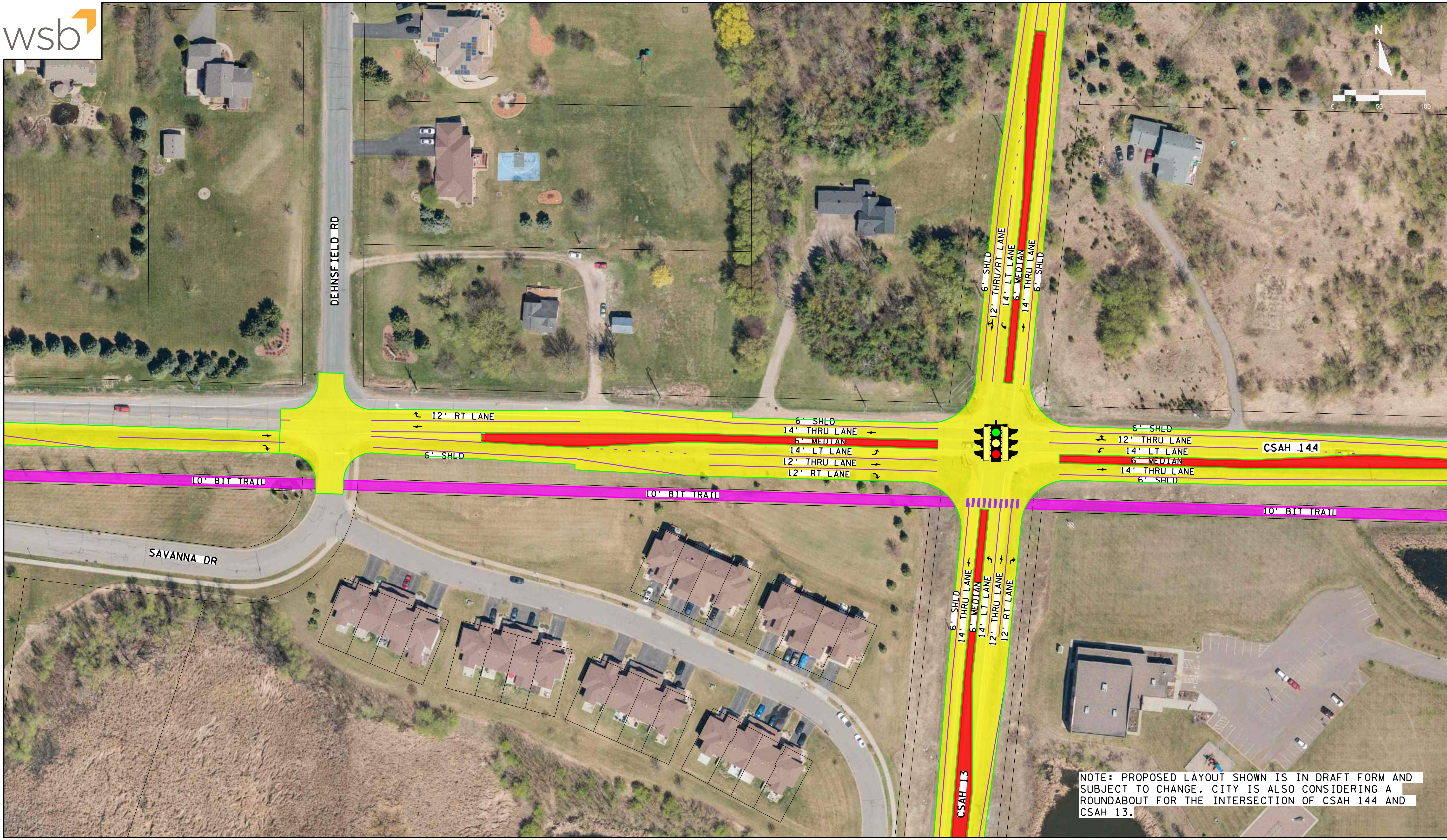

ROGERS MN

CSAH 144 AND CSAH 13 INTERSECTION

City of Rogers, Hennepin County, Minnesota

INTERSECTION INSET

CSAH 144 Expanded View

Date: Printed: 5/14/2020
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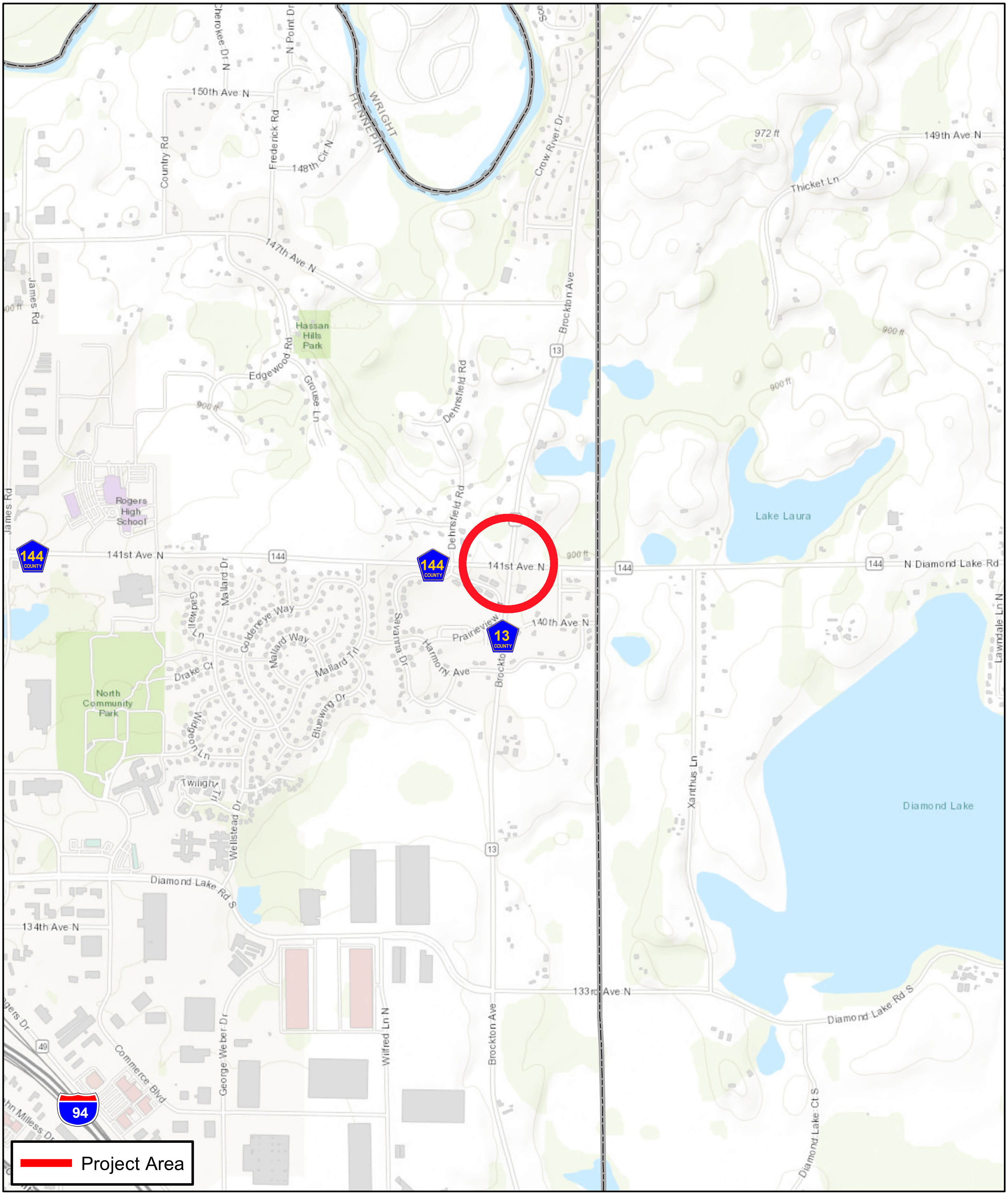


Figure 1 - CSAH 144 & CSAH 13 Intersection Improvements

City of Rogers, MN

Hennepin County

RESOLUTION NO. 2020-29

RESOLUTION FOR APPROVAL OF METROLITAN COUNCIL CSAH 144 (141st Avenue) & CSAH 13 (Brockton Lane) SPOT MOBILITY & SAFETY GRANT APPLICATION SUBMITTAL AND AUTHORIZATION FOR STAFF TO PROVIDE A LETTER OF SUPPORT

WHEREAS, the Metropolitan Council is requesting project submittals for federal funding under the Spot Mobility and Safety Grant Program; and

WHEREAS, the City of Rogers is proposing signal and geometric improvements at the intersection of CSAH 144 (141st Avenue) and CSAH 13 (Brockton Lane) under the Spot Mobility & Safety Program for 2024/2025 funding; and

WHEREAS, these proposed improvements are located at the northerly intersection of a forecasted 2040 congested Brockton Lane corridor in the City of Rogers 2040 Comprehensive Plan and is also identified in the currently held valid City of Rogers Capital Improvement Program (CIP); and

WHEREAS, the proposed CSAH 144 (141st Avenue) & CSAH 13 (Brockton Lane) signal and intersection geometric improvements project is a regionally significant federally eligible project eligible for submittal under the Spot Mobility & Safety Program; and

WHEREAS, all Metropolitan Council Regional Solicitation projects require a 20 percent local match from non-federal sources; and

WHEREAS, the City of Rogers has the legal authority to apply for financial assistance, and the institutional, managerial and financial capacity to ensure matching funds and adequate construction of the proposed project; and

WHEREAS, subject to a federal funding award the City Council of Rogers Minnesota, would be asked to consider authorization to execute a federal grant agreement at a future meeting; and

WHEREAS, 2024/2025 Metropolitan Council Spot Mobility & Safety Regional Solicitation grant application submittals are due on May 15, 2020.

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Rogers, Minnesota, hereby:

1. Authorizes the City Engineer to submit a Metropolitan Council Spot Mobility & Safety Regional Solicitation grant application for 2024/2025 signal and intersection geometric improvements at CSAH 144 (141st Avenue) and CSAH 13 (Brockton Lane).

2. Authorizes the City Engineer to submit a letter of support as part of the Spot Mobility & Safety grant submittal package by the City of Rogers.

3. Acknowledges, to the extent it has jurisdiction and controls right-of-way of the associated facilities, that the City of Rogers will operate and maintain the proposed roadway improvement for its useful life and will not change the use any of the right-of-way acquired without prior approval from MnDOT.

Moved by Councilmember Eiden, seconded by Councilmember Jakel

The following voted in favor of said resolution: Eiden, Gorecki, Ihli, Jakel and Klick

The following voted against the same: none

The following abstained: none

Whereupon said resolution was declared duly passed and adopted, and was signed by the Mayor, and attested by the Clerk dated this 28th day of April, 2020.

Rick Ihli, Mayor

ATTEST:

Stacy Scharber

Stacy Scharber, Asst. City Administrator/City Clerk

Crash Detail Report - Short Form

CSAH 144_CSAH 13

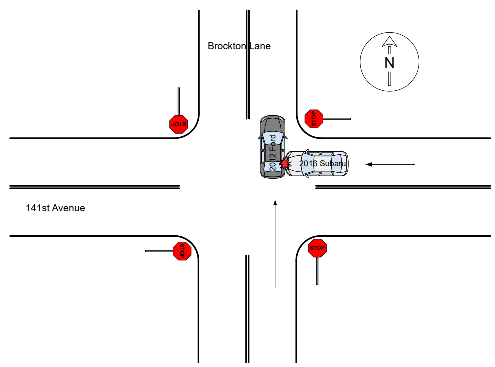
INCIDENT ID	ROUTE SYS	ROUTE NUM	MEASURE	ROUTE NAME	ROUTE ID	COUNTY	CITY
00325125	04-CSAH	0013	2.807	BROCKTON LA	0400006594720013-I	27	Rogers

INTERSECT WITH	NUM VEH	NUM KILLED	DATE	TIME	DAY OF WEEK	LAT	LONG	UTM X	UTM Y	WORK ZONE TYPE
141ST AVE	2	0	02/01/16	06:47	Mon	45.2098	-93.5264	458663.7	5006394.0	NOT APPLICABLE

BASIC TYPE	CRASH SEVERITY	FIRST HARMFUL	LIGHT CONDITION	WEATHER PRIMARY
Angle	N - Prop Damage Only	Motor Vehicle In Transport	Dark (Str Lights On)	Fog/Smog/Smoke

	Unit 1	Unit 2	Unit 3	Unit 4
Unit Type	Motor Vehicle in Transport	Motor Vehicle in Transport		
Vehicle Type	Passenger Car	Passenger Car		
Direction of Travel	Westbound	Northbound		
Veh Manuever	Moving Forward	Moving Forward		
Age/Sex	36 M	48 M		
Physical Cond	Apparently Normal	Apparently Normal		
Contributing Factor 1	Failure to Yield Right-of-Way	No Clear Contributing Action		

OFFICER SKETCH



NARRATIVE

OFFICER RESPONDED TO A CALL OF A PROPERTY DAMAGE ACCIDENT WITH VEHICLES BLOCKING AT THE INTERSECTION OF BROCKTON LANE AND 141ST AVE IN ROGERS. IT WAS DARK OUTSIDE AND VERY FOGGY, LIMITING VISIBILITY. TRAFFIC WAS BUSY AT THE INTERSECTION, WHICH IS CONTROLLED BY STOP SIGNS AT ALL APPROACHES. OFFICER ARRIVED AND FOUND BOTH VEHICLES HAD MOVED TO THE SHOULDER. VEHICLE 1 WAS A 2016 SUBARU WSL AND WAS STOPPED ON WESTBOUND 141ST AVE JUST WEST OF THE INTERSECTION. VEHICLE 2 WAS A 2012 FORD FUSION AND WAS STOPPED ON THE NORTHEAST CORNER OF THE INTERSECTION. BOTH DRIVERS REPORTED THAT THEY WERE NOT INJURED. DRIVER 1 SAID HE HAD BEEN WESTBOUND ON 141ST AVE AND STOPPED AT THE STOP SIGN. HE SAID THAT HE LOOKED QUICK AND THEN DROVE FORWARD AND STRUCK VEHICLE 2. DRIVER 1 SAID THAT HE DIDN'T SEE VEHICLE 2 UNTIL IT WAS IN FRONT OF HIM. DRIVER 1 SAID THAT

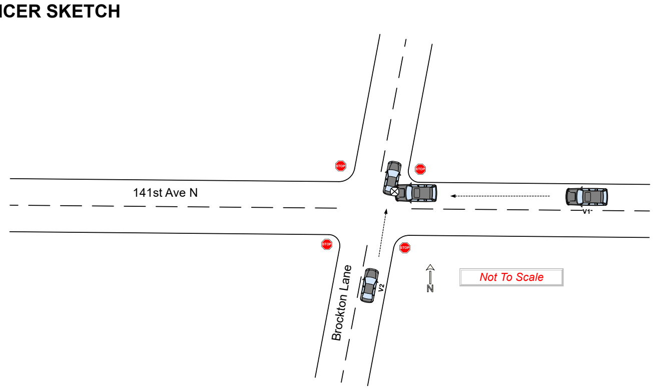
INCIDENT ID	ROUTE SYS	ROUTE NUM	MEASURE	ROUTE NAME	ROUTE ID	COUNTY	CITY
00622462	04-CSAH	0013	2.816	BROCKTON LA	0400006594720013-I	27	Rogers

INTERSECT WITH	NUM VEH	NUM KILLED	DATE	TIME	DAY OF WEEK	LAT	LONG	UTM X	UTM Y	WORK ZONE TYPE
	2	0	07/20/18	22:00	Fri	45.2099	-93.5264	458666.9	5006408.1	NOT APPLICABLE

BASIC TYPE	CRASH SEVERITY	FIRST HARMFUL	LIGHT CONDITION	WEATHER PRIMARY
Angle	N - Prop Damage Only	Motor Vehicle In Transport	Dark (Str Lights On)	Clear

	Unit 1	Unit 2	Unit 3	Unit 4
Unit Type	Motor Vehicle in Transport	Motor Vehicle in Transport		
Vehicle Type	Sport Utility Vehicle	Passenger Car		
Direction of Travel	Westbound	Westbound		
Veh Manuever	Moving Forward	Moving Forward		
Age/Sex	37 M	28 F		
Physical Cond	Apparently Normal	Apparently Normal		
Contributing Factor 1	Driver Distracted	No Clear Contributing Action		

OFFICER SKETCH



NARRATIVE

OFFICERS RESPONDED TO THE AREA OF 141ST AVE AND BROCKTON LANE REGARDING A TWO VEHICLE PROPERTY DAMAGE CRASH. THE INTERSECTION OF 141ST AVE AND BROCKTON LANE IS CONTROLLED BY 4 WAY STOP SIGNS. OFFICERS ARRIVED ON SCENE AND MADE CONTACT WITH ALL INVOLVED PARTIES AND CONFIRMED THERE WERE NO INJURIES. THE CRASH INVESTIGATION REVEALED THAT A WHITE PASSENGER CAR (VEHICLE 2) WAS TRAVELING NORTH ON BROCKTON LANE AND ARRIVED AT THE STOP SIGN AT 141ST AVE. THE DRIVER OF VEHICLE 2 CAME TO A STOP AND OBSERVED A VEHICLE, VEHICLE 1, TRAVELING WEST ON 141ST AVE TOWARDS BROCKTON LANE. THE DRIVER OF VEHICLE 2 PROCEEDED THROUGH THE INTERSECTION WITH THE ASSUMPTION VEHICLE 1 WOULD STOP AT THE STOP SIGN. VEHICLE 1 CONTINUED THROUGH THE INTERSECTION AND CRASHED INTO VEHICLE 2. THE DRIVER OF VEHICLE 1 SAID HE WAS HAVING VEHICLE ISSUES WITH HIS

Crash Detail Report - Short Form

CSAH 144_CSAH 13

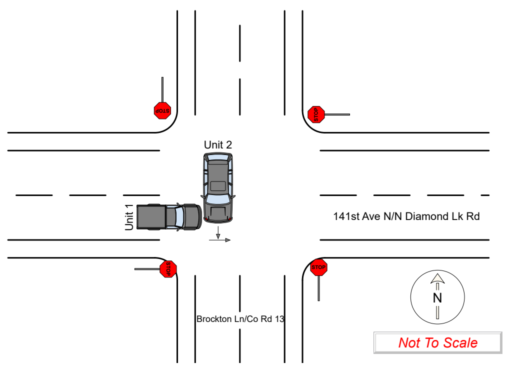
INCIDENT ID	ROUTE SYS	ROUTE NUM	MEASURE	ROUTE NAME	ROUTE ID	COUNTY	CITY
00457203	04-CSAH	0144	4.639	N DIAMOND LAKE RD	0400006594720144-I	27	Rogers

INTERSECT WITH	NUM VEH	NUM KILLED	DATE	TIME	DAY OF WEEK	LAT	LONG	UTM X	UTM Y	WORK ZONE TYPE
BROCKTON LA	2	0	06/05/17	06:21	Mon	45.2099	-93.5263	458668.5	5006404.7	NOT APPLICABLE

BASIC TYPE	CRASH SEVERITY	FIRST HARMFUL	LIGHT CONDITION	WEATHER PRIMARY
Angle	N - Prop Damage Only	Motor Vehicle In Transport	Daylight	Clear

	Unit 1	Unit 2	Unit 3	Unit 4
Unit Type	Motor Vehicle in Transport	Motor Vehicle in Transport		
Vehicle Type	Pickup	Sport Utility Vehicle		
Direction of Travel	Eastbound	Southbound		
Veh Manuever	Moving Forward	Moving Forward		
Age/Sex	30 M	59 F		
Physical Cond	Apparently Normal	Apparently Normal		
Contributing Factor 1	Failure to Yield Right-of-Way	No Clear Contributing Action		

OFFICER SKETCH



NARRATIVE

UNIT 1 STATED HE WAS TRAVELING EASTBOUND ON 141ST AVE/N DIAMOND LAKE RD AND CAME TO A COMPLETE STOP AT THE STOP SIGN FOR THE INTERSECTION WITH BROCKTON LA/CO RD 13. HE STATED HE LOOKED BOTH WAYS FIRST AND PROCEEDED INTO THE INTERSECTION WHERE HE STRUCK UNIT 2 WHICH WAS TRAVELING SOUTH ON BROCKTON LANE. UNIT 1 STATED UNIT 2 WAS IN A BLIND SPOT AS HE DID NOT SEE THEM AS THE SUN AND DOOR POST/FRAME WAS A FACTOR. UNIT 1 STATED THE ACCIDENT WAS HIS FAULT. UNIT 1 WAS DRIVABLE FROM THE SCENE. UNIT 2 STATED SHE WAS TRAVELING SOUTH ON BROCKTON LA AND STOPPED AT THE STOP SIGN FOR THE INTERSECTION WITH 141ST AVE N. SHE SAID SHE WAITED FOR TWO VEHICLES TO PROCEED THROUGH THE INTERSECTION AS SHE THEN BELIEVED IT WAS HER TURN TO PROCEED. SHE STATED AS SHE WAS DRIVING SOUTH THROUGH THE INTERSECTION, SHE WAS STRUCK BY UNIT 1 AS IT WAS TRAVELING

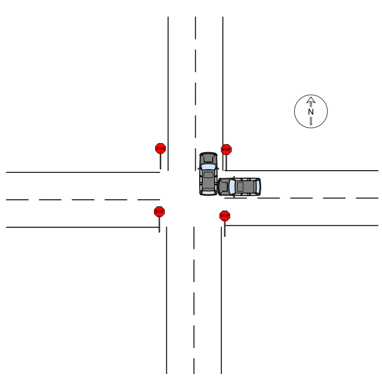
INCIDENT ID	ROUTE SYS	ROUTE NUM	MEASURE	ROUTE NAME	ROUTE ID	COUNTY	CITY
00456131	04-CSAH	0144	4.641	N DIAMOND LAKE RD	0400006594720144-I	27	Rogers

INTERSECT WITH	NUM VEH	NUM KILLED	DATE	TIME	DAY OF WEEK	LAT	LONG	UTM X	UTM Y	WORK ZONE TYPE
	2	0	05/31/17	19:07	Wed	45.2099	-93.5263	458671.2	5006401.2	NOT APPLICABLE

BASIC TYPE	CRASH SEVERITY	FIRST HARMFUL	LIGHT CONDITION	WEATHER PRIMARY
Angle	N - Prop Damage Only	Motor Vehicle In Transport	Daylight	Clear

	Unit 1	Unit 2	Unit 3	Unit 4
Unit Type	Motor Vehicle in Transport	Motor Vehicle in Transport		
Vehicle Type	Sport Utility Vehicle	Sport Utility Vehicle		
Direction of Travel	Westbound	Northbound		
Veh Manuever	Moving Forward	Moving Forward		
Age/Sex	35 M	58 M		
Physical Cond	Apparently Normal	Apparently Normal		
Contributing Factor 1	Other Contributing Action	No Clear Contributing Action		

OFFICER SKETCH



NARRATIVE

INITIAL INFORMATION ON 05/31/2017, I WAS WORKING THE NIGHT SHIFT FROM 1745-0600 HOURS. I WAS OPERATING MARKED SQUAD 6852 AND WEARING FULL POLICE UNIFORM. DETAILS AT 1907 HOURS I RESPONDED TO A PROPERTY DAMAGE CRASH AT 141ST AND BROCKTON LANE. I ARRIVED AND MADE CONTACT WITH THE OCCUPANTS. THERE WERE NO INJURIES. THE INTERSECTION IS A 4-WAY INTERSECTION CONTROLLED BY STOP SIGNS IN ALL DIRECTIONS. JON KENNETH PIPENHAGEN (DOB 09/03/1958) WAS DRIVING A 2002 CHEVROLET BLAZER NORTHBOUND BROCKTON LANE FROM 141ST. BERNICE THERESA PIPENHAGEN (DOB 03/29/1934) WAS IN THE FRONT PASSENGER SEAT. WHILE IN THE INTERSECTION AND TRAVELING NORTHBOUND HE WAS STRUCK IN THE REAR PASSENGER DOOR AREA BUT A FORD EDGE. ARIK LEE ANDERSON (DOB 06/18/1981) WAS DRIVING WESTBOUND ON 141ST FROM BROCKTON LANE. ARIK TOLD ME THE SUN GLARED IN HIS EYES. THE

Crash Detail Report - Short Form

CSAH 144_CSAH 13

Selection Filter:

WORK AREA: County('659472') - FILTER: Year('2016','2017','2018') - SPATIAL FILTER APPLIED

Analyst:	Notes:
Mallori Fitzpatrick	

Commuter and Express Route Design

The factors that guide the design of express routes are somewhat different from those covered in the above section for local routes. Express routes are focused on providing fast, reliable trips into major regional centers. The most important factors for express service success are high-density origins and destinations at both ends of the route (such as at a park-and-ride and downtown) and demand management that balances parking supply and cost with the demand for parking and access for transit. The level and location of congestion can also be a substantial factor in the success of express bus services.

Transit Market Areas

Market Areas Overview

An important underlying element to the transit investment plan is the definition of Transit Market Areas. Transit Market Areas are defined by the demographic and urban design factors that are associated with successful transit service. There are five Transit Market Areas (see figure 6-3) as well as some unique Market Area features. The Transit Market Areas are generally associated with community designations in *Thrive MSP 2040* (see Land Use and Local Planning for more details) as follows:

- **Transit Market Areas I and II** are mostly Urban Center communities where urban form and density are most supportive of transit. These areas also have the largest concentrations of transit-dependent residents in the region. Transit service in these areas focuses on providing a dense network of local routes with high levels of service to accommodate a wide variety of trip purposes. Market Area II will typically have a similar route structure to Market Area I, but lower levels of service, as demand warrants.
- **Transit Market Area III** is primarily Urban along with portions of the Suburban, Suburban Edge, and Emerging Suburban Edge and is generally characterized by overall lower density and less transit-supportive urban form along with some pockets of denser development. The primary emphasis of transit service in this area is express and commuter service with some suburban local routes and dial-a-ride service providing basic access.
- **Transit Market Area IV** is primarily Suburban Edge and Emerging Suburban Edge along with portions of Suburban, and is generally characterized by consistently low-density development and an urban form that does not support frequent local transit service. Transit service in Market Area IV is primarily peak-period express and commuter service oriented to park-and-ride facilities that can effectively capture the lower density transit demand. Local trips are provided by general public dial-a-ride services.
- **Transit Market Area V** is generally all forms of Rural and Agricultural but does include the unique freestanding town centers of Stillwater, Waconia, Forest Lake, and Hastings; Market Area V is generally characterized by low-density development or undeveloped land not well suited for regular-route transit service outside of limited peak-period express and commuter service.

Unique Market Areas

The Emerging Market overlays are unique areas of Transit Market Areas II and III where significant pockets of higher density exist but surrounding conditions still limit the success of local transit. These areas should be a focus for future development that will connect them with areas of higher transit intensity, specifically looking at extensions of existing routes or connections.

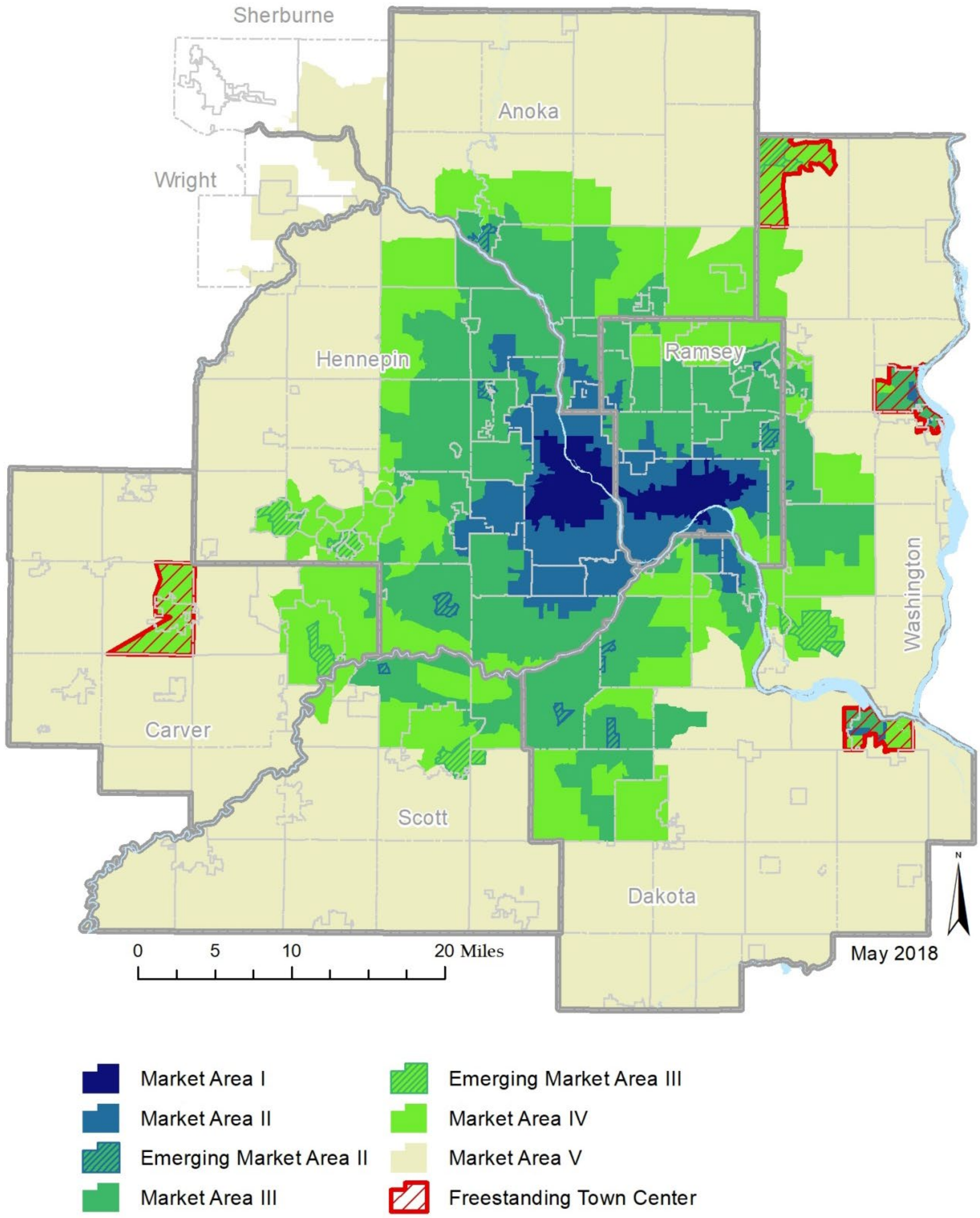
Freestanding Town Centers are unique areas that grew independently of Minneapolis and Saint Paul and act as suburbs but are still separated from the urban and suburban areas by rural land. These areas typically have small downtowns of their own but also export many workers to other regional centers. Local transit services that connect to the region would not be as effective serving these areas given their location in the region, despite their relatively concentrated nature. However, these areas may still have express service demand and possible demand for small circulator services.

The Metropolitan Council and regional transit providers will also coordinate their efforts with MnDOT and transit services that connect beyond the seven-county metropolitan region. The Transit Market Areas do not address the feasibility of these kinds of services, which are coordinated on a case-by-case basis.

Two additional areas of emphasis in *Thrive MSP 2040* are important for consideration in transit service design, the special features of Areas of Concentrated Poverty, Areas of Concentrated Poverty where at least 50% of residents are people of color, and Job Concentrations. Residents of Areas of Concentrated Poverty must overcome a legacy of private disinvestment to access the opportunity of the region. In transit, this often means considering higher levels of service, better amenities, or unique service types focused on providing better access to jobs or education. These areas are also highly correlated with limited household access to a private vehicle. Job Concentrations have good potential to be served with transit because of their density and level of activity. Many of these concentrations will need to adapt and continue adding density and diversifying land uses to be truly transit-oriented. This will need to be coordinated with continued investments in transit access to these areas as well as better transit facilities.

The Transit Market Areas are shown in Figure 6-3 and described in more detail in Appendix G. Transit Market Areas are primarily used to design the regional bus system, but some guidance on their application to transitways is discussed in the Regional Transitway Guidelines.

Figure 6-3: Transit Market Areas



WSB Project: CSAH 144 and CSAH 13 Intersection
Project Location: City of Rogers, Hennepin County
WSB Project No: 015957-000
Date: 5/11/2020

STATEMENT OF ESTIMATED QUANTITIES

						CSAH 144 and CSAH 13	
SHEET	Item Number	Description	Unit	Notes	Unit Price	Estimated Quantity	Estimated Cost
	2021.501	MOBILIZATION	LUMP SUM		$131,350.00	1	$131,350.00
	2104.518	REMOVE BITUMINOUS PAVEMENT	SQ YD		$4.00	13400	$53,600.00
	2104.601	MISCELLANEOUS REMOVALS	LUMP SUM	1	$35,000.00	1	$35,000.00
	2106.507	EXCAVATION - COMMON	CU YD		$10.00	8000	$80,000.00
	2106.507	EXCAVATION - SUBGRADE	CU YD		$10.00	12200	$122,000.00
	2106.507	SELECT GRANULAR EMBANKMENT (CV)	CU YD		$16.00	12200	$195,200.00
	2106.507	COMMON EMBANKMENT (CV)	CU YD		$6.00	8000	$48,000.00
	2211.507	AGGREGATE BASE (CV) CLASS 5	CU YD	2	$35.00	4300	$150,500.00
	2360.509	TYPE SP 9.5 WEARING COURSE MIX (4,C)	TON		$62.00	7300	$452,600.00
		CONSTRUCT DRAINAGE SYSTEMS (APPROX 10%)	LUMP SUM		$200,000.00	1	$200,000.00
	2521.518	4" CONCRETE WALK	SQ FT	3	$5.00	14500	$72,500.00
	2521.518	6" CONCRETE WALK	SQ FT		$8.00	1600	$12,800.00
	2521.518	3" BITUMINOUS WALK	SQ FT		$2.00	16000	$32,000.00

WSB Project: CSAH 144 and CSAH 13 Intersection
Project Location: City of Rogers, Hennepin County
WSB Project No: 015957-000
Date: 5/11/2020

STATEMENT OF ESTIMATED QUANTITIES

SHEET	Item Number	Description	Unit	Notes	Unit Price	CSAH 144 and CSAH 13 Estimated Quantity	Estimated Cost
	2531.503	CONCRETE CURB & GUTTER DESIGN B424	LIN FT		$18.00	3700	$66,600.00
	2531.618	TRUNCATED DOMES	SQ FT		$50.00	40	$2,000.00
	2565.516	TRAFFIC CONTROL SIGNAL SYSTEM	SYSTEM		$225,000.00	1	$225,000.00
		EROSION CONTROL & TURF ESTABLISHMENT	LUMP SUM		$85,000.00	1	$85,000.00
		TRAFFIC CONTROL & STAGING	LUMP SUM		$60,000.00	1	$60,000.00
		SIGNING & STRIPING (APPROX 2%)	LUMP SUM		$56,140.00	1	$56,140.00
	TOTAL ESTIMATE						$2,080,290.00
						5% CONTINGENCY	$104,100.00
						TOTAL ESTIMATE	**$2,184,390.00**

NOTES:
1. INCLUDES BUT IS NOT LIMITED TO DRAINAGE PIPES, DRAINAGE STRUCTURES, SIGNS, AND SAWCUTTING.
2. AGGREGATE DEPTH ASSUMED TO BE 6" UNDER ROAD AND MEDIANS, 6" UNDER TRAIL AND SIDEWALKS.
3. INCLUDES CONCRETE FOR MEDIANS AND SIDEWALK.

Memorandum

To: File

From: Mallori Fitzpatrick, EIT

Date: May 13, 2020

Re: Hennepin CSAH 144 and CSAH 13 Traffic Signal and Geometric Improvements (Spot Safety and Mobility Application)
Questions 3 and 4 on Met Council Application
WSB Project No. 015957-000

The purpose of this technical memorandum is to analyze the Congestion Reduction/Air Quality and Safety of the existing condition and proposed Hennepin CSAH 144 and CSAH 13 traffic signal and intersection geometric improvements project to satisfy the requirements of the Spot Mobility and Safety criteria.

Task 3. Congestion Reduction/Air Quality

A capacity and emissions analysis was conducted at the intersection using 2018 PM peak hour traffic counts. Synchro software was used to analyze the delay for the existing and proposed network. Synchro was also used to report the Carbon Monoxide (CO), Nitrogen Oxides (NOx), and Volatile Organic Compound (VOC) emissions at the intersection of Hennepin CSAH 144 and CSAH 13.

Table 1 identifies the existing and build condition delays at the intersection during the PM peak hour as reported from HCM 6th Edition.

Table 1. Existing and Build Condition Delays

PM PEAK						
Intersection	Existing Vehicles	Build Vehicles	Synchro Existing Delay per vehicle (s)	Synchro Build Delay per vehicle (s)	Synchro Existing Total Delay (s)	Synchro Build Total Delay (s)
CSAH 144 & CSAH 13	1074	1074	47.0	13.0	50478	13962

The following includes responses to Part A:

- Total Peak Hour Delay/Vehicle without the Project (Seconds/Vehicle): 47.0
- Total Peak Hour Delay/Vehicle with the Project (Seconds/Vehicle): 13.0
- Total Peak Hour Delay/Vehicle Reduced by the Project (Seconds/Vehicle): 34.0
- Volume without the Project (Vehicles per hour): 1,074
- Volume with the Project (Vehicles per hour): 1,074
- Total Peak Hour Delay Reduced by the Project (Seconds): 36,516

Table 2 identifies the existing and build condition emission outputs at the intersection during the PM peak hour as reported from Synchro 10.

701 XENIA AVENUE S | SUITE 300 | MINNEAPOLIS, MN | 55416 | 763.541.4800 | WSBENG.COM

Table 2. Existing and Build Emissions

PM PEAK						
Intersection	Existing CO Emissions (kg)	Existing Nox Emissions (kg)	Existing VOC Emissions (kg)	Build CO Emissions (kg)	Build NOx Emissions (kg)	Build VOC Emissions (kg)
CSAH 144 & CSAH 13	2.8	0.54	0.65	1.73	0.34	0.4
Total		**3.99**			**2.47**	

The following includes responses to Part B:

- Total (CO, NOx, and VOC) Peak Hour Emissions without the Project (Kilograms): 3.99
- Total (CO, NOx, and VOC) Peak Hour Emissions with the Project (Kilograms): 2.47
- Total (CO, NOx, and VOC) Peak Hour Emissions Reduced by the Project (Kilograms): 1.52

Task 4. Safety

A safety analysis was conducted at the intersection of CSAH 144 and CSAH 13. Three years of crash data (2016-2018) was collected at intersection and analyzed in a Benefit/Cost (B/C) worksheet. A total of four crashes occurred at the intersection within the three-year period. **Table 3** identifies the severity and type of collisions from the data set.

Table 3. Existing Intersection Crash Data

CSAH 144 and CSAH 13 (2016-2018)								
	Classification by Type							
Severity	**Rear End**	**Side Swipe**	**Left Turn**	**Road**	**Right Angle**	**Right Turn**	**Head On**	**Other**
K	0	0	0	0	0	0	0	0
A	0	0	0	0	0	0	0	0
B	0	0	0	0	0	0	0	0
C	0	0	0	0	0	0	0	0
N	0	0	0	0	4	0	0	0
Total	**0**	**0**	**0**	**0**	**4**	**0**	**0**	**0**

The following includes responses to Part A:

- Two crash modification factors were identified using the Federal Highway Administration's (FHWA) Crash Modification Factors (CMF) Clearinghouse to predict the annual crash reduction and cost benefit. The following CMFs were applied:
  - Install a traffic signal (CMF = 0.56 for all crash and severity types)
  - Install raised median (CMF = 0.61 for all crash and severity types)
- Project Benefit ($) from B/C ratio: $168,982
- Total Fatal (K) Crashes: 0
- Total Serious Injury (A) Crashes: 0
- Total Non-Motorized Fatal and Serious Injury Crashes: 0
- Total Crashes: 4
- Total Fatal (K) Crashes Reduced by Project: 0
- Total Serious Injury (A) Crashes Reduced by Project: 0
- Total Non-Motorized Fatal and Serious Injury Crashes Reduced by Project: 0
- Total Crashes Reduced by Project: 11.8 crashes over 20 years

The overall Benefit/Cost (B/C) Ratio is 0.08, see the B/C worksheet for the breakdown of the benefit analysis.

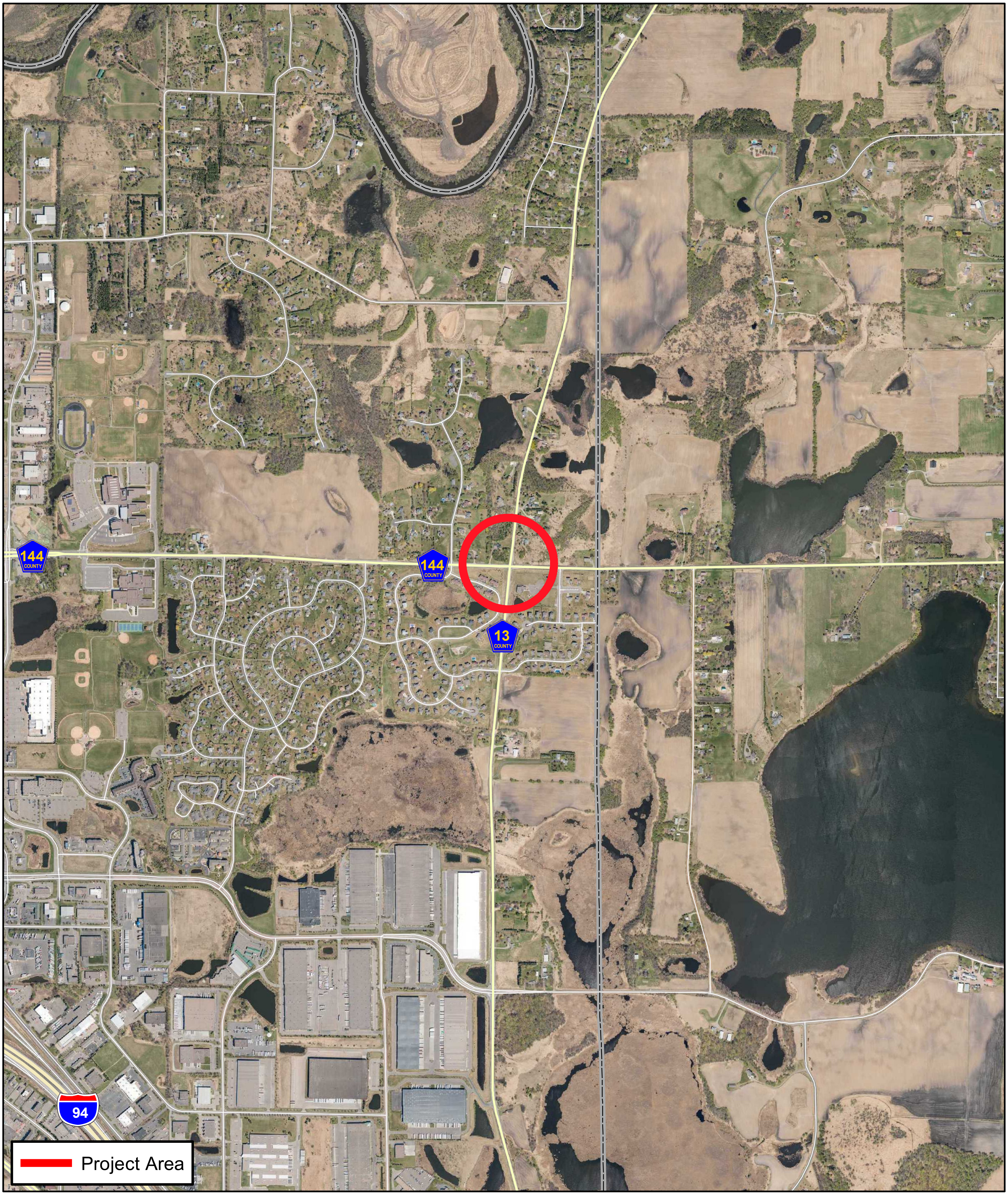


Figure 2 - CSAH 144 & CSAH 13 Intersection Improvements (Aerial)
City of Rogers, MN
Hennepin County

City of Rogers FMP Document - Transportation Capital Improvement Projects - Intersection Focus

Updated 5/14/2020

Map No.	Project	Year	Cost Estimates: Other Indirect Costs	ROW	Engineering	Construction	Total	Funding: Federal / State	County	MSA	Assessment	Franchise Fees	Developer	TIF 1	Other City Funds	Area Wide Assessments (402 unallocated)	Fund 402 -- Allocated Funds	Total Funding Sources
	2019																	
4	Northdale from 141st to South Diamond Lake rd.	2019			$230,400	$1,151,900	**$1,382,300**			$508,750	$204,000	$505,000			$122,550		$42,000	**$1,382,300**
			$0	$0	$230,400	$1,151,900	$1,382,300	$0	$0	$508,750	$204,000	$505,000	$0	$0	$122,550	$0	$42,000	$1,382,300
	2020																	
2A	Industrial Blvd. to CSAH 144 - STAGE I	2020			$220,000	$1,100,000	**$1,320,000**		$150,000	$920,000						$250,000		**$1,320,000**
7	Fletcher Lane Improvements	2020	$5,000		$72,473	$410,680	**$488,153**				$310,000				$102,380		$75,773	**$488,153**
-	Fletcher By-Pass ROW Acquisition	2020		$300,000			**$300,000**							$300,000				**$300,000**
-	Downtown R.O.W for Transportation	2020		$500,000			**$500,000**							$500,000				**$500,000**
9	129TH AVE/ MAIN ST/ MEMORIAL DR REALIGNMENT	2020	$0	$50,000	$108,000	$600,000	**$758,000**			$250,000				$258,000		$250,000		**$758,000**
-	CSAH 116 & Wood Lane	2020			$150,000	$750,000	**$900,000**				$900,000							**$900,000**
-	CSAH 13 & Lucas/Bebeau	2020			$120,000	$600,000	**$720,000**				$720,000							**$720,000**
8	Main Street Reconstruct - CSAH 81 to Rogers Elem New Entrance	2020	$5,000		$300,000	$2,282,000	**$2,587,000**		$500,000			$500,000		$300,000	$1,287,000			**$2,587,000**
			$10,000	$850,000	$970,473	$5,742,680	$7,573,153	$0	$650,000	$1,170,000	$1,930,000	$500,000	$0	$1,358,000	$1,389,380	$500,000	$75,773	$7,573,153
	2021																	
18	Dayton Parkway Interchange	2021	$0	$0	$3,360,000	$38,640,000	**$42,000,000**	$33,000,000	$7,500,000							$1,500,000		**$42,000,000**
6	Fletcher By-Pass PHASE I (1st two lanes)	2021	$9,000		$1,300,000	$6,500,000	**$7,809,000**	$0	$6,925,000	$384,000						$500,000		**$7,809,000**
10	John Deere Lane Extension to 129th Avenue	2021	$0	$350,000	$540,000	$2,700,000	**$3,590,000**			$1,375,000	$500,000			$500,000	$320,000	$895,000		**$3,590,000**
			$9,000	$350,000	$5,200,000	$47,840,000	$53,399,000	$33,000,000	$14,425,000	$1,759,000	$500,000	$0	$0	$500,000	$320,000	$2,895,000	$0	$53,399,000
	2022																	
32	CSAH 116 & Tucker Road Intersection Improvements	2021		$250,000	$240,000	$1,200,000	**$1,690,000**	$750,000	$250,000							$690,000		**$1,690,000**
11	129th Avenue Upgrade Phase 2 (Arthur Street to Oakwood Drive)	2020	$6,400	$100,000	$390,000	$1,950,000	**$2,446,400**			$1,250,000		$250,000			$446,400	$500,000		**$2,446,400**
12/13	CSAH 144 Expansion/ CSAH 13 & 144 Intersection	2022	$0	$350,000	$820,000	$4,100,000	**$5,270,000**		$4,428,000	$241,571							$600,429	**$5,270,000**
			$6,400	$700,000	$1,450,000	$7,250,000	$9,406,400	$750,000	$4,678,000	$1,491,571	$0	$250,000	$0	$0	$446,400	$1,190,000	$600,429	$9,406,400
	2023																	
14	Main St. (CSAH 150) / Territorial Rd. (CSAH 116) Intersection	2023	$0	$50,000	$163,750	$720,500	**$934,250**	$720,500								$166,160	$47,590	**$934,250**
29	Edgewater Parkway from Edgewater Development to 129th Ave	2019				$1,900,000	$1,900,000						$1,900,000					$1,900,000
16	CSAH 81 Upgrade (Relates to Fletcher Bypass)	2023	$0	$125,000	$775,000	$3,100,000	**$4,000,000**	$2,500,000	$600,000							$900,000		**$4,000,000**
			$0	$175,000	$938,750	$5,720,500	$6,834,250	$3,220,500	$600,000	$0	$0	$0	$1,900,000	$0	$0	$1,066,160	$47,590	$6,834,250
	2024																	
19/20	CSAH 13 4 Lane Expansion (CSAH 81 to Rogers Dr) Stage 1	2024	$50,000	$500,000	$1,500,000	$7,500,000	**$9,550,000**	$4,000,000	$2,500,000	$50,000					$1,000,000	$2,000,000		**$9,550,000**
30	Edgewater Parkway - 129th Ave to CSAH 116	2023				$1,900,000	$1,900,000						$1,900,000					$1,900,000
33	CSAH 116 & Co Rd 203 Intersection Alignment	2024	$0	$250,000	$240,000	$1,200,000	**$1,690,000**		$1,440,000							$250,000		**$1,690,000**
			$50,000	$750,000	$1,740,000	$10,600,000	$13,140,000	$4,000,000	$3,940,000	$50,000	$0	$0	$1,900,000	$0	$1,000,000	$2,250,000	$0	$13,140,000
	2025																	
2B	Industrial Blvd. from Edgewater Pkwy to CSAH 144	2025	$0	$250,000	$300,000	$1,500,000	**$2,050,000**		$1,650,000		$400,000							**$2,050,000**
17	129th Avenue Upgrade Phase 3 (Oakwood Drive to CSAH 116)	2025	$0	$250,000	$350,000	$1,750,000	**$2,350,000**			$1,200,000		$250,000				$900,000		**$2,350,000**
			$0	$500,000	$650,000	$3,250,000	$4,400,000	$0	$1,650,000	$1,200,000	$400,000	$250,000	$0	$0	$0	$900,000	$0	$4,400,000
	2026+																	
22	CSAH 117 to CSAH 13 (Extension from 116 to Brockton Lane)	2026+	$1,000,000	$500,000	$3,000,000	$15,000,000	**$19,500,000**	$7,000,000	$8,000,000				$4,500,000					**$19,500,000**
21	Fletcher By-Pass PHASE II (2nd two lanes)	2026+	$0	$0	$490,000	$2,450,000	**$2,940,000**		$2,500,000	$440,000								**$2,940,000**
23	CSAH 144 Expansion I-94 to Marie Ave	2026+		$1,275,000	$1,700,000	$8,500,000	**$11,475,000**	$4,975,000	$2,500,000	$1,500,000						$2,500,000		**$11,475,000**
15	Rogers Dr. Realignment - S. of South Dia. Lk. Rd.	2026+	$0	$1,300,000	$750,000	$2,500,000	**$4,550,000**						$3,550,000			$1,000,000		**$4,550,000**
25	CSAH 144 Realignment - North Section (116 to Industrial)	2026+	$0	$300,000	$620,000	$3,100,000	**$4,020,000**		$3,520,000	$500,000								**$4,020,000**
26	Co RD 203 Intersections (Tucker, Hassan Pkwy, Curve Radius)	2026+	$0	$250,000	$180,000	$1,200,000	**$1,630,000**	$0	$1,110,000							$520,000		**$1,630,000**
			$1,000,000	$3,625,000	$6,740,000	$32,750,000	$44,115,000	$11,975,000	$17,630,000	$2,440,000	$0	$0	$8,050,000	$0	$0	$4,020,000	$0	$44,115,000

Attachment A

EJSCREEN ACS Summary Report

Location: User-specified point center at 45.209878, -93.526332
Ring (buffer): 0.5-miles radius
Description: CSAH 144-CSAH 13

Summary of ACS Estimates	2013 - 2017
Population	820
Population Density (per sq. mile)	884
Minority Population	90
% Minority	11%
Households	222
Housing Units	222
Housing Units Built Before 1950	7
Per Capita Income	42,581
Land Area (sq. miles) (Source: SF1)	0.93
% Land Area	98%
Water Area (sq. miles) (Source: SF1)	0.02
% Water Area	2%

	2013 - 2017 ACS Estimates	Percent	MOE (±)
Population by Race			
Total	820	100%	680
Population Reporting One Race	813	99%	1,327
White	736	90%	771
Black	0	0%	12
American Indian	0	0%	12
Asian	76	9%	502
Pacific Islander	1	0%	18
Some Other Race	0	0%	12
Population Reporting Two or More Races	7	1%	61
Total Hispanic Population	9	1%	87
Total Non-Hispanic Population	810		
White Alone	730	89%	765
Black Alone	0	0%	12
American Indian Alone	0	0%	12
Non-Hispanic Asian Alone	76	9%	502
Pacific Islander Alone	1	0%	18
Other Race Alone	0	0%	12
Two or More Races Alone	4	0%	46
Population by Sex			
Male	383	47%	385
Female	437	53%	467
Population by Age			
Age 0-4	39	5%	150
Age 0-17	231	28%	373
Age 18+	589	72%	594
Age 65+	100	12%	261

Data Note: Detail may not sum to totals due to rounding. Hispanic population can be of any race.
N/A means not available. **Source:** U.S. Census Bureau, American Community Survey (ACS) 2013 - 2017 .

EJSCREEN ACS Summary Report

Location: User-specified point center at 45.209878, -93.526332
Ring (buffer): 0.5-miles radius
Description: CSAH 144-CSAH 13

	2013 - 2017 ACS Estimates	Percent	MOE (±)
Population 25+ by Educational Attainment			
Total	532	100%	513
Less than 9th Grade	1	0%	21
9th - 12th Grade, No Diploma	30	6%	153
High School Graduate	110	21%	390
Some College, No Degree	201	38%	352
Associate Degree	74	14%	207
Bachelor's Degree or more	190	36%	372
Population Age 5+ Years by Ability to Speak English			
Total	781	100%	645
Speak only English	710	91%	675
Non-English at Home[1+2+3+4]	71	9%	372
[1]Speak English "very well"	39	5%	184
[2]Speak English "well"	14	2%	135
[3]Speak English "not well"	5	1%	46
[4]Speak English "not at all"	12	2%	147
[3+4]Speak English "less than well"	18	2%	154
[2+3+4]Speak English "less than very well"	32	4%	204
Linguistically Isolated Households*			
Total	4	100%	61
Speak Spanish	0	0%	12
Speak Other Indo-European Languages	0	0%	12
Speak Asian-Pacific Island Languages	4	100%	60
Speak Other Languages	0	0%	12
Households by Household Income			
Household Income Base	222	100%	193
< $15,000	7	3%	67
$15,000 - $25,000	6	3%	70
$25,000 - $50,000	28	12%	145
$50,000 - $75,000	37	17%	176
$75,000 +	144	65%	317
Occupied Housing Units by Tenure			
Total	222	100%	193
Owner Occupied	173	78%	196
Renter Occupied	48	22%	159
Employed Population Age 16+ Years			
Total	614	100%	594
In Labor Force	444	72%	522
Civilian Unemployed in Labor Force	16	3%	102
Not In Labor Force	170	28%	275

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

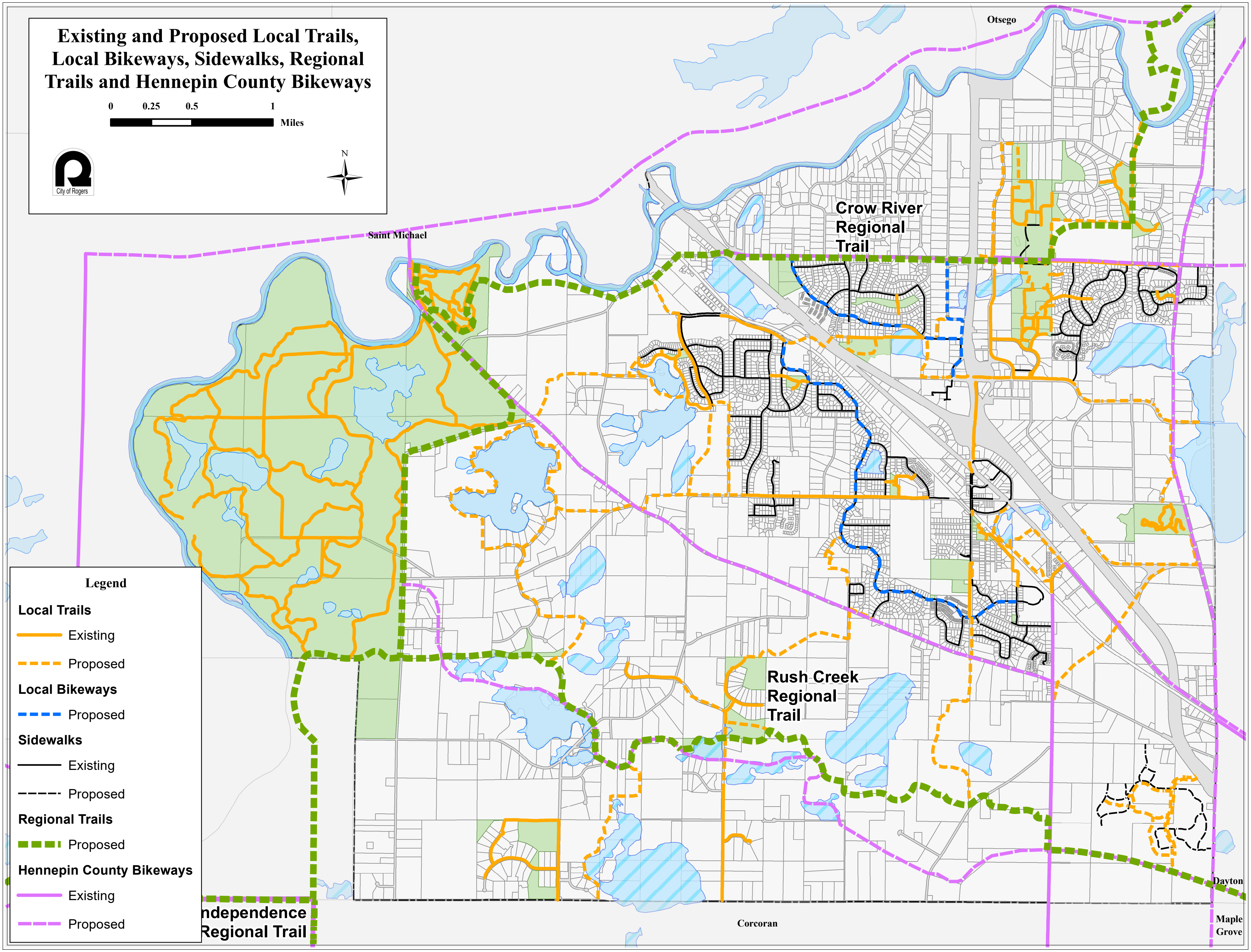
EJSCREEN ACS Summary Report

Location: User-specified point center at 45.209878, -93.526332
Ring (buffer): 0.5-miles radius
Description: CSAH 144-CSAH 13

	2013 - 2017 **ACS Estimates**	**Percent**	**MOE (±)**
Population by Language Spoken at Home*			
Total (persons age 5 and above)	N/A	N/A	N/A
English	N/A	N/A	N/A
Spanish	N/A	N/A	N/A
French	N/A	N/A	N/A
French Creole	N/A	N/A	N/A
Italian	N/A	N/A	N/A
Portuguese	N/A	N/A	N/A
German	N/A	N/A	N/A
Yiddish	N/A	N/A	N/A
Other West Germanic	N/A	N/A	N/A
Scandinavian	N/A	N/A	N/A
Greek	N/A	N/A	N/A
Russian	N/A	N/A	N/A
Polish	N/A	N/A	N/A
Serbo-Croatian	N/A	N/A	N/A
Other Slavic	N/A	N/A	N/A
Armenian	N/A	N/A	N/A
Persian	N/A	N/A	N/A
Gujarathi	N/A	N/A	N/A
Hindi	N/A	N/A	N/A
Urdu	N/A	N/A	N/A
Other Indic	N/A	N/A	N/A
Other Indo-European	N/A	N/A	N/A
Chinese	N/A	N/A	N/A
Japanese	N/A	N/A	N/A
Korean	N/A	N/A	N/A
Mon-Khmer, Cambodian	N/A	N/A	N/A
Hmong	N/A	N/A	N/A
Thai	N/A	N/A	N/A
Laotian	N/A	N/A	N/A
Vietnamese	N/A	N/A	N/A
Other Asian	N/A	N/A	N/A
Tagalog	N/A	N/A	N/A
Other Pacific Island	N/A	N/A	N/A
Navajo	N/A	N/A	N/A
Other Native American	N/A	N/A	N/A
Hungarian	N/A	N/A	N/A
Arabic	N/A	N/A	N/A
Hebrew	N/A	N/A	N/A
African	N/A	N/A	N/A
Other and non-specified	N/A	N/A	N/A
Total Non-English	N/A	N/A	N/A

Data Note: Detail may not sum to totals due to rounding. Hispanic popultion can be of any race.
N/A meansnot available. **Source:** U.S. Census Bureau, American Community Survey (ACS) 2013 - 2017 .
*Population by Language Spoken at Home is available at the census tract summary level and up.

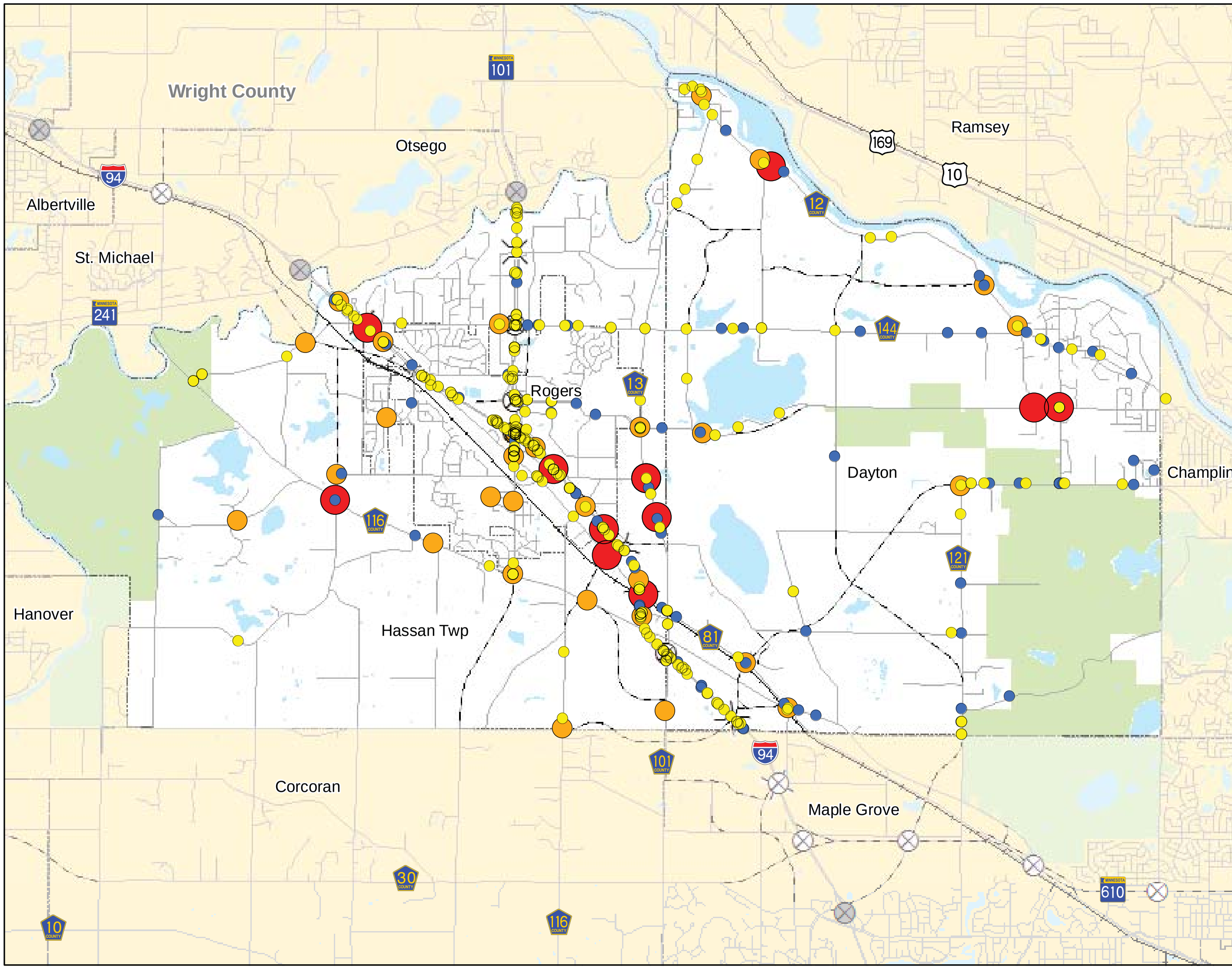
Attachment B



Created by: City of Rogers > Public Works > GIS

Crashes 2002-2006

Northwest Hennepin County
I-94 Sub-Area Transportation Study



- Fatal - 12 crashes
- Incapacitating Injury 32 crashes
- Non-Incapacitating Injury 155 crashes
- Possible Injury 362 crashes

Source: Mn/DOT

N

0 1 2
Miles

SRF Consulting Group, Inc.

HENNEPIN COUNTY
MINNESOTA

April 30, 2020

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

Re: Support for 2020 Regional Solicitation Application
CSAH 13 (Brockton Lane) at CSAH 144 (141st Avenue) Spot Mobility and Safety Project

Dear Ms. Koutsoukos,

Hennepin County has been notified that the City of Rogers is submitting an application for funding as part of the 2020 Regional Solicitation through the Metropolitan Council. The proposed project will improve mobility at the existing CSAH 13 (Brockton Lane) and CSAH 144 (141st Avenue) intersection which currently operates under All-Way Stop intersection traffic control. It is anticipated that a new intersection design will be introduced to better facilitate turning movements, especially during the morning and afternoon peak periods. Furthermore, this project will complement planned development located within close proximity of this intersection that will likely result in increased activity in the area.

Hennepin County supports this funding application and will operate and maintain both CSAH 13 (Brockton Lane) and CSAH 144 (141st Avenue) for the useful life of these improvements. At this time, Hennepin County has no funding programmed in its 2020-2024 Transportation Capital Improvement Program (CIP) for this project. Therefore, county staff is currently unable to commit county cost participation in the project. However, we request that the City of Rogers includes county staff as part of the design process to discuss potential intersection modification strategies. Hennepin County looks forward to working with the City of Rogers to improve mobility at the CSAH 13 (Brockton Lane) and CSAH 144 (141st Avenue) intersection.

Sincerely,

Carla Stueve

Carla Stueve, P.E., P.T.O.E.
Transportation Project Delivery Director and County Engineer

cc: Chad Ellos, P.E. – Transportation Planning Division Manager

Hennepin County Transportation Project Delivery
7009 York Avenue South, MN 55435 (Temporary)
612-596-0241 | hennepin.us

City of Rogers: CSAH 144 & CSAH 13 Intersection Improvements

Existing Conditions Images

CSAH 13 (Brockton Ln N), south of CSAH 144 (141st Ave N), facing north.
Photo Credit: Google (Street View)

CSAH 13 (Brockton Ln N), north of CSAH 144 (141st Ave N), facing south.
Photo Credit: Google (Street View)

CSAH 144 (141st Ave N), west of CSAH 13 (Brockton Ln N), facing east.
Photo Credit: Google (Street View)

CSAH 144 (N Diamond Lake Rd), east of CSAH 13 (Brockton Ln N), facing west.
Photo Credit: Google (Street View)

CSAH 13 (Brockton Ln N), between CSAH 144 (141st Ave N) and Harmony Ave, facing south.
Photo Credit: Google (Street View)

CITY OF ROGERS

PUBLIC WORKS DEPARTMENT **(763) 428-8580**

22350 SOUTH DIAMOND LAKE ROAD • ROGERS, MINNESOTA 55374 **www.rogersmn.gov**

May 4, 2020

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

RE: CSAH 144 and CSAH 13 Signal and Intersection Geometric Improvements
2020 Met Council Regional Solicitation Application

Dear Elaine:

Please find attached a resolution adopted by the Rogers City Council approving submittal of a Spot Mobility and Safety application to the Metropolitan Council as part of its 2020 Regional Solicitation for CSAH 144 and CSAH 13 signal and intersection geometric improvements. The City is taking the lead on this project application and coordinating with Hennepin County, who is also submitting a separate letter of support.

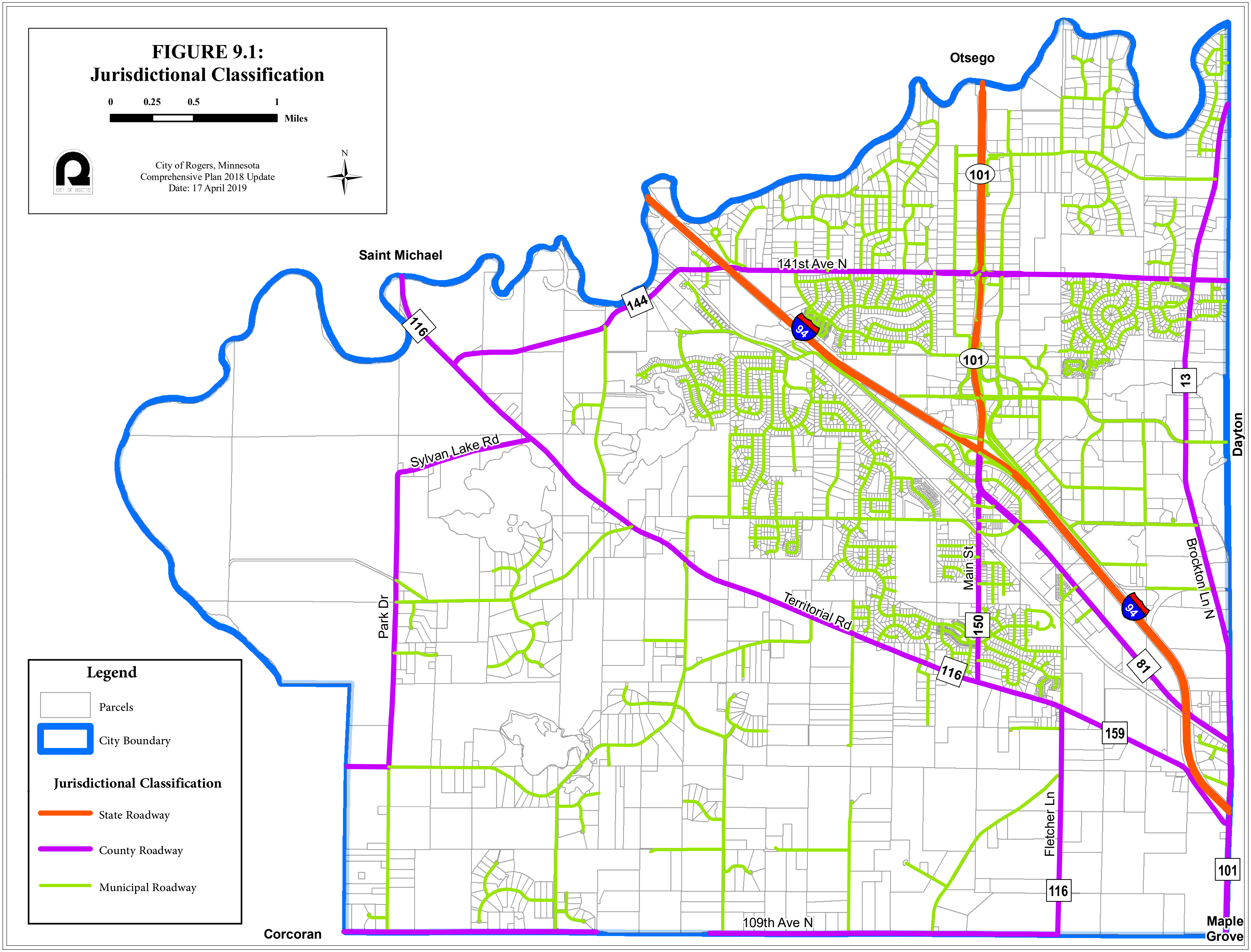
This project is identified in the City of Rogers Capital Improvement Program (CIP) and 2040 Comprehensive Plan.

The City of Rogers acknowledges, to the extent it has jurisdiction and controls right-of-way of the associated facilities, that the City will operate and maintain the roadway for the useful life of the improvement and will not change the use of any right-of-way acquired without prior approval from MnDOT.

Sincerely,

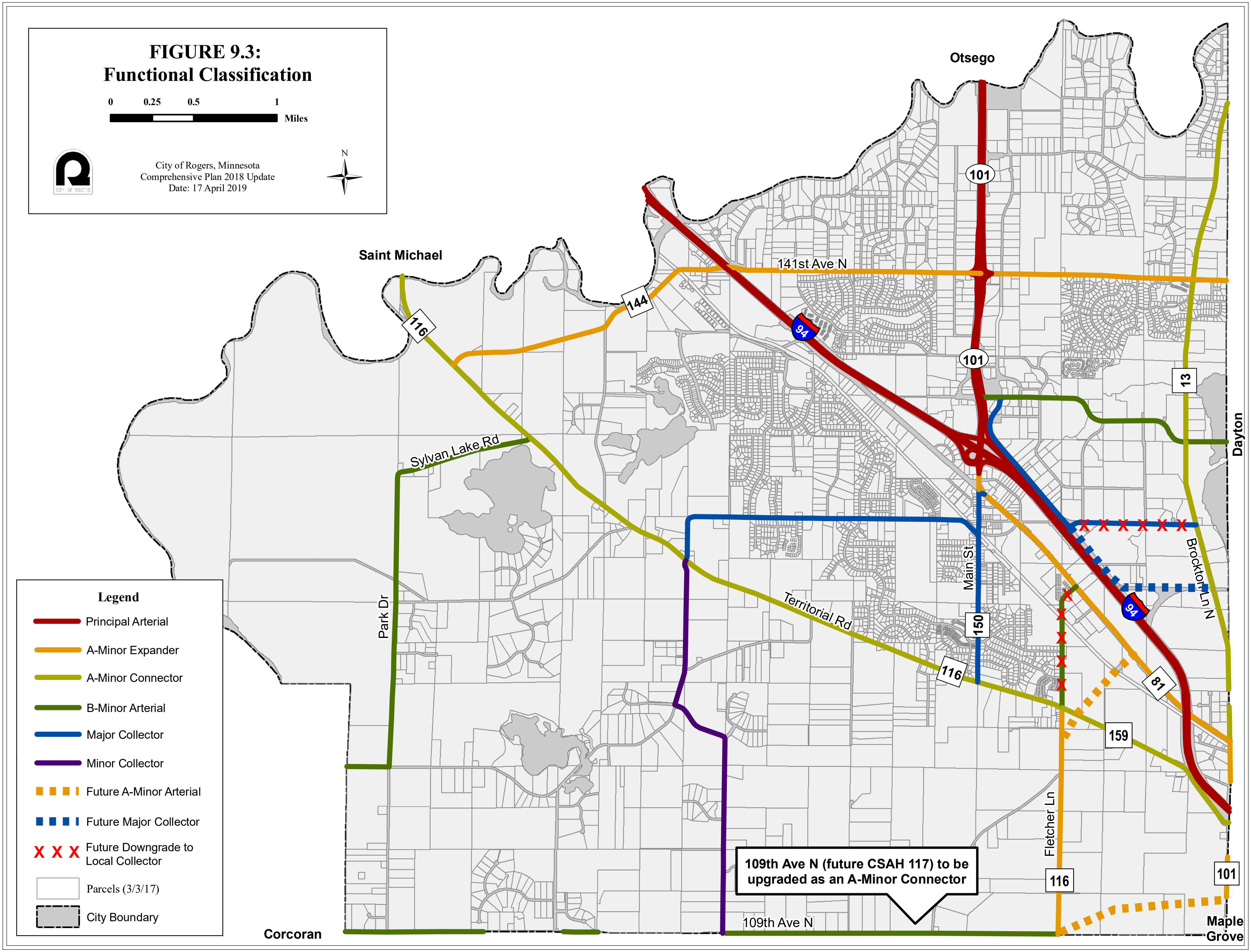
John Seifert
Public Works Director

Chapter 9
Transportation



Created by: SRF Consulting Group

FIGURE 9.3: Functional Classification



Created by: SRF Consulting Group

Programmed & Planned Improvements

Programmed and planned roadway improvements identified in the Rogers Transportation Capital Improvement Program (CIP) or Hennepin County's Capital Improvement Program (CIP) within the City of Rogers include:

- **Fletcher Lane (CR 116) Bypass.** The City has been working with Hennepin County on plans to upgrade and re-route Fletcher Lane to the east, bypassing the Fletcher area to connect with CSAH 81. This rerouting would allow better connection of minor arterials and relocate through traffic from downtown Main Street (CSAH 150) onto Fletcher Lane (CR 116). Ultimately, the Fletcher Lane (CR 116) Bypass will connect to CSAH 13 north of I-94 via an overpass.
- **Downtown Main Street Reconstruction.** In conjunction with the Fletcher Lane (CR 116) bypass project, the City is redesigning Main Street from CR 81 to Point Drive as part of a major reconstruction project that will feature pedestrian and bicycle enhancements and streetscape elements to improve the walkability of downtown and its connection to Triangle Park and adjacent neighborhoods.
- **Extension of 109th Avenue (CR 117).** Movement along the community's southern boundary will be facilitated by the extension of 109th Avenue (CR 117) from Fletcher Lane (CR 116) to Brockton Lane (CSAH 101).
- **Brockton Lane (CSAH 13) Expansion.** The City plans to work with Hennepin County and the City of Dayton to expand Brockton Lane (CSAH 13) to a 4-Lane roadway from CSAH 81 to Rogers Drive. This expansion will add the necessary roadway capacity to support future demand along this eastern boundary.
- **141st Avenue (CSAH 144) Expansion.** To support future land uses and increased demand along the 141st Avenue (CSAH 144) corridor, the City plans to work with Hennepin County to finish building out this corridor as a future 3-lane roadway from the I-94 overpass to Northdale Boulevard. The segment from Northdale Boulevard to Brockton Lane (CSAH 13) plans to be a 4-lane roadway.
- **Industrial Boulevard Extension.** To improve residential access and continuity in the City's roadway system, Industrial Boulevard will be extended from Edgewater Parkway to 141st Avenue (CSAH 144).

Although not located in the City of Rogers, the Dayton Parkway Interchange is a programmed roadway improvement in MnDOT's Transportation System Plan. This new interchange is located east of Brockton Lane (CSAH 101), within the City of Dayton. Design work continues for this new Interchange, which will benefit the Rogers community by providing an additional access point to I-94 and reduce overall traffic volumes near the existing I-94 and TH 101 interchange area. Improvements to adjacent roadways, such as the extension of 109th Avenue (CR 117), is being planned to facilitate traffic to and from the new interchange.

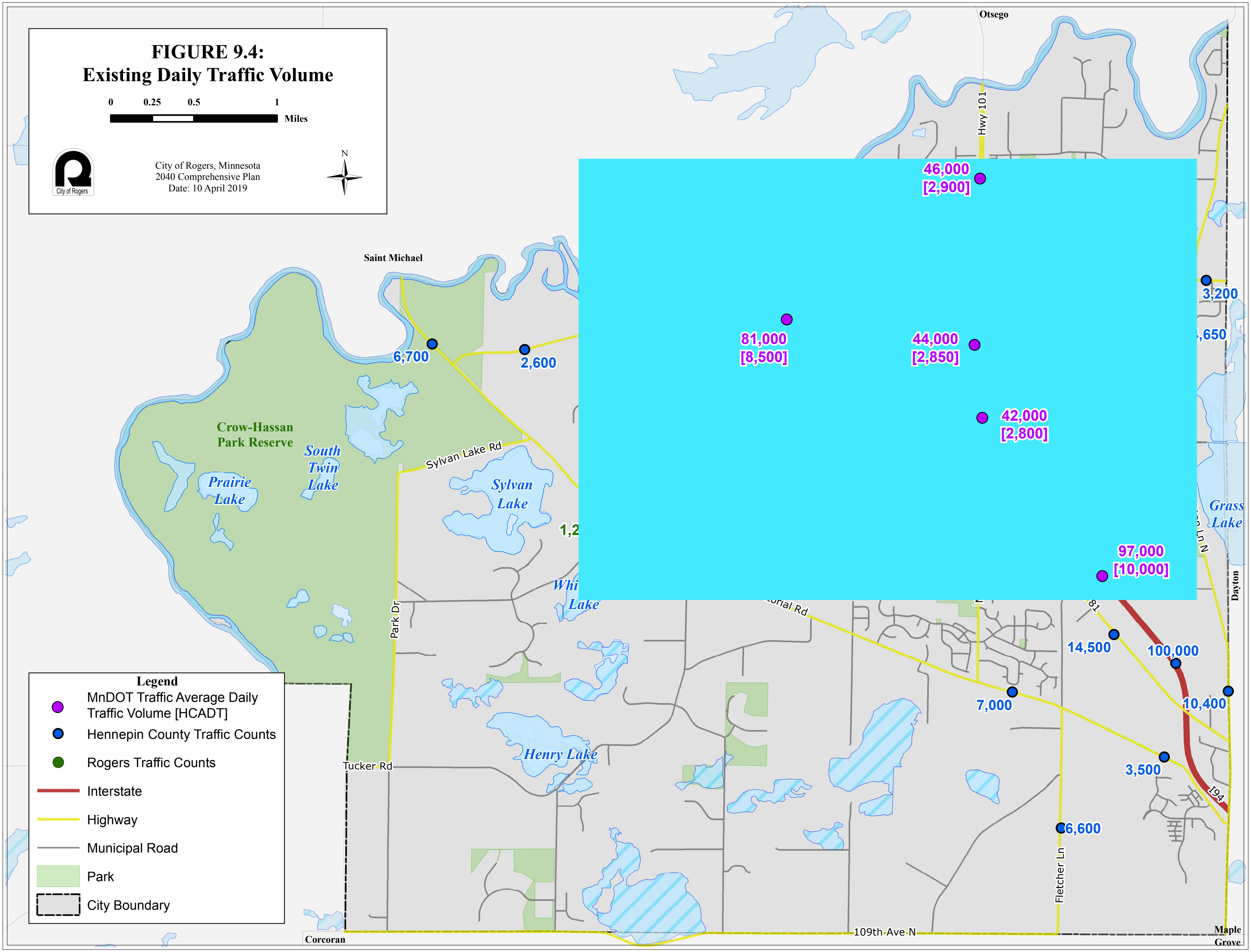
The City of Rogers will continue to coordinate with adjacent jurisdictions – Dayton, Maple Grove, Corcoran and Hanover – and Hennepin County and MnDOT when planning future improvements. This on-going coordination will result in financial and time savings through economies of scale; such coordination may reduce construction impacts to residents and businesses.

Several Hennepin County roadways border the Crow-Hassan Park Reserve. The City of Rogers will continue to coordinate with Hennepin County and the Three Rivers Park District when considering and planning for any roadway realignments to minimize negative impacts to the park reserve.

2040 Travel Demand Forecasts

The pattern and intensity of travel is directly related to the distribution and magnitude of households, population and employment within a community, neighboring communities, and the larger region. This section provides an overview of the existing land use pattern in the City of Rogers.

FIGURE 9.4: Existing Daily Traffic Volume



Created by: City of Rogers > Public Works > GIS

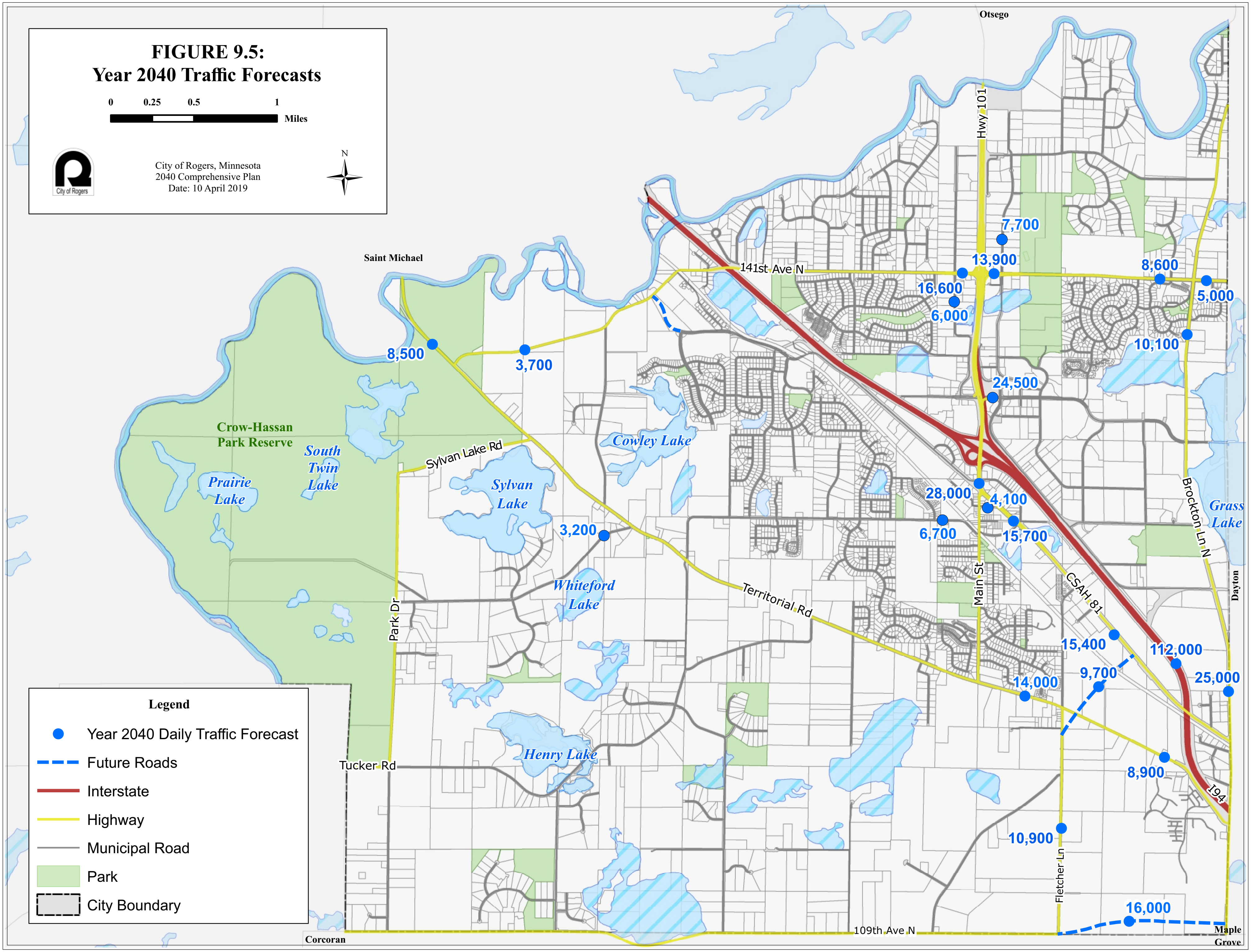
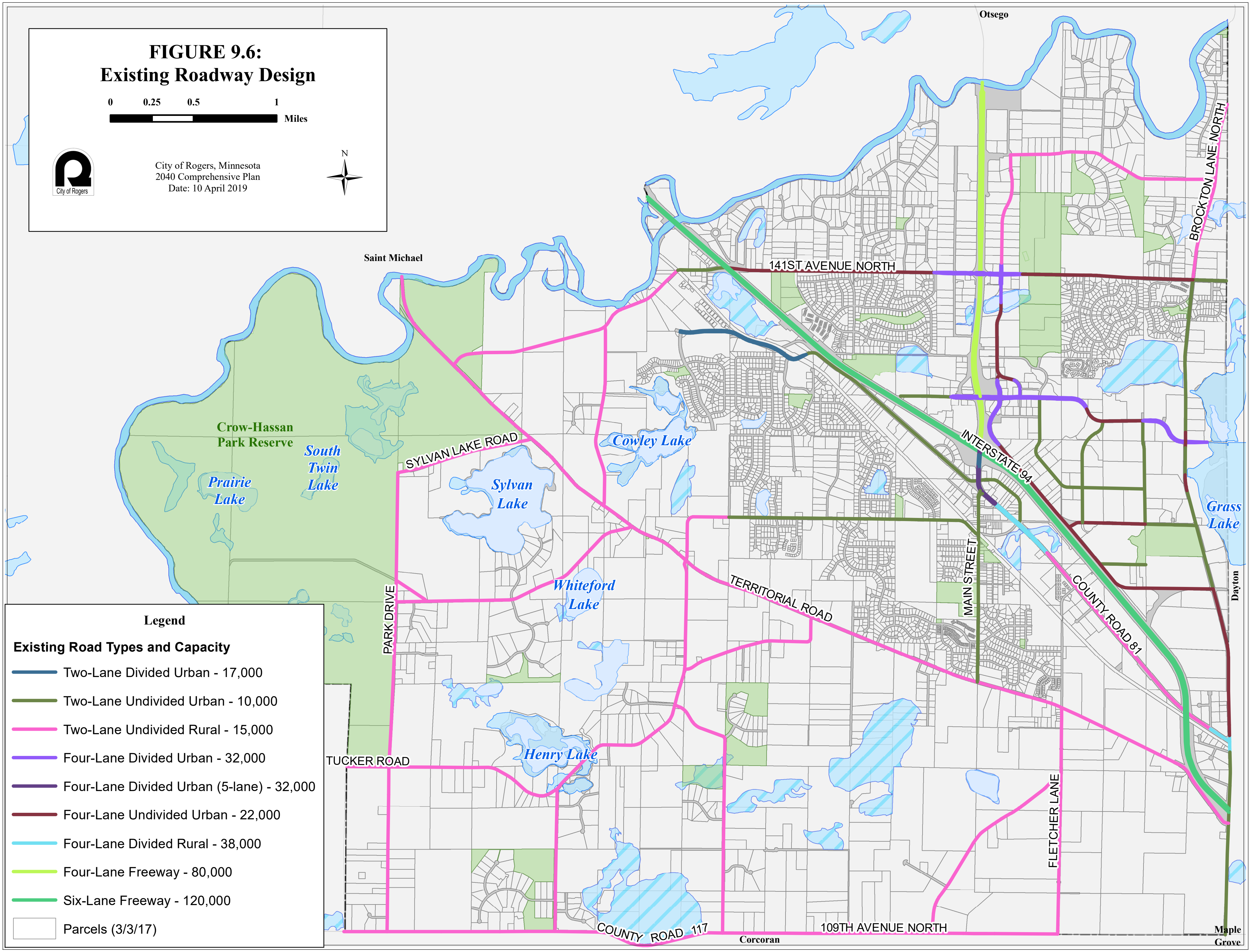


FIGURE 9.5: Year 2040 Traffic Forecasts

City of Rogers, Minnesota
2040 Comprehensive Plan
Date: 10 April 2019

Created by: City of Rogers > Public Works > GIS



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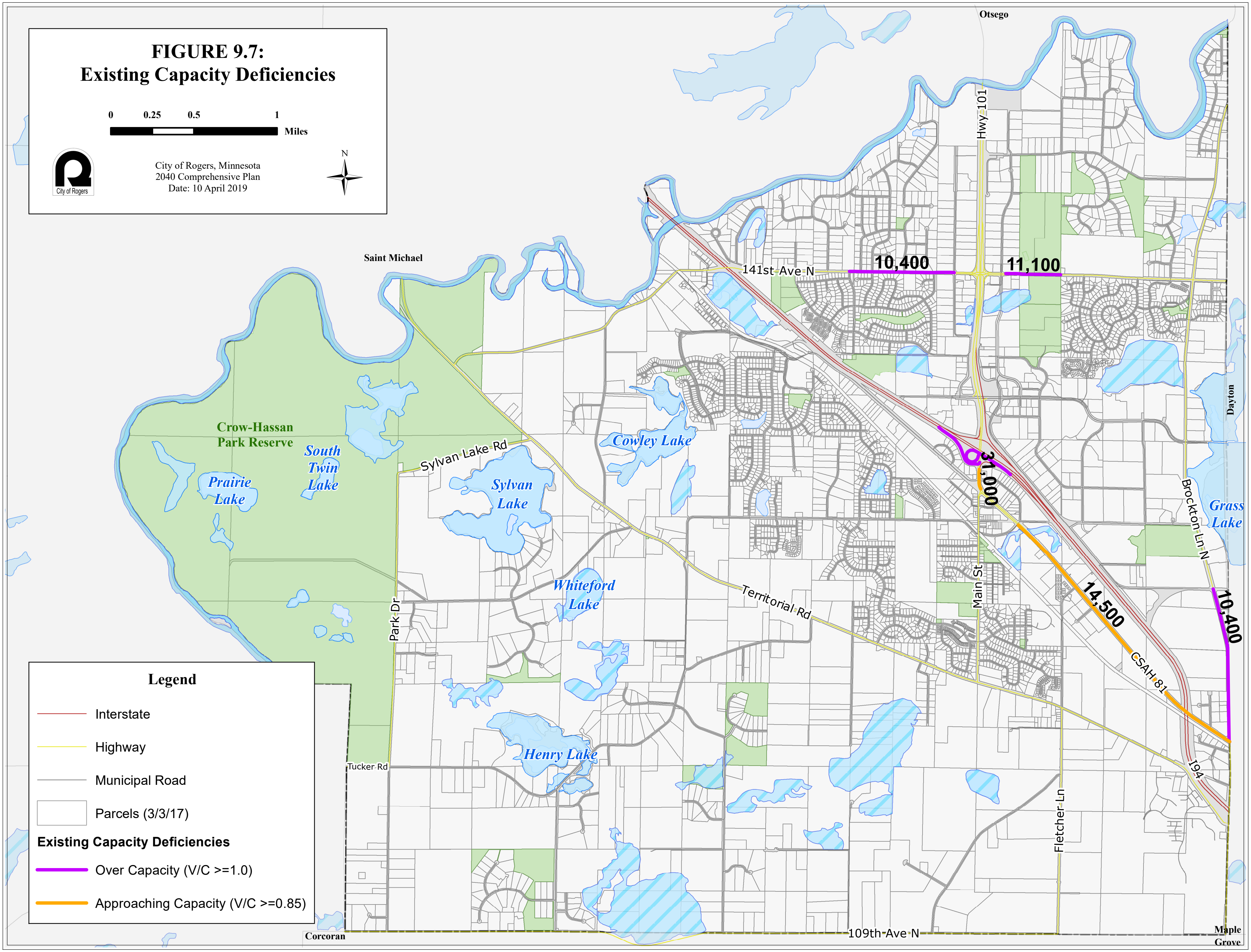


Created by: City of Rogers > Public Works > GIS

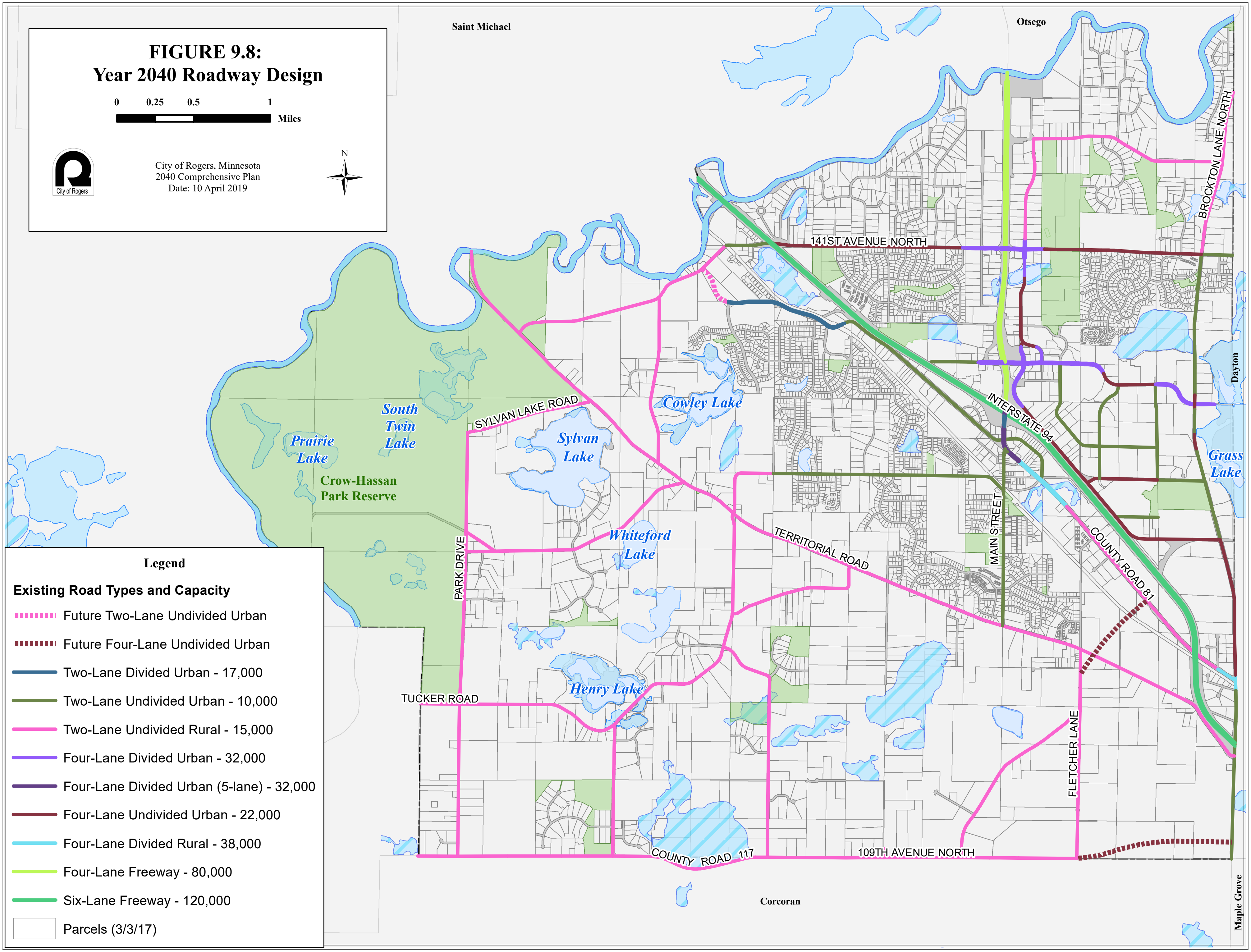
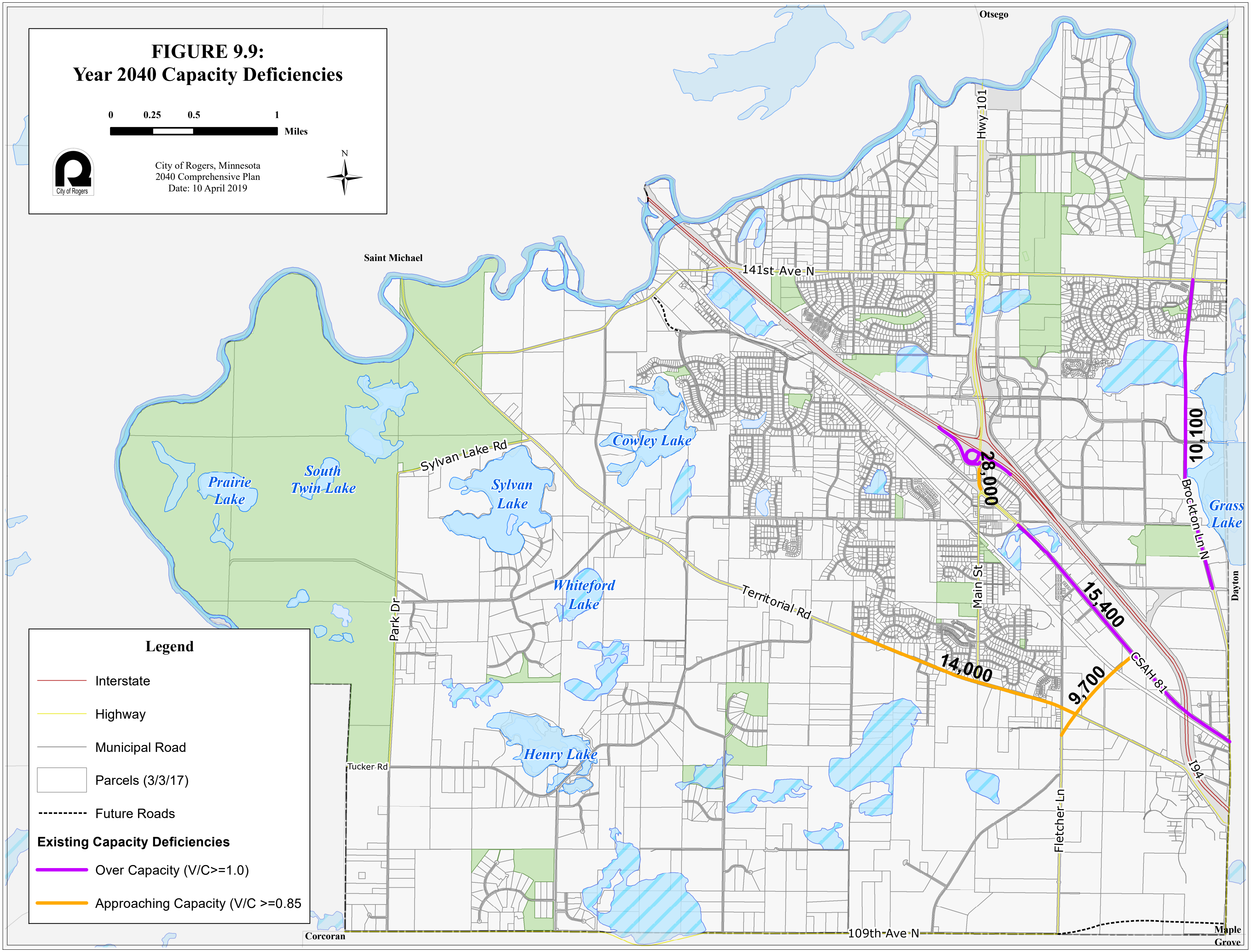


FIGURE 9.8:
Year 2040 Roadway Design

City of Rogers, Minnesota
2040 Comprehensive Plan
Date: 10 April 2019

Created by: City of Rogers > Public Works > GIS



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The methodology described above is a planning-level analysis that uses average daily traffic volumes and is not appropriate for all traffic conditions. For example, traffic conditions that do not fit the average daily traffic criteria, such as weekend travel, holiday travel, and special events, are likely to produce different levels of congestion. Additionally, factors such as the amount of access and street geometrics may influence capacity, as will additional street features or mobility accommodations – on-street bicycle lanes, shared bicycle lanes, on-street parking, etc.

Future Roadway System Improvements

Future roadway improvements are derived from the combination of future traffic demand, safety, system continuity and connectivity, and the intended function of each roadway as it relates to the adjacent land use.

Regional System Improvements

The Rogers Transportation Plan does not identify the need for improvements to I-94 or TH 101 within City limits. Design work continues for the Dayton Parkway interchange which will reduce overall traffic volumes near the existing I-94 and TH 101 interchange area and provide an additional access point to I-94. In addition, the City will continue to work with MnDOT to address long-term access issues from TH 101 to I-94.

County System Improvements

Currently, there are no additional capacity improvements identified on Hennepin County roadways within the City beyond those mentioned in the previous Programmed and Planned Improvements section.

Local System Improvements

Potential capacity improvements on local roadways in Rogers have not been identified as a need has not been warranted. The City of Roger's local roadways do not have existing capacity deficiencies and are not expected to have capacity deficiencies under year 2040 conditions.

The Rogers Transportation Capital Improvement Program (CIP) does identify residential access improvements, roadway realignments, and intersections improvements to support future development, maintain a connected roadway network, and improve overall roadway safety.

Roadway System Impacts

As the City plans to reconstruct, widen street widths and construct new street segments to meet future connectivity demands or accommodate development projects and anticipated growth, developers of private and public lands will be encouraged to retain natural areas and consider wildlife needs during the roadway design process and after construction to enhance the health and diversity of wildlife populations.

Safety Issues

In addition to a reliable roadway system, roadway safety is a high priority to the Rogers community. A statewide database of crash records identifies the location, severity and circumstances associated with crashes in Minnesota. The most current dataset (years 2011-2015) was analyzed to identify the number, location and severity of crashes on roadways, excluding I-94, in the City of Rogers.

In general, these crashes were widely distributed throughout the City with most locations accounting for only one or two incidents, suggesting that a crash at that location was a random event. However, several crashes were concentrated at a limited number of locations. The ten intersection locations with the highest frequency of crashes between 2011 and 2015 are illustrated in **Figure 9.10** and listed in **Table 9.4**.

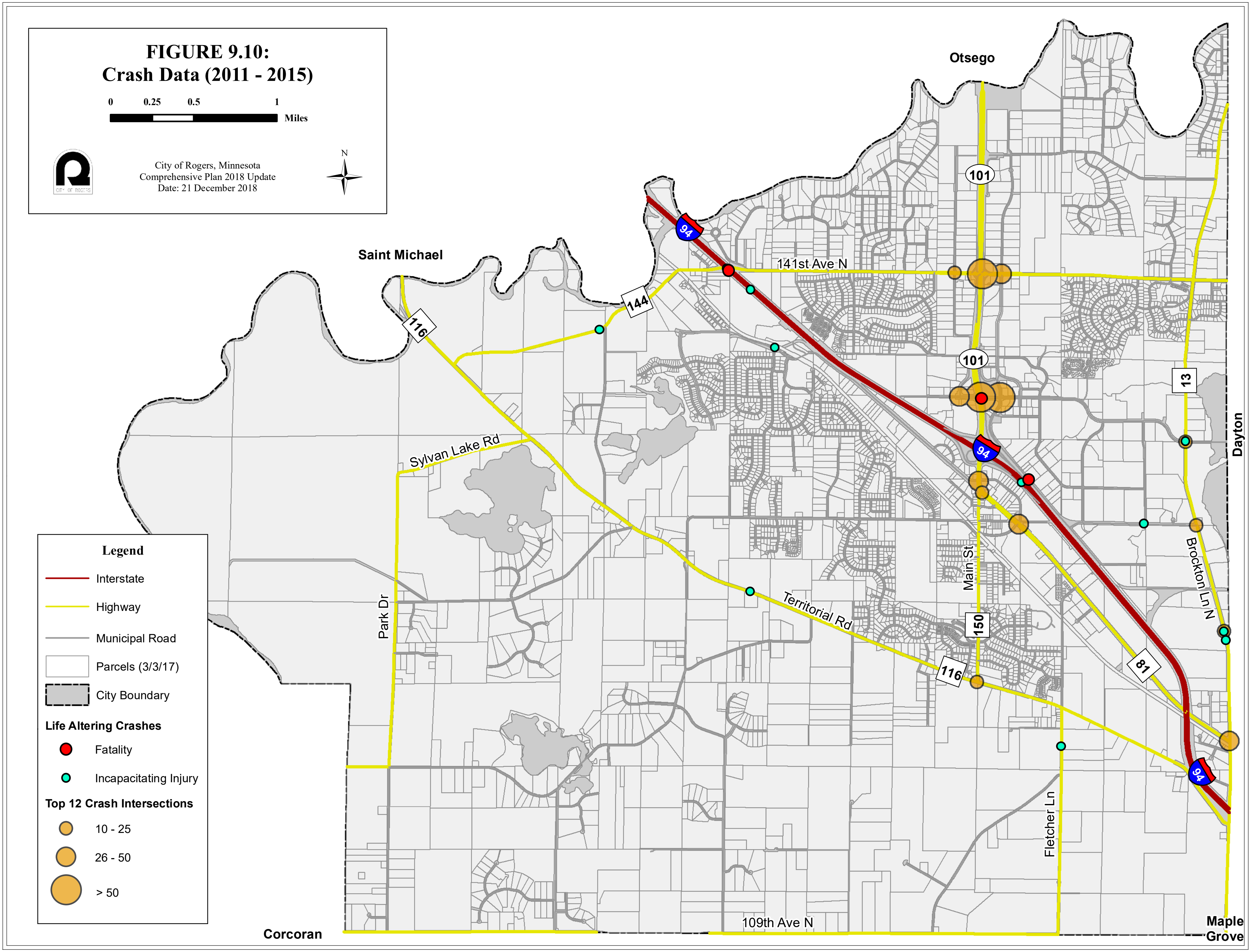
Many of the crashes in Rogers were minor incidents with no pattern of reoccurrence. These crashes were widely distributed throughout the City and suggest that the crashes were random events. The intersection locations with a 5-year average of two or more were compiled in **Table 9.4** and illustrated in **Figure 9.10**.

Table 9.4: Top 10 City of Rogers Crash Sites by Frequency (Years 2011-2015)

Location	Number of Crashes		Traffic Control
	5-Year Total	5-Year Average	
1. TH 101 and South Diamond Lake Road	102	20	Signal
2. TH 101 and 141st Avenue (CSAH 144)	64	13	Interchange (Opened 2015)
3. Rogers Drive and South Diamond Lake Road	63	13	Signal
4. 141st Avenue (CSAH 144) and James Road	49	10	All-Way Stop
5. CSAH 81 and Brockton Lane (CSAH 13)	44	9	Signal
6. Main Street (CSAH 150) and Industrial Boulevard	39	8	Signal
7. Northdale Boulevard and South Diamond Lake Road	28	6	Signal
8. CSAH 81 and Memorial Drive	27	5	Signal
9. Main Street (CSAH 150) and CSAH 116 (Territorial Road)	15	3	Side-Street Stop
10. Brockton Lane (CSAH 13) and 124th Avenue	14	3	Side-Street Stop
11. Brockton Lane (CSAH 13) and South Diamond Lake Road	14	3	Signal
12. Brockton Lane (CSAH 13) and David Koch Avenue	13	3	Side-Street Stop
13. CSAH 81 and Main Street (CSAH 150)	11	2	Right-In/Right-Out
14. 141st Avenue (CSAH 144) and Northdale Boulevard	10	2	Side-Street Stop

As shown in **Table 9.4**, two of the intersections with the most crashes are along South Diamond Lake Road (CSAH 49) in an area with high peak hour volumes and truck traffic. The City needs to continue to work with MnDOT to evaluate driver behavior, crash type, crash patterns and severity at these two closely spaced intersections to develop potential strategies to improve overall intersection safety.

One example within the City of Rogers where the number of crashes has significantly been reduced is the TH 101 and 141st Avenue (CSAH 144) intersection. Prior to the construction of a new interchange, this intersection averaged 15 crashes per year from year 2011 to 2014. After the construction of the interchange in 2015, only four crashes have occurred. The City is will continue to monitor and evaluate high crash locations to determine the need for addition intersection improvements.



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Access Management

Roadway access management for both cross-street spacing and driveway placement is critical to maintain roadway safety and the mobility of important transportation corridors. Access management involves balancing the access and mobility functions of a roadway. Access refers to providing roadway access to properties and is needed at both ends of a trip. Mobility is the ability to get from one place to another. Most roadways serve both functions to some degree based on their functional classification. The roadway's functional classification has a direct and corresponding relationship to mobility and access, as described in the Functional Classification section.

The City of Rogers does not currently have its own access management guidelines to guide development or evaluate access requests. However, the City will continue to support and utilize Access Management guidelines established by MnDOT and Hennepin County for roadways in Rogers.

Right-of-Way Preservation

Right-of-Way (ROW) is a valuable public asset. Therefore, it needs to be protected and managed to respect the roadway's intended function, while serving pedestrians, bicyclists, utilities and the greatest public good. Rogers will need to consider that adequate ROW be maintained or secured along with initial design work. The City will also coordinate with MnDOT and Hennepin County for ROW acquisition along County or State routes.

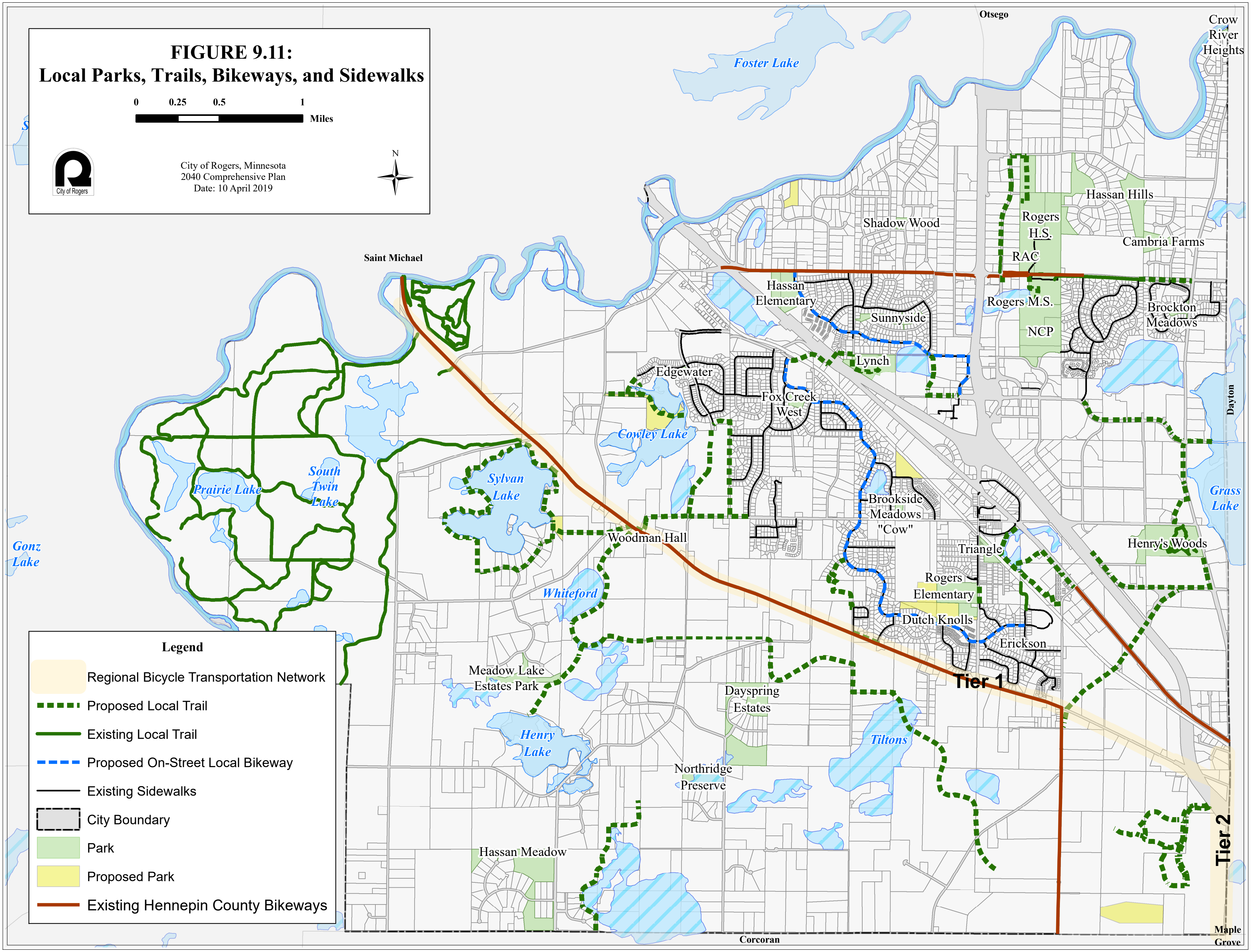
Bicycle & Trail System Plan

It is important for Rogers to expand its pedestrian and bicycle facilities to provide strong connections to schools, parks, public spaces and employment, as well as regional trail corridors. As **Figure 9.11** shows, these facilities focus on serving the local community for multi-modal transportation needs for all people and modes.

The City of Rogers' Park, Open Space and Trails Plan referenced in Chapter 6 provides additional detail on the City's future plans to address gaps in the system and future trail routes throughout the community for a complete sidewalk and trail system. As the community continues to develop, the trail plan should be reviewed to ensure its adequacy as traffic conditions change and to identify new opportunities, such as the connection of trails to commercial nodes, civic campuses, park and recreation areas and possible transit services. The City recognizes the recreational opportunities provided by trails and sidewalks, but also recognizes their ability to provide options for multi-modal transportation.

The City of Rogers currently has 26.6 miles of sidewalks in the City. Sidewalks are primarily used as a means to connect neighborhoods to local destinations and developed areas, as well as to other facilities in the trail system. Sidewalks are an essential part of the trail system, particularly for those who rely on walking as a means of transportation, recreation, or exercise, such as youth, seniors, or non-car owners. It is anticipated that the sidewalk network will grow as the City fills in gaps in the sidewalk network and as new development occurs.

FIGURE 9.11:
Local Parks, Trails, Bikeways, and Sidewalks



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Project Name: Signal and Intersection Geometric Improvements at Hennepin County CSAH 144 and CSAH 13

Applicant: City of Rogers
Project Location: Intersection of CSAH 144 and CSAH 13
Total Project Cost: $2,184,390
Requested Federal Amount: $1,747,512
Local Match: $ 436,878 (20% of total)

Project Description:
The City of Rogers is proposing geometric improvements and a new signalized intersection at CSAH 144 and CSAH 13. Currently, both CSAH 144 and CSAH 13 are two-lane undivided roadways with no turn lanes or shoulders. The CSAH 144/CSAH 13 intersection currently functions at a LOS E. The entire CSAH 13 corridor is also forecasted to be over capacity in the Rogers 2040 Comprehensive Plan with a 2040 forecast of 10,100 AADT. This intersection is used on a regular basis by commuters bypassing heavy traffic on I-94. As backups occur, motorists also regularly cut through adjacent neighborhoods creating extremely unsafe conditions. The project will remove existing stop control from all four intersection legs and replace with a traffic signal, raised center median and left and right turn lanes for all approaches. Turn lane improvements are also planned as part of the project at adjacent intersections located at Savannah Drive and Harmony Avenue. Project improvements will also include a 10-foot multiuse separated multiuse trail on the south side of CSAH 144 from Mallard Drive to Monarch Lane and six-foot paved shoulders.

Project Benefits:
- Enhanced mobility for motorists entering and exiting the intersection
- Reduced total annual crashes
- Improved safety and access for pedestrians and bicyclists with extension of existing trail
- Reduced emissions due to fewer vehicular stops

Project Area: