Application

17063 - 2022 Roadway Modernization

17580 - TH 101/I-94 Diverging Diamond Interchange Upgrade

Regional Solicitation - Roadways Including Multimodal Elements

Status:	Submitted
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Primary Contact

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*	Rogers	Minnesota	55374
	City	State/Province	Postal Code/Zip

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	Phone	Ext.

Fax:

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	Minnesota	55374
	City	State/Province	Postal Code/Zip

County:	Hennepin
Phone:*	763-428-8580 Ext.
Fax:	
PeopleSoft Vendor Number	0000006587A3

Project Information

Project Name	TH 101/I-94 Diverging Diamond Interchange Upgrade
Primary County where the Project is Located	Hennepin
Cities or Townships where the Project is Located:	Rogers
Jurisdictional Agency (If Different than the Applicant):	MnDOT

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

The existing TH 101 southbound on-ramp loop to eastbound I-94 is currently over capacity with significant operational issues in the morning peak period along with inadequate turn lane storage on the existing bridge for westbound on-ramp traffic. The project includes the TH 101 and I-94 diamond interchange reconstruction to a diverging diamond interchange. This will provide safer operations along TH 101, a critical non-freeway Principal Arterial with its connection to a major regional facility I-94, a freeway Principal Arterial.

The DDI will improve TH 101 operations to/from I-94. At the TH 101 and South Diamond Lake Road intersection north of the interchange, there are double eastbound right-turn lanes and double westbound left-turn lanes feeding into three southbound through lanes. Westbound traffic includes a high volume of trucks traveling from the TA Travel Center. Most of this traffic wants to move into the far-right lane, to enter the eastbound single lane on-ramp loop. Trucks also have difficulty accelerating due to the grades, which creates unsafe weaving issues, congestion and long queues. The new interchange design retains the three southbound through lanes from South Diamond Lake Road, however, it provides two lanes of traffic onto the eastbound on-ramp in place of a single on-ramp loop.

The upgraded interchange project improves other operational problems:
- Southbound congestion creates long queues where frustrated motorists bypass the on-ramp loop, continue southbound to make a U-turn at Industrial Boulevard to then enter the northbound to eastbound on-ramp. This move is extremely disruptive to local traffic.

- Heavy congestion and queuing increases the potential for rear-end and side-swipe crashes due

to weaving along TH 101.

- High truck volumes create additional delay near the eastbound on-ramp loop due to slower truck speeds and acceleration.

The project provides multimodal benefits for bicyclists/pedestrians traveling south of I-94 to a variety of commercial uses north of I-94. A 0.4 mile segment of 10-foot trail on the east side of TH 101 will be replaced. Although a replacement, the crossing distances at the eastbound on-ramp and westbound off-ramp will be improved. Under its current design, there are unsafe pedestrian crossings at the eastbound on-ramp due to the free right movement with no traffic signal protection. Pedestrian crossings at the westbound off-ramp are also difficult due to obscured sightlines and 70 feet of pavement to cross. At both ramp intersections, these crossing distances will be reduced.

(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.

Reconstruct TH 101 and I-94 Interchange in the City of Rogers

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

Project Length (Miles)

0.3

to the nearest one-tenth of a mile

Project Funding

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

No

If yes, please identify the source(s)

Federal Amount

$6,780,000.00

Match Amount

$1,695,000.00

Minimum of 20% of project total

Project Total

$8,475,000.00

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

Match Percentage

20.0%

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

Source of Match Funds Local funds

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

Preferred Program Year

Select one: 2026, 2027

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

Additional Program Years: 2024, 2025

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

Project Information-Roadways

County, City, or Lead Agency City of Rogers

Functional Class of Road Non-Freeway Principal Arterial

Road System TH

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

Road/Route No. 101

i.e., 53 for CSAH 53

Name of Road Main Street

Example; 1st ST., MAIN AVE

Zip Code where Majority of Work is Being Performed 55374

(Approximate) Begin Construction Date 04/01/2026

(Approximate) End Construction Date 11/01/2026

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

From:
(Intersection or Address) north of TH 101 North Ramps

To:
(Intersection or Address) south of TH 101 South Ramps

DO NOT INCLUDE LEGAL DESCRIPTION

Or At

Miles of Sidewalk (nearest 0.1 miles) 0

Miles of Trail (nearest 0.1 miles) 0.4

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

Primary Types of Work GRADE, AGG BASE, BIT BASE, BIT SURF, CURB AND GUTTER, GUARDRAIL, PED RAMPS, SIGNALS, TRAIL, 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:

Goal B: Safety and Security

Objective: Reduce fatal and serious injury crashes and improve safety and security for all modes of passenger travel and freight transportation.

Strategies: B1, B6 (Page 2.5 and 2.8)

Goal C: Access to Destinations

Objective: Increase travel time reliability and predictability for travel on highway and transit systems.
Strategies: C7, C8, C10, C14, C16, C17, and C18 (Page 2.16-2.24)

Goal D: Competitive Economy

Objective: Support the region?s economic competitiveness through the efficient movement of freight.

Strategies: D1 (Page 2.26)

Goal E: Healthy Environment

Objective: Provide a transportation system that promotes community cohesion and connectivity for people of all ages, abilities, particularly for under-represented populations.

Strategies: E3, E6, and E7 (Page 2.31-2.34)

Goal F: Leveraging Transportation Investments to Guide Land Use.

Objective: Encourage local land use design that integrates highways, streets, transit, walking, and bicycling.

Strategies: F2, F6, F7, and F9 (Page 2.36-2.40)

Limit 2,800 characters, approximately 400 words

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

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

2040 Rogers Comprehensive Plan. Chapter 9: Transportation (Pages 148 and 153, Figures 9.7 and 9.9)

Limit 2,800 characters, approximately 400 words

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

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

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

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

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

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

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

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

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

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

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

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

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

Date plan completed: 04/02/2020

Link to plan: Uploaded 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 1648996158457_Rogers_ADA_Transition_Plan.pdf

Upload as PDF

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

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

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

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

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

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

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

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

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

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

Roadways Including Multimodal Elements

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

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

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

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

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

Bridge Rehabilitation/Replacement and Strategic Capacity projects only:

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

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

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

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

Bridge Rehabilitation/Replacement projects only:

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

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

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

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

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

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

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

Requirements - Roadways Including Multimodal Elements

Specific Roadway Elements

CONSTRUCTION PROJECT ELEMENTS/COST ESTIMATES	Cost
Mobilization (approx. 5% of total cost)	$312,500.00
Removals (approx. 5% of total cost)	$312,500.00
Roadway (grading, borrow, etc.)	$550,000.00
Roadway (aggregates and paving)	$2,500,000.00
Subgrade Correction (muck)	$0.00
Storm Sewer	$750,000.00
Ponds	$62,500.00
Concrete Items (curb & gutter, sidewalks, median barriers)	$375,000.00
Traffic Control	$375,000.00
Striping	$62,500.00
Signing	$250,000.00

Lighting	$250,000.00
Turf - Erosion & Landscaping	$212,500.00
Bridge	$500,000.00
Retaining Walls	$312,500.00
Noise Wall (not calculated in cost effectiveness measure)	$0.00
Traffic Signals	$750,000.00
Wetland Mitigation	$62,500.00
Other Natural and Cultural Resource Protection	$0.00
RR Crossing	$0.00
Roadway Contingencies	$625,000.00
Other Roadway Elements	$125,000.00
Totals	**$8,387,500.00**

Specific Bicycle and Pedestrian Elements

CONSTRUCTION PROJECT ELEMENTS/COST ESTIMATES	Cost
Path/Trail Construction	$25,000.00
Sidewalk Construction	$62,500.00
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	**$87,500.00**

Specific Transit and TDM Elements

CONSTRUCTION PROJECT ELEMENTS/COST ESTIMATES	Cost
Fixed Guideway Elements	$0.00
Stations, Stops, and Terminals	$0.00
Support Facilities	$0.00

Transit Systems (e.g. communications, signals, controls, fare collection, etc.)	$0.00
Vehicles	$0.00
Contingencies	$0.00
Right-of-Way	$0.00
Other Transit and TDM Elements	$0.00
Totals	**$0.00**

Transit Operating Costs

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

Totals

Total Cost	$8,475,000.00
Construction Cost Total	$8,475,000.00
Transit Operating Cost Total	$0.00

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

Existing Employment within 1 Mile:	7223
Existing Manufacturing/Distribution-Related Employment within 1 Mile:	3182
Existing Post-Secondary Students within 1 Mile:	0
Upload Map	1648947444952_Economy.pdf

Please upload attachment in PDF form.

Measure C: Current Heavy Commercial Traffic

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

Along Tier 1:

Miles: 0

(to the nearest 0.1 miles)

Along Tier 2:

Miles: 0.3

(to the nearest 0.1 miles)

Along Tier 3:

Miles: 0

(to the nearest 0.1 miles)

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

None of the tiers:

Measure A: Current Daily Person Throughput

Location TH 101 north of I-94

Current AADT Volume 53000

Existing Transit Routes on the Project N/A

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

Upload Transit Connections Map 1648947568173_Transit.pdf

Please upload attachment in PDF form.

Response: Current Daily Person Throughput

Average Annual Daily Transit Ridership 0

Current Daily Person Throughput 68900.0

Measure B: 2040 Forecast ADT

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

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

OR

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

Forecast (2040) ADT volume

Measure A: Engagement

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

Engagement of equity populations has occurred prior to the project's development, through the City's extensive community planning efforts and project needs identification.

In 2007/2008, the Cities of Rogers and Dayton initiated the Northwest Hennepin County I-94 Sub-Area Transportation Study to develop a transportation system plan for this urbanizing area including I-94 access. A study objective was to encourage the planning and design of an arterial system that compliments I-94.TH 101 is a non-freeway Principal Arterial that plays a significant role with access to I-94. Existing operations along TH 101 was already identified as unacceptable with heavy congestion and delays during the peak periods. This study included public participation through two open houses and several joint elected-official meetings. Public input was used to develop the overall study findings and recommendations.

Response:

The next step in the planning efforts was the I-94/Brockton Lane Interchange Project conducted in 2011/2012 that included an extensive public engagement plan with four open houses, individual meetings, and public comment opportunities. As a project partner, the TH 101 at I-94 interchange operations identified as a transportation issue throughout the project engagement.

The latest planning efforts conducted by the City was during their 2040 Comprehensive Plan process. A Planning Commission meeting, City Council meeting and Open House in November 2018 was held to present their draft Plan and solicit feedback. The existing TH 101 capacity issues were identified, in addition to the TH 101 southbound loop experiencing significant operational issues in the morning peak hour. The

Trans Plan indicated that the City would continue to work with MnDOT to address long-term access issues from TH 101 to I-94.

As the project develops, the City will include a public engagement process that reaches out to all equity populations, specifically low-income housing residents and older adults living in the community. As shown on the Equity Populations and Destinations map, specific outreach includes the following equity populations in census tracts within ½ mile of the project:

- Pleasant Place Apartments (subsidized units for seniors and persons with disabilities)

- Autumn Trails of Rogers (subsidized units for seniors)

- Duffy Apartments (planned subsidized units for seniors)
- Meadow Trails Apartments (subsidized units for seniors and persons with disabilities)

- Heritage Place Apartments (senior units)

-The Wellstead of Rogers and Diamondcrest (senior units)

- Variety of Schools and Childcare (youth populations)

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

Measure B: Equity Population Benefits and Impacts

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

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

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

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

Response:

The TH 101 and I-94 interchange project is designed to provide direct safety and transportation benefits to equity populations residing or engaged in activities near the project area. Travel time improvements will be provided to these low-income populations, persons with disabilities, youth, and older adults traveling across or connecting to I-94 using this segment of TH 101. While traveling by car, heavy congestion and long queues can change a short distance trip into a time-consuming trip.

The project will also provide significant safety benefits to these same equity populations relying on the TH 101 corridor to travel by all modes of transportation. Benefits of a DDI interchange are the elimination of last-minute lane changes, better sight distance at turns, resulting in fewer crashes. Based on recent crash data (2019 to 2021), there were 71 reported crashes (42 rear-end and eight side-swipe crashes) within the project limits. 86 percent of the rear-end and 75 percent of the side-swipe crashes involve vehicles traveling in the southbound direction. In addition, there was one vehicle-bicycle crash reported with possible injuries. The DDI interchange design will address the unsafe weaving issues, congestion and long queues by providing better lane designation south of South Diamond Lake Road and two lanes of traffic onto the eastbound on-ramp in place of the single on-ramp loop. Safer vehicular operations provide improved conditions for other modes of transportation that share the TH 101 corridor.

Overall, the project will provide safer and more convenient travel for residents living in subsidized and senior apartments, persons with disabilities and youth to destinations such as jobs, schools, childcare, shopping, recreation, restaurants and health services in the area (see Equity Populations and Destinations map).

The project will also provide safety benefits to the equity populations relying on bicycling and walking as an alternative mode of transportation. The 10-foot trail being replaced on the east side of TH 101 will provide shorter crossing distances at the north and south ramp intersections between neighborhoods and businesses for equity populations.

As with most projects, there will be construction activities related to TH 101 and the I-94 ramp intersections that will directly impact the traveling public and nearby residents and businesses. However, project construction will incorporate proper noise, dust, traffic management mitigation, and access management for motorists, bicyclists, and pedestrians as well as planned detour routes to consider the needs of property owners and stakeholders.

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

Measure C: Affordable Housing Access

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

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

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

Response:

As shown on the Socio-Economic Conditions map, there are 61 publicly subsidized rental housing units in census tracts with ½ mile of the project, including:

- Pleasant Place apartments (subsidized units for seniors and persons with disabilities)

- Autumn Trails of Rogers (subsidized units for seniors)

- Meadow Trails apartments (subsidized units for seniors and persons with disabilities)

As shown on the Affordable Housing and Destinations map, the three subsidized rental units are located on the south side of I-94.In addition, the Duffy apartments with low-income housing for seniors are planned for the area south of I-94 and north of the railroad tracks. The TH 101 and I-94 interchange project is designed to provide direct safety and transportation benefits to these residents of affordable housing with improved access to numerous destinations north of I-94. Engaged activities include but are not limited to shopping at Target and Kohls; picking up grandchildren at childcare; having a meal at one of the many restaurants and/or attending church service.

Travel time improvements will be provided to these low-income populations, persons with disabilities, and older adults traveling across or connecting to I-94 using this segment of TH 101. While traveling by car, heavy congestion and long queues can change a short distance trip into a time-consuming trip. The DDI interchange design will provide improved north-south travel flow along the project segment of TH 101 crossing over and connecting to I-94.

The project includes multimodal improvements for these residents of affordable housing that use bicycling and walking as their mode of transportation for short trips to the grocery store, church or health services. Currently, I-94 is a barrier for older adults crossing over the I-94 freeway facility. Although there is an existing 10-foot trail on the east of the roadway, crossing the north and south ramp intersections is a safety issue. Under its current design, there are unsafe pedestrian crossings at the eastbound on-ramp due to the free right movement with no traffic signal protection. Pedestrian crossings at the westbound off-ramp are also difficult due to obscured sightlines and the 70 feet of pavement to cross. At both ramp intersections, crossing distances will be reduced.

The TH 101 and I-94 interchange reconstruction will provide community connection improvements as I-94 is a significant freeway facility that splits the City of Rogers into two areas. If the overall flow of vehicular traffic is improved, it provides safer conditions for all modes of transportation.

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

Measure D: BONUS POINTS

Project is located in an Area of Concentrated Poverty:	
Projects census tracts are above the regional average for population in poverty or population of color (Regional Environmental Justice Area):	
Project located in a census tract that is below the regional average for population in poverty or populations of color (Regional Environmental Justice Area):	Yes
Upload the Socio-Economic Conditions map used for this measure.	1648948306901_SocioEco.pdf

Measure A: Year of Roadway Construction

Year of Original Roadway Construction or Most Recent Reconstruction	Segment Length	Calculation	Calculation 2
	0	0	0
1971	0.3	591.3	1971.0
	0	**591**	**1971**

Total Project Length

Total Project Length (as entered in "Project Information" form) 0.3

Average Construction Year

Weighted Year 1971

Total Segment Length (Miles)

Total Segment Length 0.3

Measure B: Geometric, Structural, or Infrastructure Improvements

Improved roadway to better accommodate freight movements: Yes

Response:

The project provides an important connection for freight movements to/from the TA Travel Center and industrial uses northeast of the interchange. The project will provide improved lane distribution for freight trucks traveling southbound to fully utilize two lanes of approach with the DDI design configuration. Today, there is a single-lane approach.

(Limit 700 characters; approximately 100 words)

Improved clear zones or sight lines: Yes

Response:

Currently, motorists who stop at TH 101 while exiting the westbound I-94 off-ramp have a limited view to the south. The new DDI interchange configuration will address poor sight lines due to the existing alignment skew at the north ramp intersection, particularly for motorists to see pedestrians and bicyclists along TH 101.

(Limit 700 characters; approximately 100 words)

Improved roadway geometrics: Yes

Response:

The new DDI interchange provides improved roadway geometrics to accommodate the dominant turn moves and reduces the need for lane changes within a short distance. The existing southbound TH 101 to eastbound I-94 on-ramp loop provides a one lane entrance. The improved roadway geometrics provides a two-lane entrance for this heavy southbound to eastbound movement.

(Limit 700 characters; approximately 100 words)

Access management enhancements: Yes

Response:

Current congestion leads to diverted traffic through local intersections which creates access problems. The proposed geometry reduces congestion to vastly improve access issues.

(Limit 700 characters; approximately 100 words)

Vertical/horizontal alignment improvements: Yes

Response:

The existing southbound TH 101 to eastbound I-94 requires traffic to enter I-94 on a downgrade, followed by the need to increase their speeds to enter the freeway. The project will improve the vertical alignment of eastbound traffic entering I-94 freeway speeds.

(Limit 700 characters; approximately 100 words)

Improved stormwater mitigation: Yes

Response:

The DDI design reduces the overall impervious area resulting in improved water quality and quantity issues.

(Limit 700 characters; approximately 100 words)

Signals/lighting upgrades: Yes

Response:

With the reconstructed DDI interchange, left-turn movements and phasing are eliminated from the signalized intersections. The two-phase traffic signal operates more efficiently and will reduce the overall vehicular delay by accommodating high turning volumes.

(Limit 700 characters; approximately 100 words)

Other Improvements

No

Response:

(Limit 700 characters; approximately 100 words)

Measure A: Congestion Reduction/Air Quality

Total Peak Hour Delay Per Vehicle Without The Project (Seconds/ Vehicle)	Total Peak Hour Delay Per Vehicle With The Project (Seconds/ Vehicle)	Total Peak Hour Delay Per Vehicle Reduced by Project (Seconds/ Vehicle)	Volume without the Project (Vehicles per hour)	Volume with the Project (Vehicles Per Hour):	Total Peak Hour Delay Reduced by the Project:	Total Peak Hour Delay Reduced by the Project:	EXPLANATION of methodology used to calculate railroad crossing delay, if applicable.	Synchro or HCM Reports
22.0	0	22.0	4298	0	94556.0	0	N/A	1649092962432_Rogers Traffic Analysis.pdf
52.0	0	52.0	3634	0	188968.0	0	N/A	1649093011851_Rogers Traffic Analysis.pdf
0	25.0	-25	0	1662	0	-41550	N/A	1649093070050_Rogers Traffic Analysis.pdf
0	6.0	-6	0	700	0	-4200	N/A	1649093117852_Rogers Traffic Analysis.pdf

0	7.0	-7	0	1435	0	-10045	N/A	1649093150051_Rogers Traffic Analysis.pdf
0	0	0	0	2163	0	0	N/A	1649093177648_Rogers Traffic Analysis.pdf
0	47.0	-47	0	3219	0	-151293	N/A	1649093210785_Rogers Traffic Analysis.pdf
0	23.0	-23	0	2666	0	-61318	N/A	1649093238309_Rogers Traffic Analysis.pdf
0	5.0	-5	0	808	0	-4040	N/A	1649093258469_Rogers Traffic Analysis.pdf
						-272446		

Vehicle Delay Reduced

Total Peak Hour Delay Reduced	283524.0
Total Peak Hour Delay Reduced	-272446

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):
14.54	11.72	2.82
15	**12**	**3**

Total

Total Emissions Reduced:	2.82
Upload Synchro Report	1648998299829_Rogers Traffic Analysis.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: Roadway Projects that do not Include Railroad Grade-Separation Elements

Crash Modification Factor Used: *(Limit 700 Characters; approximately 100 words)*	The CMF used was for the conversion of an interchange to a diverging diamond interchange.
Rationale for Crash Modification Selected: *(Limit 1400 Characters; approximately 200 words)*	This CMF directly relates to the proposed changes for the TH 101 and I-94 interchange project, as the interchange is planning to be reconstructed to a DDI. We utilized the most applicable CMF for specific crash types when available. This provided the most accurate reduction calculations.
Project Benefit ($) from B/C Ratio	$12,337,676.00
Total Fatal (K) Crashes:	0
Total Serious Injury (A) Crashes:	0
Total Non-Motorized Fatal and Serious Injury Crashes:	0
Total Crashes:	71
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:	29
Worksheet Attachment *Please upload attachment in PDF form.*	1649095087779_Rogers Safety Analysis_220404.pdf

Roadway projects that include railroad grade-separation elements:

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

Measure A: Pedestrian Safety

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

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

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

The project will address the safety needs of pedestrians crossing the two TH 101 signalized ramp intersections at I-94. At these intersections, pedestrian improvements will include safety strategies identified in MnDOT's Best Practices for Pedestrians/Bicycle Safety, such as ADA compliant crosswalks, crosswalk lighting, traffic signals, and curb ramps. These improvements are important in supporting safe, reliable and affordable connections for all pedestrian users of all abilities to places of employment, shopping, healthcare, and other essential services and activities.

Response:

According to the pedestrian safety resource PEDSAFE, countermeasures to improve the safety and mobility of those who walk along a roadway include sidewalks and walkways. Project improvements include the replacement of the existing 10-foot trail on the east side of TH 101. According to this resource, FHWA and ITE recommend a minimum of five feet for a sidewalk or walkway. The reconstructed 10-foot trail as part of the TH 101 and I-94 Interchange project provides a high-level pedestrian facility for safe travels.

Another countermeasure identified by PEDSAFE is crossing islands. As shown on the concept layout, the DDI interchange design will provide safe walking distances across wide raised medians at both ramp intersections. These medians will provide a refuge area to help protect pedestrians at these signalized intersections. These improvements at the TH 101 and I-94 ramp intersections will provide additional safety for all pedestrian traffic.

(Limit 2,800 characters; approximately 400 words)

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

Select one: No

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

Response:

(Limit 1,400 characters; approximately 200 words)

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

Select one: No

If yes,
How many intersections will likely be affected?

Response:

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

Response:

(Limit 1,400 characters; approximately 200 words)

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

Response:

(Limit 1,400 characters; approximately 200 words)

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

Response:

(Limit 1,400 characters; approximately 200 words)

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

Response:

For the existing TH 101 and I-94 diamond interchange, free flow conditions for through traffic is a straight north-south alignment. The DDI interchange project may indirectly affect through traffic speeds with the reduction of peak hour congestion. However, the DDI roadway alignment for north-south traffic will require a slight maneuver to the right while traveling through the interchange area. The project design and roadway alignment will manage overall motorist speed through the interchange area.

For turning movements being made at the interchange ramps, right-turn movements from the I-94 ramps will be free flowing during its green phase. In order to mitigate the potential for increased speeds indirectly, the pedestrian crossing at these two ramps have a shorter crossing distance with only one lane of traffic to cross.

(Limit 2,800 characters; approximately 400 words)

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

Response:

The posted speed limit is 40 mph. All speeds are expected remain consistent with existing conditions.

(Limit 1,400 characters; approximately 200 words)

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

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

Existing road configuration is a One-way, 3+ through lanes or	
Existing road configuration is a Two-way, 4+ through lanes	Yes
Existing road has a design speed, posted speed limit, or speed study/data showing 85th percentile travel speeds in excess of 30 MPH or more	Yes
Existing road has AADT of greater than 15,000 vehicles per day	Yes
List the AADT	53000

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

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

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

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

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

Yes

If checked, please describe:

The TH 101 project corridor is within 500 feet of several shopping and dining destinations. These include commercial destinations in all four quadrants of the TH 101 and I-94 interchange area:

- Southwest quadrant: Freddy's Frozen Custard & Steakburgers, Jersey Mike's Subs and Dunkin'.

- Southeast quadrant: Clive's Roadhouse

- Northwest quadrant: Target

- Northeast quadrant: McDonald's

(Limit 1,400 characters; approximately 200 words)

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

If checked, please describe:

(Limit 1,400 characters; approximately 200 words)

Measure A: Multimodal Elements and Existing Connections

Response:

The TH 101 and I-94 Diverging Diamond Interchange Upgrade project will have a positive impact on the City of Rogers? multimodal system. The bicycle and pedestrian element being constructed as part of the project includes the replacement of the 10-foot trail that will improve the travel experience and safety for these non-motorized modes of traffic.

The proposed multimodal 10-foot trail being completed as part of the project will provide an improved crossing of a Regional Bicycle Barrier with respect to the tiered Regional Bicycle Barrier Crossing Improvement Areas as defined in the TPP and Technical Addendum to the Regional Bicycle Barriers Study (May 2019). In the Technical Addendum, Figure 1 identifies I-94 and the short segment between I-94 and South Diamond Lake Road as an Expressway Barrier as defined by the Regional Bicycle Barriers Study (RBBS) completed by Met Council in 2018. In addition, Figure 3 identifies all regional bicycle barrier crossings and prioritizes them into three tiers. TH 101 crossing over I-94 is identified as a Tier 3 barrier crossing point.

Although there is an existing 10-foot trail on the east side of the roadway, crossing the north and south ramp intersections is a safety issue. Under its current design, there are unsafe bicycle and pedestrian crossings at the eastbound on-ramp due to the free right movement with no traffic signal protection. Pedestrian crossings at the westbound off-ramp are also difficult due to obscured sightlines and motorists having limit sight distance to see seeing pedestrians and bicyclists along TH 101. In addition, pedestrians currently must cross approximately 70 feet of pavement at the westbound off-ramp.

The new DDI interchange configuration will address poor sight lines due to the existing alignment skew at the north ramp intersection, particularly for motorists to see pedestrians and bicyclists along TH 101. The DDI interchange design will also reduce the crossing distances across both ramp intersections and safer walking distances across wide raised medians. These medians will provide refuge areas to help protect bicyclists and pedestrians at these signalized intersections. These improvements at the TH 101 and I-94 ramp intersections will provide additional safety for all bicycle and pedestrian traffic.

As part of this project, the new signals will include countdown timers at the TH 101 ramp intersections for safer crossings. In addition, all sidewalk replacement, crosswalks, lighting, traffic signal, and curb ramps will be constructed to meet ADA standards.

(Limit 2,800 characters; approximately 400 words)

Transit Projects Not Requiring Construction

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

Check Here if Your Transit Project Does Not Require Construction

Measure A: Risk Assessment - Construction Projects

1.Public Involvement (20 Percent of Points)

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

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

100%

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

50%

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

50%

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

Yes

25%

No outreach has led to the selection of this project.

0%

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

Response:

Although no public outreach specific to the project was conducted, the project was identified through outreach related to the larger City planning efforts for their 2040 Comp Plan process. A Planning Commission meeting, City Council meeting and Open House in November 2018 was held to present their draft Plan and solicit feedback. The existing TH 101 capacity issues were identified, in addition to the TH 101 southbound loop experiencing significant operational issues in the morning peak hour. The Trans Plan indicated that the City would continue to work with MnDOT to address long-term access issues from TH 101 to I-94.

In the Fall of 2021, an initial meeting with MnDOT has occurred to discuss the project needs and proposed improvements, whereas a letter of support has been provided by their agency.

(Limit 2,800 characters; approximately 400 words)

2.Layout (25 Percent of Points)

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

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

100%

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

100%

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

75%

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

50%

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

25%

Layout has not been started

0%

Attach Layout 1648999024019_RogersDDI_PlanView.pdf

Please upload attachment in PDF form.

Additional Attachments

Please upload attachment in PDF form.

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

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

100%

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

100%

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

80%

Historic/archeological property impacted; determination of adverse effect anticipated

40%

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

0%

Project is located on an identified historic bridge

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

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

100%

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

50%

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

25%

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

0%

5.Railroad Involvement (15 Percent of Points)

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

100%

Signature Page

Please upload attachment in PDF form.

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

50%

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

0%

Measure A: Cost Effectiveness

Total Project Cost (entered in Project Cost Form):	$8,475,000.00
Enter Amount of the Noise Walls:	$0.00
Total Project Cost subtract the amount of the noise walls:	$8,475,000.00
Enter amount of any outside, competitive funding:	$0.00
Attach documentation of award:	
Points Awarded in Previous Criteria	
Cost Effectiveness	$0.00

Other Attachments

File Name	Description	File Size
25 - LOS - Rogers - TH 101 & I-094 Interchange Project - 2022.03.25.pdf	County Support	110 KB
Congestion.pdf	Congestion	6.1 MB
Economy.pdf	Economy	3.1 MB
Met Council Letter of Support_I94 Rogers.pdf	Met Council Support	233 KB
Otsego Support.pdf	Otsego Support	457 KB
Photos.pdf	Photos	3.7 MB
Project Summary.pdf	Project Summart	308 KB
Rogers RAISE MnDOT Letter of Support.pdf	MnDOT Support	125 KB
Rogers Traffic Analysis.pdf	Synchro Files	195 KB
RogersDDI_PlanView.pdf	Concept Layout	841 KB
Rogers_ADA_Transition_Plan.pdf	ADA Plan	2.1 MB
SocioEco.pdf	SocioEco	3.1 MB
Transit.pdf	Transit	3.1 MB

2020

Rogers ADA Transition Plan

Rogers Public Works Department

4/2/2020

Introduction

The City of Rogers is committed to breaking down barriers for residents and to be a fair, inclusive and equitable community in its practices, programs and services.

The American with Disabilities Act (ADA) enacted on July 26th, 1990, is a civil rights law prohibiting discrimination against individuals based on disability. The ADA requires public transportation agencies to develop transition plans detailing how the agencies will ensure accessibility within the public right of way. See Appendix H for more detailed information on the ADA and related regulations.

The City of Rogers Public Works Department has prepared this Americans with Disabilities Act ADA transition plan to guide its efforts to ensure pedestrian facilities located within the City's right of way meet the accessibility needs of all residents.

This plan will be used to maintain, program and construct accessible pedestrian facilities in the right of way. It provides an inventory of pedestrian ramps and traffic signals that fall under City jurisdiction for ownership and maintenance.

This plan establishes an ADA coordinator for public right of way to provide a single point of contact for the public to report and address concerns.

Additionally, a formal grievance procedure is established with this plan for the purposes of the prompt and equitable resolution of residents' complaints, concerns and comments regarding accessibility of pedestrian facilities located within the public right of way.

Self-evaluation

Overview

The City of Rogers Public Works Department performed a self-evaluation of its current transportation infrastructure polices, practices, and programs.

The goal of the self-evaluation is to review existing policies and practices to verify the City is providing accessibility and not adversely affecting the full participation of individuals with disabilities.

The self-evaluation included completing an inventory of all pedestrian curb ramps and traffic control signals that are located within the City right of way.

Existing policies and practices

The Public Works Department will consider and respond to all accessibility improvement requests. Requests should be sent to the ADA coordinator as specified in Appendix D. All accessibility improvements that have been determined to be reasonable will be scheduled, consistent with transportation priorities. The City will coordinate with external agencies as necessary to ensure that all new or altered pedestrian facilities within the City jurisdiction are ADA compliant to the maximum

extent possible. Following are descriptions of the various policies and practices the city uses to assist with ADA compliance.

Temporary Pedestrian Access Routes

Construction and temporary traffic control zones present unique challenges for pedestrians with disabilities. According to the Public Rights of Way Accessible Guidelines [PROWAG (R205)], when an existing pedestrian access route is blocked by construction or maintenance, an ADA compliant alternative pedestrian access route should be provided. The Minnesota Department of Transportation (MnDOT) and the Minnesota Manual on Uniform Traffic Control Devices (MnMUTCD) Chapter 6D offers technical guidance on this issue. MnDOT continues to update these guidelines as necessary, and the City of Rogers monitors MnDOT's evolving standards to stay in compliance. During construction, the city evaluates any temporary control zone to ensure compliance with PROWAG. The responsibility for providing compliant alternative pedestrian routes falls to the project contractor; however, staff ensures compliance by using MnDOT's pedestrian accessibility checklist (MnMUTCD Figure 6D-1) to evaluate each site.

Transportation Projects

The city's goal is to continue to provide and upgrade accessible pedestrian facilities as part of transportation projects. During the development of project plans, staff will inspect, inventory and plan for any required improvements to pedestrian facilities located in the public right of way to ensure ADA compliance. The city has established ADA design standards and procedures as detailed in Appendix C. These standards and procedures will be kept up to date with nationwide and local best management practices. The city's capital improvement plan (CIP) includes the following types of transportation projects

Pavement Management Program (PMP)

The majority of the City's street infrastructure is maintained through the Pavement Management Program (PMP), established by the City in 2015. The PMP is a street maintenance plan that implements the right maintenance at the right time in a road's lifecycle to reduce the overall cost of keeping the City's streets in good condition. The PMP provides a systematic approach to managing the City's transportation infrastructure, including pedestrian facilities within the right of way. The data-driven nature of the PMP makes it a useful vehicle for ADA compliance.

The City incorporates ADA accessible pedestrian features into PMP projects, including rehabilitation, sealcoating, and sidewalk maintenance. The segments of street and sidewalk are selected based on condition and budget. The PMP is updated annually to reflect current infrastructure conditions. Through this process, the city works to keep its transportation infrastructure in good condition

Municipal State Aid (MSA) Projects

The MSA system is a collection of higher traffic volume and key connecting roads in the city. MSA roads receive state funding for construction and maintenance. As a result, they are scheduled for improvements separately from the local streets.

The schedule to improve MSA streets is based on pavement condition and budget.

Bikeway, Sidewalk, and Trail Projects

One of the city's goals is to develop a comprehensive, citywide system of bikeways, sidewalks and trails that provide local and regional connectivity, improve safety and accessibility, and enhance overall community livability. At times, it's necessary to schedule bikeway, sidewalk and trail construction separately from street rehabilitation. These projects will incorporate pedestrian facility upgrades as necessary.

Traffic Control Signal Projects

The City is responsible for only a few traffic control signals and work with other agencies such as Hennepin County and MNDoT to address concerns and issues.

Inventory

In 2020, the City of Rogers conducted an inventory of existing pedestrian facilities within its public right of way. A map showing the location of these facilities is in the Appendix B and will be updated annually to add or remove changes.

The Public Works Department will further assess accessibility of pedestrian ramps and traffic signals in advance of CIP and PMP projects to allow for the design of ADA compliant pedestrian facilities. As resources allow, the department will gather additional data to assist in determining levels of ADA compliance of pedestrian facilities to assist in prioritizing and programming funds for projects to be added into the CIP and PMP.

What activity requires an ADA upgrade?

Activity	Upgrade Required
Construction	
New construction All new construction must meet ADA requirements (i.e. curb ramps, sidewalks, trails, pedestrian crosswalks, traffic signals, pedestrian tunnels/bridges and new developments).	Yes
Mill and overlay/pavement reclaim ADA upgrades are required on all pedestrian facilities adjacent to the street segments being worked on. All existing curb ramps will be brought into compliance. Where there is no curb ramp, curb ramps must be installed where there is existing sidewalk. Adjacent sidewalk will be removed and replaced as needed.	Yes
Reconstruction ADA upgrades are required on all pedestrian facilities adjacent to the street segments being worked on. This includes projects to widen roads, add vehicle or bike lanes, change horizontal or vertical alignment, replace bridges, rehabilitate	Yes

pavement, replace curb and gutter, replace traffic signals, or replace sidewalks or trails.	
Maintenance	
Crack sealing	No
Concrete joint sealing, surface planning or grinding	No
Curb replacement If the curb replacement is at an existing or proposed pedestrian ramp location, then it must meet ADA requirements. All existing curb ramps will be brought into compliance. Where there is no curb ramp, curb ramps must be installed where there is existing sidewalk.	Maybe
Pothole Patching	No
Seal Coating	No
Sidewalk panel replacement Accessibility upgrades should be done to the extent feasible. If only one or two panels are being replaced, there may not be an opportunity to make changes.	Maybe
Sidewalk Shaving	No
Sidewalk panel temporary patch or ramp Accessibility upgrades should be done to the extent feasible. The larger the patch section, the better the opportunity to address slope or cross slope. However, if only one or two panels are being patched, there may not be an opportunity to make changes	Maybe
Utility patch If the patch is located in the middle of the street, no upgrades are required. However, if the patch disturbs curb ramps or sidewalk, upgrades are required.	Maybe
Traffic	
Crosswalk installation Any new marked and signed crosswalk must meet ADA requirements	Yes
Pavement marking modification Any pedestrian-related pavement marking should meet ADA requirements.	Maybe

ADA Coordinator

In accordance with 28 CFR 35.107(a), the City of Rogers has identified an ADA Title II coordinator to oversee the City policies and procedures for public right of way. It is the responsibility of the ADA coordinator to implement this policy. Contact information for the coordinator is in Appendix D.

Implementation

Methodology

The City of Rogers is committed to improving accessibility within the city. A systematic approach to providing accessible facilities will be established to include the cost for public right of way improvements into the city's budget.

The city will use two methods for upgrading pedestrian facilities to current ADA standards. The first and most comprehensive method is the scheduled transportation projects. All pedestrian facilities affected by these projects will be upgraded to current ADA accessibility standards. The second method is ADA accessibility improvement projects. These projects will be incorporated into the capital improvement plan (CIP) on a case-by-case basis as determined by staff. The CIP includes a schedule for project improvements by year and geographic area.

Prioritization

The City will include accessibility improvements in all transportation projects planned in the CIP. The CIP is reviewed on an annual basis and will be revised as necessary to address accessibility priorities in context with the needs of the City's overall transportation system.

External Agency Coordination

Other agencies are responsible for pedestrian facilities within Rogers, including Hennepin County and MnDOT. The City will coordinate with these agencies to track and assist in removing accessibility barriers along their routes and/or associated with their services.

Schedule

Rogers has set the following schedule goals for improving accessibility of pedestrian facilities within the city:

- Traffic signals, pedestrian ramps and sidewalks will be addressed through transportation projects for scheduling and constructing improvements.
- Any facilities identified as an existing hazard or compliance issue that city staff believes needs to be addressed by a set date will have a work order initiated or it will be incorporated into a capital improvement plan project.
- The City has a 20-year goal to have a minimum of 80 percent of transportation accessibility features within the City of Rogers ADA compliant. The remaining 20 percent would include any locations that have not had an adjacent road project within the 20-year period.

Grievance Procedure

Under the Americans with Disabilities Act (ADA), each agency is required to publish its responsibilities regarding ADA accessibility. A draft public notice is provided in Appendix E. If users of Rogers transportation facilities and services believe the city has not provided reasonable accommodation, they have the right to file a grievance.

In accordance with 28 CFR 35.107(b), the city has developed a grievance procedure for the purposes of the prompt and equitable resolution of complaints, concerns, comments and other grievances. This grievance procedure is outlined in Appendix F, with a complaint form in Appendix G.

Monitor the Progress

This document, including the appendices, will be updated as conditions within the City change. With each main update, a public outreach will be conducted to ask for the public's participation in plan updates.

Appendices

A. **Glossary of Terms**
B. **Inventory Maps**
C. **Agency ADA design standards and procedures**
D. **ADA coordinator**
E. **ADA public notice**
F. **Grievance procedure**
G. **Complaint form**
H. **Transition plan needs and requirements**

APPENDIX A – GLOSSARY OF TERMS

ADA Transition Plan – Rogers' transportation system plan that identifies accessibility needs; outlines the process to fully integrate accessibility improvements into transportation projects; and ensures all transportation facilities, services, programs and activities are accessible to all individuals.

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

Accessible pedestrian signal (APS): A device that communicates information about the WALK and DON'T WALK intervals at signalized intersections in non-visual (audible and vibro-tactile) formats.

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

Americans with Disabilities Act (ADA): The Americans with Disabilities Act is civil rights legislation that was passed in 1990 and went into effect in July 1992. The ADA sets design guidelines for accessibility to public facilities, including sidewalks and trails, by individuals with disabilities.

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

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

Capital Improvement Program (CIP): The CIP includes an annual capital budget and a 10-year plan for funding new construction and reconstruction projects within the city's transportation system.

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

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

Pavement Management Program (PMP): The PMP is a systematic approach used to schedule street improvement projects by year and geographic area.

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

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

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

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

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

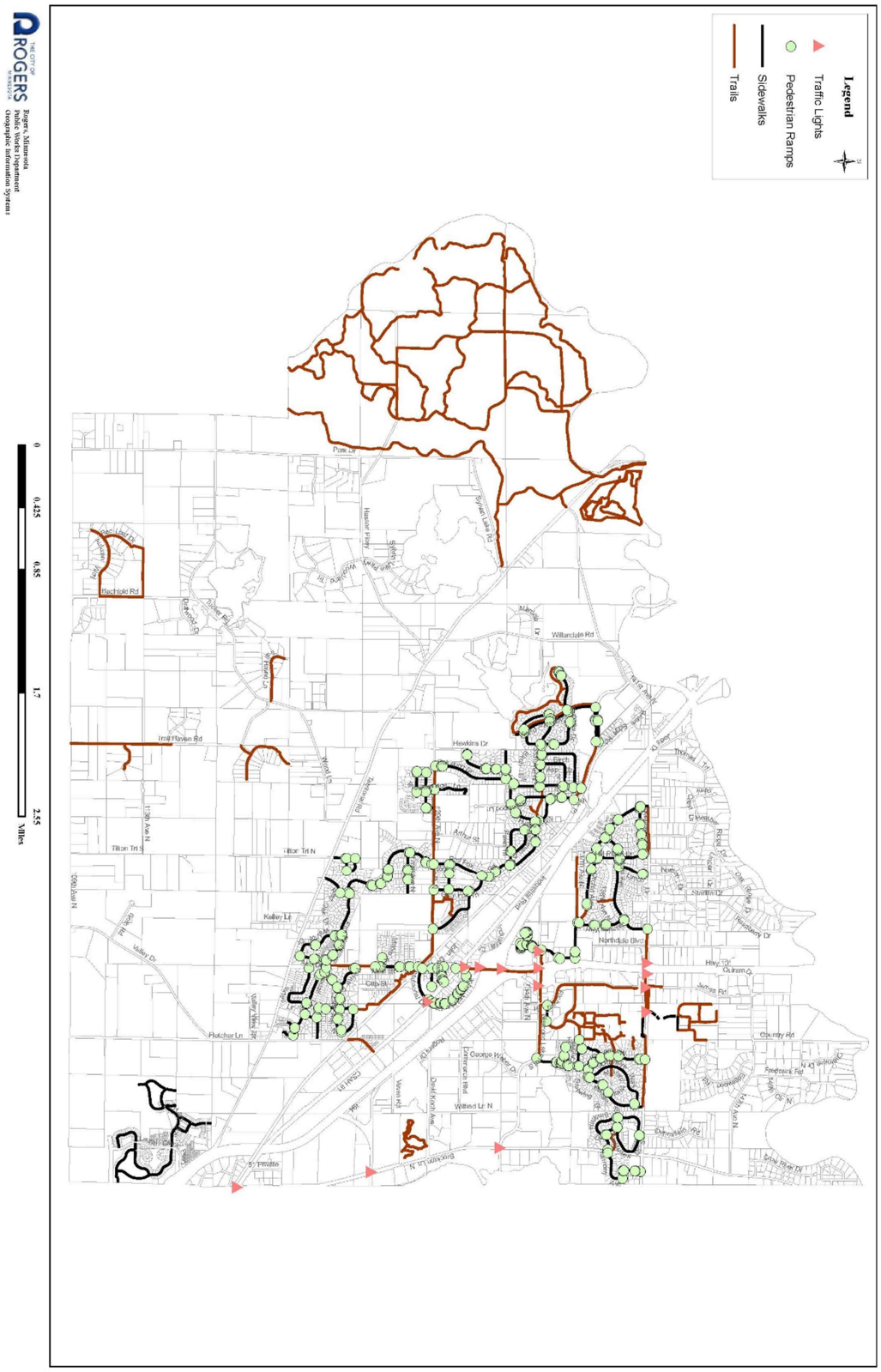
Transportation project: A project within the right of way intended to construct or repair transportation related infrastructure, including pavement, curb and gutter, traffic signals, sidewalks, trails, bikeways and bridges.

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

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

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

Appendix B – Inventory Map



APPENDIX C – AGENCY ADA DESIGN PROCEDURES AND STANDARDS

Design Procedures

Intersection Corners

The city plans to construct or upgrade curb ramps to achieve ADA compliance as part of transportation projects. There may be limitations that make it technically infeasible for an intersection corner to achieve full accessibility within the scope of a project. Those limitations will be noted, and those intersection corners will remain on the ADA transition plan. As future projects or opportunities come up, those intersection corners will be incorporated into future work. Regardless of whether or not full compliance can be achieved, each intersection corner will be made as compliant as possible in accordance with the judgment of city staff.

Bikeways, sidewalks, and trails

The city will evaluate and attempt to construct or upgrade bikeways, sidewalks and trails to achieve ADA compliance as part of transportation projects. In general, a six-foot-wide sidewalk is desirable for accessibility and maintenance purposes. A minimum five-foot-wide sidewalk may be acceptable where physical constraints limit achieving the desired six- foot width. There may be limitations that make it technically infeasible for segments of sidewalks or trails to achieve full accessibility within the scope of a project. Those limitations will be noted, and those segments will remain on the ADA transition plan. As future projects or opportunities come up, those segments will be incorporated into future work. Regardless of whether or not full compliance can be achieved, every bikeway, sidewalk or trail will be made as compliant as possible in accordance with the judgment of city staff.

Traffic Signals

The city will attempt to construct or upgrade traffic control signals to achieve ADA compliance as part of transportation projects. There may be limitations that make it technically infeasible for individual traffic control signal locations to achieve full accessibility within the scope of a project. Those limitations will be noted, and those locations will remain on the ADA transition plan. As future projects or opportunities come up, those locations will be incorporated into future work. Regardless of whether or not full compliance can be achieved, each traffic signal control location will be made as compliant as possible in accordance with the judgment of city staff.

Other polices, practices, and programs

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

Design Standards

The city generally follows the guidelines identified in the Public Rights of Way Accessible Guidelines (PROWAG) when practical and feasible.

APPENDIX D – CONTACT INFORMATION

Public right of way: ADA Title II Coordinator and Implementation Coordinator

Name: Andrew Simmons

Address: 22350 South Diamond Lake Road, Rogers MN, 55374

Phone: 763-428-8580

Email: asimmons@rogersmn.gov

APPENDIX E – ADA PUBLIC NOTICE

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

PUBLIC NOTICE

In accordance with the requirements of Title II of the Americans with Disabilities Act of 1990, the City of Rogers Public Works Department will not discriminate against qualified individuals with disabilities on the basis of disability in city transportation services, programs or activities.

EMPLOYMENT

The city does not discriminate on the basis of disability in its hiring or employment practices and complies with all regulations promulgated by the United States Equal Employment Opportunity Commission under Title I of the Americans with Disabilities Act (ADA).

EFFECTIVE COMMUNICATION

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

MODIFICATIONS TO POLICIES AND PROCEDURES

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

Anyone who requires an auxiliary aid or service for effective communication, or a modification of policies or procedures to participate in a transportation program, service or activity, should contact the office of the public right of way ADA coordinator (see Appendix D) as soon as possible, but no later than 48 hours before any scheduled event.

The ADA does not require the city to take any action that would fundamentally alter the nature of its programs or services or impose an undue financial or administrative burden.

The city will not place a surcharge on an individual with a disability or any group of individuals with disabilities to cover the cost of providing auxiliary aids/services or reasonable modifications of policy, such as retrieving items from locations that are open to the public but are not accessible to persons who use wheelchairs.

APPENDIX F – GRIEVANCE PROCEDURE

Prior to filing a grievance, the public is strongly encouraged to contact the public right of way ADA coordinator to discuss any concerns regarding city transportation facilities. The ADA coordinator's role is designed to provide a point of contact for the public to address concerns. It is anticipated that most concerns identified will be able to be resolved by the ADA coordinator. Contact information for the ADA coordinator can be found in Appendix D of this document.

PURPOSE

This grievance procedure is established to meet the requirements of the Americans with Disabilities Act (ADA) of 1990. It may be used by anyone who wishes to file a complaint alleging discrimination on the basis of disability in the provision of services, activities, programs or benefits by the City of Rogers Public Works Department. The city's personnel policy governs employment-related complaints of disability discrimination.

PROCEDURE

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

The complaint should be submitted to the ADA coordinator by the grievant and/or their designee as soon as possible, but no later than 60 calendar days after the alleged violation. Contact information for the ADA coordinator can be found in Appendix D of this document.

Within 15 working days after receipt of the complaint, the ADA coordinator or their designee will meet with the complainant to discuss the complaint and possible resolutions. Within 15 working days of the meeting, the ADA coordinator or their designee will respond in writing, and where appropriate, in a format accessible to the complainant, such as large print or audio tape. The response will explain the position of the city and offer options for substantive resolution of the complaint.

If the response by the ADA coordinator or their designee does not satisfactorily resolve the issue, the complainant and/or their designee may appeal the decision to the city manager or his/her designee within 30 calendar days after receipt of the response.

Within 30 calendar days after receipt of the appeal, the city manager or his/her designee will meet with the complainant to discuss the complaint and possible resolutions. Within 30 calendar days after the meeting, the city manager or his/her designee will respond in writing, and where appropriate, in a format accessible to the complainant with a final resolution of the complaint.

All written complaints received by the ADA coordinator or their designee, appeals to the city manager or his/her designee, and responses from these two offices will be retained by the city in accordance with state and federal law.

METHOD

Those wishing to file a formal written grievance with the City of Rogers Public Works Department may do so by one of the following methods:

WEBSITE

Visit the City of Rogers' ADA transition plan webpage at www.rogersmn.gov and click the link to the ADA complaint form. A copy of the ADA complaint form is included with this document in Appendix G.

TELEPHONE

Contact the ADA coordinator as specified in Appendix D to submit an oral grievance. The ADA coordinator will prepare and submit the complaint form on behalf of the person filing the grievance.

PAPER SUBMITAL

Contact the ADA coordinator as specified in Appendix D to request a paper copy of the complaint form. Complete the form and submit it to the ADA coordinator.

INFORMATION REQUIRED

The ADA complaint form will ask for the following information:

- The name, address, telephone number and email address for the person filing the grievance.
- The name, telephone number and email address for the person alleging an ADA violation (if different than the person filing the grievance)
- A description and location of the problem and the nature of a remedy sought, if known by the complainant.
- If the complainant has filed the same complaint or grievance with the United States Department of Justice (DOJ), another federal or state civil rights agency, a court, or others, the name of the agency or court where the complainant filed it and the filing date.

PROCESS

If the grievance filed does not concern a City of Rogers transportation facility, the city will work with the complainant to contact the agency that has jurisdiction over the facility.

A city staff person will conduct an investigation to determine the validity of the alleged violation. As part of the investigation, the staff person may conduct an engineering study to help determine the response. The staff person will use department resources, engineering judgment, data collected and any information submitted by the complainant to develop a conclusion. A staff person will be available to meet with the complainant to discuss the matter as a part of the investigation and resolution. The city will document each resolution of a filed complaint and retain documentation in the department's ADA complaint files in accordance with state and federal law.

The city will consider all specific complaints within its particular context or setting. Furthermore, the city will consider many varying circumstances including:

- The nature of the access to services, programs or facilities at issue
- The specific nature of the disability
- The essential eligibility requirements for participation
- The health and safety of others
- The degree to which an accommodation would constitute a fundamental alteration to the program, service, facility or cause an undue hardship to the City

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

FILE MAINTENANCE

The city shall maintain ADA complaint files in accordance with state and federal law.

Complaints on Title II violations may also be filed with the United States Department of Justice (DOJ) within 180 days of the date of discrimination. In certain situations, cases may be referred to a mediation program sponsored by the DOJ. The DOJ may bring a lawsuit where it has investigated a matter and has been unable to resolve violations.

For more information, contact:

United States Department of Justice Civil Rights Division
950 Pennsylvania Ave., N.W. Disability Rights Section - NYAV Washington, D.C. 20530
www.ada.gov
800.514.0301 (voice – toll free)
800.514.0383 (TTY)

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

APPENDIX G – COMPLAINT FORM

See the following pages for the complaint form.

CITY OF ROGERS

ADA Complaint Form

The City has developed a grievance procedure to ensure that accessibility concerns are resolved quickly and fairly, as outlined in the Americans with Disabilities Act (ADA).

If you have issues with the form, or to file an oral grievance, call 763-428-8580.

Complainant - Person Filing Grievance

Name: _____ Date: _____

Street Address: _____

City: _____ State: _____ Zip Code: _____

Phone Number: _____ Email: _____

Person Claiming Accessibility Issue (if different from above)

Name: _____

Phone Number: _____ Email: _____

Complaint

Where is the location of the problem? Please include city, street name, intersection (if applicable), facility name and/or location if other than a roadway.

What efforts have been made to resolve this complaint?

If you have documentation, copies would be helpful. Examples are letters, email messages, written notes, etc.

Has the complaint been filed with federal or state agency? ☐ Yes ☐ No

Name of Agency:_____

Contact Name: _____ Date: _____

Please attach any additional pages if you need more room.

Signature of Complainant: _____ Date: _____

Return To: Andrew Simmons, Water Resources Technician

22350 S. Diamond Lake Rd. Rogers, MN 55374

763-428-0907

asimmons@rogersmn.gov

NOTICE OF RIGHTS

In accordance with the Minnesota Government Data Practices Act, the City of Rogers is required to inform you of your rights as they pertain to the private information collected from you. The personal information we collect from you is private. Access to this information is available only to you, the agency collecting the information and other statutorily authorized agencies, unless you or a court authorizes its release.

The Minnesota Government Data Practices Act requires that you be informed that the following information, which you are asked to provide, is considered private.

The purpose and intended use of the requested information is:
To assist City of Rogers staff and designees to evaluate and respond to accessibility concerns within the public right of way.

Authorized persons or agencies with whom this information may be shared include:
City of Rogers officials, staff or designee(s)

Furnishing the above information is voluntary, but refusal to supply the requested information will mean: City of Rogers staff may be unable to respond to or evaluate your request.

MINN. STAT. 13.04(2)

APPENDIX H – TRANSITION PLAN NEEDS AND REQUIREMENTS

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

I. Employment
II. State and local government services
III. Public accommodations
IV. Telecommunications
V. Miscellaneous provisions

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

As required by Title II of ADA, 28 CFR. Part 35 Sec. 35.105 and Sec. 35.150, the city has conducted a self-evaluation of its facilities within the public right of way and has developed this transition plan detailing how the organization will ensure these facilities are accessible to all individuals. A glossary of terms is included in Appendix A

This transition plan has been created to specifically cover accessibility within the public right of way and does not include information on city programs, practices or building facilities not related to public right of way.

ADA AND ITS RELATIONSHIP TO OTHER LAWS

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

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

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

AGENCY REQUIREMENTS

Under Title II, the City of Rogers Public Works Department must meet these general requirements:

- Must operate their programs so that, when viewed in their entirety, the programs are accessible to and useable by individuals with disabilities (28 CFR Sec. 35.150).
- May not refuse to allow a person with a disability to participate in a service, program or activity simply because the person has a disability (28 CFR Sec. 35.130 (a).
- Must make reasonable modifications in policies, practices and procedures that deny equal access to individuals with disabilities unless a fundamental alteration in the program would result (28 CFR Sec. 35.130(b) (7).
- May not provide services or benefits to individuals with disabilities through programs that are separate or different unless the separate or different measures are necessary to ensure that benefits and services are equally effective (28 CFR Sec. 35.130(b)(iv) & (d).
- Must take appropriate steps to ensure that communications with applicants, participants and members of the public with disabilities are as effective as communications with others (28 CFR Sec. 35.160(a).
- Must designate at least one responsible employee to coordinate ADA compliance [28 CFR Sec. 35.107(a)]. This person is often referred to as the "ADA coordinator." The public entity must provide the ADA coordinator's name, office address and telephone number to all interested individuals [28 CFR Sec. 35.107(a)].
- Must provide notice of ADA requirements. All public entities, regardless of size, must provide information about the rights and protections of Title II to applicants, participants, beneficiaries, employees and other interested persons [28 CFR Sec. 35.106].
- Must establish a grievance procedure. Public entities must adopt and publish grievance procedures providing for prompt and equitable resolution of complaints [28 CFR Sec. 35.107(b)]. This requirement provides for a timely resolution of all problems or conflicts related to ADA compliance before they escalate to litigation and/or the federal complaint process.

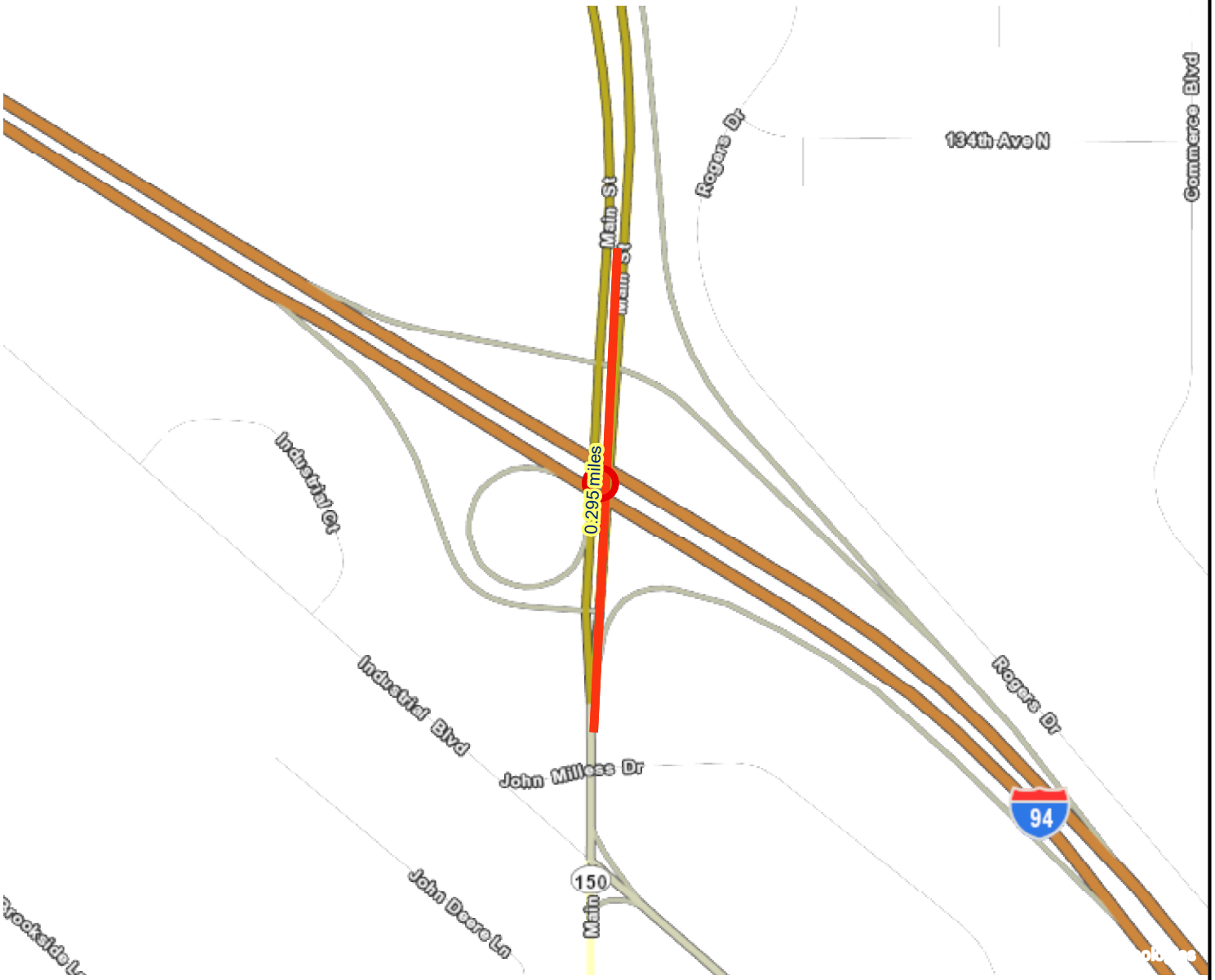
Regional Economy

Roadway Reconstruction/Modernization Project: TH 101 and I-94 Diverging Diamond Interchange Upgrade | Map ID:

Results

WITHIN ONE MI of project:
Postsecondary Students: 0

Totals by City:
Rogers
Population: 7494
Employment: 7223
Mfg and Dist Employment: 3182



Project Points
Project
Manfacturing/Distribution Centers
Job Concentration Centers

0 0.05 0.1 0.2 0.3 0.4 Miles

Created: 3/24/2022
LandscapeRSA5

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

METROPOLITAN COUNCIL

Transit Connections

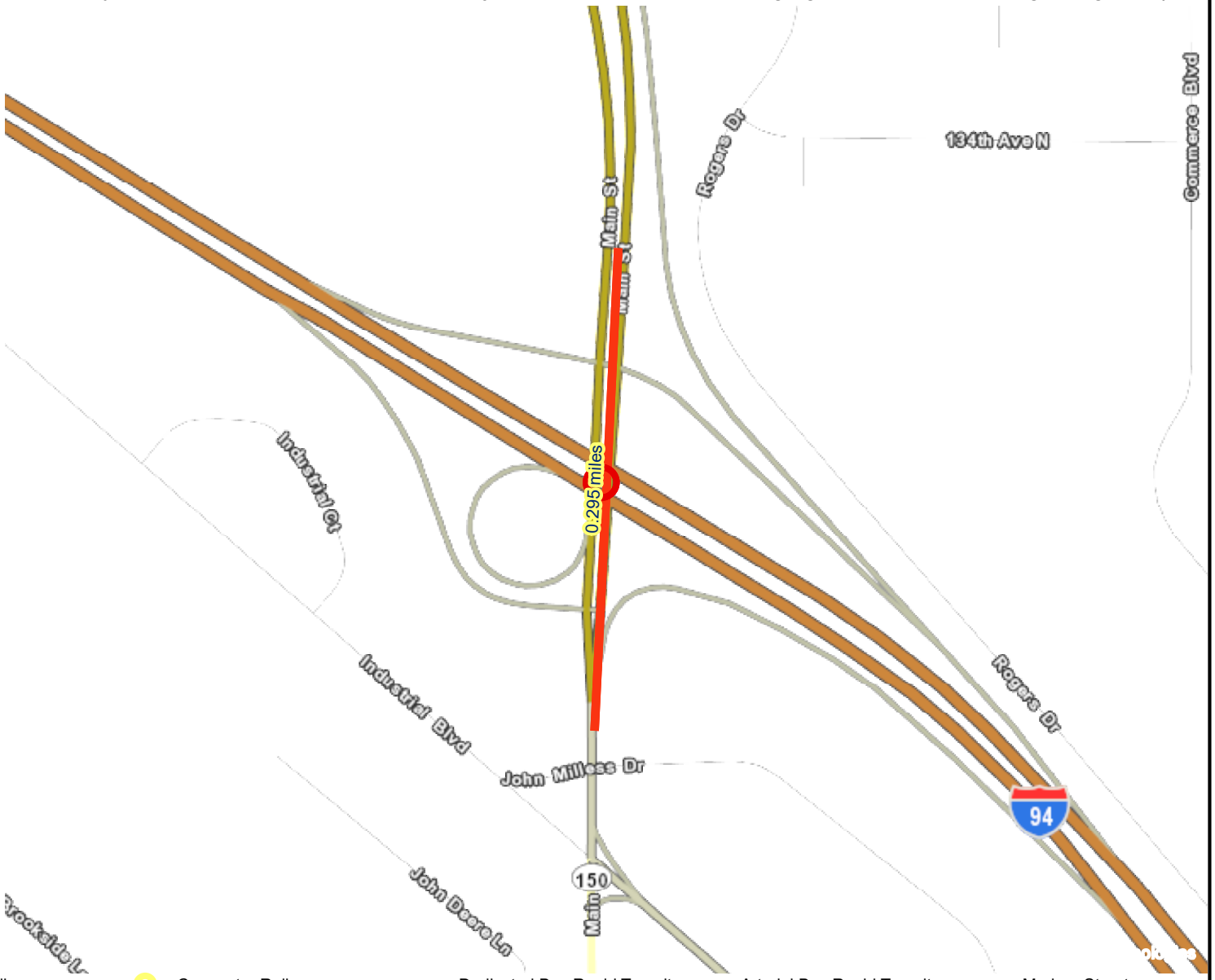
Roadway Reconstruction/Modernization Project: TH 101 and I-94 Diverging Diamond Interchange Upgrade | Map ID:

Results

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

**indicates Planned Alignments*

Transit Market areas: 5



Project Points
Project
Project Area
Active Stop
Arterial Bus Rapid Transit

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

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

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

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

Modern Streetcar
Undetermined

0 0.05 0.1 0.2 0.3 0.4 Miles

Created: 3/24/2022
LandscapeRSA3

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METROPOLITAN COUNCIL

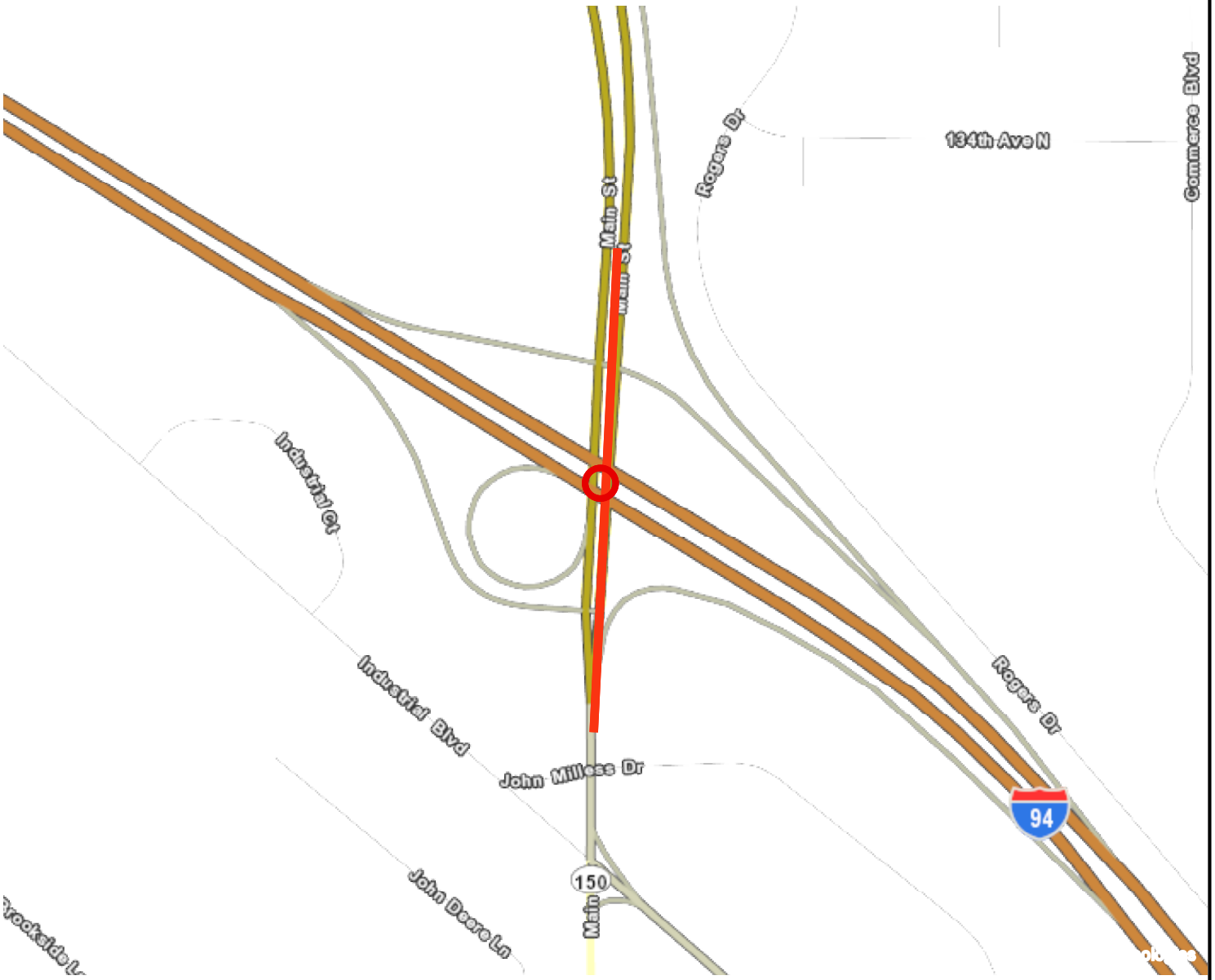
Socio-Economic Conditions

Roadway Reconstruction/Modernization Project: TH 101 and I-94 Diverging Diamond Interchange Upgrade | Map ID: 1648146

Results

Total of publicly subsidized rental housing units in census tracts within 1/2 mile: 61

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



Points
Area of Concentrated Poverty
Lines

0 0.05 0.1 0.2 0.3 0.4 Miles

Created: 3/24/2022
LandscapeRSA2

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

METROPOLITAN COUNCIL

Rogers 101/94 Application

Existing

920	South Ramps		
	Existing Volume	4298	vehicles
	Existing Delay	22	sec/veh
	Existing Total Delay	94556	seconds

940	North Ramps		
	Existing Volume	3634	vehicles
	Existing Delay	52	sec/veh
	Existing Total Delay	188968	seconds

Total Delay	**283524**

Build

20	South Crossover		
	Future Volume	1662	vehicles
	Future Delay	25	sec/veh
	Future Total Delay	41550	seconds

21	NB 101 and 94 EB Off Ramp		
	Future Volume	700	vehicles
	Future Delay	6	sec/veh
	Future Total Delay	4200	seconds

22	SB 101 and 94 EB Off Ramp		
	Future Volume	1435	vehicles
	Future Delay	7	sec/veh
	Future Total Delay	10045	seconds

23	94 EB On Ramp and 101		
	Future Volume	2163	vehicles
	Future Delay	0	sec/veh
	Future Total Delay	0	seconds

30	SB 101 and North Crossover		
	Future Volume	3219	vehicles
	Future Delay	47	sec/veh
	Future Total Delay	151293	seconds

31	94 WB Off Ramp and SB 101		
	Future Volume	2666	vehicles
	Future Delay	23	sec/veh
	Future Total Delay	61318	seconds

32	94 WB Off Ramp and NB 101		
	Future Volume	808	vehicles
	Future Delay	5	sec/veh
	Future Total Delay	4040	seconds

Total Future Delay	**272446**

Total Network Delay Reduction	**11078**	**seconds**

Emissions

Existing	920	940	Total
CO	4.11	6.09	10.2
NOx	0.8	1.18	1.98
VOC	0.95	1.41	2.36
	Total Existing		14.54

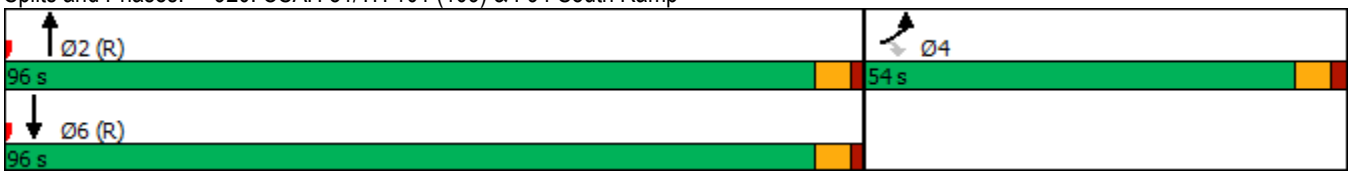
Build	20	21	22	23	30	31	32	Total
CO	1.54	0.18	0.37	0.45	4.28	1.21	0.19	8.22
NOx	0.3	0.04	0.07	0.09	0.83	0.24	0.04	1.61
VOC	0.36	0.04	0.08	0.1	0.99	0.28	0.04	1.89
						Total Future		11.72

Total Reduction	**2.82**

Lane Group	EBL	EBR	NBT	NBR	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	251	222	449	710	1213	1453
Future Volume (vph)	251	222	449	710	1213	1453
Turn Type	Prot	Perm	NA	Free	NA	Free
Protected Phases	4		2		6	
Permitted Phases		4		Free		Free
Detector Phase	4	4	2		6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	15.0		15.0	
Minimum Split (s)	22.0	22.0	21.5		21.5	
Total Split (s)	54.0	54.0	96.0		96.0	
Total Split (%)	36.0%	36.0%	64.0%		64.0%	
Yellow Time (s)	4.0	4.0	4.0		4.0	
All-Red Time (s)	2.0	2.0	1.5		1.5	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.0	5.5		5.5	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Max		C-Max	
Act Effct Green (s)	28.7	28.7	109.8	150.0	109.8	150.0
Actuated g/C Ratio	0.19	0.19	0.73	1.00	0.73	1.00
v/c Ratio	0.79	0.68	0.17	0.49	0.46	1.03
Control Delay	74.0	50.4	6.9	1.1	8.5	34.6
Queue Delay	0.0	0.0	0.0	0.0	0.4	0.0
Total Delay	74.0	50.4	6.9	1.1	8.9	34.6
LOS	E	D	A	A	A	C
Approach Delay			3.4		22.9	
Approach LOS			A		C	

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of 1st Green	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 22.1	Intersection LOS: C
Intersection Capacity Utilization 53.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 920: CSAH 81/TH 101 (109) & I-94 South Ramp



Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	92	3	163	55	645	2574	102
Future Volume (vph)	92	3	163	55	645	2574	102
Turn Type	Perm	NA	Free	Prot	NA	NA	Perm
Protected Phases		8		5	2	6	
Permitted Phases	8		Free				6
Detector Phase	8	8		5	2	6	6
Switch Phase							
Minimum Initial (s)	8.0	8.0		7.0	15.0	15.0	15.0
Minimum Split (s)	22.0	22.0		12.5	23.5	21.5	21.5
Total Split (s)	22.0	22.0		12.5	128.0	115.5	115.5
Total Split (%)	14.7%	14.7%		8.3%	85.3%	77.0%	77.0%
Yellow Time (s)	4.0	4.0		3.5	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		5.5	5.5	5.5	5.5
Lead/Lag				Lag		Lead	Lead
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None		None	C-Max	C-Max	C-Max
Act Effct Green (s)	9.5	9.5	150.0	7.0	129.0	116.5	116.5
Actuated g/C Ratio	0.06	0.06	1.00	0.05	0.86	0.78	0.78
v/c Ratio	0.45	0.51	0.06	0.74	0.21	1.09	0.09
Control Delay	74.2	24.4	0.1	126.9	3.4	65.7	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.2	24.4	0.1	126.9	3.4	65.7	0.9
LOS	E	C	A	F	A	E	A
Approach Delay		34.4			13.2	63.3	
Approach LOS		C			B	E	

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of 1st Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.09	
Intersection Signal Delay: 51.6	Intersection LOS: D
Intersection Capacity Utilization 62.0%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 940: TH 101 (109) & I-94 North Ramp

920: CSAH 81/TH 101 (109) & I-94 South Ramp

Direction	All
Future Volume (vph)	4298
Total Delay / Veh (s/v)	22
CO Emissions (kg)	4.11
NOx Emissions (kg)	0.80
VOC Emissions (kg)	0.95

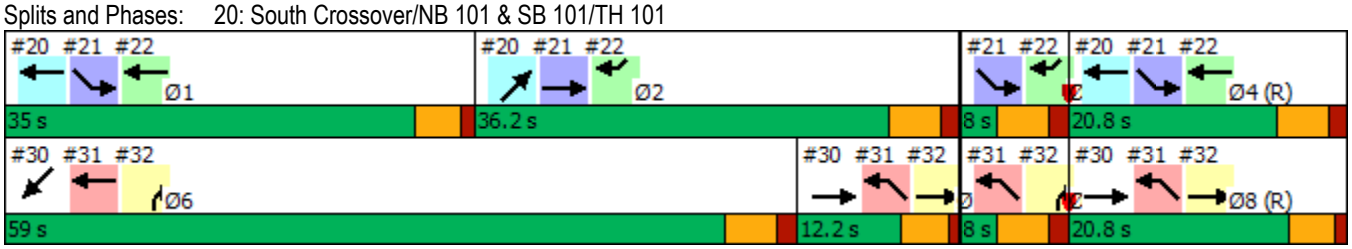
940: TH 101 (109) & I-94 North Ramp

Direction	All
Future Volume (vph)	3634
Total Delay / Veh (s/v)	52
CO Emissions (kg)	6.09
NOx Emissions (kg)	1.18
VOC Emissions (kg)	1.41

Lane Group	WBT	NET	Ø1	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8
Lane Configurations									
Traffic Volume (vph)	1213	449							
Future Volume (vph)	1213	449							
Turn Type	NA	NA							
Protected Phases	1 4	2	1	3	4	5	6	7	8
Permitted Phases									
Detector Phase	1	2							
Switch Phase									
Minimum Initial (s)		4.0	5.0	2.0	4.0	5.0	4.0	2.0	5.0
Minimum Split (s)		28.0	9.5	8.0	20.0	9.5	28.0	8.0	9.5
Total Split (s)		36.2	35.0	8.0	20.8	12.2	59.0	8.0	20.8
Total Split (%)		36.2%	35%	8%	21%	12%	59%	8%	21%
Yellow Time (s)		3.9	3.5	3.9	3.9	3.5	3.9	3.9	3.5
All-Red Time (s)		1.5	1.0	1.5	1.5	1.0	1.5	1.5	1.0
Lost Time Adjust (s)		0.0							
Total Lost Time (s)		5.4							
Lead/Lag		Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag
Lead-Lag Optimize?		Yes	Yes			Yes	Yes		Yes
Recall Mode		None	None	None	C-Max	None	None	None	C-Max
Act Effct Green (s)	58.9	31.2							
Actuated g/C Ratio	0.59	0.31							
v/c Ratio	0.64	0.45							
Control Delay	23.5	29.3							
Queue Delay	0.0	0.0							
Total Delay	23.5	29.3							
LOS	C	C							
Approach Delay	23.5	29.3							
Approach LOS	C	C							

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 4:WBT and 8:, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 25.0	Intersection LOS: C
Intersection Capacity Utilization 55.5%	ICU Level of Service B
Analysis Period (min) 15	

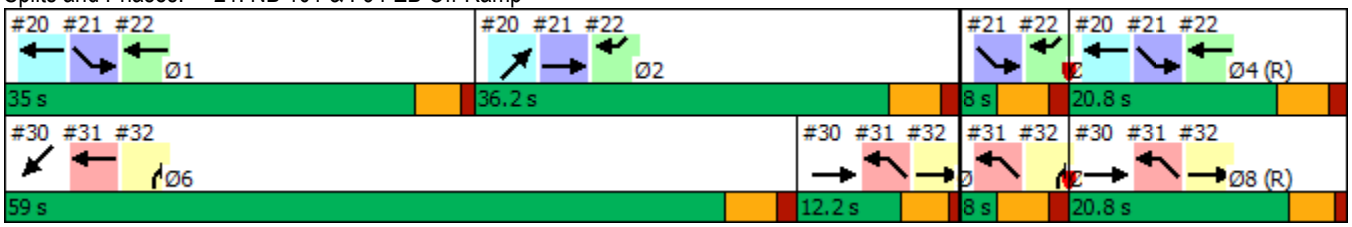
Splits and Phases: 20: South Crossover/NB 101 & SB 101/TH 101



Lane Group	EBT	SEL	Ø1	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8
Lane Configurations									
Traffic Volume (vph)	449	251							
Future Volume (vph)	449	251							
Turn Type	NA	pm+pt							
Protected Phases	2	1 3 4	1	3	4	5	6	7	8
Permitted Phases		1 3 4							
Detector Phase	2	1							
Switch Phase									
Minimum Initial (s)	4.0		5.0	2.0	4.0	5.0	4.0	2.0	5.0
Minimum Split (s)	28.0		9.5	8.0	20.0	9.5	28.0	8.0	9.5
Total Split (s)	36.2		35.0	8.0	20.8	12.2	59.0	8.0	20.8
Total Split (%)	36.2%		35%	8%	21%	12%	59%	8%	21%
Yellow Time (s)	3.9		3.5	3.9	3.9	3.5	3.9	3.9	3.5
All-Red Time (s)	1.5		1.0	1.5	1.5	1.0	1.5	1.5	1.0
Lost Time Adjust (s)	0.0								
Total Lost Time (s)	5.4								
Lead/Lag	Lag		Lead	Lead	Lag	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes		Yes			Yes	Yes		Yes
Recall Mode	None		None	None	C-Max	None	None	None	C-Max
Act Effct Green (s)	31.2	58.9							
Actuated g/C Ratio	0.31	0.59							
v/c Ratio	0.45	0.26							
Control Delay	3.3	10.7							
Queue Delay	0.1	0.0							
Total Delay	3.4	10.7							
LOS	A	B							
Approach Delay	3.4	10.7							
Approach LOS	A	B							

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 4:WBT and 8:, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 6.0	Intersection LOS: A
Intersection Capacity Utilization 34.2%	ICU Level of Service A
Analysis Period (min) 15	

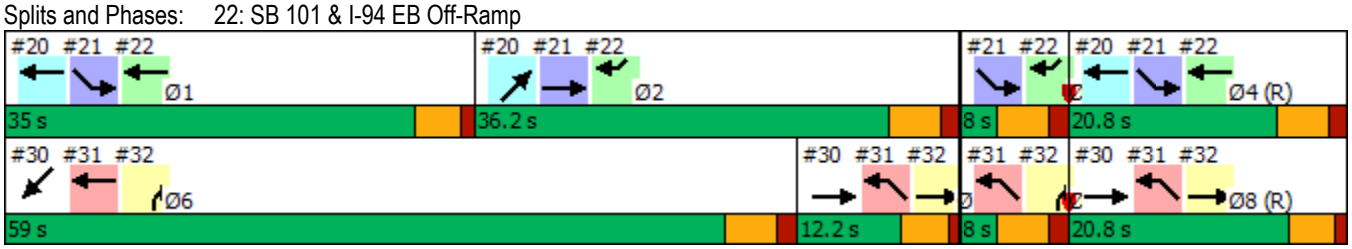
Splits and Phases: 21: NB 101 & I-94 EB Off-Ramp



Lane Group	WBT	SWR	Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8
Lane Configurations										
Traffic Volume (vph)	1213	222								
Future Volume (vph)	1213	222								
Turn Type	NA	custom								
Protected Phases	1 4	2 3	1	2	3	4	5	6	7	8
Permitted Phases										
Detector Phase	1	2								
Switch Phase										
Minimum Initial (s)			5.0	4.0	2.0	4.0	5.0	4.0	2.0	5.0
Minimum Split (s)			9.5	28.0	8.0	20.0	9.5	28.0	8.0	9.5
Total Split (s)			35.0	36.2	8.0	20.8	12.2	59.0	8.0	20.8
Total Split (%)			35%	36%	8%	21%	12%	59%	8%	21%
Yellow Time (s)			3.5	3.9	3.9	3.9	3.5	3.9	3.9	3.5
All-Red Time (s)			1.0	1.5	1.5	1.5	1.0	1.5	1.5	1.0
Lost Time Adjust (s)										
Total Lost Time (s)										
Lead/Lag			Lead	Lag	Lead	Lag	Lag	Lead	Lead	Lag
Lead-Lag Optimize?			Yes	Yes			Yes	Yes		Yes
Recall Mode			None	None	None	C-Max	None	None	None	C-Max
Act Effct Green (s)	58.9	31.2								
Actuated g/C Ratio	0.59	0.31								
v/c Ratio	0.64	0.48								
Control Delay	2.9	32.1								
Queue Delay	0.0	0.0								
Total Delay	2.9	32.1								
LOS	A	C								
Approach Delay	2.9									
Approach LOS	A									

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 4:WBT and 8:, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 7.5	Intersection LOS: A
Intersection Capacity Utilization 55.5%	ICU Level of Service B
Analysis Period (min) 15	

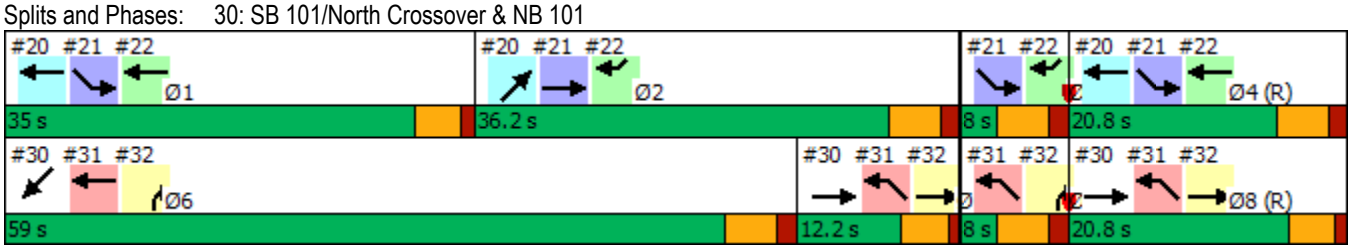
Splits and Phases: 22: SB 101 & I-94 EB Off-Ramp



Lane Group	EBT	SWT	Ø1	Ø2	Ø3	Ø4	Ø5	Ø7	Ø8
Lane Configurations									
Traffic Volume (vph)	645	2574							
Future Volume (vph)	645	2574							
Turn Type	NA	NA							
Protected Phases	5 8	6	1	2	3	4	5	7	8
Permitted Phases									
Detector Phase	5	6							
Switch Phase									
Minimum Initial (s)		4.0	5.0	4.0	2.0	4.0	5.0	2.0	5.0
Minimum Split (s)		28.0	9.5	28.0	8.0	20.0	9.5	8.0	9.5
Total Split (s)		59.0	35.0	36.2	8.0	20.8	12.2	8.0	20.8
Total Split (%)		59.0%	35%	36%	8%	21%	12%	8%	21%
Yellow Time (s)		3.9	3.5	3.9	3.9	3.9	3.5	3.9	3.5
All-Red Time (s)		1.5	1.0	1.5	1.5	1.5	1.0	1.5	1.0
Lost Time Adjust (s)		0.0							
Total Lost Time (s)		5.4							
Lead/Lag		Lead	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?		Yes	Yes	Yes			Yes		Yes
Recall Mode		None	None	None	None	C-Max	None	None	C-Max
Act Effct Green (s)	36.5	53.6							
Actuated g/C Ratio	0.36	0.54							
v/c Ratio	0.55	1.03							
Control Delay	16.2	51.1							
Queue Delay	0.0	4.1							
Total Delay	16.2	55.2							
LOS	B	E							
Approach Delay	16.2	55.2							
Approach LOS	B	E							

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 4:WBT and 8:, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 47.4	Intersection LOS: D
Intersection Capacity Utilization 75.8%	ICU Level of Service D
Analysis Period (min) 15	

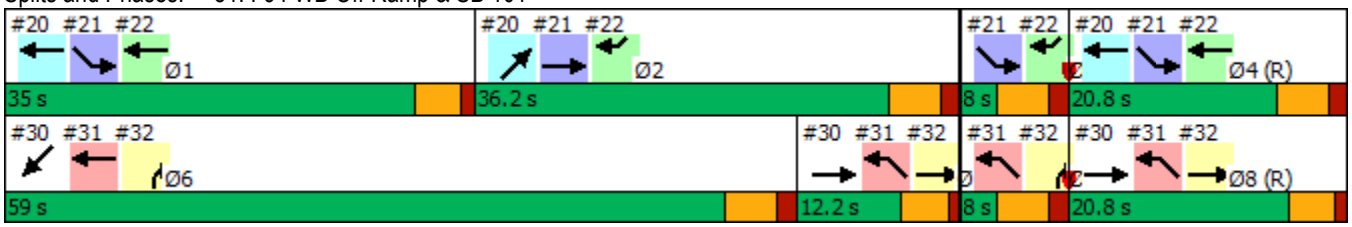
Splits and Phases: 30: SB 101/North Crossover & NB 101



Lane Group	WBT	NWL	Ø1	Ø2	Ø3	Ø4	Ø5	Ø7	Ø8
Lane Configurations									
Traffic Volume (vph)	2574	92							
Future Volume (vph)	2574	92							
Turn Type	NA	pm+pt							
Protected Phases	6	5 7 8	1	2	3	4	5	7	8
Permitted Phases		5 7 8							
Detector Phase	6	5							
Switch Phase									
Minimum Initial (s)	4.0		5.0	4.0	2.0	4.0	5.0	2.0	5.0
Minimum Split (s)	28.0		9.5	28.0	8.0	20.0	9.5	8.0	9.5
Total Split (s)	59.0		35.0	36.2	8.0	20.8	12.2	8.0	20.8
Total Split (%)	59.0%		35%	36%	8%	21%	12%	8%	21%
Yellow Time (s)	3.9		3.5	3.9	3.9	3.9	3.5	3.9	3.5
All-Red Time (s)	1.5		1.0	1.5	1.5	1.5	1.0	1.5	1.0
Lost Time Adjust (s)	0.0								
Total Lost Time (s)	5.4								
Lead/Lag	Lead		Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes		Yes	Yes			Yes		Yes
Recall Mode	None		None	None	None	C-Max	None	None	C-Max
Act Effct Green (s)	53.6	36.5							
Actuated g/C Ratio	0.54	0.36							
v/c Ratio	1.03	0.08							
Control Delay	22.7	21.1							
Queue Delay	0.0	0.0							
Total Delay	22.7	21.1							
LOS	C	C							
Approach Delay	22.7	21.1							
Approach LOS	C	C							

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 4:WBT and 8:, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 22.6	Intersection LOS: C
Intersection Capacity Utilization 68.7%	ICU Level of Service C
Analysis Period (min) 15	

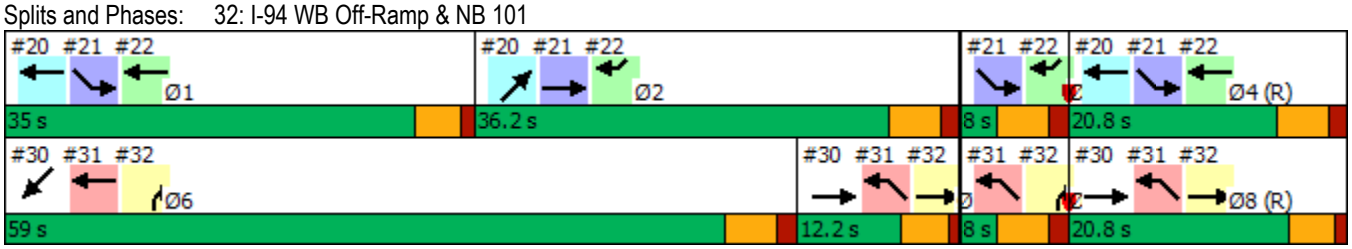
Splits and Phases: 31: I-94 WB Off-Ramp & SB 101



Lane Group	EBT	NBR	Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8
Lane Configurations										
Traffic Volume (vph)	645	163								
Future Volume (vph)	645	163								
Turn Type	NA	custom								
Protected Phases	5 8	6 7	1	2	3	4	5	6	7	8
Permitted Phases		6 7								
Detector Phase	5	6								
Switch Phase										
Minimum Initial (s)			5.0	4.0	2.0	4.0	5.0	4.0	2.0	5.0
Minimum Split (s)			9.5	28.0	8.0	20.0	9.5	28.0	8.0	9.5
Total Split (s)			35.0	36.2	8.0	20.8	12.2	59.0	8.0	20.8
Total Split (%)			35%	36%	8%	21%	12%	59%	8%	21%
Yellow Time (s)			3.5	3.9	3.9	3.9	3.5	3.9	3.9	3.5
All-Red Time (s)			1.0	1.5	1.5	1.5	1.0	1.5	1.5	1.0
Lost Time Adjust (s)										
Total Lost Time (s)										
Lead/Lag			Lead	Lag	Lead	Lag	Lag	Lead	Lead	Lag
Lead-Lag Optimize?			Yes	Yes			Yes	Yes		Yes
Recall Mode			None	None	None	C-Max	None	None	None	C-Max
Act Effct Green (s)	36.5	53.6								
Actuated g/C Ratio	0.36	0.54								
v/c Ratio	0.55	0.21								
Control Delay	3.1	12.9								
Queue Delay	0.0	0.0								
Total Delay	3.1	12.9								
LOS	A	B								
Approach Delay	3.1									
Approach LOS	A									

Intersection Summary			
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 4:WBT and 8:, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.03			
Intersection Signal Delay: 5.1		Intersection LOS: A	
Intersection Capacity Utilization 75.8%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 32: I-94 WB Off-Ramp & NB 101



20: South Crossover/NB 101 & SB 101/TH 101

Direction	All
Future Volume (vph)	1662
Total Delay / Veh (s/v)	25
CO Emissions (kg)	1.54
NOx Emissions (kg)	0.30
VOC Emissions (kg)	0.36

21: NB 101 & I-94 EB Off-Ramp

Direction	All
Future Volume (vph)	700
Total Delay / Veh (s/v)	6
CO Emissions (kg)	0.18
NOx Emissions (kg)	0.04
VOC Emissions (kg)	0.04

22: SB 101 & I-94 EB Off-Ramp

Direction	All
Future Volume (vph)	1435
Total Delay / Veh (s/v)	7
CO Emissions (kg)	0.37
NOx Emissions (kg)	0.07
VOC Emissions (kg)	0.08

23: I-94 EB On-Ramp/NB 101 & SB 101

Direction	All
Future Volume (vph)	2163
Total Delay / Veh (s/v)	0
CO Emissions (kg)	0.45
NOx Emissions (kg)	0.09
VOC Emissions (kg)	0.10

30: SB 101/North Crossover & NB 101

Direction	All
Future Volume (vph)	3219
Total Delay / Veh (s/v)	47
CO Emissions (kg)	4.28
NOx Emissions (kg)	0.83
VOC Emissions (kg)	0.99

31: I-94 WB Off-Ramp & SB 101

Direction	All
Future Volume (vph)	2666
Total Delay / Veh (s/v)	23
CO Emissions (kg)	1.21
NOx Emissions (kg)	0.24
VOC Emissions (kg)	0.28

32: I-94 WB Off-Ramp & NB 101

Direction	All
Future Volume (vph)	808
Total Delay / Veh (s/v)	5
CO Emissions (kg)	0.19
NOx Emissions (kg)	0.04
VOC Emissions (kg)	0.04

Rogers 101/94 Application

Existing

920	South Ramps		
	Existing Volume	4298	vehicles
	Existing Delay	22	sec/veh
	Existing Total Delay	94556	seconds

940	North Ramps		
	Existing Volume	3634	vehicles
	Existing Delay	52	sec/veh
	Existing Total Delay	188968	seconds

Total Delay	**283524**

Build

20	South Crossover		
	Future Volume	1662	vehicles
	Future Delay	25	sec/veh
	Future Total Delay	41550	seconds

21	NB 101 and 94 EB Off Ramp		
	Future Volume	700	vehicles
	Future Delay	6	sec/veh
	Future Total Delay	4200	seconds

22	SB 101 and 94 EB Off Ramp		
	Future Volume	1435	vehicles
	Future Delay	7	sec/veh
	Future Total Delay	10045	seconds

23	94 EB On Ramp and 101		
	Future Volume	2163	vehicles
	Future Delay	0	sec/veh
	Future Total Delay	0	seconds

30	SB 101 and North Crossover		
	Future Volume	3219	vehicles
	Future Delay	47	sec/veh
	Future Total Delay	151293	seconds

31	94 WB Off Ramp and SB 101		
	Future Volume	2666	vehicles
	Future Delay	23	sec/veh
	Future Total Delay	61318	seconds

32	94 WB Off Ramp and NB 101		
	Future Volume	808	vehicles
	Future Delay	5	sec/veh
	Future Total Delay	4040	seconds

Total Future Delay	**272446**

Total Network Delay Reduction	**11078**	**seconds**

Emissions

Existing	920	940	Total
CO	4.11	6.09	10.2
NOx	0.8	1.18	1.98
VOC	0.95	1.41	2.36
	Total Existing		14.54

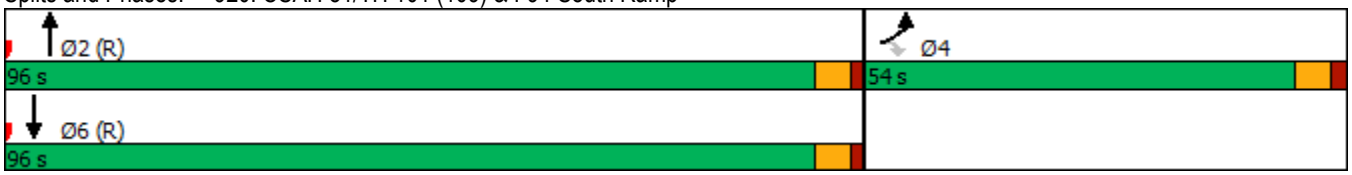
Build	20	21	22	23	30	31	32	Total
CO	1.54	0.18	0.37	0.45	4.28	1.21	0.19	8.22
NOx	0.3	0.04	0.07	0.09	0.83	0.24	0.04	1.61
VOC	0.36	0.04	0.08	0.1	0.99	0.28	0.04	1.89
						Total Future		11.72

Total Reduction	**2.82**

Lane Group	EBL	EBR	NBT	NBR	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	251	222	449	710	1213	1453
Future Volume (vph)	251	222	449	710	1213	1453
Turn Type	Prot	Perm	NA	Free	NA	Free
Protected Phases	4		2		6	
Permitted Phases		4		Free		Free
Detector Phase	4	4	2		6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	15.0		15.0	
Minimum Split (s)	22.0	22.0	21.5		21.5	
Total Split (s)	54.0	54.0	96.0		96.0	
Total Split (%)	36.0%	36.0%	64.0%		64.0%	
Yellow Time (s)	4.0	4.0	4.0		4.0	
All-Red Time (s)	2.0	2.0	1.5		1.5	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.0	5.5		5.5	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Max		C-Max	
Act Effct Green (s)	28.7	28.7	109.8	150.0	109.8	150.0
Actuated g/C Ratio	0.19	0.19	0.73	1.00	0.73	1.00
v/c Ratio	0.79	0.68	0.17	0.49	0.46	1.03
Control Delay	74.0	50.4	6.9	1.1	8.5	34.6
Queue Delay	0.0	0.0	0.0	0.0	0.4	0.0
Total Delay	74.0	50.4	6.9	1.1	8.9	34.6
LOS	E	D	A	A	A	C
Approach Delay			3.4		22.9	
Approach LOS			A		C	

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of 1st Green	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 22.1	Intersection LOS: C
Intersection Capacity Utilization 53.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 920: CSAH 81/TH 101 (109) & I-94 South Ramp



Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	92	3	163	55	645	2574	102
Future Volume (vph)	92	3	163	55	645	2574	102
Turn Type	Perm	NA	Free	Prot	NA	NA	Perm
Protected Phases		8		5	2	6	
Permitted Phases	8		Free				6
Detector Phase	8	8		5	2	6	6
Switch Phase							
Minimum Initial (s)	8.0	8.0		7.0	15.0	15.0	15.0
Minimum Split (s)	22.0	22.0		12.5	23.5	21.5	21.5
Total Split (s)	22.0	22.0		12.5	128.0	115.5	115.5
Total Split (%)	14.7%	14.7%		8.3%	85.3%	77.0%	77.0%
Yellow Time (s)	4.0	4.0		3.5	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		5.5	5.5	5.5	5.5
Lead/Lag				Lag		Lead	Lead
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None		None	C-Max	C-Max	C-Max
Act Effct Green (s)	9.5	9.5	150.0	7.0	129.0	116.5	116.5
Actuated g/C Ratio	0.06	0.06	1.00	0.05	0.86	0.78	0.78
v/c Ratio	0.45	0.51	0.06	0.74	0.21	1.09	0.09
Control Delay	74.2	24.4	0.1	126.9	3.4	65.7	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.2	24.4	0.1	126.9	3.4	65.7	0.9
LOS	E	C	A	F	A	E	A
Approach Delay		34.4			13.2	63.3	
Approach LOS		C			B	E	

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of 1st Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.09	
Intersection Signal Delay: 51.6	Intersection LOS: D
Intersection Capacity Utilization 62.0%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 940: TH 101 (109) & I-94 North Ramp

920: CSAH 81/TH 101 (109) & I-94 South Ramp

Direction	All
Future Volume (vph)	4298
Total Delay / Veh (s/v)	22
CO Emissions (kg)	4.11
NOx Emissions (kg)	0.80
VOC Emissions (kg)	0.95

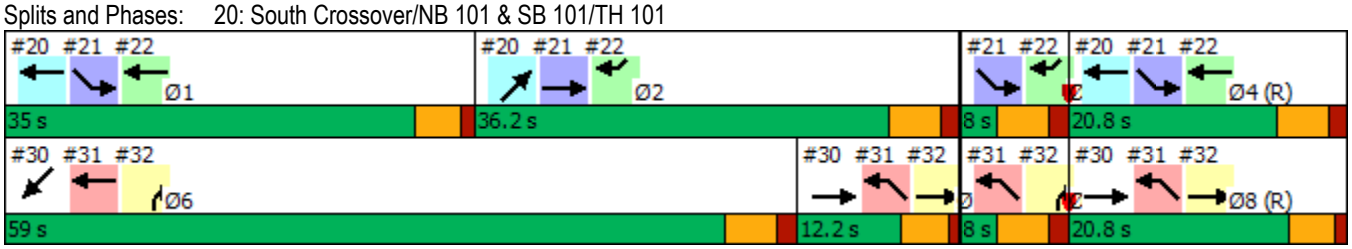
940: TH 101 (109) & I-94 North Ramp

Direction	All
Future Volume (vph)	3634
Total Delay / Veh (s/v)	52
CO Emissions (kg)	6.09
NOx Emissions (kg)	1.18
VOC Emissions (kg)	1.41

Lane Group	WBT	NET	Ø1	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8
Lane Configurations									
Traffic Volume (vph)	1213	449							
Future Volume (vph)	1213	449							
Turn Type	NA	NA							
Protected Phases	1 4	2	1	3	4	5	6	7	8
Permitted Phases									
Detector Phase	1	2							
Switch Phase									
Minimum Initial (s)		4.0	5.0	2.0	4.0	5.0	4.0	2.0	5.0
Minimum Split (s)		28.0	9.5	8.0	20.0	9.5	28.0	8.0	9.5
Total Split (s)		36.2	35.0	8.0	20.8	12.2	59.0	8.0	20.8
Total Split (%)		36.2%	35%	8%	21%	12%	59%	8%	21%
Yellow Time (s)		3.9	3.5	3.9	3.9	3.5	3.9	3.9	3.5
All-Red Time (s)		1.5	1.0	1.5	1.5	1.0	1.5	1.5	1.0
Lost Time Adjust (s)		0.0							
Total Lost Time (s)		5.4							
Lead/Lag		Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag
Lead-Lag Optimize?		Yes	Yes			Yes	Yes		Yes
Recall Mode		None	None	None	C-Max	None	None	None	C-Max
Act Effct Green (s)	58.9	31.2							
Actuated g/C Ratio	0.59	0.31							
v/c Ratio	0.64	0.45							
Control Delay	23.5	29.3							
Queue Delay	0.0	0.0							
Total Delay	23.5	29.3							
LOS	C	C							
Approach Delay	23.5	29.3							
Approach LOS	C	C							

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 4:WBT and 8:, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 25.0	Intersection LOS: C
Intersection Capacity Utilization 55.5%	ICU Level of Service B
Analysis Period (min) 15	

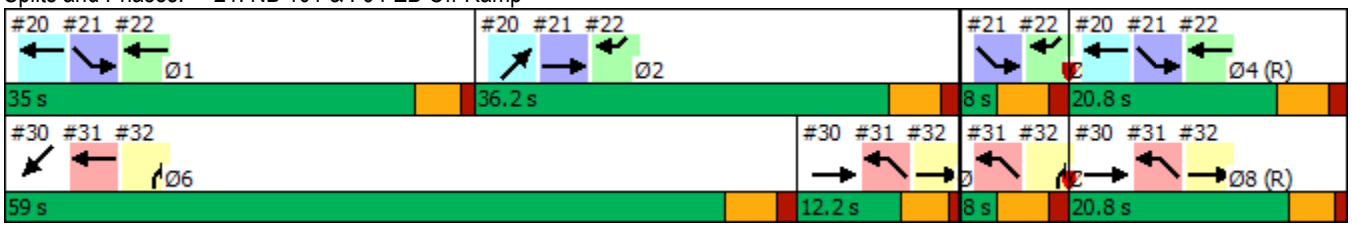
Splits and Phases: 20: South Crossover/NB 101 & SB 101/TH 101



Lane Group	EBT	SEL	Ø1	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8
Lane Configurations									
Traffic Volume (vph)	449	251							
Future Volume (vph)	449	251							
Turn Type	NA	pm+pt							
Protected Phases	2	1 3 4	1	3	4	5	6	7	8
Permitted Phases		1 3 4							
Detector Phase	2	1							
Switch Phase									
Minimum Initial (s)	4.0		5.0	2.0	4.0	5.0	4.0	2.0	5.0
Minimum Split (s)	28.0		9.5	8.0	20.0	9.5	28.0	8.0	9.5
Total Split (s)	36.2		35.0	8.0	20.8	12.2	59.0	8.0	20.8
Total Split (%)	36.2%		35%	8%	21%	12%	59%	8%	21%
Yellow Time (s)	3.9		3.5	3.9	3.9	3.5	3.9	3.9	3.5
All-Red Time (s)	1.5		1.0	1.5	1.5	1.0	1.5	1.5	1.0
Lost Time Adjust (s)	0.0								
Total Lost Time (s)	5.4								
Lead/Lag	Lag		Lead	Lead	Lag	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes		Yes			Yes	Yes		Yes
Recall Mode	None		None	None	C-Max	None	None	None	C-Max
Act Effct Green (s)	31.2	58.9							
Actuated g/C Ratio	0.31	0.59							
v/c Ratio	0.45	0.26							
Control Delay	3.3	10.7							
Queue Delay	0.1	0.0							
Total Delay	3.4	10.7							
LOS	A	B							
Approach Delay	3.4	10.7							
Approach LOS	A	B							

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 4:WBT and 8:, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 6.0	Intersection LOS: A
Intersection Capacity Utilization 34.2%	ICU Level of Service A
Analysis Period (min) 15	

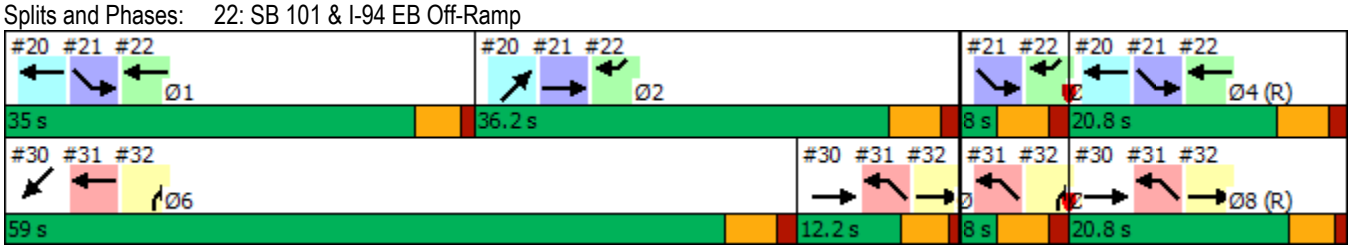
Splits and Phases: 21: NB 101 & I-94 EB Off-Ramp



Lane Group	WBT	SWR	Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8
Lane Configurations										
Traffic Volume (vph)	1213	222								
Future Volume (vph)	1213	222								
Turn Type	NA	custom								
Protected Phases	1 4	2 3	1	2	3	4	5	6	7	8
Permitted Phases										
Detector Phase	1	2								
Switch Phase										
Minimum Initial (s)			5.0	4.0	2.0	4.0	5.0	4.0	2.0	5.0
Minimum Split (s)			9.5	28.0	8.0	20.0	9.5	28.0	8.0	9.5
Total Split (s)			35.0	36.2	8.0	20.8	12.2	59.0	8.0	20.8
Total Split (%)			35%	36%	8%	21%	12%	59%	8%	21%
Yellow Time (s)			3.5	3.9	3.9	3.9	3.5	3.9	3.9	3.5
All-Red Time (s)			1.0	1.5	1.5	1.5	1.0	1.5	1.5	1.0
Lost Time Adjust (s)										
Total Lost Time (s)										
Lead/Lag			Lead	Lag	Lead	Lag	Lag	Lead	Lead	Lag
Lead-Lag Optimize?			Yes	Yes			Yes	Yes		Yes
Recall Mode			None	None	None	C-Max	None	None	None	C-Max
Act Effct Green (s)	58.9	31.2								
Actuated g/C Ratio	0.59	0.31								
v/c Ratio	0.64	0.48								
Control Delay	2.9	32.1								
Queue Delay	0.0	0.0								
Total Delay	2.9	32.1								
LOS	A	C								
Approach Delay	2.9									
Approach LOS	A									

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 4:WBT and 8:, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 7.5	Intersection LOS: A
Intersection Capacity Utilization 55.5%	ICU Level of Service B
Analysis Period (min) 15	

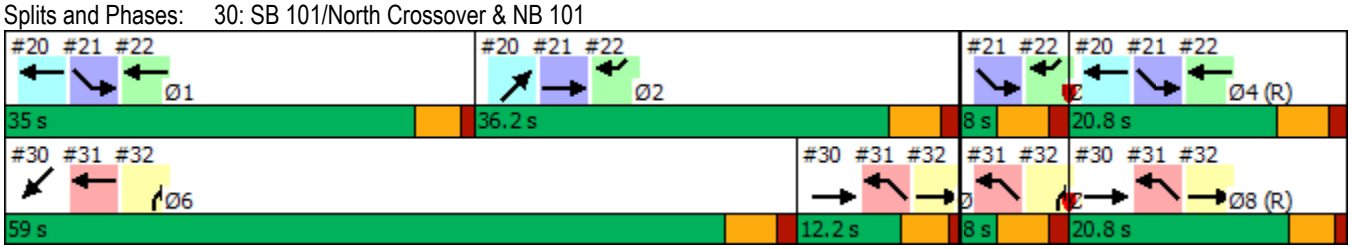
Splits and Phases: 22: SB 101 & I-94 EB Off-Ramp



Lane Group	EBT	SWT	Ø1	Ø2	Ø3	Ø4	Ø5	Ø7	Ø8
Lane Configurations									
Traffic Volume (vph)	645	2574							
Future Volume (vph)	645	2574							
Turn Type	NA	NA							
Protected Phases	5 8	6	1	2	3	4	5	7	8
Permitted Phases									
Detector Phase	5	6							
Switch Phase									
Minimum Initial (s)		4.0	5.0	4.0	2.0	4.0	5.0	2.0	5.0
Minimum Split (s)		28.0	9.5	28.0	8.0	20.0	9.5	8.0	9.5
Total Split (s)		59.0	35.0	36.2	8.0	20.8	12.2	8.0	20.8
Total Split (%)		59.0%	35%	36%	8%	21%	12%	8%	21%
Yellow Time (s)		3.9	3.5	3.9	3.9	3.9	3.5	3.9	3.5
All-Red Time (s)		1.5	1.0	1.5	1.5	1.5	1.0	1.5	1.0
Lost Time Adjust (s)		0.0							
Total Lost Time (s)		5.4							
Lead/Lag		Lead	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?		Yes	Yes	Yes			Yes		Yes
Recall Mode		None	None	None	None	C-Max	None	None	C-Max
Act Effct Green (s)	36.5	53.6							
Actuated g/C Ratio	0.36	0.54							
v/c Ratio	0.55	1.03							
Control Delay	16.2	51.1							
Queue Delay	0.0	4.1							
Total Delay	16.2	55.2							
LOS	B	E							
Approach Delay	16.2	55.2							
Approach LOS	B	E							

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 4:WBT and 8:, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 47.4	Intersection LOS: D
Intersection Capacity Utilization 75.8%	ICU Level of Service D
Analysis Period (min) 15	

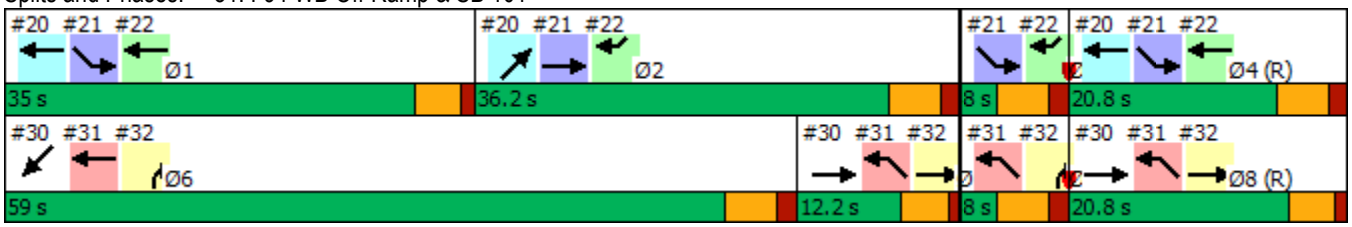
Splits and Phases: 30: SB 101/North Crossover & NB 101



Lane Group	WBT	NWL	Ø1	Ø2	Ø3	Ø4	Ø5	Ø7	Ø8
Lane Configurations									
Traffic Volume (vph)	2574	92							
Future Volume (vph)	2574	92							
Turn Type	NA	pm+pt							
Protected Phases	6	5 7 8	1	2	3	4	5	7	8
Permitted Phases		5 7 8							
Detector Phase	6	5							
Switch Phase									
Minimum Initial (s)	4.0		5.0	4.0	2.0	4.0	5.0	2.0	5.0
Minimum Split (s)	28.0		9.5	28.0	8.0	20.0	9.5	8.0	9.5
Total Split (s)	59.0		35.0	36.2	8.0	20.8	12.2	8.0	20.8
Total Split (%)	59.0%		35%	36%	8%	21%	12%	8%	21%
Yellow Time (s)	3.9		3.5	3.9	3.9	3.9	3.5	3.9	3.5
All-Red Time (s)	1.5		1.0	1.5	1.5	1.5	1.0	1.5	1.0
Lost Time Adjust (s)	0.0								
Total Lost Time (s)	5.4								
Lead/Lag	Lead		Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes		Yes	Yes			Yes		Yes
Recall Mode	None		None	None	None	C-Max	None	None	C-Max
Act Effct Green (s)	53.6	36.5							
Actuated g/C Ratio	0.54	0.36							
v/c Ratio	1.03	0.08							
Control Delay	22.7	21.1							
Queue Delay	0.0	0.0							
Total Delay	22.7	21.1							
LOS	C	C							
Approach Delay	22.7	21.1							
Approach LOS	C	C							

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 4:WBT and 8:, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 22.6	Intersection LOS: C
Intersection Capacity Utilization 68.7%	ICU Level of Service C
Analysis Period (min) 15	

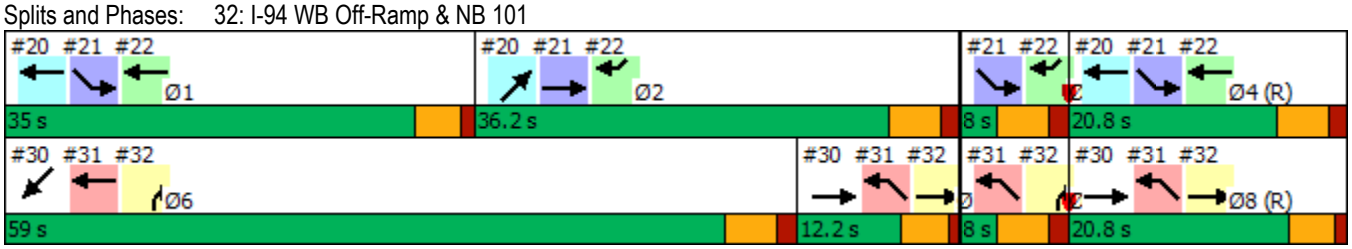
Splits and Phases: 31: I-94 WB Off-Ramp & SB 101



Lane Group	EBT	NBR	Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8
Lane Configurations										
Traffic Volume (vph)	645	163								
Future Volume (vph)	645	163								
Turn Type	NA	custom								
Protected Phases	5 8	6 7	1	2	3	4	5	6	7	8
Permitted Phases		6 7								
Detector Phase	5	6								
Switch Phase										
Minimum Initial (s)			5.0	4.0	2.0	4.0	5.0	4.0	2.0	5.0
Minimum Split (s)			9.5	28.0	8.0	20.0	9.5	28.0	8.0	9.5
Total Split (s)			35.0	36.2	8.0	20.8	12.2	59.0	8.0	20.8
Total Split (%)			35%	36%	8%	21%	12%	59%	8%	21%
Yellow Time (s)			3.5	3.9	3.9	3.9	3.5	3.9	3.9	3.5
All-Red Time (s)			1.0	1.5	1.5	1.5	1.0	1.5	1.5	1.0
Lost Time Adjust (s)										
Total Lost Time (s)										
Lead/Lag			Lead	Lag	Lead	Lag	Lag	Lead	Lead	Lag
Lead-Lag Optimize?			Yes	Yes			Yes	Yes		Yes
Recall Mode			None	None	None	C-Max	None	None	None	C-Max
Act Effct Green (s)	36.5	53.6								
Actuated g/C Ratio	0.36	0.54								
v/c Ratio	0.55	0.21								
Control Delay	3.1	12.9								
Queue Delay	0.0	0.0								
Total Delay	3.1	12.9								
LOS	A	B								
Approach Delay	3.1									
Approach LOS	A									

Intersection Summary			
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 4:WBT and 8:, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.03			
Intersection Signal Delay: 5.1		Intersection LOS: A	
Intersection Capacity Utilization 75.8%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 32: I-94 WB Off-Ramp & NB 101



20: South Crossover/NB 101 & SB 101/TH 101

Direction	All
Future Volume (vph)	1662
Total Delay / Veh (s/v)	25
CO Emissions (kg)	1.54
NOx Emissions (kg)	0.30
VOC Emissions (kg)	0.36

21: NB 101 & I-94 EB Off-Ramp

Direction	All
Future Volume (vph)	700
Total Delay / Veh (s/v)	6
CO Emissions (kg)	0.18
NOx Emissions (kg)	0.04
VOC Emissions (kg)	0.04

22: SB 101 & I-94 EB Off-Ramp

Direction	All
Future Volume (vph)	1435
Total Delay / Veh (s/v)	7
CO Emissions (kg)	0.37
NOx Emissions (kg)	0.07
VOC Emissions (kg)	0.08

23: I-94 EB On-Ramp/NB 101 & SB 101

Direction	All
Future Volume (vph)	2163
Total Delay / Veh (s/v)	0
CO Emissions (kg)	0.45
NOx Emissions (kg)	0.09
VOC Emissions (kg)	0.10

30: SB 101/North Crossover & NB 101

Direction	All
Future Volume (vph)	3219
Total Delay / Veh (s/v)	47
CO Emissions (kg)	4.28
NOx Emissions (kg)	0.83
VOC Emissions (kg)	0.99

31: I-94 WB Off-Ramp & SB 101

Direction	All
Future Volume (vph)	2666
Total Delay / Veh (s/v)	23
CO Emissions (kg)	1.21
NOx Emissions (kg)	0.24
VOC Emissions (kg)	0.28

32: I-94 WB Off-Ramp & NB 101

Direction	All
Future Volume (vph)	808
Total Delay / Veh (s/v)	5
CO Emissions (kg)	0.19
NOx Emissions (kg)	0.04
VOC Emissions (kg)	0.04

Rogers 101/94 Application

Existing

920	South Ramps		
	Existing Volume	4298	vehicles
	Existing Delay	22	sec/veh
	Existing Total Delay	94556	seconds

940	North Ramps		
	Existing Volume	3634	vehicles
	Existing Delay	52	sec/veh
	Existing Total Delay	188968	seconds

Total Delay	**283524**

Build

20	South Crossover		
	Future Volume	1662	vehicles
	Future Delay	25	sec/veh
	Future Total Delay	41550	seconds

21	NB 101 and 94 EB Off Ramp		
	Future Volume	700	vehicles
	Future Delay	6	sec/veh
	Future Total Delay	4200	seconds

22	SB 101 and 94 EB Off Ramp		
	Future Volume	1435	vehicles
	Future Delay	7	sec/veh
	Future Total Delay	10045	seconds

23	94 EB On Ramp and 101		
	Future Volume	2163	vehicles
	Future Delay	0	sec/veh
	Future Total Delay	0	seconds

30	SB 101 and North Crossover		
	Future Volume	3219	vehicles
	Future Delay	47	sec/veh
	Future Total Delay	151293	seconds

31	94 WB Off Ramp and SB 101		
	Future Volume	2666	vehicles
	Future Delay	23	sec/veh
	Future Total Delay	61318	seconds

32	94 WB Off Ramp and NB 101		
	Future Volume	808	vehicles
	Future Delay	5	sec/veh
	Future Total Delay	4040	seconds

Total Future Delay	**272446**

Total Network Delay Reduction	**11078**	**seconds**

Emissions

Existing	920	940	Total
CO	4.11	6.09	10.2
NOx	0.8	1.18	1.98
VOC	0.95	1.41	2.36
	Total Existing		14.54

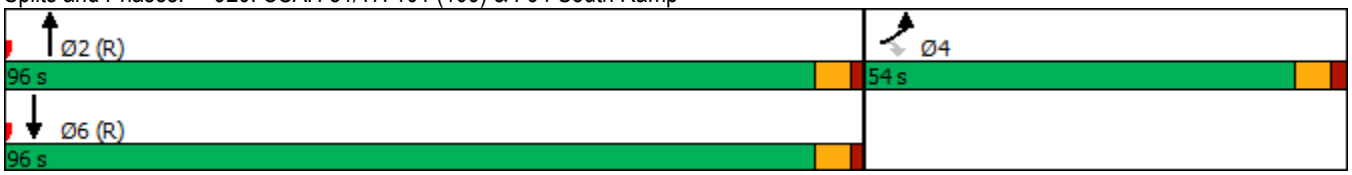
Build	20	21	22	23	30	31	32	Total
CO	1.54	0.18	0.37	0.45	4.28	1.21	0.19	8.22
NOx	0.3	0.04	0.07	0.09	0.83	0.24	0.04	1.61
VOC	0.36	0.04	0.08	0.1	0.99	0.28	0.04	1.89
						Total Future		11.72

Total Reduction	**2.82**

Lane Group	EBL	EBR	NBT	NBR	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	251	222	449	710	1213	1453
Future Volume (vph)	251	222	449	710	1213	1453
Turn Type	Prot	Perm	NA	Free	NA	Free
Protected Phases	4		2		6	
Permitted Phases		4		Free		Free
Detector Phase	4	4	2		6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	15.0		15.0	
Minimum Split (s)	22.0	22.0	21.5		21.5	
Total Split (s)	54.0	54.0	96.0		96.0	
Total Split (%)	36.0%	36.0%	64.0%		64.0%	
Yellow Time (s)	4.0	4.0	4.0		4.0	
All-Red Time (s)	2.0	2.0	1.5		1.5	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.0	5.5		5.5	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Max		C-Max	
Act Effct Green (s)	28.7	28.7	109.8	150.0	109.8	150.0
Actuated g/C Ratio	0.19	0.19	0.73	1.00	0.73	1.00
v/c Ratio	0.79	0.68	0.17	0.49	0.46	1.03
Control Delay	74.0	50.4	6.9	1.1	8.5	34.6
Queue Delay	0.0	0.0	0.0	0.0	0.4	0.0
Total Delay	74.0	50.4	6.9	1.1	8.9	34.6
LOS	E	D	A	A	A	C
Approach Delay			3.4		22.9	
Approach LOS			A		C	

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of 1st Green	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 22.1	Intersection LOS: C
Intersection Capacity Utilization 53.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 920: CSAH 81/TH 101 (109) & I-94 South Ramp



Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	92	3	163	55	645	2574	102
Future Volume (vph)	92	3	163	55	645	2574	102
Turn Type	Perm	NA	Free	Prot	NA	NA	Perm
Protected Phases		8		5	2	6	
Permitted Phases	8		Free				6
Detector Phase	8	8		5	2	6	6
Switch Phase							
Minimum Initial (s)	8.0	8.0		7.0	15.0	15.0	15.0
Minimum Split (s)	22.0	22.0		12.5	23.5	21.5	21.5
Total Split (s)	22.0	22.0		12.5	128.0	115.5	115.5
Total Split (%)	14.7%	14.7%		8.3%	85.3%	77.0%	77.0%
Yellow Time (s)	4.0	4.0		3.5	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		5.5	5.5	5.5	5.5
Lead/Lag				Lag		Lead	Lead
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None		None	C-Max	C-Max	C-Max
Act Effct Green (s)	9.5	9.5	150.0	7.0	129.0	116.5	116.5
Actuated g/C Ratio	0.06	0.06	1.00	0.05	0.86	0.78	0.78
v/c Ratio	0.45	0.51	0.06	0.74	0.21	1.09	0.09
Control Delay	74.2	24.4	0.1	126.9	3.4	65.7	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.2	24.4	0.1	126.9	3.4	65.7	0.9
LOS	E	C	A	F	A	E	A
Approach Delay		34.4			13.2	63.3	
Approach LOS		C			B	E	

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of 1st Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.09	
Intersection Signal Delay: 51.6	Intersection LOS: D
Intersection Capacity Utilization 62.0%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 940: TH 101 (109) & I-94 North Ramp

920: CSAH 81/TH 101 (109) & I-94 South Ramp

Direction	All
Future Volume (vph)	4298
Total Delay / Veh (s/v)	22
CO Emissions (kg)	4.11
NOx Emissions (kg)	0.80
VOC Emissions (kg)	0.95

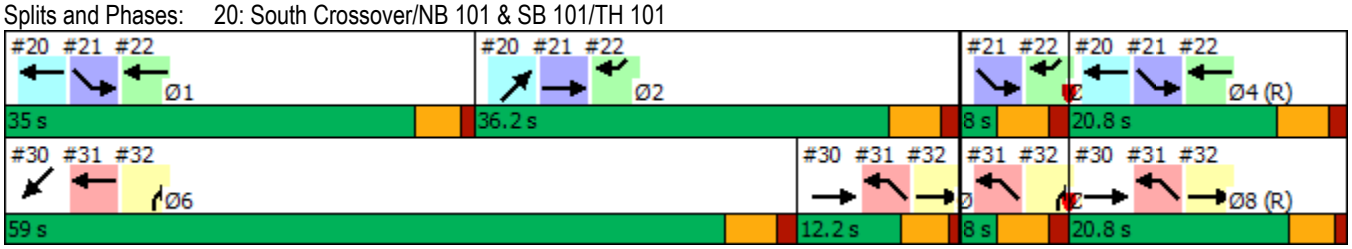
940: TH 101 (109) & I-94 North Ramp

Direction	All
Future Volume (vph)	3634
Total Delay / Veh (s/v)	52
CO Emissions (kg)	6.09
NOx Emissions (kg)	1.18
VOC Emissions (kg)	1.41

Lane Group	WBT	NET	Ø1	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8
Lane Configurations									
Traffic Volume (vph)	1213	449							
Future Volume (vph)	1213	449							
Turn Type	NA	NA							
Protected Phases	1 4	2	1	3	4	5	6	7	8
Permitted Phases									
Detector Phase	1	2							
Switch Phase									
Minimum Initial (s)		4.0	5.0	2.0	4.0	5.0	4.0	2.0	5.0
Minimum Split (s)		28.0	9.5	8.0	20.0	9.5	28.0	8.0	9.5
Total Split (s)		36.2	35.0	8.0	20.8	12.2	59.0	8.0	20.8
Total Split (%)		36.2%	35%	8%	21%	12%	59%	8%	21%
Yellow Time (s)		3.9	3.5	3.9	3.9	3.5	3.9	3.9	3.5
All-Red Time (s)		1.5	1.0	1.5	1.5	1.0	1.5	1.5	1.0
Lost Time Adjust (s)		0.0							
Total Lost Time (s)		5.4							
Lead/Lag		Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag
Lead-Lag Optimize?		Yes	Yes			Yes	Yes		Yes
Recall Mode		None	None	None	C-Max	None	None	None	C-Max
Act Effct Green (s)	58.9	31.2							
Actuated g/C Ratio	0.59	0.31							
v/c Ratio	0.64	0.45							
Control Delay	23.5	29.3							
Queue Delay	0.0	0.0							
Total Delay	23.5	29.3							
LOS	C	C							
Approach Delay	23.5	29.3							
Approach LOS	C	C							

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 4:WBT and 8:, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 25.0	Intersection LOS: C
Intersection Capacity Utilization 55.5%	ICU Level of Service B
Analysis Period (min) 15	

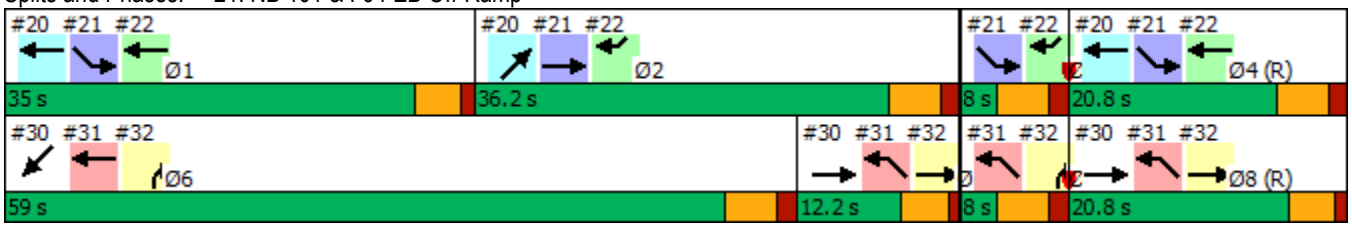
Splits and Phases: 20: South Crossover/NB 101 & SB 101/TH 101



Lane Group	EBT	SEL	Ø1	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8
Lane Configurations									
Traffic Volume (vph)	449	251							
Future Volume (vph)	449	251							
Turn Type	NA	pm+pt							
Protected Phases	2	1 3 4	1	3	4	5	6	7	8
Permitted Phases		1 3 4							
Detector Phase	2	1							
Switch Phase									
Minimum Initial (s)	4.0		5.0	2.0	4.0	5.0	4.0	2.0	5.0
Minimum Split (s)	28.0		9.5	8.0	20.0	9.5	28.0	8.0	9.5
Total Split (s)	36.2		35.0	8.0	20.8	12.2	59.0	8.0	20.8
Total Split (%)	36.2%		35%	8%	21%	12%	59%	8%	21%
Yellow Time (s)	3.9		3.5	3.9	3.9	3.5	3.9	3.9	3.5
All-Red Time (s)	1.5		1.0	1.5	1.5	1.0	1.5	1.5	1.0
Lost Time Adjust (s)	0.0								
Total Lost Time (s)	5.4								
Lead/Lag	Lag		Lead	Lead	Lag	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes		Yes			Yes	Yes		Yes
Recall Mode	None		None	None	C-Max	None	None	None	C-Max
Act Effct Green (s)	31.2	58.9							
Actuated g/C Ratio	0.31	0.59							
v/c Ratio	0.45	0.26							
Control Delay	3.3	10.7							
Queue Delay	0.1	0.0							
Total Delay	3.4	10.7							
LOS	A	B							
Approach Delay	3.4	10.7							
Approach LOS	A	B							

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 4:WBT and 8:, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 6.0	Intersection LOS: A
Intersection Capacity Utilization 34.2%	ICU Level of Service A
Analysis Period (min) 15	

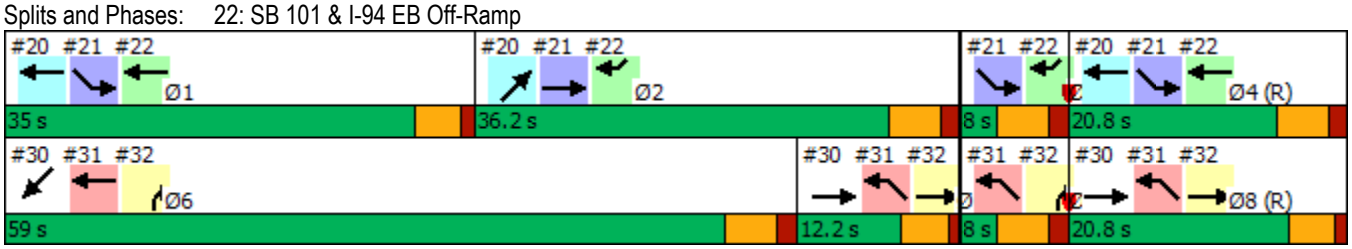
Splits and Phases: 21: NB 101 & I-94 EB Off-Ramp



Lane Group	WBT	SWR	Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8
Lane Configurations										
Traffic Volume (vph)	1213	222								
Future Volume (vph)	1213	222								
Turn Type	NA	custom								
Protected Phases	1 4	2 3	1	2	3	4	5	6	7	8
Permitted Phases										
Detector Phase	1	2								
Switch Phase										
Minimum Initial (s)			5.0	4.0	2.0	4.0	5.0	4.0	2.0	5.0
Minimum Split (s)			9.5	28.0	8.0	20.0	9.5	28.0	8.0	9.5
Total Split (s)			35.0	36.2	8.0	20.8	12.2	59.0	8.0	20.8
Total Split (%)			35%	36%	8%	21%	12%	59%	8%	21%
Yellow Time (s)			3.5	3.9	3.9	3.9	3.5	3.9	3.9	3.5
All-Red Time (s)			1.0	1.5	1.5	1.5	1.0	1.5	1.5	1.0
Lost Time Adjust (s)										
Total Lost Time (s)										
Lead/Lag			Lead	Lag	Lead	Lag	Lag	Lead	Lead	Lag
Lead-Lag Optimize?			Yes	Yes			Yes	Yes		Yes
Recall Mode			None	None	None	C-Max	None	None	None	C-Max
Act Effct Green (s)	58.9	31.2								
Actuated g/C Ratio	0.59	0.31								
v/c Ratio	0.64	0.48								
Control Delay	2.9	32.1								
Queue Delay	0.0	0.0								
Total Delay	2.9	32.1								
LOS	A	C								
Approach Delay	2.9									
Approach LOS	A									

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 4:WBT and 8:, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 7.5	Intersection LOS: A
Intersection Capacity Utilization 55.5%	ICU Level of Service B
Analysis Period (min) 15	

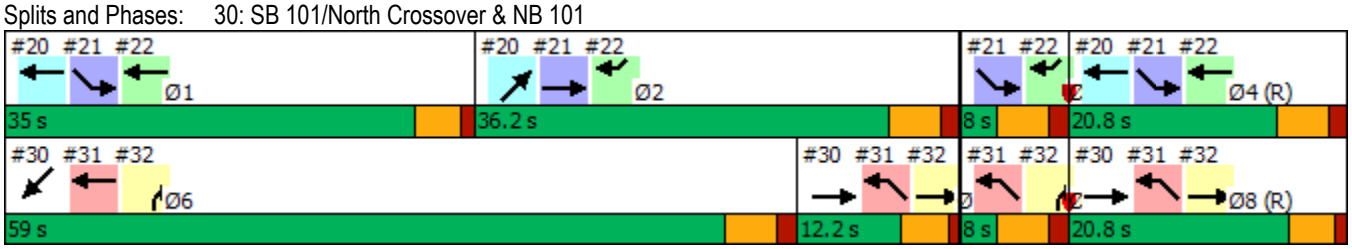
Splits and Phases: 22: SB 101 & I-94 EB Off-Ramp



Lane Group	EBT	SWT	Ø1	Ø2	Ø3	Ø4	Ø5	Ø7	Ø8
Lane Configurations									
Traffic Volume (vph)	645	2574							
Future Volume (vph)	645	2574							
Turn Type	NA	NA							
Protected Phases	5 8	6	1	2	3	4	5	7	8
Permitted Phases									
Detector Phase	5	6							
Switch Phase									
Minimum Initial (s)		4.0	5.0	4.0	2.0	4.0	5.0	2.0	5.0
Minimum Split (s)		28.0	9.5	28.0	8.0	20.0	9.5	8.0	9.5
Total Split (s)		59.0	35.0	36.2	8.0	20.8	12.2	8.0	20.8
Total Split (%)		59.0%	35%	36%	8%	21%	12%	8%	21%
Yellow Time (s)		3.9	3.5	3.9	3.9	3.9	3.5	3.9	3.5
All-Red Time (s)		1.5	1.0	1.5	1.5	1.5	1.0	1.5	1.0
Lost Time Adjust (s)		0.0							
Total Lost Time (s)		5.4							
Lead/Lag		Lead	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?		Yes	Yes	Yes			Yes		Yes
Recall Mode		None	None	None	None	C-Max	None	None	C-Max
Act Effct Green (s)	36.5	53.6							
Actuated g/C Ratio	0.36	0.54							
v/c Ratio	0.55	1.03							
Control Delay	16.2	51.1							
Queue Delay	0.0	4.1							
Total Delay	16.2	55.2							
LOS	B	E							
Approach Delay	16.2	55.2							
Approach LOS	B	E							

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 4:WBT and 8:, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 47.4	Intersection LOS: D
Intersection Capacity Utilization 75.8%	ICU Level of Service D
Analysis Period (min) 15	

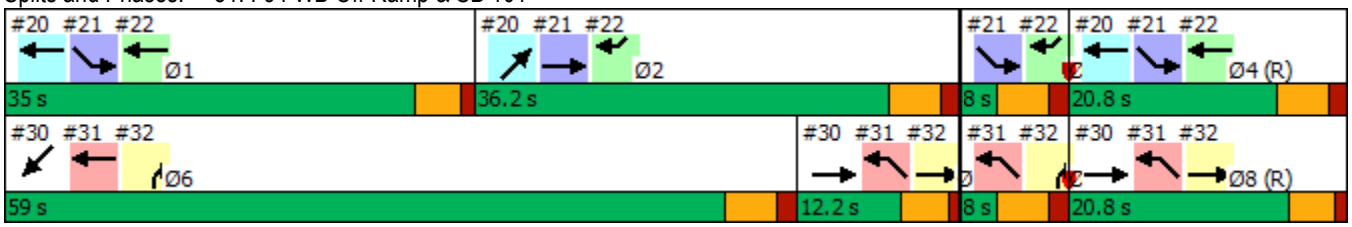
Splits and Phases: 30: SB 101/North Crossover & NB 101



Lane Group	WBT	NWL	Ø1	Ø2	Ø3	Ø4	Ø5	Ø7	Ø8
Lane Configurations									
Traffic Volume (vph)	2574	92							
Future Volume (vph)	2574	92							
Turn Type	NA	pm+pt							
Protected Phases	6	5 7 8	1	2	3	4	5	7	8
Permitted Phases		5 7 8							
Detector Phase	6	5							
Switch Phase									
Minimum Initial (s)	4.0		5.0	4.0	2.0	4.0	5.0	2.0	5.0
Minimum Split (s)	28.0		9.5	28.0	8.0	20.0	9.5	8.0	9.5
Total Split (s)	59.0		35.0	36.2	8.0	20.8	12.2	8.0	20.8
Total Split (%)	59.0%		35%	36%	8%	21%	12%	8%	21%
Yellow Time (s)	3.9		3.5	3.9	3.9	3.9	3.5	3.9	3.5
All-Red Time (s)	1.5		1.0	1.5	1.5	1.5	1.0	1.5	1.0
Lost Time Adjust (s)	0.0								
Total Lost Time (s)	5.4								
Lead/Lag	Lead		Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes		Yes	Yes			Yes		Yes
Recall Mode	None		None	None	None	C-Max	None	None	C-Max
Act Effct Green (s)	53.6	36.5							
Actuated g/C Ratio	0.54	0.36							
v/c Ratio	1.03	0.08							
Control Delay	22.7	21.1							
Queue Delay	0.0	0.0							
Total Delay	22.7	21.1							
LOS	C	C							
Approach Delay	22.7	21.1							
Approach LOS	C	C							

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 4:WBT and 8:, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 22.6	Intersection LOS: C
Intersection Capacity Utilization 68.7%	ICU Level of Service C
Analysis Period (min) 15	

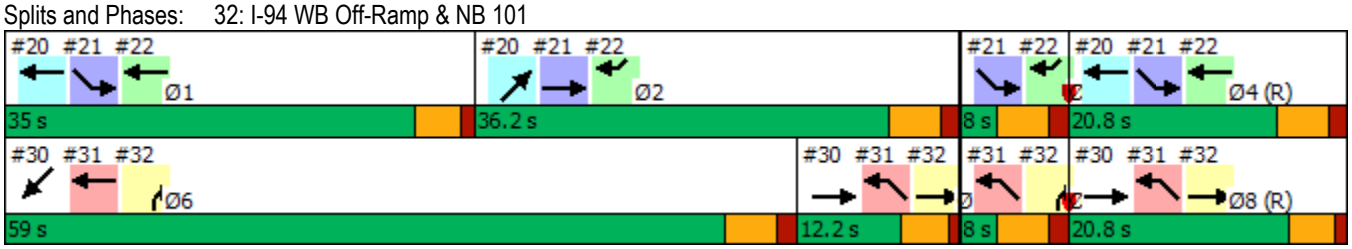
Splits and Phases: 31: I-94 WB Off-Ramp & SB 101



Lane Group	EBT	NBR	Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8
Lane Configurations										
Traffic Volume (vph)	645	163								
Future Volume (vph)	645	163								
Turn Type	NA	custom								
Protected Phases	5 8	6 7	1	2	3	4	5	6	7	8
Permitted Phases		6 7								
Detector Phase	5	6								
Switch Phase										
Minimum Initial (s)			5.0	4.0	2.0	4.0	5.0	4.0	2.0	5.0
Minimum Split (s)			9.5	28.0	8.0	20.0	9.5	28.0	8.0	9.5
Total Split (s)			35.0	36.2	8.0	20.8	12.2	59.0	8.0	20.8
Total Split (%)			35%	36%	8%	21%	12%	59%	8%	21%
Yellow Time (s)			3.5	3.9	3.9	3.9	3.5	3.9	3.9	3.5
All-Red Time (s)			1.0	1.5	1.5	1.5	1.0	1.5	1.5	1.0
Lost Time Adjust (s)										
Total Lost Time (s)										
Lead/Lag			Lead	Lag	Lead	Lag	Lag	Lead	Lead	Lag
Lead-Lag Optimize?			Yes	Yes			Yes	Yes		Yes
Recall Mode			None	None	None	C-Max	None	None	None	C-Max
Act Effct Green (s)	36.5	53.6								
Actuated g/C Ratio	0.36	0.54								
v/c Ratio	0.55	0.21								
Control Delay	3.1	12.9								
Queue Delay	0.0	0.0								
Total Delay	3.1	12.9								
LOS	A	B								
Approach Delay	3.1									
Approach LOS	A									

Intersection Summary			
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 4:WBT and 8:, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.03			
Intersection Signal Delay: 5.1		Intersection LOS: A	
Intersection Capacity Utilization 75.8%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 32: I-94 WB Off-Ramp & NB 101



20: South Crossover/NB 101 & SB 101/TH 101

Direction	All
Future Volume (vph)	1662
Total Delay / Veh (s/v)	25
CO Emissions (kg)	1.54
NOx Emissions (kg)	0.30
VOC Emissions (kg)	0.36

21: NB 101 & I-94 EB Off-Ramp

Direction	All
Future Volume (vph)	700
Total Delay / Veh (s/v)	6
CO Emissions (kg)	0.18
NOx Emissions (kg)	0.04
VOC Emissions (kg)	0.04

22: SB 101 & I-94 EB Off-Ramp

Direction	All
Future Volume (vph)	1435
Total Delay / Veh (s/v)	7
CO Emissions (kg)	0.37
NOx Emissions (kg)	0.07
VOC Emissions (kg)	0.08

23: I-94 EB On-Ramp/NB 101 & SB 101

Direction	All
Future Volume (vph)	2163
Total Delay / Veh (s/v)	0
CO Emissions (kg)	0.45
NOx Emissions (kg)	0.09
VOC Emissions (kg)	0.10

30: SB 101/North Crossover & NB 101

Direction	All
Future Volume (vph)	3219
Total Delay / Veh (s/v)	47
CO Emissions (kg)	4.28
NOx Emissions (kg)	0.83
VOC Emissions (kg)	0.99

31: I-94 WB Off-Ramp & SB 101

Direction	All
Future Volume (vph)	2666
Total Delay / Veh (s/v)	23
CO Emissions (kg)	1.21
NOx Emissions (kg)	0.24
VOC Emissions (kg)	0.28

32: I-94 WB Off-Ramp & NB 101

Direction	All
Future Volume (vph)	808
Total Delay / Veh (s/v)	5
CO Emissions (kg)	0.19
NOx Emissions (kg)	0.04
VOC Emissions (kg)	0.04

Rogers 101/94 Application

Existing

920	South Ramps		
	Existing Volume	4298	vehicles
	Existing Delay	22	sec/veh
	Existing Total Delay	94556	seconds

940	North Ramps		
	Existing Volume	3634	vehicles
	Existing Delay	52	sec/veh
	Existing Total Delay	188968	seconds

Total Delay	**283524**

Build

20	South Crossover		
	Future Volume	1662	vehicles
	Future Delay	25	sec/veh
	Future Total Delay	41550	seconds

21	NB 101 and 94 EB Off Ramp		
	Future Volume	700	vehicles
	Future Delay	6	sec/veh
	Future Total Delay	4200	seconds

22	SB 101 and 94 EB Off Ramp		
	Future Volume	1435	vehicles
	Future Delay	7	sec/veh
	Future Total Delay	10045	seconds

23	94 EB On Ramp and 101		
	Future Volume	2163	vehicles
	Future Delay	0	sec/veh
	Future Total Delay	0	seconds

30	SB 101 and North Crossover		
	Future Volume	3219	vehicles
	Future Delay	47	sec/veh
	Future Total Delay	151293	seconds

31	94 WB Off Ramp and SB 101		
	Future Volume	2666	vehicles
	Future Delay	23	sec/veh
	Future Total Delay	61318	seconds

32	94 WB Off Ramp and NB 101		
	Future Volume	808	vehicles
	Future Delay	5	sec/veh
	Future Total Delay	4040	seconds

Total Future Delay	**272446**

Total Network Delay Reduction	**11078**	**seconds**

Emissions

Existing	920	940	Total
CO	4.11	6.09	10.2
NOx	0.8	1.18	1.98
VOC	0.95	1.41	2.36
	Total Existing		14.54

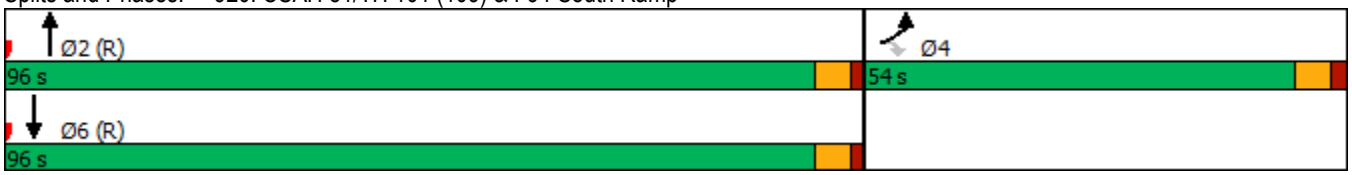
Build	20	21	22	23	30	31	32	Total
CO	1.54	0.18	0.37	0.45	4.28	1.21	0.19	8.22
NOx	0.3	0.04	0.07	0.09	0.83	0.24	0.04	1.61
VOC	0.36	0.04	0.08	0.1	0.99	0.28	0.04	1.89
						Total Future		11.72

Total Reduction	**2.82**

Lane Group	EBL	EBR	NBT	NBR	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	251	222	449	710	1213	1453
Future Volume (vph)	251	222	449	710	1213	1453
Turn Type	Prot	Perm	NA	Free	NA	Free
Protected Phases	4		2		6	
Permitted Phases		4		Free		Free
Detector Phase	4	4	2		6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	15.0		15.0	
Minimum Split (s)	22.0	22.0	21.5		21.5	
Total Split (s)	54.0	54.0	96.0		96.0	
Total Split (%)	36.0%	36.0%	64.0%		64.0%	
Yellow Time (s)	4.0	4.0	4.0		4.0	
All-Red Time (s)	2.0	2.0	1.5		1.5	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.0	5.5		5.5	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Max		C-Max	
Act Effct Green (s)	28.7	28.7	109.8	150.0	109.8	150.0
Actuated g/C Ratio	0.19	0.19	0.73	1.00	0.73	1.00
v/c Ratio	0.79	0.68	0.17	0.49	0.46	1.03
Control Delay	74.0	50.4	6.9	1.1	8.5	34.6
Queue Delay	0.0	0.0	0.0	0.0	0.4	0.0
Total Delay	74.0	50.4	6.9	1.1	8.9	34.6
LOS	E	D	A	A	A	C
Approach Delay			3.4		22.9	
Approach LOS			A		C	

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of 1st Green	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 22.1	Intersection LOS: C
Intersection Capacity Utilization 53.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 920: CSAH 81/TH 101 (109) & I-94 South Ramp



Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	92	3	163	55	645	2574	102
Future Volume (vph)	92	3	163	55	645	2574	102
Turn Type	Perm	NA	Free	Prot	NA	NA	Perm
Protected Phases		8		5	2	6	
Permitted Phases	8		Free				6
Detector Phase	8	8		5	2	6	6
Switch Phase							
Minimum Initial (s)	8.0	8.0		7.0	15.0	15.0	15.0
Minimum Split (s)	22.0	22.0		12.5	23.5	21.5	21.5
Total Split (s)	22.0	22.0		12.5	128.0	115.5	115.5
Total Split (%)	14.7%	14.7%		8.3%	85.3%	77.0%	77.0%
Yellow Time (s)	4.0	4.0		3.5	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		5.5	5.5	5.5	5.5
Lead/Lag				Lag		Lead	Lead
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None		None	C-Max	C-Max	C-Max
Act Effct Green (s)	9.5	9.5	150.0	7.0	129.0	116.5	116.5
Actuated g/C Ratio	0.06	0.06	1.00	0.05	0.86	0.78	0.78
v/c Ratio	0.45	0.51	0.06	0.74	0.21	1.09	0.09
Control Delay	74.2	24.4	0.1	126.9	3.4	65.7	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.2	24.4	0.1	126.9	3.4	65.7	0.9
LOS	E	C	A	F	A	E	A
Approach Delay		34.4			13.2	63.3	
Approach LOS		C			B	E	

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of 1st Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.09	
Intersection Signal Delay: 51.6	Intersection LOS: D
Intersection Capacity Utilization 62.0%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 940: TH 101 (109) & I-94 North Ramp

920: CSAH 81/TH 101 (109) & I-94 South Ramp

Direction	All
Future Volume (vph)	4298
Total Delay / Veh (s/v)	22
CO Emissions (kg)	4.11
NOx Emissions (kg)	0.80
VOC Emissions (kg)	0.95

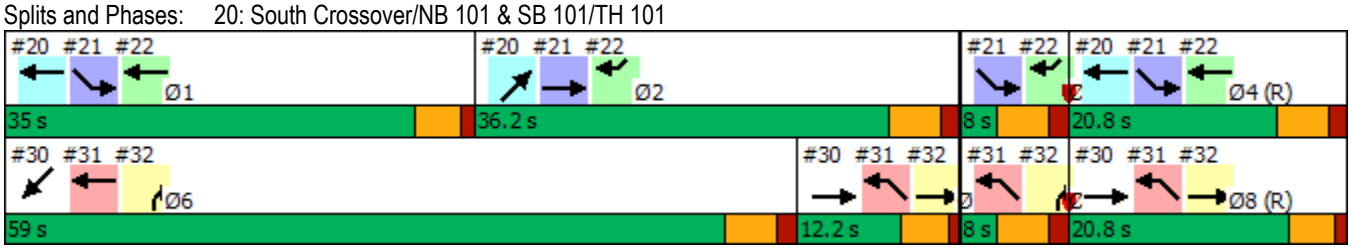
940: TH 101 (109) & I-94 North Ramp

Direction	All
Future Volume (vph)	3634
Total Delay / Veh (s/v)	52
CO Emissions (kg)	6.09
NOx Emissions (kg)	1.18
VOC Emissions (kg)	1.41

Lane Group	WBT	NET	Ø1	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8
Lane Configurations									
Traffic Volume (vph)	1213	449							
Future Volume (vph)	1213	449							
Turn Type	NA	NA							
Protected Phases	1 4	2	1	3	4	5	6	7	8
Permitted Phases									
Detector Phase	1	2							
Switch Phase									
Minimum Initial (s)		4.0	5.0	2.0	4.0	5.0	4.0	2.0	5.0
Minimum Split (s)		28.0	9.5	8.0	20.0	9.5	28.0	8.0	9.5
Total Split (s)		36.2	35.0	8.0	20.8	12.2	59.0	8.0	20.8
Total Split (%)		36.2%	35%	8%	21%	12%	59%	8%	21%
Yellow Time (s)		3.9	3.5	3.9	3.9	3.5	3.9	3.9	3.5
All-Red Time (s)		1.5	1.0	1.5	1.5	1.0	1.5	1.5	1.0
Lost Time Adjust (s)		0.0							
Total Lost Time (s)		5.4							
Lead/Lag		Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag
Lead-Lag Optimize?		Yes	Yes			Yes	Yes		Yes
Recall Mode		None	None	None	C-Max	None	None	None	C-Max
Act Effct Green (s)	58.9	31.2							
Actuated g/C Ratio	0.59	0.31							
v/c Ratio	0.64	0.45							
Control Delay	23.5	29.3							
Queue Delay	0.0	0.0							
Total Delay	23.5	29.3							
LOS	C	C							
Approach Delay	23.5	29.3							
Approach LOS	C	C							

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 4:WBT and 8:, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 25.0	Intersection LOS: C
Intersection Capacity Utilization 55.5%	ICU Level of Service B
Analysis Period (min) 15	

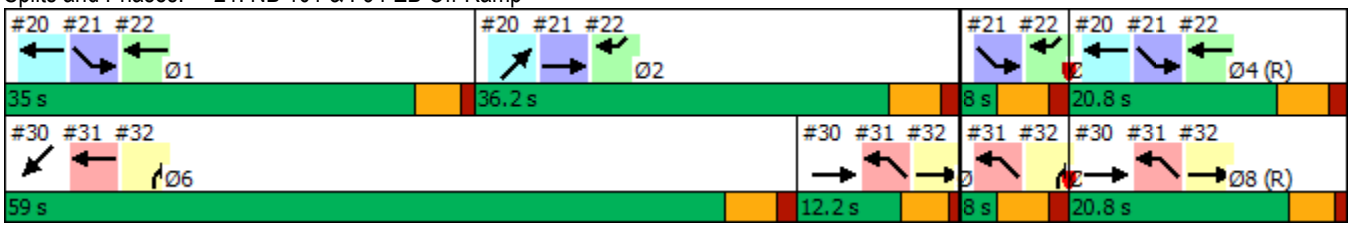
Splits and Phases: 20: South Crossover/NB 101 & SB 101/TH 101



Lane Group	EBT	SEL	Ø1	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8
Lane Configurations									
Traffic Volume (vph)	449	251							
Future Volume (vph)	449	251							
Turn Type	NA	pm+pt							
Protected Phases	2	1 3 4	1	3	4	5	6	7	8
Permitted Phases		1 3 4							
Detector Phase	2	1							
Switch Phase									
Minimum Initial (s)	4.0		5.0	2.0	4.0	5.0	4.0	2.0	5.0
Minimum Split (s)	28.0		9.5	8.0	20.0	9.5	28.0	8.0	9.5
Total Split (s)	36.2		35.0	8.0	20.8	12.2	59.0	8.0	20.8
Total Split (%)	36.2%		35%	8%	21%	12%	59%	8%	21%
Yellow Time (s)	3.9		3.5	3.9	3.9	3.5	3.9	3.9	3.5
All-Red Time (s)	1.5		1.0	1.5	1.5	1.0	1.5	1.5	1.0
Lost Time Adjust (s)	0.0								
Total Lost Time (s)	5.4								
Lead/Lag	Lag		Lead	Lead	Lag	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes		Yes			Yes	Yes		Yes
Recall Mode	None		None	None	C-Max	None	None	None	C-Max
Act Effct Green (s)	31.2	58.9							
Actuated g/C Ratio	0.31	0.59							
v/c Ratio	0.45	0.26							
Control Delay	3.3	10.7							
Queue Delay	0.1	0.0							
Total Delay	3.4	10.7							
LOS	A	B							
Approach Delay	3.4	10.7							
Approach LOS	A	B							

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 4:WBT and 8:, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 6.0	Intersection LOS: A
Intersection Capacity Utilization 34.2%	ICU Level of Service A
Analysis Period (min) 15	

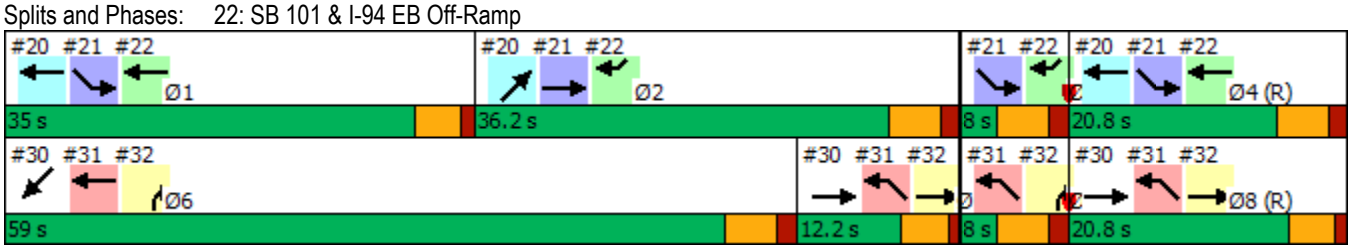
Splits and Phases: 21: NB 101 & I-94 EB Off-Ramp



Lane Group	WBT	SWR	Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8
Lane Configurations										
Traffic Volume (vph)	1213	222								
Future Volume (vph)	1213	222								
Turn Type	NA	custom								
Protected Phases	1 4	2 3	1	2	3	4	5	6	7	8
Permitted Phases										
Detector Phase	1	2								
Switch Phase										
Minimum Initial (s)			5.0	4.0	2.0	4.0	5.0	4.0	2.0	5.0
Minimum Split (s)			9.5	28.0	8.0	20.0	9.5	28.0	8.0	9.5
Total Split (s)			35.0	36.2	8.0	20.8	12.2	59.0	8.0	20.8
Total Split (%)			35%	36%	8%	21%	12%	59%	8%	21%
Yellow Time (s)			3.5	3.9	3.9	3.9	3.5	3.9	3.9	3.5
All-Red Time (s)			1.0	1.5	1.5	1.5	1.0	1.5	1.5	1.0
Lost Time Adjust (s)										
Total Lost Time (s)										
Lead/Lag			Lead	Lag	Lead	Lag	Lag	Lead	Lead	Lag
Lead-Lag Optimize?			Yes	Yes			Yes	Yes		Yes
Recall Mode			None	None	None	C-Max	None	None	None	C-Max
Act Effct Green (s)	58.9	31.2								
Actuated g/C Ratio	0.59	0.31								
v/c Ratio	0.64	0.48								
Control Delay	2.9	32.1								
Queue Delay	0.0	0.0								
Total Delay	2.9	32.1								
LOS	A	C								
Approach Delay	2.9									
Approach LOS	A									

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 4:WBT and 8:, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 7.5	Intersection LOS: A
Intersection Capacity Utilization 55.5%	ICU Level of Service B
Analysis Period (min) 15	

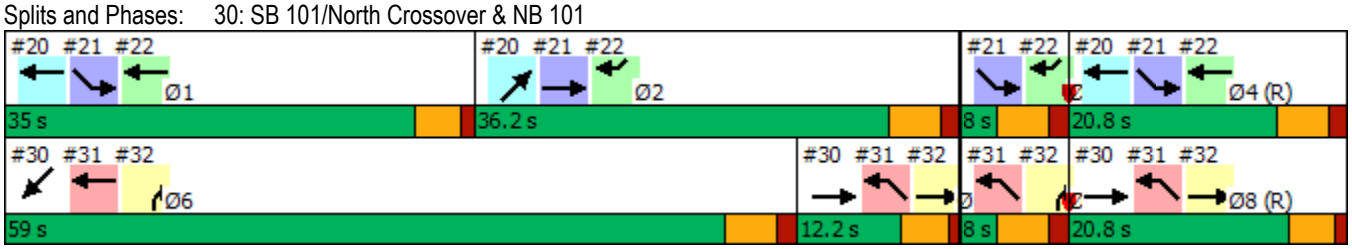
Splits and Phases: 22: SB 101 & I-94 EB Off-Ramp



Lane Group	EBT	SWT	Ø1	Ø2	Ø3	Ø4	Ø5	Ø7	Ø8
Lane Configurations									
Traffic Volume (vph)	645	2574							
Future Volume (vph)	645	2574							
Turn Type	NA	NA							
Protected Phases	5 8	6	1	2	3	4	5	7	8
Permitted Phases									
Detector Phase	5	6							
Switch Phase									
Minimum Initial (s)		4.0	5.0	4.0	2.0	4.0	5.0	2.0	5.0
Minimum Split (s)		28.0	9.5	28.0	8.0	20.0	9.5	8.0	9.5
Total Split (s)		59.0	35.0	36.2	8.0	20.8	12.2	8.0	20.8
Total Split (%)		59.0%	35%	36%	8%	21%	12%	8%	21%
Yellow Time (s)		3.9	3.5	3.9	3.9	3.9	3.5	3.9	3.5
All-Red Time (s)		1.5	1.0	1.5	1.5	1.5	1.0	1.5	1.0
Lost Time Adjust (s)		0.0							
Total Lost Time (s)		5.4							
Lead/Lag		Lead	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?		Yes	Yes	Yes			Yes		Yes
Recall Mode		None	None	None	None	C-Max	None	None	C-Max
Act Effct Green (s)	36.5	53.6							
Actuated g/C Ratio	0.36	0.54							
v/c Ratio	0.55	1.03							
Control Delay	16.2	51.1							
Queue Delay	0.0	4.1							
Total Delay	16.2	55.2							
LOS	B	E							
Approach Delay	16.2	55.2							
Approach LOS	B	E							

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 4:WBT and 8:, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 47.4	Intersection LOS: D
Intersection Capacity Utilization 75.8%	ICU Level of Service D
Analysis Period (min) 15	

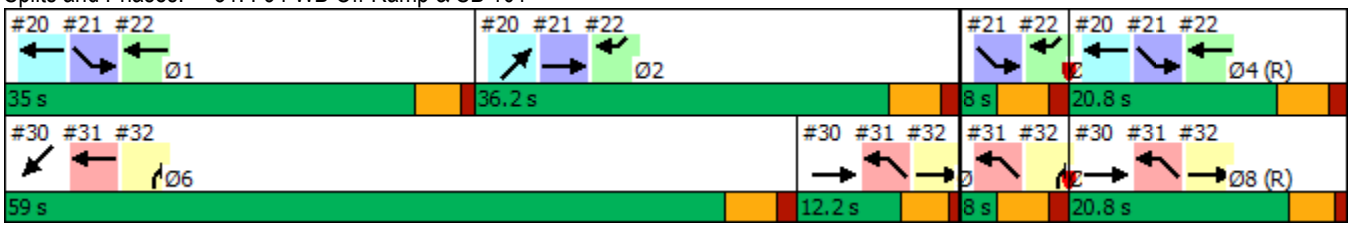
Splits and Phases: 30: SB 101/North Crossover & NB 101



Lane Group	WBT	NWL	Ø1	Ø2	Ø3	Ø4	Ø5	Ø7	Ø8
Lane Configurations									
Traffic Volume (vph)	2574	92							
Future Volume (vph)	2574	92							
Turn Type	NA	pm+pt							
Protected Phases	6	5 7 8	1	2	3	4	5	7	8
Permitted Phases		5 7 8							
Detector Phase	6	5							
Switch Phase									
Minimum Initial (s)	4.0		5.0	4.0	2.0	4.0	5.0	2.0	5.0
Minimum Split (s)	28.0		9.5	28.0	8.0	20.0	9.5	8.0	9.5
Total Split (s)	59.0		35.0	36.2	8.0	20.8	12.2	8.0	20.8
Total Split (%)	59.0%		35%	36%	8%	21%	12%	8%	21%
Yellow Time (s)	3.9		3.5	3.9	3.9	3.9	3.5	3.9	3.5
All-Red Time (s)	1.5		1.0	1.5	1.5	1.5	1.0	1.5	1.0
Lost Time Adjust (s)	0.0								
Total Lost Time (s)	5.4								
Lead/Lag	Lead		Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes		Yes	Yes			Yes		Yes
Recall Mode	None		None	None	None	C-Max	None	None	C-Max
Act Effct Green (s)	53.6	36.5							
Actuated g/C Ratio	0.54	0.36							
v/c Ratio	1.03	0.08							
Control Delay	22.7	21.1							
Queue Delay	0.0	0.0							
Total Delay	22.7	21.1							
LOS	C	C							
Approach Delay	22.7	21.1							
Approach LOS	C	C							

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 4:WBT and 8:, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 22.6	Intersection LOS: C
Intersection Capacity Utilization 68.7%	ICU Level of Service C
Analysis Period (min) 15	

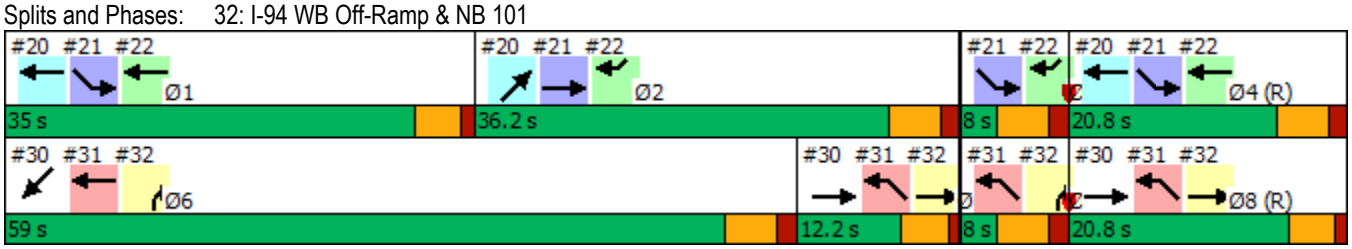
Splits and Phases: 31: I-94 WB Off-Ramp & SB 101



Lane Group	EBT	NBR	Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8
Lane Configurations										
Traffic Volume (vph)	645	163								
Future Volume (vph)	645	163								
Turn Type	NA	custom								
Protected Phases	5 8	6 7	1	2	3	4	5	6	7	8
Permitted Phases		6 7								
Detector Phase	5	6								
Switch Phase										
Minimum Initial (s)			5.0	4.0	2.0	4.0	5.0	4.0	2.0	5.0
Minimum Split (s)			9.5	28.0	8.0	20.0	9.5	28.0	8.0	9.5
Total Split (s)			35.0	36.2	8.0	20.8	12.2	59.0	8.0	20.8
Total Split (%)			35%	36%	8%	21%	12%	59%	8%	21%
Yellow Time (s)			3.5	3.9	3.9	3.9	3.5	3.9	3.9	3.5
All-Red Time (s)			1.0	1.5	1.5	1.5	1.0	1.5	1.5	1.0
Lost Time Adjust (s)										
Total Lost Time (s)										
Lead/Lag			Lead	Lag	Lead	Lag	Lag	Lead	Lead	Lag
Lead-Lag Optimize?			Yes	Yes			Yes	Yes		Yes
Recall Mode			None	None	None	C-Max	None	None	None	C-Max
Act Effct Green (s)	36.5	53.6								
Actuated g/C Ratio	0.36	0.54								
v/c Ratio	0.55	0.21								
Control Delay	3.1	12.9								
Queue Delay	0.0	0.0								
Total Delay	3.1	12.9								
LOS	A	B								
Approach Delay	3.1									
Approach LOS	A									

Intersection Summary			
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 4:WBT and 8:, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.03			
Intersection Signal Delay: 5.1		Intersection LOS: A	
Intersection Capacity Utilization 75.8%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 32: I-94 WB Off-Ramp & NB 101



20: South Crossover/NB 101 & SB 101/TH 101

Direction	All
Future Volume (vph)	1662
Total Delay / Veh (s/v)	25
CO Emissions (kg)	1.54
NOx Emissions (kg)	0.30
VOC Emissions (kg)	0.36

21: NB 101 & I-94 EB Off-Ramp

Direction	All
Future Volume (vph)	700
Total Delay / Veh (s/v)	6
CO Emissions (kg)	0.18
NOx Emissions (kg)	0.04
VOC Emissions (kg)	0.04

22: SB 101 & I-94 EB Off-Ramp

Direction	All
Future Volume (vph)	1435
Total Delay / Veh (s/v)	7
CO Emissions (kg)	0.37
NOx Emissions (kg)	0.07
VOC Emissions (kg)	0.08

23: I-94 EB On-Ramp/NB 101 & SB 101

Direction	All
Future Volume (vph)	2163
Total Delay / Veh (s/v)	0
CO Emissions (kg)	0.45
NOx Emissions (kg)	0.09
VOC Emissions (kg)	0.10

30: SB 101/North Crossover & NB 101

Direction	All
Future Volume (vph)	3219
Total Delay / Veh (s/v)	47
CO Emissions (kg)	4.28
NOx Emissions (kg)	0.83
VOC Emissions (kg)	0.99

31: I-94 WB Off-Ramp & SB 101

Direction	All
Future Volume (vph)	2666
Total Delay / Veh (s/v)	23
CO Emissions (kg)	1.21
NOx Emissions (kg)	0.24
VOC Emissions (kg)	0.28

32: I-94 WB Off-Ramp & NB 101

Direction	All
Future Volume (vph)	808
Total Delay / Veh (s/v)	5
CO Emissions (kg)	0.19
NOx Emissions (kg)	0.04
VOC Emissions (kg)	0.04

Rogers 101/94 Application

Existing

920	South Ramps		
	Existing Volume	4298	vehicles
	Existing Delay	22	sec/veh
	Existing Total Delay	94556	seconds

940	North Ramps		
	Existing Volume	3634	vehicles
	Existing Delay	52	sec/veh
	Existing Total Delay	188968	seconds

Total Delay	**283524**

Build

20	South Crossover		
	Future Volume	1662	vehicles
	Future Delay	25	sec/veh
	Future Total Delay	41550	seconds

21	NB 101 and 94 EB Off Ramp		
	Future Volume	700	vehicles
	Future Delay	6	sec/veh
	Future Total Delay	4200	seconds

22	SB 101 and 94 EB Off Ramp		
	Future Volume	1435	vehicles
	Future Delay	7	sec/veh
	Future Total Delay	10045	seconds

23	94 EB On Ramp and 101		
	Future Volume	2163	vehicles
	Future Delay	0	sec/veh
	Future Total Delay	0	seconds

30	SB 101 and North Crossover		
	Future Volume	3219	vehicles
	Future Delay	47	sec/veh
	Future Total Delay	151293	seconds

31	94 WB Off Ramp and SB 101		
	Future Volume	2666	vehicles
	Future Delay	23	sec/veh
	Future Total Delay	61318	seconds

32	94 WB Off Ramp and NB 101		
	Future Volume	808	vehicles
	Future Delay	5	sec/veh
	Future Total Delay	4040	seconds

Total Future Delay	**272446**

Total Network Delay Reduction	**11078**	**seconds**

Emissions

Existing	920	940	Total
CO	4.11	6.09	10.2
NOx	0.8	1.18	1.98
VOC	0.95	1.41	2.36
	Total Existing		14.54

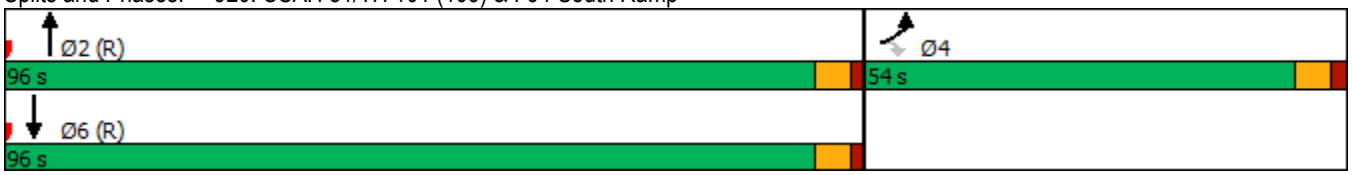
Build	20	21	22	23	30	31	32	Total
CO	1.54	0.18	0.37	0.45	4.28	1.21	0.19	8.22
NOx	0.3	0.04	0.07	0.09	0.83	0.24	0.04	1.61
VOC	0.36	0.04	0.08	0.1	0.99	0.28	0.04	1.89
						Total Future		11.72

Total Reduction	**2.82**

Lane Group	EBL	EBR	NBT	NBR	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	251	222	449	710	1213	1453
Future Volume (vph)	251	222	449	710	1213	1453
Turn Type	Prot	Perm	NA	Free	NA	Free
Protected Phases	4		2		6	
Permitted Phases		4		Free		Free
Detector Phase	4	4	2		6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	15.0		15.0	
Minimum Split (s)	22.0	22.0	21.5		21.5	
Total Split (s)	54.0	54.0	96.0		96.0	
Total Split (%)	36.0%	36.0%	64.0%		64.0%	
Yellow Time (s)	4.0	4.0	4.0		4.0	
All-Red Time (s)	2.0	2.0	1.5		1.5	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.0	5.5		5.5	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Max		C-Max	
Act Effct Green (s)	28.7	28.7	109.8	150.0	109.8	150.0
Actuated g/C Ratio	0.19	0.19	0.73	1.00	0.73	1.00
v/c Ratio	0.79	0.68	0.17	0.49	0.46	1.03
Control Delay	74.0	50.4	6.9	1.1	8.5	34.6
Queue Delay	0.0	0.0	0.0	0.0	0.4	0.0
Total Delay	74.0	50.4	6.9	1.1	8.9	34.6
LOS	E	D	A	A	A	C
Approach Delay			3.4		22.9	
Approach LOS			A		C	

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of 1st Green	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 22.1	Intersection LOS: C
Intersection Capacity Utilization 53.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 920: CSAH 81/TH 101 (109) & I-94 South Ramp



Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	92	3	163	55	645	2574	102
Future Volume (vph)	92	3	163	55	645	2574	102
Turn Type	Perm	NA	Free	Prot	NA	NA	Perm
Protected Phases		8		5	2	6	
Permitted Phases	8		Free				6
Detector Phase	8	8		5	2	6	6
Switch Phase							
Minimum Initial (s)	8.0	8.0		7.0	15.0	15.0	15.0
Minimum Split (s)	22.0	22.0		12.5	23.5	21.5	21.5
Total Split (s)	22.0	22.0		12.5	128.0	115.5	115.5
Total Split (%)	14.7%	14.7%		8.3%	85.3%	77.0%	77.0%
Yellow Time (s)	4.0	4.0		3.5	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		5.5	5.5	5.5	5.5
Lead/Lag				Lag		Lead	Lead
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None		None	C-Max	C-Max	C-Max
Act Effct Green (s)	9.5	9.5	150.0	7.0	129.0	116.5	116.5
Actuated g/C Ratio	0.06	0.06	1.00	0.05	0.86	0.78	0.78
v/c Ratio	0.45	0.51	0.06	0.74	0.21	1.09	0.09
Control Delay	74.2	24.4	0.1	126.9	3.4	65.7	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.2	24.4	0.1	126.9	3.4	65.7	0.9
LOS	E	C	A	F	A	E	A
Approach Delay		34.4			13.2	63.3	
Approach LOS		C			B	E	

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of 1st Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.09	
Intersection Signal Delay: 51.6	Intersection LOS: D
Intersection Capacity Utilization 62.0%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 940: TH 101 (109) & I-94 North Ramp

920: CSAH 81/TH 101 (109) & I-94 South Ramp

Direction	All
Future Volume (vph)	4298
Total Delay / Veh (s/v)	22
CO Emissions (kg)	4.11
NOx Emissions (kg)	0.80
VOC Emissions (kg)	0.95

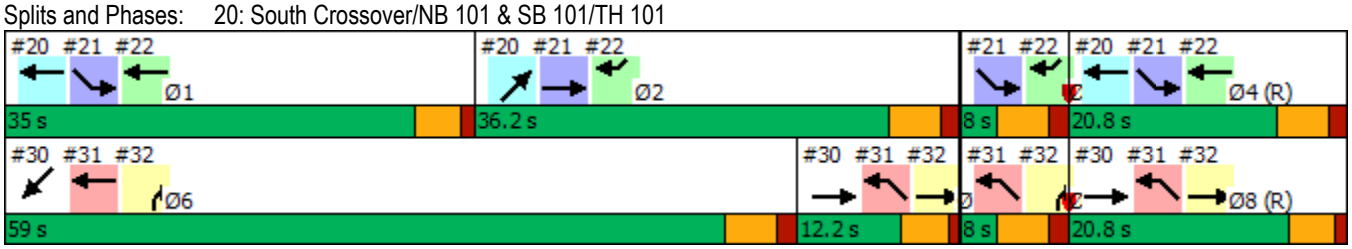
940: TH 101 (109) & I-94 North Ramp

Direction	All
Future Volume (vph)	3634
Total Delay / Veh (s/v)	52
CO Emissions (kg)	6.09
NOx Emissions (kg)	1.18
VOC Emissions (kg)	1.41

Lane Group	WBT	NET	Ø1	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8
Lane Configurations									
Traffic Volume (vph)	1213	449							
Future Volume (vph)	1213	449							
Turn Type	NA	NA							
Protected Phases	1 4	2	1	3	4	5	6	7	8
Permitted Phases									
Detector Phase	1	2							
Switch Phase									
Minimum Initial (s)		4.0	5.0	2.0	4.0	5.0	4.0	2.0	5.0
Minimum Split (s)		28.0	9.5	8.0	20.0	9.5	28.0	8.0	9.5
Total Split (s)		36.2	35.0	8.0	20.8	12.2	59.0	8.0	20.8
Total Split (%)		36.2%	35%	8%	21%	12%	59%	8%	21%
Yellow Time (s)		3.9	3.5	3.9	3.9	3.5	3.9	3.9	3.5
All-Red Time (s)		1.5	1.0	1.5	1.5	1.0	1.5	1.5	1.0
Lost Time Adjust (s)		0.0							
Total Lost Time (s)		5.4							
Lead/Lag		Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag
Lead-Lag Optimize?		Yes	Yes			Yes	Yes		Yes
Recall Mode		None	None	None	C-Max	None	None	None	C-Max
Act Effct Green (s)	58.9	31.2							
Actuated g/C Ratio	0.59	0.31							
v/c Ratio	0.64	0.45							
Control Delay	23.5	29.3							
Queue Delay	0.0	0.0							
Total Delay	23.5	29.3							
LOS	C	C							
Approach Delay	23.5	29.3							
Approach LOS	C	C							

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 4:WBT and 8:, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 25.0	Intersection LOS: C
Intersection Capacity Utilization 55.5%	ICU Level of Service B
Analysis Period (min) 15	

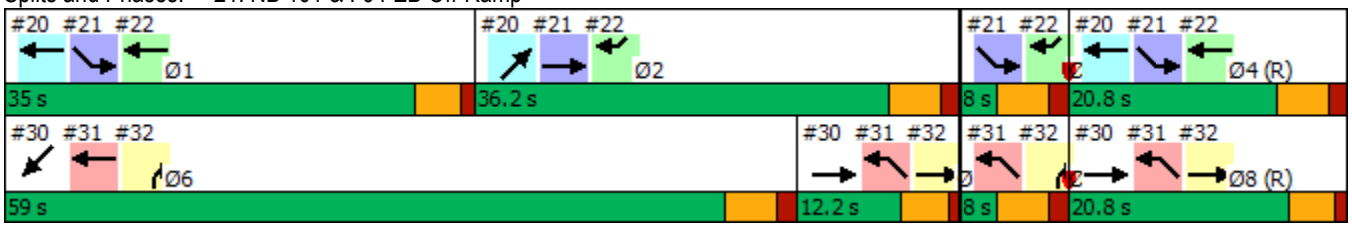
Splits and Phases: 20: South Crossover/NB 101 & SB 101/TH 101



Lane Group	EBT	SEL	Ø1	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8
Lane Configurations									
Traffic Volume (vph)	449	251							
Future Volume (vph)	449	251							
Turn Type	NA	pm+pt							
Protected Phases	2	1 3 4	1	3	4	5	6	7	8
Permitted Phases		1 3 4							
Detector Phase	2	1							
Switch Phase									
Minimum Initial (s)	4.0		5.0	2.0	4.0	5.0	4.0	2.0	5.0
Minimum Split (s)	28.0		9.5	8.0	20.0	9.5	28.0	8.0	9.5
Total Split (s)	36.2		35.0	8.0	20.8	12.2	59.0	8.0	20.8
Total Split (%)	36.2%		35%	8%	21%	12%	59%	8%	21%
Yellow Time (s)	3.9		3.5	3.9	3.9	3.5	3.9	3.9	3.5
All-Red Time (s)	1.5		1.0	1.5	1.5	1.0	1.5	1.5	1.0
Lost Time Adjust (s)	0.0								
Total Lost Time (s)	5.4								
Lead/Lag	Lag		Lead	Lead	Lag	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes		Yes			Yes	Yes		Yes
Recall Mode	None		None	None	C-Max	None	None	None	C-Max
Act Effct Green (s)	31.2	58.9							
Actuated g/C Ratio	0.31	0.59							
v/c Ratio	0.45	0.26							
Control Delay	3.3	10.7							
Queue Delay	0.1	0.0							
Total Delay	3.4	10.7							
LOS	A	B							
Approach Delay	3.4	10.7							
Approach LOS	A	B							

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 4:WBT and 8:, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 6.0	Intersection LOS: A
Intersection Capacity Utilization 34.2%	ICU Level of Service A
Analysis Period (min) 15	

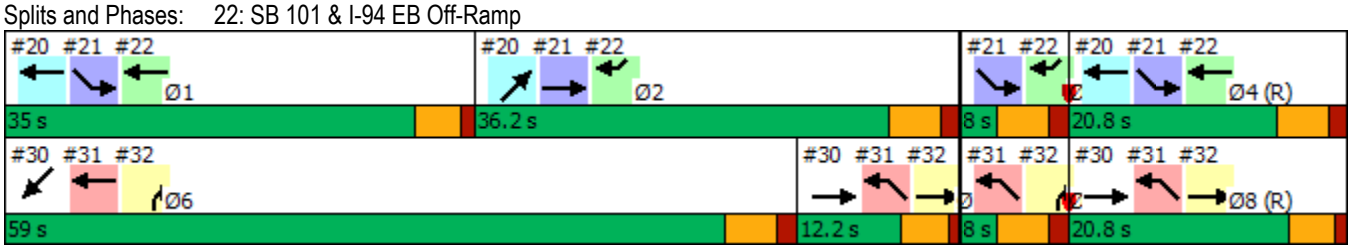
Splits and Phases: 21: NB 101 & I-94 EB Off-Ramp



Lane Group	WBT	SWR	Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8
Lane Configurations										
Traffic Volume (vph)	1213	222								
Future Volume (vph)	1213	222								
Turn Type	NA	custom								
Protected Phases	1 4	2 3	1	2	3	4	5	6	7	8
Permitted Phases										
Detector Phase	1	2								
Switch Phase										
Minimum Initial (s)			5.0	4.0	2.0	4.0	5.0	4.0	2.0	5.0
Minimum Split (s)			9.5	28.0	8.0	20.0	9.5	28.0	8.0	9.5
Total Split (s)			35.0	36.2	8.0	20.8	12.2	59.0	8.0	20.8
Total Split (%)			35%	36%	8%	21%	12%	59%	8%	21%
Yellow Time (s)			3.5	3.9	3.9	3.9	3.5	3.9	3.9	3.5
All-Red Time (s)			1.0	1.5	1.5	1.5	1.0	1.5	1.5	1.0
Lost Time Adjust (s)										
Total Lost Time (s)										
Lead/Lag			Lead	Lag	Lead	Lag	Lag	Lead	Lead	Lag
Lead-Lag Optimize?			Yes	Yes			Yes	Yes		Yes
Recall Mode			None	None	None	C-Max	None	None	None	C-Max
Act Effct Green (s)	58.9	31.2								
Actuated g/C Ratio	0.59	0.31								
v/c Ratio	0.64	0.48								
Control Delay	2.9	32.1								
Queue Delay	0.0	0.0								
Total Delay	2.9	32.1								
LOS	A	C								
Approach Delay	2.9									
Approach LOS	A									

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 4:WBT and 8:, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 7.5	Intersection LOS: A
Intersection Capacity Utilization 55.5%	ICU Level of Service B
Analysis Period (min) 15	

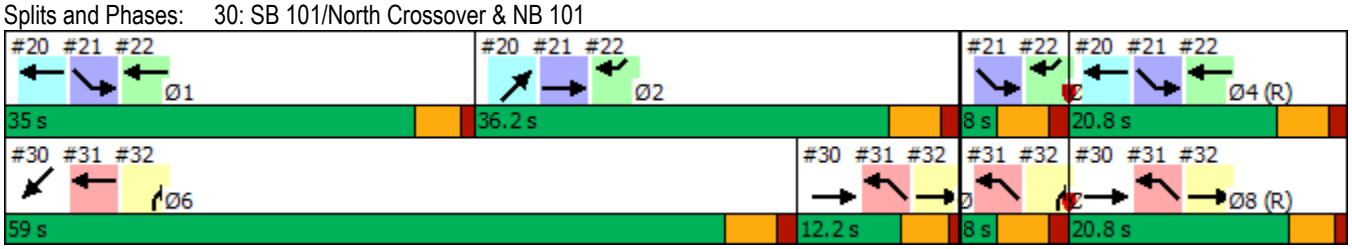
Splits and Phases: 22: SB 101 & I-94 EB Off-Ramp



Lane Group	EBT	SWT	Ø1	Ø2	Ø3	Ø4	Ø5	Ø7	Ø8
Lane Configurations									
Traffic Volume (vph)	645	2574							
Future Volume (vph)	645	2574							
Turn Type	NA	NA							
Protected Phases	5 8	6	1	2	3	4	5	7	8
Permitted Phases									
Detector Phase	5	6							
Switch Phase									
Minimum Initial (s)		4.0	5.0	4.0	2.0	4.0	5.0	2.0	5.0
Minimum Split (s)		28.0	9.5	28.0	8.0	20.0	9.5	8.0	9.5
Total Split (s)		59.0	35.0	36.2	8.0	20.8	12.2	8.0	20.8
Total Split (%)		59.0%	35%	36%	8%	21%	12%	8%	21%
Yellow Time (s)		3.9	3.5	3.9	3.9	3.9	3.5	3.9	3.5
All-Red Time (s)		1.5	1.0	1.5	1.5	1.5	1.0	1.5	1.0
Lost Time Adjust (s)		0.0							
Total Lost Time (s)		5.4							
Lead/Lag		Lead	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?		Yes	Yes	Yes			Yes		Yes
Recall Mode		None	None	None	None	C-Max	None	None	C-Max
Act Effct Green (s)	36.5	53.6							
Actuated g/C Ratio	0.36	0.54							
v/c Ratio	0.55	1.03							
Control Delay	16.2	51.1							
Queue Delay	0.0	4.1							
Total Delay	16.2	55.2							
LOS	B	E							
Approach Delay	16.2	55.2							
Approach LOS	B	E							

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 4:WBT and 8:, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 47.4	Intersection LOS: D
Intersection Capacity Utilization 75.8%	ICU Level of Service D
Analysis Period (min) 15	

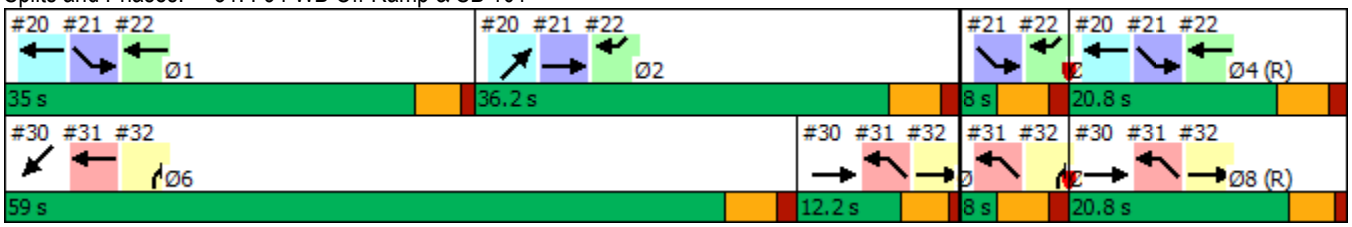
Splits and Phases: 30: SB 101/North Crossover & NB 101



Lane Group	WBT	NWL	Ø1	Ø2	Ø3	Ø4	Ø5	Ø7	Ø8
Lane Configurations									
Traffic Volume (vph)	2574	92							
Future Volume (vph)	2574	92							
Turn Type	NA	pm+pt							
Protected Phases	6	5 7 8	1	2	3	4	5	7	8
Permitted Phases		5 7 8							
Detector Phase	6	5							
Switch Phase									
Minimum Initial (s)	4.0		5.0	4.0	2.0	4.0	5.0	2.0	5.0
Minimum Split (s)	28.0		9.5	28.0	8.0	20.0	9.5	8.0	9.5
Total Split (s)	59.0		35.0	36.2	8.0	20.8	12.2	8.0	20.8
Total Split (%)	59.0%		35%	36%	8%	21%	12%	8%	21%
Yellow Time (s)	3.9		3.5	3.9	3.9	3.9	3.5	3.9	3.5
All-Red Time (s)	1.5		1.0	1.5	1.5	1.5	1.0	1.5	1.0
Lost Time Adjust (s)	0.0								
Total Lost Time (s)	5.4								
Lead/Lag	Lead		Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes		Yes	Yes			Yes		Yes
Recall Mode	None		None	None	None	C-Max	None	None	C-Max
Act Effct Green (s)	53.6	36.5							
Actuated g/C Ratio	0.54	0.36							
v/c Ratio	1.03	0.08							
Control Delay	22.7	21.1							
Queue Delay	0.0	0.0							
Total Delay	22.7	21.1							
LOS	C	C							
Approach Delay	22.7	21.1							
Approach LOS	C	C							

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 4:WBT and 8:, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 22.6	Intersection LOS: C
Intersection Capacity Utilization 68.7%	ICU Level of Service C
Analysis Period (min) 15	

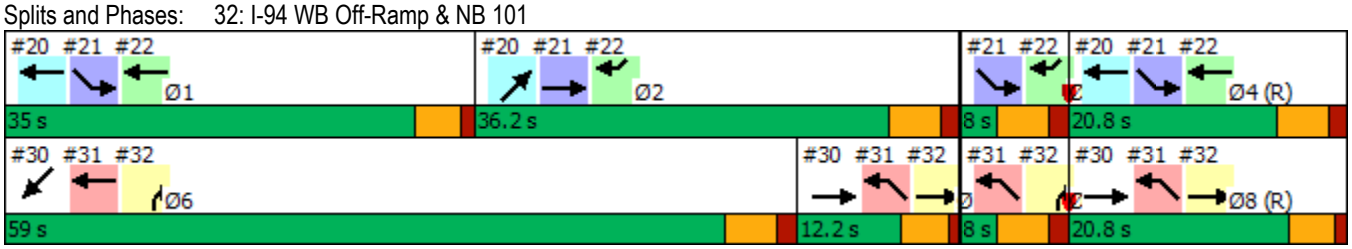
Splits and Phases: 31: I-94 WB Off-Ramp & SB 101



Lane Group	EBT	NBR	Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8
Lane Configurations										
Traffic Volume (vph)	645	163								
Future Volume (vph)	645	163								
Turn Type	NA	custom								
Protected Phases	5 8	6 7	1	2	3	4	5	6	7	8
Permitted Phases		6 7								
Detector Phase	5	6								
Switch Phase										
Minimum Initial (s)			5.0	4.0	2.0	4.0	5.0	4.0	2.0	5.0
Minimum Split (s)			9.5	28.0	8.0	20.0	9.5	28.0	8.0	9.5
Total Split (s)			35.0	36.2	8.0	20.8	12.2	59.0	8.0	20.8
Total Split (%)			35%	36%	8%	21%	12%	59%	8%	21%
Yellow Time (s)			3.5	3.9	3.9	3.9	3.5	3.9	3.9	3.5
All-Red Time (s)			1.0	1.5	1.5	1.5	1.0	1.5	1.5	1.0
Lost Time Adjust (s)										
Total Lost Time (s)										
Lead/Lag			Lead	Lag	Lead	Lag	Lag	Lead	Lead	Lag
Lead-Lag Optimize?			Yes	Yes			Yes	Yes		Yes
Recall Mode			None	None	None	C-Max	None	None	None	C-Max
Act Effct Green (s)	36.5	53.6								
Actuated g/C Ratio	0.36	0.54								
v/c Ratio	0.55	0.21								
Control Delay	3.1	12.9								
Queue Delay	0.0	0.0								
Total Delay	3.1	12.9								
LOS	A	B								
Approach Delay	3.1									
Approach LOS	A									

Intersection Summary			
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 4:WBT and 8:, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.03			
Intersection Signal Delay: 5.1		Intersection LOS: A	
Intersection Capacity Utilization 75.8%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 32: I-94 WB Off-Ramp & NB 101



20: South Crossover/NB 101 & SB 101/TH 101

Direction	All
Future Volume (vph)	1662
Total Delay / Veh (s/v)	25
CO Emissions (kg)	1.54
NOx Emissions (kg)	0.30
VOC Emissions (kg)	0.36

21: NB 101 & I-94 EB Off-Ramp

Direction	All
Future Volume (vph)	700
Total Delay / Veh (s/v)	6
CO Emissions (kg)	0.18
NOx Emissions (kg)	0.04
VOC Emissions (kg)	0.04

22: SB 101 & I-94 EB Off-Ramp

Direction	All
Future Volume (vph)	1435
Total Delay / Veh (s/v)	7
CO Emissions (kg)	0.37
NOx Emissions (kg)	0.07
VOC Emissions (kg)	0.08

23: I-94 EB On-Ramp/NB 101 & SB 101

Direction	All
Future Volume (vph)	2163
Total Delay / Veh (s/v)	0
CO Emissions (kg)	0.45
NOx Emissions (kg)	0.09
VOC Emissions (kg)	0.10

30: SB 101/North Crossover & NB 101

Direction	All
Future Volume (vph)	3219
Total Delay / Veh (s/v)	47
CO Emissions (kg)	4.28
NOx Emissions (kg)	0.83
VOC Emissions (kg)	0.99

31: I-94 WB Off-Ramp & SB 101

Direction	All
Future Volume (vph)	2666
Total Delay / Veh (s/v)	23
CO Emissions (kg)	1.21
NOx Emissions (kg)	0.24
VOC Emissions (kg)	0.28

32: I-94 WB Off-Ramp & NB 101

Direction	All
Future Volume (vph)	808
Total Delay / Veh (s/v)	5
CO Emissions (kg)	0.19
NOx Emissions (kg)	0.04
VOC Emissions (kg)	0.04

Rogers 101/94 Application

Existing

920	South Ramps		
	Existing Volume	4298	vehicles
	Existing Delay	22	sec/veh
	Existing Total Delay	94556	seconds

940	North Ramps		
	Existing Volume	3634	vehicles
	Existing Delay	52	sec/veh
	Existing Total Delay	188968	seconds

Total Delay	**283524**

Build

20	South Crossover		
	Future Volume	1662	vehicles
	Future Delay	25	sec/veh
	Future Total Delay	41550	seconds

21	NB 101 and 94 EB Off Ramp		
	Future Volume	700	vehicles
	Future Delay	6	sec/veh
	Future Total Delay	4200	seconds

22	SB 101 and 94 EB Off Ramp		
	Future Volume	1435	vehicles
	Future Delay	7	sec/veh
	Future Total Delay	10045	seconds

23	94 EB On Ramp and 101		
	Future Volume	2163	vehicles
	Future Delay	0	sec/veh
	Future Total Delay	0	seconds

30	SB 101 and North Crossover		
	Future Volume	3219	vehicles
	Future Delay	47	sec/veh
	Future Total Delay	151293	seconds

31	94 WB Off Ramp and SB 101		
	Future Volume	2666	vehicles
	Future Delay	23	sec/veh
	Future Total Delay	61318	seconds

32	94 WB Off Ramp and NB 101		
	Future Volume	808	vehicles
	Future Delay	5	sec/veh
	Future Total Delay	4040	seconds

Total Future Delay	**272446**

Total Network Delay Reduction	**11078**	**seconds**

Emissions

Existing	920	940	Total
CO	4.11	6.09	10.2
NOx	0.8	1.18	1.98
VOC	0.95	1.41	2.36
	Total Existing		14.54

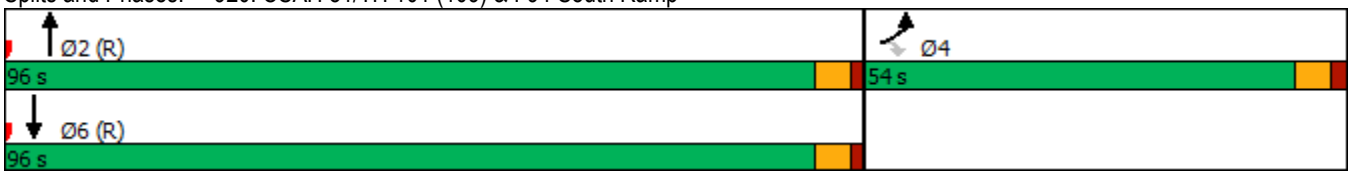
Build	20	21	22	23	30	31	32	Total
CO	1.54	0.18	0.37	0.45	4.28	1.21	0.19	8.22
NOx	0.3	0.04	0.07	0.09	0.83	0.24	0.04	1.61
VOC	0.36	0.04	0.08	0.1	0.99	0.28	0.04	1.89
						Total Future		11.72

Total Reduction	**2.82**

Lane Group	EBL	EBR	NBT	NBR	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	251	222	449	710	1213	1453
Future Volume (vph)	251	222	449	710	1213	1453
Turn Type	Prot	Perm	NA	Free	NA	Free
Protected Phases	4		2		6	
Permitted Phases		4		Free		Free
Detector Phase	4	4	2		6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	15.0		15.0	
Minimum Split (s)	22.0	22.0	21.5		21.5	
Total Split (s)	54.0	54.0	96.0		96.0	
Total Split (%)	36.0%	36.0%	64.0%		64.0%	
Yellow Time (s)	4.0	4.0	4.0		4.0	
All-Red Time (s)	2.0	2.0	1.5		1.5	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.0	5.5		5.5	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Max		C-Max	
Act Effct Green (s)	28.7	28.7	109.8	150.0	109.8	150.0
Actuated g/C Ratio	0.19	0.19	0.73	1.00	0.73	1.00
v/c Ratio	0.79	0.68	0.17	0.49	0.46	1.03
Control Delay	74.0	50.4	6.9	1.1	8.5	34.6
Queue Delay	0.0	0.0	0.0	0.0	0.4	0.0
Total Delay	74.0	50.4	6.9	1.1	8.9	34.6
LOS	E	D	A	A	A	C
Approach Delay			3.4		22.9	
Approach LOS			A		C	

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of 1st Green	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 22.1	Intersection LOS: C
Intersection Capacity Utilization 53.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 920: CSAH 81/TH 101 (109) & I-94 South Ramp



Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	92	3	163	55	645	2574	102
Future Volume (vph)	92	3	163	55	645	2574	102
Turn Type	Perm	NA	Free	Prot	NA	NA	Perm
Protected Phases		8		5	2	6	
Permitted Phases	8		Free				6
Detector Phase	8	8		5	2	6	6
Switch Phase							
Minimum Initial (s)	8.0	8.0		7.0	15.0	15.0	15.0
Minimum Split (s)	22.0	22.0		12.5	23.5	21.5	21.5
Total Split (s)	22.0	22.0		12.5	128.0	115.5	115.5
Total Split (%)	14.7%	14.7%		8.3%	85.3%	77.0%	77.0%
Yellow Time (s)	4.0	4.0		3.5	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		5.5	5.5	5.5	5.5
Lead/Lag				Lag		Lead	Lead
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None		None	C-Max	C-Max	C-Max
Act Effct Green (s)	9.5	9.5	150.0	7.0	129.0	116.5	116.5
Actuated g/C Ratio	0.06	0.06	1.00	0.05	0.86	0.78	0.78
v/c Ratio	0.45	0.51	0.06	0.74	0.21	1.09	0.09
Control Delay	74.2	24.4	0.1	126.9	3.4	65.7	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.2	24.4	0.1	126.9	3.4	65.7	0.9
LOS	E	C	A	F	A	E	A
Approach Delay		34.4			13.2	63.3	
Approach LOS		C			B	E	

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of 1st Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.09	
Intersection Signal Delay: 51.6	Intersection LOS: D
Intersection Capacity Utilization 62.0%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 940: TH 101 (109) & I-94 North Ramp

920: CSAH 81/TH 101 (109) & I-94 South Ramp

Direction	All
Future Volume (vph)	4298
Total Delay / Veh (s/v)	22
CO Emissions (kg)	4.11
NOx Emissions (kg)	0.80
VOC Emissions (kg)	0.95

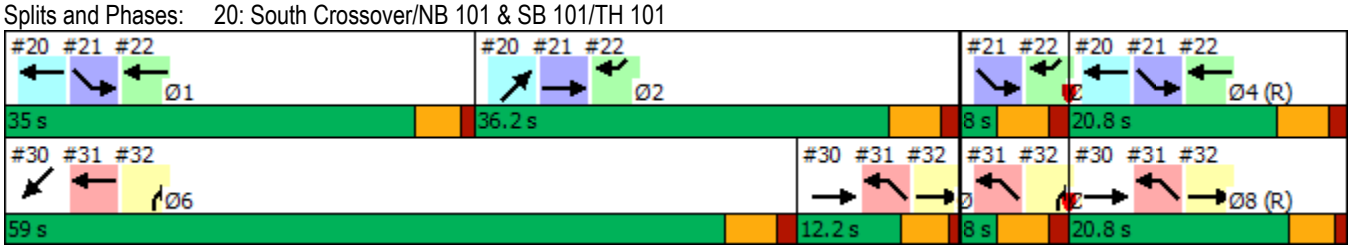
940: TH 101 (109) & I-94 North Ramp

Direction	All
Future Volume (vph)	3634
Total Delay / Veh (s/v)	52
CO Emissions (kg)	6.09
NOx Emissions (kg)	1.18
VOC Emissions (kg)	1.41

Lane Group	WBT	NET	Ø1	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8
Lane Configurations									
Traffic Volume (vph)	1213	449							
Future Volume (vph)	1213	449							
Turn Type	NA	NA							
Protected Phases	1 4	2	1	3	4	5	6	7	8
Permitted Phases									
Detector Phase	1	2							
Switch Phase									
Minimum Initial (s)		4.0	5.0	2.0	4.0	5.0	4.0	2.0	5.0
Minimum Split (s)		28.0	9.5	8.0	20.0	9.5	28.0	8.0	9.5
Total Split (s)		36.2	35.0	8.0	20.8	12.2	59.0	8.0	20.8
Total Split (%)		36.2%	35%	8%	21%	12%	59%	8%	21%
Yellow Time (s)		3.9	3.5	3.9	3.9	3.5	3.9	3.9	3.5
All-Red Time (s)		1.5	1.0	1.5	1.5	1.0	1.5	1.5	1.0
Lost Time Adjust (s)		0.0							
Total Lost Time (s)		5.4							
Lead/Lag		Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag
Lead-Lag Optimize?		Yes	Yes			Yes	Yes		Yes
Recall Mode		None	None	None	C-Max	None	None	None	C-Max
Act Effct Green (s)	58.9	31.2							
Actuated g/C Ratio	0.59	0.31							
v/c Ratio	0.64	0.45							
Control Delay	23.5	29.3							
Queue Delay	0.0	0.0							
Total Delay	23.5	29.3							
LOS	C	C							
Approach Delay	23.5	29.3							
Approach LOS	C	C							

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 4:WBT and 8:, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 25.0	Intersection LOS: C
Intersection Capacity Utilization 55.5%	ICU Level of Service B
Analysis Period (min) 15	

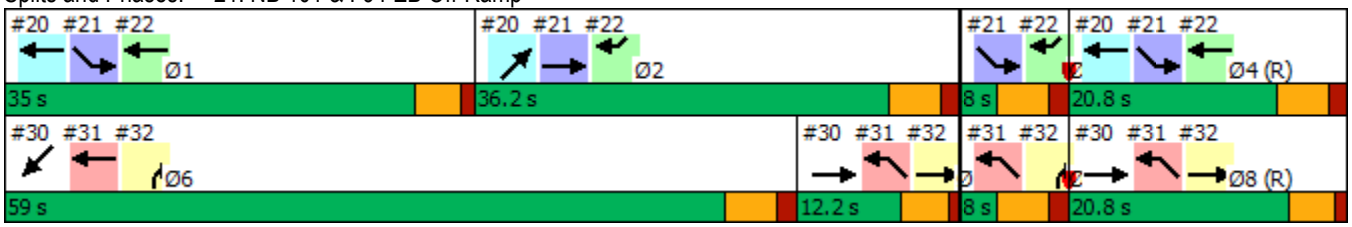
Splits and Phases: 20: South Crossover/NB 101 & SB 101/TH 101



Lane Group	EBT	SEL	Ø1	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8
Lane Configurations									
Traffic Volume (vph)	449	251							
Future Volume (vph)	449	251							
Turn Type	NA	pm+pt							
Protected Phases	2	1 3 4	1	3	4	5	6	7	8
Permitted Phases		1 3 4							
Detector Phase	2	1							
Switch Phase									
Minimum Initial (s)	4.0		5.0	2.0	4.0	5.0	4.0	2.0	5.0
Minimum Split (s)	28.0		9.5	8.0	20.0	9.5	28.0	8.0	9.5
Total Split (s)	36.2		35.0	8.0	20.8	12.2	59.0	8.0	20.8
Total Split (%)	36.2%		35%	8%	21%	12%	59%	8%	21%
Yellow Time (s)	3.9		3.5	3.9	3.9	3.5	3.9	3.9	3.5
All-Red Time (s)	1.5		1.0	1.5	1.5	1.0	1.5	1.5	1.0
Lost Time Adjust (s)	0.0								
Total Lost Time (s)	5.4								
Lead/Lag	Lag		Lead	Lead	Lag	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes		Yes			Yes	Yes		Yes
Recall Mode	None		None	None	C-Max	None	None	None	C-Max
Act Effct Green (s)	31.2	58.9							
Actuated g/C Ratio	0.31	0.59							
v/c Ratio	0.45	0.26							
Control Delay	3.3	10.7							
Queue Delay	0.1	0.0							
Total Delay	3.4	10.7							
LOS	A	B							
Approach Delay	3.4	10.7							
Approach LOS	A	B							

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 4:WBT and 8:, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 6.0	Intersection LOS: A
Intersection Capacity Utilization 34.2%	ICU Level of Service A
Analysis Period (min) 15	

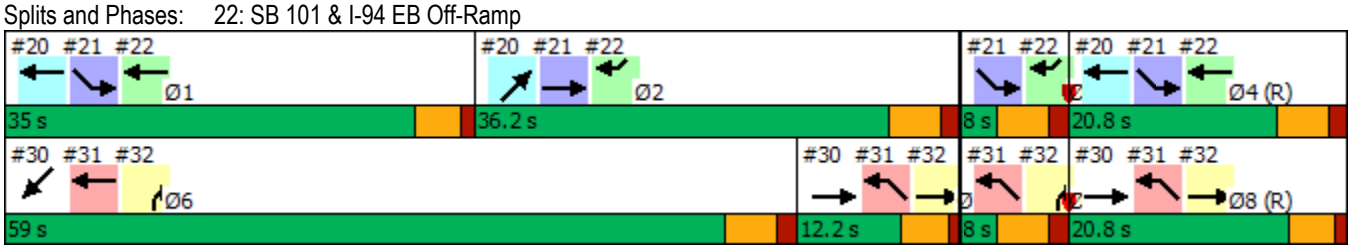
Splits and Phases: 21: NB 101 & I-94 EB Off-Ramp



Lane Group	WBT	SWR	Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8
Lane Configurations										
Traffic Volume (vph)	1213	222								
Future Volume (vph)	1213	222								
Turn Type	NA	custom								
Protected Phases	1 4	2 3	1	2	3	4	5	6	7	8
Permitted Phases										
Detector Phase	1	2								
Switch Phase										
Minimum Initial (s)			5.0	4.0	2.0	4.0	5.0	4.0	2.0	5.0
Minimum Split (s)			9.5	28.0	8.0	20.0	9.5	28.0	8.0	9.5
Total Split (s)			35.0	36.2	8.0	20.8	12.2	59.0	8.0	20.8
Total Split (%)			35%	36%	8%	21%	12%	59%	8%	21%
Yellow Time (s)			3.5	3.9	3.9	3.9	3.5	3.9	3.9	3.5
All-Red Time (s)			1.0	1.5	1.5	1.5	1.0	1.5	1.5	1.0
Lost Time Adjust (s)										
Total Lost Time (s)										
Lead/Lag			Lead	Lag	Lead	Lag	Lag	Lead	Lead	Lag
Lead-Lag Optimize?			Yes	Yes			Yes	Yes		Yes
Recall Mode			None	None	None	C-Max	None	None	None	C-Max
Act Effct Green (s)	58.9	31.2								
Actuated g/C Ratio	0.59	0.31								
v/c Ratio	0.64	0.48								
Control Delay	2.9	32.1								
Queue Delay	0.0	0.0								
Total Delay	2.9	32.1								
LOS	A	C								
Approach Delay	2.9									
Approach LOS	A									

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 4:WBT and 8:, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 7.5	Intersection LOS: A
Intersection Capacity Utilization 55.5%	ICU Level of Service B
Analysis Period (min) 15	

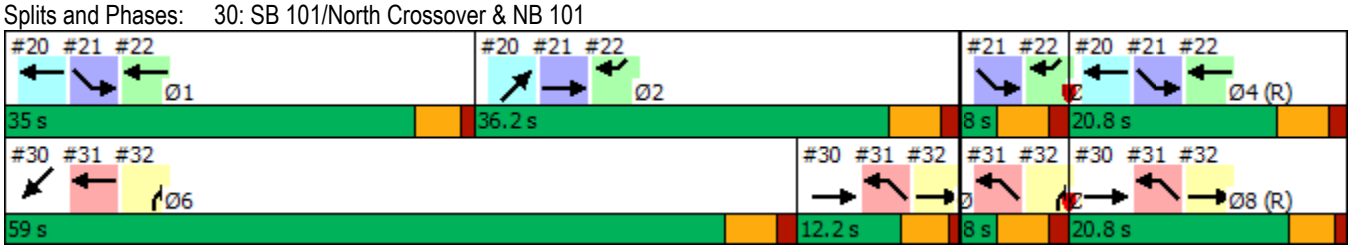
Splits and Phases: 22: SB 101 & I-94 EB Off-Ramp



Lane Group	EBT	SWT	Ø1	Ø2	Ø3	Ø4	Ø5	Ø7	Ø8
Lane Configurations									
Traffic Volume (vph)	645	2574							
Future Volume (vph)	645	2574							
Turn Type	NA	NA							
Protected Phases	5 8	6	1	2	3	4	5	7	8
Permitted Phases									
Detector Phase	5	6							
Switch Phase									
Minimum Initial (s)		4.0	5.0	4.0	2.0	4.0	5.0	2.0	5.0
Minimum Split (s)		28.0	9.5	28.0	8.0	20.0	9.5	8.0	9.5
Total Split (s)		59.0	35.0	36.2	8.0	20.8	12.2	8.0	20.8
Total Split (%)		59.0%	35%	36%	8%	21%	12%	8%	21%
Yellow Time (s)		3.9	3.5	3.9	3.9	3.9	3.5	3.9	3.5
All-Red Time (s)		1.5	1.0	1.5	1.5	1.5	1.0	1.5	1.0
Lost Time Adjust (s)		0.0							
Total Lost Time (s)		5.4							
Lead/Lag		Lead	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?		Yes	Yes	Yes			Yes		Yes
Recall Mode		None	None	None	None	C-Max	None	None	C-Max
Act Effct Green (s)	36.5	53.6							
Actuated g/C Ratio	0.36	0.54							
v/c Ratio	0.55	1.03							
Control Delay	16.2	51.1							
Queue Delay	0.0	4.1							
Total Delay	16.2	55.2							
LOS	B	E							
Approach Delay	16.2	55.2							
Approach LOS	B	E							

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 4:WBT and 8:, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 47.4	Intersection LOS: D
Intersection Capacity Utilization 75.8%	ICU Level of Service D
Analysis Period (min) 15	

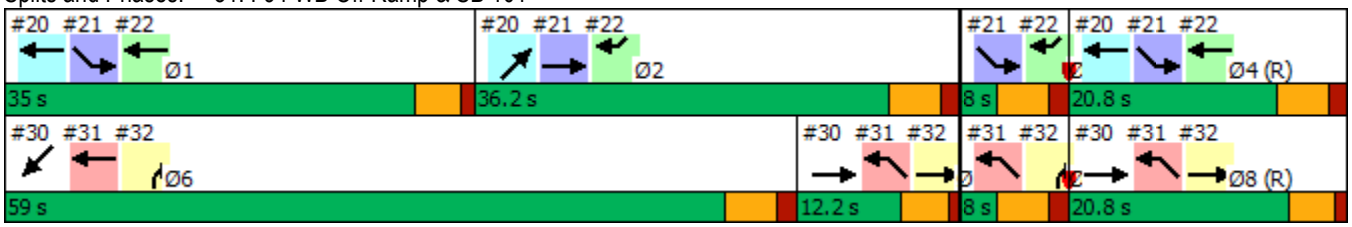
Splits and Phases: 30: SB 101/North Crossover & NB 101



Lane Group	WBT	NWL	Ø1	Ø2	Ø3	Ø4	Ø5	Ø7	Ø8
Lane Configurations									
Traffic Volume (vph)	2574	92							
Future Volume (vph)	2574	92							
Turn Type	NA	pm+pt							
Protected Phases	6	5 7 8	1	2	3	4	5	7	8
Permitted Phases		5 7 8							
Detector Phase	6	5							
Switch Phase									
Minimum Initial (s)	4.0		5.0	4.0	2.0	4.0	5.0	2.0	5.0
Minimum Split (s)	28.0		9.5	28.0	8.0	20.0	9.5	8.0	9.5
Total Split (s)	59.0		35.0	36.2	8.0	20.8	12.2	8.0	20.8
Total Split (%)	59.0%		35%	36%	8%	21%	12%	8%	21%
Yellow Time (s)	3.9		3.5	3.9	3.9	3.9	3.5	3.9	3.5
All-Red Time (s)	1.5		1.0	1.5	1.5	1.5	1.0	1.5	1.0
Lost Time Adjust (s)	0.0								
Total Lost Time (s)	5.4								
Lead/Lag	Lead		Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes		Yes	Yes			Yes		Yes
Recall Mode	None		None	None	None	C-Max	None	None	C-Max
Act Effct Green (s)	53.6	36.5							
Actuated g/C Ratio	0.54	0.36							
v/c Ratio	1.03	0.08							
Control Delay	22.7	21.1							
Queue Delay	0.0	0.0							
Total Delay	22.7	21.1							
LOS	C	C							
Approach Delay	22.7	21.1							
Approach LOS	C	C							

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 4:WBT and 8:, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 22.6	Intersection LOS: C
Intersection Capacity Utilization 68.7%	ICU Level of Service C
Analysis Period (min) 15	

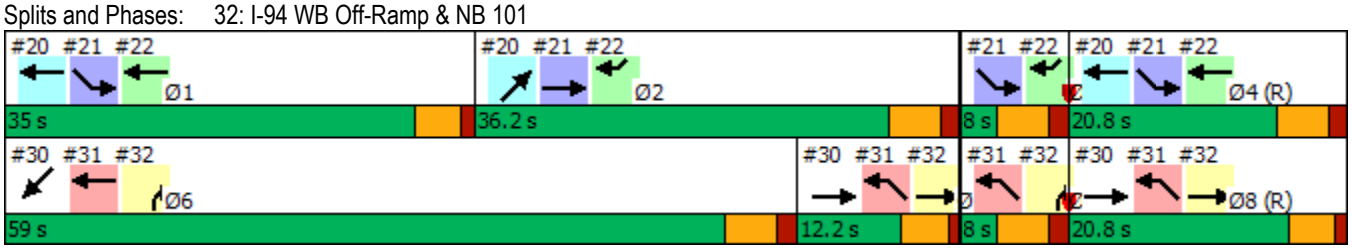
Splits and Phases: 31: I-94 WB Off-Ramp & SB 101



Lane Group	EBT	NBR	Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8
Lane Configurations										
Traffic Volume (vph)	645	163								
Future Volume (vph)	645	163								
Turn Type	NA	custom								
Protected Phases	5 8	6 7	1	2	3	4	5	6	7	8
Permitted Phases		6 7								
Detector Phase	5	6								
Switch Phase										
Minimum Initial (s)			5.0	4.0	2.0	4.0	5.0	4.0	2.0	5.0
Minimum Split (s)			9.5	28.0	8.0	20.0	9.5	28.0	8.0	9.5
Total Split (s)			35.0	36.2	8.0	20.8	12.2	59.0	8.0	20.8
Total Split (%)			35%	36%	8%	21%	12%	59%	8%	21%
Yellow Time (s)			3.5	3.9	3.9	3.9	3.5	3.9	3.9	3.5
All-Red Time (s)			1.0	1.5	1.5	1.5	1.0	1.5	1.5	1.0
Lost Time Adjust (s)										
Total Lost Time (s)										
Lead/Lag			Lead	Lag	Lead	Lag	Lag	Lead	Lead	Lag
Lead-Lag Optimize?			Yes	Yes			Yes	Yes		Yes
Recall Mode			None	None	None	C-Max	None	None	None	C-Max
Act Effct Green (s)	36.5	53.6								
Actuated g/C Ratio	0.36	0.54								
v/c Ratio	0.55	0.21								
Control Delay	3.1	12.9								
Queue Delay	0.0	0.0								
Total Delay	3.1	12.9								
LOS	A	B								
Approach Delay	3.1									
Approach LOS	A									

Intersection Summary			
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 4:WBT and 8:, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.03			
Intersection Signal Delay: 5.1		Intersection LOS: A	
Intersection Capacity Utilization 75.8%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 32: I-94 WB Off-Ramp & NB 101



20: South Crossover/NB 101 & SB 101/TH 101

Direction	All
Future Volume (vph)	1662
Total Delay / Veh (s/v)	25
CO Emissions (kg)	1.54
NOx Emissions (kg)	0.30
VOC Emissions (kg)	0.36

21: NB 101 & I-94 EB Off-Ramp

Direction	All
Future Volume (vph)	700
Total Delay / Veh (s/v)	6
CO Emissions (kg)	0.18
NOx Emissions (kg)	0.04
VOC Emissions (kg)	0.04

22: SB 101 & I-94 EB Off-Ramp

Direction	All
Future Volume (vph)	1435
Total Delay / Veh (s/v)	7
CO Emissions (kg)	0.37
NOx Emissions (kg)	0.07
VOC Emissions (kg)	0.08

23: I-94 EB On-Ramp/NB 101 & SB 101

Direction	All
Future Volume (vph)	2163
Total Delay / Veh (s/v)	0
CO Emissions (kg)	0.45
NOx Emissions (kg)	0.09
VOC Emissions (kg)	0.10

30: SB 101/North Crossover & NB 101

Direction	All
Future Volume (vph)	3219
Total Delay / Veh (s/v)	47
CO Emissions (kg)	4.28
NOx Emissions (kg)	0.83
VOC Emissions (kg)	0.99

31: I-94 WB Off-Ramp & SB 101

Direction	All
Future Volume (vph)	2666
Total Delay / Veh (s/v)	23
CO Emissions (kg)	1.21
NOx Emissions (kg)	0.24
VOC Emissions (kg)	0.28

32: I-94 WB Off-Ramp & NB 101

Direction	All
Future Volume (vph)	808
Total Delay / Veh (s/v)	5
CO Emissions (kg)	0.19
NOx Emissions (kg)	0.04
VOC Emissions (kg)	0.04

Rogers 101/94 Application

Existing

920	South Ramps		
	Existing Volume	4298	vehicles
	Existing Delay	22	sec/veh
	Existing Total Delay	94556	seconds

940	North Ramps		
	Existing Volume	3634	vehicles
	Existing Delay	52	sec/veh
	Existing Total Delay	188968	seconds

Total Delay	**283524**

Build

20	South Crossover		
	Future Volume	1662	vehicles
	Future Delay	25	sec/veh
	Future Total Delay	41550	seconds

21	NB 101 and 94 EB Off Ramp		
	Future Volume	700	vehicles
	Future Delay	6	sec/veh
	Future Total Delay	4200	seconds

22	SB 101 and 94 EB Off Ramp		
	Future Volume	1435	vehicles
	Future Delay	7	sec/veh
	Future Total Delay	10045	seconds

23	94 EB On Ramp and 101		
	Future Volume	2163	vehicles
	Future Delay	0	sec/veh
	Future Total Delay	0	seconds

30	SB 101 and North Crossover		
	Future Volume	3219	vehicles
	Future Delay	47	sec/veh
	Future Total Delay	151293	seconds

31	94 WB Off Ramp and SB 101		
	Future Volume	2666	vehicles
	Future Delay	23	sec/veh
	Future Total Delay	61318	seconds

32	94 WB Off Ramp and NB 101		
	Future Volume	808	vehicles
	Future Delay	5	sec/veh
	Future Total Delay	4040	seconds

Total Future Delay	**272446**

Total Network Delay Reduction	**11078**	**seconds**

Emissions

Existing	920	940	Total
CO	4.11	6.09	10.2
NOx	0.8	1.18	1.98
VOC	0.95	1.41	2.36
	Total Existing		14.54

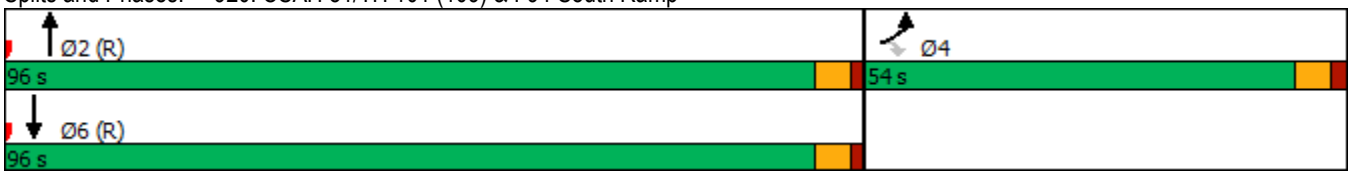
Build	20	21	22	23	30	31	32	Total
CO	1.54	0.18	0.37	0.45	4.28	1.21	0.19	8.22
NOx	0.3	0.04	0.07	0.09	0.83	0.24	0.04	1.61
VOC	0.36	0.04	0.08	0.1	0.99	0.28	0.04	1.89
						Total Future		11.72

Total Reduction	**2.82**

Lane Group	EBL	EBR	NBT	NBR	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	251	222	449	710	1213	1453
Future Volume (vph)	251	222	449	710	1213	1453
Turn Type	Prot	Perm	NA	Free	NA	Free
Protected Phases	4		2		6	
Permitted Phases		4		Free		Free
Detector Phase	4	4	2		6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	15.0		15.0	
Minimum Split (s)	22.0	22.0	21.5		21.5	
Total Split (s)	54.0	54.0	96.0		96.0	
Total Split (%)	36.0%	36.0%	64.0%		64.0%	
Yellow Time (s)	4.0	4.0	4.0		4.0	
All-Red Time (s)	2.0	2.0	1.5		1.5	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.0	5.5		5.5	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Max		C-Max	
Act Effct Green (s)	28.7	28.7	109.8	150.0	109.8	150.0
Actuated g/C Ratio	0.19	0.19	0.73	1.00	0.73	1.00
v/c Ratio	0.79	0.68	0.17	0.49	0.46	1.03
Control Delay	74.0	50.4	6.9	1.1	8.5	34.6
Queue Delay	0.0	0.0	0.0	0.0	0.4	0.0
Total Delay	74.0	50.4	6.9	1.1	8.9	34.6
LOS	E	D	A	A	A	C
Approach Delay			3.4		22.9	
Approach LOS			A		C	

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of 1st Green	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 22.1	Intersection LOS: C
Intersection Capacity Utilization 53.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 920: CSAH 81/TH 101 (109) & I-94 South Ramp



Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	92	3	163	55	645	2574	102
Future Volume (vph)	92	3	163	55	645	2574	102
Turn Type	Perm	NA	Free	Prot	NA	NA	Perm
Protected Phases		8		5	2	6	
Permitted Phases	8		Free				6
Detector Phase	8	8		5	2	6	6
Switch Phase							
Minimum Initial (s)	8.0	8.0		7.0	15.0	15.0	15.0
Minimum Split (s)	22.0	22.0		12.5	23.5	21.5	21.5
Total Split (s)	22.0	22.0		12.5	128.0	115.5	115.5
Total Split (%)	14.7%	14.7%		8.3%	85.3%	77.0%	77.0%
Yellow Time (s)	4.0	4.0		3.5	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		5.5	5.5	5.5	5.5
Lead/Lag				Lag		Lead	Lead
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None		None	C-Max	C-Max	C-Max
Act Effct Green (s)	9.5	9.5	150.0	7.0	129.0	116.5	116.5
Actuated g/C Ratio	0.06	0.06	1.00	0.05	0.86	0.78	0.78
v/c Ratio	0.45	0.51	0.06	0.74	0.21	1.09	0.09
Control Delay	74.2	24.4	0.1	126.9	3.4	65.7	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.2	24.4	0.1	126.9	3.4	65.7	0.9
LOS	E	C	A	F	A	E	A
Approach Delay		34.4			13.2	63.3	
Approach LOS		C			B	E	

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of 1st Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.09	
Intersection Signal Delay: 51.6	Intersection LOS: D
Intersection Capacity Utilization 62.0%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 940: TH 101 (109) & I-94 North Ramp

920: CSAH 81/TH 101 (109) & I-94 South Ramp

Direction	All
Future Volume (vph)	4298
Total Delay / Veh (s/v)	22
CO Emissions (kg)	4.11
NOx Emissions (kg)	0.80
VOC Emissions (kg)	0.95

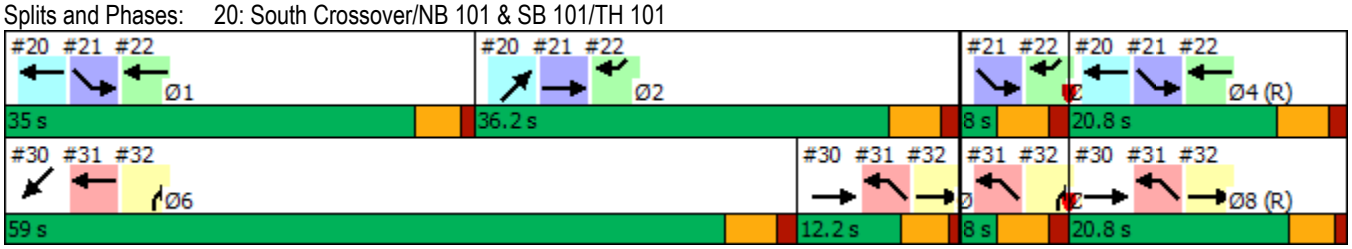
940: TH 101 (109) & I-94 North Ramp

Direction	All
Future Volume (vph)	3634
Total Delay / Veh (s/v)	52
CO Emissions (kg)	6.09
NOx Emissions (kg)	1.18
VOC Emissions (kg)	1.41

Lane Group	WBT	NET	Ø1	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8
Lane Configurations									
Traffic Volume (vph)	1213	449							
Future Volume (vph)	1213	449							
Turn Type	NA	NA							
Protected Phases	1 4	2	1	3	4	5	6	7	8
Permitted Phases									
Detector Phase	1	2							
Switch Phase									
Minimum Initial (s)		4.0	5.0	2.0	4.0	5.0	4.0	2.0	5.0
Minimum Split (s)		28.0	9.5	8.0	20.0	9.5	28.0	8.0	9.5
Total Split (s)		36.2	35.0	8.0	20.8	12.2	59.0	8.0	20.8
Total Split (%)		36.2%	35%	8%	21%	12%	59%	8%	21%
Yellow Time (s)		3.9	3.5	3.9	3.9	3.5	3.9	3.9	3.5
All-Red Time (s)		1.5	1.0	1.5	1.5	1.0	1.5	1.5	1.0
Lost Time Adjust (s)		0.0							
Total Lost Time (s)		5.4							
Lead/Lag		Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag
Lead-Lag Optimize?		Yes	Yes			Yes	Yes		Yes
Recall Mode		None	None	None	C-Max	None	None	None	C-Max
Act Effct Green (s)	58.9	31.2							
Actuated g/C Ratio	0.59	0.31							
v/c Ratio	0.64	0.45							
Control Delay	23.5	29.3							
Queue Delay	0.0	0.0							
Total Delay	23.5	29.3							
LOS	C	C							
Approach Delay	23.5	29.3							
Approach LOS	C	C							

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 4:WBT and 8:, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 25.0	Intersection LOS: C
Intersection Capacity Utilization 55.5%	ICU Level of Service B
Analysis Period (min) 15	

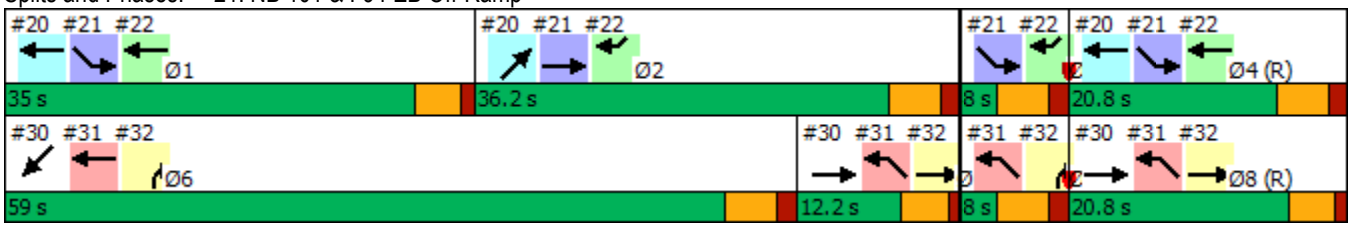
Splits and Phases: 20: South Crossover/NB 101 & SB 101/TH 101



Lane Group	EBT	SEL	Ø1	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8
Lane Configurations									
Traffic Volume (vph)	449	251							
Future Volume (vph)	449	251							
Turn Type	NA	pm+pt							
Protected Phases	2	1 3 4	1	3	4	5	6	7	8
Permitted Phases		1 3 4							
Detector Phase	2	1							
Switch Phase									
Minimum Initial (s)	4.0		5.0	2.0	4.0	5.0	4.0	2.0	5.0
Minimum Split (s)	28.0		9.5	8.0	20.0	9.5	28.0	8.0	9.5
Total Split (s)	36.2		35.0	8.0	20.8	12.2	59.0	8.0	20.8
Total Split (%)	36.2%		35%	8%	21%	12%	59%	8%	21%
Yellow Time (s)	3.9		3.5	3.9	3.9	3.5	3.9	3.9	3.5
All-Red Time (s)	1.5		1.0	1.5	1.5	1.0	1.5	1.5	1.0
Lost Time Adjust (s)	0.0								
Total Lost Time (s)	5.4								
Lead/Lag	Lag		Lead	Lead	Lag	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes		Yes			Yes	Yes		Yes
Recall Mode	None		None	None	C-Max	None	None	None	C-Max
Act Effct Green (s)	31.2	58.9							
Actuated g/C Ratio	0.31	0.59							
v/c Ratio	0.45	0.26							
Control Delay	3.3	10.7							
Queue Delay	0.1	0.0							
Total Delay	3.4	10.7							
LOS	A	B							
Approach Delay	3.4	10.7							
Approach LOS	A	B							

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 4:WBT and 8:, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 6.0	Intersection LOS: A
Intersection Capacity Utilization 34.2%	ICU Level of Service A
Analysis Period (min) 15	

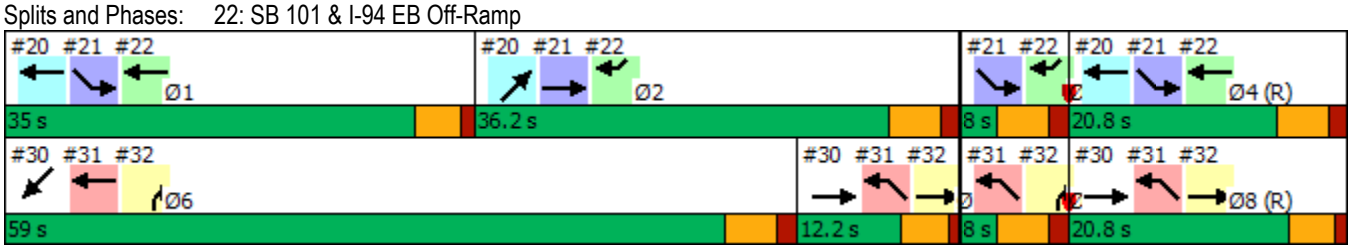
Splits and Phases: 21: NB 101 & I-94 EB Off-Ramp



Lane Group	WBT	SWR	Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8
Lane Configurations										
Traffic Volume (vph)	1213	222								
Future Volume (vph)	1213	222								
Turn Type	NA	custom								
Protected Phases	1 4	2 3	1	2	3	4	5	6	7	8
Permitted Phases										
Detector Phase	1	2								
Switch Phase										
Minimum Initial (s)			5.0	4.0	2.0	4.0	5.0	4.0	2.0	5.0
Minimum Split (s)			9.5	28.0	8.0	20.0	9.5	28.0	8.0	9.5
Total Split (s)			35.0	36.2	8.0	20.8	12.2	59.0	8.0	20.8
Total Split (%)			35%	36%	8%	21%	12%	59%	8%	21%
Yellow Time (s)			3.5	3.9	3.9	3.9	3.5	3.9	3.9	3.5
All-Red Time (s)			1.0	1.5	1.5	1.5	1.0	1.5	1.5	1.0
Lost Time Adjust (s)										
Total Lost Time (s)										
Lead/Lag			Lead	Lag	Lead	Lag	Lag	Lead	Lead	Lag
Lead-Lag Optimize?			Yes	Yes			Yes	Yes		Yes
Recall Mode			None	None	None	C-Max	None	None	None	C-Max
Act Effct Green (s)	58.9	31.2								
Actuated g/C Ratio	0.59	0.31								
v/c Ratio	0.64	0.48								
Control Delay	2.9	32.1								
Queue Delay	0.0	0.0								
Total Delay	2.9	32.1								
LOS	A	C								
Approach Delay	2.9									
Approach LOS	A									

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 4:WBT and 8:, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 7.5	Intersection LOS: A
Intersection Capacity Utilization 55.5%	ICU Level of Service B
Analysis Period (min) 15	

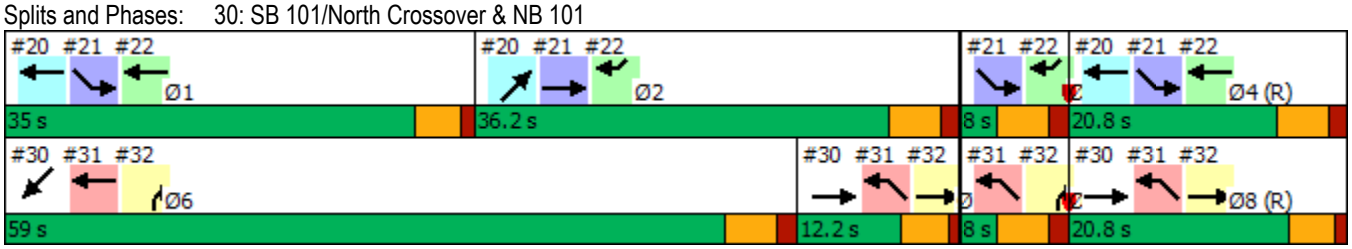
Splits and Phases: 22: SB 101 & I-94 EB Off-Ramp



Lane Group	EBT	SWT	Ø1	Ø2	Ø3	Ø4	Ø5	Ø7	Ø8
Lane Configurations									
Traffic Volume (vph)	645	2574							
Future Volume (vph)	645	2574							
Turn Type	NA	NA							
Protected Phases	5 8	6	1	2	3	4	5	7	8
Permitted Phases									
Detector Phase	5	6							
Switch Phase									
Minimum Initial (s)		4.0	5.0	4.0	2.0	4.0	5.0	2.0	5.0
Minimum Split (s)		28.0	9.5	28.0	8.0	20.0	9.5	8.0	9.5
Total Split (s)		59.0	35.0	36.2	8.0	20.8	12.2	8.0	20.8
Total Split (%)		59.0%	35%	36%	8%	21%	12%	8%	21%
Yellow Time (s)		3.9	3.5	3.9	3.9	3.9	3.5	3.9	3.5
All-Red Time (s)		1.5	1.0	1.5	1.5	1.5	1.0	1.5	1.0
Lost Time Adjust (s)		0.0							
Total Lost Time (s)		5.4							
Lead/Lag		Lead	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?		Yes	Yes	Yes			Yes		Yes
Recall Mode		None	None	None	None	C-Max	None	None	C-Max
Act Effct Green (s)	36.5	53.6							
Actuated g/C Ratio	0.36	0.54							
v/c Ratio	0.55	1.03							
Control Delay	16.2	51.1							
Queue Delay	0.0	4.1							
Total Delay	16.2	55.2							
LOS	B	E							
Approach Delay	16.2	55.2							
Approach LOS	B	E							

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 4:WBT and 8:, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 47.4	Intersection LOS: D
Intersection Capacity Utilization 75.8%	ICU Level of Service D
Analysis Period (min) 15	

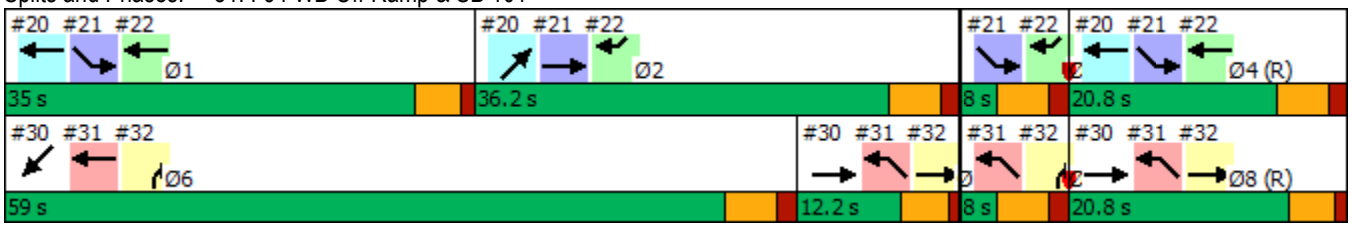
Splits and Phases: 30: SB 101/North Crossover & NB 101



Lane Group	WBT	NWL	Ø1	Ø2	Ø3	Ø4	Ø5	Ø7	Ø8
Lane Configurations									
Traffic Volume (vph)	2574	92							
Future Volume (vph)	2574	92							
Turn Type	NA	pm+pt							
Protected Phases	6	5 7 8	1	2	3	4	5	7	8
Permitted Phases		5 7 8							
Detector Phase	6	5							
Switch Phase									
Minimum Initial (s)	4.0		5.0	4.0	2.0	4.0	5.0	2.0	5.0
Minimum Split (s)	28.0		9.5	28.0	8.0	20.0	9.5	8.0	9.5
Total Split (s)	59.0		35.0	36.2	8.0	20.8	12.2	8.0	20.8
Total Split (%)	59.0%		35%	36%	8%	21%	12%	8%	21%
Yellow Time (s)	3.9		3.5	3.9	3.9	3.9	3.5	3.9	3.5
All-Red Time (s)	1.5		1.0	1.5	1.5	1.5	1.0	1.5	1.0
Lost Time Adjust (s)	0.0								
Total Lost Time (s)	5.4								
Lead/Lag	Lead		Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes		Yes	Yes			Yes		Yes
Recall Mode	None		None	None	None	C-Max	None	None	C-Max
Act Effct Green (s)	53.6	36.5							
Actuated g/C Ratio	0.54	0.36							
v/c Ratio	1.03	0.08							
Control Delay	22.7	21.1							
Queue Delay	0.0	0.0							
Total Delay	22.7	21.1							
LOS	C	C							
Approach Delay	22.7	21.1							
Approach LOS	C	C							

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 4:WBT and 8:, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 22.6	Intersection LOS: C
Intersection Capacity Utilization 68.7%	ICU Level of Service C
Analysis Period (min) 15	

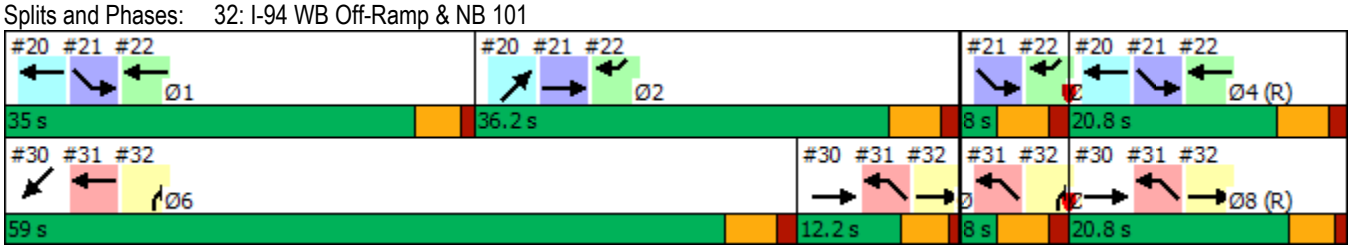
Splits and Phases: 31: I-94 WB Off-Ramp & SB 101



Lane Group	EBT	NBR	Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8
Lane Configurations										
Traffic Volume (vph)	645	163								
Future Volume (vph)	645	163								
Turn Type	NA	custom								
Protected Phases	5 8	6 7	1	2	3	4	5	6	7	8
Permitted Phases		6 7								
Detector Phase	5	6								
Switch Phase										
Minimum Initial (s)			5.0	4.0	2.0	4.0	5.0	4.0	2.0	5.0
Minimum Split (s)			9.5	28.0	8.0	20.0	9.5	28.0	8.0	9.5
Total Split (s)			35.0	36.2	8.0	20.8	12.2	59.0	8.0	20.8
Total Split (%)			35%	36%	8%	21%	12%	59%	8%	21%
Yellow Time (s)			3.5	3.9	3.9	3.9	3.5	3.9	3.9	3.5
All-Red Time (s)			1.0	1.5	1.5	1.5	1.0	1.5	1.5	1.0
Lost Time Adjust (s)										
Total Lost Time (s)										
Lead/Lag			Lead	Lag	Lead	Lag	Lag	Lead	Lead	Lag
Lead-Lag Optimize?			Yes	Yes			Yes	Yes		Yes
Recall Mode			None	None	None	C-Max	None	None	None	C-Max
Act Effct Green (s)	36.5	53.6								
Actuated g/C Ratio	0.36	0.54								
v/c Ratio	0.55	0.21								
Control Delay	3.1	12.9								
Queue Delay	0.0	0.0								
Total Delay	3.1	12.9								
LOS	A	B								
Approach Delay	3.1									
Approach LOS	A									

Intersection Summary			
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 4:WBT and 8:, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.03			
Intersection Signal Delay: 5.1		Intersection LOS: A	
Intersection Capacity Utilization 75.8%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 32: I-94 WB Off-Ramp & NB 101



20: South Crossover/NB 101 & SB 101/TH 101

Direction	All
Future Volume (vph)	1662
Total Delay / Veh (s/v)	25
CO Emissions (kg)	1.54
NOx Emissions (kg)	0.30
VOC Emissions (kg)	0.36

21: NB 101 & I-94 EB Off-Ramp

Direction	All
Future Volume (vph)	700
Total Delay / Veh (s/v)	6
CO Emissions (kg)	0.18
NOx Emissions (kg)	0.04
VOC Emissions (kg)	0.04

22: SB 101 & I-94 EB Off-Ramp

Direction	All
Future Volume (vph)	1435
Total Delay / Veh (s/v)	7
CO Emissions (kg)	0.37
NOx Emissions (kg)	0.07
VOC Emissions (kg)	0.08

23: I-94 EB On-Ramp/NB 101 & SB 101

Direction	All
Future Volume (vph)	2163
Total Delay / Veh (s/v)	0
CO Emissions (kg)	0.45
NOx Emissions (kg)	0.09
VOC Emissions (kg)	0.10

30: SB 101/North Crossover & NB 101

Direction	All
Future Volume (vph)	3219
Total Delay / Veh (s/v)	47
CO Emissions (kg)	4.28
NOx Emissions (kg)	0.83
VOC Emissions (kg)	0.99

31: I-94 WB Off-Ramp & SB 101

Direction	All
Future Volume (vph)	2666
Total Delay / Veh (s/v)	23
CO Emissions (kg)	1.21
NOx Emissions (kg)	0.24
VOC Emissions (kg)	0.28

32: I-94 WB Off-Ramp & NB 101

Direction	All
Future Volume (vph)	808
Total Delay / Veh (s/v)	5
CO Emissions (kg)	0.19
NOx Emissions (kg)	0.04
VOC Emissions (kg)	0.04

Rogers 101/94 Application

Existing

920	South Ramps		
	Existing Volume	4298	vehicles
	Existing Delay	22	sec/veh
	Existing Total Delay	94556	seconds

940	North Ramps		
	Existing Volume	3634	vehicles
	Existing Delay	52	sec/veh
	Existing Total Delay	188968	seconds

Total Delay	**283524**

Build

20	South Crossover		
	Future Volume	1662	vehicles
	Future Delay	25	sec/veh
	Future Total Delay	41550	seconds

21	NB 101 and 94 EB Off Ramp		
	Future Volume	700	vehicles
	Future Delay	6	sec/veh
	Future Total Delay	4200	seconds

22	SB 101 and 94 EB Off Ramp		
	Future Volume	1435	vehicles
	Future Delay	7	sec/veh
	Future Total Delay	10045	seconds

23	94 EB On Ramp and 101		
	Future Volume	2163	vehicles
	Future Delay	0	sec/veh
	Future Total Delay	0	seconds

30	SB 101 and North Crossover		
	Future Volume	3219	vehicles
	Future Delay	47	sec/veh
	Future Total Delay	151293	seconds

31	94 WB Off Ramp and SB 101		
	Future Volume	2666	vehicles
	Future Delay	23	sec/veh
	Future Total Delay	61318	seconds

32	94 WB Off Ramp and NB 101		
	Future Volume	808	vehicles
	Future Delay	5	sec/veh
	Future Total Delay	4040	seconds

Total Future Delay	**272446**

Total Network Delay Reduction	**11078**	**seconds**

Emissions

Existing	920	940	Total
CO	4.11	6.09	10.2
NOx	0.8	1.18	1.98
VOC	0.95	1.41	2.36
	Total Existing		14.54

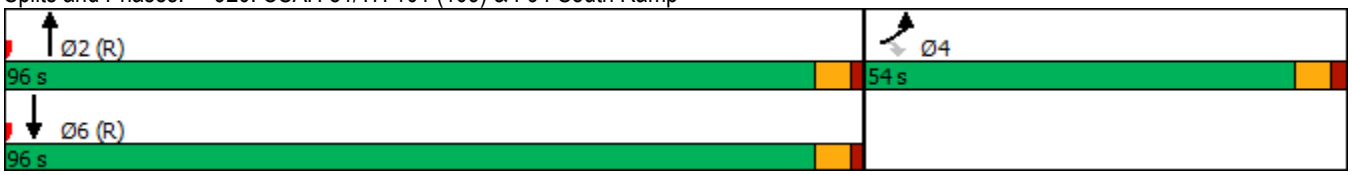
Build	20	21	22	23	30	31	32	Total
CO	1.54	0.18	0.37	0.45	4.28	1.21	0.19	8.22
NOx	0.3	0.04	0.07	0.09	0.83	0.24	0.04	1.61
VOC	0.36	0.04	0.08	0.1	0.99	0.28	0.04	1.89
						Total Future		11.72

Total Reduction	**2.82**

Lane Group	EBL	EBR	NBT	NBR	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	251	222	449	710	1213	1453
Future Volume (vph)	251	222	449	710	1213	1453
Turn Type	Prot	Perm	NA	Free	NA	Free
Protected Phases	4		2		6	
Permitted Phases		4		Free		Free
Detector Phase	4	4	2		6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	15.0		15.0	
Minimum Split (s)	22.0	22.0	21.5		21.5	
Total Split (s)	54.0	54.0	96.0		96.0	
Total Split (%)	36.0%	36.0%	64.0%		64.0%	
Yellow Time (s)	4.0	4.0	4.0		4.0	
All-Red Time (s)	2.0	2.0	1.5		1.5	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.0	5.5		5.5	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Max		C-Max	
Act Effct Green (s)	28.7	28.7	109.8	150.0	109.8	150.0
Actuated g/C Ratio	0.19	0.19	0.73	1.00	0.73	1.00
v/c Ratio	0.79	0.68	0.17	0.49	0.46	1.03
Control Delay	74.0	50.4	6.9	1.1	8.5	34.6
Queue Delay	0.0	0.0	0.0	0.0	0.4	0.0
Total Delay	74.0	50.4	6.9	1.1	8.9	34.6
LOS	E	D	A	A	A	C
Approach Delay			3.4		22.9	
Approach LOS			A		C	

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of 1st Green	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 22.1	Intersection LOS: C
Intersection Capacity Utilization 53.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 920: CSAH 81/TH 101 (109) & I-94 South Ramp



Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	92	3	163	55	645	2574	102
Future Volume (vph)	92	3	163	55	645	2574	102
Turn Type	Perm	NA	Free	Prot	NA	NA	Perm
Protected Phases		8		5	2	6	
Permitted Phases	8		Free				6
Detector Phase	8	8		5	2	6	6
Switch Phase							
Minimum Initial (s)	8.0	8.0		7.0	15.0	15.0	15.0
Minimum Split (s)	22.0	22.0		12.5	23.5	21.5	21.5
Total Split (s)	22.0	22.0		12.5	128.0	115.5	115.5
Total Split (%)	14.7%	14.7%		8.3%	85.3%	77.0%	77.0%
Yellow Time (s)	4.0	4.0		3.5	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		5.5	5.5	5.5	5.5
Lead/Lag				Lag		Lead	Lead
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None		None	C-Max	C-Max	C-Max
Act Effct Green (s)	9.5	9.5	150.0	7.0	129.0	116.5	116.5
Actuated g/C Ratio	0.06	0.06	1.00	0.05	0.86	0.78	0.78
v/c Ratio	0.45	0.51	0.06	0.74	0.21	1.09	0.09
Control Delay	74.2	24.4	0.1	126.9	3.4	65.7	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.2	24.4	0.1	126.9	3.4	65.7	0.9
LOS	E	C	A	F	A	E	A
Approach Delay		34.4			13.2	63.3	
Approach LOS		C			B	E	

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of 1st Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.09	
Intersection Signal Delay: 51.6	Intersection LOS: D
Intersection Capacity Utilization 62.0%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 940: TH 101 (109) & I-94 North Ramp

920: CSAH 81/TH 101 (109) & I-94 South Ramp

Direction	All
Future Volume (vph)	4298
Total Delay / Veh (s/v)	22
CO Emissions (kg)	4.11
NOx Emissions (kg)	0.80
VOC Emissions (kg)	0.95

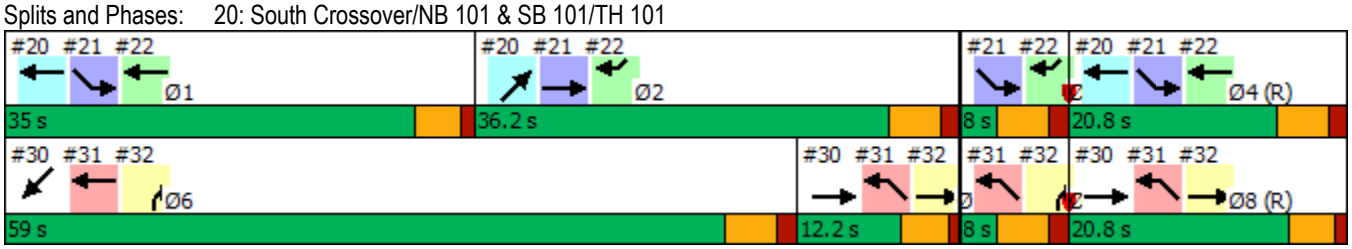
940: TH 101 (109) & I-94 North Ramp

Direction	All
Future Volume (vph)	3634
Total Delay / Veh (s/v)	52
CO Emissions (kg)	6.09
NOx Emissions (kg)	1.18
VOC Emissions (kg)	1.41

Lane Group	WBT	NET	Ø1	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8
Lane Configurations									
Traffic Volume (vph)	1213	449							
Future Volume (vph)	1213	449							
Turn Type	NA	NA							
Protected Phases	1 4	2	1	3	4	5	6	7	8
Permitted Phases									
Detector Phase	1	2							
Switch Phase									
Minimum Initial (s)		4.0	5.0	2.0	4.0	5.0	4.0	2.0	5.0
Minimum Split (s)		28.0	9.5	8.0	20.0	9.5	28.0	8.0	9.5
Total Split (s)		36.2	35.0	8.0	20.8	12.2	59.0	8.0	20.8
Total Split (%)		36.2%	35%	8%	21%	12%	59%	8%	21%
Yellow Time (s)		3.9	3.5	3.9	3.9	3.5	3.9	3.9	3.5
All-Red Time (s)		1.5	1.0	1.5	1.5	1.0	1.5	1.5	1.0
Lost Time Adjust (s)		0.0							
Total Lost Time (s)		5.4							
Lead/Lag		Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag
Lead-Lag Optimize?		Yes	Yes			Yes	Yes		Yes
Recall Mode		None	None	None	C-Max	None	None	None	C-Max
Act Effct Green (s)	58.9	31.2							
Actuated g/C Ratio	0.59	0.31							
v/c Ratio	0.64	0.45							
Control Delay	23.5	29.3							
Queue Delay	0.0	0.0							
Total Delay	23.5	29.3							
LOS	C	C							
Approach Delay	23.5	29.3							
Approach LOS	C	C							

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 4:WBT and 8:, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 25.0	Intersection LOS: C
Intersection Capacity Utilization 55.5%	ICU Level of Service B
Analysis Period (min) 15	

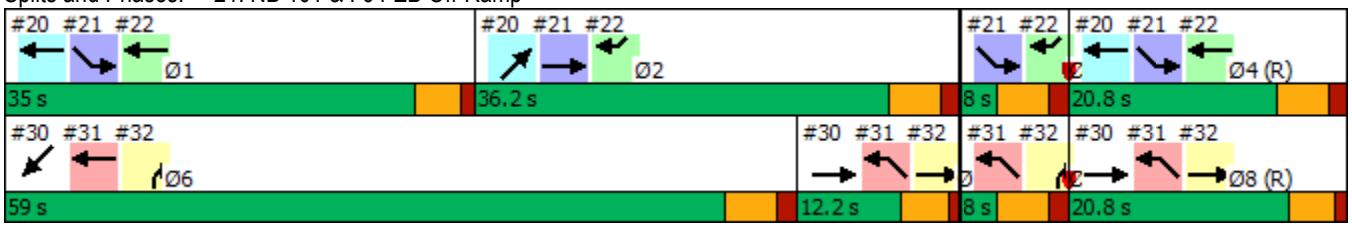
Splits and Phases: 20: South Crossover/NB 101 & SB 101/TH 101



Lane Group	EBT	SEL	Ø1	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8
Lane Configurations									
Traffic Volume (vph)	449	251							
Future Volume (vph)	449	251							
Turn Type	NA	pm+pt							
Protected Phases	2	1 3 4	1	3	4	5	6	7	8
Permitted Phases		1 3 4							
Detector Phase	2	1							
Switch Phase									
Minimum Initial (s)	4.0		5.0	2.0	4.0	5.0	4.0	2.0	5.0
Minimum Split (s)	28.0		9.5	8.0	20.0	9.5	28.0	8.0	9.5
Total Split (s)	36.2		35.0	8.0	20.8	12.2	59.0	8.0	20.8
Total Split (%)	36.2%		35%	8%	21%	12%	59%	8%	21%
Yellow Time (s)	3.9		3.5	3.9	3.9	3.5	3.9	3.9	3.5
All-Red Time (s)	1.5		1.0	1.5	1.5	1.0	1.5	1.5	1.0
Lost Time Adjust (s)	0.0								
Total Lost Time (s)	5.4								
Lead/Lag	Lag		Lead	Lead	Lag	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes		Yes			Yes	Yes		Yes
Recall Mode	None		None	None	C-Max	None	None	None	C-Max
Act Effct Green (s)	31.2	58.9							
Actuated g/C Ratio	0.31	0.59							
v/c Ratio	0.45	0.26							
Control Delay	3.3	10.7							
Queue Delay	0.1	0.0							
Total Delay	3.4	10.7							
LOS	A	B							
Approach Delay	3.4	10.7							
Approach LOS	A	B							

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 4:WBT and 8:, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 6.0	Intersection LOS: A
Intersection Capacity Utilization 34.2%	ICU Level of Service A
Analysis Period (min) 15	

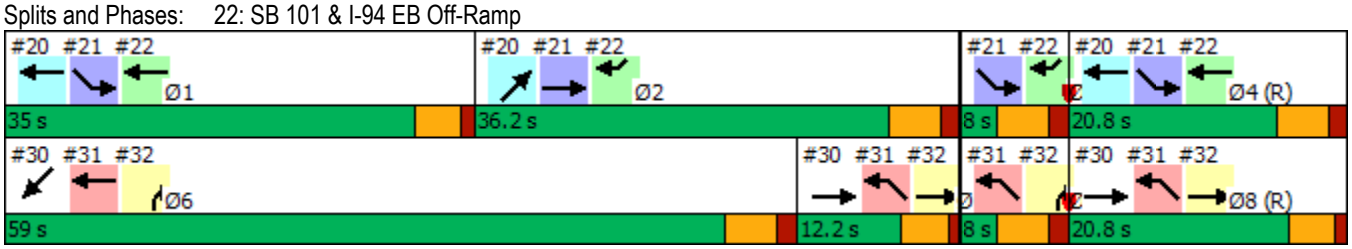
Splits and Phases: 21: NB 101 & I-94 EB Off-Ramp



Lane Group	WBT	SWR	Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8
Lane Configurations										
Traffic Volume (vph)	1213	222								
Future Volume (vph)	1213	222								
Turn Type	NA	custom								
Protected Phases	1 4	2 3	1	2	3	4	5	6	7	8
Permitted Phases										
Detector Phase	1	2								
Switch Phase										
Minimum Initial (s)			5.0	4.0	2.0	4.0	5.0	4.0	2.0	5.0
Minimum Split (s)			9.5	28.0	8.0	20.0	9.5	28.0	8.0	9.5
Total Split (s)			35.0	36.2	8.0	20.8	12.2	59.0	8.0	20.8
Total Split (%)			35%	36%	8%	21%	12%	59%	8%	21%
Yellow Time (s)			3.5	3.9	3.9	3.9	3.5	3.9	3.9	3.5
All-Red Time (s)			1.0	1.5	1.5	1.5	1.0	1.5	1.5	1.0
Lost Time Adjust (s)										
Total Lost Time (s)										
Lead/Lag			Lead	Lag	Lead	Lag	Lag	Lead	Lead	Lag
Lead-Lag Optimize?			Yes	Yes			Yes	Yes		Yes
Recall Mode			None	None	None	C-Max	None	None	None	C-Max
Act Effct Green (s)	58.9	31.2								
Actuated g/C Ratio	0.59	0.31								
v/c Ratio	0.64	0.48								
Control Delay	2.9	32.1								
Queue Delay	0.0	0.0								
Total Delay	2.9	32.1								
LOS	A	C								
Approach Delay	2.9									
Approach LOS	A									

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 4:WBT and 8:, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 7.5	Intersection LOS: A
Intersection Capacity Utilization 55.5%	ICU Level of Service B
Analysis Period (min) 15	

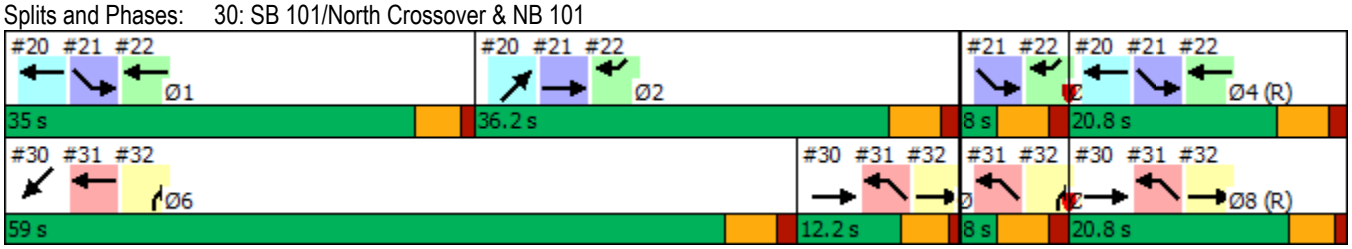
Splits and Phases: 22: SB 101 & I-94 EB Off-Ramp



Lane Group	EBT	SWT	Ø1	Ø2	Ø3	Ø4	Ø5	Ø7	Ø8
Lane Configurations									
Traffic Volume (vph)	645	2574							
Future Volume (vph)	645	2574							
Turn Type	NA	NA							
Protected Phases	5 8	6	1	2	3	4	5	7	8
Permitted Phases									
Detector Phase	5	6							
Switch Phase									
Minimum Initial (s)		4.0	5.0	4.0	2.0	4.0	5.0	2.0	5.0
Minimum Split (s)		28.0	9.5	28.0	8.0	20.0	9.5	8.0	9.5
Total Split (s)		59.0	35.0	36.2	8.0	20.8	12.2	8.0	20.8
Total Split (%)		59.0%	35%	36%	8%	21%	12%	8%	21%
Yellow Time (s)		3.9	3.5	3.9	3.9	3.9	3.5	3.9	3.5
All-Red Time (s)		1.5	1.0	1.5	1.5	1.5	1.0	1.5	1.0
Lost Time Adjust (s)		0.0							
Total Lost Time (s)		5.4							
Lead/Lag		Lead	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?		Yes	Yes	Yes			Yes		Yes
Recall Mode		None	None	None	None	C-Max	None	None	C-Max
Act Effct Green (s)	36.5	53.6							
Actuated g/C Ratio	0.36	0.54							
v/c Ratio	0.55	1.03							
Control Delay	16.2	51.1							
Queue Delay	0.0	4.1							
Total Delay	16.2	55.2							
LOS	B	E							
Approach Delay	16.2	55.2							
Approach LOS	B	E							

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 4:WBT and 8:, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 47.4	Intersection LOS: D
Intersection Capacity Utilization 75.8%	ICU Level of Service D
Analysis Period (min) 15	

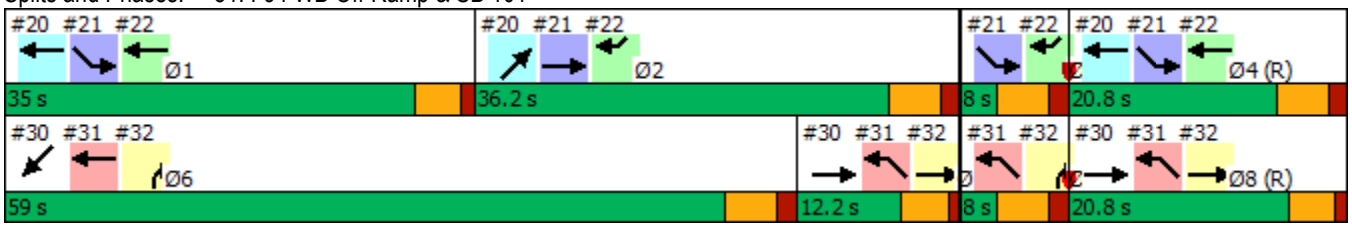
Splits and Phases: 30: SB 101/North Crossover & NB 101



Lane Group	WBT	NWL	Ø1	Ø2	Ø3	Ø4	Ø5	Ø7	Ø8
Lane Configurations									
Traffic Volume (vph)	2574	92							
Future Volume (vph)	2574	92							
Turn Type	NA	pm+pt							
Protected Phases	6	5 7 8	1	2	3	4	5	7	8
Permitted Phases		5 7 8							
Detector Phase	6	5							
Switch Phase									
Minimum Initial (s)	4.0		5.0	4.0	2.0	4.0	5.0	2.0	5.0
Minimum Split (s)	28.0		9.5	28.0	8.0	20.0	9.5	8.0	9.5
Total Split (s)	59.0		35.0	36.2	8.0	20.8	12.2	8.0	20.8
Total Split (%)	59.0%		35%	36%	8%	21%	12%	8%	21%
Yellow Time (s)	3.9		3.5	3.9	3.9	3.9	3.5	3.9	3.5
All-Red Time (s)	1.5		1.0	1.5	1.5	1.5	1.0	1.5	1.0
Lost Time Adjust (s)	0.0								
Total Lost Time (s)	5.4								
Lead/Lag	Lead		Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes		Yes	Yes			Yes		Yes
Recall Mode	None		None	None	None	C-Max	None	None	C-Max
Act Effct Green (s)	53.6	36.5							
Actuated g/C Ratio	0.54	0.36							
v/c Ratio	1.03	0.08							
Control Delay	22.7	21.1							
Queue Delay	0.0	0.0							
Total Delay	22.7	21.1							
LOS	C	C							
Approach Delay	22.7	21.1							
Approach LOS	C	C							

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 4:WBT and 8:, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 22.6	Intersection LOS: C
Intersection Capacity Utilization 68.7%	ICU Level of Service C
Analysis Period (min) 15	

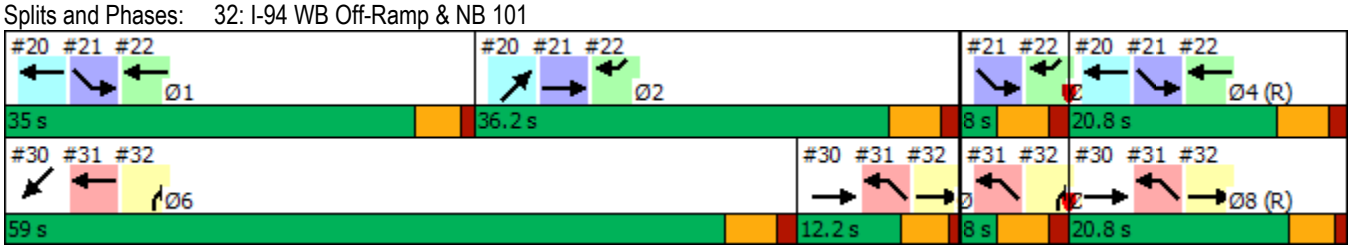
Splits and Phases: 31: I-94 WB Off-Ramp & SB 101



Lane Group	EBT	NBR	Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8
Lane Configurations										
Traffic Volume (vph)	645	163								
Future Volume (vph)	645	163								
Turn Type	NA	custom								
Protected Phases	5 8	6 7	1	2	3	4	5	6	7	8
Permitted Phases		6 7								
Detector Phase	5	6								
Switch Phase										
Minimum Initial (s)			5.0	4.0	2.0	4.0	5.0	4.0	2.0	5.0
Minimum Split (s)			9.5	28.0	8.0	20.0	9.5	28.0	8.0	9.5
Total Split (s)			35.0	36.2	8.0	20.8	12.2	59.0	8.0	20.8
Total Split (%)			35%	36%	8%	21%	12%	59%	8%	21%
Yellow Time (s)			3.5	3.9	3.9	3.9	3.5	3.9	3.9	3.5
All-Red Time (s)			1.0	1.5	1.5	1.5	1.0	1.5	1.5	1.0
Lost Time Adjust (s)										
Total Lost Time (s)										
Lead/Lag			Lead	Lag	Lead	Lag	Lag	Lead	Lead	Lag
Lead-Lag Optimize?			Yes	Yes			Yes	Yes		Yes
Recall Mode			None	None	None	C-Max	None	None	None	C-Max
Act Effct Green (s)	36.5	53.6								
Actuated g/C Ratio	0.36	0.54								
v/c Ratio	0.55	0.21								
Control Delay	3.1	12.9								
Queue Delay	0.0	0.0								
Total Delay	3.1	12.9								
LOS	A	B								
Approach Delay	3.1									
Approach LOS	A									

Intersection Summary			
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 4:WBT and 8:, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.03			
Intersection Signal Delay: 5.1		Intersection LOS: A	
Intersection Capacity Utilization 75.8%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 32: I-94 WB Off-Ramp & NB 101



20: South Crossover/NB 101 & SB 101/TH 101

Direction	All
Future Volume (vph)	1662
Total Delay / Veh (s/v)	25
CO Emissions (kg)	1.54
NOx Emissions (kg)	0.30
VOC Emissions (kg)	0.36

21: NB 101 & I-94 EB Off-Ramp

Direction	All
Future Volume (vph)	700
Total Delay / Veh (s/v)	6
CO Emissions (kg)	0.18
NOx Emissions (kg)	0.04
VOC Emissions (kg)	0.04

22: SB 101 & I-94 EB Off-Ramp

Direction	All
Future Volume (vph)	1435
Total Delay / Veh (s/v)	7
CO Emissions (kg)	0.37
NOx Emissions (kg)	0.07
VOC Emissions (kg)	0.08

23: I-94 EB On-Ramp/NB 101 & SB 101

Direction	All
Future Volume (vph)	2163
Total Delay / Veh (s/v)	0
CO Emissions (kg)	0.45
NOx Emissions (kg)	0.09
VOC Emissions (kg)	0.10

30: SB 101/North Crossover & NB 101

Direction	All
Future Volume (vph)	3219
Total Delay / Veh (s/v)	47
CO Emissions (kg)	4.28
NOx Emissions (kg)	0.83
VOC Emissions (kg)	0.99

31: I-94 WB Off-Ramp & SB 101

Direction	All
Future Volume (vph)	2666
Total Delay / Veh (s/v)	23
CO Emissions (kg)	1.21
NOx Emissions (kg)	0.24
VOC Emissions (kg)	0.28

32: I-94 WB Off-Ramp & NB 101

Direction	All
Future Volume (vph)	808
Total Delay / Veh (s/v)	5
CO Emissions (kg)	0.19
NOx Emissions (kg)	0.04
VOC Emissions (kg)	0.04

Rogers 101/94 Application

Existing

920	South Ramps		
	Existing Volume	4298	vehicles
	Existing Delay	22	sec/veh
	Existing Total Delay	94556	seconds

940	North Ramps		
	Existing Volume	3634	vehicles
	Existing Delay	52	sec/veh
	Existing Total Delay	188968	seconds

Total Delay	**283524**

Build

20	South Crossover		
	Future Volume	1662	vehicles
	Future Delay	25	sec/veh
	Future Total Delay	41550	seconds

21	NB 101 and 94 EB Off Ramp		
	Future Volume	700	vehicles
	Future Delay	6	sec/veh
	Future Total Delay	4200	seconds

22	SB 101 and 94 EB Off Ramp		
	Future Volume	1435	vehicles
	Future Delay	7	sec/veh
	Future Total Delay	10045	seconds

23	94 EB On Ramp and 101		
	Future Volume	2163	vehicles
	Future Delay	0	sec/veh
	Future Total Delay	0	seconds

30	SB 101 and North Crossover		
	Future Volume	3219	vehicles
	Future Delay	47	sec/veh
	Future Total Delay	151293	seconds

31	94 WB Off Ramp and SB 101		
	Future Volume	2666	vehicles
	Future Delay	23	sec/veh
	Future Total Delay	61318	seconds

32	94 WB Off Ramp and NB 101		
	Future Volume	808	vehicles
	Future Delay	5	sec/veh
	Future Total Delay	4040	seconds

Total Future Delay	**272446**

Total Network Delay Reduction	**11078**	**seconds**

Emissions

Existing	920	940	Total
CO	4.11	6.09	10.2
NOx	0.8	1.18	1.98
VOC	0.95	1.41	2.36
	Total Existing		14.54

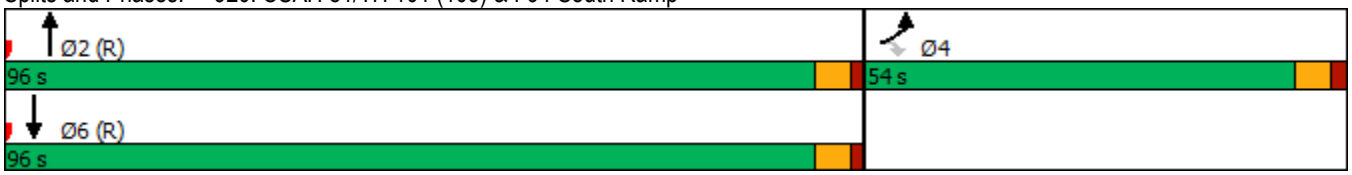
Build	20	21	22	23	30	31	32	Total
CO	1.54	0.18	0.37	0.45	4.28	1.21	0.19	8.22
NOx	0.3	0.04	0.07	0.09	0.83	0.24	0.04	1.61
VOC	0.36	0.04	0.08	0.1	0.99	0.28	0.04	1.89
						Total Future		11.72

Total Reduction	**2.82**

Lane Group	EBL	EBR	NBT	NBR	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	251	222	449	710	1213	1453
Future Volume (vph)	251	222	449	710	1213	1453
Turn Type	Prot	Perm	NA	Free	NA	Free
Protected Phases	4		2		6	
Permitted Phases		4		Free		Free
Detector Phase	4	4	2		6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	15.0		15.0	
Minimum Split (s)	22.0	22.0	21.5		21.5	
Total Split (s)	54.0	54.0	96.0		96.0	
Total Split (%)	36.0%	36.0%	64.0%		64.0%	
Yellow Time (s)	4.0	4.0	4.0		4.0	
All-Red Time (s)	2.0	2.0	1.5		1.5	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.0	5.5		5.5	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Max		C-Max	
Act Effct Green (s)	28.7	28.7	109.8	150.0	109.8	150.0
Actuated g/C Ratio	0.19	0.19	0.73	1.00	0.73	1.00
v/c Ratio	0.79	0.68	0.17	0.49	0.46	1.03
Control Delay	74.0	50.4	6.9	1.1	8.5	34.6
Queue Delay	0.0	0.0	0.0	0.0	0.4	0.0
Total Delay	74.0	50.4	6.9	1.1	8.9	34.6
LOS	E	D	A	A	A	C
Approach Delay			3.4		22.9	
Approach LOS			A		C	

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of 1st Green	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 22.1	Intersection LOS: C
Intersection Capacity Utilization 53.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 920: CSAH 81/TH 101 (109) & I-94 South Ramp



Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	92	3	163	55	645	2574	102
Future Volume (vph)	92	3	163	55	645	2574	102
Turn Type	Perm	NA	Free	Prot	NA	NA	Perm
Protected Phases		8		5	2	6	
Permitted Phases	8		Free				6
Detector Phase	8	8		5	2	6	6
Switch Phase							
Minimum Initial (s)	8.0	8.0		7.0	15.0	15.0	15.0
Minimum Split (s)	22.0	22.0		12.5	23.5	21.5	21.5
Total Split (s)	22.0	22.0		12.5	128.0	115.5	115.5
Total Split (%)	14.7%	14.7%		8.3%	85.3%	77.0%	77.0%
Yellow Time (s)	4.0	4.0		3.5	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		5.5	5.5	5.5	5.5
Lead/Lag				Lag		Lead	Lead
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None		None	C-Max	C-Max	C-Max
Act Effct Green (s)	9.5	9.5	150.0	7.0	129.0	116.5	116.5
Actuated g/C Ratio	0.06	0.06	1.00	0.05	0.86	0.78	0.78
v/c Ratio	0.45	0.51	0.06	0.74	0.21	1.09	0.09
Control Delay	74.2	24.4	0.1	126.9	3.4	65.7	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.2	24.4	0.1	126.9	3.4	65.7	0.9
LOS	E	C	A	F	A	E	A
Approach Delay		34.4			13.2	63.3	
Approach LOS		C			B	E	

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of 1st Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.09	
Intersection Signal Delay: 51.6	Intersection LOS: D
Intersection Capacity Utilization 62.0%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 940: TH 101 (109) & I-94 North Ramp

920: CSAH 81/TH 101 (109) & I-94 South Ramp

Direction	All
Future Volume (vph)	4298
Total Delay / Veh (s/v)	22
CO Emissions (kg)	4.11
NOx Emissions (kg)	0.80
VOC Emissions (kg)	0.95

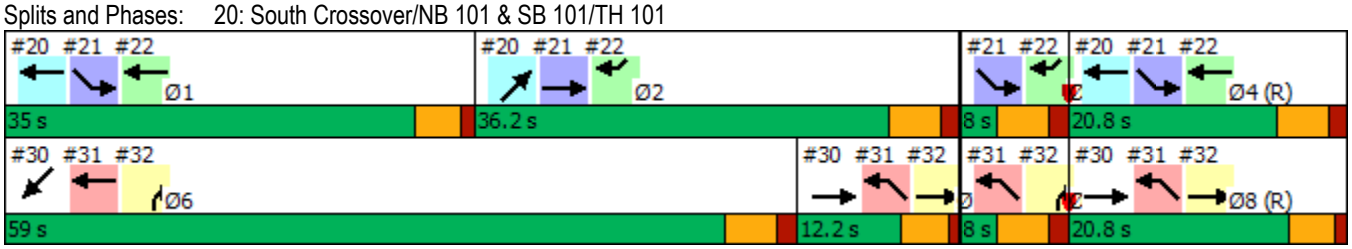
940: TH 101 (109) & I-94 North Ramp

Direction	All
Future Volume (vph)	3634
Total Delay / Veh (s/v)	52
CO Emissions (kg)	6.09
NOx Emissions (kg)	1.18
VOC Emissions (kg)	1.41

Lane Group	WBT	NET	Ø1	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8
Lane Configurations									
Traffic Volume (vph)	1213	449							
Future Volume (vph)	1213	449							
Turn Type	NA	NA							
Protected Phases	1 4	2	1	3	4	5	6	7	8
Permitted Phases									
Detector Phase	1	2							
Switch Phase									
Minimum Initial (s)		4.0	5.0	2.0	4.0	5.0	4.0	2.0	5.0
Minimum Split (s)		28.0	9.5	8.0	20.0	9.5	28.0	8.0	9.5
Total Split (s)		36.2	35.0	8.0	20.8	12.2	59.0	8.0	20.8
Total Split (%)		36.2%	35%	8%	21%	12%	59%	8%	21%
Yellow Time (s)		3.9	3.5	3.9	3.9	3.5	3.9	3.9	3.5
All-Red Time (s)		1.5	1.0	1.5	1.5	1.0	1.5	1.5	1.0
Lost Time Adjust (s)		0.0							
Total Lost Time (s)		5.4							
Lead/Lag		Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag
Lead-Lag Optimize?		Yes	Yes			Yes	Yes		Yes
Recall Mode		None	None	None	C-Max	None	None	None	C-Max
Act Effct Green (s)	58.9	31.2							
Actuated g/C Ratio	0.59	0.31							
v/c Ratio	0.64	0.45							
Control Delay	23.5	29.3							
Queue Delay	0.0	0.0							
Total Delay	23.5	29.3							
LOS	C	C							
Approach Delay	23.5	29.3							
Approach LOS	C	C							

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 4:WBT and 8:, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 25.0	Intersection LOS: C
Intersection Capacity Utilization 55.5%	ICU Level of Service B
Analysis Period (min) 15	

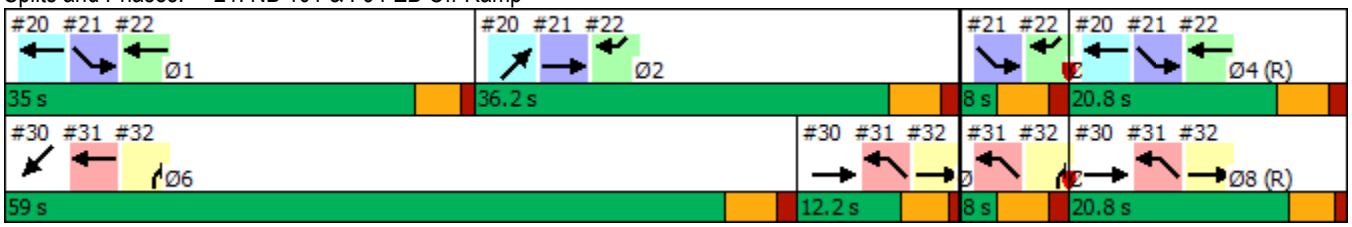
Splits and Phases: 20: South Crossover/NB 101 & SB 101/TH 101



Lane Group	EBT	SEL	Ø1	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8
Lane Configurations									
Traffic Volume (vph)	449	251							
Future Volume (vph)	449	251							
Turn Type	NA	pm+pt							
Protected Phases	2	1 3 4	1	3	4	5	6	7	8
Permitted Phases		1 3 4							
Detector Phase	2	1							
Switch Phase									
Minimum Initial (s)	4.0		5.0	2.0	4.0	5.0	4.0	2.0	5.0
Minimum Split (s)	28.0		9.5	8.0	20.0	9.5	28.0	8.0	9.5
Total Split (s)	36.2		35.0	8.0	20.8	12.2	59.0	8.0	20.8
Total Split (%)	36.2%		35%	8%	21%	12%	59%	8%	21%
Yellow Time (s)	3.9		3.5	3.9	3.9	3.5	3.9	3.9	3.5
All-Red Time (s)	1.5		1.0	1.5	1.5	1.0	1.5	1.5	1.0
Lost Time Adjust (s)	0.0								
Total Lost Time (s)	5.4								
Lead/Lag	Lag		Lead	Lead	Lag	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes		Yes			Yes	Yes		Yes
Recall Mode	None		None	None	C-Max	None	None	None	C-Max
Act Effct Green (s)	31.2	58.9							
Actuated g/C Ratio	0.31	0.59							
v/c Ratio	0.45	0.26							
Control Delay	3.3	10.7							
Queue Delay	0.1	0.0							
Total Delay	3.4	10.7							
LOS	A	B							
Approach Delay	3.4	10.7							
Approach LOS	A	B							

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 4:WBT and 8:, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 6.0	Intersection LOS: A
Intersection Capacity Utilization 34.2%	ICU Level of Service A
Analysis Period (min) 15	

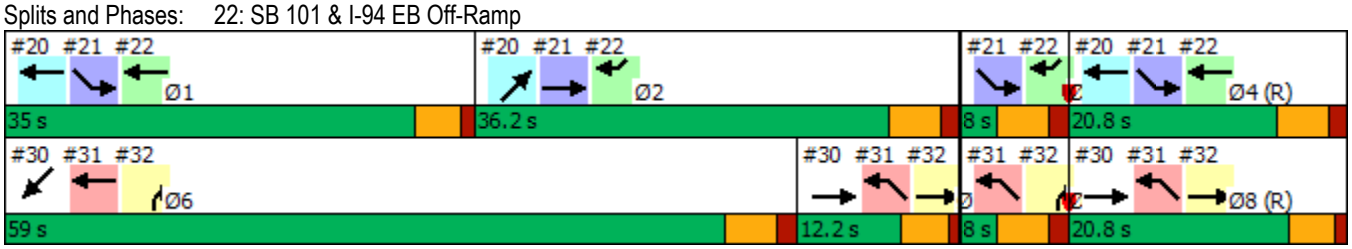
Splits and Phases: 21: NB 101 & I-94 EB Off-Ramp



Lane Group	WBT	SWR	Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8
Lane Configurations										
Traffic Volume (vph)	1213	222								
Future Volume (vph)	1213	222								
Turn Type	NA	custom								
Protected Phases	1 4	2 3	1	2	3	4	5	6	7	8
Permitted Phases										
Detector Phase	1	2								
Switch Phase										
Minimum Initial (s)			5.0	4.0	2.0	4.0	5.0	4.0	2.0	5.0
Minimum Split (s)			9.5	28.0	8.0	20.0	9.5	28.0	8.0	9.5
Total Split (s)			35.0	36.2	8.0	20.8	12.2	59.0	8.0	20.8
Total Split (%)			35%	36%	8%	21%	12%	59%	8%	21%
Yellow Time (s)			3.5	3.9	3.9	3.9	3.5	3.9	3.9	3.5
All-Red Time (s)			1.0	1.5	1.5	1.5	1.0	1.5	1.5	1.0
Lost Time Adjust (s)										
Total Lost Time (s)										
Lead/Lag			Lead	Lag	Lead	Lag	Lag	Lead	Lead	Lag
Lead-Lag Optimize?			Yes	Yes			Yes	Yes		Yes
Recall Mode			None	None	None	C-Max	None	None	None	C-Max
Act Effct Green (s)	58.9	31.2								
Actuated g/C Ratio	0.59	0.31								
v/c Ratio	0.64	0.48								
Control Delay	2.9	32.1								
Queue Delay	0.0	0.0								
Total Delay	2.9	32.1								
LOS	A	C								
Approach Delay	2.9									
Approach LOS	A									

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 4:WBT and 8:, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 7.5	Intersection LOS: A
Intersection Capacity Utilization 55.5%	ICU Level of Service B
Analysis Period (min) 15	

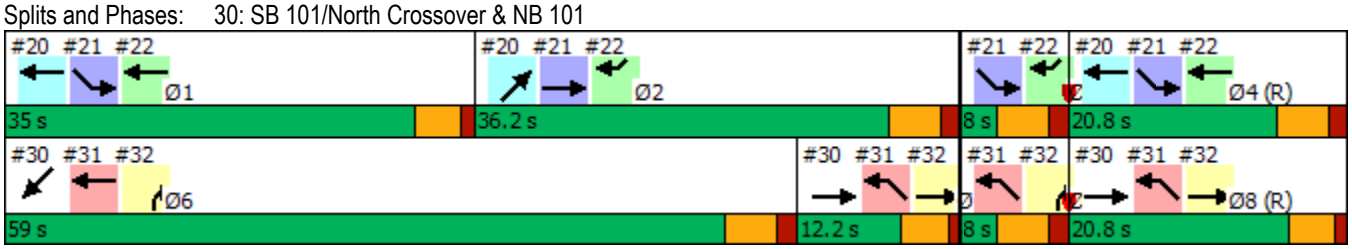
Splits and Phases: 22: SB 101 & I-94 EB Off-Ramp



Lane Group	EBT	SWT	Ø1	Ø2	Ø3	Ø4	Ø5	Ø7	Ø8
Lane Configurations									
Traffic Volume (vph)	645	2574							
Future Volume (vph)	645	2574							
Turn Type	NA	NA							
Protected Phases	5 8	6	1	2	3	4	5	7	8
Permitted Phases									
Detector Phase	5	6							
Switch Phase									
Minimum Initial (s)		4.0	5.0	4.0	2.0	4.0	5.0	2.0	5.0
Minimum Split (s)		28.0	9.5	28.0	8.0	20.0	9.5	8.0	9.5
Total Split (s)		59.0	35.0	36.2	8.0	20.8	12.2	8.0	20.8
Total Split (%)		59.0%	35%	36%	8%	21%	12%	8%	21%
Yellow Time (s)		3.9	3.5	3.9	3.9	3.9	3.5	3.9	3.5
All-Red Time (s)		1.5	1.0	1.5	1.5	1.5	1.0	1.5	1.0
Lost Time Adjust (s)		0.0							
Total Lost Time (s)		5.4							
Lead/Lag		Lead	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?		Yes	Yes	Yes			Yes		Yes
Recall Mode		None	None	None	None	C-Max	None	None	C-Max
Act Effct Green (s)	36.5	53.6							
Actuated g/C Ratio	0.36	0.54							
v/c Ratio	0.55	1.03							
Control Delay	16.2	51.1							
Queue Delay	0.0	4.1							
Total Delay	16.2	55.2							
LOS	B	E							
Approach Delay	16.2	55.2							
Approach LOS	B	E							

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 4:WBT and 8:, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 47.4	Intersection LOS: D
Intersection Capacity Utilization 75.8%	ICU Level of Service D
Analysis Period (min) 15	

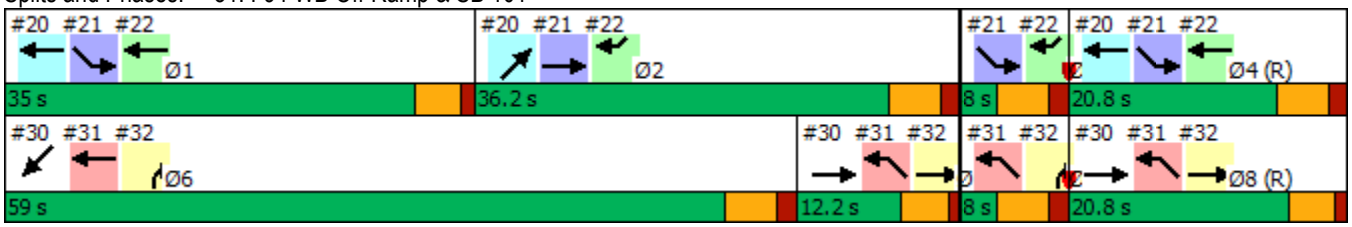
Splits and Phases: 30: SB 101/North Crossover & NB 101



Lane Group	WBT	NWL	Ø1	Ø2	Ø3	Ø4	Ø5	Ø7	Ø8
Lane Configurations									
Traffic Volume (vph)	2574	92							
Future Volume (vph)	2574	92							
Turn Type	NA	pm+pt							
Protected Phases	6	5 7 8	1	2	3	4	5	7	8
Permitted Phases		5 7 8							
Detector Phase	6	5							
Switch Phase									
Minimum Initial (s)	4.0		5.0	4.0	2.0	4.0	5.0	2.0	5.0
Minimum Split (s)	28.0		9.5	28.0	8.0	20.0	9.5	8.0	9.5
Total Split (s)	59.0		35.0	36.2	8.0	20.8	12.2	8.0	20.8
Total Split (%)	59.0%		35%	36%	8%	21%	12%	8%	21%
Yellow Time (s)	3.9		3.5	3.9	3.9	3.9	3.5	3.9	3.5
All-Red Time (s)	1.5		1.0	1.5	1.5	1.5	1.0	1.5	1.0
Lost Time Adjust (s)	0.0								
Total Lost Time (s)	5.4								
Lead/Lag	Lead		Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes		Yes	Yes			Yes		Yes
Recall Mode	None		None	None	None	C-Max	None	None	C-Max
Act Effct Green (s)	53.6	36.5							
Actuated g/C Ratio	0.54	0.36							
v/c Ratio	1.03	0.08							
Control Delay	22.7	21.1							
Queue Delay	0.0	0.0							
Total Delay	22.7	21.1							
LOS	C	C							
Approach Delay	22.7	21.1							
Approach LOS	C	C							

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 4:WBT and 8:, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 22.6	Intersection LOS: C
Intersection Capacity Utilization 68.7%	ICU Level of Service C
Analysis Period (min) 15	

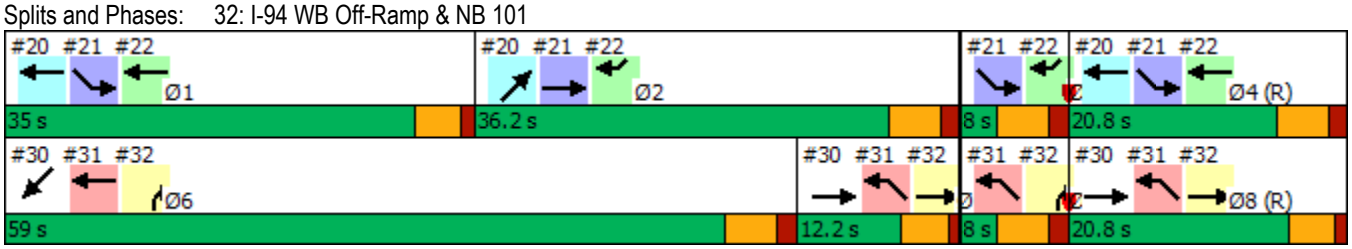
Splits and Phases: 31: I-94 WB Off-Ramp & SB 101



Lane Group	EBT	NBR	Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8
Lane Configurations										
Traffic Volume (vph)	645	163								
Future Volume (vph)	645	163								
Turn Type	NA	custom								
Protected Phases	5 8	6 7	1	2	3	4	5	6	7	8
Permitted Phases		6 7								
Detector Phase	5	6								
Switch Phase										
Minimum Initial (s)			5.0	4.0	2.0	4.0	5.0	4.0	2.0	5.0
Minimum Split (s)			9.5	28.0	8.0	20.0	9.5	28.0	8.0	9.5
Total Split (s)			35.0	36.2	8.0	20.8	12.2	59.0	8.0	20.8
Total Split (%)			35%	36%	8%	21%	12%	59%	8%	21%
Yellow Time (s)			3.5	3.9	3.9	3.9	3.5	3.9	3.9	3.5
All-Red Time (s)			1.0	1.5	1.5	1.5	1.0	1.5	1.5	1.0
Lost Time Adjust (s)										
Total Lost Time (s)										
Lead/Lag			Lead	Lag	Lead	Lag	Lag	Lead	Lead	Lag
Lead-Lag Optimize?			Yes	Yes			Yes	Yes		Yes
Recall Mode			None	None	None	C-Max	None	None	None	C-Max
Act Effct Green (s)	36.5	53.6								
Actuated g/C Ratio	0.36	0.54								
v/c Ratio	0.55	0.21								
Control Delay	3.1	12.9								
Queue Delay	0.0	0.0								
Total Delay	3.1	12.9								
LOS	A	B								
Approach Delay	3.1									
Approach LOS	A									

Intersection Summary			
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 4:WBT and 8:, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.03			
Intersection Signal Delay: 5.1		Intersection LOS: A	
Intersection Capacity Utilization 75.8%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 32: I-94 WB Off-Ramp & NB 101



20: South Crossover/NB 101 & SB 101/TH 101

Direction	All
Future Volume (vph)	1662
Total Delay / Veh (s/v)	25
CO Emissions (kg)	1.54
NOx Emissions (kg)	0.30
VOC Emissions (kg)	0.36

21: NB 101 & I-94 EB Off-Ramp

Direction	All
Future Volume (vph)	700
Total Delay / Veh (s/v)	6
CO Emissions (kg)	0.18
NOx Emissions (kg)	0.04
VOC Emissions (kg)	0.04

22: SB 101 & I-94 EB Off-Ramp

Direction	All
Future Volume (vph)	1435
Total Delay / Veh (s/v)	7
CO Emissions (kg)	0.37
NOx Emissions (kg)	0.07
VOC Emissions (kg)	0.08

23: I-94 EB On-Ramp/NB 101 & SB 101

Direction	All
Future Volume (vph)	2163
Total Delay / Veh (s/v)	0
CO Emissions (kg)	0.45
NOx Emissions (kg)	0.09
VOC Emissions (kg)	0.10

30: SB 101/North Crossover & NB 101

Direction	All
Future Volume (vph)	3219
Total Delay / Veh (s/v)	47
CO Emissions (kg)	4.28
NOx Emissions (kg)	0.83
VOC Emissions (kg)	0.99

31: I-94 WB Off-Ramp & SB 101

Direction	All
Future Volume (vph)	2666
Total Delay / Veh (s/v)	23
CO Emissions (kg)	1.21
NOx Emissions (kg)	0.24
VOC Emissions (kg)	0.28

32: I-94 WB Off-Ramp & NB 101

Direction	All
Future Volume (vph)	808
Total Delay / Veh (s/v)	5
CO Emissions (kg)	0.19
NOx Emissions (kg)	0.04
VOC Emissions (kg)	0.04

Rogers 101/94 Application

Existing

920	South Ramps		
	Existing Volume	4298	vehicles
	Existing Delay	22	sec/veh
	Existing Total Delay	94556	seconds

940	North Ramps		
	Existing Volume	3634	vehicles
	Existing Delay	52	sec/veh
	Existing Total Delay	188968	seconds

Total Delay	**283524**

Build

20	South Crossover		
	Future Volume	1662	vehicles
	Future Delay	25	sec/veh
	Future Total Delay	41550	seconds

21	NB 101 and 94 EB Off Ramp		
	Future Volume	700	vehicles
	Future Delay	6	sec/veh
	Future Total Delay	4200	seconds

22	SB 101 and 94 EB Off Ramp		
	Future Volume	1435	vehicles
	Future Delay	7	sec/veh
	Future Total Delay	10045	seconds

23	94 EB On Ramp and 101		
	Future Volume	2163	vehicles
	Future Delay	0	sec/veh
	Future Total Delay	0	seconds

30	SB 101 and North Crossover		
	Future Volume	3219	vehicles
	Future Delay	47	sec/veh
	Future Total Delay	151293	seconds

31	94 WB Off Ramp and SB 101		
	Future Volume	2666	vehicles
	Future Delay	23	sec/veh
	Future Total Delay	61318	seconds

32	94 WB Off Ramp and NB 101		
	Future Volume	808	vehicles
	Future Delay	5	sec/veh
	Future Total Delay	4040	seconds

Total Future Delay	**272446**

Total Network Delay Reduction	**11078**	**seconds**

Emissions

Existing	920	940	Total
CO	4.11	6.09	10.2
NOx	0.8	1.18	1.98
VOC	0.95	1.41	2.36
	Total Existing		14.54

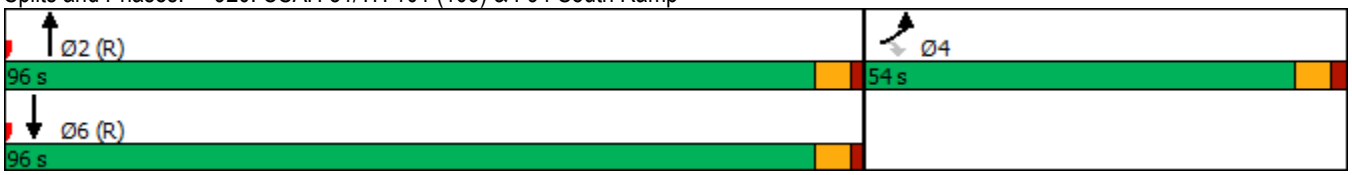
Build	20	21	22	23	30	31	32	Total
CO	1.54	0.18	0.37	0.45	4.28	1.21	0.19	8.22
NOx	0.3	0.04	0.07	0.09	0.83	0.24	0.04	1.61
VOC	0.36	0.04	0.08	0.1	0.99	0.28	0.04	1.89
						Total Future		11.72

Total Reduction	**2.82**

Lane Group	EBL	EBR	NBT	NBR	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	251	222	449	710	1213	1453
Future Volume (vph)	251	222	449	710	1213	1453
Turn Type	Prot	Perm	NA	Free	NA	Free
Protected Phases	4		2		6	
Permitted Phases		4		Free		Free
Detector Phase	4	4	2		6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	15.0		15.0	
Minimum Split (s)	22.0	22.0	21.5		21.5	
Total Split (s)	54.0	54.0	96.0		96.0	
Total Split (%)	36.0%	36.0%	64.0%		64.0%	
Yellow Time (s)	4.0	4.0	4.0		4.0	
All-Red Time (s)	2.0	2.0	1.5		1.5	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.0	5.5		5.5	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Max		C-Max	
Act Effct Green (s)	28.7	28.7	109.8	150.0	109.8	150.0
Actuated g/C Ratio	0.19	0.19	0.73	1.00	0.73	1.00
v/c Ratio	0.79	0.68	0.17	0.49	0.46	1.03
Control Delay	74.0	50.4	6.9	1.1	8.5	34.6
Queue Delay	0.0	0.0	0.0	0.0	0.4	0.0
Total Delay	74.0	50.4	6.9	1.1	8.9	34.6
LOS	E	D	A	A	A	C
Approach Delay			3.4		22.9	
Approach LOS			A		C	

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of 1st Green	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 22.1	Intersection LOS: C
Intersection Capacity Utilization 53.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 920: CSAH 81/TH 101 (109) & I-94 South Ramp



Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	92	3	163	55	645	2574	102
Future Volume (vph)	92	3	163	55	645	2574	102
Turn Type	Perm	NA	Free	Prot	NA	NA	Perm
Protected Phases		8		5	2	6	
Permitted Phases	8		Free				6
Detector Phase	8	8		5	2	6	6
Switch Phase							
Minimum Initial (s)	8.0	8.0		7.0	15.0	15.0	15.0
Minimum Split (s)	22.0	22.0		12.5	23.5	21.5	21.5
Total Split (s)	22.0	22.0		12.5	128.0	115.5	115.5
Total Split (%)	14.7%	14.7%		8.3%	85.3%	77.0%	77.0%
Yellow Time (s)	4.0	4.0		3.5	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		5.5	5.5	5.5	5.5
Lead/Lag				Lag		Lead	Lead
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None		None	C-Max	C-Max	C-Max
Act Effct Green (s)	9.5	9.5	150.0	7.0	129.0	116.5	116.5
Actuated g/C Ratio	0.06	0.06	1.00	0.05	0.86	0.78	0.78
v/c Ratio	0.45	0.51	0.06	0.74	0.21	1.09	0.09
Control Delay	74.2	24.4	0.1	126.9	3.4	65.7	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.2	24.4	0.1	126.9	3.4	65.7	0.9
LOS	E	C	A	F	A	E	A
Approach Delay		34.4			13.2	63.3	
Approach LOS		C			B	E	

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of 1st Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.09	
Intersection Signal Delay: 51.6	Intersection LOS: D
Intersection Capacity Utilization 62.0%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 940: TH 101 (109) & I-94 North Ramp

920: CSAH 81/TH 101 (109) & I-94 South Ramp

Direction	All
Future Volume (vph)	4298
Total Delay / Veh (s/v)	22
CO Emissions (kg)	4.11
NOx Emissions (kg)	0.80
VOC Emissions (kg)	0.95

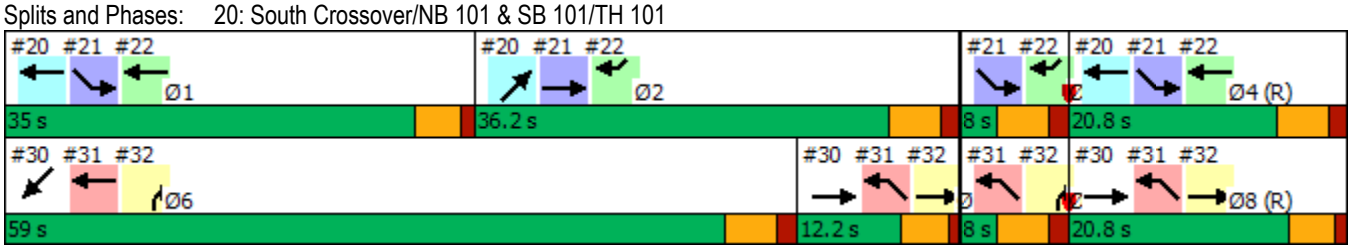
940: TH 101 (109) & I-94 North Ramp

Direction	All
Future Volume (vph)	3634
Total Delay / Veh (s/v)	52
CO Emissions (kg)	6.09
NOx Emissions (kg)	1.18
VOC Emissions (kg)	1.41

Lane Group	WBT	NET	Ø1	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8
Lane Configurations									
Traffic Volume (vph)	1213	449							
Future Volume (vph)	1213	449							
Turn Type	NA	NA							
Protected Phases	1 4	2	1	3	4	5	6	7	8
Permitted Phases									
Detector Phase	1	2							
Switch Phase									
Minimum Initial (s)		4.0	5.0	2.0	4.0	5.0	4.0	2.0	5.0
Minimum Split (s)		28.0	9.5	8.0	20.0	9.5	28.0	8.0	9.5
Total Split (s)		36.2	35.0	8.0	20.8	12.2	59.0	8.0	20.8
Total Split (%)		36.2%	35%	8%	21%	12%	59%	8%	21%
Yellow Time (s)		3.9	3.5	3.9	3.9	3.5	3.9	3.9	3.5
All-Red Time (s)		1.5	1.0	1.5	1.5	1.0	1.5	1.5	1.0
Lost Time Adjust (s)		0.0							
Total Lost Time (s)		5.4							
Lead/Lag		Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag
Lead-Lag Optimize?		Yes	Yes			Yes	Yes		Yes
Recall Mode		None	None	None	C-Max	None	None	None	C-Max
Act Effct Green (s)	58.9	31.2							
Actuated g/C Ratio	0.59	0.31							
v/c Ratio	0.64	0.45							
Control Delay	23.5	29.3							
Queue Delay	0.0	0.0							
Total Delay	23.5	29.3							
LOS	C	C							
Approach Delay	23.5	29.3							
Approach LOS	C	C							

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 4:WBT and 8:, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 25.0	Intersection LOS: C
Intersection Capacity Utilization 55.5%	ICU Level of Service B
Analysis Period (min) 15	

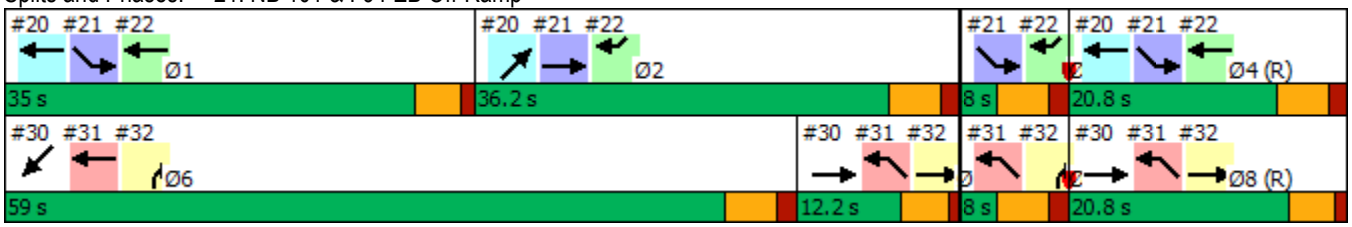
Splits and Phases: 20: South Crossover/NB 101 & SB 101/TH 101



Lane Group	EBT	SEL	Ø1	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8
Lane Configurations									
Traffic Volume (vph)	449	251							
Future Volume (vph)	449	251							
Turn Type	NA	pm+pt							
Protected Phases	2	1 3 4	1	3	4	5	6	7	8
Permitted Phases		1 3 4							
Detector Phase	2	1							
Switch Phase									
Minimum Initial (s)	4.0		5.0	2.0	4.0	5.0	4.0	2.0	5.0
Minimum Split (s)	28.0		9.5	8.0	20.0	9.5	28.0	8.0	9.5
Total Split (s)	36.2		35.0	8.0	20.8	12.2	59.0	8.0	20.8
Total Split (%)	36.2%		35%	8%	21%	12%	59%	8%	21%
Yellow Time (s)	3.9		3.5	3.9	3.9	3.5	3.9	3.9	3.5
All-Red Time (s)	1.5		1.0	1.5	1.5	1.0	1.5	1.5	1.0
Lost Time Adjust (s)	0.0								
Total Lost Time (s)	5.4								
Lead/Lag	Lag		Lead	Lead	Lag	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes		Yes			Yes	Yes		Yes
Recall Mode	None		None	None	C-Max	None	None	None	C-Max
Act Effct Green (s)	31.2	58.9							
Actuated g/C Ratio	0.31	0.59							
v/c Ratio	0.45	0.26							
Control Delay	3.3	10.7							
Queue Delay	0.1	0.0							
Total Delay	3.4	10.7							
LOS	A	B							
Approach Delay	3.4	10.7							
Approach LOS	A	B							

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 4:WBT and 8:, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 6.0	Intersection LOS: A
Intersection Capacity Utilization 34.2%	ICU Level of Service A
Analysis Period (min) 15	

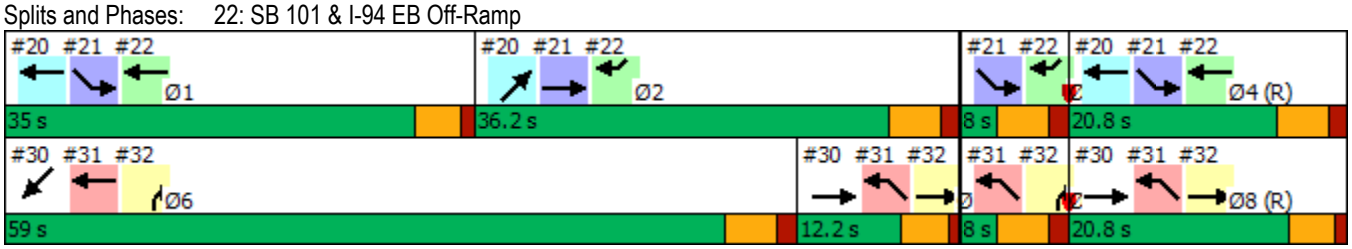
Splits and Phases: 21: NB 101 & I-94 EB Off-Ramp



Lane Group	WBT	SWR	Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8
Lane Configurations										
Traffic Volume (vph)	1213	222								
Future Volume (vph)	1213	222								
Turn Type	NA	custom								
Protected Phases	1 4	2 3	1	2	3	4	5	6	7	8
Permitted Phases										
Detector Phase	1	2								
Switch Phase										
Minimum Initial (s)			5.0	4.0	2.0	4.0	5.0	4.0	2.0	5.0
Minimum Split (s)			9.5	28.0	8.0	20.0	9.5	28.0	8.0	9.5
Total Split (s)			35.0	36.2	8.0	20.8	12.2	59.0	8.0	20.8
Total Split (%)			35%	36%	8%	21%	12%	59%	8%	21%
Yellow Time (s)			3.5	3.9	3.9	3.9	3.5	3.9	3.9	3.5
All-Red Time (s)			1.0	1.5	1.5	1.5	1.0	1.5	1.5	1.0
Lost Time Adjust (s)										
Total Lost Time (s)										
Lead/Lag			Lead	Lag	Lead	Lag	Lag	Lead	Lead	Lag
Lead-Lag Optimize?			Yes	Yes			Yes	Yes		Yes
Recall Mode			None	None	None	C-Max	None	None	None	C-Max
Act Effct Green (s)	58.9	31.2								
Actuated g/C Ratio	0.59	0.31								
v/c Ratio	0.64	0.48								
Control Delay	2.9	32.1								
Queue Delay	0.0	0.0								
Total Delay	2.9	32.1								
LOS	A	C								
Approach Delay	2.9									
Approach LOS	A									

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 4:WBT and 8:, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 7.5	Intersection LOS: A
Intersection Capacity Utilization 55.5%	ICU Level of Service B
Analysis Period (min) 15	

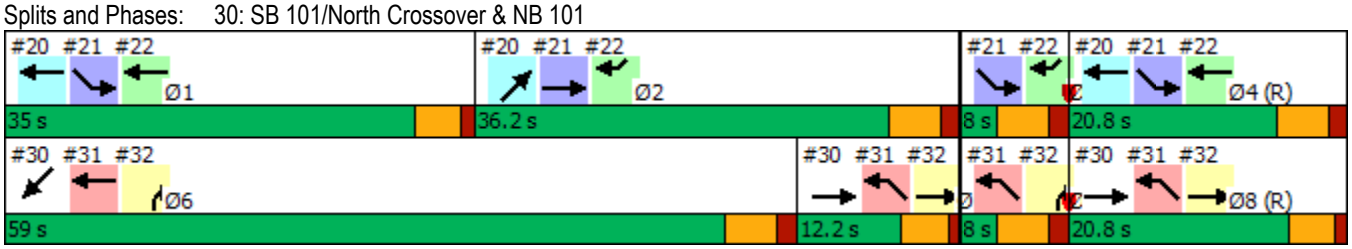
Splits and Phases: 22: SB 101 & I-94 EB Off-Ramp



Lane Group	EBT	SWT	Ø1	Ø2	Ø3	Ø4	Ø5	Ø7	Ø8
Lane Configurations									
Traffic Volume (vph)	645	2574							
Future Volume (vph)	645	2574							
Turn Type	NA	NA							
Protected Phases	5 8	6	1	2	3	4	5	7	8
Permitted Phases									
Detector Phase	5	6							
Switch Phase									
Minimum Initial (s)		4.0	5.0	4.0	2.0	4.0	5.0	2.0	5.0
Minimum Split (s)		28.0	9.5	28.0	8.0	20.0	9.5	8.0	9.5
Total Split (s)		59.0	35.0	36.2	8.0	20.8	12.2	8.0	20.8
Total Split (%)		59.0%	35%	36%	8%	21%	12%	8%	21%
Yellow Time (s)		3.9	3.5	3.9	3.9	3.9	3.5	3.9	3.5
All-Red Time (s)		1.5	1.0	1.5	1.5	1.5	1.0	1.5	1.0
Lost Time Adjust (s)		0.0							
Total Lost Time (s)		5.4							
Lead/Lag		Lead	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?		Yes	Yes	Yes			Yes		Yes
Recall Mode		None	None	None	None	C-Max	None	None	C-Max
Act Effct Green (s)	36.5	53.6							
Actuated g/C Ratio	0.36	0.54							
v/c Ratio	0.55	1.03							
Control Delay	16.2	51.1							
Queue Delay	0.0	4.1							
Total Delay	16.2	55.2							
LOS	B	E							
Approach Delay	16.2	55.2							
Approach LOS	B	E							

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 4:WBT and 8:, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 47.4	Intersection LOS: D
Intersection Capacity Utilization 75.8%	ICU Level of Service D
Analysis Period (min) 15	

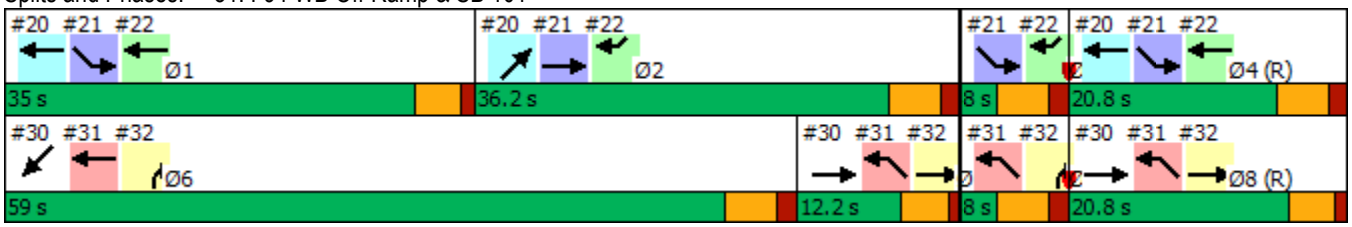
Splits and Phases: 30: SB 101/North Crossover & NB 101



Lane Group	WBT	NWL	Ø1	Ø2	Ø3	Ø4	Ø5	Ø7	Ø8
Lane Configurations									
Traffic Volume (vph)	2574	92							
Future Volume (vph)	2574	92							
Turn Type	NA	pm+pt							
Protected Phases	6	5 7 8	1	2	3	4	5	7	8
Permitted Phases		5 7 8							
Detector Phase	6	5							
Switch Phase									
Minimum Initial (s)	4.0		5.0	4.0	2.0	4.0	5.0	2.0	5.0
Minimum Split (s)	28.0		9.5	28.0	8.0	20.0	9.5	8.0	9.5
Total Split (s)	59.0		35.0	36.2	8.0	20.8	12.2	8.0	20.8
Total Split (%)	59.0%		35%	36%	8%	21%	12%	8%	21%
Yellow Time (s)	3.9		3.5	3.9	3.9	3.9	3.5	3.9	3.5
All-Red Time (s)	1.5		1.0	1.5	1.5	1.5	1.0	1.5	1.0
Lost Time Adjust (s)	0.0								
Total Lost Time (s)	5.4								
Lead/Lag	Lead		Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes		Yes	Yes			Yes		Yes
Recall Mode	None		None	None	None	C-Max	None	None	C-Max
Act Effct Green (s)	53.6	36.5							
Actuated g/C Ratio	0.54	0.36							
v/c Ratio	1.03	0.08							
Control Delay	22.7	21.1							
Queue Delay	0.0	0.0							
Total Delay	22.7	21.1							
LOS	C	C							
Approach Delay	22.7	21.1							
Approach LOS	C	C							

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 4:WBT and 8:, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 22.6	Intersection LOS: C
Intersection Capacity Utilization 68.7%	ICU Level of Service C
Analysis Period (min) 15	

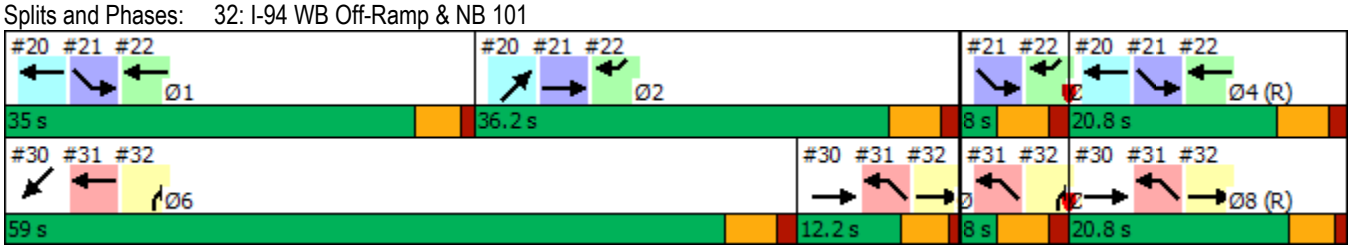
Splits and Phases: 31: I-94 WB Off-Ramp & SB 101



Lane Group	EBT	NBR	Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8
Lane Configurations										
Traffic Volume (vph)	645	163								
Future Volume (vph)	645	163								
Turn Type	NA	custom								
Protected Phases	5 8	6 7	1	2	3	4	5	6	7	8
Permitted Phases		6 7								
Detector Phase	5	6								
Switch Phase										
Minimum Initial (s)			5.0	4.0	2.0	4.0	5.0	4.0	2.0	5.0
Minimum Split (s)			9.5	28.0	8.0	20.0	9.5	28.0	8.0	9.5
Total Split (s)			35.0	36.2	8.0	20.8	12.2	59.0	8.0	20.8
Total Split (%)			35%	36%	8%	21%	12%	59%	8%	21%
Yellow Time (s)			3.5	3.9	3.9	3.9	3.5	3.9	3.9	3.5
All-Red Time (s)			1.0	1.5	1.5	1.5	1.0	1.5	1.5	1.0
Lost Time Adjust (s)										
Total Lost Time (s)										
Lead/Lag			Lead	Lag	Lead	Lag	Lag	Lead	Lead	Lag
Lead-Lag Optimize?			Yes	Yes			Yes	Yes		Yes
Recall Mode			None	None	None	C-Max	None	None	None	C-Max
Act Effct Green (s)	36.5	53.6								
Actuated g/C Ratio	0.36	0.54								
v/c Ratio	0.55	0.21								
Control Delay	3.1	12.9								
Queue Delay	0.0	0.0								
Total Delay	3.1	12.9								
LOS	A	B								
Approach Delay	3.1									
Approach LOS	A									

Intersection Summary			
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 4:WBT and 8:, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.03			
Intersection Signal Delay: 5.1		Intersection LOS: A	
Intersection Capacity Utilization 75.8%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 32: I-94 WB Off-Ramp & NB 101



20: South Crossover/NB 101 & SB 101/TH 101

Direction	All
Future Volume (vph)	1662
Total Delay / Veh (s/v)	25
CO Emissions (kg)	1.54
NOx Emissions (kg)	0.30
VOC Emissions (kg)	0.36

21: NB 101 & I-94 EB Off-Ramp

Direction	All
Future Volume (vph)	700
Total Delay / Veh (s/v)	6
CO Emissions (kg)	0.18
NOx Emissions (kg)	0.04
VOC Emissions (kg)	0.04

22: SB 101 & I-94 EB Off-Ramp

Direction	All
Future Volume (vph)	1435
Total Delay / Veh (s/v)	7
CO Emissions (kg)	0.37
NOx Emissions (kg)	0.07
VOC Emissions (kg)	0.08

23: I-94 EB On-Ramp/NB 101 & SB 101

Direction	All
Future Volume (vph)	2163
Total Delay / Veh (s/v)	0
CO Emissions (kg)	0.45
NOx Emissions (kg)	0.09
VOC Emissions (kg)	0.10

30: SB 101/North Crossover & NB 101

Direction	All
Future Volume (vph)	3219
Total Delay / Veh (s/v)	47
CO Emissions (kg)	4.28
NOx Emissions (kg)	0.83
VOC Emissions (kg)	0.99

31: I-94 WB Off-Ramp & SB 101

Direction	All
Future Volume (vph)	2666
Total Delay / Veh (s/v)	23
CO Emissions (kg)	1.21
NOx Emissions (kg)	0.24
VOC Emissions (kg)	0.28

32: I-94 WB Off-Ramp & NB 101

Direction	All
Future Volume (vph)	808
Total Delay / Veh (s/v)	5
CO Emissions (kg)	0.19
NOx Emissions (kg)	0.04
VOC Emissions (kg)	0.04

Traffic Safety Benefit-Cost Calculation

Highway Safety Improvement Program (HSIP) Reactive Project

DEPARTMENT OF TRANSPORTATION

A. Roadway Description

Route	TH 101	**District**		**County**	Hennepin
Begin RP		**End RP**		**Miles**	
Location	TH 101 and 94 Interchange				

B. Project Description

Proposed Work	Convert interchange to a Diverging Diamond Interchange		
Project Cost*	$8,475,000	**Installation Year**	2026
Project Service Life	20 years	**Traffic Growth Factor**	2.0%

** exclude Right of Way from Project Cost*

C. Crash Modification Factor

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

D. Crash Modification Factor (optional second CMF)

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

E. Crash Data

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

Crash Severity	Angle	Rear End
K crashes		
A crashes		
B crashes	1	1
C crashes	1	11
PDO crashes	9	30

F. Benefit-Cost Calculation

$8,567,022	**Benefit (present value)**	**B/C Ratio = 1.02**
$8,475,000	**Cost**	

Proposed project expected to reduce 9 crashes annually, 0 of which involving fatality or serious injury.

F. Analysis Assumptions

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

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

Real Discount Rate	0.7%
Traffic Growth Rate	2.0%
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	1.01	0.34	$77,433
C crashes	5.51	1.84	$220,400
PDO crashes	18.54	6.18	$80,340
			$378,173

H. Amortized Benefit

Year	Crash Benefits	Present Value
2026	$378,173	$378,173
2027	$385,737	$383,055
2028	$393,452	$388,001
2029	$401,321	$393,009
2030	$409,347	$398,083
2031	$417,534	$403,222
2032	$425,885	$408,428
2033	$434,402	$413,700
2034	$443,090	$419,041
2035	$451,952	$424,451
2036	$460,991	$429,930
2037	$470,211	$435,480
2038	$479,615	$441,102
2039	$489,208	$446,797
2040	$498,992	$452,565
2041	$508,972	$458,407
2042	$519,151	$464,325
2043	$529,534	$470,319
2044	$540,125	$476,391
2045	$550,927	$482,541
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0

Total = $8,567,022

Traffic Safety Benefit-Cost Calculation

Highway Safety Improvement Program (HSIP) Reactive Project

DEPARTMENT OF TRANSPORTATION

A. Roadway Description

Route	TH 101	**District**		**County**	Hennepin
Begin RP		**End RP**		**Miles**	
Location	TH 101 and 94 Interchange				

B. Project Description

Proposed Work	Convert interchange to a Diverging Diamond Interchange		
Project Cost*	$8,475,000	**Installation Year**	2026
Project Service Life	20 years	**Traffic Growth Factor**	2.0%

** exclude Right of Way from Project Cost*

C. Crash Modification Factor

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

D. Crash Modification Factor (optional second CMF)

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

E. Crash Data

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

Crash Severity	**Sideswipe**	**All**
K crashes		
A crashes		
B crashes		1
C crashes		3
PDO crashes	10	4

F. Benefit-Cost Calculation

$3,110,654	**Benefit (present value)**	**B/C Ratio = 0.37**
$8,475,000	**Cost**	

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

F. Analysis Assumptions

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

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

Real Discount Rate	0.7%
Traffic Growth Rate	2.0%
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	0.67	0.22	$51,367
C crashes	2.01	0.67	$80,400
PDO crashes	1.28	0.43	$5,547
			$137,313

H. Amortized Benefit

Year	Crash Benefits	Present Value
2026	$137,313	$137,313
2027	$140,060	$139,086
2028	$142,861	$140,882
2029	$145,718	$142,700
2030	$148,632	$144,542
2031	$151,605	$146,408
2032	$154,637	$148,299
2033	$157,730	$150,213
2034	$160,884	$152,152
2035	$164,102	$154,116
2036	$167,384	$156,106
2037	$170,732	$158,121
2038	$174,147	$160,163
2039	$177,629	$162,230
2040	$181,182	$164,325
2041	$184,806	$166,446
2042	$188,502	$168,595
2043	$192,272	$170,771
2044	$196,117	$172,976
2045	$200,040	$175,209
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0

Total = $3,110,654

CRASH MODIFICATION FACTORS CLEARINGHOUSE

SEARCH RESULTS

There were 112 CMFs returned for your search on "**DDI**". [MODIFY YOUR SEARCH].

Having trouble deciding between similar CMFs? Use our **COMPARISON TOOL** or **CHECK OUT OUR FAQS**.

Overwhelmed by too many results? See our **SEARCH TIPS**.

STAR QUALITY RATING

- 1 (9)
- 2 (46)
- 3 (27)
- 4 (17)
- 5 (8)

COUNTRY

- U.S. & Canada (110)
- International (2)

CRASH TYPE

CRASH SEVERITY

ROADWAY TYPE

AREA TYPE

INTERSECTION TYPE

INTERSECTION GEOMETRY

TRAFFIC CONTROL

IN HSM

Filter Results

Results Control: COLLAPSE ALL | EXPAND ALL

Click on the links below to expand individual categories.

EXPORT ALL RESULTS TO EXCEL

Category: Bicyclists (6)

Category: Interchange design (69)

Subcategory: None (69)

Countermeasure: Convert at-grade intersections to Diverging Diamond Interchanges

Countermeasure: Convert diamond interchange to Diverging Diamond Interchange (DDI) or Double Crossover Diamond (DCD)

Compare	CMF	CRF(%)	Quality	Crash Type	Crash Severity	Area Type	Reference	Comme
☐	0.858	14.2	★★★★☆	All	All	Urban and suburban	ABDELRAHMAN ET AL., 2021	The AADT v mentioned [READ MO
☐	0.558	44.2	★★★★☆	All	K (fatal),A (serious injury),B (minor injury),C (possible injury)	Urban and suburban	ABDELRAHMAN ET AL., 2021	The AADT v mentioned [READ MO
☐	0.92	8	★★★★☆	All	O (property damage only)	Urban and suburban	ABDELRAHMAN ET AL., 2021	The AADT v mentioned [READ MO
☐	0.887	11.3	★★★★☆	Rear end	All	Urban and suburban	ABDELRAHMAN ET AL., 2021	The AADT v mentioned [READ MO
☐	0.448	55.2	★★★★☆	Angle,Left turn	All	Urban and suburban	ABDELRAHMAN ET AL., 2021	The AADT v mentioned [READ MO
☐	0.845	15.5	★★★★☆	Single vehicle	All	Urban and suburban	ABDELRAHMAN ET AL., 2021	The AADT v mentioned [READ MO
☐	0.67	33	★★★☆☆	All	All	Suburban	HUMMER ET AL., 2016	The volume her ... [READ MO
☐	0.59	41	★★★☆☆	All	K (fatal),A (serious injury),B (minor injury),C (possible injury)	Suburban	HUMMER ET AL., 2016	The volume her ... [READ MO
☐	0.45	55	★★★☆☆	All	K (fatal),A (serious injury),B (minor injury),C (possible injury)	Urban	CLAROS ET AL., 2017	This CMF app the ... [READ M
☐	0.686	31.4	★★★☆☆	All	O (property	Urban	CLAROS	This CMF app

					damage only)		ET AL., 2017	the ... [READ M
☐	0.625	37.5	★★★☆☆	All	All	Urban	CLAROS ET AL., 2017	This CMF app the ... [READ M
☐	0.633	36.7	★★★☆☆	All	All	Not specified	NYE ET AL., 2019	
☐	0.821	17.9	★★★☆☆	All	All	Not specified	NYE ET AL., 2019	
☐	0.577	42.3	★★★☆☆	All	All	Not specified	NYE ET AL., 2019	
☐	0.328	67.2	★★★☆☆	All	All	Not specified	NYE ET AL., 2019	
☐	0.512	48.8	★★★☆☆	All	All	Not specified	NYE ET AL., 2019	
☐	0.441	55.9	★★★☆☆	Angle	All	Not specified	NYE ET AL., 2019	
☐	0.549	45.1	★★★☆☆	Rear end	All	Not specified	NYE ET AL., 2019	
☐	1.139	-13.9	★★★☆☆	Sideswipe	All	Not specified	NYE ET AL., 2019	
☐	0.461	53.9	★★★☆☆	All	K (fatal),A (serious injury),B (minor injury),C (possible injury)	Not specified	NYE ET AL., 2019	
☐	0.695	30.5	★★★☆☆	All	O (property damage only)	Not specified	NYE ET AL., 2019	
☐	0.648	35.2	★★★☆☆	All	All	Not specified	NYE ET AL., 2019	
☐	0.638	36.2	★★★☆☆	All	All	Not specified	NYE ET AL., 2019	
☐	1.241	-24.1	★★★☆☆	Sideswipe	All	Urban and suburban	ABDELRAHMAN ET AL., 2021	The AADT v mentioned [READ MC
☐	0.643	35.7	★★★☆☆	Head on	All	Urban and suburban	ABDELRAHMAN ET AL., 2021	The AADT v mentioned [READ MC
☐	1.762	-76.2	★★★☆☆	Other	All	Urban and suburban	ABDELRAHMAN ET AL., 2021	This CMF is fc Motorized ... MORE
☐	0.33	67	★★☆☆☆	Angle	All	Suburban	HUMMER ET AL., 2016	The volume her ... [READ MC
☐	0.64	36	★★☆☆☆	Rear end	All	Urban	HUMMER ET AL., 2016	The volume her ... [READ MC
☐	1.27	-27	★★☆☆☆	Sideswipe	All	Suburban	HUMMER ET AL., 2016	The volume her ... [READ MC
☐	0.76	24	★★☆☆☆	Single vehicle	All	Suburban	HUMMER ET AL., 2016	The volume her ... [READ MC
☐	0.374	62.6	★★☆☆☆	All	K (fatal),A	Urban	CLAROS	This CMF app

					(serious injury),B (minor injury),C (possible injury)		ET AL., 2015	the ... [READ M
☐	0.649	35.1	★★☆☆☆	All	O (property damage only)	Urban	CLAROS ET AL., 2015	This CMF app the ... [READ M
☐	0.592	40.8	★★☆☆☆	All	All	Urban	CLAROS ET AL., 2015	This CMF app the ... [READ M
☐	1.039	-3.9	★★☆☆☆	Angle	All	Not specified	NYE ET AL., 2019	
☐	0.572	42.8	★★☆☆☆	Rear end	All	Not specified	NYE ET AL., 2019	
☐	1.44	-44	★★☆☆☆	Sideswipe	All	Not specified	NYE ET AL., 2019	
☐	0.339	66.1	★★☆☆☆	Angle	All	Not specified	NYE ET AL., 2019	
☐	0.587	41.3	★★☆☆☆	Rear end	All	Not specified	NYE ET AL., 2019	
☐	0.655	34.5	★★☆☆☆	Sideswipe	All	Not specified	NYE ET AL., 2019	
☐	0.153		★★☆☆☆	Angle	All	Not specified	NYE ET AL., 2019	
☐	0.257	74.3	★★☆☆☆	Rear end	All	Not specified	NYE ET AL., 2019	
☐	1.138	-13.8	★★☆☆☆	Sideswipe	All	Not specified	NYE ET AL., 2019	
☐	0.11	89	★★☆☆☆	Angle	All	Not specified	NYE ET AL., 2019	
☐	0.576	42.4	★★☆☆☆	Rear end	All	Not specified	NYE ET AL., 2019	
☐	0.714	28.6	★★☆☆☆	Sideswipe	All	Not specified	NYE ET AL., 2019	
☐	0.582		★★☆☆☆	All	K (fatal),A (serious injury),B (minor injury),C (possible injury)	Not specified	NYE ET AL., 2019	
☐	0.888		★★☆☆☆	All	O (property damage only)	Not specified	NYE ET AL., 2019	
☐	0.502	49.8	★★☆☆☆	All	K (fatal),A (serious injury),B (minor injury),C (possible injury)	Not specified	NYE ET AL., 2019	
☐	0.6	40	★★☆☆☆	All	O (property damage only)	Not specified	NYE ET AL., 2019	
☐	0.232	76.8	★★☆☆☆	All	K (fatal),A (serious injury),B (minor injury),C (possible injury)	Not specified	NYE ET AL., 2019	
☐	0.36	64	★★☆☆☆	All	O (property damage only)	Not specified	NYE ET AL., 2019	
☐	0.312	68.8	★★☆☆☆	All	K (fatal),A (serious injury),B	Not specified	NYE ET AL., 2019	

					(minor injury),C (possible injury)			
☐	0.626	37.4	★★☆☆☆	All	O (property damage only)	Not specified	NYE ET AL., 2019	
☐	0.919	8.1	★★☆☆☆	All	All	Not specified	NYE ET AL., 2019	
☐	0.626	37.4	★★☆☆☆	All	All	Not specified	NYE ET AL., 2019	
☐	0.557	44.3	★★☆☆☆	All	All	Not specified	NYE ET AL., 2019	
☐	0.647	35.3	★★☆☆☆	All	All	Not specified	NYE ET AL., 2019	
☐	0.425	57.5	★★☆☆☆	All	All	Not specified	NYE ET AL., 2019	
☐	0.53	47	★★☆☆☆	All	All	Not specified	NYE ET AL., 2019	
☐	0.514	48.6	★★☆☆☆	All	All	Not specified	NYE ET AL., 2019	
☐	0.5	50	★★☆☆☆	All	All	Not specified	NYE ET AL., 2019	
☐	0.54	46	★☆☆☆☆	All	All	Urban	CHILUKURI ET AL., 2011	The authors cor the CMF ... [R MORE]
☐	0.28	72	★☆☆☆☆	All	B (minor injury)	Urban	CHILUKURI ET AL., 2011	The authors cor the CMF ... [R MORE]
☐	0.63	37	★☆☆☆☆	All	O (property damage only)	Urban	CHILUKURI ET AL., 2011	The authors cor the CMF ... [R MORE]
☐	0.71	29	★☆☆☆☆	Rear end	All	Urban	CHILUKURI ET AL., 2011	The authors cor the CMF ... [R MORE]
☐	0	100	★☆☆☆☆	Left turn	All	Urban	CHILUKURI ET AL., 2011	The authors cor the CMF ... [R MORE]
☐	0.81	19	★☆☆☆☆	Not specified	All	Urban	CHILUKURI ET AL., 2011	The authors cor the CMF ... [R MORE]

Compare* Reset Compare

NOTE: You can compare CMFs across countermeasures, subcategories, and categories.

Category: Intersection geometry (6)

Subcategory: Turn lanes (6)

Category: Intersection traffic control (12)

Subcategory: Traffic control visibility (11)

Subcategory: Traffic control type (1)

Category: Roadway (19)

EXPORT ALL RESULTS TO EXCEL

SEARCH RESULTS WITHOUT STAR RATINGS

There were 53 CMFs returned for the search that do not have star ratings. ***(VIEW ADDITIONAL RESULTS)***

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

For more information, contact Karen Scurry at **karen.scurry@dot.gov**

INCIDENTID	RTESYSCOD	RTENUMBE	MEASURE	COUNTY_S	CITY_NAM	MNDOT_D	STATE_PAT	TRIBAL_GC	LOCALID	ACCIDENT_NUMBER	CRASH_MO
807789	3	101	35.886	27	2396415		25		20005057	201130019	4
863858	3	101	35.89	27	2396415		25		20015907	203210098	11
893285	3	101	35.899	27	2396415		25		21002637	210580045	2
942582	3	101	35.898	27	2396415		25		21509085	212660191	9
956320	3	101	35.9	27	2396415		25		21006683	212850022	10
781819	3	101	35.901	27	2396415		25		20000809	200210060	1
838290	3	101	35.903	27	2396415		25		20011968	202440161	8
804741	3	101	35.905	27	2396415		25		20003340	200800048	3
757328	3	101	35.912	27	2396415		25		19013502	192990019	10
751076	3	101	35.914	27	2396415		25		19511870	192730086	9
915790	3	101	35.915	27	2396415		25		21008464	211830032	7
980433	3	101	35.923	27	2396415		25		21512174	213480074	12
847255	3	101	35.925	27	2396415		25		20014654	202930057	10
800877	3	101	35.929	27	2396415		25		20002285	200570048	2
809421	3	101	35.931	27	2396415		25		20503944	201280028	5
847246	3	101	35.933	27	2396415		25		20508907	202930050	10
897617	3	101	35.94	27	2396415		25		21003843	210840049	3
945935	3	101	35.946	27	2396415		25		21509220	212700230	9
907668	3	101	35.952	27	2396415		25		21504475	211410265	5
887799	3	101	35.958	27	2396415		25		21001537	210340015	2
904814	3	101	35.962	27	2396415		25		21006171	211300018	5
969929	3	101	35.962	27	2396415		25		21013670	213020013	10
868372	3	101	35.963	27	2396415		25		20017366	203510008	12
896789	3	101	35.964	27	2396415		25		21003574	210780116	3
944743	3	101	35.967	27	2396415		25		21012509	212770061	10
942461	3	101	35.974	27	2396415		25		21012044	212660101	9
674334	3	101	35.982	27	Rogers	M	25		19000326	190060051	1
866275	3	101	35.984	27	2396415		25		20016688	203370103	12
754883	3	101	35.985	27	2396415		25		19512504	192890012	10
773786	3	101	35.986	27	2396415		25		19015643	193570020	12
736670	3	101	36.184	27	2396415		25		19509183	192090085	7
694512	3	101	36.19	27	2396415		25		19003008	190630011	3
724572	3	101	36.191	27	2396415		25		19007020	191500234	5

743336	3	101	36.215	27	2396415		25	19510466	192400019	8
728339	3	101	36.239	27	2396415		25	19007970	191700222	6
693237	3	101	36.279	27	2396415		25	19002853	190590278	2
734359	3	101	36.295	27	2396415		25	19009194	191990045	7
868516	4	81	19.808	27	Rogers	M	25	20017412	203520007	12
810204	4	81	19.811	27	Rogers	M	25	20006194	201350052	5
860700	4	81	19.813	27	Rogers	M	25	20015276	203060102	11
908099	4	81	19.848	27	Rogers	M	25	21006949	211460138	5
772258	4	81	19.875	27	Rogers	M	25	19015417	193510095	12
865277	4	81	19.882	27	Rogers	M	25	20509792	203160375	11
940764	4	81	19.904	27	Rogers	M	25	21010940	212380275	8
727425	22	65	0.015	27	Rogers	M	25	19007846	191670110	6
799121	22	65	0.028	27	Rogers	M	25	20501993	200490432	2
807819	22	65	0.057	27	Rogers	M	25	20005056	201130046	4
705787	22	65	0.154	27	Rogers	M	25	19004121	190870223	3
807196	22	65	0.155	27	Rogers	M	25	20503536	201060051	4
745130	22	77	0.02	27	Rogers	M	25	19011215	192470193	9
972175	22	815	0.014	27	Rogers	M	25	21510693	213090245	11
682796	22	815	0.026	27	Rogers	M	25	19001683	190340218	2
735869	22	815	0.029	27	Rogers	M	25	19009512	192050191	7
760778	22	815	0.04	27	Rogers	M	25	19014722	193120024	11
905353	22	815	0.041	27	Rogers	M	25	21006286	211320126	5
897291	22	815	0.061	27	Rogers	M	25	21003765	210820071	3
846356	22	1222	0.004	27	Rogers	M	25	20508734	202880040	10
821397	22	1222	0.016	27	Rogers	M	25	W2050584	202020195	7
904691	22	1607	0.268	27	Rogers	M	25	21006149	211290044	5
680135	22	1607	0.268	27	Rogers	M	25	19001377	190280108	1
809433	22	1607	0.27	27	Rogers	M	25	20005844	201280042	5
843147	22	1607	0.271	27	Rogers	M	25	20013482	202710091	9
810955	22	2608	0	27	Rogers	M	25	20006438	201410021	5
892796	22	2608	0	27	Rogers	M	25	21002451	210550094	2
807514	22	2608	0.004	27	Rogers	M	25	20004885	201100005	4
685497	22	3342	0.017	27	Rogers	M	25	19502259	190390483	2
764452	22	3342	0.023	27	Rogers	M	25	19513850	193170600	11

740755	22	3342	0.033	27	Rogers	M	25	19010442	192280088	8
966941	22	3342	0.034	27	Rogers	M	25	21012997	212870145	10
720170	22	3342	0.037	27	Rogers	M	25	19006307	191350185	5
840997	22	3342	0.038	27	Rogers	M	25	20012795	202590138	9

CRASH_DA	CRASH_YE/	CRASH_DA	CRASH_HO	DIVIDEDRD	CRASHSEVI	NUMBERKI	NUMBERO	MANNERO	FIRSTHARM	RELATIONT	LIGHTCONI	WEATHERP
22	2020	Wed	10	S	5	0	2	12	10	29	1	1
16	2020	Mon	8	S	5	0	2	12	10	3	1	4
27	2021	Sat	15	S	5	0	2	12	10	3	1	2
23	2021	Thu	9	S	5	0	2	12	10	2	1	1
12	2021	Tue	7		5	0	2	10	10	99	1	2
21	2020	Tue	5	S	5	0	4	12	10	28	4	1
31	2020	Mon	16	S	4	0	2	12	10	2	1	1
20	2020	Fri	13	S	5	0	2	12	10	10	1	1
26	2019	Sat	10	N	5	0	2	5	10	4	1	1
30	2019	Mon	14	S	5	0	2	12	10	10	1	2
2	2021	Fri	12	S	5	0	2	12	10	2	1	1
14	2021	Tue	7	S	5	0	3	12	10	29	4	2
19	2020	Mon	14	N	4	0	2	12	10	3	1	4
26	2020	Wed	12	S	5	0	2	12	10	10	1	1
7	2020	Thu	9	S	5	0	2	10	10	3	1	1
19	2020	Mon	11	N	5	0	2	5	10	3	1	2
25	2021	Thu	14	W	4	0	2	12	10	26	1	2
27	2021	Mon	9	N	4	0	2	90	10	3	1	1
21	2021	Fri	22	98	5	0	2	5	10	3	4	1
3	2021	Wed	6	S	5	0	2	12	10	2	4	2
10	2021	Mon	7	S	5	0	2	12	10	10	1	1
29	2021	Fri	5	S	5	0	2	12	10	3	4	2
16	2020	Wed	7	S	4	0	2	12	10	2	4	1
19	2021	Fri	17	S	5	0	2	12	10	90	1	1
4	2021	Mon	13	S	5	0	2	12	10	2	1	1
23	2021	Thu	12	S	5	0	2	10	10	10	1	1
6	2019	Sun	13	S	4	0	2	12	10	10	1	2
2	2020	Wed	17	S	4	0	3	12	10	2	4	1
16	2019	Wed	6	S	5	0	3	12	10	2	4	2
23	2019	Mon	7	S	5	0	2	10	10	2	2	1
28	2019	Sun	16	S	5	0	2	12	10	3	1	2
4	2019	Mon	5	S	4	0	3	12	10	29	4	1
30	2019	Thu	15	N	5	0	2	5	10	3	1	1

28	2019	Wed	6	S		5	0	2	10	10	10	2	1
19	2019	Wed	18	S		5	0	3	12	10	27	1	1
28	2019	Thu	9	S		5	0	2	12	10	26	1	1
18	2019	Thu	8	S		4	0	2	12	10	2	1	1
17	2020	Thu	6	S		4	0	2	12	10	3	4	1
14	2020	Thu	14	S		5	0	2		11	4	1	2
1	2020	Sun	19	S		5	0	2	13	10	26	3	1
26	2021	Wed	16	S		5	0	2	12	10	2	1	1
17	2019	Tue	12	S		5	0	2	12	10	2	1	1
11	2020	Wed	8	E		5	0	3	10	10	2	1	4
26	2021	Thu	14	N		5	0	3	12	10	2	1	3
16	2019	Sun	17	S		5	0	1		32	25	1	1
18	2020	Tue	3	S		5	0	2	12	10	27	4	1
22	2020	Wed	10		98	5	0	2	10	10	25	1	1
28	2019	Thu	15	E		3	0	1		56	8	1	1
15	2020	Wed	21	E		5	0	1		62	25	4	2
4	2019	Wed	17	S		5	0	3	12	10	2	1	1
5	2021	Fri	13	W		5	0	2	12	10	26	1	2
3	2019	Sun	22	W		5	0	2	5	10	2	4	5
24	2019	Wed	14	W		5	0	2	10	10	3	1	1
8	2019	Fri	5	W		3	0	2	12	10	26	4	1
12	2021	Wed	16		98	5	0	2	12	10	10	1	1
23	2021	Tue	17	W		5	0	2	12	10	27	3	3
14	2020	Wed	6	S		5	0	2	12	10	25	4	1
20	2020	Mon	13			5	0	2	10	10	26	1	1
9	2021	Sun	16		98	4	0	2	12	10	4	1	1
28	2019	Mon	9	E		5	0	2	12	10	27	1	7
7	2020	Thu	9	E		3	0	2	5	10	3	1	1
27	2020	Sun	19	S		5	0	2	5	10	3	4	3
20	2020	Wed	6	S		5	0	2	5	10	4	1	2
24	2021	Wed	9	S		4	0	2	5	10	4	1	1
18	2020	Sat	14	S		5	0	2	5	10	4	1	1
8	2019	Fri	15	W		4	0	2	12	10	26	1	1
13	2019	Wed	11	W		5	0	1		32	26	1	4

16	2019	Fri	9	W		4	0	1		9	10	1	2
14	2021	Thu	22		98	5	0	2	10	10	3	4	99
15	2019	Wed	19	W		5	0	2	12	10	3	3	1
15	2020	Tue	18	W		4	0	2		11	26	1	1

WEATHERS	RDWYSURF	WORKZON	ROADWAY	INTERSECT	ROUTE_ID	BASIC_TYP	UNITTYPEU	VEHICLETY	DIRECTION	PRECRASHI	AGEU1	SEXU1
	1	98	MNTH 101		030000000	7	2	2	2	21	32	M
5	3	98	MNTH 101		030000000	7	2	49	2	26	25	M
	1	98	MNTH 101		030000000	7	2	4	2	21	63	F
	1	98	SB MNTH 101 AT ISTH		030000000	7	2	3	2	28	26	M
	1	1	MNTH 101	ISTH 94	030000000	5	2	2	2	28	40	F
	5	98	MNTH 101		030000000	7	2	4	2	21	62	F
	1	1	MNTH 101		030000000	7	2	5	2	21	23	F
	1	98	MNTH 101		030000000	7	2	2	2	21	32	M
	1	98	MNTH 101		030000000	10	2	2	1	21	27	M
	1	98	MNTH 101		030000000	7	2	5	2	26	63	M
	1	98	MNTH 101		030000000	7	2	5	2	21	64	F
	1	98	MNTH 101	94	030000000	7	2	3	2	21	29	M
	2	98	MNTH 101		030000000	7	2	4	1	21	28	F
	1	98	MNTH 101		030000000	7	2	48	2	21	49	M
	1	98	SB MNTH 101 AND IST		030000000	5	2	3	2	21	54	M
4	2	98	MNTH 101	WB ISTH 94	030000000	10	2	49	1	26	60	M
	1	98	MNTH 101		030000000	7	2	3	4	31	22	M
	1	6	MNTH 101		030000000	90	2	49	1	33	26	M
	1	98	MNTH 101		030000000	10	2	2	4	21	76	F
	2	98	MNTH 101		030000000	7	1	2	2	21		
	1	98	MNTH 101		030000000	7	2	49	2	21	70	M
	2	6	MNTH 101	I-94	030000000	7	2	3	2	28	45	M
	1	98	MNTH 101		030000000	7	2	4	2	28	38	F
	1	98	MNTH 101		030000000	7	2	4	2	28	40	M
	1	1	MNTH 101	101	030000000	7	2	4	2	28	31	F
	1	2	MNTH 101	INTERSTAT	030000000	5	2	5	2	28	32	F
	1	98	MNTH 101		030000000	7	2	2	2	21	28	M
	1	98	MNTH 101		030000000	7	2	2	2	21	20	M
	1	98	SB MNTH 101 @ ISTH		030000000	7	2	3	2	34	36	F
	2	98	MNTH 101		030000000	5	2	48	2	21	36	M
	1	98	MNTH 101		030000000	7	2	4	2	21	35	F
	5	98	MNTH 101	ISTH 94	030000000	7	2	2	2	21	31	M
	1	98	MNTH 101		030000000	10	2	2	1	21	80	M

	1	98	SB MNTH 101 @ ISTH 9	030000000	5	2	2	2	28	29	M
	1	98	MNTH 101	030000000	7	2	2	2	21	32	F
	5	98	MNTH 101	030000000	7	2	49	2	21	59	M
	1	98	MNTH 101	030000000	7	2	2	2	21	48	F
	1	98	MAIN ST	040000659	7	2	2	3	23	19	M
	1	98	MAIN ST	040000659	90	2	3	2	34	41	M
	1	98	MAIN ST	040000659	10	2	3	2	21	24	M
	1	98	MAIN ST	040000659	7	2	6	2	21	23	M
	2	6	MAIN ST	040000659	7	2	6	2	21	20	M
	3	1	EB ISTH 94 AT MNTH 1	040000659	5	2	2	3	28	33	M
	2	98	MAIN ST	040000659	7	2	2	1	21	82	M
	1	98	RAMP65	220000659	3	2	2	2	32	24	F
	5	98	RAMP65	220000659	7	2	3	2	32	33	F
	1	98	RAMP65	220000659	5	2	4	2	32	56	M
	1	98	RAMP65	220000659	3	2	2	3	32	26	M
	1	98	RAMP65	220000659	3	2	2	3	21	18	M
	1	98	RAMP77	220000659	7	2	4	2	28	36	M
	1	1	WB ISTH 94 RAMP TO I	220000659	7	2	4	4	34	33	M
	5	98	RAMP815	220000659	10	2	4	4	27	31	M
	1	98	RAMP815	220000659	5	2	49	4	23	52	F
	1	98	RAMP815 MNTH 101	220000659	7	2	2	4	23	38	M
	1	98	RAMP815	220000659	7	2	2	4	23	35	M
2	2	98	RAMP815	220000659	7	2	2	4	34	39	F
	1	98	SB MNTH 101 @ I94	220000659	7	2	2	2	21	22	M
	1	3	RAMP222	220000659	5	2	2	2	34	49	F
	1	98	RAMP607	220000659	7	2	4	3	23	24	F
	3	98	RAMP607	220000659	7	2	2	3	26	20	M
	1	98	RAMP607	220000659	10	2	5	3	21	29	F
	2	98	RAMP607 MAIN ST	220000659	10	2	3	2	21	38	M
	1	98	RAMP608	220000659	10	2	49	2	21	57	M
	1	98	RAMP608	220000659	10	2	2	2	21	26	F
	1	98	RAMP608	220000659	10	2	3	3	26	22	M
	5	98	RAMP342	220000659	7	2	4	4	34	28	M
	3	98	RAMP342	220000659	3	2	2	4	21	27	F

1	98	RAMP342		220000659	2	2	2	4	23	19 F
1	1	RAMP342	MAIN STRE	220000659	5	2	2	4	21	70 M
1	98	RAMP342		220000659	7	2	2	4	21	23 M
1	98	RAMP342		220000659	90	2	4	4	21	50 M

PHYSICALC	CONTRIBFA	CONTRIBFA	NONMOTC	NONMOTC	RDWYDESI	TRAFFICCO	SPEEDLIMI	ALIGNMEN	GRADEU1	UNITTYPEL	VEHICLETY	DIRECTION
5	75	4			15	98	40	11	22	2	2	2
5	1				15	20		11	21	2	2	2
5	1				14	20	40	11	23	2	4	2
5	68	10			15	9	60	11	23	2	2	2
5	90				15	9	40	11	21	2	49	2
5	4				15	9	40	11	21	2	2	2
5	4				15	20	40	11	22	2	4	2
5	74				14	20	40	11	21	2	4	2
5	74	63			14	20	40	11	24	2	2	4
5	1				15	20	45	11	21	2	2	2
5	1				15	9	40	11	21	2	2	2
5	4				15	9	40	11	21	2	3	2
5	1				15	20	40	11	21	2	2	1
5	74				15	20	40	11	23	2	4	2
5	74				15	20	40	11	21	2	90	2
5	63				14	20	40	11	24	2	49	4
5	4	2			90	20	40	13	22	2	4	4
5	11	70			14	20	45	11	21	2	4	1
5	90				11	20	30	11	21	2	2	2
					15	98	40	11	23	2	4	2
5	4				15	20	40	11	23	2	2	2
5	10				14	20	40	11	23	2	13	2
5	4	90			15	98	40	11	23	2	2	2
5	10				15	20	40	11	23	2	4	2
5	90				14	9	40	11	23	2	3	2
5	10				14	20	40	11	23	2	48	2
5	4				15	20	40	11	23	2	4	2
5	4				15	98	40	11	23	2	5	2
5	1				14	20	40	11	23	2	49	2
5	70				15	9	40	11	23	2	4	2
5	1				15	20	40	11	21	2	4	2
5	4				15	20	40	11	21	2	2	2
5	1				14	20	40	11	21	2	4	4

5	10		15	9	40	11	21	2	3	2
5	4		15	9	40	11	21	2	2	2
5	4		12	20	40	11	23	2	4	2
10	10		14	9	40	11	23	2	49	2
5	4		15	20	40	11	21	2	2	3
5	65		15	20		11	21	3	2	2
10	63		15	20	40	11	21	2	49	3
5	4		15	98	40	11	21	2	4	2
5	74		15	9	40	11	22	2	4	2
5	10		15	9	60	11	21	2	2	3
5	4		14	9	40	11	23	2	2	1
10	75	62	15	9	40	13	21			
5	71		11	9	40	13	24	2	2	2
5	68	10	11	9	40	13	24	2	6	2
99	70	75	11	9	40	13	25			
12	74	75	11	9	60	13	21			
5	10		90	9	40	11	21	2	3	2
5	1		11	20	60	11	23	1	5	4
5	72		11	20	40	12	23	2	2	4
5	10		15	20	70	11	21	2	2	4
5	1		11	20	55	13	21	1	2	4
5	4		11	20		11	21	2	4	4
5	4	10	11	20	30	11	21	2	4	4
5	4		15	20	55	11	21	2	2	2
5	1		14	20	35	11	21	2	49	2
5	4		11	20	40	11	21	2	2	3
5	75		11	20	70	11	23	2	2	3
8	63		14	20	40	11	23	2	3	3
5	63		15	20	40	11	24	2	2	3
5	63		15	20	40	11	21	2	2	3
5	99		14	20	40	11	24	2	4	3
5	2		11	20	70	11	21	2	4	2
5	1		90	20	70	11	23	2	2	4
5	68		15	20	70	11	21			

5	2	65		14	20	40	11	21	6		
5	10			11	20	40	11	21	2	49	4
5	2			11	20	40	12	23	2	2	4
5	74			11	20	40	11	21	3	2	4

PRECRASHI	AGEU2	SEXU2	PHYSICALC	CONTRIBFA	CONTRIBFA	NONMOTC	NONMOTC	RDWYDESI	TRAFFICCO	SPEEDLIMI	ALIGNMEN	GRADEU2
26	26	F	5	1				15	98	40	11	22
34	43	F	5	1				15	20		11	21
21	58	M	5	1				14	20	40	11	23
21	41	M	5	1				15	9	60	11	23
23	39	M	5	90				15	9	40	11	21
21	44	M	5	4				15	9	40	11	21
34	58	F	5	1				15	20	40	11	22
26	56	F	5	1				14	20	40	11	21
24	71	M	5	1				14	20	40	11	24
21	20	M	5	4				15	20	45	11	21
26	26	M	5	1				15	9	40	11	21
26	61	M	5	1				15	9	40	11	21
26	18	F	5	1				15	20	40	11	21
21	25	F	5	1				15	20	40	11	23
21	53	M	5	1				15	20	40	11	21
24	63	M	5	1				11	20	70	11	21
26	48	F	5	1				90	20	40	13	22
34	53	F	5	1				14	20	45	11	21
21	63	M	5	1				15	20	40	11	21
34	41	F	99	1				15	98	40	11	23
34	39	F	5	1				15	20	40	11	23
26	46	M	5	1				14	20	40	11	23
26	59	M	5	1				15	98	40	11	23
34	36	F	5	1				15	20	40	11	23
34	50	M	5	1				14	9	40	11	23
21	19	M	5	1				14	20	40	11	23
26	56	M	99	1				15	20	40	11	23
26	26	M	5	1				15	98	40	11	23
34	58	M	5	1				14	20	40	11	23
21	38	M	5	1				15	9	40	11	23
21	69	M	5	4				15	20	40	11	21
21	41	M	5	4				15	20	40	11	21
24	58	F	5	1				14	20	40	11	21

34	45	M	5	1		15	9	40	11	21
21	18	M	5	4		15	9	40	11	21
34	40	F	5	1		12	20	40	11	23
21	23	M	5	1		14	9	40	11	23
23	24	F	5	1		15	20	40	11	21
34	28	M	5	1		15	20		11	21
23	24	M	5	1		12	20	70	11	21
26	22	F	5	1		15	98	40	11	21
34	33	M	5	1		15	9	40	11	22
21	52	M	5	1		15	9	60	11	21
21	16	F	5	4		14	9	40	11	23
32	36	M	5	71		11	9	40	13	24
32	50	M	5	1		11	9	40	13	24
21	60	M	5	1		90	9	40	11	21
26	33	F	11	4	90	11	20	60	11	23
34	30	F	5	1		11	20	40	12	23
34	61	F	5	1		15	20	70	11	21
23	33	F	5	1		11	20	55	13	21
23	38	F	5	1		11	20		11	21
34	45	F	5	1		11	20	30	11	21
21	43	F	5	1		15	20	55	11	21
23	46	M	5	72		14	20	35	11	21
34	22	F	5	1		11	20	40	11	21
34	50	F	5	1		11	20	70	11	23
24	30	M	5	1		14	20	40	11	23
21	20	M	5	1		11	20	40	11	21
24	29	F	5	1		11	20	40	11	21
24	44	F	5	99		14	20	40	11	24
21	31	F	5	1		15	20	40	11	24
26	37	F	5	90		90	20	70	11	23

	65	M	5	22	30	1						
24	51	M	5	10			11	20	40	11	21	
34	68	F	5	1			11	20	40	12	23	
34	25	F	5	1			11	20	40	11	21	

UNITTYPEL	VEHICLETY	DIRECTION	PRECRASHI	AGEU3	SEXU3	PHYSICALC	CONTRIBFA	CONTRIBFA	NONMOTC	NONMOTC	RDWYDESI	TRAFFICCO
2	4	2	21	48	M	5	1				15	9
2	2	2	21	64	F	5	1				15	9
2	4	2	26	65	F	5	1				15	98
2	2	2	21	66	M	5	70	90			14	20
2	3	2	34	33	M	5	1				15	20

2	2	2	21	17	M	5	1			15	9
2	49	3	21	77	M	5	1			15	9
2	2	1	26	41	M	5	1			14	9
2	2	2	21	48	M	5	1			90	9

SPEEDLIMI	ALIGNMEN	GRADEU3	UNITTYPEL	VEHICLETY	DIRECTION	PRECRASHI	AGEU4	SEXU4	PHYSICALC	CONTRIBFA	CONTRIBFA	NONMOTC
40	11	21	2	2	2	21	52	M		5	1	
40	11	21										
40	11	23										
40	11	23										
40	11	21										

40	11	21
60	11	21
40	11	23
40	11	21

NONMOTC	RDWYDESI	TRAFFICCO	SPEEDLIMI	ALIGNMEN	GRADEU4	UTMX	UTMY	LATITUDE	LONGITUDI	CRASH_DA	STATUS	STATUS_N
						456587.6	5004755	45.19494	-93.5527	########	Accepted	Reportable
						456588.3	5004761	45.195	-93.5527	########	Accepted	Reportable
						456589.9	5004776	45.19513	-93.5527	########	Accepted	Reportable
						456612.5	5004789	45.19525	-93.5524	########	Accepted	Reportable
						456606.3	5004793	45.19529	-93.5525	########	Accepted	Reportable
	15	9	40	11	21	456590.9	5004779	45.19516	-93.5526	########	Accepted	Reportable
						456589	5004782	45.19519	-93.5527	########	Accepted	Reportable
						456590.9	5004785	45.19521	-93.5526	########	Accepted	Reportable
						456616.9	5004810	45.19544	-93.5523	########	Accepted	Reportable
						456582.9	5004801	45.19536	-93.5528	########	Accepted	Reportable
						456588.7	5004802	45.19537	-93.5527	########	Accepted	Reportable
						456593.4	5004814	45.19547	-93.5526	########	Accepted	Reportable
						456615.6	5004832	45.19564	-93.5523	########	Accepted	Reportable
						456596.7	5004825	45.19557	-93.5526	########	Accepted	Reportable
						456595.6	5004827	45.19559	-93.5526	########	Accepted	Reportable
						456618.8	5004844	45.19574	-93.5523	########	Accepted	Reportable
						456625.4	5004855	45.19585	-93.5522	########	Accepted	Reportable
						456591.3	5004852	45.19582	-93.5527	########	Accepted	Reportable
						456599.8	5004861	45.19589	-93.5525	########	Accepted	Reportable
						456597.7	5004871	45.19599	-93.5526	########	Accepted	Reportable
						456602.1	5004876	45.19603	-93.5525	########	Accepted	Reportable
						456599.3	5004877	45.19604	-93.5526	########	Accepted	Reportable
						456597.3	5004879	45.19606	-93.5526	########	Accepted	Reportable
						456598.6	5004880	45.19606	-93.5526	########	Accepted	Reportable
						456601.5	5004885	45.19611	-93.5525	########	Accepted	Reportable
						456599.9	5004897	45.19622	-93.5525	########	Accepted	Reportable
						456603.9	5004918	45.19642	-93.5525	########	Accepted	Reportable
						456606.3	5004912	45.19636	-93.5525	########	Accepted	Reportable
						456599.8	5004914	45.19637	-93.5525	########	Accepted	Reportable
						456599.2	5004915	45.19639	-93.5526	########	Accepted	Reportable
						456604	5004755	45.19494	-93.5525	########	Accepted	Reportable
						456587.5	5004753	45.19492	-93.5527	########	Accepted	Reportable
						456611.6	5004765	45.19503	-93.5524	########	Accepted	Reportable

456585	5004793	45.19528	-93.5527	########	Accepted	Reportable
456594.8	5004831	45.19563	-93.5526	########	Accepted	Reportable
456602.1	5004896	45.19621	-93.5525	########	Accepted	Reportable
456602.1	5004921	45.19644	-93.5525	########	Accepted	Reportable
456579.2	5004624	45.19377	-93.5528	########	Accepted	Reportable
456579.3	5004628	45.19381	-93.5528	########	Accepted	Reportable
456579.4	5004631	45.19384	-93.5528	########	Accepted	Reportable
456583.3	5004688	45.19434	-93.5527	########	Accepted	Reportable
456586.4	5004731	45.19474	-93.5527	########	Accepted	Reportable
456587.2	5004742	45.19484	-93.5527	########	Accepted	Reportable
456610.5	5004729	45.19472	-93.5524	########	Accepted	Reportable
456569.6	5004654	45.19404	-93.5529	########	Accepted	Reportable
456551.7	5004643	45.19394	-93.5531	########	Accepted	Reportable
456506	5004645	45.19395	-93.5537	########	Accepted	Reportable
456525.9	5004756	45.19496	-93.5535	########	Accepted	Reportable
456527.5	5004756	45.19496	-93.5535	########	Accepted	Reportable
456593	5004727	45.1947	-93.5526	########	Accepted	Reportable
456660.9	5004836	45.19568	-93.5518	########	Accepted	Reportable
456645.5	5004847	45.19578	-93.552	########	Accepted	Reportable
456642.2	5004850	45.19581	-93.552	########	Accepted	Reportable
456633.9	5004866	45.19595	-93.5521	########	Accepted	Reportable
456633.3	5004868	45.19597	-93.5521	########	Accepted	Reportable
456630.8	5004900	45.19626	-93.5522	########	Accepted	Reportable
456592.1	5004860	45.19589	-93.5526	########	Accepted	Reportable
456574.2	5004864	45.19593	-93.5529	########	Accepted	Reportable
456573.9	5004623	45.19376	-93.5529	########	Accepted	Reportable
456575	5004623	45.19376	-93.5528	########	Accepted	Reportable
456577.6	5004623	45.19376	-93.5528	########	Accepted	Reportable
456578.9	5004623	45.19376	-93.5528	########	Accepted	Reportable
456579.7	5004622	45.19376	-93.5528	########	Accepted	Reportable
456579.7	5004622	45.19376	-93.5528	########	Accepted	Reportable
456585	5004622	45.19376	-93.5527	########	Accepted	Reportable
456655.1	5004836	45.19568	-93.5518	########	Accepted	Reportable
456646.6	5004840	45.19572	-93.552	########	Accepted	Reportable

456631.8	5004848	45.19579	-93.5521	########	Accepted	Reportable
456630.6	5004848	45.19579	-93.5522	########	Accepted	Reportable
456626.2	5004850	45.19581	-93.5522	########	Accepted	Reportable
456625.4	5004851	45.19581	-93.5522	########	Accepted	Reportable

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MN027340	Police
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MN027340	Police
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MN027320	Police
MN027340	Police
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NARRATIVE

According to Drivers: Vehicles Moved

Officer was dispatched to a property damage crash that occurred on Main St over the I94 bridge. Officer spoke to Driver #1 who was southbound Main St

Officer responded to the area of Main Street at intersection with Interstate 94 for a property damage accident. There were no injuries and both vehicles

SB MNTH 101 AT ISTH 94, TWO VEHICLES, FRONT TO REAR, NO INJURIES, NO TOWS.

Driver of unit 1 stated that she had been traveling southbound in the right-hand lane of Main Street, and that she decided to merge into the center lane

Driver 1 stated she was traveling Southbound on Main St in the right exit lane to travel Eastbound I-94. She stated she was traveling 5mph or less and

SB Main Street from SDLR to I94 overpass is under construction, right lane of three SB lanes is temporarily closed. Located the two involved vehicles block

Driver 2 stated she was traveling Southbound on MN Hwy 101/Main St approaching the I-94 overpass. She stated she was in the lane to take the

Property damage motor vehicle crash. No injuries, two tows.

SB HWY 101/ OVER 94. RIGHT LANE OF 3 LANES.

Drivers of vehicles 1 & 2 were travelling SB on 101 over the bridge of Interstate 94. Both vehicles were in the lane to take the clover to EB 94. The driver o

MNTH 101 S/B OVER I-94.

Both driver were NB Main Street traveling over the I-94 bridge in the left lane to go straight. The north light turned yellow and D2 quickly came to a stop

Driver 1 stated he was traveling southbound on Main Street waiting to cross over Interstate 94. Driver 1 stated he was in the lane to exit onto

SB MNTH 101 and ISTH 94

MNTH 101 @ ISTH 94, 2 VEH, ANGLE CRASH, BOTH CMV, NO INJ/ PASS, 2 PVT TOWS, CMV INSPECTION COMPLETED.

Vehicles Moved According to Drivers:

County 101 (Mainstreet) to Westbound I-94 in Rogers. It was daylight, the weather was clear and the roadway was dry. V1 was in front of V2 in the left t

WB ISTH 94 exit ramp to MNTH 101.

According to Driver #2 (Reported over the phone and as a H&R)

On Monday, May 10, 2021, at approximately 0735 hours, I was dispatched to a property damage accident. I was advised both vehicles were now parked

Unit two was SB in the right lane to enter I-94 before the lights over the bridge. Unit one was SB merging or just merged into the same right lane. Traffic

According to Driver's, Vehicles moved

Vehicles Moved

Driver two was stopped at a red light southbound Main Street at I-94. Driver one was in the middle lane behind Driver two. Driver one noticed she had to

Officer responded to a two vehicle property damage accident on southbound Main Street, south of Interstate 94. There were no injuries and one vehicle

Driver 1 was only vehicle on scene on arrival of officer. Driver 1 stated he rear-ended a Cadillac Escalade in the SB Main Street (MNTH 101) lane that

Dispatched to a personal injury motor vehicle crash. No tows, no transport to hospital.

SB MNTH 101 @ ISTH 94, #3 LANE, 3 VEH, REAR END, NO INJ, 1 PASS, 1 PVT TOW, CMV, INSP WAIVED.

Unit 1 Driver called to report hit & run crash occurring SB Main St. between SDLR and I94. Officer called the RP and learned he remained on scene, in the

SB HWY 101 @ ISTH 94, 2 VEHICLE, NO INJURIES, NO TOWS, FRONT TO REAR, 1 CITATION

On 03-04-2019 at 0540 hours, I, Sgt. Bohlsen was dispatched to a call of a multiple vehicle crash on southbound Main Street over I94. Five vehicles had

Officer was made aware of a property damage accident on Main Street and Interstate 94 involving two vehicles. There were no injuries and both vehicles

SB MNTH 101 @ ISTH 94, #3 LANE, 2 VEH, SIDE SWIPE SAME, NO INJ/PASS/TOWS.
Vehicle #3 was southbound on Main Street, over Interstate 94, approaching the Interstate 94 eastbound on ramp. The ramp is on the right. Traffic was
Officer was dispatched to a two vehicle property damage accident on southbound Main Street at Interstate 94. There were no reported injuries and both
Unit 1 and 2 were traveling SB on Main Street. Unit 2 was in the 2nd lane (Lane for EB I94) and Unit 1 was in the 3rd lane (straight lane). Unit 1 changed
Officers were dispatched to a property damage accident involving two cars on south bound Main Street south of the Interstate 94 interchange. Upon
Officers were dispatched to a two-vehicle property damage accident at the intersection of Main Street and the ramp for East Interstate 94. No injuries
Unit 2 exited I-94 EB taking a right onto SB Main street on a green light. Unit 2 came to a quick stop when Unit 1 ran a red light and clipped the front
The drivers of vehicle 1 and 2 were in rush hour traffic heading southbound on main street approaching the clover to take eastbound I-94. The driver of ve
The crash was reported to have occurred on the Main St bridge SB over I94. A moving road construction crew MNDOT was repairing pavement pot holes
V1 MADE CONTACT WITH V2 AND V3 WHILE ATTEMPTING TO CUT IN BETWEEN V2 AND V3. NO INJURIES
Officer responded to a three vehicle property damage accident on northbound Main Street at Interstate 94. There were no injuries and one vehicle was
Officers were dispatched to a vehicle that had crashed into a road sign after hopping the curb. Two separate callers reported the accident, one stating
TROOPER WITNESSED 2 VEH CRASH. VEH 1 SB HWY 101 TO EB 94 ENTRANCE RAMP. DRIVER LOST CONTROL OF VEH ON BLACK ICE ON RAMP AND DROVE
Officer responded to a property damage accident on the cloverleaf from southbound Main Street to eastbound Interstate 94. There were two vehicles
Officer was on scene at a business when a theft in progress occurred. Officer attempted to stop the suspect as the suspect fled on foot, prior to fleeing in
SB Hwy 101 to EB I-94 ramp. Driver stated he was going to fast and not paying attention when he came down the ramp, lost control and struck the guard
Unit 2 and 3 were traveling in the right lane of SB Main St approaching the ramp for EB I94. Unit 1 was traveling in the middle lane. Driver of Unit 1
WB ISTH 94 RAMP TO MNTH 101, 2 VEH, REAR END, H/R, NO INJ / PASS / TOW, CONST ZONE.
Vehicles were both exiting at Hwy 101 (Main Street) from Westbound I94. Vehicle 1 was in the middle lane, and vehicle two was in the far right lane.
On Wednesday 07/24/2019 I, Officer Blake Neumann, was dispatched to a property damage crash that took place at the top of the exit to Main Street
Vehicle one was stopped at West bound 94 off ramp at the light to North bound 101. When vehicle 0ne started to make the right hand turn vehicle 2 rear
Officers came upon a two vehicle property damage accident with no injuries. Officer spoke with the driver of unit 2 who stated she had stopped for
Both vehicles were exiting WB I-94 onto Main street in Rogers and stopped at the red light to turn right and go North bound on Main street. Driver of V2 v
Both vehicles traveling southbound on MNTH 101 @ I94. Both vehicles in the right lane. Vehicle one rear ended vehicle two. Traffic was slowed/ stopped
V1 stopped in lane for traffic and lights ahead.
Officers responded to a two vehicle front to rear collision on the eastbound Interstate 94 ramp to Main Street (Hwy 101). There was very minor damage
Driver 2 stated she was traveling East on Interstate 94 and took the exit ramp to MN Hwy 101/Main St. She stated she came to a stop in the left turn
Officers responded to Main Street and Interstate 94 for an unknown injury accident. Officers located two vehicles in the intersection. Both vehicles
Vehicle one was traveling Southbound on Main Street in the far left lane. Vehicle two was exiting Eastbound Interstate 94 to go Northbound on Main
Officers were dispatched to a two vehicle property damage accident at the intersection of Interstate 94 and Main St. No injuries.
Officers responded to the intersection of Main Street and Interstate 94 for a two vehicle personal injury crash. Both vehicles were towed form the scene
I was dispatched to a 2 vehicle PD crash on Main St near the I94 overpass, vehicles were not blocking. I arrived and observed a GMC Acadia MN LIC
WB ISTH 94 EXIT RAMP TO MAIN STREET / MNTH 101
THE DRIVER OF V1 STATED THAT SHE WAS ON THE RAMP FROM ISTH 94 WESTBOUND TO HWY 101, SHE STATED THAT SHE LOST CONTROL OF HER

Officers responded to a motor vehicle accident involving a bicyclist at the intersection of Main Street and Interstate 94. I spoke with the driver of the Officer responded to the area of Main Street and the exit ramp from westbound Interstate 94 for a semi/passenger vehicle crash. There were no injuries Both vehicles were exiting from Westbound I94 waiting to turn onto Northbound Main St. There was a semaphore active and on a red light. Driver 1 state On September 15, 2020 at approximately 1836 hours, I was dispatched to a property damage accident on Main Street and Interstate 94.

:. Driver #1 stated that he was trying to stop at the stop light but due to the icy roads he was unable and he struck the rear end of unit #2. Driver #2 s

ing the left lane, exchanging info. Both drivers were ID'D by MN DL and vehicles moved to a nearby gas station after photos were taken, see media. U

f vehicle 2 was ahead and was in stop and go traffic. Driver of vehicle 2 said that he started to drive when the vehicle in front of him slammed on its b

urn lane on 101 to go westbound I-94. Part of the ramp was coned off with construction barrels and the area was under construction and an active w

change lanes due to construction. While attempting to change lanes Driver one hit the rear driver side of Unit two with the front passenger side of Ur

ehicle 2 was in front of vehicle 1. It was stop and go traffic and all of the sudden vehicle 2 came to a halt in effort to avoid colliding with a vehicle in frc

OVER CURB COMING TO REST WITH REAR OF VEH BLOCKING RAMP. VEH 2 ENTERED RAMP AND COULD NOT STOP ON BLACK ICE TO AVOID COLLISIO

rail end causing airbags to deploy and disabling damage to vehicle. Guard rail damaged. Yellow tagged. Driver cited for duty to drive with due care.

ended vehicle one.

was the next vehicle up to turn on the red light and the driver started to move forward to look and see if it was ok to turn. Driver of vehicle 2 stated sh
due to morning commute congestion for vehicles to enter I94. Driver of vehicle one stated that traffic slowed quickly and was not able to stop in time

d he thought that vehicle 2 had started going, so he moved forward, while looking at traffic from the left. He did not realize that vehicle 2 was stoppe

tated she was stopped at the light and rear ended by unit #1. No injuries, both vehicles were still drivable.

nit 2 reported to have been stopped in traffic back up in the left lane N side of the bridge deck. She was struck from behind, did not see pre crash in re

rakes, causing him to have to do the same. The driver of vehicle 1 stated she was going slow and was approaching the moving vehicle 2 but was unab

orking area. V1 attempted to make the left turn, but due to the barrels, driver of V1 realized they were not going to make the turn so V1 backed up t

nit one.

ont. Vehicle 1 was travelling too close to vehicle 2 and rear-ended it. Both vehicles sustained moderate but not disabling damage. Both drivers were ur

N STRIKING REAR BUMPER OF VEH 1. MINOR DAMAGE TO BOTH VEHS. TROOPER PULLING IN BEHIND VEHS TO BLOCK TRAFFIC WITH EMERGENCY LIG

Vehicle towed by Burda's towing.

ıe stopped prior to the crosswalk as a vehicle was coming northbound on Main street and she could not turn. V1 was behind V2 and did not see that V
before impact.

d and rear ended her. Driver 2 stated that she was at a complete stop waiting for traffic to clear so she could make the right turn when she was rear e

ear view. Driver of Unit 2 stated her back was sore, refused medical at scene. Driver of Unit 1 said she was not distracted but could not explain what ca

le to stop in time as vehicle 2 slammed on its brakes, causing them to collide.

o re-angle and make the left turn. When V1 backed up, V1 struck V2 stopped behind it and pushed V2 for quite a ways. Surrounding traffic was honk

ıinjured and moved vehicles to nearby business lot.

ıHTS BARELY AVOIDED COLLISION AS WELL RAMP WAS SO ICY. NO INJURIES.

/2 had stopped and crashed into the rear of V2.

nded. No injuries reported.

aused her to impact Unit 2. Driver of Unit 1 reported having a sore back as well, refused medical at scene. Driver of Unit 1 was cited for following too c

ing at V1, but V1 continued to re-angle and proceeded to make the turn and drove off onto westbound I-94. A witness, which was a Burdas tow truck

closely.

, in the area followed V1 to Monticello where a State Trooper was able to stop V1. There was very heavy damage to the front and top of V2. The wir

ıdshield was crushed and pushed back into the driver area. Driver of V2 was complaining of pain, seen by medics but refused transpc

N

0 100 200

SCALE IN FEET

MAIN ST (TH 101)

WB ON-RAMP

INTERSTATE 94

CLOSE ACCESS TO EXISTING WALK

REMOVE EXISTING SB TH 101 TO EB I-94 LOOP AND C-D ROAD.

EB OFF-RAMP

INDUSTRIAL CT

WB OFF-RAMP

ROGERS DR

INTERSTATE 94

EB ON-RAMP

INDUSTRIAL BLVD

MAIN ST (TH 101)

JOHN MILLESS DR

LEGEND

- PAVED ROADWAY
- BRIDGE REHAB
- RAISED MEDIANS & CURBS
- PAVED SHOULDERS
- BITUMINOUS TRAIL
- CONCRETE TRAIL
- LANDSCAPED MEDIAN
- PROPOSED TRAFFIC SIGNAL
- EXISTING TRAFFIC SIGNAL
- PARCEL BOUNDARY

HENNEPIN COUNTY
MINNESOTA

March 25, 2022

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

Re: Support for 2022 Regional Solicitation Application
TH 101 Interchange Project at I-94

Dear Ms. Koutsoukos,

Hennepin County has been notified that the City of Rogers is submitting an application for funding as part of the 2022 Regional Solicitation through the Metropolitan Council. The proposed project is the redesign of the existing interchange along TH 101 at I-94 is anticipated to include the following improvements:

- Redesign of the existing interchange configuration to improve mobility and safety through the area
- Upgrades to the existing off-road facilities for people walking and biking through the area
- Introduction of green space for storm water management

Hennepin County supports this funding application that aims to improve safety and mobility at a key interchange in Northwest Hennepin County. At this time, Hennepin County has no funding programmed for this project in its 2022-2026 Transportation Capital Improvement Program (CIP). Therefore, county staff is currently unable to commit county cost participation in this project. Additionally, given project's close proximity to CSAH 81, we kindly request that the City of Rogers includes county staff in the project development process to ensure project success. We look forward to working together to improve the safety and mobility of people walking, biking, and driving through the TH 101 at I-94 interchange.

Sincerely,

Carla Stueve

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

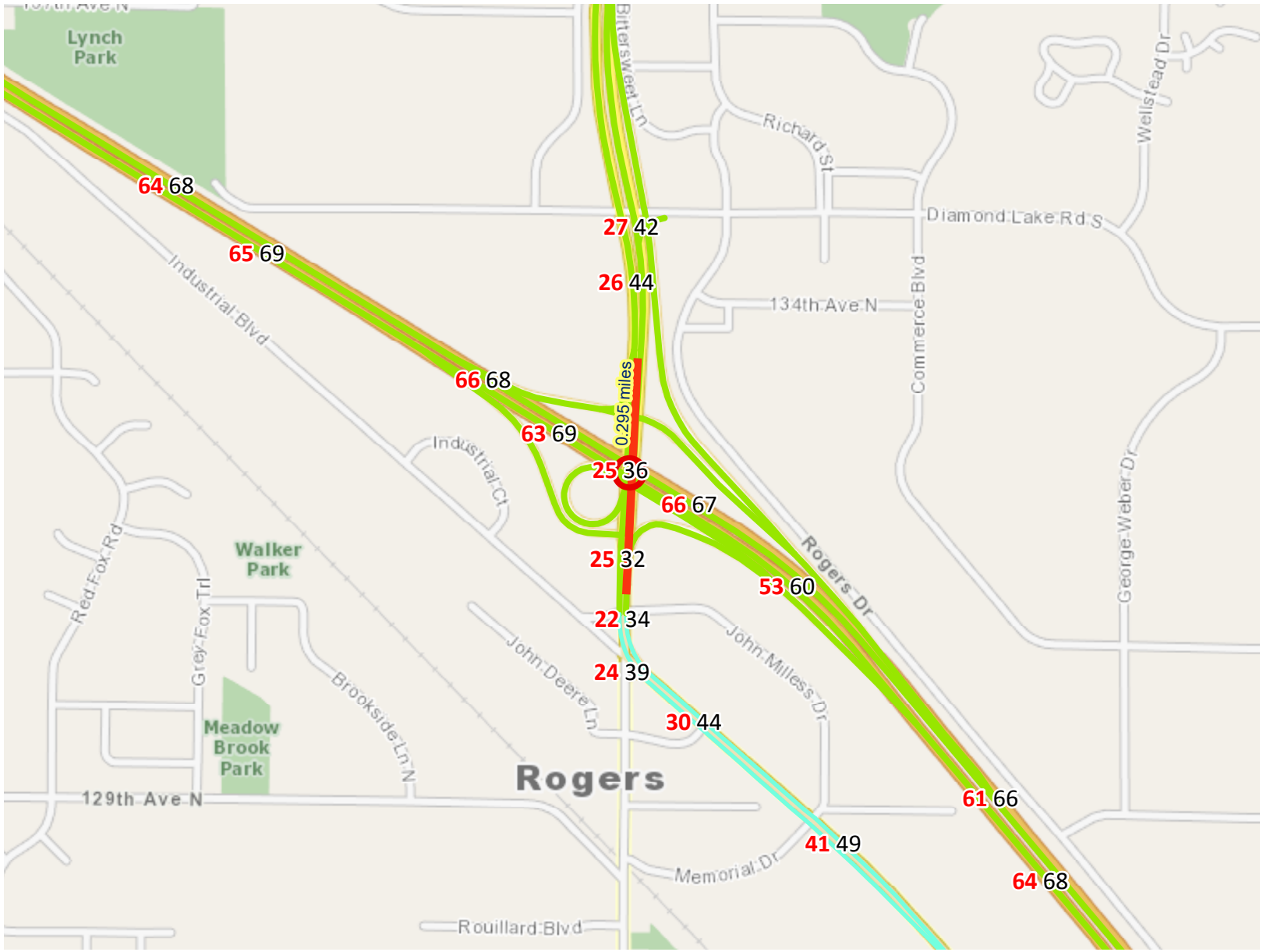
cc: Jason Pieper, P.E. – Capital Program Manager

Hennepin County Public Works
1600 Prairie Drive | Medina, MN
612-596-0356 | hennepin.us

Hennepin

Level of Congestion

Roadway Reconstruction/Modernization Project: TH 101 and I-94 Diverging Diamond Interchange Upgrade | Map ID: 1648146509808



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

0 0.1 0.2 0.4 0.6 0.8 Miles

Created: 3/24/2022
LandscapeRSA1

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

METROPOLITAN COUNCIL

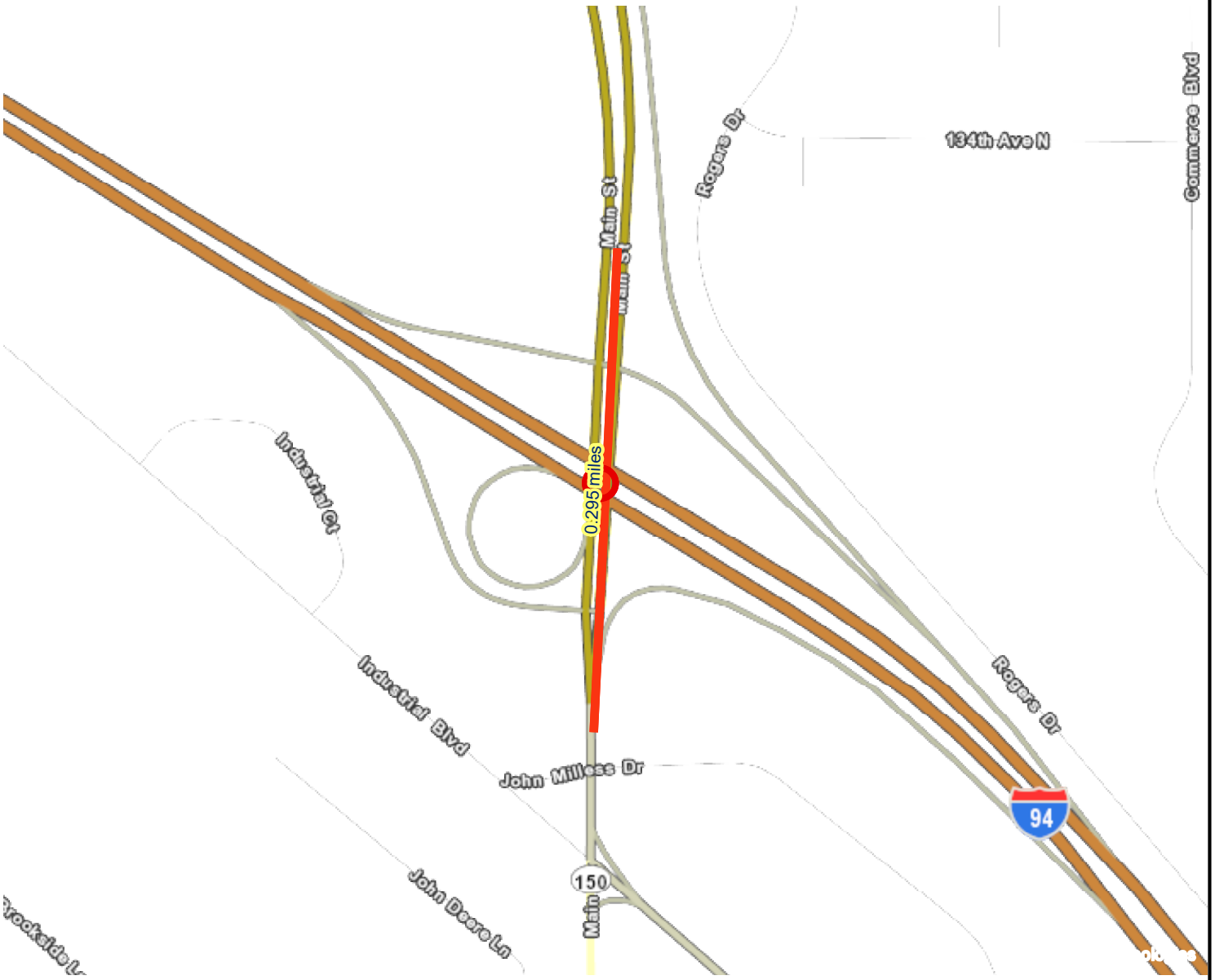
Regional Economy

Roadway Reconstruction/Modernization Project: TH 101 and I-94 Diverging Diamond Interchange Upgrade | Map ID:

Results

WITHIN ONE MI of project:
Postsecondary Students: 0

Totals by City:
Rogers
Population: 7494
Employment: 7223
Mfg and Dist Employment: 3182



Project Points
Project
Manfacturing/Distribution Centers
Job Concentration Centers

0 0.05 0.1 0.2 0.3 0.4 Miles

Created: 3/24/2022
LandscapeRSA5

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

METROPOLITAN COUNCIL

March 17, 2022

The Honorable Peter Buttigieg
Secretary, US Department of Transportation
1200 New Jersey Ave, SE
Washington, DC 20590

Secretary Buttigieg:

As the region's metropolitan planning organization, the Metropolitan Council of the Twin Cities region is pleased to support the City of Rogers' request for the I-94 and Minnesota Trunk Highway 101 interchange project for consideration under the US Department of Transportation (DOT) RAISE grant program. This project would provide improved mobility and safety for local traffic, regional commuters, and freight traffic. This interchange frequently creates unsafe queues with southbound Trunk Highway 101 queues extending up to a mile north, impacting the next major intersection. Traffic operations studies have found that a Diverging Diamond Interchange would provide better operations and safety for a limited capital cost.

The Metropolitan Council is committed to amending the Transportation Improvement Program and long-range transportation plan, as needed, to include this project. The Metropolitan Council is in full support of the City of Rogers' RAISE grant application, and we look forward to working with the city and all other project partners to successfully deliver these regionally significant improvements.

Sincerely,

Charles Carlson
Metropolitan Transportation Services Executive Director
Metropolitan Council

390 Robert Street North | Saint Paul, MN 55101-1805
P. 651.602.1000 | TTY. 651.291.0904 | metrocouncil.org
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METROPOLITAN COUNCIL

April 4, 2022

Pete Buttigieg
United States Secretary of Transportation
U.S. Department of Transportation
1200 New Jersey Ave, SE
Washington, DC 20590

Subject: Letter of Support for the 2022 RAISE Grant Program: TH101 & I94 Interchange (Rogers, MN)

Dear Secretary Buttigieg,

I am writing in support of the City of Rogers's application for funding through the United States Department of Transportation's Rebuilding American Infrastructure with Sustainability and Equity (RAISE) grant. The RAISE funding would facilitate construction of a diverging diamond interchange at Interstate 94 and Minnesota Trunk Highway 101.

The interchange is a vital asset to the surrounding communities and the State as a whole, as it connects the Minneapolis-Saint Paul Metropolitan Area with many suburban communities and is a gateway to north central Minnesota.

The project would provide for increased safety and decreased congestion at what is an extremely busy intersection and would provide economic development benefits by improving access to good paying jobs and improving freight mobility throughout the region.

I fully support the City of Roger's application for the funding of the diverging diamond interchange at Interstate 94 and Minnesota Trunk Highway 101 and look forward to the infrastructure investment in our region through the Bipartisan Infrastructure Law. Please give this 2022 RAISE Discretionary Grant proposal your full consideration and if I can answer any questions, please do not hesitate to contact me. I may be reached via email at jstockamp@ci.otsego.mn.us.

Sincerely,

Jessica L. Stockamp
Mayor
City of Otsego, MN

TH 101/I-94 Diverging Diamond Interchange Upgrade
Photos

Southbound TH 101

Northbound TH 101

Project Summary
TH 101/I-94 Diverging Diamond Interchange Upgrade

Applicant – City of Rogers
Project Location – TH 101 at I-94 in Rogers, Hennepin County
Total Project Cost – $8,475,000 **Requested Federal Dollars** - $6,780,000

Project Description:

The project includes the reconstruction of the TH 101 and I-94 diamond interchange to a diverging diamond interchange. This will provide safer operations along TH 101, a critical non-freeway Principal Arterial with its connection to a major regional facility, I-94, a freeway Principal Arterial.

The interchange reconstruction also includes replacing a 0.4-mile segment of 10-foot trail on the east side of TH 101 with shorter crossing distances at the ramp intersections. As part of this project, the new signals will include countdown timers at the TH 101 ramp intersections for safer crossings. The two-phase traffic signal will operate more efficiently and reduce the overall vehicular delay by accommodating high turning volumes. In addition, all sidewalk replacement, crosswalks, lighting, traffic signal, and curb ramps will be constructed to meet ADA standards.

Summary of Benefits:

- Addresses the unsafe weaving issues, congestion, and long queues by providing better lane designation and two lanes of traffic onto the eastbound on-ramp in place of the single on-ramp loop.
- Provides improved roadway geometrics to accommodate the dominant turn moves and reduces the need for lane changes within a short distance.
- Reduces the potential for rear-end and side-swipe crashes due to weaving along TH 101.
- Provides improved north-south travel flow for TH 101 motorists crossing over and connecting to I-94.
- Improves the travel experience for bicyclists and pedestrians that share the TH 101 corridor.

Existing Conditions: TH 101 Southbound motorists experiencing existing roadway grades to reach the eastbound on-ramp to I-94.

DEPARTMENT OF TRANSPORTATION

395 John Ireland Boulevard
Saint Paul, MN 55155

April 1, 2022

The Honorable Pete Buttigieg
Secretary, US Department of Transportation
1200 New Jersey Ave, SE
Washington, DC 20590

Dear Secretary Buttigieg,

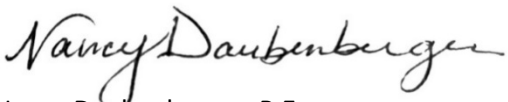
This letter is in reference to the Rebuilding American Infrastructure with Sustainability and Equity application for the Highway 101/Interstate 94 interchange project in the city of Rogers. This is a locally led project on MnDOT's trunk highway system. This project will convert the existing Highway 101/I-94 interchange into a diverging diamond interchange. The Highway 101/I-94 interchange is a system interchange that experiences a high-level of commuter, freight and local traffic. A completed traffic analysis of the interchange determined a diverging diamond interchange would operate at a better level of service than exists today and would improve traffic flow and provide safety benefits to the area for a limited capital cost.

Currently the total project cost estimate is $12 million. The city of Rogers has $2.4 million identified for this project. MnDOT currently does not have this project included in the State Transportation Improvement Program (STIP) or funding identified in MnDOT's 10-year Capital Highway Investment Plan (CHIP). It is MnDOT's assumption at this time that the local agency will be responsible for delivery costs and funding gaps. This project is planned for construction in 2023.

MnDOT looks forward to continued cooperation with the city of Rogers as this effort moves forward to improve this transportation need.

Thank you for your interest and support to improve Minnesota's transportation system.

Sincerely,



Nancy Daubenberger, P.E.
Interim Commissioner, Minnesota Department of Transportation

CC Doran Cote, Public Works Director/City Engineer, City of Rogers
Michael Barnes, MnDOT District Engineer

Rogers 101/94 Application

Existing

920	South Ramps		
	Existing Volume	4298	vehicles
	Existing Delay	22	sec/veh
	Existing Total Delay	94556	seconds

940	North Ramps		
	Existing Volume	3634	vehicles
	Existing Delay	52	sec/veh
	Existing Total Delay	188968	seconds

Total Delay	**283524**

Build

20	South Crossover		
	Future Volume	1662	vehicles
	Future Delay	25	sec/veh
	Future Total Delay	41550	seconds

21	NB 101 and 94 EB Off Ramp		
	Future Volume	700	vehicles
	Future Delay	6	sec/veh
	Future Total Delay	4200	seconds

22	SB 101 and 94 EB Off Ramp		
	Future Volume	1435	vehicles
	Future Delay	7	sec/veh
	Future Total Delay	10045	seconds

23	94 EB On Ramp and 101		
	Future Volume	2163	vehicles
	Future Delay	0	sec/veh
	Future Total Delay	0	seconds

30	SB 101 and North Crossover		
	Future Volume	3219	vehicles
	Future Delay	47	sec/veh
	Future Total Delay	151293	seconds

31	94 WB Off Ramp and SB 101		
	Future Volume	2666	vehicles
	Future Delay	23	sec/veh
	Future Total Delay	61318	seconds

32	94 WB Off Ramp and NB 101		
	Future Volume	808	vehicles
	Future Delay	5	sec/veh
	Future Total Delay	4040	seconds

Total Future Delay	**272446**

Total Network Delay Reduction	**11078**	**seconds**

Emissions

Existing	920	940	Total
CO	4.11	6.09	10.2
NOx	0.8	1.18	1.98
VOC	0.95	1.41	2.36
	Total Existing		14.54

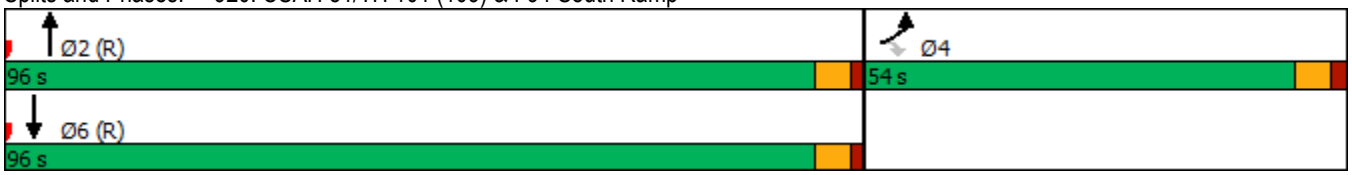
Build	20	21	22	23	30	31	32	Total
CO	1.54	0.18	0.37	0.45	4.28	1.21	0.19	8.22
NOx	0.3	0.04	0.07	0.09	0.83	0.24	0.04	1.61
VOC	0.36	0.04	0.08	0.1	0.99	0.28	0.04	1.89
						Total Future		11.72

Total Reduction	**2.82**

Lane Group	EBL	EBR	NBT	NBR	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	251	222	449	710	1213	1453
Future Volume (vph)	251	222	449	710	1213	1453
Turn Type	Prot	Perm	NA	Free	NA	Free
Protected Phases	4		2		6	
Permitted Phases		4		Free		Free
Detector Phase	4	4	2		6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	15.0		15.0	
Minimum Split (s)	22.0	22.0	21.5		21.5	
Total Split (s)	54.0	54.0	96.0		96.0	
Total Split (%)	36.0%	36.0%	64.0%		64.0%	
Yellow Time (s)	4.0	4.0	4.0		4.0	
All-Red Time (s)	2.0	2.0	1.5		1.5	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.0	5.5		5.5	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Max		C-Max	
Act Effct Green (s)	28.7	28.7	109.8	150.0	109.8	150.0
Actuated g/C Ratio	0.19	0.19	0.73	1.00	0.73	1.00
v/c Ratio	0.79	0.68	0.17	0.49	0.46	1.03
Control Delay	74.0	50.4	6.9	1.1	8.5	34.6
Queue Delay	0.0	0.0	0.0	0.0	0.4	0.0
Total Delay	74.0	50.4	6.9	1.1	8.9	34.6
LOS	E	D	A	A	A	C
Approach Delay			3.4		22.9	
Approach LOS			A		C	

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of 1st Green	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 22.1	Intersection LOS: C
Intersection Capacity Utilization 53.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 920: CSAH 81/TH 101 (109) & I-94 South Ramp



Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	92	3	163	55	645	2574	102
Future Volume (vph)	92	3	163	55	645	2574	102
Turn Type	Perm	NA	Free	Prot	NA	NA	Perm
Protected Phases		8		5	2	6	
Permitted Phases	8		Free				6
Detector Phase	8	8		5	2	6	6
Switch Phase							
Minimum Initial (s)	8.0	8.0		7.0	15.0	15.0	15.0
Minimum Split (s)	22.0	22.0		12.5	23.5	21.5	21.5
Total Split (s)	22.0	22.0		12.5	128.0	115.5	115.5
Total Split (%)	14.7%	14.7%		8.3%	85.3%	77.0%	77.0%
Yellow Time (s)	4.0	4.0		3.5	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		5.5	5.5	5.5	5.5
Lead/Lag				Lag		Lead	Lead
Lead-Lag Optimize?				Yes		Yes	Yes
Recall Mode	None	None		None	C-Max	C-Max	C-Max
Act Effct Green (s)	9.5	9.5	150.0	7.0	129.0	116.5	116.5
Actuated g/C Ratio	0.06	0.06	1.00	0.05	0.86	0.78	0.78
v/c Ratio	0.45	0.51	0.06	0.74	0.21	1.09	0.09
Control Delay	74.2	24.4	0.1	126.9	3.4	65.7	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.2	24.4	0.1	126.9	3.4	65.7	0.9
LOS	E	C	A	F	A	E	A
Approach Delay		34.4			13.2	63.3	
Approach LOS		C			B	E	

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of 1st Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.09	
Intersection Signal Delay: 51.6	Intersection LOS: D
Intersection Capacity Utilization 62.0%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 940: TH 101 (109) & I-94 North Ramp

920: CSAH 81/TH 101 (109) & I-94 South Ramp

Direction	All
Future Volume (vph)	4298
Total Delay / Veh (s/v)	22
CO Emissions (kg)	4.11
NOx Emissions (kg)	0.80
VOC Emissions (kg)	0.95

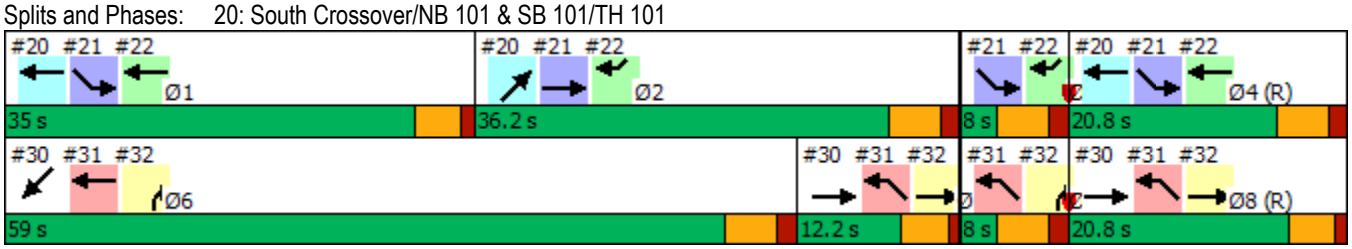
940: TH 101 (109) & I-94 North Ramp

Direction	All
Future Volume (vph)	3634
Total Delay / Veh (s/v)	52
CO Emissions (kg)	6.09
NOx Emissions (kg)	1.18
VOC Emissions (kg)	1.41

Lane Group	WBT	NET	Ø1	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8
Lane Configurations									
Traffic Volume (vph)	1213	449							
Future Volume (vph)	1213	449							
Turn Type	NA	NA							
Protected Phases	1 4	2	1	3	4	5	6	7	8
Permitted Phases									
Detector Phase	1	2							
Switch Phase									
Minimum Initial (s)		4.0	5.0	2.0	4.0	5.0	4.0	2.0	5.0
Minimum Split (s)		28.0	9.5	8.0	20.0	9.5	28.0	8.0	9.5
Total Split (s)		36.2	35.0	8.0	20.8	12.2	59.0	8.0	20.8
Total Split (%)		36.2%	35%	8%	21%	12%	59%	8%	21%
Yellow Time (s)		3.9	3.5	3.9	3.9	3.5	3.9	3.9	3.5
All-Red Time (s)		1.5	1.0	1.5	1.5	1.0	1.5	1.5	1.0
Lost Time Adjust (s)		0.0							
Total Lost Time (s)		5.4							
Lead/Lag		Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag
Lead-Lag Optimize?		Yes	Yes			Yes	Yes		Yes
Recall Mode		None	None	None	C-Max	None	None	None	C-Max
Act Effct Green (s)	58.9	31.2							
Actuated g/C Ratio	0.59	0.31							
v/c Ratio	0.64	0.45							
Control Delay	23.5	29.3							
Queue Delay	0.0	0.0							
Total Delay	23.5	29.3							
LOS	C	C							
Approach Delay	23.5	29.3							
Approach LOS	C	C							

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 4:WBT and 8:, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 25.0	Intersection LOS: C
Intersection Capacity Utilization 55.5%	ICU Level of Service B
Analysis Period (min) 15	

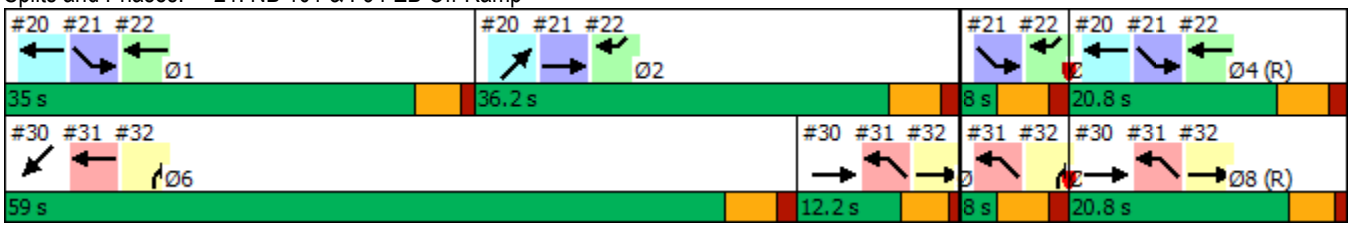
Splits and Phases: 20: South Crossover/NB 101 & SB 101/TH 101



Lane Group	EBT	SEL	Ø1	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8
Lane Configurations									
Traffic Volume (vph)	449	251							
Future Volume (vph)	449	251							
Turn Type	NA	pm+pt							
Protected Phases	2	1 3 4	1	3	4	5	6	7	8
Permitted Phases		1 3 4							
Detector Phase	2	1							
Switch Phase									
Minimum Initial (s)	4.0		5.0	2.0	4.0	5.0	4.0	2.0	5.0
Minimum Split (s)	28.0		9.5	8.0	20.0	9.5	28.0	8.0	9.5
Total Split (s)	36.2		35.0	8.0	20.8	12.2	59.0	8.0	20.8
Total Split (%)	36.2%		35%	8%	21%	12%	59%	8%	21%
Yellow Time (s)	3.9		3.5	3.9	3.9	3.5	3.9	3.9	3.5
All-Red Time (s)	1.5		1.0	1.5	1.5	1.0	1.5	1.5	1.0
Lost Time Adjust (s)	0.0								
Total Lost Time (s)	5.4								
Lead/Lag	Lag		Lead	Lead	Lag	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes		Yes			Yes	Yes		Yes
Recall Mode	None		None	None	C-Max	None	None	None	C-Max
Act Effct Green (s)	31.2	58.9							
Actuated g/C Ratio	0.31	0.59							
v/c Ratio	0.45	0.26							
Control Delay	3.3	10.7							
Queue Delay	0.1	0.0							
Total Delay	3.4	10.7							
LOS	A	B							
Approach Delay	3.4	10.7							
Approach LOS	A	B							

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 4:WBT and 8:, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 6.0	Intersection LOS: A
Intersection Capacity Utilization 34.2%	ICU Level of Service A
Analysis Period (min) 15	

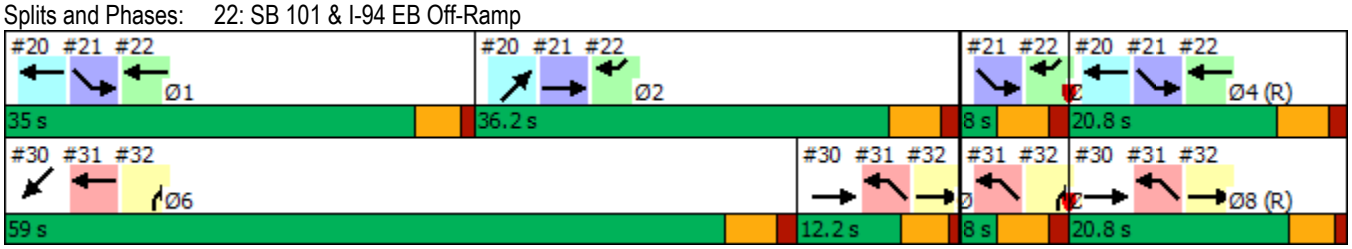
Splits and Phases: 21: NB 101 & I-94 EB Off-Ramp



Lane Group	WBT	SWR	Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8
Lane Configurations										
Traffic Volume (vph)	1213	222								
Future Volume (vph)	1213	222								
Turn Type	NA	custom								
Protected Phases	1 4	2 3	1	2	3	4	5	6	7	8
Permitted Phases										
Detector Phase	1	2								
Switch Phase										
Minimum Initial (s)			5.0	4.0	2.0	4.0	5.0	4.0	2.0	5.0
Minimum Split (s)			9.5	28.0	8.0	20.0	9.5	28.0	8.0	9.5
Total Split (s)			35.0	36.2	8.0	20.8	12.2	59.0	8.0	20.8
Total Split (%)			35%	36%	8%	21%	12%	59%	8%	21%
Yellow Time (s)			3.5	3.9	3.9	3.9	3.5	3.9	3.9	3.5
All-Red Time (s)			1.0	1.5	1.5	1.5	1.0	1.5	1.5	1.0
Lost Time Adjust (s)										
Total Lost Time (s)										
Lead/Lag			Lead	Lag	Lead	Lag	Lag	Lead	Lead	Lag
Lead-Lag Optimize?			Yes	Yes			Yes	Yes		Yes
Recall Mode			None	None	None	C-Max	None	None	None	C-Max
Act Effct Green (s)	58.9	31.2								
Actuated g/C Ratio	0.59	0.31								
v/c Ratio	0.64	0.48								
Control Delay	2.9	32.1								
Queue Delay	0.0	0.0								
Total Delay	2.9	32.1								
LOS	A	C								
Approach Delay	2.9									
Approach LOS	A									

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 4:WBT and 8:, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 7.5	Intersection LOS: A
Intersection Capacity Utilization 55.5%	ICU Level of Service B
Analysis Period (min) 15	

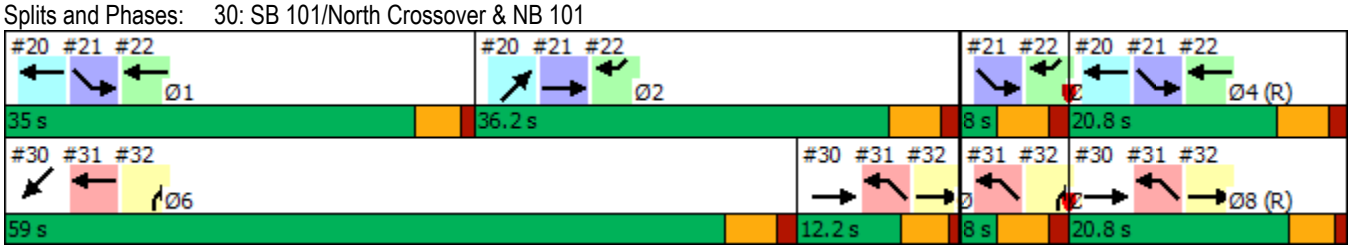
Splits and Phases: 22: SB 101 & I-94 EB Off-Ramp



Lane Group	EBT	SWT	Ø1	Ø2	Ø3	Ø4	Ø5	Ø7	Ø8
Lane Configurations									
Traffic Volume (vph)	645	2574							
Future Volume (vph)	645	2574							
Turn Type	NA	NA							
Protected Phases	5 8	6	1	2	3	4	5	7	8
Permitted Phases									
Detector Phase	5	6							
Switch Phase									
Minimum Initial (s)		4.0	5.0	4.0	2.0	4.0	5.0	2.0	5.0
Minimum Split (s)		28.0	9.5	28.0	8.0	20.0	9.5	8.0	9.5
Total Split (s)		59.0	35.0	36.2	8.0	20.8	12.2	8.0	20.8
Total Split (%)		59.0%	35%	36%	8%	21%	12%	8%	21%
Yellow Time (s)		3.9	3.5	3.9	3.9	3.9	3.5	3.9	3.5
All-Red Time (s)		1.5	1.0	1.5	1.5	1.5	1.0	1.5	1.0
Lost Time Adjust (s)		0.0							
Total Lost Time (s)		5.4							
Lead/Lag		Lead	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?		Yes	Yes	Yes			Yes		Yes
Recall Mode		None	None	None	None	C-Max	None	None	C-Max
Act Effct Green (s)	36.5	53.6							
Actuated g/C Ratio	0.36	0.54							
v/c Ratio	0.55	1.03							
Control Delay	16.2	51.1							
Queue Delay	0.0	4.1							
Total Delay	16.2	55.2							
LOS	B	E							
Approach Delay	16.2	55.2							
Approach LOS	B	E							

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 4:WBT and 8:, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 47.4	Intersection LOS: D
Intersection Capacity Utilization 75.8%	ICU Level of Service D
Analysis Period (min) 15	

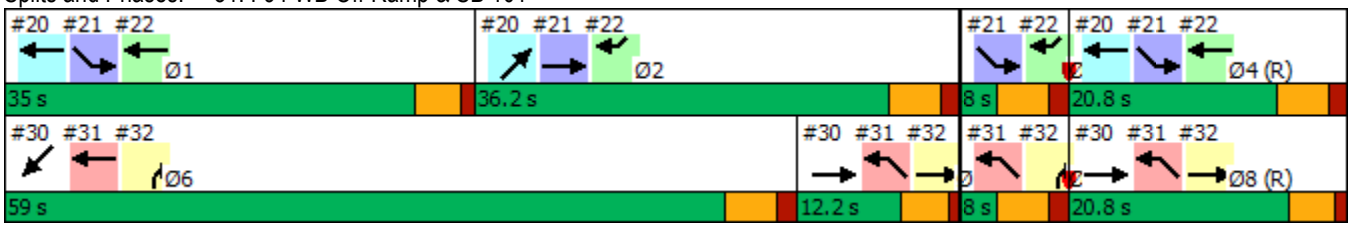
Splits and Phases: 30: SB 101/North Crossover & NB 101



Lane Group	WBT	NWL	Ø1	Ø2	Ø3	Ø4	Ø5	Ø7	Ø8
Lane Configurations									
Traffic Volume (vph)	2574	92							
Future Volume (vph)	2574	92							
Turn Type	NA	pm+pt							
Protected Phases	6	5 7 8	1	2	3	4	5	7	8
Permitted Phases		5 7 8							
Detector Phase	6	5							
Switch Phase									
Minimum Initial (s)	4.0		5.0	4.0	2.0	4.0	5.0	2.0	5.0
Minimum Split (s)	28.0		9.5	28.0	8.0	20.0	9.5	8.0	9.5
Total Split (s)	59.0		35.0	36.2	8.0	20.8	12.2	8.0	20.8
Total Split (%)	59.0%		35%	36%	8%	21%	12%	8%	21%
Yellow Time (s)	3.9		3.5	3.9	3.9	3.9	3.5	3.9	3.5
All-Red Time (s)	1.5		1.0	1.5	1.5	1.5	1.0	1.5	1.0
Lost Time Adjust (s)	0.0								
Total Lost Time (s)	5.4								
Lead/Lag	Lead		Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes		Yes	Yes			Yes		Yes
Recall Mode	None		None	None	None	C-Max	None	None	C-Max
Act Effct Green (s)	53.6	36.5							
Actuated g/C Ratio	0.54	0.36							
v/c Ratio	1.03	0.08							
Control Delay	22.7	21.1							
Queue Delay	0.0	0.0							
Total Delay	22.7	21.1							
LOS	C	C							
Approach Delay	22.7	21.1							
Approach LOS	C	C							

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 4:WBT and 8:, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 22.6	Intersection LOS: C
Intersection Capacity Utilization 68.7%	ICU Level of Service C
Analysis Period (min) 15	

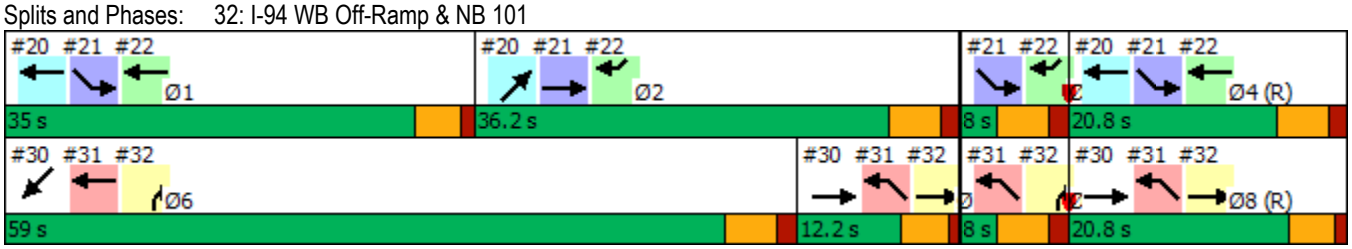
Splits and Phases: 31: I-94 WB Off-Ramp & SB 101



Lane Group	EBT	NBR	Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8
Lane Configurations										
Traffic Volume (vph)	645	163								
Future Volume (vph)	645	163								
Turn Type	NA	custom								
Protected Phases	5 8	6 7	1	2	3	4	5	6	7	8
Permitted Phases		6 7								
Detector Phase	5	6								
Switch Phase										
Minimum Initial (s)			5.0	4.0	2.0	4.0	5.0	4.0	2.0	5.0
Minimum Split (s)			9.5	28.0	8.0	20.0	9.5	28.0	8.0	9.5
Total Split (s)			35.0	36.2	8.0	20.8	12.2	59.0	8.0	20.8
Total Split (%)			35%	36%	8%	21%	12%	59%	8%	21%
Yellow Time (s)			3.5	3.9	3.9	3.9	3.5	3.9	3.9	3.5
All-Red Time (s)			1.0	1.5	1.5	1.5	1.0	1.5	1.5	1.0
Lost Time Adjust (s)										
Total Lost Time (s)										
Lead/Lag			Lead	Lag	Lead	Lag	Lag	Lead	Lead	Lag
Lead-Lag Optimize?			Yes	Yes			Yes	Yes		Yes
Recall Mode			None	None	None	C-Max	None	None	None	C-Max
Act Effct Green (s)	36.5	53.6								
Actuated g/C Ratio	0.36	0.54								
v/c Ratio	0.55	0.21								
Control Delay	3.1	12.9								
Queue Delay	0.0	0.0								
Total Delay	3.1	12.9								
LOS	A	B								
Approach Delay	3.1									
Approach LOS	A									

Intersection Summary			
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 4:WBT and 8:, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.03			
Intersection Signal Delay: 5.1		Intersection LOS: A	
Intersection Capacity Utilization 75.8%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 32: I-94 WB Off-Ramp & NB 101



20: South Crossover/NB 101 & SB 101/TH 101

Direction	All
Future Volume (vph)	1662
Total Delay / Veh (s/v)	25
CO Emissions (kg)	1.54
NOx Emissions (kg)	0.30
VOC Emissions (kg)	0.36

21: NB 101 & I-94 EB Off-Ramp

Direction	All
Future Volume (vph)	700
Total Delay / Veh (s/v)	6
CO Emissions (kg)	0.18
NOx Emissions (kg)	0.04
VOC Emissions (kg)	0.04

22: SB 101 & I-94 EB Off-Ramp

Direction	All
Future Volume (vph)	1435
Total Delay / Veh (s/v)	7
CO Emissions (kg)	0.37
NOx Emissions (kg)	0.07
VOC Emissions (kg)	0.08

23: I-94 EB On-Ramp/NB 101 & SB 101

Direction	All
Future Volume (vph)	2163
Total Delay / Veh (s/v)	0
CO Emissions (kg)	0.45
NOx Emissions (kg)	0.09
VOC Emissions (kg)	0.10

30: SB 101/North Crossover & NB 101

Direction	All
Future Volume (vph)	3219
Total Delay / Veh (s/v)	47
CO Emissions (kg)	4.28
NOx Emissions (kg)	0.83
VOC Emissions (kg)	0.99

31: I-94 WB Off-Ramp & SB 101

Direction	All
Future Volume (vph)	2666
Total Delay / Veh (s/v)	23
CO Emissions (kg)	1.21
NOx Emissions (kg)	0.24
VOC Emissions (kg)	0.28

32: I-94 WB Off-Ramp & NB 101

Direction	All
Future Volume (vph)	808
Total Delay / Veh (s/v)	5
CO Emissions (kg)	0.19
NOx Emissions (kg)	0.04
VOC Emissions (kg)	0.04

N

0 100 200

SCALE IN FEET

MAIN ST (TH 101)

WB ON-RAMP

INTERSTATE 94

CLOSE ACCESS TO EXISTING WALK

REMOVE EXISTING SB TH 101 TO EB I-94 LOOP AND C-D ROAD.

EB OFF-RAMP

INDUSTRIAL CT

WB OFF-RAMP

ROGERS DR

INTERSTATE 94

EB ON-RAMP

INDUSTRIAL BLVD

MAIN ST (TH 101)

JOHN MILLESS DR

LEGEND

- PAVED ROADWAY
- BRIDGE REHAB
- RAISED MEDIANS & CURBS
- PAVED SHOULDERS
- BITUMINOUS TRAIL
- CONCRETE TRAIL
- LANDSCAPED MEDIAN
- PROPOSED TRAFFIC SIGNAL
- EXISTING TRAFFIC SIGNAL
- PARCEL BOUNDARY

2020

Rogers ADA Transition Plan

Rogers Public Works Department

4/2/2020

Introduction

The City of Rogers is committed to breaking down barriers for residents and to be a fair, inclusive and equitable community in its practices, programs and services.

The American with Disabilities Act (ADA) enacted on July 26th, 1990, is a civil rights law prohibiting discrimination against individuals based on disability. The ADA requires public transportation agencies to develop transition plans detailing how the agencies will ensure accessibility within the public right of way. See Appendix H for more detailed information on the ADA and related regulations.

The City of Rogers Public Works Department has prepared this Americans with Disabilities Act ADA transition plan to guide its efforts to ensure pedestrian facilities located within the City's right of way meet the accessibility needs of all residents.

This plan will be used to maintain, program and construct accessible pedestrian facilities in the right of way. It provides an inventory of pedestrian ramps and traffic signals that fall under City jurisdiction for ownership and maintenance.

This plan establishes an ADA coordinator for public right of way to provide a single point of contact for the public to report and address concerns.

Additionally, a formal grievance procedure is established with this plan for the purposes of the prompt and equitable resolution of residents' complaints, concerns and comments regarding accessibility of pedestrian facilities located within the public right of way.

Self-evaluation

Overview

The City of Rogers Public Works Department performed a self-evaluation of its current transportation infrastructure polices, practices, and programs.

The goal of the self-evaluation is to review existing policies and practices to verify the City is providing accessibility and not adversely affecting the full participation of individuals with disabilities.

The self-evaluation included completing an inventory of all pedestrian curb ramps and traffic control signals that are located within the City right of way.

Existing policies and practices

The Public Works Department will consider and respond to all accessibility improvement requests. Requests should be sent to the ADA coordinator as specified in Appendix D. All accessibility improvements that have been determined to be reasonable will be scheduled, consistent with transportation priorities. The City will coordinate with external agencies as necessary to ensure that all new or altered pedestrian facilities within the City jurisdiction are ADA compliant to the maximum

extent possible. Following are descriptions of the various policies and practices the city uses to assist with ADA compliance.

Temporary Pedestrian Access Routes

Construction and temporary traffic control zones present unique challenges for pedestrians with disabilities. According to the Public Rights of Way Accessible Guidelines [PROWAG (R205)], when an existing pedestrian access route is blocked by construction or maintenance, an ADA compliant alternative pedestrian access route should be provided. The Minnesota Department of Transportation (MnDOT) and the Minnesota Manual on Uniform Traffic Control Devices (MnMUTCD) Chapter 6D offers technical guidance on this issue. MnDOT continues to update these guidelines as necessary, and the City of Rogers monitors MnDOT's evolving standards to stay in compliance. During construction, the city evaluates any temporary control zone to ensure compliance with PROWAG. The responsibility for providing compliant alternative pedestrian routes falls to the project contractor; however, staff ensures compliance by using MnDOT's pedestrian accessibility checklist (MnMUTCD Figure 6D-1) to evaluate each site.

Transportation Projects

The city's goal is to continue to provide and upgrade accessible pedestrian facilities as part of transportation projects. During the development of project plans, staff will inspect, inventory and plan for any required improvements to pedestrian facilities located in the public right of way to ensure ADA compliance. The city has established ADA design standards and procedures as detailed in Appendix C. These standards and procedures will be kept up to date with nationwide and local best management practices. The city's capital improvement plan (CIP) includes the following types of transportation projects

Pavement Management Program (PMP)

The majority of the City's street infrastructure is maintained through the Pavement Management Program (PMP), established by the City in 2015. The PMP is a street maintenance plan that implements the right maintenance at the right time in a road's lifecycle to reduce the overall cost of keeping the City's streets in good condition. The PMP provides a systematic approach to managing the City's transportation infrastructure, including pedestrian facilities within the right of way. The data-driven nature of the PMP makes it a useful vehicle for ADA compliance.

The City incorporates ADA accessible pedestrian features into PMP projects, including rehabilitation, sealcoating, and sidewalk maintenance. The segments of street and sidewalk are selected based on condition and budget. The PMP is updated annually to reflect current infrastructure conditions. Through this process, the city works to keep its transportation infrastructure in good condition

Municipal State Aid (MSA) Projects

The MSA system is a collection of higher traffic volume and key connecting roads in the city. MSA roads receive state funding for construction and maintenance. As a result, they are scheduled for improvements separately from the local streets.

The schedule to improve MSA streets is based on pavement condition and budget.

Bikeway, Sidewalk, and Trail Projects

One of the city's goals is to develop a comprehensive, citywide system of bikeways, sidewalks and trails that provide local and regional connectivity, improve safety and accessibility, and enhance overall community livability. At times, it's necessary to schedule bikeway, sidewalk and trail construction separately from street rehabilitation. These projects will incorporate pedestrian facility upgrades as necessary.

Traffic Control Signal Projects

The City is responsible for only a few traffic control signals and work with other agencies such as Hennepin County and MNDoT to address concerns and issues.

Inventory

In 2020, the City of Rogers conducted an inventory of existing pedestrian facilities within its public right of way. A map showing the location of these facilities is in the Appendix B and will be updated annually to add or remove changes.

The Public Works Department will further assess accessibility of pedestrian ramps and traffic signals in advance of CIP and PMP projects to allow for the design of ADA compliant pedestrian facilities. As resources allow, the department will gather additional data to assist in determining levels of ADA compliance of pedestrian facilities to assist in prioritizing and programming funds for projects to be added into the CIP and PMP.

What activity requires an ADA upgrade?

Activity	Upgrade Required
Construction	
New construction All new construction must meet ADA requirements (i.e. curb ramps, sidewalks, trails, pedestrian crosswalks, traffic signals, pedestrian tunnels/bridges and new developments).	Yes
Mill and overlay/pavement reclaim ADA upgrades are required on all pedestrian facilities adjacent to the street segments being worked on. All existing curb ramps will be brought into compliance. Where there is no curb ramp, curb ramps must be installed where there is existing sidewalk. Adjacent sidewalk will be removed and replaced as needed.	Yes
Reconstruction ADA upgrades are required on all pedestrian facilities adjacent to the street segments being worked on. This includes projects to widen roads, add vehicle or bike lanes, change horizontal or vertical alignment, replace bridges, rehabilitate	Yes

pavement, replace curb and gutter, replace traffic signals, or replace sidewalks or trails.	
Maintenance	
Crack sealing	No
Concrete joint sealing, surface planning or grinding	No
Curb replacement If the curb replacement is at an existing or proposed pedestrian ramp location, then it must meet ADA requirements. All existing curb ramps will be brought into compliance. Where there is no curb ramp, curb ramps must be installed where there is existing sidewalk.	Maybe
Pothole Patching	No
Seal Coating	No
Sidewalk panel replacement Accessibility upgrades should be done to the extent feasible. If only one or two panels are being replaced, there may not be an opportunity to make changes.	Maybe
Sidewalk Shaving	No
Sidewalk panel temporary patch or ramp Accessibility upgrades should be done to the extent feasible. The larger the patch section, the better the opportunity to address slope or cross slope. However, if only one or two panels are being patched, there may not be an opportunity to make changes	Maybe
Utility patch If the patch is located in the middle of the street, no upgrades are required. However, if the patch disturbs curb ramps or sidewalk, upgrades are required.	Maybe
Traffic	
Crosswalk installation Any new marked and signed crosswalk must meet ADA requirements	Yes
Pavement marking modification Any pedestrian-related pavement marking should meet ADA requirements.	Maybe

ADA Coordinator

In accordance with 28 CFR 35.107(a), the City of Rogers has identified an ADA Title II coordinator to oversee the City policies and procedures for public right of way. It is the responsibility of the ADA coordinator to implement this policy. Contact information for the coordinator is in Appendix D.

Implementation

Methodology

The City of Rogers is committed to improving accessibility within the city. A systematic approach to providing accessible facilities will be established to include the cost for public right of way improvements into the city's budget.

The city will use two methods for upgrading pedestrian facilities to current ADA standards. The first and most comprehensive method is the scheduled transportation projects. All pedestrian facilities affected by these projects will be upgraded to current ADA accessibility standards. The second method is ADA accessibility improvement projects. These projects will be incorporated into the capital improvement plan (CIP) on a case-by-case basis as determined by staff. The CIP includes a schedule for project improvements by year and geographic area.

Prioritization

The City will include accessibility improvements in all transportation projects planned in the CIP. The CIP is reviewed on an annual basis and will be revised as necessary to address accessibility priorities in context with the needs of the City's overall transportation system.

External Agency Coordination

Other agencies are responsible for pedestrian facilities within Rogers, including Hennepin County and MnDOT. The City will coordinate with these agencies to track and assist in removing accessibility barriers along their routes and/or associated with their services.

Schedule

Rogers has set the following schedule goals for improving accessibility of pedestrian facilities within the city:

- Traffic signals, pedestrian ramps and sidewalks will be addressed through transportation projects for scheduling and constructing improvements.
- Any facilities identified as an existing hazard or compliance issue that city staff believes needs to be addressed by a set date will have a work order initiated or it will be incorporated into a capital improvement plan project.
- The City has a 20-year goal to have a minimum of 80 percent of transportation accessibility features within the City of Rogers ADA compliant. The remaining 20 percent would include any locations that have not had an adjacent road project within the 20-year period.

Grievance Procedure

Under the Americans with Disabilities Act (ADA), each agency is required to publish its responsibilities regarding ADA accessibility. A draft public notice is provided in Appendix E. If users of Rogers transportation facilities and services believe the city has not provided reasonable accommodation, they have the right to file a grievance.

In accordance with 28 CFR 35.107(b), the city has developed a grievance procedure for the purposes of the prompt and equitable resolution of complaints, concerns, comments and other grievances. This grievance procedure is outlined in Appendix F, with a complaint form in Appendix G.

Monitor the Progress

This document, including the appendices, will be updated as conditions within the City change. With each main update, a public outreach will be conducted to ask for the public's participation in plan updates.

Appendices

A. **Glossary of Terms**
B. **Inventory Maps**
C. **Agency ADA design standards and procedures**
D. **ADA coordinator**
E. **ADA public notice**
F. **Grievance procedure**
G. **Complaint form**
H. **Transition plan needs and requirements**

APPENDIX A – GLOSSARY OF TERMS

ADA Transition Plan – Rogers' transportation system plan that identifies accessibility needs; outlines the process to fully integrate accessibility improvements into transportation projects; and ensures all transportation facilities, services, programs and activities are accessible to all individuals.

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

Accessible pedestrian signal (APS): A device that communicates information about the WALK and DON'T WALK intervals at signalized intersections in non-visual (audible and vibro-tactile) formats.

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

Americans with Disabilities Act (ADA): The Americans with Disabilities Act is civil rights legislation that was passed in 1990 and went into effect in July 1992. The ADA sets design guidelines for accessibility to public facilities, including sidewalks and trails, by individuals with disabilities.

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

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

Capital Improvement Program (CIP): The CIP includes an annual capital budget and a 10-year plan for funding new construction and reconstruction projects within the city's transportation system.

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

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

Pavement Management Program (PMP): The PMP is a systematic approach used to schedule street improvement projects by year and geographic area.

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

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

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

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

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

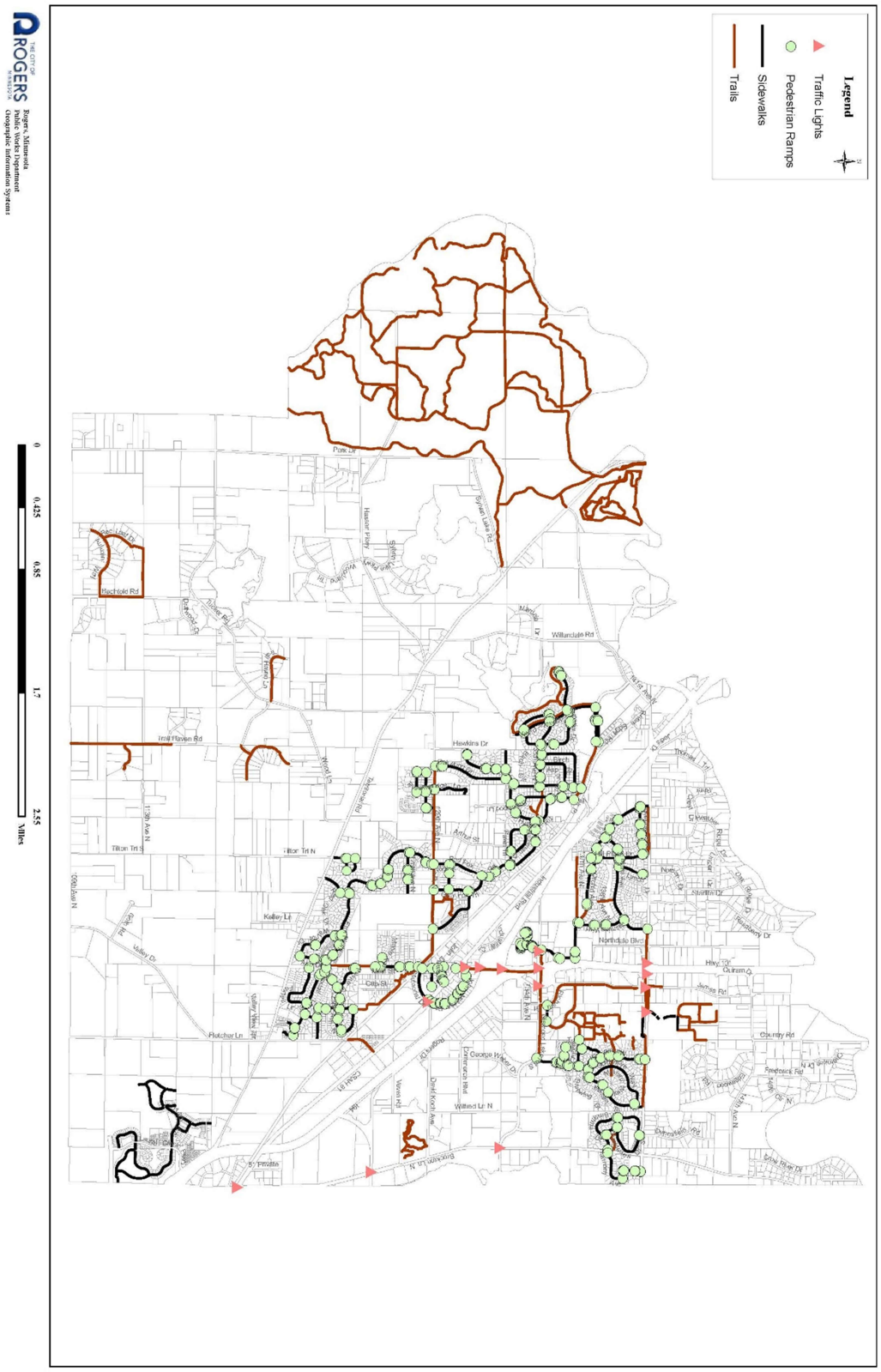
Transportation project: A project within the right of way intended to construct or repair transportation related infrastructure, including pavement, curb and gutter, traffic signals, sidewalks, trails, bikeways and bridges.

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

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

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

Appendix B – Inventory Map



APPENDIX C – AGENCY ADA DESIGN PROCEDURES AND STANDARDS

Design Procedures

Intersection Corners

The city plans to construct or upgrade curb ramps to achieve ADA compliance as part of transportation projects. There may be limitations that make it technically infeasible for an intersection corner to achieve full accessibility within the scope of a project. Those limitations will be noted, and those intersection corners will remain on the ADA transition plan. As future projects or opportunities come up, those intersection corners will be incorporated into future work. Regardless of whether or not full compliance can be achieved, each intersection corner will be made as compliant as possible in accordance with the judgment of city staff.

Bikeways, sidewalks, and trails

The city will evaluate and attempt to construct or upgrade bikeways, sidewalks and trails to achieve ADA compliance as part of transportation projects. In general, a six-foot-wide sidewalk is desirable for accessibility and maintenance purposes. A minimum five-foot-wide sidewalk may be acceptable where physical constraints limit achieving the desired six- foot width. There may be limitations that make it technically infeasible for segments of sidewalks or trails to achieve full accessibility within the scope of a project. Those limitations will be noted, and those segments will remain on the ADA transition plan. As future projects or opportunities come up, those segments will be incorporated into future work. Regardless of whether or not full compliance can be achieved, every bikeway, sidewalk or trail will be made as compliant as possible in accordance with the judgment of city staff.

Traffic Signals

The city will attempt to construct or upgrade traffic control signals to achieve ADA compliance as part of transportation projects. There may be limitations that make it technically infeasible for individual traffic control signal locations to achieve full accessibility within the scope of a project. Those limitations will be noted, and those locations will remain on the ADA transition plan. As future projects or opportunities come up, those locations will be incorporated into future work. Regardless of whether or not full compliance can be achieved, each traffic signal control location will be made as compliant as possible in accordance with the judgment of city staff.

Other polices, practices, and programs

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

Design Standards

The city generally follows the guidelines identified in the Public Rights of Way Accessible Guidelines (PROWAG) when practical and feasible.

APPENDIX D – CONTACT INFORMATION

Public right of way: ADA Title II Coordinator and Implementation Coordinator

Name: Andrew Simmons

Address: 22350 South Diamond Lake Road, Rogers MN, 55374

Phone: 763-428-8580

Email: asimmons@rogersmn.gov

APPENDIX E – ADA PUBLIC NOTICE

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

PUBLIC NOTICE

In accordance with the requirements of Title II of the Americans with Disabilities Act of 1990, the City of Rogers Public Works Department will not discriminate against qualified individuals with disabilities on the basis of disability in city transportation services, programs or activities.

EMPLOYMENT

The city does not discriminate on the basis of disability in its hiring or employment practices and complies with all regulations promulgated by the United States Equal Employment Opportunity Commission under Title I of the Americans with Disabilities Act (ADA).

EFFECTIVE COMMUNICATION

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

MODIFICATIONS TO POLICIES AND PROCEDURES

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

Anyone who requires an auxiliary aid or service for effective communication, or a modification of policies or procedures to participate in a transportation program, service or activity, should contact the office of the public right of way ADA coordinator (see Appendix D) as soon as possible, but no later than 48 hours before any scheduled event.

The ADA does not require the city to take any action that would fundamentally alter the nature of its programs or services or impose an undue financial or administrative burden.

The city will not place a surcharge on an individual with a disability or any group of individuals with disabilities to cover the cost of providing auxiliary aids/services or reasonable modifications of policy, such as retrieving items from locations that are open to the public but are not accessible to persons who use wheelchairs.

APPENDIX F – GRIEVANCE PROCEDURE

Prior to filing a grievance, the public is strongly encouraged to contact the public right of way ADA coordinator to discuss any concerns regarding city transportation facilities. The ADA coordinator's role is designed to provide a point of contact for the public to address concerns. It is anticipated that most concerns identified will be able to be resolved by the ADA coordinator. Contact information for the ADA coordinator can be found in Appendix D of this document.

PURPOSE

This grievance procedure is established to meet the requirements of the Americans with Disabilities Act (ADA) of 1990. It may be used by anyone who wishes to file a complaint alleging discrimination on the basis of disability in the provision of services, activities, programs or benefits by the City of Rogers Public Works Department. The city's personnel policy governs employment-related complaints of disability discrimination.

PROCEDURE

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

The complaint should be submitted to the ADA coordinator by the grievant and/or their designee as soon as possible, but no later than 60 calendar days after the alleged violation. Contact information for the ADA coordinator can be found in Appendix D of this document.

Within 15 working days after receipt of the complaint, the ADA coordinator or their designee will meet with the complainant to discuss the complaint and possible resolutions. Within 15 working days of the meeting, the ADA coordinator or their designee will respond in writing, and where appropriate, in a format accessible to the complainant, such as large print or audio tape. The response will explain the position of the city and offer options for substantive resolution of the complaint.

If the response by the ADA coordinator or their designee does not satisfactorily resolve the issue, the complainant and/or their designee may appeal the decision to the city manager or his/her designee within 30 calendar days after receipt of the response.

Within 30 calendar days after receipt of the appeal, the city manager or his/her designee will meet with the complainant to discuss the complaint and possible resolutions. Within 30 calendar days after the meeting, the city manager or his/her designee will respond in writing, and where appropriate, in a format accessible to the complainant with a final resolution of the complaint.

All written complaints received by the ADA coordinator or their designee, appeals to the city manager or his/her designee, and responses from these two offices will be retained by the city in accordance with state and federal law.

METHOD

Those wishing to file a formal written grievance with the City of Rogers Public Works Department may do so by one of the following methods:

WEBSITE

Visit the City of Rogers' ADA transition plan webpage at www.rogersmn.gov and click the link to the ADA complaint form. A copy of the ADA complaint form is included with this document in Appendix G.

TELEPHONE

Contact the ADA coordinator as specified in Appendix D to submit an oral grievance. The ADA coordinator will prepare and submit the complaint form on behalf of the person filing the grievance.

PAPER SUBMITAL

Contact the ADA coordinator as specified in Appendix D to request a paper copy of the complaint form. Complete the form and submit it to the ADA coordinator.

INFORMATION REQUIRED

The ADA complaint form will ask for the following information:

- The name, address, telephone number and email address for the person filing the grievance.
- The name, telephone number and email address for the person alleging an ADA violation (if different than the person filing the grievance)
- A description and location of the problem and the nature of a remedy sought, if known by the complainant.
- If the complainant has filed the same complaint or grievance with the United States Department of Justice (DOJ), another federal or state civil rights agency, a court, or others, the name of the agency or court where the complainant filed it and the filing date.

PROCESS

If the grievance filed does not concern a City of Rogers transportation facility, the city will work with the complainant to contact the agency that has jurisdiction over the facility.

A city staff person will conduct an investigation to determine the validity of the alleged violation. As part of the investigation, the staff person may conduct an engineering study to help determine the response. The staff person will use department resources, engineering judgment, data collected and any information submitted by the complainant to develop a conclusion. A staff person will be available to meet with the complainant to discuss the matter as a part of the investigation and resolution. The city will document each resolution of a filed complaint and retain documentation in the department's ADA complaint files in accordance with state and federal law.

The city will consider all specific complaints within its particular context or setting. Furthermore, the city will consider many varying circumstances including:

- The nature of the access to services, programs or facilities at issue
- The specific nature of the disability
- The essential eligibility requirements for participation
- The health and safety of others
- The degree to which an accommodation would constitute a fundamental alteration to the program, service, facility or cause an undue hardship to the City

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

FILE MAINTENANCE

The city shall maintain ADA complaint files in accordance with state and federal law.

Complaints on Title II violations may also be filed with the United States Department of Justice (DOJ) within 180 days of the date of discrimination. In certain situations, cases may be referred to a mediation program sponsored by the DOJ. The DOJ may bring a lawsuit where it has investigated a matter and has been unable to resolve violations.

For more information, contact:

United States Department of Justice Civil Rights Division
950 Pennsylvania Ave., N.W. Disability Rights Section - NYAV Washington, D.C. 20530
www.ada.gov
800.514.0301 (voice – toll free)
800.514.0383 (TTY)

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

APPENDIX G – COMPLAINT FORM

See the following pages for the complaint form.

CITY OF ROGERS

ADA Complaint Form

The City has developed a grievance procedure to ensure that accessibility concerns are resolved quickly and fairly, as outlined in the Americans with Disabilities Act (ADA).

If you have issues with the form, or to file an oral grievance, call 763-428-8580.

Complainant - Person Filing Grievance

Name: _____ Date: _____

Street Address: _____

City: _____ State: _____ Zip Code: _____

Phone Number: _____ Email: _____

Person Claiming Accessibility Issue (if different from above)

Name: _____

Phone Number: _____ Email: _____

Complaint

Where is the location of the problem? Please include city, street name, intersection (if applicable), facility name and/or location if other than a roadway.

What efforts have been made to resolve this complaint?

If you have documentation, copies would be helpful. Examples are letters, email messages, written notes, etc.

Has the complaint been filed with federal or state agency? ☐ Yes ☐ No

Name of Agency:_____

Contact Name: _____ Date: _____

Please attach any additional pages if you need more room.

Signature of Complainant: _____ Date: _____

Return To: Andrew Simmons, Water Resources Technician

22350 S. Diamond Lake Rd. Rogers, MN 55374

763-428-0907

asimmons@rogersmn.gov

NOTICE OF RIGHTS

In accordance with the Minnesota Government Data Practices Act, the City of Rogers is required to inform you of your rights as they pertain to the private information collected from you. The personal information we collect from you is private. Access to this information is available only to you, the agency collecting the information and other statutorily authorized agencies, unless you or a court authorizes its release.

The Minnesota Government Data Practices Act requires that you be informed that the following information, which you are asked to provide, is considered private.

The purpose and intended use of the requested information is:
To assist City of Rogers staff and designees to evaluate and respond to accessibility concerns within the public right of way.

Authorized persons or agencies with whom this information may be shared include:
City of Rogers officials, staff or designee(s)

Furnishing the above information is voluntary, but refusal to supply the requested information will mean: City of Rogers staff may be unable to respond to or evaluate your request.

MINN. STAT. 13.04(2)

APPENDIX H – TRANSITION PLAN NEEDS AND REQUIREMENTS

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

I. Employment
II. State and local government services
III. Public accommodations
IV. Telecommunications
V. Miscellaneous provisions

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

As required by Title II of ADA, 28 CFR. Part 35 Sec. 35.105 and Sec. 35.150, the city has conducted a self-evaluation of its facilities within the public right of way and has developed this transition plan detailing how the organization will ensure these facilities are accessible to all individuals. A glossary of terms is included in Appendix A

This transition plan has been created to specifically cover accessibility within the public right of way and does not include information on city programs, practices or building facilities not related to public right of way.

ADA AND ITS RELATIONSHIP TO OTHER LAWS

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

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

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

AGENCY REQUIREMENTS

Under Title II, the City of Rogers Public Works Department must meet these general requirements:

- Must operate their programs so that, when viewed in their entirety, the programs are accessible to and useable by individuals with disabilities (28 CFR Sec. 35.150).
- May not refuse to allow a person with a disability to participate in a service, program or activity simply because the person has a disability (28 CFR Sec. 35.130 (a).
- Must make reasonable modifications in policies, practices and procedures that deny equal access to individuals with disabilities unless a fundamental alteration in the program would result (28 CFR Sec. 35.130(b) (7).
- May not provide services or benefits to individuals with disabilities through programs that are separate or different unless the separate or different measures are necessary to ensure that benefits and services are equally effective (28 CFR Sec. 35.130(b)(iv) & (d).
- Must take appropriate steps to ensure that communications with applicants, participants and members of the public with disabilities are as effective as communications with others (28 CFR Sec. 35.160(a).
- Must designate at least one responsible employee to coordinate ADA compliance [28 CFR Sec. 35.107(a)]. This person is often referred to as the "ADA coordinator." The public entity must provide the ADA coordinator's name, office address and telephone number to all interested individuals [28 CFR Sec. 35.107(a)].
- Must provide notice of ADA requirements. All public entities, regardless of size, must provide information about the rights and protections of Title II to applicants, participants, beneficiaries, employees and other interested persons [28 CFR Sec. 35.106].
- Must establish a grievance procedure. Public entities must adopt and publish grievance procedures providing for prompt and equitable resolution of complaints [28 CFR Sec. 35.107(b)]. This requirement provides for a timely resolution of all problems or conflicts related to ADA compliance before they escalate to litigation and/or the federal complaint process.

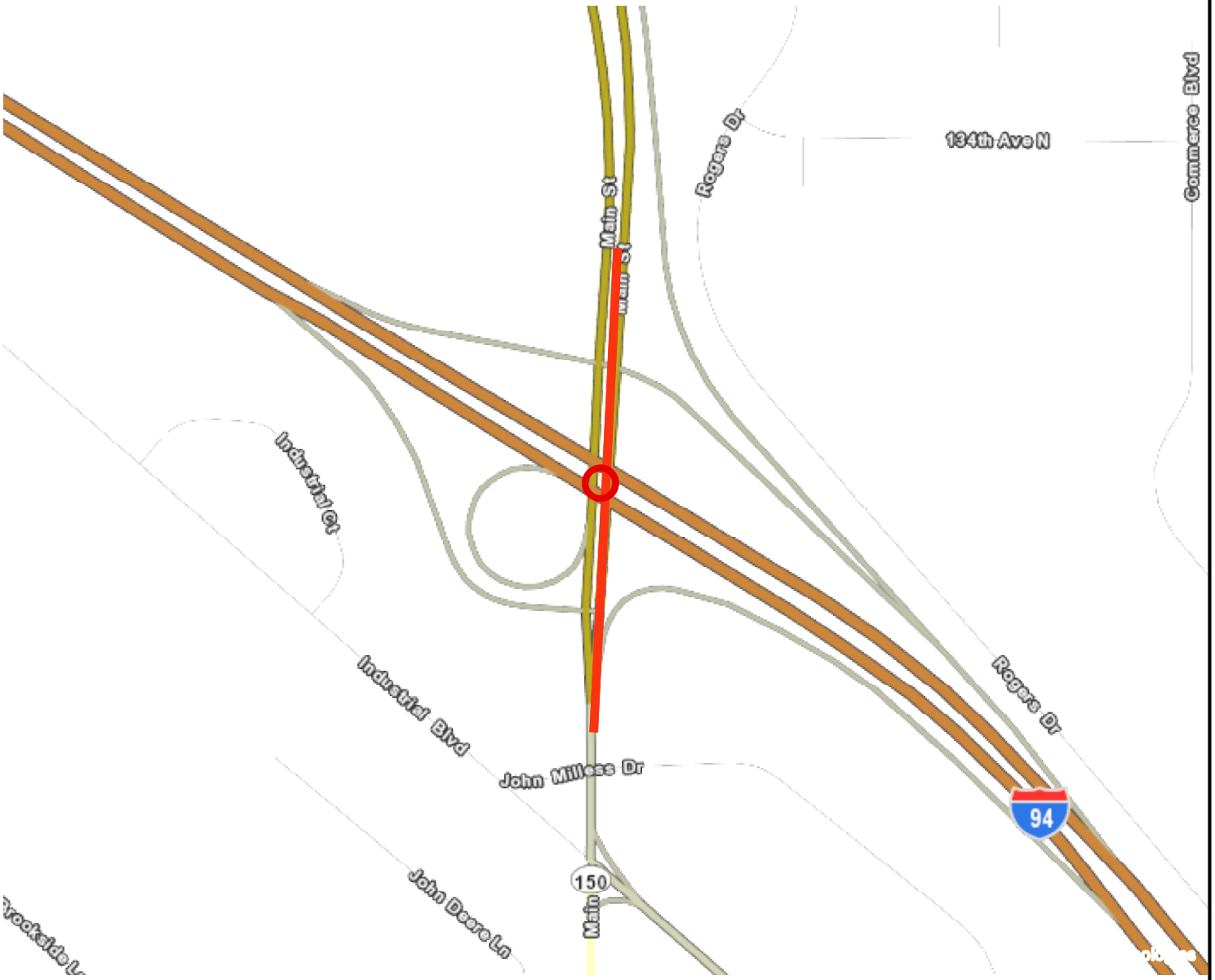
Socio-Economic Conditions

Roadway Reconstruction/Modernization Project: TH 101 and I-94 Diverging Diamond Interchange Upgrade | Map ID: 1648146

Results

Total of publicly subsidized rental housing units in census tracts within 1/2 mile: 61

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



Points
Area of Concentrated Poverty
Lines

0 0.05 0.1 0.2 0.3 0.4 Miles

Created: 3/24/2022
LandscapeRSA2

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

METROPOLITAN COUNCIL

Transit Connections

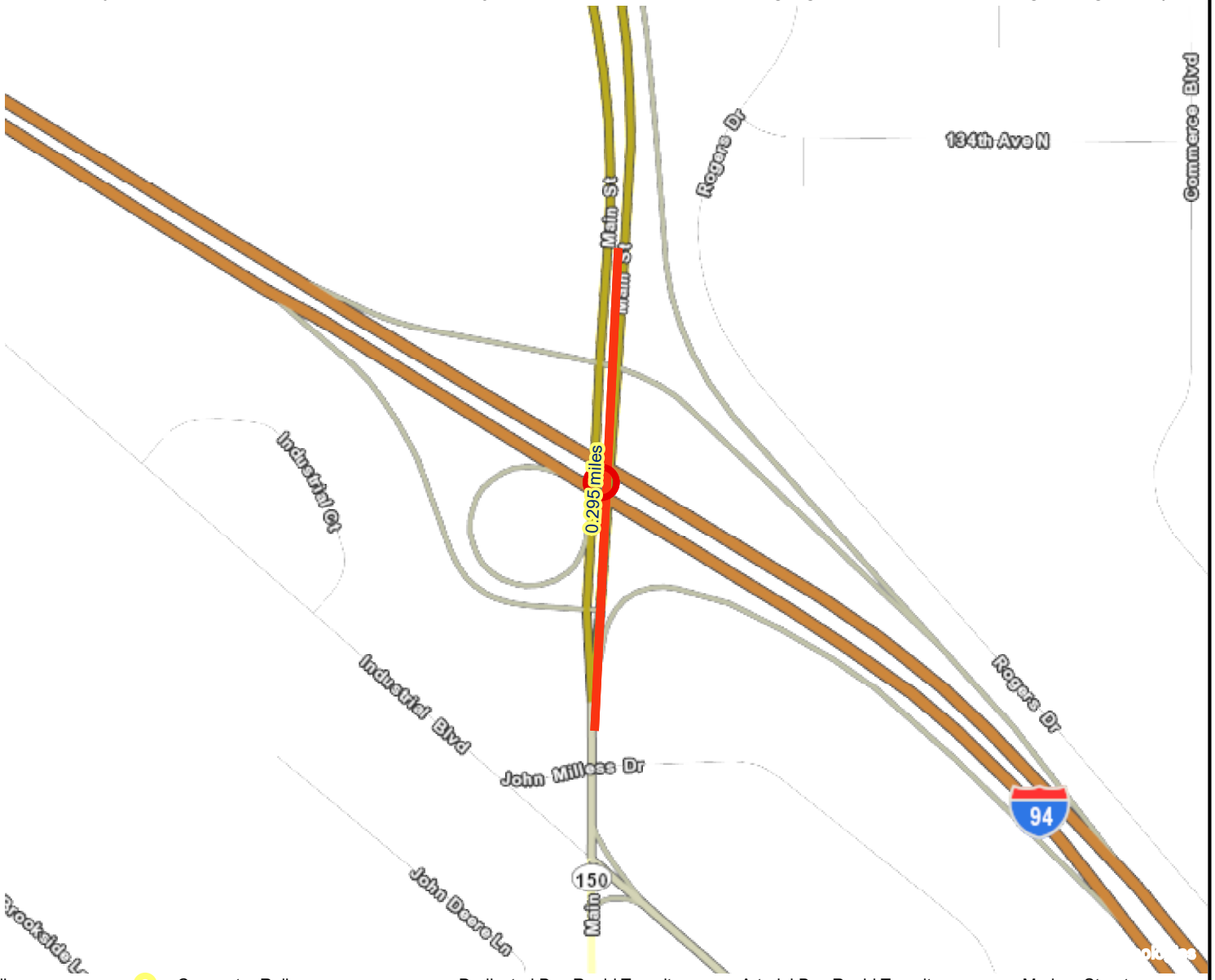
Roadway Reconstruction/Modernization Project: TH 101 and I-94 Diverging Diamond Interchange Upgrade | Map ID:

Results

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

**indicates Planned Alignments*

Transit Market areas: 5



Project Points
Project
Project Area
Active Stop
Arterial Bus Rapid Transit

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

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

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

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

Modern Streetcar
Undetermined

0 0.05 0.1 0.2 0.3 0.4 Miles

Created: 3/24/2022
LandscapeRSA3

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METROPOLITAN COUNCIL