

Application

19839 - 2024 Roadway Expansion 20139 - TH 610 & East River Road Full Access Interchange Regional Solicitation - Roadways Including Multimodal Elements Status:

Submitted Date:

Submitted 12/14/2023 10:18 AM

Primary Contact

Feel free to edit your profile any time your information changes. Create your own personal alerts using My Alerts.

Name:*	Mr. Pronouns	Mark First Name	Christian Middle Name	Hansen
Title:	Assistant Cit			Last Nume
Department:	Public Works			
Email:		oonrapidsmn.go	v	
Address:	11155 Robins		-	
*	Coon Rapids	;	Minnesota	55433
	City		State/Province	Postal Code/Zip
Phone:*	763-767-646	5		
	Phone			Ext.
Fax:	763-767-6573			
What Grant Programs are you most interested in?	Regional Soli	citation - Bicycl	e and Pedestrian Fac	ilities
Organization Information				
Name:	COON RAPI	DS,CITY OF		
Jurisdictional Agency (if different):				
Organization Type:	City			
Organization Website:				
Address:	11155 NW R	OBINSON RD		
*				
	COON RAPI City	DS	Minnesota State/Province	55433 Postal Code/Zip
County:	Anoka		State, Hovinee	
Phone:*		0		
	763-755-280	0		Ext.
Fax:				
PeopleSoft Vendor Number	00000209344	A1		
Project Information				
Project Name	TH 610 and E	East River Road	Interchange Reconstr	uction
Primary County where the Project is Located	Anoka		3	
	Coon Rapids			
Cities or Townships where the Project is Located:				

Brief Project Description (Include location, road name/functional class, The reconstruction of the TH 610/East River Road interchange will provide additional ramp access to TH 610 to and from the east. In 2018, Anoka County, in partnership with the City of Coon Rapids, was awarded federal funds for a grade separation of Foley Boulevard over the BNSF Railroad tracks near TH 610 and Coon Rapids Boulevard. With the City purchase of available property and funding secured for the Foley Railroad Grade-Separation project, the City and County collaborated to develop an improved transportation system solution by also modifying the existing TH 610/ East River Road interchange.

> While not being built at the same time, the design of these two projects influences each other. The Foley Railroad Grade-Separation project has recently been constructed and greatly improves the reliability of the local roadway system. This project provides the ability to tie a future full-access interchange at East River Road, a significant transportation improvement for the area. The County and City agree that a modified East River Road interchange will best serve both the County's and City's residents and businesses, as well as Metro Transit customers by providing better access to the Foley Park & Ride lot. In addition, the construction of a new 10-foot trail along East River Road and adjacent to the folded south ramps will provide improved connections for bicyclists and pedestrians.

> Trips destined to land uses in the TH 610/East River Road/Coon Rapids Boulevard area requires circuitous trips that use TH 10 and Foley Boulevard. This results in poor traffic operations and heavy queues at the TH 10/Foley Boulevard interchange. Furthermore, the lack of access increases emergency response times considerably, creating challenges for the City when responding to emergencies, especially in the area of eastbound TH 610 between the river and University Avenue.

> The purpose of completing the TH 610/East River Road full-access interchange is to:

- address limited access to and from TH 610 to support existing and future land uses in Coon Rapids,

- improve safety and emergency response access,
- reduce traffic impacts at the TH 10/Foley Boulevard interchange, and

- increase the functionality of TH 610 as an important route in the statewide transportation system.

(Limit 2,800 characters; approximately 400 words)

TRANSPORTATION IMPROVEMENT PROGRAM (TIP) DESCRIPTION - will be used in TIP TH 610 and East River Road (CSAH 1) Interchange in Coon Rapids - New if the project is selected for funding. See MnDOT's TIP description guidance. Construction of East Ramps, Trail and Underpass

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)	0.4	
to the nearest one-tenth of a mile		
Project Funding		
Are you applying for competitive funds from another sc project?	purce(s) to implement this No	

project?	INO
If yes, please identify the source(s)	
Federal Amount	\$10,000,000.00
Match Amount	\$25,687,000.00
Minimumof 20% of project total	
Project Total	\$35,687,000.00
For transit projects, the total cost for the application is total cost minus fare revenues.	
Match Percentage	71.98%

ource of Match Funds	Anoka County and City of Coon Rapids
minimumof 20% of the total project cost must come from non-federal s	ources; additional match funds over the 20% minimumcan come fromother federal sources
Preferred Program Year	
Select one:	2028, 2029
elect 2026 or 2027 for TDM and Unique projects only. For all other app	
Additional Program Years:	2025, 2026, 2027
elect all years that are feasible if funding in an earlier year becomes av	railable.
Project Information-Roadways	- <u>-</u>
IOTE: If your project has already been assigned a Sta SAP#:	ate Aid Project # (SAP or SP), please Indicate SAP# here
County, City, or Lead Agency	City of Coon Rapids
unctional Class of Road	A Minor Arterial Expander
Boad System	CSAH
H, CSAH, MSAS, CO. RD., TWP. RD., CITY STREET	
Soad/Route No.	1
e., 53 for CSAH 53	·
lame of Road	East River Road
xample; 1st ST., MAIN AVE	
ERMINI:(Termini listed must be within 0.3 miles of a	ny work)
rom:	93rd Lane NW
Road System	SOLU LAINE INVV
Road/Route No.	
e., 53 for CSAH 53	
lame of Road	
Example; 1st ST., MAIN AVE	
o: toad System	600 feet south of TH 610 South Ramps
NO NOT INCLUDE LEGAL DESCRIPTION	
Road/Route No.	
e., 53 for CSAH 53	
ame of Road	
xample; 1st ST., MAIN AVE	
n the City/Cities of:	
List all cities within project limits)	
DR:	
At:	
toad System TH, CSAH, MSAS, CO. RD., TWP. RD., City Street)	
Road/Route No.	
e. 53 for CSAH 53	
lame of Road	
Example; 1st ST., MAIN AVE	
n the City/Cities of:	
List all cities within project limits)	
PROJECT LENGTH	
/iles	0.4
nearest 0.1 niles)	
Primary Types of Work (<u>check all the apply</u>)	
lew Construction	Yes
Reconstruction	
esurfacing	Yes
Situminous Pavement	Yes
Concrete Pavement	100
Roundabout	
lew Bridge	
Bridge Replacement	Yes

New Signal		
Signal Replacement/Revision	Yes	
Bike Trail	Yes	
Other (do not include incidental items)	Ped Ramps, Sidewalk, Noise Walls	, Ped Underpass, Lighting, Retaining Walls, Stormwater,
BRIDGE/CULVERT PROJECTS (IF APPLICABLE)		
Old Bridge/Culvert No.:		
New Bridge/Culvert No.:		
Structure is Over/Under (Bridge or culvert name):		
OTHER INFORMATION:		
Zip Code where Majority of Work is Being Performed	55433	
Approximate Begin Construction Date	03/01/2025	
Approximate End Construction Date	11/01/2026	
Miles of Trail (nearest 0.1 miles)	0.8	
Miles of Sidewalk (nearest 0.1 miles)	0.4	

Requirements - All Projects

All Projects

Is this a new trail?

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).

Yes

Yes

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

Miles of trail on the Regional Bicycle Transportation Network (nearest 0.1 miles): 0.4

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 the availability of multimodal travel options, especially in congested highway corridors.

Objective: Increase travel time reliability and predictability for travel on highway and transit systems.

Objective: Increase transit ridership and share of trips taken using transit bicycling and walking.

Objective: improve multimodal travel options for people of all ages and abilities to connect to jobs and other opportunities, particularly for historically underrepresented populations.

Strategies: C1, C2, C8, C9, C10, C12, C14, C15, C16, and C17 (Page 2.10-2.24)

Goal D: Competitive Economy

Objective: Invest in a multimodal transportation system to attract and retain businesses and residents.

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

Strategies: D1, D3 (Page 2.26-2.27)

Goal E: Healthy Environment

Objective: Increase the availability and attractiveness of transit, bicycling, and walking to encourage healthy communities through the use of active transportation options.

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, F3, F6, F7, F8, 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 - 2040 Coon Rapids Comprehensive Plan. Chapter 3: Transportation (Page 3-7, from this qualifying requirement because of their innovative nature. and 3-9)

- Coon Rapids Boulevard / East River Road Corridor Study

- T.H. 610 and County Road 3 (Coon Rapids Boulevard) Interchange Study

- Highway Interchange Request: TH 610 at East River Road (CSAH 1) application and supporting documentation dated July 16, 2019

 Interchange Review Committee Approval Letter from MnDOT dated August 20, 2019

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.

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.

Yes

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

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.

7. The requested funding amount must be more than or equal to the minimum award and less than or equal to the maximum award. The cost of preparing a project for funding authorization can be substantial. For that reason, minimum federal amounts apply. Other federal funds may be combined with the requested funds for projects exceeding the maximum award, but the source(s) must be identified in the application. Funding amounts by application category are listed below in Table 1. For unique projects, the minimum award is \$500,000 and the maximum award is the total amount available each funding cycle (approximately \$4,000,000 for the 2024 funding cycle).

Yes

Strategic Capacity (Roadway Expansion): \$1,000,000 to \$10,000,000 Roadway Reconstruction/Modernization: \$1,000,000 to \$7,000,000 Troffic Management Technologies (Readway System Management), \$500,000 to \$2	500.000
Traffic Management Technologies (Roadway System Management): \$500,000 to \$3, 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
	(TIP) and approved by USDOT, the public agency sponsor must either have a current ic right of way/transportation, as required under Title II of the ADA. The plan must be completed al Solicitation funding cycles, this requirement may include that the plan has undergone a recent
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:	03/06/2018
Link to plan:	
The applicant is a public agency that employs fewer than 50 people and has a completed ADA self-evaluation that covers the public right of way/transportation.	
Date self-evaluation completed:	
Link to plan:	
Upload plan or self-evaluation if there is no link	1649248095959_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.
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Yes

Specific Roadway Elements CONSTRUCTION PROJECT ELEMENTS/COST ESTIMATES	Cost
Requirements - Roadways Including Multimodal Element	S
Check the box to indicate that the project meets this requirement.	
Planning Review Committee prior to application submittal. Please contact David Elvin at through this process as described in Appendix F of the 2040 Transportation Policy Plan.	winterchange ramps must have approval by the Metropolitan Council/MnDOT Interchange MnDOT (David.Elvin@state.mn.us or 651-234-7795) to determine whether your project needs to go
Roadway Expansion, Reconstruction/Modernization, and Bridge Rehabilitation	
Check the box to indicate that the project meets this requirement.	
The bridge must have a Local Planning Index (LPI) of less than 60 OR a National Brid Adequacy as reported on the most recent Minnesota Structure Inventory Report.	ge Inventory (NBI) Rating of 3 or less for either Deck Geometry, Approach Roadway, or Waterway
Check the box to indicate that the project meets this requirement.	
5. The length of the in-place structure is 20 feet or longer.	
Bridge Rehabilitation/Replacement projects only:	
Check the box to indicate that the project meets this requirement.	Yes
4. The bridge must carry vehicular traffic. Bridges can carry traffic from multiple modes. Bicycle and Pedestrian Facilities application categories. Rail-only bridges are ineligible	However, bridges that <u>are exclusively</u> for bicycle or pedestrian traffic must apply under one of the for funding.
Check the box to indicate that the project meets this requirement.	Yes
3. Projects requiring a grade-separated crossing of a principal arterial freeway must be l responsibility using MnDOT?s ?Cost Participation for Cooperative Construction Projects project, the policy guidelines should be read as if the funded trunk highway route is under the funded trunk of the second	s and Maintenance Responsibilities? manual. In the case of a federally funded trunk highway
Bridge Rehabilitation/Replacement and Strategic Capacity projects only:	
Check the box to indicate that the project meets this requirement.	Yes
2. The project must be designed to meet 10-ton load limit standards.	
Roadway Strategic Capacity and Reconstruction/Modernization and Spot Mod	ility projects only:
Check the box to indicate that the project meets this requirement.	Yes
	nly) or A-minor arterial as shown on the latest TAB approved roadway functional classification map. hove functionally classified roadway in the urban areas or a major collector and above in the rural
Roadways Including Multimodal Elements	
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
	project is defined as work that must be replaced within five years and is ineligible for funding. The If future stages. Staged construction is eligible for funding as long as future stages build on, rather
Check the box to indicate that the project meets this requirement.	Yes
and does not depend on any construction elements of the project being funded from other include traffic management or transit operating funds as part of a construction project are	rm ?independent utility? means the project provides benefits described in the application by itself r sources outside the regional solicitation, excluding the required non-federal match. Projects that e exempt from this policy.
Check the box to indicate that the project meets this requirement.	Yes
pedestrian, and transit facilities, per FHWA direction established 8/27/2008 and updated	4/15/2019. Unique projects are exempt from this qualifying requirement.
	r the useful life of the improvement. This includes assurance of year-round use of bicycle,

Mobilization (approx. 5% of total cost)	\$1,025,000.00
Removals (approx 5% of total cost)	\$340,600.00
Roadway (grading, borrow, etc.)	\$1,666,600.00
Roadway (aggregates and paving)	\$2,585,600.00
Subgrade Correction (muck)	\$0.00
Storm Sewer	\$1,430,000.00
Ponds	\$235,000.00
Concrete Items (curb & gutter, sidewalks, median barriers)	\$858,700.00
Traffic Control	\$1,642,000.00
Striping	\$7,800.00
Signing	\$231,000.00
Lighting	\$360,000.00
Turf - Erosion & Landscaping	\$752,000.00
Bridge	\$3,070,000.00
Retaining Walls	\$2,911,300.00
Noise Wall (not calculated in cost effectiveness measure)	\$4,174,800.00

Traffic Signals	\$550,000.00
Wetland Mitigation	\$132,000.00
Other Natural and Cultural Resource Protection	\$0.00
RR Crossing	\$0.00
Roadway Contingencies	\$8,015,900.00
Other Roadway Elements	\$4,855,000.00
Totals	\$34,843,300.00

Cost

Specific Bicycle and Pedestrian Elements CONSTRUCTION PROJECT ELEMENTS/COST ESTIMATES

	0.00
Path/Trail Construction \$150,400	0.00
Sidewalk Construction \$75,000	0.00
On-Street Bicycle Facility Construction \$0	0.00
Right-of-Way \$24,200	0.00
Pedestrian Curb Ramps (ADA) \$0	0.00
Crossing Aids (e.g., Audible Pedestrian Signals, HAWK) \$0	0.00
Pedestrian-scale Lighting \$35,000	0.00
Streetscaping \$0	0.00
Wayfinding \$1,000	0.00
Bicycle and Pedestrian Contingencies \$225,200	0.00
Other Bicycle and Pedestrian Elements \$500,000	0.00
Totals \$1,010,800	0.00

Specific Transit and TDM Elements

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

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

PROTECT Funds Eligibility

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

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

The TH 610 and East River Road Interchange Reconstruction project will incorporate elements that will increase the resiliency of the transportation system network within the TH 610/East River Road/Coon Rapids Boulevard area. The project provides transportation benefits by making the TH 610 and East River Road Interchange more resilient to endure current and future severe weather events and natural disasters. The project will reduce long-term, life cycle infrastructure costs by preventing future damage, maintenance, and reconstruction. Project element improvements that are eligible to receive PROTECT funds include the following: - Storm sewer systems will be designed to current standards to include high intensity rainfall events and installed to remove rainwater from surface transportation facilities. - Flood detention basins will be installed for a 100-year design event to prevent the intrusion of floodwater into the surface transportation systems. - Storm water will be managed to meet water quality requirements of both the Coon Creek Watershed District and the City of Coon Rapids. - Riprap installation at storm sewer and culvert outlets for erosion protection. - The number of drainage structures on the roadway surface will be increased to meet current standards. - Native seed mixtures will be used following MnDOT standards. Weed control will be used during establishment. These are vegetation management practices in transportation rights-of-way to improve roadway safety, prevent invasive species, and provide wildfire and erosion control.

Total Cost \$35,854,100.00 Construction Cost Total \$35,854,100.00 Transit Operating Cost Total \$0.00	Totals	
400,001,100.00	Total Cost	\$35,854,100.00
Transit Operating Cost Total \$0.00	Construction Cost Total	\$35,854,100.00
	Transit Operating Cost Total	\$0.00

Congestion within Project Area:

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

Free-Flow Travel Speed:	40
The Free-Flow Travel Speed is the black number.	
Peak Hour Travel Speed:	18
The Peak Hour Travel Speed is the red number.	
Percentage Decrease in Travel Speed in Peak Hour compared to Free-Flow:	55.0%
Upload Level of Congestion map:	1702511814197_LevelofCongestionMap.pdf

Congestion on adjacent Parallel Routes:

Congestion on aujacent Faraller Routes.	
Adjacent Parallel Corridor	Coon Rapids Boulevard
Adjacent Parallel Corridor Start and End Points:	
Start Point:	Foley Boulevard
End Point:	TH 47
Free-Flow Travel Speed:	42
The Free-Flow Travel Speed is the black number.	
Peak Hour Travel Speed:	26
The Peak Hour Travel Speed is the red number.	
Percentage Decrease in Travel Speed in Peak Hour Compared to Free-Flow:	38.1%
Upload Level of Congestion Map:	1702511814197_LevelofCongestionMap.pdf

Principal Arterial Intersection Conversion Study:

Proposed interchange or at-grade project that reduces delay at a High Priority Intersection: (80 Points)

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

(60 Points)

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

(50 Points)

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

(40 Points)

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

(0 Points)

(0 Points)

Measure B: Project Location Relative to Jobs, Manufac	cturing, and Education		
Existing Employment within 1 Mile:	12126		
Existing Manufacturing/Distribution-Related Employment within 1 Mile:	3397		
Existing Post-Secondary Students within 1 Mile:	0		
Upload Map	1702511880380_RegionalEconomyMap.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:	Yes		
Miles:	0.7		
(to the nearest 0.1 miles)			
Along Tier 2:			
Miles:	0		
(to the nearest 0.1 miles)			
Along Tier 3:			
Miles:	0		
(to the nearest 0.1 miles)			
The project provides a direct and immediate connection (i.e., intersects) wi either a Tier 1, Tier 2, or Tier 3 corridor:	th Yes		
None of the tiers:			
Measure A: Current Daily Person Throughput			
	East River Road north of TH 610		
Measure A: Current Daily Person Throughput Location Current AADT Volume	East River Road north of TH 610 18300		
Location Current AADT Volume			
Location	18300 850, 888-Northstar Commuter Rail		
Location Current AADT Volume Existing Transit Routes on the Project For New Roadways only, list transit routes that will likely be diverted to the new proposed roadway	18300 850, 888-Northstar Commuter Rail		
Location Current AADT Volume Existing Transit Routes on the Project For New Roadways only, list transit routes that will likely be diverted to the new proposed roadway Upload Transit Connections Map	18300 850, 888-Northstar Commuter Rail (if applicable).		
Location Current AADT Volume Existing Transit Routes on the Project For New Roadways only, list transit routes that will likely be diverted to the new proposed roadway Upload Transit Connections Map Please upload attachment in PDF form	18300 850, 888-Northstar Commuter Rail (if applicable).		
Location Current AADT Volume Existing Transit Routes on the Project For New Roadways only, list transit routes that will likely be diverted to the new proposed roadway Upload Transit Connections Map Please upload attachment in PDF form Response: Current Daily Person Throughput	18300 850, 888-Northstar Commuter Rail (if applicable).		
Location Current AADT Volume Existing Transit Routes on the Project For New Roadways only, list transit routes that will likely be diverted to the new proposed roadway Upload Transit Connections Map Please upload attachment in PDF form	18300 850, 888-Northstar Commuter Rail (<i>if applicable</i>). 1702511987994_TransitConnectionsMap.pdf		
Location Current AADT Volume Existing Transit Routes on the Project For New Roadways only, list transit routes that will likely be diverted to the new proposed roadway (Upload Transit Connections Map Please upload attachment in PDF form Response: Current Daily Person Throughput Average Annual Daily Transit Ridership Current Daily Person Throughput	18300 850, 888-Northstar Commuter Rail (<i>if applicable</i>). 1702511987994_TransitConnectionsMap.pdf		
Location Current AADT Volume Existing Transit Routes on the Project For New Roadways only, list transit routes that will likely be diverted to the new proposed roadway of Upload Transit Connections Map Please upload attachment in PDF form Response: Current Daily Person Throughput Average Annual Daily Transit Ridership Current Daily Person Throughput Measure B: 2040 Forecast ADT	18300 850, 888-Northstar Commuter Rail (<i>if applicable</i>). 1702511987994_TransitConnectionsMap.pdf		
Location Current AADT Volume Existing Transit Routes on the Project For New Roadways only, list transit routes that will likely be diverted to the new proposed roadway (Upload Transit Connections Map Please upload attachment in PDF form Response: Current Daily Person Throughput Average Annual Daily Transit Ridership Current Daily Person Throughput Measure B: 2040 Forecast ADT Use Metropolitan Council model to determine forecast (2040) ADT volume	18300 850, 888-Northstar Commuter Rail (<i>if applicable</i>). 1702511987994_TransitConnectionsMap.pdf		
Location Current AADT Volume Existing Transit Routes on the Project For New Roadways only, list transit routes that will likely be diverted to the new proposed roadway of Upload Transit Connections Map Please upload attachment in PDF form Response: Current Daily Person Throughput Average Annual Daily Transit Ridership Current Daily Person Throughput Measure B: 2040 Forecast ADT Use Metropolitan Council model to determine forecast (2040) ADT volume if checked, METC Staff will provide Forecast (2040) ADT volume	18300 850, 888-Northstar Commuter Rail (<i>if applicable</i>). 1702511987994_TransitConnectionsMap.pdf		
Location Current AADT Volume Existing Transit Routes on the Project For New Roadways only, list transit routes that will likely be diverted to the new proposed roadway (Upload Transit Connections Map Please upload attachment in PDF form Response: Current Daily Person Throughput Average Annual Daily Transit Ridership Current Daily Person Throughput Measure B: 2040 Forecast ADT Use Metropolitan Council model to determine forecast (2040) ADT volume If checked, METC Staff will provide Forecast (2040) ADT volume OR	18300 850, 888-Northstar Commuter Rail (<i>if applicable</i>). 1702511987994_TransitConnectionsMap.pdf		

Measure A: Engagement

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

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

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

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

Response:

The extensive project community engagement from 2021 through 2023 includes online surveys, maps, in-person/virtual presentations, and open houses. The City's website includes a designated project page for ongoing communication with residents, business owners and stakeholders.

Multiple digital, video and print marketing materials were distributed to as many citizens, underrepresented or otherwise:

- 10 email blasts (2,500+ subscribers)
- 9 Facebook posts (3,868+ engagement clicks)
- 5 Tweets (2,236 followers)
- 11 alerts on City/CTN homepages
- 2 print articles (circulation 26,475)
- 1 print article targeting businesses (circulation 1,750)
- 3 video stories on cable/YouTube (230+ views)

ABC Newspapers (local media) ran a story about an open house event in their August 7, 2021 edition (5,000+ print circulation and online audience).

As shown on the Equity Populations and Destinations map, specific mailings were sent to the following equity populations within $\frac{1}{2}$ mile of the project:

- Tralee Terrace (subsidized units)
- Wellington Ridge (subsidized units)
- Villas on Palm (subsidized units)
- Spring House (income restrictions)
- Head Start ACCAP (youth programs for income-eligible households)
- Adams Elementary School
- Various Daycare Centers and Social Services

Including the affordable and senior housing developments, daycare centers and social services shown just outside of the $\frac{1}{2}$ mile area, the overall targeted

stakeholder mailings include:

- 33 religious organizations/communities
- 22 local businesses
- 15 apartments
- 14 childcare facilities/schools

The community had multiple opportunities to engage throughout the project process, including the equity populations identified. These engagement activities solicited project input and refined alternatives to guide the process:

- Virtual Open House #1, July 30, 2021
- In-Person Open House #2, August 31, 2021
- In-Person Open House #3, December 15, 2021
- Virtual Open House #4, February 15, 2022
- Multi-Cultural Advisory Committee Presentation, February 24, 2022
- Coon Rapids Senior Center Visits, March 1-3, 2022
- In-Person Open House #5, October 27, 2023

A summary from all engagement events includes seventy-three percent of the participants supported additional TH 610 access and expanded transit options, and acknowledged pedestrian and bicycle safety is very important. Feedback from Open House #5 resulted in an overall support of the preferred alternative.

A final In-Person Open House #6 took place on December 6, 2023.

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

Measure B: Disadvantaged Communities Benefits and Impacts

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

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

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

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

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

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

The project provides direct benefits to equity populations in the area (see Equity Populations and Destinations map). Travel time improvements will be provided while traveling to/from the east on TH 610. With only TH 610 west ramps at East River Road and Coon Rapids Boulevard, trips destined to land uses near TH 610/East River Road/Coon Rapids Boulevard require longer trips using TH 10/Foley Boulevard. The project provides direct access for residents living in subsidized and senior apartments to jobs, school, childcare, and transit service destinations in the area.

Currently, there is a lack of direct access in this area for emergency response teams. Coon Rapids' police and fire personnel often ask Brooklyn Park for assistance due to their proximity to existing eastbound TH 610 access. Local calls increased from 17 in 2017 to 183 in 2022 for emergency teams to respond. The project improves response times to emergency situations for low-income, youth and elderly populations in the area.

The project provides equity population benefits relying on public transit as a mode of transportation. It improves access for transit routes serving the Foley Park & Ride, providing possible opportunities for service expansion. Direct access improvements also benefit transit users relying on express service to job destinations in downtown Minneapolis. City efforts focus on a future station for the Northern Lights Express (NLX) high-speed rail between the Twin Cities and Duluth.

A 10-foot trail along and under East River Road (via a grade-separated underpass) provides safer connections between neighborhoods, businesses, and transit facilities for equity populations using non-motorized modes of transportation. New signals with countdown timers, crosswalks, lighting, and curb ramps upgraded to ADA standards provide safer bicycle/pedestrian travel. In addition, the constructed trail and underpass at the south end are a key connection to the Mississippi Regional Trail, Hennepin County dam crossing and other regional trails.

The project includes property impacts due to the new East River Road ramps. However, these do not negatively impact the equity populations in the area and have less property impact than other alternatives considered.

As with most projects, there will be construction activities related to the project. However, impacts on the traveling public and nearby residents and businesses will be minimized since most improvements can be constructed offline. However, project construction will incorporate proper noise, dust, traffic management mitigation, and access management as well as planned detour routes to meet the needs of all stakeholders.

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

Measure C: Affordable Housing Access

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

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

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

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

Response:

As shown on the Socio-Economic Conditions map, there are 398 publicly subsidized rental housing units in census tracts within ½ mile of the project, including:

- Tralee Terrace (subsidized units)
- Wellington Ridge apartments (subsidized units)
- Villas on Palm (subsidized units)
- Spring House apartments (income restrictions)

In addition, according to the Met Council's 2021 Housing Performance Scores, Coon Rapids has the highest score available at 100. This score recognizes their overall local effort in developing and maintaining housing affordable to low and moderate-income households.

The project includes significant multimodal improvements for these residents of affordable housing that are more likely not to own a private vehicle, and rely on transit, bicycling and walking as their mode of transportation. Currently, there is only a sidewalk on the west side of East River Road along the project limits. Project improvements include sidewalk replacement on the west side and a new 10-foot trail on the east side of East River Road from the TH 610 South Ramps to Foley Boulevard, connecting to the existing Foley Boulevard trail and park & ride facility. In addition, an East River Road pedestrian underpass will be constructed at the TH 610 south ramp intersection, with a new trail segment connecting to the Mississippi Regional Trail and other regional trails.

This new trail provides a safer modal option for bicyclists and pedestrians along and across East River Road, connecting low-income housing residents to jobs, schools, and transit facilities. New signals with countdown timers will be installed at the TH 610 west ramp intersections for safer crossings. In addition, all sidewalk replacement, crosswalks, lighting, traffic signal, and curb ramps will be upgraded to meet ADA standards. As shown on the Equity Populations and Destinations map, the project improvements will benefit the affordable housing residents living in census tracts within ½ mile of the project by providing improved access to jobs, schools (Adams Elementary), transit, childcare, and place of worship (Kingdom Hall).

The project will also improve connections for affordable housing residents relying on public transit as an alternative mode of transportation to/from their job destinations in downtown Minneapolis. It will close the bus only westbound onramp to TH 610 but replace it with safer access to East River Road and TH 610. Direct access improvements to the Foley Park & Ride will benefit these transit users relying on express service to job destinations in downtown Minneapolis.

Measure D: BONUS POINTS

Project is located in an Area of Concentrated Poverty:

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

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.

1702512189345_Socio-EconomicMap.pdf

Measure A: Infrastructure Age

Year of Original Roadway Construction or Most Recent	Segment Length	Calculation	Calculation 2
Reconstruction			
1991.0	0	0	0
1995.0	0	0	0
1993.0	0.4	797.2	1993.0
	0	797	1993

Average Construction Year

Weighted Year

Total Segment Length (Miles)

Total Segment Length

0.4

1993.0

Measure A: Congestion Reduction/Air Quality

incustre A. Congestion Actuality									
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 with the Project (Vehicles Per Hour):	Total Peak Hour Delay without the Project:	Total Peak Hour Delay by the Project:	Total Peak hour Delay Reduced by project	EXPLANATION of methodology used to calculate railroad crossing delay, if applicable.	Synchro or HCM Reports
67.0	0	67.0	3973	0	266191.0	0	266191.0	N/A	1702512610868_Coon Rapids Traffic Analysis.pdf
0	67.0	-67	0	3828	0	256476.0	-256476	N/A	1702512814543_Coon Rapids Traffic Analysis.pdf
16.0	0	16.0	2996	0	47936.0	0	47936.0	N/A	1702513038809_Coon Rapids Traffic Analysis.pdf
0	17.0	-17	0	2708	0	46036.0	-46036	N/A	1702512998397_Coon Rapids Traffic Analysis.pdf
35.0	0	35.0	2935	0	102725.0	0	102725.0	N/A	1702513108581_Coon Rapids Traffic Analysis.pdf
0	23.0	-23	0	2647	0	60881.0	-60881	N/A	1702513153779_Coon Rapids Traffic Analysis.pdf
15.0	0	15.0	2816	0	42240.0	0	42240.0	N/A	1702513194045_Coon Rapids Traffic Analysis.pdf
0	25.0	-25	0	3067	0	76675.0	-76675	N/A	1702513233420_Coon Rapids Traffic Analysis.pdf
20.0	0	20.0	2730	0	54600.0	0	54600.0	N/A	1702513266452_Coon Rapids Traffic Analysis.pdf
0	19.0	-19	0	2909	0	55271.0	-55271	N/A	1702513312453_Coon Rapids Traffic Analysis.pdf
						495339			

Vehicle Delay Reduced

Total Peak Hour Delay Reduced

Total Peak Hour Delay Reduced

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

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

Total

Total Emissions Reduced:

Upload Synchro Report

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

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

0

Total (CO,	Total (CO,	Total (CO,
NOX, and	NOX, and	NOX, and
VOC) Peak	VOC) Peak	VOC) Peak
Hour	Hour	Hour
Emissions	Emissions	Emissions
without the	with the	Reduced by
Project	Project	the Project
(Kilograms):	(Kilograms):	(Kilograms):
27.97	26.88	1.09
28	27	1

Total Parallel Roadway

Emissions Reduced on Parallel Roadways Upload Synchro Report Please upload attachment in PDF form (Save Form then click 'Edit' in top right to upload file.)	1.09 1702513697638_Coon Rapids Traffic Analysis.pdf
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):	1.09

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

Cruise speed in miles per hour without the project:	0
Vehicle miles traveled without the project:	0
Total delay in hours without the project:	0
Total stops in vehicles per hour without the project:	0
Cruise speed in miles per hour with the project:	0
Vehicle miles traveled with the project:	0
Total delay in hours with the project:	0
Total stops in vehicles per hour with the project:	0

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

Measure A: Benefit of Crash Reduction Crash Modification Factor Used: The

Crash Modification Factor Used:	The reconstruction of the TH 610/East River Road interchange will provide additional new ramp access to TH 610 to/from the east. With added ramps, traffic volumes are expected to decrease at the TH 10/Foley Boulevard Ramp intersections. Following the guidance above, the crash reduction factor used was determined by the relocated traffic volumes and estimated number of crashes modified at the TH 610/East River Road interchange and the TH 10/Foley Boulevard interchanges. Crashes were estimated by applying the volume modifications assumed for the study intersections and determining how many crashes the intersection will be modified by to match a similar crash rate to existing.			
(Linit 700 Characters; approximately 100 words)				
Rationale for Crash Modification Selected:	There is no direct CMF related to a new interchange ramp approach, therefore, the crash analysis method was used as this takes into account the volume modifications assumed as part of the new ramps.			
(Linit 1400 Characters; approximately 200 words)				
Project Benefit (\$) from B/C Ratio:	\$3,032,576.00			
Total Fatal (K) Crashes:				
Total Serious Injury (A) Crashes:				
Total Non-Motorized Fatal and Serious Injury Crashes:				
Total Crashes:	60			
Total Fatal (K) Crashes Reduced by Project:				
Total Serious Injury (A) Crashes Reduced by Project:				
Total Non-Motorized Fatal and Serious Injury Crashes Reduced by Project:				
Total Crashes Reduced by Project:	6			
Worksheet Attachment	1702513991765_NEW_Coon Rapids Safety Analysis.pdf			
Please upload attachment in PDF form				

Roadway projects that include railroad grade-separation elements:		
Current AADT volume:	0	
Average daily trains:	0	
Crash Risk Exposure eliminated:	0	

Measure B: Pedestrian Safety

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

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

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

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

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

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

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

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

Treatments and countermeasures should be well-matched to the roadway?s context (e.g., appropriate for the speed, volume, crossing distance, and other location attributes). Refer to the Regional Solicitation Resources web page for guidance links.

The project will address the safety deficiencies for pedestrian crossings at the TH 610 North and South Ramp signalized intersections along East River Road. At both intersections, improvements will include ADA compliant crosswalks, crosswalk lighting, upgraded traffic signals with pedestrian countdown timers, and curb ramps identified in MnDOT's Best Practices for Pedestrians and Bicycle Safety and PEDSAFE as pedestrian safety countermeasures. These improvements support a critical connection for pedestrian users of all abilities with a safe, reliable, and affordable network to places of employment, education, healthcare services, and other essential services and activities.

Other safety countermeasures identified by the PEDSAFE and FHWA Proven Safety Countermeasures are medians and pedestrian refuges. The TH 610 North Ramp intersection will be reconstructed to accommodate the additional westbound off-ramp. The reconstruction of this intersection will improve the distance crossing East River Road along the north leg. In addition, the distance crossing the west leg of the intersection will be shortened and include a reconstructed raised median to cross the on-ramp leg of the intersection. These improvements at the TH 610 North Ramp intersection will provide additional safety for all pedestrian traffic crossing the roadway.

In addition, a new pedestrian underpass at the TH 610 South Ramp signalized intersection will further address the safety needs of people crossing East River Road. The pedestrian underpass countermeasure identified in the pedestrian safety resource PEDSAFE, will safely separate the pedestrian movement from vehicular traffic.

(Limit 2,800 characters; approximately 400 words)

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

Yes

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:

Select one:

The proposed project does not remove a signalized intersection along East River Road. However, the distance between the TH 610 North and South Ramp signalized intersections does increase slightly due to the entire southwest quadrant being moved southerly for design purposes. This allows the loop auxiliary lane to be tapered into eastbound TH 610 traffic, prior to the BNSF railroad bridge, such that this bridge does not need to be widened with the project.

The segment of East River Road between the two signalized intersections crosses under TH 610.

Although the distance between the two signalized intersections will be increasing with the project design, a protected pedestrian underpass is being constructed at the TH 610 South Ramp intersection. This will allow safe crossings for pedestrian traffic with complete separation from vehicular traffic.

(Limit 1,400 characters; approximately 200 words)

	section? (e.g., by adding turn or through lanes, widening lanes, using a multi-phase crossing, , etc.). This does not include any increases to crossing distances solely due to the addition of
Select one:	Yes
If yes, ? How many intersections will likely be affected?	
Response:	1

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

The TH 610 South Ramp and East River Road intersection will increase the crossing distance along the west leg of the intersection to add the eastbound onramp lane. Mitigation measures as part of the proposed project that will address the increased crossing distance includes a new traffic signal with countdown timers and a median crossing island to serve as a refuge area to improve pedestrian travel across the intersection.

In addition, the crossing distance will also increase along the south leg of this intersection due to the pedestrian underpass of East River Road. The improvement itself will eliminate all exposure and delay for pedestrians by providing an uninterrupted flow of pedestrian movement under the roadway.

(Limit 1,400 characters; approximately 200 words)

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

Response:

As part of the project, a grade-separated pedestrian crossing will be added along the south leg of the TH 610 South Ramp and East River Road intersection. In order to make the separated crossing a more appealing option, its design will be an underpass instead of a pedestrian bridge. In addition, when compared to the additional wait time to receive a pedestrian crossing indication at the signalized intersection today, the total travel time to cross East River Road at this intersection will be reduced.

(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:

As part of the project, the turning radii will be widened at the TH 610 North and South Ramp intersections to accommodate freight movements in the area. In addition, turn lanes will be added for the new eastbound on-ramp. In order to mitigate the potential for increased speeds indirectly, trails will be added along the entire project limits to provide wider pedestrian facilities and separation from moving vehicles on East River Road. For through traffic along East River Road, the new coordinated signal system will synchronize the traffic movements and optimize for slower speeds.

(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 existing and proposed design speed on East River Road is 45 mph. The

posted speed limit is 45 mph. There is no change from 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	18300

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 Yes with no stops, such as non-stop freeway sections of express or limited-stop routes.)

Existing road has high-frequency transit running on or across it and 1+ highfrequency stops in the project area (high-frequency defined as service at least every 15 minutes from 6am to 7pm weekdays and 9am to 6pm Saturdays.)

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

If checked, please describe:

The project area is served by Metro Transit express routes 850 and 888 with stops at the Foley Park & Ride facility. These express routes provide frequent, all-day service from the transit station to downtown Minneapolis. It is currently the fastest transit option from the area to downtown Minneapolis. The Foley Park & Ride is well utilized and one of the largest in the system.

The Foley Blvd grade-separated crossing recently constructed over the BNSF railroad has improved transit operations in the project area. The grade-separated crossing project created better separation between vehicles and buses accessing the Foley Boulevard transit station parking lot and removed a BNSF railroad at-grade crossing. Coordinated traffic signals and longer access ramps with HOV/dedicated bus lanes will make getting onto TH 610 fast, convenient and safer by allowing slower moving buses to reach freeway speeds and more safely merge into faster vehicle speeds. The previous grade separation project combined with the proposed full access interchange at TH 610 and East River Road provides safer transit operations with buses exiting Foley Boulevard at East River Road, continuing along the project roadway to access the freeway at the TH 610 North Ramp and East River Road intersection.

(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, regulatorilydesignated affordable housing) Yes

If checked, please describe:

Adams Elementary School is located within 500 feet of the new 10-foot trail and East River Road with pedestrian underpass will be constructed as part of the interchange project.

(Limit 1,400 characters; approximately 200 words)

Measure A: Multimodal Elements and Existing Connections

Response:

The project improves the travel experience for bicyclists, pedestrians, and transit users with significant multimodal elements. Improvements include a 10-foot trail on the east side, from the TH 610 South Ramps to Foley Boulevard, connecting to the Foley Boulevard trail and park & ride. The existing five-foot sidewalk on the west side will be replaced in its current location. All sidewalk replacement, crosswalks, lighting, traffic signal, and curb ramps will be upgraded to meet ADA standards to enhance all multimodal connections.

The project trail has a positive impact on an identified Tier 1 RBTN alignment/corridor by addressing a portion of an identified gap and expressway barrier. At the south end, an additional one-half mile trail segment will be constructed, connecting to an existing trail and the Mississippi River Regional Trail. This regional trail connects the Coon Rapids Dam Regional Park, through the cities of Coon Rapids, Fridley, and Columbia Heights, into the Minneapolis Grand Rounds Trail Scenic Byway system. It also connects to the North Hennepin and Rice Creek Regional Trails. This provides biking as a commuting option.

The project area is served by Metro Transit express routes 850 and 852 with stops at the Foley Park & Ride facility. These routes provide frequent, all-day service from the transit station to downtown Minneapolis. It is currently the fastest transit option from the area to downtown Minneapolis and one of the largest in the system.

The grade-separated BNSF railroad crossing recently constructed has improved transit operations. The project created better separation between vehicles and buses accessing the Foley Boulevard transit station parking lot and removed the railroad at-grade crossing. Coordinated traffic signals will make getting onto TH 610 fast, convenient, and safer by allowing slower moving buses to merge into faster vehicle speeds more safely. The grade-separation combined with the full-access interchange at TH 610 and East River Road provides safer transit operations with buses exiting Foley Boulevard at East River Road, continuing along the project roadway to the TH 610 North Ramp and East River Road freeway access.

The City's Foley Boulevard Station Area Plan (2015) focuses on a station for the Northern Lights Express (NLX) high-speed rail between the Twin Cities and Duluth. New funding for the NLX project puts this transit option one step closer to reality and positions the TH 610 and East River Road area as a future transit hub for the north metro.

(Limit 2,800 characters; approximately 400 words)

Transit Projects Not Requiring Construction

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

Park-and-Ride and other transit construction projects require completion of the Risk Assessment below. Check Here if Your Transit Project Does Not Require Construction

Measure A: Risk Assessment - Construction Projects

1. Public Involvement (20 Percent of Points)

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

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

Yes

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

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

50%

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

25%

No outreach has led to the selection of this project.

0%

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

Response:

The extensive project community engagement from 2021 through 2023 includes online surveys, maps, in-person/virtual presentations, and open houses. The City's website includes a designated project page for ongoing communication with residents, business owners and stakeholders.

Multiple digital, video and print marketing materials were distributed to as many citizens, underrepresented or otherwise:

- 10 email blasts (2,500+ subscribers)
- 9 Facebook posts (3,868+ engagement clicks)
- 5 Tweets (2,236 followers)
- 11 alerts on City/CTN homepages
- 2 print articles (circulation 26,475)
- 1 print article targeting businesses (circulation 1,750)
- 3 video stories on cable/YouTube (230+ views)

ABC Newspapers (local media) ran a story about an open house event in their August 7, 2021 edition (5,000+ print circulation and online audience).

As shown on the Equity Populations and Destinations map, specific mailings were sent to the following equity populations within $\frac{1}{2}$ mile of the project:

- Tralee Terrace (subsidized units)
- Wellington Ridge (subsidized units)
- Villas on Palm (subsidized units)
- Spring House (income restrictions)
- Head Start ACCAP (youth programs for income-eligible households)
- Adams Elementary School
- Various Daycare Centers and Social Services

Including the affordable and senior housing developments, daycare centers and social services shown just outside of the $\frac{1}{2}$ mile area, the overall targeted stakeholder mailings include:

- ววาษแนเบนร บานสาแลสแบบเร/บบกากมาแนะร
- 22 local businesses
- 15 apartments
- 14 childcare facilities/schools

The community had multiple opportunities to engage throughout the project process, including the equity populations identified. These engagement activities solicited project input and refined alternatives to guide the process:

- Virtual Open House #1, July 30, 2021
- In-Person Open House #2, August 31, 2021
- In-Person Open House #3, December 15, 2021
- Virtual Open House #4, February 15, 2022
- Multi-Cultural Advisory Committee Presentation, February 24, 2022
- Coon Rapids Senior Center Visits, March 1-3, 2022
- In-Person Open House #5, October 27, 2023

A summary from all engagement events includes seventy-three percent of the participants supported additional TH 610 access and expanded transit options, and acknowledged pedestrian and bicycle safety is very important. Feedback from Open House #5 resulted in an overall support of the preferred alternative.

A final Open House #6 took place on December 6, 2023.

(Limit 2,800 characters; approximately 400 words)

2. Layout (25 Percent of Points)

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

Layout approved by the applicant and all impacted jurisdictions (i.e., cities/counties/MnDOT. If a MnDOT trunk highway is impacted, approval by MnDOT must have occurred to receive full points. A PDF of the layout must be attached along with letters from each jurisdiction to receive points. 100% A layout does not apply (signal replacement/signal timing, stand-alone streetscaping, minor intersection improvements). Applicants that are not certain whether a layout is required should contact Colleen Brown at MnDOT Metro State Aid ? colleen.brown@state.mn.us.

100%

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

75%

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

50%

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

25%

Layout has not been started

0%

Attach Layout

Please upload attachment in PDF form

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	
There are historical/archeological properties present but determination of ?no historic properties affected? is anticipated.	Yes
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.	
Project is located on an identified historic bridge	
4. Right-of-Way (25 Percent of Points)	
Right-of-way, permanent or temporary easements, and MnDOT agreement/limited-use permit either not required or all have been acquired 100%	
Right-of-way, permanent or temporary easements, and/or MnDOT agreement/limited-use permit required - plat, legal descriptions, or official map complete	
50%	
Right-of-way, permanent or temporary easements, and/or MnDOT agreement/limited-use permit required - parcels identified 25%	Yes
Right-of-way, permanent or temporary easements, and/or MnDOT agreement/limited-use permit required - parcels not all identified %	
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	

Measure A: Cost Effectiveness

Total Project Cost (entered in Project Cost Form):	\$35,854,100.00
Enter Amount of the Noise Walls:	\$4,174,800.00
Total Project Cost subtract the amount of the noise walls:	\$31,679,300.00
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

(23-10-19) AC LOS - TH 610 & ERR Interchange Improvements.pdf 2024 Regional Solicitation_CR_610.pdf 231211_TH610_Equity_Mapv2.pdf ADA Transition Plan.pdf Coon Rapids Traffic Analysis.pdf

LevelofCongestionMap.pdf NEW_ Coon Rapids Safety Analysis.pdf Project Summary.pdf RegionalEconomyMap.pdf Resolution #2023_135-TH 610 Interchange.pdf Signed Resolution 23-118.pdf Socio-EconomicMap.pdf SP 0217-36_TH 610-Layout 1C_SIGNED.pdf TransitConnectionsMap.pdf

Description File Size 252 KB County Support MnDOT Support 208 KB Equity Map 553 KB ADA Plan 3.4 MB Traffic Analysis 327 KB Congestion 6.1 MB 494 KB Crash Analysis 2.2 MB Project Summary **Regional Economy** 1.4 MB County Resolution 364 KB 362 KB City Resolution SocioEcon 1.4 MB 5.7 MB Signed Layout Transit 1.4 MB

City of Coon Rapids ADA Transition Plan



Adopted by the Coon Rapids City Council March 6, 2018

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Introduction

Transition Plan Need and Purpose

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:

- 1. Employment
- 2. State and local government services
- 3. Public accommodations
- 4. Telecommunications
- 5. 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 Coon Rapids 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." (<u>42 USC. Sec. 12132</u>; <u>28</u> <u>CFR. Sec. 35.130</u>)

As required by Title II of <u>ADA, 28 CFR. Part 35 Sec. 35.105 and Sec. 35.150</u>, the City of Coon Rapids has conducted a self-evaluation of its facilities within public rights of way and has developed this Transition Plan detailing how the organization will ensure that all of those facilities are accessible to all individuals.

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. The Architectural Barriers Act 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 Coon Rapids 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 C.F.R. 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 C.F.R. 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 C.F.R. 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 C.F.R. 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 [29 C.F.R. Sec. 35.160(a)].
- Must designate at least one responsible employee to coordinate ADA compliance [28 <u>CFR Sec. 35.107(a)</u>]. 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]. The notice must include the identification of the employee serving as the ADA coordinator and must provide this information on an ongoing basis [28 CFR Sec. 104.8(a)].
- Must establish a grievance procedure. Public entities must adopt and publish grievance procedures providing for prompt and equitable resolution of complaints [<u>28 CFR Sec.</u> <u>35.107(b)</u>]. 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.

This document has been created to specifically cover accessibility within the public rights of way and does not include information on City of Coon Rapids programs, practices, or building facilities not related to public rights of way.

Self-Evaluation

Overview

The City of Coon Rapids (City) is required, under Title II of the Americans with Disabilities Act (ADA) and 28CFR35.105, to perform a self-evaluation of its current transportation infrastructure policies, practices, and programs. This self-evaluation will identify what policies and practices impact accessibility and examine how the City implements these policies. The goal of the self-evaluation is to verify that, in implementing the City policies and practices, the department is providing accessibility and not adversely affecting the full participation of individuals with disabilities.

The self-evaluation also examines the condition of the City Pedestrian Circulation Route/Pedestrian Access Route (PCR/PAR) and identifies potential need for PCR/PAR infrastructure improvements. This includes the sidewalks, curb ramps, bicycle/pedestrian trails, traffic control signals and transit facilities that are located within the City's rights of way, but does not include any sidewalks, curb ramps, bicycle/pedestrian trails, traffic control signals and transit facilities under the jurisdiction of Anoka County or the Minnesota Department of Transportation. Any barriers to accessibility identified in the self-evaluation and the remedy to the identified barrier are set out in this transition plan.

Summary

In 2017, the City conducted an inventory of pedestrian facilities within its public right-of-way consisting of the evaluation of the following:

- 94.3 miles of sidewalks
- 1,192 curb ramps
- 60 miles of trails
- 81 traffic control signals
- 333 bus stops

A detailed evaluation on how these facilities relate to ADA standards is found in Appendix A and will be updated periodically.

Policies and Practices

Previous Practices

Since the adoption of the ADA, the City has provided accessible pedestrian features as part of City capital improvement projects. As additional information was made available regarding methods to provide accessible pedestrian features, the City updated their procedures to accommodate these methods.

Policy

The City's goal is to continue to provide accessible pedestrian design features as part of City capital improvement projects. The City has established ADA design standards and procedures as listed in Appendix F. These standards and procedures will be kept up to date with nationwide and local best management practices.

The City will consider and respond to all accessibility improvement requests. All accessibility improvements that have been deemed reasonable will be scheduled consistent with transportation project priorities. The City will coordinate with external agencies to ensure that all new or altered pedestrian facilities within the City's jurisdiction are ADA compliant to the maximum extent feasible.

Maintenance of pedestrian facilities within the public right-of-way will continue to follow the policies set forth by the City.

Requests for accessibility improvements can be submitted to the ADA Coordinator. Contact information for this individual is located in Appendix E.

Improvement Schedule

Priority Areas

The City has identified specific locations as priority areas for planned accessibility improvement projects. These areas have been selected due to their proximity to specific land uses such as schools, government offices and medical facilities, as well as from the receipt of public comments. The priority areas as identified in the self-evaluation are as follows:

- Mercy Hospital; Port Medical Area
- Schools; Anoka Ramsey Community College; Parks
- Coon Rapids Ice Center; Boulevard Plaza; City Hall; Transit Corridors

Additional priority will be given to any location where an improvement project or alteration was constructed after January 26, 1991, and accessibility features were omitted.

External Agency Coordination

Many other agencies are responsible for pedestrian facilities within the jurisdiction of the City. The City will coordinate with those agencies to track and assist in the elimination of accessibility barriers along their routes.

Schedule

The City has set the following schedule goals for improving the accessibility of its pedestrian facilities within the City jurisdiction:

• After 30 years, 80% of accessibility features within the jurisdiction of Coon Rapids would be ADA compliant.

ADA Coordinator

In accordance with 28 CFR 35.107(a), the City of Coon Rapids has identified an ADA Title II Coordinator to oversee City ADA policies and procedures. Contact information for this individual is located in Appendix E.

Implementation Schedule

Methodology

The City will utilize two methods for upgrading pedestrian facilities to current ADA standards. The first and most comprehensive of the two methods is scheduled street and utility improvement projects. All pedestrian facilities impacted by these projects will be upgraded to current ADA accessibility standards. The second method is stand-alone sidewalk and ADA accessibility improvement projects. These projects will be incorporated on a case by case basis as determined by City staff. Every five years, the City evaluates all roads under the City's jurisdiction and a 5-year street reconstruction plan is developed, which includes a schedule for specific improvements. During that 5-year period, roads that were planned to be reconstructed may be rescheduled or removed from the 5-year plan and other roads may be added. This is due to potential needs in other areas or budgetary constraints in any given year.

Public Outreach

The City recognizes that public participation is an important component in the development of this document. Input from the community has been gathered and used to help define priority areas for improvements within the jurisdiction of the City.

Public outreach for the creation of this document consisted of the following activities:

Engineering staff met with the City Safety Commission in November 2016 and February 2017 to identify recommended high-priority projects the City should focus on. With that information in mind, the City held a public open house meeting on April 13, 2017. The purpose of the open house was to gain feedback on the draft ADA plan from the public, determine potential improvements to enhance ADA compliance efforts, and establish how the public believes the City should focus its efforts.

The City publishes quarterly newsletters which are distributed to all residents and businesses within the City. The spring 2017 newsletter announced the public meeting and invited residents to participate. On April 14, 2017, CTN Studios (the City's cable news program provider) broadcast a segment to explain what the ADA Transition Plan is, the City's efforts thus far, and to contact the Engineering department with any questions or comments.

This document was also made available for public comment. A summary of public outreach efforts is located in Appendix C.

Grievance Procedure

Under the Americans with Disabilities Act, each agency is required to publish its responsibilities in regards to the ADA. A draft of this public notice is provided in Appendix D. If users of City 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 purpose of the prompt and equitable resolution of citizens' complaints, concerns, comments, and other grievances. This grievance procedure is outlined in Appendix D.

Monitor the Progress

This document will continue to be updated as conditions within the City and standards evolve. The appendices in this document will be updated periodically, while the main body of the document will be updated in (short term period, 5 years) with a future update schedule to be developed at that time. With each main body update, a public comment period will be established to continue the public outreach.

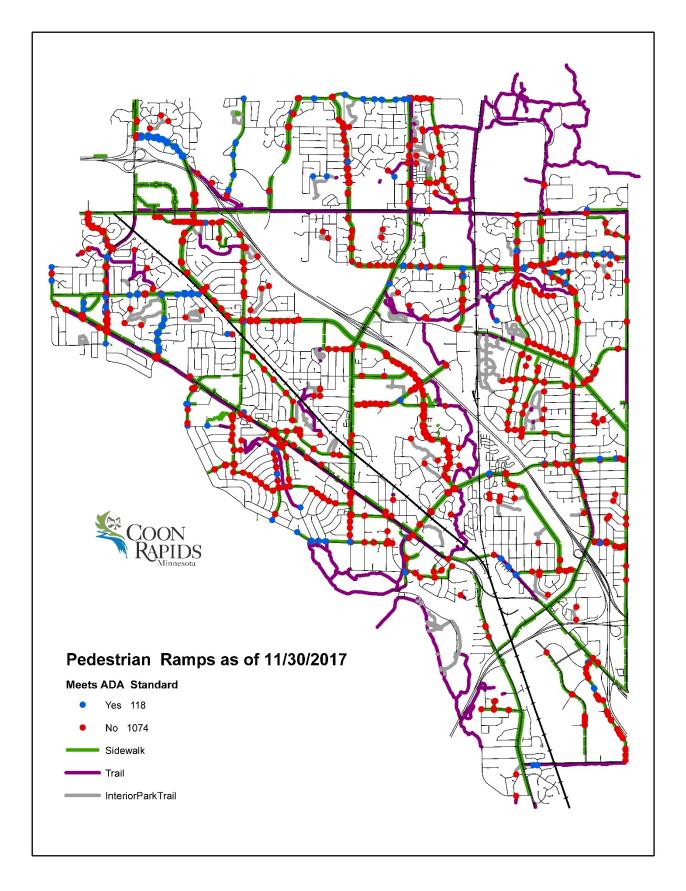
Appendices

- A. Self-Evaluation Results
- **B. Schedule / Budget Information**
- C. Public Outreach
- **D. Grievance Procedure**
- **E. Contact Information**
- F. Agency ADA Design Standards and Procedures
- **G.** Glossary of Terms

Appendix A – Self-Evaluation Results

This initial self-evaluation of pedestrian facilities yielded the following results:

- 80% of sidewalks met accessibility criteria
- 10% of curb ramps met accessibility criteria
- 55% intersections did not have any curb ramps (due to no sidewalks or trails at those intersections)
- 80% of trails met accessibility criteria
- 100% of traffic control signals had push buttons that are accessible, or had the pedestrian indications on recall
- 0% of traffic control signals had APS
- 0% of bus stops met accessibility criteria
- 0% of bus stops had amenities that met accessibility criteria



Appendix B – Schedule / Budget Information

Cost Information

Unit Prices

Construction costs for upgrading facilities can vary depending on each individual improvement and conditions of each site. Costs can also vary on the type and size of project the improvements are associated with. Listed below are representative 2017 cost estimates for typical accessibility improvements based on whether the improvements are included as part of a retrofit-type project, or as part of a larger comprehensive capital improvement project.

Intersection corner ADA improvement retrofit: +/- \$5,000 per corner

Intersection corner ADA improvement as part of adjacent capital project: +/- \$2,600 per corner

Traffic control signal APS upgrade retrofit: +/-\$ 16,000

Traffic control signal APS upgrade as part of full traffic control signal installation: +/- \$12,000

Sidewalk / Trail ADA improvement retrofit: +/- \$5.50 per SF

Sidewalk / Trail ADA improvement as part of adjacent capital project: +/- \$4.00 per SF

Bus Stop ADA improvement retrofit: +/- \$400 per stop

Bus Stop ADA improvement as part of adjacent capital project: +/- \$250 per stop

Priority Areas

Based on the results of the self-evaluation, the estimated costs associated with eliminating accessibility barriers within the targeted priority areas is as follows:

- Mercy Hospital; Port Medical Area \$500,000
- Schools; Anoka Ramsey Community College \$750,000
- Coon Rapids Ice Center; Boulevard Plaza; City Hall \$500,000

Entire Jurisdiction

Based on the results of the self-evaluation, the estimated costs associated with providing ADA accessibility within the entire jurisdiction is \$9,500,000. This amount represents a significant investment that the City is committed to making in the upcoming years. A systematic approach to providing accessibility will be taken in order to absorb the cost into the City budget for improvements within the public right-of-way.

Appendix C – Public Outreach

Safety Commission Survey Summary:

Safety Commission ADA Transition Plan Ranking Form
Please numerically rank the following items in regards to the City of Coon Rapids ADA Transition Plan Rank items with 1 being considered the most important
1. ADA Priority Item for Transition Plan to Address
Other 2. What issue is most important to address with Pedestrian Curb Ramps? 2. Slopes (not too steep) 3 Detectable Warnings (Truncated Domes) Installed Ramps are Installed at Correct Locations Drainage (no water ponding in front of ramp) Other
3. What issue is most important to address with Traffic Control Signals? Installed at all locations where pedestrians cross traffic Provide push button with accessible surface Provide push button with verbal messages/audible tones and accessible surface Provide push button with vibrating surfaces and accessible surface Other
4. What issue is most important to address with Bus Stops?
5. What areas should be considered priorities for the transition plan to address? Areas close to schools Areas close to medical facilities Areas close to government offices Other
6. What specific areas in Coop Rapids should be considered a priority for the transition plan to address? CR Blid and Mississipp. Blid intersection
 7. What schedule most close aligns with your beliefs on how the City of Coon Rapids should reach full ADA compliance? After 20 years, 100% of accessibility features within the jurisdiction of Coon Rapids would be ADA compliant. After 25 years, 100% of accessibility features within the jurisdiction of Coon Rapids would be ADA compliant. After 30 years, 100% of accessibility features within the jurisdiction of Coon Rapids would be ADA compliant. After 40 years, 100% of accessibility features within the jurisdiction of Coon Rapids would be ADA compliant. After 40 years, 100% of accessibility features within the jurisdiction of Coon Rapids would be ADA compliant. Other

(This form was presented to and filled out by the City's Safety Commission. The responses were averaged and are shown above.)

Spring 2017 Newsletter:



Appendix D – Grievance Procedure

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 Coon Rapids will not discriminate against qualified individuals with disabilities on the basis of disability in the City of Coon Rapids 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 U.S. 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 City programs, services, and activities, including 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 policies and programs to ensure that people with disabilities have an equal opportunity to enjoy all City 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 City program, service, or activity, should contact the office of the ADA Coordinator as soon as possible but no later than 48 hours before the 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 a particular 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.

Grievance Form Instructions

City of Coon Rapids Grievance Procedure under the Americans with Disabilities Act

This Grievance Procedure is established to meet the requirements of the Americans with Disabilities Act of 1990 ("ADA"). 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 Coon Rapids. The City of Coon Rapids' Personnel Policy governs employment-related complaints of disability discrimination.

The complaint shall be in writing by an approved method detailed herein and contain information about the alleged discrimination such as name, address, and phone number of complainant, and 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 shall be submitted by the grievant and/or his/her designee as soon as possible but no later than 60 calendar days after the alleged violation to:

Joan Lenzmeier ADA Coordinator/City Clerk JLenzmeier@coonrapidsmn.gov

Within 15 calendar days after receipt of the complaint, the ADA Coordinator or his/her designee will meet with the complainant to discuss the complaint and the possible resolutions. Within 15 calendar days of the meeting, the ADA Coordinator or his/her designee will respond in writing, and where appropriate, in a format accessible to the complainant, such as large print, Braille, or audio tape. The response will explain the position of the City of Coon Rapids and offer options for substantive resolution of the complaint.

If the response by the ADA Coordinator or his/her his designee does not satisfactorily resolve the issue, the complainant and/or his/her designee may appeal the decision within 15 calendar days after receipt of the response to the City Manager or his/her designee.

Within 15 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 15 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 his/her designee, appeals to the City Manager or his/her designee, and responses from these two offices will be retained by the City for at least three years.

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

Internet

Visit the City website <u>www.coonrapidsmn.gov</u> and click the "ADA" link to access the <u>ADA</u> <u>Grievance Form</u>. Fill in the form online and click "submit." A copy of The ADA Grievance Form is included in this Appendix.

Telephone

Contact the pertinent City of Coon Rapids staff person listed in the **Contact Information** section of Appendix E to submit an oral grievance. The staff person will utilize the Internet method above to submit the grievance on behalf of the person filing the grievance.

Paper Submittal

Contact the pertinent City staff person listed in the **Contact Information** section of Appendix E to request a paper copy of the City's grievance form, complete the form, and submit it to the ADA Coordinator.

The ADA Grievance Form requires the following information:

The name, address, telephone number, and email address for the person filing the grievance

The **name**, **address**, **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 alleged violation 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.

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

The City will document each resolution of a filed grievance and retain such documentation in the department's ADA Grievance File for a period of three years.

The City will consider all specific grievances within its particular context or setting. Furthermore, the City will consider many varying circumstances including: 1) the nature of the access to services, programs, or facilities at issue; 2) the specific nature of the disability; 3) the essential eligibility requirements for participation; 4) the health and safety of others; and 5) the degree to which an accommodation would constitute a fundamental alteration to the program, service, or facility, or cause an undue hardship to the City.

Accordingly, the resolution by the City of any one grievance 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 grievance files for a period of three years.

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

For more information, contact:

U.S. Department of Justice Civil Rights Division 950 Pennsylvania Avenue, NW Disability Rights Section - NYAV Washington, D.C. 20530 <u>www.ada.gov</u> (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.

Grievance Form (Available online at www.coonrapidsmn.gov or at City Hall):

RAPIDS	11155 Robinson Drive NW, Coon Rapids, MN 5543 Web: coonrapidsmn.gov Phone: 763-755-288
Americans with Disabilities Act Tit	la II Grievance Form
Today's Date: Complainant Name:	
Address:	
City, State, Zip:	
Telephone and email:	
Individual discriminated against (if other than con	
Name:	
City, State, Zip:	
Telephone and email:	
What efforts have been made to resolve this compl Department?	aint using the internal grievance procedures of the City
If you have documentation copies would be helpful	. Examples are letters, email messages, written notes, etc.
	aency? Yes No
Has complaint been filed with State or Federal Ag	
Has complaint been filed with State or Federal Ag	gency? Yes No Date Filed:
Has complaint been filed with State or Federal Ag Name of Agency: Contact Person:	
Has complaint been filed with State or Federal Ag Name of Agency: Contact Person: TENNESSEN WARNING The data you supply on this form will be used to process the	
Has complaint been filed with State or Federal Ag Name of Agency: Contact Person: TENNESSEN WARNING The data you supply on this form will be used to process the provide this data, but we will not be able to process the AD	Date Filed: ADA grievance you are submitting. You are not legally required to A grievance without it. The data will constitute a public record if

Appendix E – Contact Information

ADA Title II Coordinator

Name: Joan Lenzmeier Address: 11155 Robinson Drive, Coon Rapids, MN 55433

Phone: 763-767-6493 Fax: 763-767-6531 E-mail: JLenzmeier@coonrapidsmn.gov

Public Right-of-Way ADA Implementation Coordinator

Name: Tim Himmer Address: 11155 Robinson Drive, Coon Rapids, MN 55433

Phone: 763-767-6465 Fax: 763-767-6573 E-mail: THimmer@coonrapidsmn.gov

Appendix F - City of Coon Rapids ADA Procedures & Standards

Design Procedures

Intersection Corners

Every attempt shall be made to construct or upgrade curb ramps and/or blended transitions to achieve ADA compliance within all capital improvement projects. There may be limitations which make it technically infeasible to achieve full accessibility to an intersection corner within the scope of any project. Those limitations will be noted and those intersection corners will remain on the transition plan. As future projects or opportunities arise, those intersection corners shall continue to be incorporated into future work. Regardless of whether full compliance can be achieved or not, each intersection corner shall be made as compliant as possible in accordance with the judgment of City of Coon Rapids staff.

Sidewalks / Trails

Every attempt shall be made to construct or upgrade sidewalks and trails to achieve ADA compliance within all capital improvement projects. There may be limitations which make it technically infeasible to achieve full accessibility to segments of sidewalks or trails within the scope of any project. Those limitations will be noted and those segments will remain on the transition plan. As future projects or opportunities arise, those segments shall continue to be incorporated into future work. Regardless of whether full compliance can be achieved or not, every sidewalk or trail shall be made as compliant as possible in accordance with the judgment of City of Coon Rapids staff.

Traffic Control Signals

Every attempt shall be made to construct or upgrade traffic control signals to achieve ADA compliance within all capital improvement projects. There may be limitations which make it technically infeasible to achieve full accessibility to individual traffic control signal locations within the scope of any project. Those limitations will be noted and those locations will remain on the transition plan. As future projects or opportunities arise, those locations shall continue to be incorporated into future work. Regardless of whether full compliance can be achieved or not, each traffic signal control location shall be made as compliant as possible in accordance with the judgment of City of Coon Rapids or Anoka County staff.

Bus Stops

Every attempt shall be made to construct or upgrade bus stops to achieve ADA compliance within all capital improvement projects. There may be limitations which make it technically infeasible to achieve full accessibility to individual bus stop locations within the scope of any project. Those limitations will be noted and those locations will remain on the transition plan. As future projects or opportunities arise, those locations shall continue to be incorporated into future work. Regardless of whether full compliance can be achieved or not, each bus stop location shall be made as compliant as possible in accordance with the judgment of City or Metro Transit staff. Transit facilities present within the limits of the City of Coon Rapids fall under the jurisdiction of Metro Transit. The City of Coon Rapids will work with Metro Transit to ensure that those facilities meet all appropriate accessibility standards.

Other policies, practices and programs

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

Design Standards

The City has adopted PROWAG, as adopted by the Minnesota Department of Transportation (MnDOT), as its design standard.

Appendix G – Glossary of Terms

ABA: See Architectural Barriers Act.

ADA: See Americans with Disabilities Act.

ADA Transition Plan: The City of Coon Rapids' transportation system plan that identifies accessibility needs and the process to fully integrate accessibility improvements, and ensures all transportation facilities, services, programs, and activities are accessible to all individuals.

ADAAG: See Americans with Disabilities Act Accessibility Guidelines.

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 phase in audible and 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; Civil rights legislation passed in 1990 and effective 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): contains scoping and technical requirements for accessibility to buildings and public facilities by individuals with disabilities under the Americans with Disabilities Act (ADA) of 1990.

APS: See Accessible Pedestrian Signal.

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

Capital Improvement Program (CIP): The CIP for the Transportation Department includes an annual capital budget and a five-year plan for funding the new construction and reconstruction projects on 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 way.

DOJ: See United States Department of Justice.

Federal Highway Administration (FHWA): A branch of the U.S. 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.

FHWA: See Federal Highway Administration.

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 *Guidelines for Accessible Public Rights-of-Way* issued in 2005 by the U. S. 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 rights-of-way.

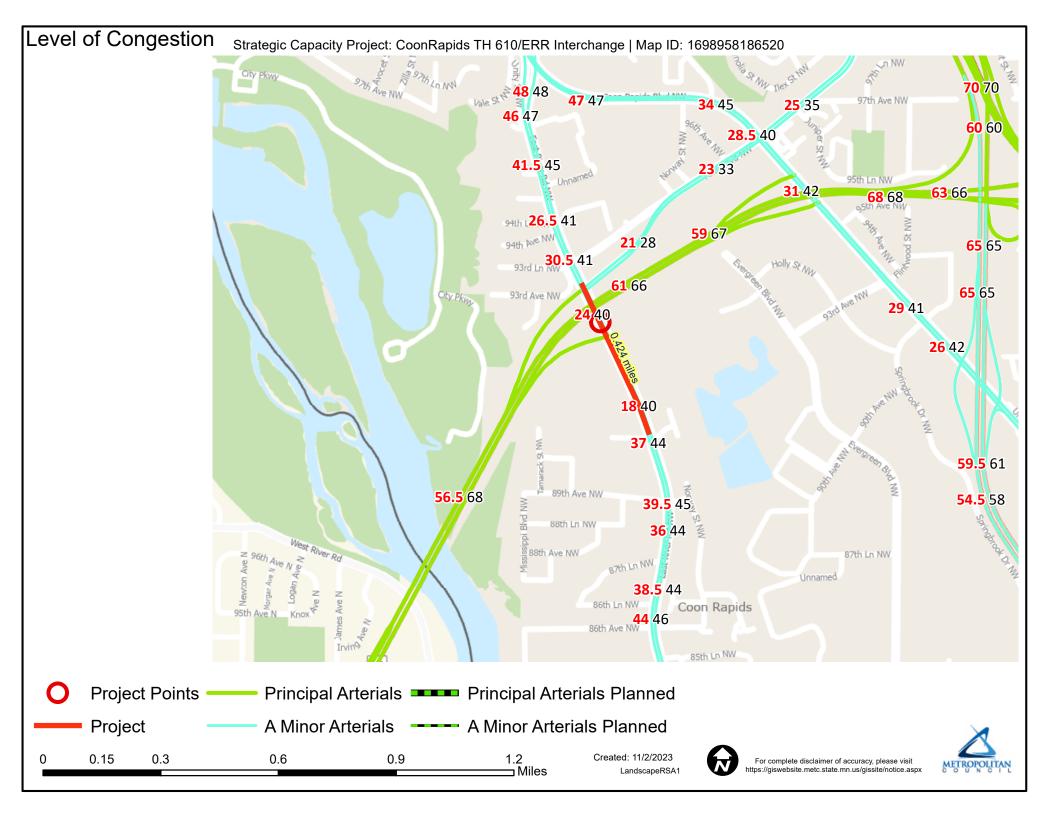
Right-of-Way: A general term denoting land, property, or interest therein, usually in a strip, acquired for the network of streets, sidewalks, and trails creating public pedestrian access within a public entity's jurisdictional limits.

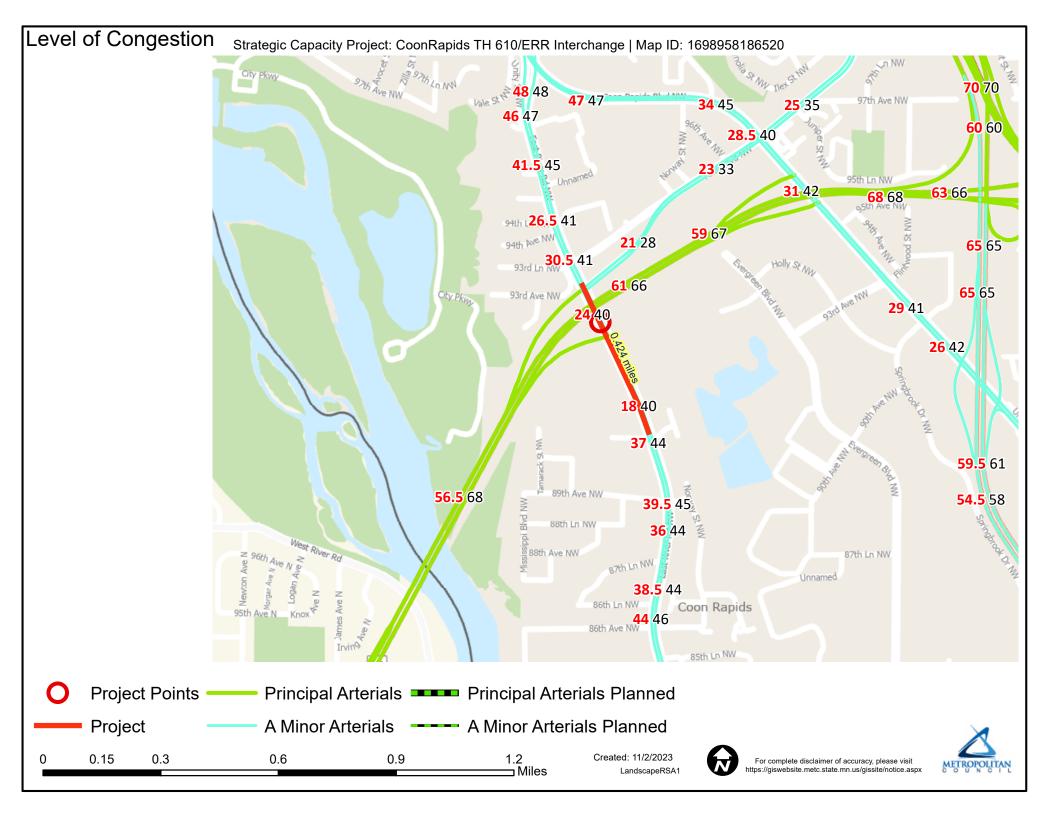
Section 504: The section of the Rehabilitation Act that prohibits discrimination by any program or activity conducted by the federal government.

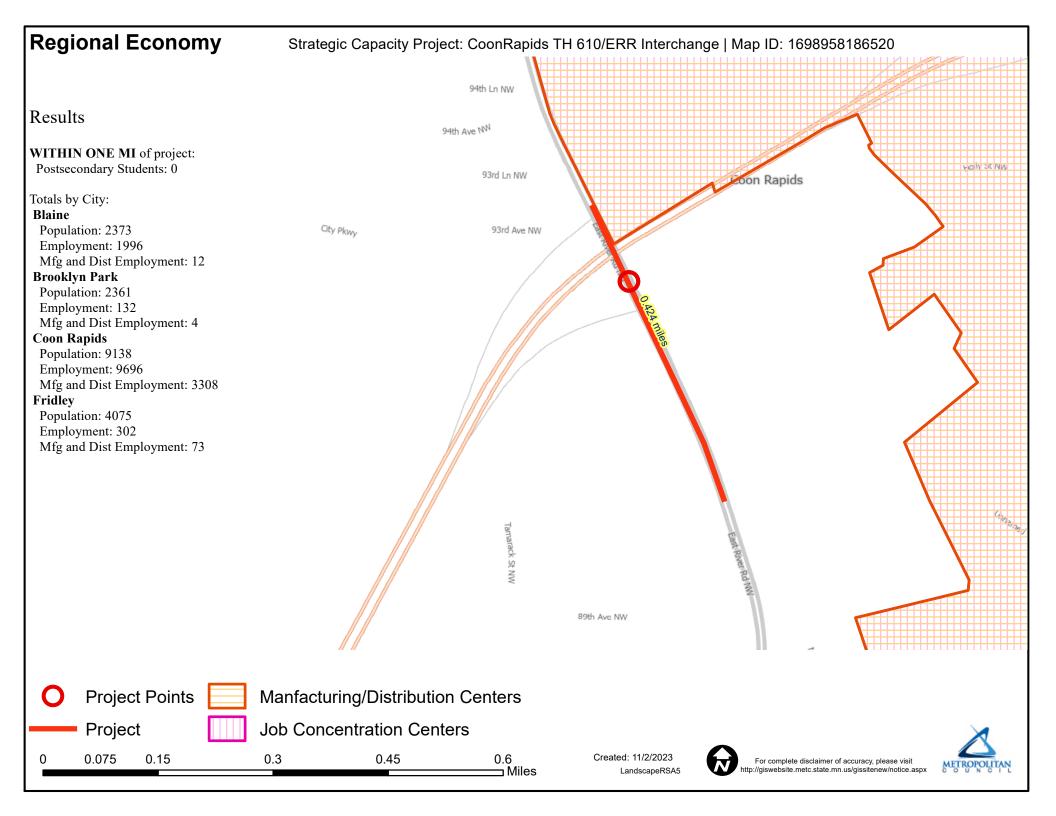
Uniform Accessibility Standards (UFAS): Accessibility standards that all federal agencies are required to meet; includes scoping and technical specifications.

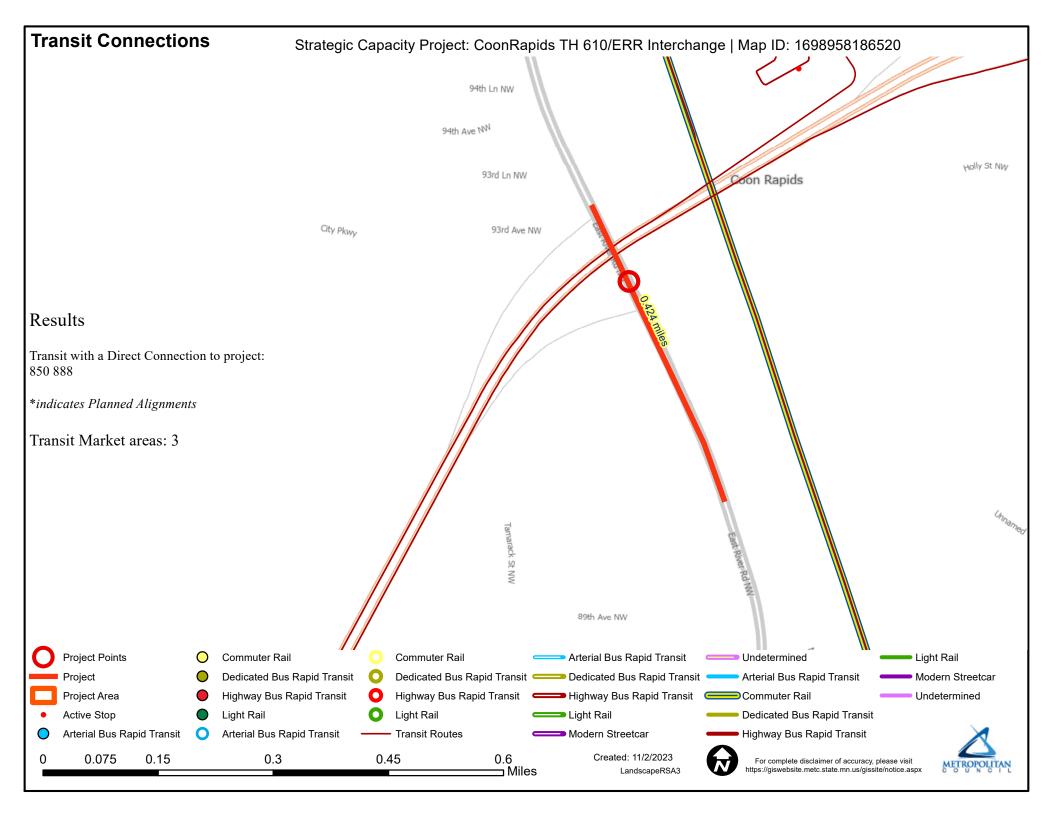
United States Access Board: An independent federal agency that develops and maintains design criteria for buildings and other improvements, transit vehicles, telecommunications equipment, and electronic and information technology. It also enforces accessibility standards that cover federally funded facilities.

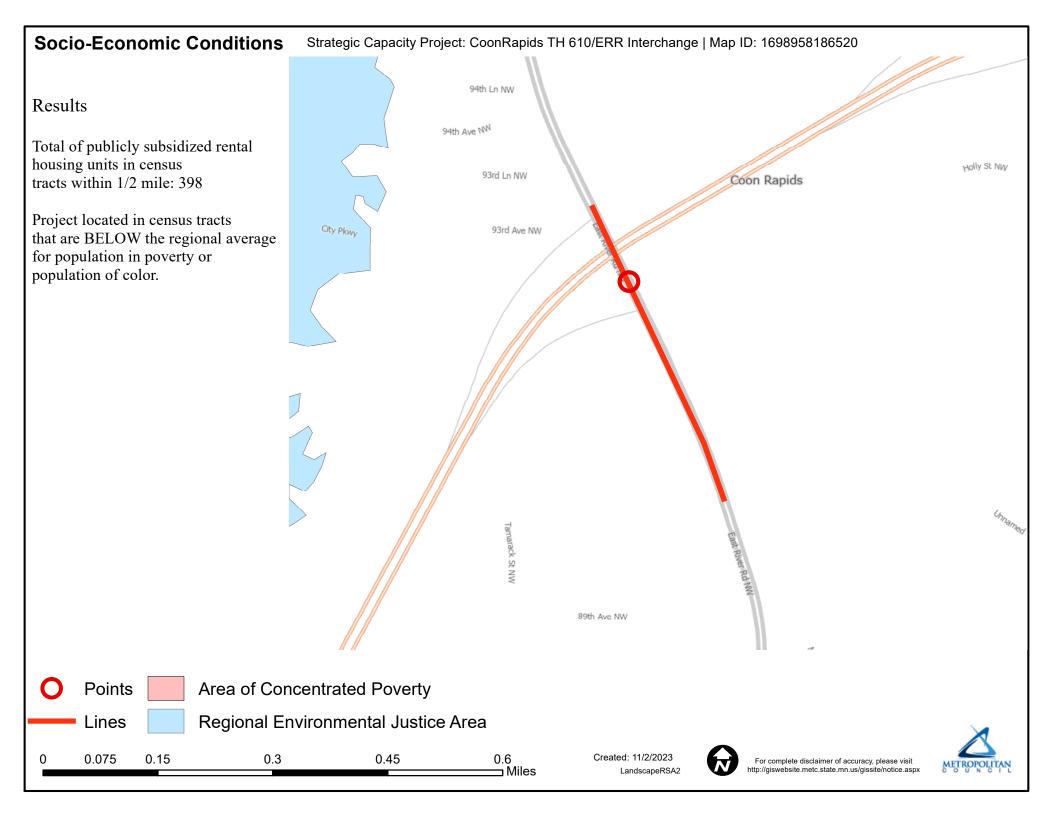
United States Department of Justice (DOJ): The United States Department of Justice (often referred to as the Justice Department or DOJ), is the United States federal executive department responsible for the enforcement of the law and administration of justice.











East River Road TH 610 Ramp Addition

Foley and TH 1	.0 N Ramps	
Existing Volume	3973	vehicles
Existing Delay	67	sec/veh
Existing Total Delay	266191	seconds
Future Volume	3828	vehicles
Future Delay	67	sec/veh
Future Total Delay	256476	seconds
Total Delay Reduction	9715	seconds
	Existing Volume Existing Delay Existing Total Delay Future Volume Future Delay Future Total Delay	Existing Delay67Existing Total Delay266191Future Volume3828Future Delay67Future Total Delay256476

2	Foley and TH	10 S Ramps	
	Existing Volume	2996	vehicles
	Existing Delay	16	sec/veh
	Existing Total Delay	47936	seconds
	Future Volume	2708	vehicles
	Future Delay	17	sec/veh
	Future Total Delay	46036	seconds
	Total Delay Reduction	1900	seconds

4	East River Rd and Nor	rth TH 610 F	Ramps
	Existing Volume	2816	vehicles
	Existing Delay	15	sec/veh
	Existing Total Delay	42240	seconds
	Future Volume	3067	vehicles
	Future Delay	25	sec/veh
	Future Total Delay	76675	seconds
	Total Delay Reduction	-34435	seconds

5	East River Road and Se	outh TH 610) Ramps
	Existing Volume	2730	vehicles
	Existing Delay	20	sec/veh
	Existing Total Delay	54600	seconds
	Future Volume	2909	vehicles
	Future Delay	19	sec/veh
	Future Total Delay	55271	seconds
	Total Delay Reduction	-671	seconds

3	Foley and	99th Ave	
	Existing Volume	2935	vehicles
	Existing Delay	35	sec/veh
	Existing Total Delay	102725	seconds
	Future Volume	2647	vehicles
	Future Delay	23	sec/veh
	Future Total Delay	60881	seconds
	Total Delay Reduction	41844	seconds

Total Network Delay Reduction

18353 seconds

Emissions						
Existing	1	2	3	4	5	Total
СО	8.01	3.03	3.13	2.71	2.89	19.77
NO	1.56	0.59	0.61	0.42	0.56	3.74
VOC	1.86	0.7	0.73	0.5	0.67	4.46
				Network Total		27.97

Build	1	2	3	4	5	Total
CO	7.76	2.79	2.32	2.98	3	18.85
NO	1.51	0.54	0.45	0.58	0.58	3.66
VOC	1.8	0.65	0.54	0.69	0.69	4.37
				Network Total		26.88

Reduction 1.09

Coon Rapids Regional Solicitation Existing PM

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Lane Group	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	<u> </u>	†	1	<u>۲</u>	<u>†</u> †	1	<u>۲</u>	^	1
Traffic Volume (vph)	99	47	42	469	1531	313	29	146	140
Future Volume (vph)	99	47	42	469	1531	313	29	146	140
Turn Type	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	. 8	8		5	2		1	6	
Permitted Phases			8			2			6
Detector Phase	8	8	8	5	2	2	1	6	6
Switch Phase									
Minimum Initial (s)	7.0	7.0	7.0	7.0	12.0	12.0	7.0	12.0	12.0
Minimum Split (s)	22.5	22.5	22.5	11.5	22.5	22.5	11.5	22.5	22.5
Total Split (s)	22.5	22.5	22.5	27.0	41.0	41.0	11.5	25.5	25.5
Total Split (%)	30.0%	30.0%	30.0%	36.0%	54.7%	54.7%	15.3%	34.0%	34.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag				Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?				Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	10.1	10.1	10.1	27.0	54.1	54.1	7.5	26.8	26.8
Actuated g/C Ratio	0.13	0.13	0.13	0.36	0.72	0.72	0.10	0.36	0.36
//c Ratio	0.46	0.20	0.13	0.80	0.65	0.28	0.18	0.13	0.23
Control Delay	35.5	29.7	0.8	33.0	11.3	1.8	33.2	19.3	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.5	29.7	0.8	33.0	11.3	1.8	33.2	19.3	5.0
LOS	D	С	А	С	В	А	С	В	А
Approach Delay		26.3			14.4			14.2	
Approach LOS		С			В			В	
Intersection Summary									
Cycle Length: 75									
Actuated Cycle Length: 75									
Offset: 0 (0%), Referenced to	phase 2	NBT and	6.SBT_S	tart of Gr	een				
Natural Cycle: 80	p11000 Z.		0.001,0						
Control Type: Actuated-Coord	dinated								
Maximum v/c Ratio: 0.80									
Intersection Signal Delay: 15.	2			Ir	ntersectio	n LOS [,] B			
Intersection Capacity Utilization					CU Level		e C		
Analysis Period (min) 15									

Splits and Phases: 110: East River Road & TH 610 North Ramps/Foley Blvd

Ø1	∮ø2 (R) ■	₹ Ø8
11.5 s	41 s	22.5 s
▲ ø5	🛡 🔻 Ø6 (R)	
27 s	25.5 s	

Coon Rapids Regional Solicitation Existing PM

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Lane Group	EBL	EBR	NBT	SBT	
Lane Configurations	ካካ	1	A	^	
Traffic Volume (vph)	1044	172	1269	245	
Future Volume (vph)	1044	172	1269	245	
Turn Type	Prot	Perm	NA	NA	
Protected Phases	4		2	6	
Permitted Phases		4			
Detector Phase	4	4	2	6	
Switch Phase					
Minimum Initial (s)	7.0	7.0	12.0	12.0	
Minimum Split (s)	22.5	22.5	22.5	22.5	
Total Split (s)	25.8	25.8	29.2	29.2	
Total Split (%)	46.9%	46.9%	53.1%	53.1%	
Yellow Time (s)	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.5	4.5	4.5	4.5	
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None	None	C-Max	C-Max	
Act Effct Green (s)	20.8	20.8	25.2	25.2	
Actuated g/C Ratio	0.38	0.38	0.46	0.46	
v/c Ratio	0.87	0.26	0.85	0.16	
Control Delay	25.3	3.3	20.6	9.3	
Queue Delay	0.0	0.0	0.0	0.0	
Total Delay	25.3	3.3	20.6	9.3	
LOS	С	А	С	A	
Approach Delay			20.6	9.3	
Approach LOS			С	А	
Intersection Summary					
Cycle Length: 55					
Actuated Cycle Length: 55	i				
Offset: 0 (0%), Referenced		NBT and	6:SBTL,	Start of C	Green
Natural Cycle: 60					
Control Type: Actuated-Co	ordinated				
Maximum v/c Ratio: 0.87					
Intersection Signal Delay:	20.3			I	ntersection LOS: C
Intersection Capacity Utiliz					CU Level of Service C
Analysis Period (min) 15					

Splits and Phases: 120: East River Road & TH 610 South Ramps

Ø2 (R)	A @4
29.2 s	25.8 s
▼ Ø6 (R)	
29.2 s	

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110: East River Road & TH 610 North Ramps/Foley Blvd

Direction	All	
Future Volume (vph)	2816	
Total Delay / Veh (s/v)	15	
CO Emissions (kg)	2.17	
NOx Emissions (kg)	0.42	
VOC Emissions (kg)	0.50	

120: East River Road & TH 610 South Ramps

Direction	All
Future Volume (vph)	2730
Total Delay / Veh (s/v)	20
CO Emissions (kg)	2.89
NOx Emissions (kg)	0.56
VOC Emissions (kg)	0.67

Coon Rapids Regional Solicitation Existing PM

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	र्च	77	ሻ	↑	1	ሻ	- † †	1	<u>۲</u>	<u>^</u>	1
Traffic Volume (vph)	820	205	263	172	187	125	328	753	331	64	669	56
Future Volume (vph)	820	205	263	172	187	125	328	753	331	64	669	56
Turn Type	Split	NA	pm+ov	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4	5	8	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	4	4	4	8	8	8	5 2	2	2	16	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	15.0	15.0	7.0	15.0	15.0
Minimum Split (s)	13.0	13.0	12.0	34.5	34.5	34.5	12.0	39.5	39.5	12.0	20.5	20.5
Total Split (s)	50.0	50.0	32.0	34.5	34.5	34.5	32.0	49.5	49.5	16.0	33.5	33.5
Total Split (%)	33.3%	33.3%	21.3%	23.0%	23.0%	23.0%	21.3%	33.0%	33.0%	10.7%	22.3%	22.3%
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.5	2.5	2.5	2.0	1.5	1.5	2.0	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	5.0	6.5	6.5	6.5	5.0	5.5	5.5	5.0	5.5	5.5
Lead/Lag	Lead	Lead	Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize? Recall Mode	Yes	Yes	Yes	Yes None	Yes	Yes	Yes	Yes	Yes	Yes None	Yes C-Max	Yes
Act Effct Green (s)	None 44.0	None 44.0	None 77.0	21.2	None 21.2	None 21.2	None 27.0	C-Max 54.0	C-Max 54.0	10.2	34.8	C-Max 34.8
Actuated g/C Ratio	44.0 0.29	44.0 0.29	0.51	0.14	0.14	0.14	0.18	0.36	0.36	0.07	0.23	0.23
v/c Ratio	1.06	1.06	0.51	0.14	0.14	0.14	1.07	0.50	0.30	0.07	0.23	0.23
Control Delay	107.6	106.9	2.2	76.2	77.3	10.0	125.5	43.9	5.6	84.6	65.3	0.15
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	40.9	0.0	0.0	0.0	0.0
Total Delay	107.6	106.9	2.2	76.2	77.3	10.0	125.5	43.9	5.6	84.6	65.3	0.0
LOS	107.0	F	Α	70.2 E	E	10.0 A	120.0 F	40.0 D	0.0 A	64.0 F	00.0	0.0 A
Approach Delay		85.8	7.		59.5	~		53.9	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	•	62.3	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
Approach LOS		F			E			D			E	
Intersection Summary												
Cycle Length: 150												
Actuated Cycle Length: 150												
Offset: 0 (0%), Referenced	to phase 2:	NBT and	6:SBT, S	tart of 1st	t Green							
Natural Cycle: 150												
Control Type: Actuated-Coo	rdinated											
Maximum v/c Ratio: 1.07												
Intersection Signal Delay: 6					ntersectio							
Intersection Capacity Utiliza	tion 93.8%			10	CU Level	of Service	e F					
Analysis Period (min) 15												

Splits and Phases: 110: Foley Blvd & TH 10 N Ramp/101st Ave

Ø1	Ø2 (R)		4 04	₽ _{Ø8}
16 s	49.5 s		50 s	34.5 s
Ø6 (R)		\$ Ø5		
33.5 s		32 s		

Coon Rapids Regional Solicitation Existing PM

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Lane Group	EBT	EBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	र्भ	1	ሻ	- † †	1	ሻ	- † †	1	
Traffic Volume (vph)	1	221	27	1138	231	120	777	207	
Future Volume (vph)	1	221	27	1138	231	120	777	207	
Turn Type	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	4		5	2		1	6		
Permitted Phases		4			2			6	
Detector Phase	4	4	5	2	2	1	6	6	
Switch Phase									
Minimum Initial (s)	7.0	7.0	7.0	15.0	15.0	7.0	15.0	15.0	
Minimum Split (s)	13.0	13.0	12.0	30.5	30.5	12.0	20.5	20.5	
Total Split (s)	17.0	17.0	12.0	31.0	31.0	12.0	31.0	31.0	
Total Split (%)	28.3%	28.3%	20.0%	51.7%	51.7%	20.0%	51.7%	51.7%	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	1.5	1.5	2.0	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	5.0	5.5	5.5	5.0	5.5	5.5	
Lead/Lag			Lag	Lead	Lead	Lag	Lead	Lead	
Lead-Lag Optimize?						-			
Recall Mode	None	None	None	C-Max	C-Max	None	C-Max	C-Max	
Act Effct Green (s)	10.9	10.9	7.0	28.0	28.0	7.0	32.8	32.8	
Actuated g/C Ratio	0.18	0.18	0.12	0.47	0.47	0.12	0.55	0.55	
v/c Ratio	0.87	0.48	0.13	0.70	0.27	0.59	0.41	0.22	
Control Delay	52.9	7.5	25.6	16.4	2.8	38.6	10.1	2.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	52.9	7.5	25.6	16.4	2.8	38.6	10.1	2.6	
LOS	D	А	С	В	А	D	В	А	
Approach Delay	32.7			14.3			11.8		
Approach LOS	С			В			В		
Intersection Summary									
Cycle Length: 60									
Actuated Cycle Length: 60									
Offset: 0 (0%), Referenced to	phase 2	NBT and	6.SBT_S	tart of 1st	t Green				
Natural Cycle: 60	p.1000 2.		0.021,0						
Control Type: Actuated-Coord	dinated								
Maximum v/c Ratio: 0.87									
Intersection Signal Delay: 16.4	4			Ir	ntersectio	n LOS [,] B			
Intersection Capacity Utilization					CU Level		э С		
						2. 2011100			

Splits and Phases: 120: Foley Blvd & TH 10 S Ramp

Ø2 (R)	Ø1	₩ Ø4
31s	12 s	17 s
Ø6 (R)	▲ ø5	
31 s	12 s	

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Lane Group	EBL	EBR	NBL	NBT	SBT	
Lane Configurations	٦	1	<u>۲</u>	<u>††</u>	∱ ⊅	
Traffic Volume (vph)	353	189	353	1043	442	
Future Volume (vph)	353	189	353	1043	442	
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	2 5	2	6	
Switch Phase						
Minimum Initial (s)	7.0	7.0	5.0	15.0	15.0	
Minimum Split (s)	32.5	32.5	10.0	20.5	34.5	
Total Split (s)	33.0	33.0	10.0	97.0	87.0	
Total Split (%)	25.4%	25.4%	7.7%	74.6%	66.9%	
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	
All-Red Time (s)	2.5	2.5	2.0	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5	5.0	5.5	5.5	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?	Nama	Mana	Yes	0.14-1	Yes	
Recall Mode	None	None	None	C-Max	C-Max	
Act Effct Green (s)	27.5	27.5	92.0	91.5	81.5	
Actuated g/C Ratio v/c Ratio	0.21 1.02	0.21 0.41	0.71 1.21	0.70	0.63	
Control Delay	102	0.41 8.2	138.1	0.45 9.0	0.49 7.5	
Queue Delay	0.0	0.2	0.0	9.0	0.5	
Total Delay	100.9	8.2	138.1	9.0	0.5 8.0	
LOS	100.9 F	0.2 A	130.1 F	9.0 A	0.0 A	
Approach Delay	г 68.6	A	F	41.7	8.0	
Approach LOS	00.0 E			41.7 D	0.0 A	
	C			U	A	
Intersection Summary						
Cycle Length: 130						
Actuated Cycle Length: 13						
Offset: 0 (0%), Referenced	to phase 2:	NBTL and	d 6:SBT,	Start of 1	st Green	
Natural Cycle: 120						
Control Type: Actuated-Co	ordinated					
Maximum v/c Ratio: 1.21						
Intersection Signal Delay:					ntersection	
Intersection Capacity Utiliz	ation 82.5%			10	CU Level	of Service E
Analysis Period (min) 15						

Splits and Phases: 130: Foley Blvd & 99th Ave

Ø2 (R)	A 04
97 s	33 s
▲ Ø5 ↓ Ø6 (R)	
10 s 87 s	

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110: Foley Blvd & TH 10 N Ramp/101st Ave

Direction	All	
Future Volume (vph)	3973	
Total Delay / Veh (s/v)	67	
CO Emissions (kg)	8.01	
NOx Emissions (kg)	1.56	
VOC Emissions (kg)	1.86	

120: Foley Blvd & TH 10 S Ramp

Direction	All
Future Volume (vph)	2996
Total Delay / Veh (s/v)	16
CO Emissions (kg)	3.03
NOx Emissions (kg)	0.59
VOC Emissions (kg)	0.70

130: Foley Blvd & 99th Ave

Direction	All
Future Volume (vph)	2935
Total Delay / Veh (s/v)	35
CO Emissions (kg)	3.13
NOx Emissions (kg)	0.61
VOC Emissions (kg)	0.73

Future Volume (vph)7236361354742469153131329217140Turn Typepm+ptNAPermProtNAPermProtNAPermProtNAPermProtected Phases74385216Permitted Phases448826Detector Phase74438852216Switch Phase744388522166Minimum Initial (s)5.05.05.07.07.07.07.012.012.07.012.012.012.012.0Minimum Split (s)9.522.522.522.522.522.511.522.5 </th <th></th> <th>٦</th> <th>-</th> <th>\mathbf{r}</th> <th>4</th> <th>+</th> <th>×</th> <th>1</th> <th>1</th> <th>۲</th> <th>1</th> <th>ŧ</th> <th>~</th>		٦	-	\mathbf{r}	4	+	×	1	1	۲	1	ŧ	~
Traffic Volume (vph) 72 36 36 135 47 42 469 1531 313 29 217 140 Future Volume (vph) 72 36 36 135 47 42 469 1531 313 29 217 140 Turn Type pm+pt NA Perm pm+pt NA Perm Prot NA Per	Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Future Volume (vph)7236361354742469153131329217140Turn Typepm+ptNAPermProtNAPermProtNAPermProtNAPermProtected Phases74385216Permitted Phases448826Detector Phase74438852216Switch Phase744388522166Minimum Initial (s)5.05.05.07.07.07.07.012.012.07.012.012.012.012.0Minimum Split (s)9.522.522.522.522.522.511.522.5 </td <td>Lane Configurations</td> <td>ľ</td> <td>•</td> <td>1</td> <td>1</td> <td>•</td> <td>1</td> <td>۲ ۲</td> <td><u></u></td> <td>1</td> <td>ľ</td> <td><u></u></td> <td>1</td>	Lane Configurations	ľ	•	1	1	•	1	۲ ۲	<u></u>	1	ľ	<u></u>	1
Turn Type pm+pt NA Perm pm+pt NA Perm Prot NA Perm	Traffic Volume (vph)	72	36	36	135		42	469			29	217	140
Protected Phases 7 4 3 8 5 2 1 6 Permitted Phases 4 4 8 8 2 6 6 Detector Phase 7 4 4 3 8 8 5 2 1 6 Switch Phase 7 4 4 3 8 8 5 2 2 1 6 6 Switch Phase 7 4 4 3 8 8 5 2 2 1 6 6 Switch Phase 7 4 4 3 8 8 5 2 2 1 6 6 Minimum Initial (s) 5.0 5.0 5.0 7.0 7.0 7.0 7.0 12.0 <t< td=""><td>Future Volume (vph)</td><td>72</td><td>36</td><td>36</td><td>135</td><td>47</td><td>42</td><td>469</td><td>1531</td><td>313</td><td>29</td><td>217</td><td>140</td></t<>	Future Volume (vph)	72	36	36	135	47	42	469	1531	313	29	217	140
Permitted Phases 4 4 8 8 2 6 Detector Phase 7 4 4 3 8 5 2 2 1 6 6 Switch Phase 7 5.0 5.0 7.0 7.0 7.0 12.0		pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Detector Phase 7 4 4 3 8 8 5 2 2 1 6 6 Switch Phase			4			8		5	2		1	6	
Switch PhaseMinimum Initial (s)5.05.07.07.07.012.012.012.012.012.0Minimum Split (s)9.522.522.522.522.511.522.522.522.5		4		4									6
Minimum Initial (s) 5.0 5.0 5.0 7.0 7.0 7.0 12.0		7	4	4	3	8	8	5	2	2	1	6	6
Minimum Split (s) 9.5 22.5 22.5 22.5 22.5 22.5 11.5 22.5 11.5 22.5 11.5 22.5													
Total Split (s) 10.3 22.5 22.5 22.5 34.7 34.7 37.2 53.5 53.5 11.5 27.8 27.8													
	Total Split (s)	10.3	22.5	22.5	22.5	34.7	34.7	37.2	53.5	53.5	11.5	27.8	27.8
													25.3%
Yellow Time (s) 3.5													
													1.0
Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.													
													4.5
Lead/Lag Lead Lag Lead Lag Lag Lead Lag Lag Lag Lead Lag Lag							•					•	
													Yes
Recall Mode None None None None None None C-Max C-Max None C-Max C-Max													
Act Effct Green (s) 12.5 7.8 7.8 23.6 15.3 15.3 38.1 69.6 69.6 7.9 34.8 34.8													
Actuated g/C Ratio 0.11 0.07 0.07 0.21 0.14 0.14 0.35 0.63 0.63 0.07 0.32 0.32													
													0.24
													3.2
													0.0
													3.2
LOS D D A D D A D C A D C A		D		A	D		A	D		A	D		A
Approach Delay 34.8 33.6 23.9 22.7													
Approach LOS C C C C	Approach LOS		С			С			С			С	
Intersection Summary	Intersection Summary												
Cycle Length: 110	Cycle Length: 110												
Actuated Cycle Length: 110													
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green													
Natural Cycle: 110													
Control Type: Actuated-Coordinated													
Maximum v/c Ratio: 0.83	Maximum v/c Ratio: 0.83												
Intersection Signal Delay: 25.0 Intersection LOS: C	Intersection Signal Delay: 2												
Intersection Capacity Utilization 73.6% ICU Level of Service D	Intersection Capacity Utiliza	ation 73.6%	1		l	CU Level	of Service	e D					
Analysis Period (min) 15	Analysis Period (min) 15												

Splits and Phases: 110: East River Road & TH 610 North Ramps/Foley Blvd

Ø1	Ø2 (R)		Ø3		₩ Ø4	
11.5 s	53.5 s		22.5 s		22.5 s	
▲ ø5		Ø6 (R)		₹ø8		
37.2 s		27.8 s	10.3 s	34.7 s		

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	ሻሻ	1	ሻ	A	<u>††</u>	1
Traffic Volume (vph)	1044	172	36	1268	281	108
Future Volume (vph)	1044	172	36	1268	281	108
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	2	2	6	6
Switch Phase						
Minimum Initial (s)	7.0	7.0	12.0	12.0	12.0	12.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	28.1	28.1	31.9	31.9	31.9	31.9
Total Split (%)	46.8%	46.8%	53.2%	53.2%	53.2%	53.2%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	23.0	23.0	28.0	28.0	28.0	28.0
Actuated g/C Ratio	0.38	0.38	0.47	0.47	0.47	0.47
v/c Ratio	0.86	0.26	0.08	0.83	0.18	0.15
Control Delay	25.7	3.3	9.8	20.3	9.9	2.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.7	3.3	9.8	20.3	9.9	2.8
LOS	С	A	A	С	A	A
Approach Delay				20.0	8.0	
Approach LOS				С	A	
Intersection Summary						
Cycle Length: 60						
Actuated Cycle Length: 60					_	
Offset: 0 (0%), Referenced	to phase 2:	NBTL and	d 6:SBTL	, Start of	Green	
Natural Cycle: 60						
Control Type: Actuated-Coo	ordinated					
Maximum v/c Ratio: 0.86						
Intersection Signal Delay: 1					ntersectio	
Intersection Capacity Utiliza	ation 71.9%			10	CU Level	of Service
Analysis Period (min) 15						

Splits and Phases: 120: East River Road & TH 610 South Ramps

Ø2 (R)	A @4
31.9 s	28.1s
●	
31.9 s	

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110: East River Road & TH 610 North Ramps/Foley Blvd

Direction	All	
Future Volume (vph)	3067	
Total Delay / Veh (s/v)	25	
CO Emissions (kg)	2.98	
NOx Emissions (kg)	0.58	
VOC Emissions (kg)	0.69	

120: East River Road & TH 610 South Ramps

Direction	All
Future Volume (vph)	2909
Total Delay / Veh (s/v)	19
CO Emissions (kg)	3.00
NOx Emissions (kg)	0.58
VOC Emissions (kg)	0.69

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	् स्	77	ሻ	↑	1	ሻ	- † †	1	<u>۲</u>	- ††	1
Traffic Volume (vph)	820	205	120	172	187	125	328	753	331	64	667	56
Future Volume (vph)	820	205	120	172	187	125	328	753	331	64	667	56
Turn Type	Split	NA	pm+ov	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4	5	8	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	4	4	4	8	8	8	52	2	2	16	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	15.0	15.0	7.0	15.0	15.0
Minimum Split (s)	13.0	13.0	12.0	34.5	34.5	34.5	12.0	39.5	39.5	12.0	20.5	20.5
Total Split (s)	49.0	49.0	31.0	34.5	34.5	34.5	31.0	53.5	53.5	13.0	35.5	35.5
Total Split (%)	32.7%	32.7%	20.7%	23.0%	23.0%	23.0%	20.7%	35.7%	35.7%	8.7%	23.7%	23.7%
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.5	2.5	2.5	2.0	1.5	1.5	2.0	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	5.0	6.5	6.5	6.5	5.0	5.5	5.5	5.0	5.5	5.5
Lead/Lag	Lead	Lead	Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	43.1	43.1	75.1	20.4	20.4	20.4	26.0	48.2	48.2	7.8	30.0	30.0
Actuated g/C Ratio	0.30	0.30	0.53	0.14	0.14	0.14	0.18	0.34	0.34	0.05	0.21	0.21
v/c Ratio	1.03	1.03	0.08	0.70	0.73	0.38	1.05	0.65	0.45	0.69	0.92	0.14
Control Delay	96.6	95.4	3.1	73.0	74.1	10.0	118.4	43.7	5.4	100.1	74.0	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	96.6	95.4	3.1	73.0	74.1	10.0	118.4	43.7	5.4	100.1	74.0	0.7
LOS	F	F	А	Е	Е	А	F	D	А	F	Е	A
Approach Delay		86.2			57.2			52.1			70.9	
Approach LOS		F			E			D			Е	
Intersection Summary												
Cycle Length: 150												
Actuated Cycle Length: 142	2.5											
Natural Cycle: 150												
Control Type: Actuated-Uncoordinated												
Maximum v/c Ratio: 1.05												
Intersection Signal Delay: 6												
Intersection Capacity Utilization 93.7% ICU Level of Service F												
Analysis Period (min) 15												

Splits and Phases: 110: Foley Blvd & TH 10 N Ramp/101st Ave

Ø1	ø2		₽ Ø4	₽ _{Ø8}
13 s 53.	5 s		49 s	34.5 s
4 Ø6		\$ Ø5		
35.5 s		31 s		

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Lane Group	EBT	EBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	र्स	1	۲	<u></u>	1	۲	<u></u>	1	
Traffic Volume (vph)	1	221	27	1138	87	120	633	207	
Future Volume (vph)	1	221	27	1138	87	120	633	207	
Turn Type	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	4		5	2		1	6		
Permitted Phases		4			2			6	
Detector Phase	4	4	5	2	2	1	6	6	
Switch Phase									
Minimum Initial (s)	7.0	7.0	7.0	15.0	15.0	7.0	15.0	15.0	
Minimum Split (s)	13.0	13.0	12.0	30.5	30.5	12.0	20.5	20.5	
Total Split (s)	17.0	17.0	12.0	31.0	31.0	12.0	31.0	31.0	
Total Split (%)	28.3%	28.3%	20.0%	51.7%	51.7%	20.0%	51.7%	51.7%	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	1.5	1.5	2.0	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	5.0	5.5	5.5	5.0	5.5	5.5	
Lead/Lag			Lag	Lead	Lead	Lag	Lead	Lead	
Lead-Lag Optimize?									
Recall Mode	None	None	None	Max	Max	None	Max	Max	
Act Effct Green (s)	10.7	10.7	7.1	25.8	25.8	7.1	30.4	30.4	
Actuated g/C Ratio	0.19	0.19	0.12	0.45	0.45	0.12	0.53	0.53	
v/c Ratio	0.84	0.47	0.13	0.72	0.11	0.55	0.34	0.22	
Control Delay	48.6	7.4	25.4	17.0	1.1	36.8	9.6	2.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	48.6	7.4	25.4	17.0	1.1	36.8	9.6	2.7	
LOS	D	А	С	В	А	D	А	А	
Approach Delay	30.2			16.1			11.5		
Approach LOS	С			В			В		
Intersection Summary									
Cycle Length: 60									
Actuated Cycle Length: 57.3									
Natural Cycle: 60									
Control Type: Actuated-Unco	ordinated								
Maximum v/c Ratio: 0.84									
Intersection Signal Delay: 17.	.1			Ir	ntersection	n LOS: B			
Intersection Capacity Utilization	ntersection Capacity Utilization 67.1% ICU Level of Service C								
Analysis Period (min) 15	011 01 . 1 /0								

Splits and Phases: 120: Foley Blvd & TH 10 S Ramp

f ø2	Ø1	↓ 04
31 s	12 s	17 s
4 Ø6	▲ Ø5	
31 s	12 s	

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Lane Group	EBL	EBR	NBL	NBT	SBT	
Lane Configurations	۲	1	۲	<u></u>	A⊅	
Traffic Volume (vph)	301	189	353	950	380	
Future Volume (vph)	301	189	353	950	380	
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	25	2	6	
Switch Phase						
Minimum Initial (s)	7.0	7.0	5.0	15.0	15.0	
Minimum Split (s)	32.5	32.5	10.0	20.5	34.5	
Total Split (s)	34.0	34.0	10.0	96.0	86.0	
Total Split (%)	26.2%	26.2%	7.7%	73.8%	66.2%	
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	
All-Red Time (s)	2.5	2.5	2.0	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5	5.0	5.5	5.5	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None	None	None	Max	Max	
Act Effct Green (s)	26.0	26.0	91.0	90.5	80.5	
Actuated g/C Ratio	0.20	0.20	0.71	0.71	0.63	
v/c Ratio	0.90	0.42	1.00	0.41	0.41	
Control Delay	77.5	8.3	62.7	8.4	6.2	
Queue Delay	0.0	0.0	0.0	0.0	0.3	
Total Delay	77.5	8.3	62.7	8.4	6.5	
LOS	Е	А	E	А	А	
Approach Delay	50.8			23.1	6.5	
Approach LOS	D			С	А	
Intersection Summary						
Cycle Length: 130	E					
Actuated Cycle Length: 127	.5					
Natural Cycle: 130	oordinated					
Control Type: Actuated-Unc	oordinated					
Maximum v/c Ratio: 1.00	2.0			١.	ntersectior	
Intersection Signal Delay: 22.9						of Service D
Intersection Capacity Utilization 75.3%					SO Level (JI Service D
Analysis Period (min) 15						
Splits and Phases: 130: Foley Blvd & 99th Ave						
		x JULIAV	C			

▲ ¶ _{Ø2}	
96 s	34 s
★ Ø5 ↓ Ø6	
10 s 86 s	

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110: Foley Blvd & TH 10 N Ramp/101st Ave

Direction	All
Future Volume (vph)	3828
Total Delay / Veh (s/v)	67
CO Emissions (kg)	7.76
NOx Emissions (kg)	1.51
VOC Emissions (kg)	1.80

120: Foley Blvd & TH 10 S Ramp

Direction	All
Future Volume (vph)	2708
Total Delay / Veh (s/v)	17
CO Emissions (kg)	2.79
NOx Emissions (kg)	0.54
VOC Emissions (kg)	0.65

130: Foley Blvd & 99th Ave

Direction	All
Future Volume (vph)	2647
Total Delay / Veh (s/v)	23
CO Emissions (kg)	2.32
NOx Emissions (kg)	0.45
VOC Emissions (kg)	0.54

East River Road TH 610 Ramp Addition

Foley and TH 10 N Ramps					
Existing Volume	3973	vehicles			
Existing Delay	67	sec/veh			
Existing Total Delay	266191	seconds			
Future Volume	3828	vehicles			
Future Delay	67	sec/veh			
Future Total Delay	256476	seconds			
Total Delay Reduction	9715	seconds			
	Existing Volume Existing Delay Existing Total Delay Future Volume Future Delay Future Total Delay	Existing Volume3973Existing Delay67Existing Total Delay266191Future Volume3828Future Delay67Future Total Delay256476			

2	Foley and TH 10 S Ramps					
	Existing Volume	2996	vehicles			
	Existing Delay	16	sec/veh			
	Existing Total Delay	47936	seconds			
	Future Volume	2708	vehicles			
	Future Delay	17	sec/veh			
	Future Total Delay	46036	seconds			
	Total Delay Reduction	1900	seconds			

4	East River Rd and North TH 610 Ramps				
	Existing Volume	2816	vehicles		
	Existing Delay	15	sec/veh		
	Existing Total Delay	42240	seconds		
	Future Volume	3067	vehicles		
	Future Delay	25	sec/veh		
	Future Total Delay	76675	seconds		
	Total Delay Reduction	-34435	seconds		

5	East River Road and South TH 610 Ramps				
	Existing Volume	2730	vehicles		
	Existing Delay	20	sec/veh		
	Existing Total Delay	54600	seconds		
	Future Volume	2909	vehicles		
	Future Delay	19	sec/veh		
	Future Total Delay	55271	seconds		
	Total Delay Reduction	-671	seconds		

3	Foley and 99th Ave					
	Existing Volume	2935	vehicles			
	Existing Delay	35	sec/veh			
	Existing Total Delay	102725	seconds			
	Future Volume	2647	vehicles			
	Future Delay	23	sec/veh			
	Future Total Delay	60881	seconds			
	Total Delay Reduction	41844	seconds			

Total Network Delay Reduction

18353 seconds

Emissions						
Existing	1	2	3	4	5	Total
СО	8.01	3.03	3.13	2.71	2.89	19.77
NO	1.56	0.59	0.61	0.42	0.56	3.74
VOC	1.86	0.7	0.73	0.5	0.67	4.46
				Network Total		27.97

Build	1	2	3	4	5	Total
CO	7.76	2.79	2.32	2.98	3	18.85
NO	1.51	0.54	0.45	0.58	0.58	3.66
VOC	1.8	0.65	0.54	0.69	0.69	4.37
				Network Total		26.88

Reduction 1.09

Coon Rapids Regional Solicitation Existing PM

	4	-	*	1	1	1	1	ţ	~
Lane Group	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	<u>۲</u>	1	1	<u>۲</u>	<u>†</u> †	1	<u>۲</u>	^	1
Traffic Volume (vph)	99	47	42	469	1531	313	29	146	140
Future Volume (vph)	99	47	42	469	1531	313	29	146	140
Turn Type	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	. 8	8		5	2		1	6	
Permitted Phases			8			2			6
Detector Phase	8	8	8	5	2	2	1	6	6
Switch Phase									
Minimum Initial (s)	7.0	7.0	7.0	7.0	12.0	12.0	7.0	12.0	12.0
Minimum Split (s)	22.5	22.5	22.5	11.5	22.5	22.5	11.5	22.5	22.5
Total Split (s)	22.5	22.5	22.5	27.0	41.0	41.0	11.5	25.5	25.5
Total Split (%)	30.0%	30.0%	30.0%	36.0%	54.7%	54.7%	15.3%	34.0%	34.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag				Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?				Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	10.1	10.1	10.1	27.0	54.1	54.1	7.5	26.8	26.8
Actuated g/C Ratio	0.13	0.13	0.13	0.36	0.72	0.72	0.10	0.36	0.36
v/c Ratio	0.46	0.20	0.13	0.80	0.65	0.28	0.18	0.13	0.23
Control Delay	35.5	29.7	0.8	33.0	11.3	1.8	33.2	19.3	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.5	29.7	0.8	33.0	11.3	1.8	33.2	19.3	5.0
LOS	D	С	А	С	В	А	С	В	А
Approach Delay		26.3			14.4			14.2	
Approach LOS		С			В			В	
Intersection Summary									
Cycle Length: 75									
Actuated Cycle Length: 75									
Offset: 0 (0%), Referenced to	phase 2	NBT and	6:SBT. S	tart of Gr	een				
Natural Cycle: 80	- p		0.021,0		••••				
Control Type: Actuated-Coor	dinated								
Maximum v/c Ratio: 0.80									
Intersection Signal Delay: 15	.2			Ir	ntersectio	n LOS: B			
Intersection Capacity Utilizati						of Service	с		
Analysis Period (min) 15									

Splits and Phases: 110: East River Road & TH 610 North Ramps/Foley Blvd

Ø1	🖡 🖉 🖉 🖉	₹ø8
11.5 s	41 s	22.5 s
▲ ø5	🛡 🕈 Ø6 (R)	
27 s	25.5 s	

Coon Rapids Regional Solicitation Existing PM

	٨	\mathbf{r}	1	Ļ	
Lane Group	EBL	EBR	NBT	SBT	
Lane Configurations	ካካ	1	A	^	
Traffic Volume (vph)	1044	172	1269	245	
Future Volume (vph)	1044	172	1269	245	
Turn Type	Prot	Perm	NA	NA	
Protected Phases	4		2	6	
Permitted Phases		4			
Detector Phase	4	4	2	6	
Switch Phase					
Minimum Initial (s)	7.0	7.0	12.0	12.0	
Minimum Split (s)	22.5	22.5	22.5	22.5	
Total Split (s)	25.8	25.8	29.2	29.2	
Total Split (%)	46.9%	46.9%	53.1%	53.1%	
Yellow Time (s)	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.5	4.5	4.5	4.5	
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None	None	C-Max	C-Max	
Act Effct Green (s)	20.8	20.8	25.2	25.2	
Actuated g/C Ratio	0.38	0.38	0.46	0.46	
v/c Ratio	0.87	0.26	0.85	0.16	
Control Delay	25.3	3.3	20.6	9.3	
Queue Delay	0.0	0.0	0.0	0.0	
Total Delay	25.3	3.3	20.6	9.3	
LOS	С	А	С	A	
Approach Delay			20.6	9.3	
Approach LOS			С	А	
Intersection Summary					
Cycle Length: 55					
Actuated Cycle Length: 55	i				
Offset: 0 (0%), Referenced		NBT and	6:SBTL,	Start of C	Green
Natural Cycle: 60					
Control Type: Actuated-Co	ordinated				
Maximum v/c Ratio: 0.87					
					ntersection LOS: C
Intersection Capacity Utiliz					CU Level of Service C
Analysis Period (min) 15					

Splits and Phases: 120: East River Road & TH 610 South Ramps

Ø2 (R)	A @4
29.2 s	25.8 s
▼ Ø6 (R)	
29.2 s	

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110: East River Road & TH 610 North Ramps/Foley Blvd

Direction	All	
Future Volume (vph)	2816	
Total Delay / Veh (s/v)	15	
CO Emissions (kg)	2.17	
NOx Emissions (kg)	0.42	
VOC Emissions (kg)	0.50	

120: East River Road & TH 610 South Ramps

Direction	All
Future Volume (vph)	2730
Total Delay / Veh (s/v)	20
CO Emissions (kg)	2.89
NOx Emissions (kg)	0.56
VOC Emissions (kg)	0.67

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	र्च	77	ሻ	↑	1	ሻ	- † †	1	<u>۲</u>	<u>^</u>	1
Traffic Volume (vph)	820	205	263	172	187	125	328	753	331	64	669	56
Future Volume (vph)	820	205	263	172	187	125	328	753	331	64	669	56
Turn Type	Split	NA	pm+ov	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4	5	8	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	4	4	4	8	8	8	5 2	2	2	16	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	15.0	15.0	7.0	15.0	15.0
Minimum Split (s)	13.0	13.0	12.0	34.5	34.5	34.5	12.0	39.5	39.5	12.0	20.5	20.5
Total Split (s)	50.0	50.0	32.0	34.5	34.5	34.5	32.0	49.5	49.5	16.0	33.5	33.5
Total Split (%)	33.3%	33.3%	21.3%	23.0%	23.0%	23.0%	21.3%	33.0%	33.0%	10.7%	22.3%	22.3%
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.5	2.5	2.5	2.0	1.5	1.5	2.0	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	5.0	6.5	6.5	6.5	5.0	5.5	5.5	5.0	5.5	5.5
Lead/Lag	Lead	Lead	Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize? Recall Mode	Yes	Yes	Yes	Yes None	Yes	Yes	Yes	Yes	Yes	Yes None	Yes C-Max	Yes
Act Effct Green (s)	None 44.0	None 44.0	None 77.0	21.2	None 21.2	None 21.2	None 27.0	C-Max 54.0	C-Max 54.0	10.2	34.8	C-Max 34.8
Actuated g/C Ratio	44.0 0.29	44.0 0.29	0.51	0.14	0.14	0.14	0.18	0.36	0.36	0.07	0.23	0.23
v/c Ratio	1.06	1.06	0.51	0.14	0.14	0.14	1.07	0.50	0.30	0.07	0.23	0.23
Control Delay	107.6	106.9	2.2	76.2	77.3	10.0	125.5	43.9	5.6	84.6	65.3	0.15
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	43.9	0.0	0.0	0.0	0.0
Total Delay	107.6	106.9	2.2	76.2	77.3	10.0	125.5	43.9	5.6	84.6	65.3	0.0
LOS	107.0	F	Α	70.2 E	E	10.0 A	120.0 F	40.0 D	0.0 A	64.0 F	00.0	0.0 A
Approach Delay		85.8	7.		59.5	~		53.9	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	•	62.3	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
Approach LOS		F			E			D			E	
Intersection Summary												
Cycle Length: 150												
Actuated Cycle Length: 150												
Offset: 0 (0%), Referenced	to phase 2:	NBT and	6:SBT, S	tart of 1st	t Green							
Natural Cycle: 150												
Control Type: Actuated-Coo	rdinated											
Maximum v/c Ratio: 1.07												
Intersection Signal Delay: 6					ntersectio							
Intersection Capacity Utiliza	tion 93.8%			10	CU Level	of Service	e F					
Analysis Period (min) 15												

Splits and Phases: 110: Foley Blvd & TH 10 N Ramp/101st Ave

Ø1	Ø2 (R)		4 04	₽ _{Ø8}
16 s	49.5 s		50 s	34.5 s
Ø6 (R)		\$ Ø5		
33.5 s		32 s		

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Lane Group	EBT	EBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	र्भ	1	ሻ	- † †	1	ሻ	- † †	1	
Traffic Volume (vph)	1	221	27	1138	231	120	777	207	
Future Volume (vph)	1	221	27	1138	231	120	777	207	
Turn Type	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	4		5	2		1	6		
Permitted Phases		4			2			6	
Detector Phase	4	4	5	2	2	1	6	6	
Switch Phase									
Minimum Initial (s)	7.0	7.0	7.0	15.0	15.0	7.0	15.0	15.0	
Minimum Split (s)	13.0	13.0	12.0	30.5	30.5	12.0	20.5	20.5	
Total Split (s)	17.0	17.0	12.0	31.0	31.0	12.0	31.0	31.0	
Total Split (%)	28.3%	28.3%	20.0%	51.7%	51.7%	20.0%	51.7%	51.7%	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	1.5	1.5	2.0	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	5.0	5.5	5.5	5.0	5.5	5.5	
Lead/Lag			Lag	Lead	Lead	Lag	Lead	Lead	
Lead-Lag Optimize?						-			
Recall Mode	None	None	None	C-Max	C-Max	None	C-Max	C-Max	
Act Effct Green (s)	10.9	10.9	7.0	28.0	28.0	7.0	32.8	32.8	
Actuated g/C Ratio	0.18	0.18	0.12	0.47	0.47	0.12	0.55	0.55	
v/c Ratio	0.87	0.48	0.13	0.70	0.27	0.59	0.41	0.22	
Control Delay	52.9	7.5	25.6	16.4	2.8	38.6	10.1	2.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	52.9	7.5	25.6	16.4	2.8	38.6	10.1	2.6	
LOS	D	А	С	В	А	D	В	А	
Approach Delay	32.7			14.3			11.8		
Approach LOS	С			В			В		
Intersection Summary									
Cycle Length: 60									
Actuated Cycle Length: 60									
Offset: 0 (0%), Referenced to	phase 2	NBT and	6.SBT_S	tart of 1st	t Green				
Natural Cycle: 60	p.1000 2.		0.021,0						
Control Type: Actuated-Coord	dinated								
Maximum v/c Ratio: 0.87									
Intersection Signal Delay: 16.4	4			Ir	ntersectio	n LOS [,] B			
Intersection Capacity Utilization					CU Level		э С		
						2. 2011100			

Splits and Phases: 120: Foley Blvd & TH 10 S Ramp

Ø2 (R)	Ø1	₩ Ø4
31s	12 s	17 s
Ø6 (R)	▲ ø5	
31 s	12 s	

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Lane Group	EBL	EBR	NBL	NBT	SBT	
Lane Configurations	٦	1	<u>۲</u>	<u>††</u>	∱ ⊅	
Traffic Volume (vph)	353	189	353	1043	442	
Future Volume (vph)	353	189	353	1043	442	
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	2 5	2	6	
Switch Phase						
Minimum Initial (s)	7.0	7.0	5.0	15.0	15.0	
Minimum Split (s)	32.5	32.5	10.0	20.5	34.5	
Total Split (s)	33.0	33.0	10.0	97.0	87.0	
Total Split (%)	25.4%	25.4%	7.7%	74.6%	66.9%	
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	
All-Red Time (s)	2.5	2.5	2.0	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5	5.0	5.5	5.5	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?	Nama	Mana	Yes	0.14-1	Yes	
Recall Mode	None	None	None	C-Max	C-Max	
Act Effct Green (s)	27.5	27.5	92.0	91.5	81.5	
Actuated g/C Ratio v/c Ratio	0.21 1.02	0.21 0.41	0.71 1.21	0.70	0.63	
Control Delay	102	0.41 8.2	138.1	0.45 9.0	0.49 7.5	
Queue Delay	0.0	0.2	0.0	9.0	0.5	
Total Delay	100.9	8.2	138.1	9.0	0.5 8.0	
LOS	100.9 F	0.2 A	130.1 F	9.0 A	0.0 A	
Approach Delay	г 68.6	A	F	41.7	8.0	
Approach LOS	00.0 E			41.7 D	0.0 A	
	C			U	A	
Intersection Summary						
Cycle Length: 130						
Actuated Cycle Length: 13						
Offset: 0 (0%), Referenced	to phase 2:	NBTL and	d 6:SBT,	Start of 1	st Green	
Natural Cycle: 120						
Control Type: Actuated-Co	ordinated					
Maximum v/c Ratio: 1.21						
Intersection Signal Delay:					ntersection	
Intersection Capacity Utiliz	ation 82.5%			10	CU Level	of Service E
Analysis Period (min) 15						

Splits and Phases: 130: Foley Blvd & 99th Ave

Ø2 (R)	A 04
97 s	33 s
▲ Ø5 ↓ Ø6 (R)	
10 s 87 s	

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110: Foley Blvd & TH 10 N Ramp/101st Ave

Direction	All	
Future Volume (vph)	3973	
Total Delay / Veh (s/v)	67	
CO Emissions (kg)	8.01	
NOx Emissions (kg)	1.56	
VOC Emissions (kg)	1.86	

120: Foley Blvd & TH 10 S Ramp

Direction	All
Future Volume (vph)	2996
Total Delay / Veh (s/v)	16
CO Emissions (kg)	3.03
NOx Emissions (kg)	0.59
VOC Emissions (kg)	0.70

130: Foley Blvd & 99th Ave

Direction	All
Future Volume (vph)	2935
Total Delay / Veh (s/v)	35
CO Emissions (kg)	3.13
NOx Emissions (kg)	0.61
VOC Emissions (kg)	0.73

Future Volume (vph)7236361354742469153131329217140Turn Typepm+ptNAPermProtNAPermProtNAPermProtNAPermProtected Phases74385216Permitted Phases448826Detector Phase74438852216Switch Phase744388522166Minimum Initial (s)5.05.05.07.07.07.07.012.012.07.012.012.012.012.0Minimum Split (s)9.522.522.522.522.522.511.522.5 </th <th></th> <th>٦</th> <th>-</th> <th>\mathbf{r}</th> <th>4</th> <th>+</th> <th>×</th> <th>1</th> <th>1</th> <th>۲</th> <th>1</th> <th>ŧ</th> <th>~</th>		٦	-	\mathbf{r}	4	+	×	1	1	۲	1	ŧ	~
Traffic Volume (vph) 72 36 36 135 47 42 469 1531 313 29 217 140 Future Volume (vph) 72 36 36 135 47 42 469 1531 313 29 217 140 Turn Type pm+pt NA Perm pm+pt NA Perm Prot NA Per	Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Future Volume (vph)7236361354742469153131329217140Turn Typepm+ptNAPermProtNAPermProtNAPermProtNAPermProtected Phases74385216Permitted Phases448826Detector Phase74438852216Switch Phase744388522166Minimum Initial (s)5.05.05.07.07.07.07.012.012.07.012.012.012.012.0Minimum Split (s)9.522.522.522.522.522.511.522.5 </td <td>Lane Configurations</td> <td>ľ</td> <td>•</td> <td>1</td> <td>1</td> <td>•</td> <td>1</td> <td>۲ ۲</td> <td><u></u></td> <td>1</td> <td>ľ</td> <td><u></u></td> <td>1</td>	Lane Configurations	ľ	•	1	1	•	1	۲ ۲	<u></u>	1	ľ	<u></u>	1
Turn Type pm+pt NA Perm pm+pt NA Perm Prot NA Perm	Traffic Volume (vph)	72	36	36	135		42	469			29	217	140
Protected Phases 7 4 3 8 5 2 1 6 Permitted Phases 4 4 8 8 2 6 6 Detector Phase 7 4 4 3 8 8 5 2 1 6 Switch Phase 7 4 4 3 8 8 5 2 2 1 6 6 Switch Phase 7 4 4 3 8 8 5 2 2 1 6 6 Minimum Initial (s) 5.0 5.0 5.0 7.0 7.0 7.0 7.0 12.0	Future Volume (vph)	72	36	36	135	47	42	469	1531	313	29	217	140
Permitted Phases 4 4 8 8 2 6 Detector Phase 7 4 4 3 8 5 2 2 1 6 6 Switch Phase 7 5.0 5.0 7.0 7.0 7.0 12.0		pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Detector Phase 7 4 4 3 8 8 5 2 2 1 6 6 Switch Phase			4			8		5	2		1	6	
Switch PhaseMinimum Initial (s)5.05.07.07.07.012.012.012.012.012.0Minimum Split (s)9.522.522.522.522.511.522.522.522.5		4		4									6
Minimum Initial (s) 5.0 5.0 5.0 7.0 7.0 7.0 12.0		7	4	4	3	8	8	5	2	2	1	6	6
Minimum Split (s) 9.5 22.5 22.5 22.5 22.5 22.5 11.5 22.5 11.5 22.5 11.5 22.5													
Total Split (s) 10.3 22.5 22.5 22.5 34.7 34.7 37.2 53.5 53.5 11.5 27.8 27.8													
	Total Split (s)	10.3	22.5	22.5	22.5	34.7	34.7	37.2	53.5	53.5	11.5	27.8	27.8
													25.3%
Yellow Time (s) 3.5													
													1.0
Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.													
													4.5
Lead/Lag Lead Lag Lead Lag Lag Lead Lag Lag Lag Lead Lag Lag							•					•	
													Yes
Recall Mode None None None None None None C-Max C-Max None C-Max C-Max													
Act Effct Green (s) 12.5 7.8 7.8 23.6 15.3 15.3 38.1 69.6 69.6 7.9 34.8 34.8													
Actuated g/C Ratio 0.11 0.07 0.07 0.21 0.14 0.14 0.35 0.63 0.63 0.07 0.32 0.32													
													0.24
													3.2
													0.0
													3.2
LOS D D A D D A D C A D C A		D		A	D		A	D		A	D		A
Approach Delay 34.8 33.6 23.9 22.7													
Approach LOS C C C C	Approach LOS		С			С			С			С	
Intersection Summary	Intersection Summary												
Cycle Length: 110	Cycle Length: 110												
Actuated Cycle Length: 110	Actuated Cycle Length: 110)											
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green	Offset: 0 (0%), Referenced	to phase 2:	NBT and	6:SBT, S	tart of Gr	een							
Natural Cycle: 110													
Control Type: Actuated-Coordinated	Control Type: Actuated-Coc	ordinated											
Maximum v/c Ratio: 0.83	Maximum v/c Ratio: 0.83												
Intersection Signal Delay: 25.0 Intersection LOS: C	Intersection Signal Delay: 2	25.0			li	ntersectio	n LOS: C						
Intersection Capacity Utilization 73.6% ICU Level of Service D	Intersection Capacity Utiliza	ation 73.6%	1		l	CU Level	of Service	e D					
Analysis Period (min) 15	Analysis Period (min) 15												

Splits and Phases: 110: East River Road & TH 610 North Ramps/Foley Blvd

Ø1	Ø2 (R)		Ø3		₩ Ø4	
11.5 s	53.5 s		22.5 s		22.5 s	
▲ ø5		Ø6 (R)		₹ø8		
37.2 s		27.8 s	10.3 s	34.7 s		

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	ሻሻ	1	ሻ	A	<u>††</u>	1
Traffic Volume (vph)	1044	172	36	1268	281	108
Future Volume (vph)	1044	172	36	1268	281	108
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	2	2	6	6
Switch Phase						
Minimum Initial (s)	7.0	7.0	12.0	12.0	12.0	12.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	28.1	28.1	31.9	31.9	31.9	31.9
Total Split (%)	46.8%	46.8%	53.2%	53.2%	53.2%	53.2%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	23.0	23.0	28.0	28.0	28.0	28.0
Actuated g/C Ratio	0.38	0.38	0.47	0.47	0.47	0.47
v/c Ratio	0.86	0.26	0.08	0.83	0.18	0.15
Control Delay	25.7	3.3	9.8	20.3	9.9	2.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.7	3.3	9.8	20.3	9.9	2.8
LOS	С	A	A	С	A	A
Approach Delay				20.0	8.0	
Approach LOS				С	A	
Intersection Summary						
Cycle Length: 60						
Actuated Cycle Length: 60					_	
Offset: 0 (0%), Referenced	to phase 2:	NBTL and	d 6:SBTL	, Start of	Green	
Natural Cycle: 60						
Control Type: Actuated-Coo	ordinated					
Maximum v/c Ratio: 0.86						
Intersection Signal Delay: 1					ntersectio	
Intersection Capacity Utiliza	ation 71.9%			10	CU Level	of Service
Analysis Period (min) 15						

Splits and Phases: 120: East River Road & TH 610 South Ramps

Ø2 (R)	A @4
31.9 s	28.1s
●	
31.9 s	

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110: East River Road & TH 610 North Ramps/Foley Blvd

Direction	All	
Future Volume (vph)	3067	
Total Delay / Veh (s/v)	25	
CO Emissions (kg)	2.98	
NOx Emissions (kg)	0.58	
VOC Emissions (kg)	0.69	

120: East River Road & TH 610 South Ramps

Direction	All
Future Volume (vph)	2909
Total Delay / Veh (s/v)	19
CO Emissions (kg)	3.00
NOx Emissions (kg)	0.58
VOC Emissions (kg)	0.69

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	् स्	77	ሻ	↑	1	ሻ	- † †	1	<u>۲</u>	- ††	1
Traffic Volume (vph)	820	205	120	172	187	125	328	753	331	64	667	56
Future Volume (vph)	820	205	120	172	187	125	328	753	331	64	667	56
Turn Type	Split	NA	pm+ov	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4	5	8	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	4	4	4	8	8	8	52	2	2	16	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	15.0	15.0	7.0	15.0	15.0
Minimum Split (s)	13.0	13.0	12.0	34.5	34.5	34.5	12.0	39.5	39.5	12.0	20.5	20.5
Total Split (s)	49.0	49.0	31.0	34.5	34.5	34.5	31.0	53.5	53.5	13.0	35.5	35.5
Total Split (%)	32.7%	32.7%	20.7%	23.0%	23.0%	23.0%	20.7%	35.7%	35.7%	8.7%	23.7%	23.7%
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.5	2.5	2.5	2.0	1.5	1.5	2.0	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	5.0	6.5	6.5	6.5	5.0	5.5	5.5	5.0	5.5	5.5
Lead/Lag	Lead	Lead	Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	43.1	43.1	75.1	20.4	20.4	20.4	26.0	48.2	48.2	7.8	30.0	30.0
Actuated g/C Ratio	0.30	0.30	0.53	0.14	0.14	0.14	0.18	0.34	0.34	0.05	0.21	0.21
v/c Ratio	1.03	1.03	0.08	0.70	0.73	0.38	1.05	0.65	0.45	0.69	0.92	0.14
Control Delay	96.6	95.4	3.1	73.0	74.1	10.0	118.4	43.7	5.4	100.1	74.0	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	96.6	95.4	3.1	73.0	74.1	10.0	118.4	43.7	5.4	100.1	74.0	0.7
LOS	F	F	А	Е	Е	А	F	D	А	F	Е	A
Approach Delay		86.2			57.2			52.1			70.9	
Approach LOS		F			E			D			Е	
Intersection Summary												
Cycle Length: 150												
Actuated Cycle Length: 142	2.5											
Natural Cycle: 150												
Control Type: Actuated-Un	coordinated											
Maximum v/c Ratio: 1.05												
Intersection Signal Delay: 6	6.8			Ir	ntersectio	n LOS: E						
Intersection Capacity Utiliza					CU Level		ə F					
Analysis Period (min) 15												

Splits and Phases: 110: Foley Blvd & TH 10 N Ramp/101st Ave

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13 s 53.	5 s		49 s	34.5 s
4 Ø6		\$ Ø5		
35.5 s		31 s		

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Lane Group	EBT	EBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	र्स	1	۲	<u></u>	1	۲	<u></u>	1	
Traffic Volume (vph)	1	221	27	1138	87	120	633	207	
Future Volume (vph)	1	221	27	1138	87	120	633	207	
Turn Type	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	4		5	2		1	6		
Permitted Phases		4			2			6	
Detector Phase	4	4	5	2	2	1	6	6	
Switch Phase									
Minimum Initial (s)	7.0	7.0	7.0	15.0	15.0	7.0	15.0	15.0	
Minimum Split (s)	13.0	13.0	12.0	30.5	30.5	12.0	20.5	20.5	
Total Split (s)	17.0	17.0	12.0	31.0	31.0	12.0	31.0	31.0	
Total Split (%)	28.3%	28.3%	20.0%	51.7%	51.7%	20.0%	51.7%	51.7%	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	1.5	1.5	2.0	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	5.0	5.5	5.5	5.0	5.5	5.5	
Lead/Lag			Lag	Lead	Lead	Lag	Lead	Lead	
Lead-Lag Optimize?									
Recall Mode	None	None	None	Max	Max	None	Max	Max	
Act Effct Green (s)	10.7	10.7	7.1	25.8	25.8	7.1	30.4	30.4	
Actuated g/C Ratio	0.19	0.19	0.12	0.45	0.45	0.12	0.53	0.53	
v/c Ratio	0.84	0.47	0.13	0.72	0.11	0.55	0.34	0.22	
Control Delay	48.6	7.4	25.4	17.0	1.1	36.8	9.6	2.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	48.6	7.4	25.4	17.0	1.1	36.8	9.6	2.7	
LOS	D	А	С	В	А	D	А	А	
Approach Delay	30.2			16.1			11.5		
Approach LOS	С			В			В		
Intersection Summary									
Cycle Length: 60									
Actuated Cycle Length: 57.3									
Natural Cycle: 60									
Control Type: Actuated-Unco	ordinated								
Maximum v/c Ratio: 0.84									
Intersection Signal Delay: 17.	.1			Ir	ntersection	n LOS: B			
Intersection Capacity Utilization	on 67 1%			10	CU Level	of Service	с		
Analysis Period (min) 15	011 01 . 1 /0								

Splits and Phases: 120: Foley Blvd & TH 10 S Ramp

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31 s	12 s	17 s
4 Ø6	▲ Ø5	
31 s	12 s	

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Lane Group	EBL	EBR	NBL	NBT	SBT	
Lane Configurations	۲	1	۲	<u></u>	A⊅	
Traffic Volume (vph)	301	189	353	950	380	
Future Volume (vph)	301	189	353	950	380	
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	25	2	6	
Switch Phase						
Minimum Initial (s)	7.0	7.0	5.0	15.0	15.0	
Minimum Split (s)	32.5	32.5	10.0	20.5	34.5	
Total Split (s)	34.0	34.0	10.0	96.0	86.0	
Total Split (%)	26.2%	26.2%	7.7%	73.8%	66.2%	
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	
All-Red Time (s)	2.5	2.5	2.0	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5	5.0	5.5	5.5	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None	None	None	Max	Max	
Act Effct Green (s)	26.0	26.0	91.0	90.5	80.5	
Actuated g/C Ratio	0.20	0.20	0.71	0.71	0.63	
v/c Ratio	0.90	0.42	1.00	0.41	0.41	
Control Delay	77.5	8.3	62.7	8.4	6.2	
Queue Delay	0.0	0.0	0.0	0.0	0.3	
Total Delay	77.5	8.3	62.7	8.4	6.5	
LOS	Е	А	E	А	А	
Approach Delay	50.8			23.1	6.5	
Approach LOS	D			С	А	
Intersection Summary						
Cycle Length: 130	E					
Actuated Cycle Length: 127	.5					
Natural Cycle: 130	oordinated					
Control Type: Actuated-Unc	oordinated					
Maximum v/c Ratio: 1.00	2.0			١.	ntersectior	
Intersection Signal Delay: 22						of Service D
Intersection Capacity Utiliza	101175.5%				SO Level (JI Service D
Analysis Period (min) 15						
Splits and Phases: 130: F	oley Blvd &	& 99th Δ.v	e			
		x JULI AV	C			

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96 s	34 s
★ Ø5 ↓ Ø6	
10 s 86 s	

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110: Foley Blvd & TH 10 N Ramp/101st Ave

Direction	All
Future Volume (vph)	3828
Total Delay / Veh (s/v)	67
CO Emissions (kg)	7.76
NOx Emissions (kg)	1.51
VOC Emissions (kg)	1.80

120: Foley Blvd & TH 10 S Ramp

Direction	All
Future Volume (vph)	2708
Total Delay / Veh (s/v)	17
CO Emissions (kg)	2.79
NOx Emissions (kg)	0.54
VOC Emissions (kg)	0.65

130: Foley Blvd & 99th Ave

Direction	All
Future Volume (vph)	2647
Total Delay / Veh (s/v)	23
CO Emissions (kg)	2.32
NOx Emissions (kg)	0.45
VOC Emissions (kg)	0.54

East River Road TH 610 Ramp Addition

Foley and TH 1	.0 N Ramps	
Existing Volume	3973	vehicles
Existing Delay	67	sec/veh
Existing Total Delay	266191	seconds
Future Volume	3828	vehicles
Future Delay	67	sec/veh
Future Total Delay	256476	seconds
Total Delay Reduction	9715	seconds
	Existing Volume Existing Delay Existing Total Delay Future Volume Future Delay Future Total Delay	Existing Delay67Existing Total Delay266191Future Volume3828Future Delay67Future Total Delay256476

2	Foley and TH	10 S Ramps	
	Existing Volume	2996	vehicles
	Existing Delay	16	sec/veh
	Existing Total Delay	47936	seconds
	Future Volume	2708	vehicles
	Future Delay	17	sec/veh
	Future Total Delay	46036	seconds
	Total Delay Reduction	1900	seconds

4	East River Rd and Nor	rth TH 610 F	Ramps
	Existing Volume	2816	vehicles
	Existing Delay	15	sec/veh
	Existing Total Delay	42240	seconds
	Future Volume	3067	vehicles
	Future Delay	25	sec/veh
	Future Total Delay	76675	seconds
	Total Delay Reduction	-34435	seconds

5	East River Road and Se	outh TH 610) Ramps
	Existing Volume	2730	vehicles
	Existing Delay	20	sec/veh
	Existing Total Delay	54600	seconds
	Future Volume	2909	vehicles
	Future Delay	19	sec/veh
	Future Total Delay	55271	seconds
	Total Delay Reduction	-671	seconds

3	Foley and	99th Ave	
	Existing Volume	2935	vehicles
	Existing Delay	35	sec/veh
	Existing Total Delay	102725	seconds
	Future Volume	2647	vehicles
	Future Delay	23	sec/veh
	Future Total Delay	60881	seconds
	Total Delay Reduction	41844	seconds

Total Network Delay Reduction

18353 seconds

Emissions						
Existing	1	2	3	4	5	Total
СО	8.01	3.03	3.13	2.71	2.89	19.77
NO	1.56	0.59	0.61	0.42	0.56	3.74
VOC	1.86	0.7	0.73	0.5	0.67	4.46
				Network Total		27.97

Build	1	2	3	4	5	Total
CO	7.76	2.79	2.32	2.98	3	18.85
NO	1.51	0.54	0.45	0.58	0.58	3.66
VOC	1.8	0.65	0.54	0.69	0.69	4.37
				Network Total		26.88

Reduction 1.09

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Lane Group	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	<u> </u>	†	1	<u>۲</u>	<u>†</u> †	1	<u>۲</u>	^	1
Traffic Volume (vph)	99	47	42	469	1531	313	29	146	140
Future Volume (vph)	99	47	42	469	1531	313	29	146	140
Turn Type	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	. 8	8		5	2		1	6	
Permitted Phases			8			2			6
Detector Phase	8	8	8	5	2	2	1	6	6
Switch Phase									
Minimum Initial (s)	7.0	7.0	7.0	7.0	12.0	12.0	7.0	12.0	12.0
Minimum Split (s)	22.5	22.5	22.5	11.5	22.5	22.5	11.5	22.5	22.5
Total Split (s)	22.5	22.5	22.5	27.0	41.0	41.0	11.5	25.5	25.5
Total Split (%)	30.0%	30.0%	30.0%	36.0%	54.7%	54.7%	15.3%	34.0%	34.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag				Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?				Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	10.1	10.1	10.1	27.0	54.1	54.1	7.5	26.8	26.8
Actuated g/C Ratio	0.13	0.13	0.13	0.36	0.72	0.72	0.10	0.36	0.36
//c Ratio	0.46	0.20	0.13	0.80	0.65	0.28	0.18	0.13	0.23
Control Delay	35.5	29.7	0.8	33.0	11.3	1.8	33.2	19.3	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.5	29.7	0.8	33.0	11.3	1.8	33.2	19.3	5.0
LOS	D	С	А	С	В	А	С	В	А
Approach Delay		26.3			14.4			14.2	
Approach LOS		С			В			В	
Intersection Summary									
Cycle Length: 75									
Actuated Cycle Length: 75									
Offset: 0 (0%), Referenced to	phase 2	NBT and	6.SBT_S	tart of Gr	een				
Natural Cycle: 80	prid00 2.		0.001,0						
Control Type: Actuated-Coord	dinated								
Maximum v/c Ratio: 0.80									
Intersection Signal Delay: 15.	2			Ir	ntersectio	n LOS [,] B			
Intersection Capacity Utilization					CU Level		e C		
Analysis Period (min) 15									

Splits and Phases: 110: East River Road & TH 610 North Ramps/Foley Blvd

Ø1	🖡 🖉 🖉 🖉	₹ Ø8
11.5 s	41 s	22.5 s
▲ ø5	🛡 🕈 Ø6 (R)	
27 s	25.5 s	

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Lane Group	EBL	EBR	NBT	SBT	
Lane Configurations	ካካ	1	A	^	
Traffic Volume (vph)	1044	172	1269	245	
Future Volume (vph)	1044	172	1269	245	
Turn Type	Prot	Perm	NA	NA	
Protected Phases	4		2	6	
Permitted Phases		4			
Detector Phase	4	4	2	6	
Switch Phase					
Minimum Initial (s)	7.0	7.0	12.0	12.0	
Minimum Split (s)	22.5	22.5	22.5	22.5	
Total Split (s)	25.8	25.8	29.2	29.2	
Total Split (%)	46.9%	46.9%	53.1%	53.1%	
Yellow Time (s)	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.5	4.5	4.5	4.5	
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None	None	C-Max	C-Max	
Act Effct Green (s)	20.8	20.8	25.2	25.2	
Actuated g/C Ratio	0.38	0.38	0.46	0.46	
v/c Ratio	0.87	0.26	0.85	0.16	
Control Delay	25.3	3.3	20.6	9.3	
Queue Delay	0.0	0.0	0.0	0.0	
Total Delay	25.3	3.3	20.6	9.3	
LOS	С	А	С	A	
Approach Delay			20.6	9.3	
Approach LOS			С	А	
Intersection Summary					
Cycle Length: 55					
Actuated Cycle Length: 55	i				
Offset: 0 (0%), Referenced		NBT and	6:SBTL,	Start of C	Green
Natural Cycle: 60					
Control Type: Actuated-Co	ordinated				
Maximum v/c Ratio: 0.87					
Intersection Signal Delay:	20.3			I	ntersection LOS: C
Intersection Capacity Utiliz					CU Level of Service C
Analysis Period (min) 15					

Splits and Phases: 120: East River Road & TH 610 South Ramps

Ø2 (R)	A @4
29.2 s	25.8 s
▼ Ø6 (R)	
29.2 s	

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110: East River Road & TH 610 North Ramps/Foley Blvd

Direction	All	
Future Volume (vph)	2816	
Total Delay / Veh (s/v)	15	
CO Emissions (kg)	2.17	
NOx Emissions (kg)	0.42	
VOC Emissions (kg)	0.50	

120: East River Road & TH 610 South Ramps

Direction	All
Future Volume (vph)	2730
Total Delay / Veh (s/v)	20
CO Emissions (kg)	2.89
NOx Emissions (kg)	0.56
VOC Emissions (kg)	0.67

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	र्च	77	ሻ	↑	1	ሻ	- † †	1	<u>۲</u>	<u>^</u>	1
Traffic Volume (vph)	820	205	263	172	187	125	328	753	331	64	669	56
Future Volume (vph)	820	205	263	172	187	125	328	753	331	64	669	56
Turn Type	Split	NA	pm+ov	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4	5	8	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	4	4	4	8	8	8	5 2	2	2	16	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	15.0	15.0	7.0	15.0	15.0
Minimum Split (s)	13.0	13.0	12.0	34.5	34.5	34.5	12.0	39.5	39.5	12.0	20.5	20.5
Total Split (s)	50.0	50.0	32.0	34.5	34.5	34.5	32.0	49.5	49.5	16.0	33.5	33.5
Total Split (%)	33.3%	33.3%	21.3%	23.0%	23.0%	23.0%	21.3%	33.0%	33.0%	10.7%	22.3%	22.3%
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.5	2.5	2.5	2.0	1.5	1.5	2.0	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	5.0	6.5	6.5	6.5	5.0	5.5	5.5	5.0	5.5	5.5
Lead/Lag	Lead	Lead	Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize? Recall Mode	Yes	Yes	Yes	Yes None	Yes	Yes	Yes	Yes	Yes	Yes None	Yes C-Max	Yes
Act Effct Green (s)	None 44.0	None 44.0	None 77.0	21.2	None 21.2	None 21.2	None 27.0	C-Max 54.0	C-Max 54.0	10.2	34.8	C-Max 34.8
Actuated g/C Ratio	44.0 0.29	44.0 0.29	0.51	0.14	0.14	0.14	0.18	0.36	0.36	0.07	0.23	0.23
v/c Ratio	1.06	1.06	0.51	0.14	0.14	0.14	1.07	0.50	0.30	0.07	0.23	0.23
Control Delay	107.6	106.9	2.2	76.2	77.3	10.0	125.5	43.9	5.6	84.6	65.3	0.15
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	43.9	0.0	0.0	0.0	0.0
Total Delay	107.6	106.9	2.2	76.2	77.3	10.0	125.5	43.9	5.6	84.6	65.3	0.0
LOS	107.0	F	Α	70.2 E	E	10.0 A	120.0 F	40.0 D	0.0 A	64.0 F	00.0	0.0 A
Approach Delay		85.8	7.		59.5	~		53.9	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	•	62.3	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
Approach LOS		F			E			D			E	
Intersection Summary												
Cycle Length: 150												
Actuated Cycle Length: 150												
Offset: 0 (0%), Referenced	to phase 2:	NBT and	6:SBT, S	tart of 1st	t Green							
Natural Cycle: 150												
Control Type: Actuated-Coo	rdinated											
Maximum v/c Ratio: 1.07												
Intersection Signal Delay: 6					ntersectio							
Intersection Capacity Utiliza	tion 93.8%			10	CU Level	of Service	e F					
Analysis Period (min) 15												

Splits and Phases: 110: Foley Blvd & TH 10 N Ramp/101st Ave

Ø1	Ø2 (R)		4 04	₽ _{Ø8}
16 s	49.5 s		50 s	34.5 s
Ø6 (R)		\$ Ø5		
33.5 s		32 s		

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Lane Group	EBT	EBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	र्भ	1	ሻ	- † †	1	ሻ	- † †	1	
Traffic Volume (vph)	1	221	27	1138	231	120	777	207	
Future Volume (vph)	1	221	27	1138	231	120	777	207	
Turn Type	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	4		5	2		1	6		
Permitted Phases		4			2			6	
Detector Phase	4	4	5	2	2	1	6	6	
Switch Phase									
Minimum Initial (s)	7.0	7.0	7.0	15.0	15.0	7.0	15.0	15.0	
Minimum Split (s)	13.0	13.0	12.0	30.5	30.5	12.0	20.5	20.5	
Total Split (s)	17.0	17.0	12.0	31.0	31.0	12.0	31.0	31.0	
Total Split (%)	28.3%	28.3%	20.0%	51.7%	51.7%	20.0%	51.7%	51.7%	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	1.5	1.5	2.0	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	5.0	5.5	5.5	5.0	5.5	5.5	
Lead/Lag			Lag	Lead	Lead	Lag	Lead	Lead	
Lead-Lag Optimize?						-			
Recall Mode	None	None	None	C-Max	C-Max	None	C-Max	C-Max	
Act Effct Green (s)	10.9	10.9	7.0	28.0	28.0	7.0	32.8	32.8	
Actuated g/C Ratio	0.18	0.18	0.12	0.47	0.47	0.12	0.55	0.55	
v/c Ratio	0.87	0.48	0.13	0.70	0.27	0.59	0.41	0.22	
Control Delay	52.9	7.5	25.6	16.4	2.8	38.6	10.1	2.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	52.9	7.5	25.6	16.4	2.8	38.6	10.1	2.6	
LOS	D	А	С	В	А	D	В	А	
Approach Delay	32.7			14.3			11.8		
Approach LOS	С			В			В		
Intersection Summary									
Cycle Length: 60									
Actuated Cycle Length: 60									
Offset: 0 (0%), Referenced to	phase 2	NBT and	6.SBT_S	tart of 1st	t Green				
Natural Cycle: 60	p.1000 2.		0.021,0						
Control Type: Actuated-Coord	dinated								
Maximum v/c Ratio: 0.87									
Intersection Signal Delay: 16.4	4			Ir	ntersectio	n LOS [,] B			
Intersection Capacity Utilization					CU Level		э С		
						2. 2011100			

Splits and Phases: 120: Foley Blvd & TH 10 S Ramp

Ø2 (R)	Ø1	₩ Ø4
31s	12 s	17 s
Ø6 (R)	▲ ø5	
31 s	12 s	

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Lane Group	EBL	EBR	NBL	NBT	SBT	
Lane Configurations	٦	1	<u>۲</u>	<u>††</u>	∱ ⊅	
Traffic Volume (vph)	353	189	353	1043	442	
Future Volume (vph)	353	189	353	1043	442	
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	2 5	2	6	
Switch Phase						
Minimum Initial (s)	7.0	7.0	5.0	15.0	15.0	
Minimum Split (s)	32.5	32.5	10.0	20.5	34.5	
Total Split (s)	33.0	33.0	10.0	97.0	87.0	
Total Split (%)	25.4%	25.4%	7.7%	74.6%	66.9%	
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	
All-Red Time (s)	2.5	2.5	2.0	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5	5.0	5.5	5.5	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?	Nama	Mana	Yes	0.14-1	Yes	
Recall Mode	None	None	None	C-Max	C-Max	
Act Effct Green (s)	27.5	27.5	92.0	91.5	81.5	
Actuated g/C Ratio v/c Ratio	0.21 1.02	0.21 0.41	0.71 1.21	0.70	0.63	
Control Delay	102	0.41 8.2	138.1	0.45 9.0	0.49 7.5	
Queue Delay	0.0	0.2	0.0	9.0	0.5	
Total Delay	100.9	8.2	138.1	9.0	0.5 8.0	
LOS	100.9 F	0.2 A	130.1 F	9.0 A	0.0 A	
Approach Delay	г 68.6	A	F	41.7	8.0	
Approach LOS	00.0 E			41.7 D	0.0 A	
	C			U	A	
Intersection Summary						
Cycle Length: 130						
Actuated Cycle Length: 13						
Offset: 0 (0%), Referenced	to phase 2:	NBTL and	d 6:SBT,	Start of 1	st Green	
Natural Cycle: 120						
Control Type: Actuated-Co	ordinated					
Maximum v/c Ratio: 1.21						
Intersection Signal Delay:					ntersection	
Intersection Capacity Utiliz	ation 82.5%			10	CU Level	of Service E
Analysis Period (min) 15						

Splits and Phases: 130: Foley Blvd & 99th Ave

Ø2 (R)	A 04
97 s	33 s
▲ Ø5 ↓ Ø6 (R)	
10 s 87 s	

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110: Foley Blvd & TH 10 N Ramp/101st Ave

Direction	All	
Future Volume (vph)	3973	
Total Delay / Veh (s/v)	67	
CO Emissions (kg)	8.01	
NOx Emissions (kg)	1.56	
VOC Emissions (kg)	1.86	

120: Foley Blvd & TH 10 S Ramp

Direction	All
Future Volume (vph)	2996
Total Delay / Veh (s/v)	16
CO Emissions (kg)	3.03
NOx Emissions (kg)	0.59
VOC Emissions (kg)	0.70

130: Foley Blvd & 99th Ave

Direction	All
Future Volume (vph)	2935
Total Delay / Veh (s/v)	35
CO Emissions (kg)	3.13
NOx Emissions (kg)	0.61
VOC Emissions (kg)	0.73

Future Volume (vph)7236361354742469153131329217140Turn Typepm+ptNAPermProtNAPermProtNAPermProtNAPermProtected Phases74385216Permitted Phases448826Detector Phase74438852216Switch Phase744388522166Minimum Initial (s)5.05.05.07.07.07.07.012.012.07.012.012.012.012.0Minimum Split (s)9.522.522.522.522.522.511.522.5 </th <th></th> <th>٦</th> <th>-</th> <th>\mathbf{r}</th> <th>4</th> <th>+</th> <th>×</th> <th>1</th> <th>1</th> <th>۲</th> <th>1</th> <th>ŧ</th> <th>~</th>		٦	-	\mathbf{r}	4	+	×	1	1	۲	1	ŧ	~
Traffic Volume (vph) 72 36 36 135 47 42 469 1531 313 29 217 140 Future Volume (vph) 72 36 36 135 47 42 469 1531 313 29 217 140 Turn Type pm+pt NA Perm pm+pt NA Perm Prot NA Per	Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Future Volume (vph)7236361354742469153131329217140Turn Typepm+ptNAPermProtNAPermProtNAPermProtNAPermProtected Phases74385216Permitted Phases448826Detector Phase74438852216Switch Phase744388522166Minimum Initial (s)5.05.05.07.07.07.07.012.012.07.012.012.012.012.0Minimum Split (s)9.522.522.522.522.522.511.522.5 </td <td>Lane Configurations</td> <td>1</td> <td>•</td> <td>1</td> <td>1</td> <td>•</td> <td>1</td> <td>۲ ۲</td> <td><u></u></td> <td>1</td> <td>ľ</td> <td><u></u></td> <td>1</td>	Lane Configurations	1	•	1	1	•	1	۲ ۲	<u></u>	1	ľ	<u></u>	1
Turn Type pm+pt NA Perm pm+pt NA Perm Prot NA Perm	Traffic Volume (vph)	72	36	36	135		42	469			29	217	140
Protected Phases 7 4 3 8 5 2 1 6 Permitted Phases 4 4 8 8 2 6 6 Detector Phase 7 4 4 3 8 8 5 2 1 6 Switch Phase 7 4 4 3 8 8 5 2 2 1 6 6 Switch Phase 7 4 4 3 8 8 5 2 2 1 6 6 Minimum Initial (s) 5.0 5.0 5.0 7.0 7.0 7.0 7.0 12.0	Future Volume (vph)	72	36	36	135	47	42	469	1531	313	29	217	140
Permitted Phases 4 4 8 8 2 6 Detector Phase 7 4 4 3 8 5 2 2 1 6 6 Switch Phase 7 5.0 5.0 7.0 7.0 7.0 12.0		pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Detector Phase 7 4 4 3 8 8 5 2 2 1 6 6 Switch Phase			4			8		5	2		1	6	
Switch PhaseMinimum Initial (s)5.05.07.07.07.012.012.012.012.012.0Minimum Split (s)9.522.522.522.522.511.522.522.522.5		4		4									6
Minimum Initial (s) 5.0 5.0 5.0 7.0 7.0 7.0 12.0		7	4	4	3	8	8	5	2	2	1	6	6
Minimum Split (s) 9.5 22.5 22.5 22.5 22.5 22.5 11.5 22.5 11.5 22.5 11.5 22.5													
Total Split (s) 10.3 22.5 22.5 22.5 34.7 34.7 37.2 53.5 53.5 11.5 27.8 27.8													
	Total Split (s)	10.3	22.5	22.5	22.5	34.7	34.7	37.2	53.5	53.5	11.5	27.8	27.8
													25.3%
Yellow Time (s) 3.5													
													1.0
Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.													
													4.5
Lead/Lag Lead Lag Lead Lag Lag Lead Lag Lag Lag Lead Lag Lag							•					•	
													Yes
Recall Mode None None None None None None C-Max C-Max None C-Max C-Max													
Act Effct Green (s) 12.5 7.8 7.8 23.6 15.3 15.3 38.1 69.6 69.6 7.9 34.8 34.8													
Actuated g/C Ratio 0.11 0.07 0.07 0.21 0.14 0.14 0.35 0.63 0.63 0.07 0.32 0.32													
													0.24
													3.2
													0.0
													3.2
LOS D D A D D A D C A D C A		D		A	D		A	D		A	D		A
Approach Delay 34.8 33.6 23.9 22.7													
Approach LOS C C C C	Approach LOS		С			С			С			С	
Intersection Summary	Intersection Summary												
Cycle Length: 110	Cycle Length: 110												
Actuated Cycle Length: 110													
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green													
Natural Cycle: 110													
Control Type: Actuated-Coordinated													
Maximum v/c Ratio: 0.83	Maximum v/c Ratio: 0.83												
Intersection Signal Delay: 25.0 Intersection LOS: C	Intersection Signal Delay: 2												
Intersection Capacity Utilization 73.6% ICU Level of Service D	Intersection Capacity Utiliza	ation 73.6%	1		l	CU Level	of Service	e D					
Analysis Period (min) 15	Analysis Period (min) 15												

Splits and Phases: 110: East River Road & TH 610 North Ramps/Foley Blvd

Ø1	Ø2 (R)		Ø3		₩ Ø4	
11.5 s	53.5 s		22.5 s		22.5 s	
▲ ø5		Ø6 (R)		₹ø8		
37.2 s		27.8 s	10.3 s	34.7 s		

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	ሻሻ	1	ሻ	A	<u>††</u>	1
Traffic Volume (vph)	1044	172	36	1268	281	108
Future Volume (vph)	1044	172	36	1268	281	108
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	2	2	6	6
Switch Phase						
Minimum Initial (s)	7.0	7.0	12.0	12.0	12.0	12.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	28.1	28.1	31.9	31.9	31.9	31.9
Total Split (%)	46.8%	46.8%	53.2%	53.2%	53.2%	53.2%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	23.0	23.0	28.0	28.0	28.0	28.0
Actuated g/C Ratio	0.38	0.38	0.47	0.47	0.47	0.47
v/c Ratio	0.86	0.26	0.08	0.83	0.18	0.15
Control Delay	25.7	3.3	9.8	20.3	9.9	2.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.7	3.3	9.8	20.3	9.9	2.8
LOS	С	A	A	С	A	A
Approach Delay				20.0	8.0	
Approach LOS				С	A	
Intersection Summary						
Cycle Length: 60						
Actuated Cycle Length: 60					_	
Offset: 0 (0%), Referenced	to phase 2:	NBTL and	d 6:SBTL	, Start of	Green	
Natural Cycle: 60						
Control Type: Actuated-Coo	ordinated					
Maximum v/c Ratio: 0.86						
Intersection Signal Delay: 1					ntersectio	
Intersection Capacity Utiliza	ation 71.9%			10	CU Level	of Service
Analysis Period (min) 15						

Splits and Phases: 120: East River Road & TH 610 South Ramps

Ø2 (R)	A @4
31.9 s	28.1s
●	
31.9 s	

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110: East River Road & TH 610 North Ramps/Foley Blvd

Direction	All	
Future Volume (vph)	3067	
Total Delay / Veh (s/v)	25	
CO Emissions (kg)	2.98	
NOx Emissions (kg)	0.58	
VOC Emissions (kg)	0.69	

120: East River Road & TH 610 South Ramps

Direction	All
Future Volume (vph)	2909
Total Delay / Veh (s/v)	19
CO Emissions (kg)	3.00
NOx Emissions (kg)	0.58
VOC Emissions (kg)	0.69

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	् स्	77	ሻ	↑	1	ሻ	- † †	1	<u>۲</u>	- ††	1
Traffic Volume (vph)	820	205	120	172	187	125	328	753	331	64	667	56
Future Volume (vph)	820	205	120	172	187	125	328	753	331	64	667	56
Turn Type	Split	NA	pm+ov	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4	5	8	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	4	4	4	8	8	8	52	2	2	16	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	15.0	15.0	7.0	15.0	15.0
Minimum Split (s)	13.0	13.0	12.0	34.5	34.5	34.5	12.0	39.5	39.5	12.0	20.5	20.5
Total Split (s)	49.0	49.0	31.0	34.5	34.5	34.5	31.0	53.5	53.5	13.0	35.5	35.5
Total Split (%)	32.7%	32.7%	20.7%	23.0%	23.0%	23.0%	20.7%	35.7%	35.7%	8.7%	23.7%	23.7%
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.5	2.5	2.5	2.0	1.5	1.5	2.0	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	5.0	6.5	6.5	6.5	5.0	5.5	5.5	5.0	5.5	5.5
Lead/Lag	Lead	Lead	Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	43.1	43.1	75.1	20.4	20.4	20.4	26.0	48.2	48.2	7.8	30.0	30.0
Actuated g/C Ratio	0.30	0.30	0.53	0.14	0.14	0.14	0.18	0.34	0.34	0.05	0.21	0.21
v/c Ratio	1.03	1.03	0.08	0.70	0.73	0.38	1.05	0.65	0.45	0.69	0.92	0.14
Control Delay	96.6	95.4	3.1	73.0	74.1	10.0	118.4	43.7	5.4	100.1	74.0	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	96.6	95.4	3.1	73.0	74.1	10.0	118.4	43.7	5.4	100.1	74.0	0.7
LOS	F	F	А	Е	Е	А	F	D	А	F	Е	A
Approach Delay		86.2			57.2			52.1			70.9	
Approach LOS		F			E			D			Е	
Intersection Summary												
Cycle Length: 150												
Actuated Cycle Length: 142	2.5											
Natural Cycle: 150												
Control Type: Actuated-Uncoordinated												
Maximum v/c Ratio: 1.05												
Intersection Signal Delay: 6												
Intersection Capacity Utilization 93.7% ICU Level of Service F												
Analysis Period (min) 15												

Splits and Phases: 110: Foley Blvd & TH 10 N Ramp/101st Ave

Ø1	ø2		₽ Ø4	₽ _{Ø8}
13 s 53.	5 s		49 s	34.5 s
4 Ø6		\$ Ø5		
35.5 s		31 s		

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Lane Group	EBT	EBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	र्स	1	۲	<u></u>	1	۲	<u></u>	1	
Traffic Volume (vph)	1	221	27	1138	87	120	633	207	
Future Volume (vph)	1	221	27	1138	87	120	633	207	
Turn Type	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	4		5	2		1	6		
Permitted Phases		4			2			6	
Detector Phase	4	4	5	2	2	1	6	6	
Switch Phase									
Minimum Initial (s)	7.0	7.0	7.0	15.0	15.0	7.0	15.0	15.0	
Minimum Split (s)	13.0	13.0	12.0	30.5	30.5	12.0	20.5	20.5	
Total Split (s)	17.0	17.0	12.0	31.0	31.0	12.0	31.0	31.0	
Total Split (%)	28.3%	28.3%	20.0%	51.7%	51.7%	20.0%	51.7%	51.7%	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	1.5	1.5	2.0	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	5.0	5.5	5.5	5.0	5.5	5.5	
Lead/Lag			Lag	Lead	Lead	Lag	Lead	Lead	
Lead-Lag Optimize?									
Recall Mode	None	None	None	Max	Max	None	Max	Max	
Act Effct Green (s)	10.7	10.7	7.1	25.8	25.8	7.1	30.4	30.4	
Actuated g/C Ratio	0.19	0.19	0.12	0.45	0.45	0.12	0.53	0.53	
v/c Ratio	0.84	0.47	0.13	0.72	0.11	0.55	0.34	0.22	
Control Delay	48.6	7.4	25.4	17.0	1.1	36.8	9.6	2.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	48.6	7.4	25.4	17.0	1.1	36.8	9.6	2.7	
LOS	D	А	С	В	А	D	А	А	
Approach Delay	30.2			16.1			11.5		
Approach LOS	С			В			В		
Intersection Summary									
Cycle Length: 60									
Actuated Cycle Length: 57.3									
Natural Cycle: 60									
Control Type: Actuated-Unco	ordinated								
Maximum v/c Ratio: 0.84									
Intersection Signal Delay: 17.	.1			Ir	ntersection	n LOS: B			
Intersection Capacity Utilization	ntersection Capacity Utilization 67.1% ICU Level of Service C								
Analysis Period (min) 15	011 01 . 1 /0								

Splits and Phases: 120: Foley Blvd & TH 10 S Ramp

f ø2	Ø1	↓ 04
31 s	12 s	17 s
4 Ø6	▲ Ø5	
31 s	12 s	

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Lane Group	EBL	EBR	NBL	NBT	SBT	
Lane Configurations	۲	1	۲	<u></u>	A⊅	
Traffic Volume (vph)	301	189	353	950	380	
Future Volume (vph)	301	189	353	950	380	
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	25	2	6	
Switch Phase						
Minimum Initial (s)	7.0	7.0	5.0	15.0	15.0	
Minimum Split (s)	32.5	32.5	10.0	20.5	34.5	
Total Split (s)	34.0	34.0	10.0	96.0	86.0	
Total Split (%)	26.2%	26.2%	7.7%	73.8%	66.2%	
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	
All-Red Time (s)	2.5	2.5	2.0	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5	5.0	5.5	5.5	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None	None	None	Max	Max	
Act Effct Green (s)	26.0	26.0	91.0	90.5	80.5	
Actuated g/C Ratio	0.20	0.20	0.71	0.71	0.63	
v/c Ratio	0.90	0.42	1.00	0.41	0.41	
Control Delay	77.5	8.3	62.7	8.4	6.2	
Queue Delay	0.0	0.0	0.0	0.0	0.3	
Total Delay	77.5	8.3	62.7	8.4	6.5	
LOS	Е	А	E	А	А	
Approach Delay	50.8			23.1	6.5	
Approach LOS	D			С	А	
Intersection Summary						
Cycle Length: 130	E					
Actuated Cycle Length: 127	.5					
Natural Cycle: 130	oordinated					
Control Type: Actuated-Unc	oordinated					
Maximum v/c Ratio: 1.00	2.0			١.	ntersectior	
Intersection Signal Delay: 22.9						of Service D
Intersection Capacity Utilization 75.3%					SO Level (JI Service D
Analysis Period (min) 15						
Splits and Phases: 130: Foley Blvd & 99th Ave						
		x JULIAV	C			

↑ _{Ø2}	
96 s	34 s
★ Ø5 ↓ Ø6	
10 s 86 s	

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110: Foley Blvd & TH 10 N Ramp/101st Ave

Direction	All
Future Volume (vph)	3828
Total Delay / Veh (s/v)	67
CO Emissions (kg)	7.76
NOx Emissions (kg)	1.51
VOC Emissions (kg)	1.80

120: Foley Blvd & TH 10 S Ramp

Direction	All
Future Volume (vph)	2708
Total Delay / Veh (s/v)	17
CO Emissions (kg)	2.79
NOx Emissions (kg)	0.54
VOC Emissions (kg)	0.65

130: Foley Blvd & 99th Ave

Direction	All
Future Volume (vph)	2647
Total Delay / Veh (s/v)	23
CO Emissions (kg)	2.32
NOx Emissions (kg)	0.45
VOC Emissions (kg)	0.54

East River Road TH 610 Ramp Addition

Foley and TH 10 N Ramps					
Existing Volume	3973	vehicles			
Existing Delay	67	sec/veh			
Existing Total Delay	266191	seconds			
Future Volume	3828	vehicles			
Future Delay	67	sec/veh			
Future Total Delay	256476	seconds			
Total Delay Reduction	9715	seconds			
	Existing Volume Existing Delay Existing Total Delay Future Volume Future Delay Future Total Delay	Existing Volume3973Existing Delay67Existing Total Delay266191Future Volume3828Future Delay67Future Total Delay256476			

2	Foley and TH 10 S Ramps					
	Existing Volume	2996	vehicles			
	Existing Delay	16	sec/veh			
	Existing Total Delay	47936	seconds			
	Future Volume	2708	vehicles			
	Future Delay	17	sec/veh			
	Future Total Delay	46036	seconds			
	Total Delay Reduction	1900	seconds			

4	East River Rd and North TH 610 Ramps				
	Existing Volume	2816	vehicles		
	Existing Delay	15	sec/veh		
	Existing Total Delay	42240	seconds		
	Future Volume	3067	vehicles		
	Future Delay	25	sec/veh		
	Future Total Delay	76675	seconds		
	Total Delay Reduction	-34435	seconds		

5	East River Road and South TH 610 Ramps				
	Existing Volume	2730	vehicles		
	Existing Delay	20	sec/veh		
	Existing Total Delay	54600	seconds		
	Future Volume	2909	vehicles		
	Future Delay	19	sec/veh		
	Future Total Delay	55271	seconds		
	Total Delay Reduction	-671	seconds		

3	Foley and 99th Ave					
	Existing Volume	2935	vehicles			
	Existing Delay	35	sec/veh			
	Existing Total Delay	102725	seconds			
	Future Volume	2647	vehicles			
	Future Delay	23	sec/veh			
	Future Total Delay	60881	seconds			
	Total Delay Reduction	41844	seconds			

Total Network Delay Reduction

18353 seconds

Emissions						
Existing	1	2	3	4	5	Total
СО	8.01	3.03	3.13	2.71	2.89	19.77
NO	1.56	0.59	0.61	0.42	0.56	3.74
VOC	1.86	0.7	0.73	0.5	0.67	4.46
				Network Total		27.97

Build	1	2	3	4	5	Total
CO	7.76	2.79	2.32	2.98	3	18.85
NO	1.51	0.54	0.45	0.58	0.58	3.66
VOC	1.8	0.65	0.54	0.69	0.69	4.37
				Network Total		26.88

Reduction 1.09

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Lane Group	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	<u> </u>	†	1	<u>۲</u>	<u>†</u> †	1	<u>۲</u>	^	1
Traffic Volume (vph)	99	47	42	469	1531	313	29	146	140
Future Volume (vph)	99	47	42	469	1531	313	29	146	140
Turn Type	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	. 8	8		5	2		1	6	
Permitted Phases			8			2			6
Detector Phase	8	8	8	5	2	2	1	6	6
Switch Phase									
Minimum Initial (s)	7.0	7.0	7.0	7.0	12.0	12.0	7.0	12.0	12.0
Minimum Split (s)	22.5	22.5	22.5	11.5	22.5	22.5	11.5	22.5	22.5
Total Split (s)	22.5	22.5	22.5	27.0	41.0	41.0	11.5	25.5	25.5
Total Split (%)	30.0%	30.0%	30.0%	36.0%	54.7%	54.7%	15.3%	34.0%	34.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag				Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?				Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	10.1	10.1	10.1	27.0	54.1	54.1	7.5	26.8	26.8
Actuated g/C Ratio	0.13	0.13	0.13	0.36	0.72	0.72	0.10	0.36	0.36
//c Ratio	0.46	0.20	0.13	0.80	0.65	0.28	0.18	0.13	0.23
Control Delay	35.5	29.7	0.8	33.0	11.3	1.8	33.2	19.3	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.5	29.7	0.8	33.0	11.3	1.8	33.2	19.3	5.0
LOS	D	С	А	С	В	А	С	В	А
Approach Delay		26.3			14.4			14.2	
Approach LOS		С			В			В	
Intersection Summary									
Cycle Length: 75									
Actuated Cycle Length: 75									
Offset: 0 (0%), Referenced to	phase 2	NBT and	6.SBT_S	tart of Gr	een				
Natural Cycle: 80	prid00 2.		0.001,0						
Control Type: Actuated-Coord	dinated								
Maximum v/c Ratio: 0.80									
Intersection Signal Delay: 15.	2			Ir	ntersectio	n LOS [,] B			
Intersection Capacity Utilization					CU Level		e C		
Analysis Period (min) 15									

Splits and Phases: 110: East River Road & TH 610 North Ramps/Foley Blvd

Ø1	🖡 🖉 🖉 🖉	₹ Ø8
11.5 s	41 s	22.5 s
▲ ø5	🛡 🕈 Ø6 (R)	
27 s	25.5 s	

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Lane Group	EBL	EBR	NBT	SBT	
Lane Configurations	ካካ	1	A	^	
Traffic Volume (vph)	1044	172	1269	245	
Future Volume (vph)	1044	172	1269	245	
Turn Type	Prot	Perm	NA	NA	
Protected Phases	4		2	6	
Permitted Phases		4			
Detector Phase	4	4	2	6	
Switch Phase					
Minimum Initial (s)	7.0	7.0	12.0	12.0	
Minimum Split (s)	22.5	22.5	22.5	22.5	
Total Split (s)	25.8	25.8	29.2	29.2	
Total Split (%)	46.9%	46.9%	53.1%	53.1%	
Yellow Time (s)	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.5	4.5	4.5	4.5	
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None	None	C-Max	C-Max	
Act Effct Green (s)	20.8	20.8	25.2	25.2	
Actuated g/C Ratio	0.38	0.38	0.46	0.46	
v/c Ratio	0.87	0.26	0.85	0.16	
Control Delay	25.3	3.3	20.6	9.3	
Queue Delay	0.0	0.0	0.0	0.0	
Total Delay	25.3	3.3	20.6	9.3	
LOS	С	А	С	A	
Approach Delay			20.6	9.3	
Approach LOS			С	А	
Intersection Summary					
Cycle Length: 55					
Actuated Cycle Length: 55	i				
Offset: 0 (0%), Referenced		NBT and	6:SBTL,	Start of C	Green
Natural Cycle: 60					
Control Type: Actuated-Co	ordinated				
Maximum v/c Ratio: 0.87					
Intersection Signal Delay:	20.3			I	ntersection LOS: C
Intersection Capacity Utiliz					CU Level of Service C
Analysis Period (min) 15					

Splits and Phases: 120: East River Road & TH 610 South Ramps

Ø2 (R)	A @4
29.2 s	25.8 s
▼ Ø6 (R)	
29.2 s	

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110: East River Road & TH 610 North Ramps/Foley Blvd

Direction	All	
Future Volume (vph)	2816	
Total Delay / Veh (s/v)	15	
CO Emissions (kg)	2.17	
NOx Emissions (kg)	0.42	
VOC Emissions (kg)	0.50	

120: East River Road & TH 610 South Ramps

Direction	All
Future Volume (vph)	2730
Total Delay / Veh (s/v)	20
CO Emissions (kg)	2.89
NOx Emissions (kg)	0.56
VOC Emissions (kg)	0.67

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	र्च	77	ሻ	↑	1	ሻ	- † †	1	<u>۲</u>	<u>^</u>	1
Traffic Volume (vph)	820	205	263	172	187	125	328	753	331	64	669	56
Future Volume (vph)	820	205	263	172	187	125	328	753	331	64	669	56
Turn Type	Split	NA	pm+ov	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4	5	8	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	4	4	4	8	8	8	5 2	2	2	16	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	15.0	15.0	7.0	15.0	15.0
Minimum Split (s)	13.0	13.0	12.0	34.5	34.5	34.5	12.0	39.5	39.5	12.0	20.5	20.5
Total Split (s)	50.0	50.0	32.0	34.5	34.5	34.5	32.0	49.5	49.5	16.0	33.5	33.5
Total Split (%)	33.3%	33.3%	21.3%	23.0%	23.0%	23.0%	21.3%	33.0%	33.0%	10.7%	22.3%	22.3%
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.5	2.5	2.5	2.0	1.5	1.5	2.0	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	5.0	6.5	6.5	6.5	5.0	5.5	5.5	5.0	5.5	5.5
Lead/Lag	Lead	Lead	Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize? Recall Mode	Yes	Yes	Yes	Yes None	Yes	Yes	Yes	Yes	Yes	Yes None	Yes C-Max	Yes
Act Effct Green (s)	None 44.0	None 44.0	None 77.0	21.2	None 21.2	None 21.2	None 27.0	C-Max 54.0	C-Max 54.0	10.2	34.8	C-Max 34.8
Actuated g/C Ratio	44.0 0.29	44.0 0.29	0.51	0.14	0.14	0.14	0.18	0.36	0.36	0.07	0.23	0.23
v/c Ratio	1.06	1.06	0.51	0.14	0.14	0.14	1.07	0.50	0.30	0.07	0.23	0.23
Control Delay	107.6	106.9	2.2	76.2	77.3	10.0	125.5	43.9	5.6	84.6	65.3	0.15
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	43.9	0.0	0.0	0.0	0.0
Total Delay	107.6	106.9	2.2	76.2	77.3	10.0	125.5	43.9	5.6	84.6	65.3	0.0
LOS	107.0	F	Α	70.2 E	E	10.0 A	120.0 F	40.0 D	0.0 A	64.0 F	00.0	0.0 A
Approach Delay		85.8	7.		59.5	~		53.9	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	•	62.3	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
Approach LOS		F			E			D			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: 1.07												
Intersection Signal Delay: 6					ntersectio							
Intersection Capacity Utiliza	tion 93.8%			10	CU Level	of Service	e F					
Analysis Period (min) 15												

Splits and Phases: 110: Foley Blvd & TH 10 N Ramp/101st Ave

Ø1	Ø2 (R)		4 04	₽ _{Ø8}
16 s	49.5 s		50 s	34.5 s
Ø6 (R)		\$ Ø5		
33.5 s		32 s		

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Lane Group	EBT	EBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	र्भ	1	ሻ	- † †	1	ሻ	- † †	1	
Traffic Volume (vph)	1	221	27	1138	231	120	777	207	
Future Volume (vph)	1	221	27	1138	231	120	777	207	
Turn Type	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	4		5	2		1	6		
Permitted Phases		4			2			6	
Detector Phase	4	4	5	2	2	1	6	6	
Switch Phase									
Minimum Initial (s)	7.0	7.0	7.0	15.0	15.0	7.0	15.0	15.0	
Minimum Split (s)	13.0	13.0	12.0	30.5	30.5	12.0	20.5	20.5	
Total Split (s)	17.0	17.0	12.0	31.0	31.0	12.0	31.0	31.0	
Total Split (%)	28.3%	28.3%	20.0%	51.7%	51.7%	20.0%	51.7%	51.7%	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	1.5	1.5	2.0	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	5.0	5.5	5.5	5.0	5.5	5.5	
Lead/Lag			Lag	Lead	Lead	Lag	Lead	Lead	
Lead-Lag Optimize?						-			
Recall Mode	None	None	None	C-Max	C-Max	None	C-Max	C-Max	
Act Effct Green (s)	10.9	10.9	7.0	28.0	28.0	7.0	32.8	32.8	
Actuated g/C Ratio	0.18	0.18	0.12	0.47	0.47	0.12	0.55	0.55	
v/c Ratio	0.87	0.48	0.13	0.70	0.27	0.59	0.41	0.22	
Control Delay	52.9	7.5	25.6	16.4	2.8	38.6	10.1	2.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	52.9	7.5	25.6	16.4	2.8	38.6	10.1	2.6	
LOS	D	А	С	В	А	D	В	А	
Approach Delay	32.7			14.3			11.8		
Approach LOS	С			В			В		
Intersection Summary									
Cycle Length: 60									
Actuated Cycle Length: 60									
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of 1st Green									
Natural Cycle: 60	p.1000 2.		0.021,0						
Control Type: Actuated-Coord	dinated								
Maximum v/c Ratio: 0.87									
Intersection Signal Delay: 16.4	4			Ir	ntersectio	n LOS [,] B			
Intersection Capacity Utilization					CU Level		э С		
						2. 2011100			

Splits and Phases: 120: Foley Blvd & TH 10 S Ramp

Ø2 (R)	Ø1	₩ Ø4
31s	12 s	17 s
Ø6 (R)	▲ ø5	
31 s	12 s	

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Lane Group	EBL	EBR	NBL	NBT	SBT	
Lane Configurations	۲	1	<u>۲</u>	††	≜ ⊅	
Traffic Volume (vph)	353	189	353	1043	442	
Future Volume (vph)	353	189	353	1043	442	
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	2 5	2	6	
Switch Phase						
Minimum Initial (s)	7.0	7.0	5.0	15.0	15.0	
Minimum Split (s)	32.5	32.5	10.0	20.5	34.5	
Total Split (s)	33.0	33.0	10.0	97.0	87.0	
Total Split (%)	25.4%	25.4%	7.7%	74.6%	66.9%	
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	
All-Red Time (s)	2.5	2.5	2.0	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5	5.0	5.5	5.5	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None	None	None	C-Max	C-Max	
Act Effct Green (s)	27.5	27.5	92.0	91.5	81.5	
Actuated g/C Ratio	0.21	0.21	0.71	0.70	0.63	
v/c Ratio	1.02	0.41	1.21	0.45	0.49	
Control Delay	100.9	8.2	138.1	9.0	7.5	
Queue Delay	0.0	0.0	0.0	0.0	0.5	
Total Delay	100.9	8.2	138.1	9.0	8.0	
LOS	F	А	F	A	А	
Approach Delay	68.6			41.7	8.0	
Approach LOS	E			D	А	
Intersection Summary						
Cycle Length: 130						
Actuated Cycle Length: 130)					
Offset: 0 (0%), Referenced	to phase 2:	NBTL and	d 6:SBT,	Start of 1	st Green	
Natural Cycle: 120						
Control Type: Actuated-Co	ordinated					
Maximum v/c Ratio: 1.21						
Intersection Signal Delay: 3	35.2			Ir	ntersection	1 LOS: D
Intersection Capacity Utiliza						of Service E
Analysis Period (min) 15						

Splits and Phases: 130: Foley Blvd & 99th Ave

Ø2 (R)	A 04
97 s	33 s
▲ Ø5 ↓ Ø6 (R)	
10 s 87 s	

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110: Foley Blvd & TH 10 N Ramp/101st Ave

Direction	All	
Future Volume (vph)	3973	
Total Delay / Veh (s/v)	67	
CO Emissions (kg)	8.01	
NOx Emissions (kg)	1.56	
VOC Emissions (kg)	1.86	

120: Foley Blvd & TH 10 S Ramp

Direction	All
Future Volume (vph)	2996
Total Delay / Veh (s/v)	16
CO Emissions (kg)	3.03
NOx Emissions (kg)	0.59
VOC Emissions (kg)	0.70

130: Foley Blvd & 99th Ave

Direction	All
Future Volume (vph)	2935
Total Delay / Veh (s/v)	35
CO Emissions (kg)	3.13
NOx Emissions (kg)	0.61
VOC Emissions (kg)	0.73

Future Volume (vph)7236361354742469153131329217140Turn Typepm+ptNAPermProtNAPermProtNAPermProtNAPermProtected Phases74385216Permitted Phases448826Detector Phase74438852216Switch Phase744388522166Minimum Initial (s)5.05.05.07.07.07.07.012.012.07.012.012.012.012.0Minimum Split (s)9.522.522.522.522.522.511.522.5 </th <th></th> <th>٦</th> <th>-</th> <th>\mathbf{r}</th> <th>4</th> <th>+</th> <th>×</th> <th>1</th> <th>1</th> <th>۲</th> <th>1</th> <th>ŧ</th> <th>~</th>		٦	-	\mathbf{r}	4	+	×	1	1	۲	1	ŧ	~
Traffic Volume (vph) 72 36 36 135 47 42 469 1531 313 29 217 140 Future Volume (vph) 72 36 36 135 47 42 469 1531 313 29 217 140 Turn Type pm+pt NA Perm pm+pt NA Perm Prot NA Per	Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Future Volume (vph)7236361354742469153131329217140Turn Typepm+ptNAPermProtNAPermProtNAPermProtNAPermProtected Phases74385216Permitted Phases448826Detector Phase74438852216Switch Phase744388522166Minimum Initial (s)5.05.05.07.07.07.07.012.012.07.012.012.012.012.0Minimum Split (s)9.522.522.522.522.522.511.522.5 </td <td>Lane Configurations</td> <td>ľ</td> <td>•</td> <td>1</td> <td>1</td> <td>†</td> <td>1</td> <td>ľ</td> <td>- ††</td> <td>1</td> <td>ľ</td> <td><u></u></td> <td>1</td>	Lane Configurations	ľ	•	1	1	†	1	ľ	- † †	1	ľ	<u></u>	1
Turn Type pm+pt NA Perm pm+pt NA Perm Prot NA Perm	Traffic Volume (vph)	72	36	36	135		42	469			29	217	140
Protected Phases 7 4 3 8 5 2 1 6 Permitted Phases 4 4 8 8 2 6 6 Detector Phase 7 4 4 3 8 8 5 2 1 6 Switch Phase 7 4 4 3 8 8 5 2 2 1 6 6 Switch Phase 7 4 4 3 8 8 5 2 2 1 6 6 Switch Phase 7 4 4 3 8 8 5 2 2 1 6 6 Minimum Initial (s) 5.0 5.0 5.0 7.0 7.0 7.0 7.0 12.0 <t< td=""><td>Future Volume (vph)</td><td>72</td><td>36</td><td>36</td><td>135</td><td>47</td><td>42</td><td>469</td><td>1531</td><td>313</td><td>29</td><td>217</td><td>140</td></t<>	Future Volume (vph)	72	36	36	135	47	42	469	1531	313	29	217	140
Permitted Phases 4 4 8 8 2 6 Detector Phase 7 4 4 3 8 5 2 2 1 6 6 Switch Phase 7 5.0 5.0 7.0 7.0 7.0 12.0		pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Detector Phase 7 4 4 3 8 8 5 2 2 1 6 6 Switch Phase			4			8		5	2		1	6	
Switch PhaseMinimum Initial (s)5.05.07.07.07.012.012.012.012.012.0Minimum Split (s)9.522.522.522.522.511.522.522.522.5		4		4									6
Minimum Initial (s) 5.0 5.0 5.0 7.0 7.0 7.0 12.0		7	4	4	3	8	8	5	2	2	1	6	6
Minimum Split (s) 9.5 22.5 22.5 22.5 22.5 22.5 11.5 22.5 11.5 22.5 11.5 22.5													
Total Split (s) 10.3 22.5 22.5 22.5 34.7 34.7 37.2 53.5 53.5 11.5 27.8 27.8													
	Total Split (s)	10.3	22.5	22.5	22.5	34.7	34.7	37.2	53.5	53.5	11.5	27.8	27.8
													25.3%
Yellow Time (s) 3.5													
													1.0
Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.													
													4.5
Lead/Lag Lead Lag Lead Lag Lag Lead Lag Lag Lag Lead Lag Lag							•					•	
													Yes
Recall Mode None None None None None None C-Max C-Max None C-Max C-Max													
Act Effct Green (s) 12.5 7.8 7.8 23.6 15.3 15.3 38.1 69.6 69.6 7.9 34.8 34.8													
Actuated g/C Ratio 0.11 0.07 0.07 0.21 0.14 0.14 0.35 0.63 0.63 0.07 0.32 0.32													
													0.24
													3.2
													0.0
													3.2
LOS D D A D D A D C A D C A		D		A	D		A	D		A	D		A
Approach Delay 34.8 33.6 23.9 22.7													
Approach LOS C C C C	Approach LOS		С			С			С			С	
Intersection Summary	Intersection Summary												
Cycle Length: 110	Cycle Length: 110												
Actuated Cycle Length: 110	Actuated Cycle Length: 110)											
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green	Offset: 0 (0%), Referenced	to phase 2:	NBT and	6:SBT, S	tart of Gr	een							
Natural Cycle: 110													
Control Type: Actuated-Coordinated													
Maximum v/c Ratio: 0.83													
Intersection Signal Delay: 25.0 Intersection LOS: C	Intersection Signal Delay: 2												
Intersection Capacity Utilization 73.6% ICU Level of Service D	Intersection Capacity Utiliza	ersection Capacity Utilization 73.6% ICU Level of Service D											
Analysis Period (min) 15	Analysis Period (min) 15	Period (min) 15											

Splits and Phases: 110: East River Road & TH 610 North Ramps/Foley Blvd

Ø1	Ø2 (R)		Ø3		₩ Ø4	
11.5 s	53.5 s		22.5 s		22.5 s	
▲ ø5		Ø6 (R)		₹ø8		
37.2 s		27.8 s	10.3 s	34.7 s		

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	ሻሻ	1	ሻ	A	<u>††</u>	1
Traffic Volume (vph)	1044	172	36	1268	281	108
Future Volume (vph)	1044	172	36	1268	281	108
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	2	2	6	6
Switch Phase						
Minimum Initial (s)	7.0	7.0	12.0	12.0	12.0	12.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	28.1	28.1	31.9	31.9	31.9	31.9
Total Split (%)	46.8%	46.8%	53.2%	53.2%	53.2%	53.2%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	23.0	23.0	28.0	28.0	28.0	28.0
Actuated g/C Ratio	0.38	0.38	0.47	0.47	0.47	0.47
v/c Ratio	0.86	0.26	0.08	0.83	0.18	0.15
Control Delay	25.7	3.3	9.8	20.3	9.9	2.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.7	3.3	9.8	20.3	9.9	2.8
LOS	С	A	A	С	A	A
Approach Delay				20.0	8.0	
Approach LOS				С	A	
Intersection Summary						
Cycle Length: 60						
Actuated Cycle Length: 60					_	
Offset: 0 (0%), Referenced	to phase 2:	NBTL and	d 6:SBTL	, Start of	Green	
Natural Cycle: 60						
Control Type: Actuated-Coo	ordinated					
Maximum v/c Ratio: 0.86						
Intersection Signal Delay: 1					ntersectio	
Intersection Capacity Utiliza	ation 71.9%			10	CU Level	of Service
Analysis Period (min) 15						

Splits and Phases: 120: East River Road & TH 610 South Ramps

Ø2 (R)	A @4
31.9 s	28.1s
●	
31.9 s	

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110: East River Road & TH 610 North Ramps/Foley Blvd

Direction	All	
Future Volume (vph)	3067	
Total Delay / Veh (s/v)	25	
CO Emissions (kg)	2.98	
NOx Emissions (kg)	0.58	
VOC Emissions (kg)	0.69	

120: East River Road & TH 610 South Ramps

Direction	All
Future Volume (vph)	2909
Total Delay / Veh (s/v)	19
CO Emissions (kg)	3.00
NOx Emissions (kg)	0.58
VOC Emissions (kg)	0.69

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	् स्	77	ሻ	↑	1	ሻ	- † †	1	<u>۲</u>	- ††	1
Traffic Volume (vph)	820	205	120	172	187	125	328	753	331	64	667	56
Future Volume (vph)	820	205	120	172	187	125	328	753	331	64	667	56
Turn Type	Split	NA	pm+ov	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4	5	8	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	4	4	4	8	8	8	52	2	2	16	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	15.0	15.0	7.0	15.0	15.0
Minimum Split (s)	13.0	13.0	12.0	34.5	34.5	34.5	12.0	39.5	39.5	12.0	20.5	20.5
Total Split (s)	49.0	49.0	31.0	34.5	34.5	34.5	31.0	53.5	53.5	13.0	35.5	35.5
Total Split (%)	32.7%	32.7%	20.7%	23.0%	23.0%	23.0%	20.7%	35.7%	35.7%	8.7%	23.7%	23.7%
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.5	2.5	2.5	2.0	1.5	1.5	2.0	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	5.0	6.5	6.5	6.5	5.0	5.5	5.5	5.0	5.5	5.5
Lead/Lag	Lead	Lead	Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	43.1	43.1	75.1	20.4	20.4	20.4	26.0	48.2	48.2	7.8	30.0	30.0
Actuated g/C Ratio	0.30	0.30	0.53	0.14	0.14	0.14	0.18	0.34	0.34	0.05	0.21	0.21
v/c Ratio	1.03	1.03	0.08	0.70	0.73	0.38	1.05	0.65	0.45	0.69	0.92	0.14
Control Delay	96.6	95.4	3.1	73.0	74.1	10.0	118.4	43.7	5.4	100.1	74.0	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	96.6	95.4	3.1	73.0	74.1	10.0	118.4	43.7	5.4	100.1	74.0	0.7
LOS	F	F	А	Е	Е	А	F	D	А	F	Е	A
Approach Delay		86.2			57.2			52.1			70.9	
Approach LOS		F			E			D			Е	
Intersection Summary												
Cycle Length: 150												
Actuated Cycle Length: 142	2.5											
Natural Cycle: 150												
Control Type: Actuated-Un	coordinated											
Maximum v/c Ratio: 1.05												
Intersection Signal Delay: 6	6.8			Ir	ntersectio	n LOS: E						
Intersection Capacity Utiliza					CU Level		ə F					
Analysis Period (min) 15												

Splits and Phases: 110: Foley Blvd & TH 10 N Ramp/101st Ave

Ø1	ø2		₽ Ø4	₽ _{Ø8}
13 s 53.	5 s		49 s	34.5 s
4 Ø6		\$ Ø5		
35.5 s		31 s		

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Lane Group	EBT	EBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	र्स	1	۲	<u></u>	1	۲	<u></u>	1	
Traffic Volume (vph)	1	221	27	1138	87	120	633	207	
Future Volume (vph)	1	221	27	1138	87	120	633	207	
Turn Type	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	4		5	2		1	6		
Permitted Phases		4			2			6	
Detector Phase	4	4	5	2	2	1	6	6	
Switch Phase									
Minimum Initial (s)	7.0	7.0	7.0	15.0	15.0	7.0	15.0	15.0	
Minimum Split (s)	13.0	13.0	12.0	30.5	30.5	12.0	20.5	20.5	
Total Split (s)	17.0	17.0	12.0	31.0	31.0	12.0	31.0	31.0	
Total Split (%)	28.3%	28.3%	20.0%	51.7%	51.7%	20.0%	51.7%	51.7%	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	1.5	1.5	2.0	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	5.0	5.5	5.5	5.0	5.5	5.5	
Lead/Lag			Lag	Lead	Lead	Lag	Lead	Lead	
Lead-Lag Optimize?									
Recall Mode	None	None	None	Max	Max	None	Max	Max	
Act Effct Green (s)	10.7	10.7	7.1	25.8	25.8	7.1	30.4	30.4	
Actuated g/C Ratio	0.19	0.19	0.12	0.45	0.45	0.12	0.53	0.53	
v/c Ratio	0.84	0.47	0.13	0.72	0.11	0.55	0.34	0.22	
Control Delay	48.6	7.4	25.4	17.0	1.1	36.8	9.6	2.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	48.6	7.4	25.4	17.0	1.1	36.8	9.6	2.7	
LOS	D	А	С	В	А	D	А	А	
Approach Delay	30.2			16.1			11.5		
Approach LOS	С			В			В		
Intersection Summary									
Cycle Length: 60									
Actuated Cycle Length: 57.3									
Natural Cycle: 60									
Control Type: Actuated-Unco	ordinated								
Maximum v/c Ratio: 0.84									
Intersection Signal Delay: 17.	.1			Ir	ntersection	n LOS: B			
Intersection Capacity Utilization	on 67 1%			10	CU Level	of Service	с		
Analysis Period (min) 15	011 01 . 1 /0								

Splits and Phases: 120: Foley Blvd & TH 10 S Ramp

f ø2	Ø1	↓ 04
31 s	12 s	17 s
4 Ø6	▲ Ø5	
31 s	12 s	

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Lane Group	EBL	EBR	NBL	NBT	SBT	
Lane Configurations	۲	1	۲	<u></u>	A⊅	
Traffic Volume (vph)	301	189	353	950	380	
Future Volume (vph)	301	189	353	950	380	
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	25	2	6	
Switch Phase						
Minimum Initial (s)	7.0	7.0	5.0	15.0	15.0	
Minimum Split (s)	32.5	32.5	10.0	20.5	34.5	
Total Split (s)	34.0	34.0	10.0	96.0	86.0	
Total Split (%)	26.2%	26.2%	7.7%	73.8%	66.2%	
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	
All-Red Time (s)	2.5	2.5	2.0	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5	5.0	5.5	5.5	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None	None	None	Max	Max	
Act Effct Green (s)	26.0	26.0	91.0	90.5	80.5	
Actuated g/C Ratio	0.20	0.20	0.71	0.71	0.63	
v/c Ratio	0.90	0.42	1.00	0.41	0.41	
Control Delay	77.5	8.3	62.7	8.4	6.2	
Queue Delay	0.0	0.0	0.0	0.0	0.3	
Total Delay	77.5	8.3	62.7	8.4	6.5	
LOS	Е	А	E	А	А	
Approach Delay	50.8			23.1	6.5	
Approach LOS	D			С	А	
Intersection Summary						
Cycle Length: 130	E					
Actuated Cycle Length: 127	.5					
Natural Cycle: 130	oordinated					
Control Type: Actuated-Unc	oordinated					
Maximum v/c Ratio: 1.00	2.0			١.	ntersectior	
Intersection Signal Delay: 22						of Service D
Intersection Capacity Utiliza	101175.5%				SO Level (JI Service D
Analysis Period (min) 15						
Splits and Phases: 130: F	oley Blvd &	& 99th Δ.v	e			
		x JULIAV	C			

↑ _{Ø2}	
96 s	34 s
★ Ø5 ↓ Ø6	
10 s 86 s	

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110: Foley Blvd & TH 10 N Ramp/101st Ave

Direction	All
Future Volume (vph)	3828
Total Delay / Veh (s/v)	67
CO Emissions (kg)	7.76
NOx Emissions (kg)	1.51
VOC Emissions (kg)	1.80

120: Foley Blvd & TH 10 S Ramp

Direction	All
Future Volume (vph)	2708
Total Delay / Veh (s/v)	17
CO Emissions (kg)	2.79
NOx Emissions (kg)	0.54
VOC Emissions (kg)	0.65

130: Foley Blvd & 99th Ave

Direction	All
Future Volume (vph)	2647
Total Delay / Veh (s/v)	23
CO Emissions (kg)	2.32
NOx Emissions (kg)	0.45
VOC Emissions (kg)	0.54

East River Road TH 610 Ramp Addition

Foley and TH 10 N Ramps								
Existing Volume	3973	vehicles						
Existing Delay	67	sec/veh						
Existing Total Delay	266191	seconds						
Future Volume	3828	vehicles						
Future Delay	67	sec/veh						
Future Total Delay	256476	seconds						
Total Delay Reduction	9715	seconds						
	Existing Volume Existing Delay Existing Total Delay Future Volume Future Delay Future Total Delay	Existing Volume3973Existing Delay67Existing Total Delay266191Future Volume3828Future Delay67Future Total Delay256476						

2	Foley and TH 10 S Ramps								
	Existing Volume	2996	vehicles						
	Existing Delay	16	sec/veh						
	Existing Total Delay	47936	seconds						
	Future Volume	2708	vehicles						
	Future Delay	17	sec/veh						
	Future Total Delay	46036	seconds						
	Total Delay Reduction	1900	seconds						

4	East River Rd and North TH 610 Ramps							
	Existing Volume	2816	vehicles					
	Existing Delay	15	sec/veh					
	Existing Total Delay	42240	seconds					
	Future Volume	3067	vehicles					
	Future Delay	25	sec/veh					
	Future Total Delay	76675	seconds					
	Total Delay Reduction	-34435	seconds					

5	East River Road and South TH 610 Ramps							
	Existing Volume	2730	vehicles					
	Existing Delay	20	sec/veh					
	Existing Total Delay	54600	seconds					
	Future Volume	2909	vehicles					
	Future Delay	19	sec/veh					
	Future Total Delay	55271	seconds					
	Total Delay Reduction	-671	seconds					

3	Foley and 99th Ave							
	Existing Volume	2935	vehicles					
	Existing Delay	35	sec/veh					
	Existing Total Delay	102725	seconds					
	Future Volume	2647	vehicles					
	Future Delay	23	sec/veh					
	Future Total Delay	60881	seconds					
	Total Delay Reduction	41844	seconds					

Total Network Delay Reduction

18353 seconds

Emissions						
Existing	1	2	3	4	5	Total
СО	8.01	3.03	3.13	2.71	2.89	19.77
NO	1.56	0.59	0.61	0.42	0.56	3.74
VOC	1.86	0.7	0.73	0.5	0.67	4.46
				Network Total		27.97

Build	1	2	3	4	5	Total
CO	7.76	2.79	2.32	2.98	3	18.85
NO	1.51	0.54	0.45	0.58	0.58	3.66
VOC	1.8	0.65	0.54	0.69	0.69	4.37
				Network Total		26.88

Reduction 1.09

	-	-	•	1	1	1	1	Ŧ	-
Lane Group	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	<u> </u>	†	1	<u>۲</u>	<u>†</u> †	1	<u>۲</u>	^	1
Traffic Volume (vph)	99	47	42	469	1531	313	29	146	140
Future Volume (vph)	99	47	42	469	1531	313	29	146	140
Turn Type	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	. 8	8		5	2		1	6	
Permitted Phases			8			2			6
Detector Phase	8	8	8	5	2	2	1	6	6
Switch Phase									
Minimum Initial (s)	7.0	7.0	7.0	7.0	12.0	12.0	7.0	12.0	12.0
Minimum Split (s)	22.5	22.5	22.5	11.5	22.5	22.5	11.5	22.5	22.5
Total Split (s)	22.5	22.5	22.5	27.0	41.0	41.0	11.5	25.5	25.5
Total Split (%)	30.0%	30.0%	30.0%	36.0%	54.7%	54.7%	15.3%	34.0%	34.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag				Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?				Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	10.1	10.1	10.1	27.0	54.1	54.1	7.5	26.8	26.8
Actuated g/C Ratio	0.13	0.13	0.13	0.36	0.72	0.72	0.10	0.36	0.36
//c Ratio	0.46	0.20	0.13	0.80	0.65	0.28	0.18	0.13	0.23
Control Delay	35.5	29.7	0.8	33.0	11.3	1.8	33.2	19.3	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.5	29.7	0.8	33.0	11.3	1.8	33.2	19.3	5.0
LOS	D	С	А	С	В	А	С	В	А
Approach Delay		26.3			14.4			14.2	
Approach LOS		С			В			В	
Intersection Summary									
Cycle Length: 75									
Actuated Cycle Length: 75									
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green									
Natural Cycle: 80	prid00 2.		0.001,0						
Control Type: Actuated-Coord	dinated								
Maximum v/c Ratio: 0.80									
Intersection Signal Delay: 15.	2			Ir	ntersectio	n LOS [,] B			
Intersection Capacity Utilization					CU Level		e C		
Analysis Period (min) 15									

Splits and Phases: 110: East River Road & TH 610 North Ramps/Foley Blvd

Ø1	🖡 🖉 🖉 🖉	₹ Ø8
11.5 s	41 s	22.5 s
▲ ø5	🛡 🔻 Ø6 (R)	
27 s	25.5 s	

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Lane Group	EBL	EBR	NBT	SBT	
Lane Configurations	ካካ	1	A	^	
Traffic Volume (vph)	1044	172	1269	245	
Future Volume (vph)	1044	172	1269	245	
Turn Type	Prot	Perm	NA	NA	
Protected Phases	4		2	6	
Permitted Phases		4			
Detector Phase	4	4	2	6	
Switch Phase					
Minimum Initial (s)	7.0	7.0	12.0	12.0	
Minimum Split (s)	22.5	22.5	22.5	22.5	
Total Split (s)	25.8	25.8	29.2	29.2	
Total Split (%)	46.9%	46.9%	53.1%	53.1%	
Yellow Time (s)	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.5	4.5	4.5	4.5	
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None	None	C-Max	C-Max	
Act Effct Green (s)	20.8	20.8	25.2	25.2	
Actuated g/C Ratio	0.38	0.38	0.46	0.46	
v/c Ratio	0.87	0.26	0.85	0.16	
Control Delay	25.3	3.3	20.6	9.3	
Queue Delay	0.0	0.0	0.0	0.0	
Total Delay	25.3	3.3	20.6	9.3	
LOS	С	А	С	A	
Approach Delay			20.6	9.3	
Approach LOS			С	А	
Intersection Summary					
Cycle Length: 55					
Actuated Cycle Length: 55	i				
Offset: 0 (0%), Referenced		NBT and	6:SBTL,	Start of C	Green
Natural Cycle: 60					
Control Type: Actuated-Co	ordinated				
Maximum v/c Ratio: 0.87					
Intersection Signal Delay:	20.3			I	ntersection LOS: C
Intersection Capacity Utiliz					CU Level of Service C
Analysis Period (min) 15					

Splits and Phases: 120: East River Road & TH 610 South Ramps

Ø2 (R)	A @4
29.2 s	25.8 s
▼ Ø6 (R)	
29.2 s	

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110: East River Road & TH 610 North Ramps/Foley Blvd

Direction	All	
Future Volume (vph)	2816	
Total Delay / Veh (s/v)	15	
CO Emissions (kg)	2.17	
NOx Emissions (kg)	0.42	
VOC Emissions (kg)	0.50	

120: East River Road & TH 610 South Ramps

Direction	All
Future Volume (vph)	2730
Total Delay / Veh (s/v)	20
CO Emissions (kg)	2.89
NOx Emissions (kg)	0.56
VOC Emissions (kg)	0.67

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	र्च	77	ሻ	↑	1	ሻ	- † †	1	<u>۲</u>	<u>^</u>	1
Traffic Volume (vph)	820	205	263	172	187	125	328	753	331	64	669	56
Future Volume (vph)	820	205	263	172	187	125	328	753	331	64	669	56
Turn Type	Split	NA	pm+ov	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4	5	8	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	4	4	4	8	8	8	5 2	2	2	16	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	15.0	15.0	7.0	15.0	15.0
Minimum Split (s)	13.0	13.0	12.0	34.5	34.5	34.5	12.0	39.5	39.5	12.0	20.5	20.5
Total Split (s)	50.0	50.0	32.0	34.5	34.5	34.5	32.0	49.5	49.5	16.0	33.5	33.5
Total Split (%)	33.3%	33.3%	21.3%	23.0%	23.0%	23.0%	21.3%	33.0%	33.0%	10.7%	22.3%	22.3%
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.5	2.5	2.5	2.0	1.5	1.5	2.0	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	5.0	6.5	6.5	6.5	5.0	5.5	5.5	5.0	5.5	5.5
Lead/Lag	Lead	Lead	Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize? Recall Mode	Yes	Yes	Yes	Yes None	Yes	Yes	Yes	Yes	Yes	Yes None	Yes C-Max	Yes
Act Effct Green (s)	None 44.0	None 44.0	None 77.0	21.2	None 21.2	None 21.2	None 27.0	C-Max 54.0	C-Max 54.0	10.2	34.8	C-Max 34.8
Actuated g/C Ratio	44.0 0.29	44.0 0.29	0.51	0.14	0.14	0.14	0.18	0.36	0.36	0.07	0.23	0.23
v/c Ratio	1.06	1.06	0.51	0.14	0.14	0.14	1.07	0.50	0.30	0.07	0.23	0.23
Control Delay	107.6	106.9	2.2	76.2	77.3	10.0	125.5	43.9	5.6	84.6	65.3	0.15
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	43.9	0.0	0.0	0.0	0.0
Total Delay	107.6	106.9	2.2	76.2	77.3	10.0	125.5	43.9	5.6	84.6	65.3	0.0
LOS	107.0	F	Α	70.2 E	E	10.0 A	120.0 F	40.0 D	0.0 A	64.0 F	00.0	0.0 A
Approach Delay		85.8	7.		59.5	~		53.9	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	•	62.3	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
Approach LOS		F			E			D			E	
Intersection Summary												
Cycle Length: 150												
Actuated Cycle Length: 150												
Offset: 0 (0%), Referenced	to phase 2:	NBT and	6:SBT, S	tart of 1st	t Green							
Natural Cycle: 150												
Control Type: Actuated-Coo	rdinated											
Maximum v/c Ratio: 1.07												
Intersection Signal Delay: 6					ntersectio							
Intersection Capacity Utiliza	tion 93.8%			10	CU Level	of Service	e F					
Analysis Period (min) 15												

Splits and Phases: 110: Foley Blvd & TH 10 N Ramp/101st Ave

Ø1	Ø2 (R)		4 04	₽ _{Ø8}
16 s	49.5 s		50 s	34.5 s
Ø6 (R)		\$ Ø5		
33.5 s		32 s		

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Lane Group	EBT	EBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	र्भ	1	ሻ	- † †	1	ሻ	- † †	1	
Traffic Volume (vph)	1	221	27	1138	231	120	777	207	
Future Volume (vph)	1	221	27	1138	231	120	777	207	
Turn Type	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	4		5	2		1	6		
Permitted Phases		4			2			6	
Detector Phase	4	4	5	2	2	1	6	6	
Switch Phase									
Minimum Initial (s)	7.0	7.0	7.0	15.0	15.0	7.0	15.0	15.0	
Minimum Split (s)	13.0	13.0	12.0	30.5	30.5	12.0	20.5	20.5	
Total Split (s)	17.0	17.0	12.0	31.0	31.0	12.0	31.0	31.0	
Total Split (%)	28.3%	28.3%	20.0%	51.7%	51.7%	20.0%	51.7%	51.7%	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	1.5	1.5	2.0	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	5.0	5.5	5.5	5.0	5.5	5.5	
Lead/Lag			Lag	Lead	Lead	Lag	Lead	Lead	
Lead-Lag Optimize?						-			
Recall Mode	None	None	None	C-Max	C-Max	None	C-Max	C-Max	
Act Effct Green (s)	10.9	10.9	7.0	28.0	28.0	7.0	32.8	32.8	
Actuated g/C Ratio	0.18	0.18	0.12	0.47	0.47	0.12	0.55	0.55	
v/c Ratio	0.87	0.48	0.13	0.70	0.27	0.59	0.41	0.22	
Control Delay	52.9	7.5	25.6	16.4	2.8	38.6	10.1	2.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	52.9	7.5	25.6	16.4	2.8	38.6	10.1	2.6	
LOS	D	А	С	В	А	D	В	А	
Approach Delay	32.7			14.3			11.8		
Approach LOS	С			В			В		
Intersection Summary									
Cycle Length: 60									
Actuated Cycle Length: 60									
Offset: 0 (0%), Referenced to	phase 2	NBT and	6.SBT_S	tart of 1st	t Green				
Natural Cycle: 60	p.1000 2.		0.021,0						
Control Type: Actuated-Coord	dinated								
Maximum v/c Ratio: 0.87									
Intersection Signal Delay: 16.4	4			Ir	ntersectio	n LOS [,] B			
Intersection Capacity Utilization					CU Level		э С		
						2. 2011100			

Splits and Phases: 120: Foley Blvd & TH 10 S Ramp

Ø2 (R)	Ø1	₩ Ø4
31s	12 s	17 s
Ø6 (R)	▲ ø5	
31 s	12 s	

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Lane Group	EBL	EBR	NBL	NBT	SBT	
Lane Configurations	٦	1	<u>۲</u>	<u>††</u>	∱ ⊅	
Traffic Volume (vph)	353	189	353	1043	442	
Future Volume (vph)	353	189	353	1043	442	
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	2 5	2	6	
Switch Phase						
Minimum Initial (s)	7.0	7.0	5.0	15.0	15.0	
Minimum Split (s)	32.5	32.5	10.0	20.5	34.5	
Total Split (s)	33.0	33.0	10.0	97.0	87.0	
Total Split (%)	25.4%	25.4%	7.7%	74.6%	66.9%	
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	
All-Red Time (s)	2.5	2.5	2.0	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5	5.0	5.5	5.5	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?	Nama	Mana	Yes	0.14-1	Yes	
Recall Mode	None	None	None	C-Max	C-Max	
Act Effct Green (s)	27.5	27.5	92.0	91.5	81.5	
Actuated g/C Ratio v/c Ratio	0.21 1.02	0.21 0.41	0.71 1.21	0.70	0.63	
Control Delay	102	0.41 8.2	138.1	0.45 9.0	0.49 7.5	
Queue Delay	0.0	0.2	0.0	9.0	0.5	
Total Delay	100.9	8.2	138.1	9.0	0.5 8.0	
LOS	100.9 F	0.2 A	130.1 F	9.0 A	0.0 A	
Approach Delay	г 68.6	A	- F	41.7	8.0	
Approach LOS	00.0 E			41.7 D	0.0 A	
	C			U	A	
Intersection Summary						
Cycle Length: 130						
Actuated Cycle Length: 13						
Offset: 0 (0%), Referenced	to phase 2:	NBTL and	d 6:SBT,	Start of 1	st Green	
Natural Cycle: 120						
Control Type: Actuated-Co	ordinated					
Maximum v/c Ratio: 1.21						
Intersection Signal Delay:					ntersection	
Intersection Capacity Utiliz	ation 82.5%			10	CU Level	of Service E
Analysis Period (min) 15						

Splits and Phases: 130: Foley Blvd & 99th Ave

Ø2 (R)	A 04
97 s	33 s
▲ Ø5 ↓ Ø6 (R)	
10 s 87 s	

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110: Foley Blvd & TH 10 N Ramp/101st Ave

Direction	All	
Future Volume (vph)	3973	
Total Delay / Veh (s/v)	67	
CO Emissions (kg)	8.01	
NOx Emissions (kg)	1.56	
VOC Emissions (kg)	1.86	

120: Foley Blvd & TH 10 S Ramp

Direction	All
Future Volume (vph)	2996
Total Delay / Veh (s/v)	16
CO Emissions (kg)	3.03
NOx Emissions (kg)	0.59
VOC Emissions (kg)	0.70

130: Foley Blvd & 99th Ave

Direction	All
Future Volume (vph)	2935
Total Delay / Veh (s/v)	35
CO Emissions (kg)	3.13
NOx Emissions (kg)	0.61
VOC Emissions (kg)	0.73

Future Volume (vph)7236361354742469153131329217140Turn Typepm+ptNAPermProtNAPermProtNAPermProtNAPermProtected Phases74385216Permitted Phases448826Detector Phase74438852216Switch Phase744388522166Minimum Initial (s)5.05.05.07.07.07.07.012.012.07.012.012.012.012.0Minimum Split (s)9.522.522.522.522.522.511.522.5 </th <th></th> <th>٦</th> <th>-</th> <th>\mathbf{r}</th> <th>4</th> <th>+</th> <th>*</th> <th>1</th> <th>1</th> <th>۲</th> <th>1</th> <th>ŧ</th> <th>~</th>		٦	-	\mathbf{r}	4	+	*	1	1	۲	1	ŧ	~
Traffic Volume (vph) 72 36 36 135 47 42 469 1531 313 29 217 140 Future Volume (vph) 72 36 36 135 47 42 469 1531 313 29 217 140 Turn Type pm+pt NA Perm pm+pt NA Perm Prot NA Per	Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Future Volume (vph)7236361354742469153131329217140Turn Typepm+ptNAPermProtNAPermProtNAPermProtNAPermProtected Phases74385216Permitted Phases448826Detector Phase74438852216Switch Phase744388522166Minimum Initial (s)5.05.05.07.07.07.07.012.012.07.012.012.012.012.0Minimum Split (s)9.522.522.522.522.522.511.522.5 </td <td>Lane Configurations</td> <td>ľ</td> <td>•</td> <td>1</td> <td>1</td> <td>•</td> <td>1</td> <td>۲ ۲</td> <td><u></u></td> <td>1</td> <td>ľ</td> <td><u></u></td> <td>1</td>	Lane Configurations	ľ	•	1	1	•	1	۲ ۲	<u></u>	1	ľ	<u></u>	1
Turn Type pm+pt NA Perm pm+pt NA Perm Prot NA Perm	Traffic Volume (vph)	72	36	36	135		42	469			29	217	140
Protected Phases 7 4 3 8 5 2 1 6 Permitted Phases 4 4 8 8 2 6 6 Detector Phase 7 4 4 3 8 8 5 2 1 6 Switch Phase 7 4 4 3 8 8 5 2 2 1 6 6 Switch Phase 7 4 4 3 8 8 5 2 2 1 6 6 Switch Phase 7 4 4 3 8 8 5 2 2 1 6 6 Minimum Initial (s) 5.0 5.0 5.0 7.0 7.0 7.0 7.0 12.0 <t< td=""><td>Future Volume (vph)</td><td>72</td><td>36</td><td>36</td><td>135</td><td>47</td><td>42</td><td>469</td><td>1531</td><td>313</td><td>29</td><td>217</td><td>140</td></t<>	Future Volume (vph)	72	36	36	135	47	42	469	1531	313	29	217	140
Permitted Phases 4 4 8 8 2 6 Detector Phase 7 4 4 3 8 5 2 2 1 6 6 Switch Phase 7 5.0 5.0 7.0 7.0 7.0 12.0		pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Detector Phase 7 4 4 3 8 8 5 2 2 1 6 6 Switch Phase			4			8		5	2		1	6	
Switch PhaseMinimum Initial (s)5.05.07.07.07.012.012.012.012.012.0Minimum Split (s)9.522.522.522.522.511.522.522.522.5		4		4									6
Minimum Initial (s) 5.0 5.0 5.0 7.0 7.0 7.0 12.0		7	4	4	3	8	8	5	2	2	1	6	6
Minimum Split (s) 9.5 22.5 22.5 22.5 22.5 22.5 11.5 22.5 11.5 22.5 11.5 22.5													
Total Split (s) 10.3 22.5 22.5 22.5 34.7 34.7 37.2 53.5 53.5 11.5 27.8 27.8													
	Total Split (s)	10.3	22.5	22.5	22.5	34.7	34.7	37.2	53.5	53.5	11.5	27.8	27.8
													25.3%
Yellow Time (s) 3.5													
													1.0
Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.													
													4.5
Lead/Lag Lead Lag Lead Lag Lag Lead Lag Lag Lag Lead Lag Lag							•					•	
													Yes
Recall Mode None None None None None None C-Max C-Max None C-Max C-Max													
Act Effct Green (s) 12.5 7.8 7.8 23.6 15.3 15.3 38.1 69.6 69.6 7.9 34.8 34.8													
Actuated g/C Ratio 0.11 0.07 0.07 0.21 0.14 0.14 0.35 0.63 0.63 0.07 0.32 0.32													
													0.24
													3.2
													0.0
													3.2
LOS D D A D D A D C A D C A		D		A	D		A	D		A	D		A
Approach Delay 34.8 33.6 23.9 22.7													
Approach LOS C C C C	Approach LOS		С			С			С			С	
Intersection Summary	Intersection Summary												
Cycle Length: 110	Cycle Length: 110												
Actuated Cycle Length: 110	Actuated Cycle Length: 110)											
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green	Offset: 0 (0%), Referenced	to phase 2:	NBT and	6:SBT, S	tart of Gr	een							
Natural Cycle: 110													
Control Type: Actuated-Coordinated	Control Type: Actuated-Coc	ordinated											
Maximum v/c Ratio: 0.83	Maximum v/c Ratio: 0.83												
Intersection Signal Delay: 25.0 Intersection LOS: C	Intersection Signal Delay: 2	25.0			li	ntersectio	n LOS: C						
Intersection Capacity Utilization 73.6% ICU Level of Service D	Intersection Capacity Utiliza	ation 73.6%	1		l	CU Level	of Service	e D					
Analysis Period (min) 15	Analysis Period (min) 15												

Splits and Phases: 110: East River Road & TH 610 North Ramps/Foley Blvd

Ø1	Ø2 (R)		Ø3		₩ Ø4	
11.5 s	53.5 s		22.5 s		22.5 s	
▲ ø5		Ø6 (R)		₹ø8		
37.2 s		27.8 s	10.3 s	34.7 s		

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	ሻሻ	1	ሻ	A	<u>††</u>	1
Traffic Volume (vph)	1044	172	36	1268	281	108
Future Volume (vph)	1044	172	36	1268	281	108
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	2	2	6	6
Switch Phase						
Minimum Initial (s)	7.0	7.0	12.0	12.0	12.0	12.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	28.1	28.1	31.9	31.9	31.9	31.9
Total Split (%)	46.8%	46.8%	53.2%	53.2%	53.2%	53.2%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	23.0	23.0	28.0	28.0	28.0	28.0
Actuated g/C Ratio	0.38	0.38	0.47	0.47	0.47	0.47
v/c Ratio	0.86	0.26	0.08	0.83	0.18	0.15
Control Delay	25.7	3.3	9.8	20.3	9.9	2.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.7	3.3	9.8	20.3	9.9	2.8
LOS	С	A	A	С	A	A
Approach Delay				20.0	8.0	
Approach LOS				С	A	
Intersection Summary						
Cycle Length: 60						
Actuated Cycle Length: 60					_	
Offset: 0 (0%), Referenced	to phase 2:	NBTL and	d 6:SBTL	, Start of	Green	
Natural Cycle: 60						
Control Type: Actuated-Coo	ordinated					
Maximum v/c Ratio: 0.86						
Intersection Signal Delay: 1					ntersectio	
Intersection Capacity Utiliza	ation 71.9%			10	CU Level	of Service
Analysis Period (min) 15						

Splits and Phases: 120: East River Road & TH 610 South Ramps

Ø2 (R)	A @4
31.9 s	28.1s
●	
31.9 s	

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110: East River Road & TH 610 North Ramps/Foley Blvd

Direction	All	
Future Volume (vph)	3067	
Total Delay / Veh (s/v)	25	
CO Emissions (kg)	2.98	
NOx Emissions (kg)	0.58	
VOC Emissions (kg)	0.69	

120: East River Road & TH 610 South Ramps

Direction	All
Future Volume (vph)	2909
Total Delay / Veh (s/v)	19
CO Emissions (kg)	3.00
NOx Emissions (kg)	0.58
VOC Emissions (kg)	0.69

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	् स्	77	ሻ	↑	1	ሻ	- † †	1	<u>۲</u>	- ††	1
Traffic Volume (vph)	820	205	120	172	187	125	328	753	331	64	667	56
Future Volume (vph)	820	205	120	172	187	125	328	753	331	64	667	56
Turn Type	Split	NA	pm+ov	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4	5	8	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	4	4	4	8	8	8	52	2	2	16	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	15.0	15.0	7.0	15.0	15.0
Minimum Split (s)	13.0	13.0	12.0	34.5	34.5	34.5	12.0	39.5	39.5	12.0	20.5	20.5
Total Split (s)	49.0	49.0	31.0	34.5	34.5	34.5	31.0	53.5	53.5	13.0	35.5	35.5
Total Split (%)	32.7%	32.7%	20.7%	23.0%	23.0%	23.0%	20.7%	35.7%	35.7%	8.7%	23.7%	23.7%
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.5	2.5	2.5	2.0	1.5	1.5	2.0	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	5.0	6.5	6.5	6.5	5.0	5.5	5.5	5.0	5.5	5.5
Lead/Lag	Lead	Lead	Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	43.1	43.1	75.1	20.4	20.4	20.4	26.0	48.2	48.2	7.8	30.0	30.0
Actuated g/C Ratio	0.30	0.30	0.53	0.14	0.14	0.14	0.18	0.34	0.34	0.05	0.21	0.21
v/c Ratio	1.03	1.03	0.08	0.70	0.73	0.38	1.05	0.65	0.45	0.69	0.92	0.14
Control Delay	96.6	95.4	3.1	73.0	74.1	10.0	118.4	43.7	5.4	100.1	74.0	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	96.6	95.4	3.1	73.0	74.1	10.0	118.4	43.7	5.4	100.1	74.0	0.7
LOS	F	F	А	Е	Е	А	F	D	А	F	Е	A
Approach Delay		86.2			57.2			52.1			70.9	
Approach LOS		F			E			D			Е	
Intersection Summary												
Cycle Length: 150												
Actuated Cycle Length: 142	2.5											
Natural Cycle: 150												
Control Type: Actuated-Un	coordinated											
Maximum v/c Ratio: 1.05												
Intersection Signal Delay: 6	6.8			Ir	ntersectio	n LOS: E						
Intersection Capacity Utiliza					CU Level		ə F					
Analysis Period (min) 15												

Splits and Phases: 110: Foley Blvd & TH 10 N Ramp/101st Ave

Ø1	ø2		₽ Ø4	₽ _{Ø8}
13 s 53.	5 s		49 s	34.5 s
4 Ø6		\$ Ø5		
35.5 s		31 s		

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Lane Group	EBT	EBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	र्स	1	۲	<u></u>	1	۲	<u></u>	1	
Traffic Volume (vph)	1	221	27	1138	87	120	633	207	
Future Volume (vph)	1	221	27	1138	87	120	633	207	
Turn Type	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	4		5	2		1	6		
Permitted Phases		4			2			6	
Detector Phase	4	4	5	2	2	1	6	6	
Switch Phase									
Minimum Initial (s)	7.0	7.0	7.0	15.0	15.0	7.0	15.0	15.0	
Minimum Split (s)	13.0	13.0	12.0	30.5	30.5	12.0	20.5	20.5	
Total Split (s)	17.0	17.0	12.0	31.0	31.0	12.0	31.0	31.0	
Total Split (%)	28.3%	28.3%	20.0%	51.7%	51.7%	20.0%	51.7%	51.7%	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	1.5	1.5	2.0	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	5.0	5.5	5.5	5.0	5.5	5.5	
Lead/Lag			Lag	Lead	Lead	Lag	Lead	Lead	
Lead-Lag Optimize?									
Recall Mode	None	None	None	Max	Max	None	Max	Max	
Act Effct Green (s)	10.7	10.7	7.1	25.8	25.8	7.1	30.4	30.4	
Actuated g/C Ratio	0.19	0.19	0.12	0.45	0.45	0.12	0.53	0.53	
v/c Ratio	0.84	0.47	0.13	0.72	0.11	0.55	0.34	0.22	
Control Delay	48.6	7.4	25.4	17.0	1.1	36.8	9.6	2.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	48.6	7.4	25.4	17.0	1.1	36.8	9.6	2.7	
LOS	D	А	С	В	А	D	А	А	
Approach Delay	30.2			16.1			11.5		
Approach LOS	С			В			В		
Intersection Summary									
Cycle Length: 60									
Actuated Cycle Length: 57.3									
Natural Cycle: 60									
Control Type: Actuated-Unco	ordinated								
Maximum v/c Ratio: 0.84									
Intersection Signal Delay: 17.	.1			Ir	ntersection	n LOS: B			
Intersection Capacity Utilization	on 67 1%			10	CU Level	of Service	с		
Analysis Period (min) 15	011 01 . 1 /0								

Splits and Phases: 120: Foley Blvd & TH 10 S Ramp

f ø2	Ø1	↓ 04
31 s	12 s	17 s
4 Ø6	▲ Ø5	
31 s	12 s	

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Lane Group	EBL	EBR	NBL	NBT	SBT	
Lane Configurations	۲	1	۲	<u></u>	A⊅	
Traffic Volume (vph)	301	189	353	950	380	
Future Volume (vph)	301	189	353	950	380	
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	25	2	6	
Switch Phase						
Minimum Initial (s)	7.0	7.0	5.0	15.0	15.0	
Minimum Split (s)	32.5	32.5	10.0	20.5	34.5	
Total Split (s)	34.0	34.0	10.0	96.0	86.0	
Total Split (%)	26.2%	26.2%	7.7%	73.8%	66.2%	
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	
All-Red Time (s)	2.5	2.5	2.0	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5	5.0	5.5	5.5	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None	None	None	Max	Max	
Act Effct Green (s)	26.0	26.0	91.0	90.5	80.5	
Actuated g/C Ratio	0.20	0.20	0.71	0.71	0.63	
v/c Ratio	0.90	0.42	1.00	0.41	0.41	
Control Delay	77.5	8.3	62.7	8.4	6.2	
Queue Delay	0.0	0.0	0.0	0.0	0.3	
Total Delay	77.5	8.3	62.7	8.4	6.5	
LOS	Е	А	E	А	А	
Approach Delay	50.8			23.1	6.5	
Approach LOS	D			С	А	
Intersection Summary						
Cycle Length: 130	E					
Actuated Cycle Length: 127	.5					
Natural Cycle: 130	oordinated					
Control Type: Actuated-Unc	oordinated					
Maximum v/c Ratio: 1.00	2.0			١.	ntersectior	
Intersection Signal Delay: 22						of Service D
Intersection Capacity Utiliza	101175.5%				SO Level (JI Service D
Analysis Period (min) 15						
Splits and Phases: 130: F	oley Blvd &	& 99th Δ.v	e			
		x JULIAV	C			

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96 s	34 s
★ Ø5 ↓ Ø6	
10 s 86 s	

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110: Foley Blvd & TH 10 N Ramp/101st Ave

Direction	All
Future Volume (vph)	3828
Total Delay / Veh (s/v)	67
CO Emissions (kg)	7.76
NOx Emissions (kg)	1.51
VOC Emissions (kg)	1.80

120: Foley Blvd & TH 10 S Ramp

Direction	All
Future Volume (vph)	2708
Total Delay / Veh (s/v)	17
CO Emissions (kg)	2.79
NOx Emissions (kg)	0.54
VOC Emissions (kg)	0.65

130: Foley Blvd & 99th Ave

Direction	All
Future Volume (vph)	2647
Total Delay / Veh (s/v)	23
CO Emissions (kg)	2.32
NOx Emissions (kg)	0.45
VOC Emissions (kg)	0.54

East River Road TH 610 Ramp Addition

Foley and TH 10 N Ramps						
Existing Volume	3973	vehicles				
Existing Delay	67	sec/veh				
Existing Total Delay	266191	seconds				
Future Volume	3828	vehicles				
Future Delay	67	sec/veh				
Future Total Delay	256476	seconds				
Total Delay Reduction	9715	seconds				
	Existing Volume Existing Delay Existing Total Delay Future Volume Future Delay Future Total Delay	Existing Volume3973Existing Delay67Existing Total Delay266191Future Volume3828Future Delay67Future Total Delay256476				

2	Foley and TH 10 S Ramps						
	Existing Volume	2996	vehicles				
	Existing Delay	16	sec/veh				
	Existing Total Delay	47936	seconds				
	Future Volume	2708	vehicles				
	Future Delay	17	sec/veh				
	Future Total Delay	46036	seconds				
	Total Delay Reduction	1900	seconds				

4	East River Rd and North TH 610 Ramps					
	Existing Volume	2816	vehicles			
	Existing Delay	15	sec/veh			
	Existing Total Delay	42240	seconds			
	Future Volume	3067	vehicles			
	Future Delay	25	sec/veh			
	Future Total Delay	76675	seconds			
	Total Delay Reduction	-34435	seconds			

5	East River Road and South TH 610 Ramps					
	Existing Volume	2730	vehicles			
	Existing Delay	20	sec/veh			
	Existing Total Delay	54600	seconds			
	Future Volume	2909	vehicles			
	Future Delay	19	sec/veh			
	Future Total Delay	55271	seconds			
	Total Delay Reduction	-671	seconds			

3	Foley and 99th Ave					
	Existing Volume	2935	vehicles			
	Existing Delay	35	sec/veh			
	Existing Total Delay	102725	seconds			
	Future Volume	2647	vehicles			
	Future Delay	23	sec/veh			
	Future Total Delay	60881	seconds			
	Total Delay Reduction	41844	seconds			

Total Network Delay Reduction

18353 seconds

Emissions						
Existing	1	2	3	4	5	Total
СО	8.01	3.03	3.13	2.71	2.89	19.77
NO	1.56	0.59	0.61	0.42	0.56	3.74
VOC	1.86	0.7	0.73	0.5	0.67	4.46
				Network Total		27.97

Build	1	2	3	4	5	Total
CO	7.76	2.79	2.32	2.98	3	18.85
NO	1.51	0.54	0.45	0.58	0.58	3.66
VOC	1.8	0.65	0.54	0.69	0.69	4.37
				Network Total		26.88

Reduction 1.09

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Lane Group	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	<u> </u>	†	1	<u>۲</u>	<u>†</u> †	1	<u>۲</u>	^	1
Traffic Volume (vph)	99	47	42	469	1531	313	29	146	140
Future Volume (vph)	99	47	42	469	1531	313	29	146	140
Turn Type	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	. 8	8		5	2		1	6	
Permitted Phases			8			2			6
Detector Phase	8	8	8	5	2	2	1	6	6
Switch Phase									
Minimum Initial (s)	7.0	7.0	7.0	7.0	12.0	12.0	7.0	12.0	12.0
Minimum Split (s)	22.5	22.5	22.5	11.5	22.5	22.5	11.5	22.5	22.5
Total Split (s)	22.5	22.5	22.5	27.0	41.0	41.0	11.5	25.5	25.5
Total Split (%)	30.0%	30.0%	30.0%	36.0%	54.7%	54.7%	15.3%	34.0%	34.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag				Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?				Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	10.1	10.1	10.1	27.0	54.1	54.1	7.5	26.8	26.8
Actuated g/C Ratio	0.13	0.13	0.13	0.36	0.72	0.72	0.10	0.36	0.36
//c Ratio	0.46	0.20	0.13	0.80	0.65	0.28	0.18	0.13	0.23
Control Delay	35.5	29.7	0.8	33.0	11.3	1.8	33.2	19.3	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.5	29.7	0.8	33.0	11.3	1.8	33.2	19.3	5.0
LOS	D	С	А	С	В	А	С	В	А
Approach Delay		26.3			14.4			14.2	
Approach LOS		С			В			В	
Intersection Summary									
Cycle Length: 75									
Actuated Cycle Length: 75									
Offset: 0 (0%), Referenced to	phase 2	NBT and	6.SBT_S	tart of Gr	een				
Natural Cycle: 80	prid00 2.		0.001,0						
Control Type: Actuated-Coord	dinated								
Maximum v/c Ratio: 0.80									
Intersection Signal Delay: 15.	2			Ir	ntersectio	n LOS [,] B			
Intersection Capacity Utilization					CU Level		e C		
Analysis Period (min) 15									

Splits and Phases: 110: East River Road & TH 610 North Ramps/Foley Blvd

Ø1	🖡 🖉 🖉 🖉	₹ Ø8
11.5 s	41 s	22.5 s
▲ ø5	🛡 🔻 Ø6 (R)	
27 s	25.5 s	

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Lane Group	EBL	EBR	NBT	SBT	
Lane Configurations	ካካ	1	A	^	
Traffic Volume (vph)	1044	172	1269	245	
Future Volume (vph)	1044	172	1269	245	
Turn Type	Prot	Perm	NA	NA	
Protected Phases	4		2	6	
Permitted Phases		4			
Detector Phase	4	4	2	6	
Switch Phase					
Minimum Initial (s)	7.0	7.0	12.0	12.0	
Minimum Split (s)	22.5	22.5	22.5	22.5	
Total Split (s)	25.8	25.8	29.2	29.2	
Total Split (%)	46.9%	46.9%	53.1%	53.1%	
Yellow Time (s)	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.5	4.5	4.5	4.5	
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None	None	C-Max	C-Max	
Act Effct Green (s)	20.8	20.8	25.2	25.2	
Actuated g/C Ratio	0.38	0.38	0.46	0.46	
v/c Ratio	0.87	0.26	0.85	0.16	
Control Delay	25.3	3.3	20.6	9.3	
Queue Delay	0.0	0.0	0.0	0.0	
Total Delay	25.3	3.3	20.6	9.3	
LOS	С	А	С	A	
Approach Delay			20.6	9.3	
Approach LOS			С	А	
Intersection Summary					
Cycle Length: 55					
Actuated Cycle Length: 55	i				
Offset: 0 (0%), Referenced		NBT and	6:SBTL,	Start of C	Green
Natural Cycle: 60					
Control Type: Actuated-Co	ordinated				
Maximum v/c Ratio: 0.87					
Intersection Signal Delay:	20.3			I	ntersection LOS: C
Intersection Capacity Utiliz					CU Level of Service C
Analysis Period (min) 15					

Splits and Phases: 120: East River Road & TH 610 South Ramps

Ø2 (R)	A @4
29.2 s	25.8 s
▼ Ø6 (R)	
29.2 s	

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110: East River Road & TH 610 North Ramps/Foley Blvd

Direction	All	
Future Volume (vph)	2816	
Total Delay / Veh (s/v)	15	
CO Emissions (kg)	2.17	
NOx Emissions (kg)	0.42	
VOC Emissions (kg)	0.50	

120: East River Road & TH 610 South Ramps

Direction	All
Future Volume (vph)	2730
Total Delay / Veh (s/v)	20
CO Emissions (kg)	2.89
NOx Emissions (kg)	0.56
VOC Emissions (kg)	0.67

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	र्च	77	ሻ	↑	1	ሻ	- † †	1	<u>۲</u>	<u>^</u>	1
Traffic Volume (vph)	820	205	263	172	187	125	328	753	331	64	669	56
Future Volume (vph)	820	205	263	172	187	125	328	753	331	64	669	56
Turn Type	Split	NA	pm+ov	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4	5	8	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	4	4	4	8	8	8	5 2	2	2	16	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	15.0	15.0	7.0	15.0	15.0
Minimum Split (s)	13.0	13.0	12.0	34.5	34.5	34.5	12.0	39.5	39.5	12.0	20.5	20.5
Total Split (s)	50.0	50.0	32.0	34.5	34.5	34.5	32.0	49.5	49.5	16.0	33.5	33.5
Total Split (%)	33.3%	33.3%	21.3%	23.0%	23.0%	23.0%	21.3%	33.0%	33.0%	10.7%	22.3%	22.3%
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.5	2.5	2.5	2.0	1.5	1.5	2.0	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	5.0	6.5	6.5	6.5	5.0	5.5	5.5	5.0	5.5	5.5
Lead/Lag	Lead	Lead	Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize? Recall Mode	Yes	Yes	Yes	Yes None	Yes	Yes	Yes	Yes	Yes	Yes None	Yes C-Max	Yes
Act Effct Green (s)	None 44.0	None 44.0	None 77.0	21.2	None 21.2	None 21.2	None 27.0	C-Max 54.0	C-Max 54.0	10.2	34.8	C-Max 34.8
Actuated g/C Ratio	44.0 0.29	44.0 0.29	0.51	0.14	0.14	0.14	0.18	0.36	0.36	0.07	0.23	0.23
v/c Ratio	1.06	1.06	0.51	0.14	0.14	0.14	1.07	0.50	0.30	0.07	0.23	0.23
Control Delay	107.6	106.9	2.2	76.2	77.3	10.0	125.5	43.9	5.6	84.6	65.3	0.15
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	43.9	0.0	0.0	0.0	0.0
Total Delay	107.6	106.9	2.2	76.2	77.3	10.0	125.5	43.9	5.6	84.6	65.3	0.0
LOS	107.0	F	Α	70.2 E	E	10.0 A	120.0 F	40.0 D	0.0 A	64.0 F	00.0	0.0 A
Approach Delay		85.8	7.		59.5	~		53.9	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	•	62.3	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
Approach LOS		F			E			D			E	
Intersection Summary												
Cycle Length: 150												
Actuated Cycle Length: 150												
Offset: 0 (0%), Referenced	to phase 2:	NBT and	6:SBT, S	tart of 1st	t Green							
Natural Cycle: 150												
Control Type: Actuated-Coo	rdinated											
Maximum v/c Ratio: 1.07												
Intersection Signal Delay: 6					ntersectio							
Intersection Capacity Utiliza	tion 93.8%			10	CU Level	of Service	e F					
Analysis Period (min) 15												

Splits and Phases: 110: Foley Blvd & TH 10 N Ramp/101st Ave

Ø1	Ø2 (R)		4 04	₽ _{Ø8}
16 s	49.5 s		50 s	34.5 s
Ø6 (R)		\$ Ø5		
33.5 s		32 s		

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Lane Group	EBT	EBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	र्भ	1	ሻ	- † †	1	ሻ	- † †	1	
Traffic Volume (vph)	1	221	27	1138	231	120	777	207	
Future Volume (vph)	1	221	27	1138	231	120	777	207	
Turn Type	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	4		5	2		1	6		
Permitted Phases		4			2			6	
Detector Phase	4	4	5	2	2	1	6	6	
Switch Phase									
Minimum Initial (s)	7.0	7.0	7.0	15.0	15.0	7.0	15.0	15.0	
Minimum Split (s)	13.0	13.0	12.0	30.5	30.5	12.0	20.5	20.5	
Total Split (s)	17.0	17.0	12.0	31.0	31.0	12.0	31.0	31.0	
Total Split (%)	28.3%	28.3%	20.0%	51.7%	51.7%	20.0%	51.7%	51.7%	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	1.5	1.5	2.0	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	5.0	5.5	5.5	5.0	5.5	5.5	
Lead/Lag			Lag	Lead	Lead	Lag	Lead	Lead	
Lead-Lag Optimize?						-			
Recall Mode	None	None	None	C-Max	C-Max	None	C-Max	C-Max	
Act Effct Green (s)	10.9	10.9	7.0	28.0	28.0	7.0	32.8	32.8	
Actuated g/C Ratio	0.18	0.18	0.12	0.47	0.47	0.12	0.55	0.55	
v/c Ratio	0.87	0.48	0.13	0.70	0.27	0.59	0.41	0.22	
Control Delay	52.9	7.5	25.6	16.4	2.8	38.6	10.1	2.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	52.9	7.5	25.6	16.4	2.8	38.6	10.1	2.6	
LOS	D	А	С	В	А	D	В	А	
Approach Delay	32.7			14.3			11.8		
Approach LOS	С			В			В		
Intersection Summary									
Cycle Length: 60									
Actuated Cycle Length: 60									
Offset: 0 (0%), Referenced to	phase 2	NBT and	6.SBT_S	tart of 1st	t Green				
Natural Cycle: 60	p.1000 2.		0.021,0						
Control Type: Actuated-Coord	dinated								
Maximum v/c Ratio: 0.87									
Intersection Signal Delay: 16.4	4			Ir	ntersectio	n LOS [,] B			
Intersection Capacity Utilization					CU Level		э С		
						2. 2011100			

Splits and Phases: 120: Foley Blvd & TH 10 S Ramp

Ø2 (R)	Ø1	₩ Ø4
31s	12 s	17 s
Ø6 (R)	▲ ø5	
31 s	12 s	

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Lane Group	EBL	EBR	NBL	NBT	SBT	
Lane Configurations	٦	1	<u>۲</u>	<u>††</u>	∱ ⊅	
Traffic Volume (vph)	353	189	353	1043	442	
Future Volume (vph)	353	189	353	1043	442	
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	2 5	2	6	
Switch Phase						
Minimum Initial (s)	7.0	7.0	5.0	15.0	15.0	
Minimum Split (s)	32.5	32.5	10.0	20.5	34.5	
Total Split (s)	33.0	33.0	10.0	97.0	87.0	
Total Split (%)	25.4%	25.4%	7.7%	74.6%	66.9%	
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	
All-Red Time (s)	2.5	2.5	2.0	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5	5.0	5.5	5.5	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?	Nama	Mana	Yes	0.14-1	Yes	
Recall Mode	None	None	None	C-Max	C-Max	
Act Effct Green (s)	27.5	27.5	92.0	91.5	81.5	
Actuated g/C Ratio v/c Ratio	0.21 1.02	0.21 0.41	0.71 1.21	0.70	0.63	
Control Delay	102	0.41 8.2	138.1	0.45 9.0	0.49 7.5	
Queue Delay	0.0	0.2	0.0	9.0	0.5	
Total Delay	100.9	8.2	138.1	9.0	0.5 8.0	
LOS	100.9 F	0.2 A	130.1 F	9.0 A	0.0 A	
Approach Delay	г 68.6	A	- F	41.7	8.0	
Approach LOS	00.0 E			41.7 D	0.0 A	
	C			U	A	
Intersection Summary						
Cycle Length: 130						
Actuated Cycle Length: 13						
Offset: 0 (0%), Referenced	to phase 2:	NBTL and	d 6:SBT,	Start of 1	st Green	
Natural Cycle: 120						
Control Type: Actuated-Co	ordinated					
Maximum v/c Ratio: 1.21						
Intersection Signal Delay:					ntersection	
Intersection Capacity Utiliz	ation 82.5%			10	CU Level	of Service E
Analysis Period (min) 15						

Splits and Phases: 130: Foley Blvd & 99th Ave

Ø2 (R)	A 04
97 s	33 s
▲ Ø5 ↓ Ø6 (R)	
10 s 87 s	

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110: Foley Blvd & TH 10 N Ramp/101st Ave

Direction	All	
Future Volume (vph)	3973	
Total Delay / Veh (s/v)	67	
CO Emissions (kg)	8.01	
NOx Emissions (kg)	1.56	
VOC Emissions (kg)	1.86	

120: Foley Blvd & TH 10 S Ramp

Direction	All
Future Volume (vph)	2996
Total Delay / Veh (s/v)	16
CO Emissions (kg)	3.03
NOx Emissions (kg)	0.59
VOC Emissions (kg)	0.70

130: Foley Blvd & 99th Ave

Direction	All
Future Volume (vph)	2935
Total Delay / Veh (s/v)	35
CO Emissions (kg)	3.13
NOx Emissions (kg)	0.61
VOC Emissions (kg)	0.73

Future Volume (vph)7236361354742469153131329217140Turn Typepm+ptNAPermProtNAPermProtNAPermProtNAPermProtected Phases74385216Permitted Phases448826Detector Phase74438852216Switch Phase744388522166Minimum Initial (s)5.05.05.07.07.07.07.012.012.07.012.012.012.012.0Minimum Split (s)9.522.522.522.522.522.511.522.5 </th <th></th> <th>٦</th> <th>-</th> <th>\mathbf{r}</th> <th>4</th> <th>+</th> <th>×</th> <th>1</th> <th>1</th> <th>۲</th> <th>1</th> <th>ŧ</th> <th>~</th>		٦	-	\mathbf{r}	4	+	×	1	1	۲	1	ŧ	~
Traffic Volume (vph) 72 36 36 135 47 42 469 1531 313 29 217 140 Future Volume (vph) 72 36 36 135 47 42 469 1531 313 29 217 140 Turn Type pm+pt NA Perm pm+pt NA Perm Prot NA Per	Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Future Volume (vph)7236361354742469153131329217140Turn Typepm+ptNAPermProtNAPermProtNAPermProtNAPermProtected Phases74385216Permitted Phases448826Detector Phase74438852216Switch Phase744388522166Minimum Initial (s)5.05.05.07.07.07.07.012.012.07.012.012.012.012.0Minimum Split (s)9.522.522.522.522.522.511.522.5 </td <td>Lane Configurations</td> <td>ľ</td> <td>•</td> <td>1</td> <td>1</td> <td>•</td> <td>1</td> <td>۲ ۲</td> <td><u></u></td> <td>1</td> <td>ľ</td> <td><u></u></td> <td>1</td>	Lane Configurations	ľ	•	1	1	•	1	۲ ۲	<u></u>	1	ľ	<u></u>	1
Turn Type pm+pt NA Perm pm+pt NA Perm Prot NA Perm	Traffic Volume (vph)	72	36	36	135		42	469			29	217	140
Protected Phases 7 4 3 8 5 2 1 6 Permitted Phases 4 4 8 8 2 6 6 Detector Phase 7 4 4 3 8 8 5 2 1 6 Switch Phase 7 4 4 3 8 8 5 2 2 1 6 6 Switch Phase 7 4 4 3 8 8 5 2 2 1 6 6 Switch Phase 7 4 4 3 8 8 5 2 2 1 6 6 Minimum Initial (s) 5.0 5.0 5.0 7.0 7.0 7.0 7.0 12.0 <t< td=""><td>Future Volume (vph)</td><td>72</td><td>36</td><td>36</td><td>135</td><td>47</td><td>42</td><td>469</td><td>1531</td><td>313</td><td>29</td><td>217</td><td>140</td></t<>	Future Volume (vph)	72	36	36	135	47	42	469	1531	313	29	217	140
Permitted Phases 4 4 8 8 2 6 Detector Phase 7 4 4 3 8 5 2 2 1 6 6 Switch Phase 7 5.0 5.0 7.0 7.0 7.0 12.0		pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Detector Phase 7 4 4 3 8 8 5 2 2 1 6 6 Switch Phase			4			8		5	2		1	6	
Switch PhaseMinimum Initial (s)5.05.07.07.07.012.012.012.012.012.0Minimum Split (s)9.522.522.522.522.511.522.522.522.5		4		4									6
Minimum Initial (s) 5.0 5.0 5.0 7.0 7.0 7.0 12.0		7	4	4	3	8	8	5	2	2	1	6	6
Minimum Split (s) 9.5 22.5 22.5 22.5 22.5 22.5 11.5 22.5 11.5 22.5 11.5 22.5													
Total Split (s) 10.3 22.5 22.5 22.5 34.7 34.7 37.2 53.5 53.5 11.5 27.8 27.8													
	Total Split (s)	10.3	22.5	22.5	22.5	34.7	34.7	37.2	53.5	53.5	11.5	27.8	27.8
													25.3%
Yellow Time (s) 3.5													
													1.0
Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.													
													4.5
Lead/Lag Lead Lag Lead Lag Lag Lead Lag Lag Lag Lead Lag Lag							•					•	
													Yes
Recall Mode None None None None None None C-Max C-Max None C-Max C-Max													
Act Effct Green (s) 12.5 7.8 7.8 23.6 15.3 15.3 38.1 69.6 69.6 7.9 34.8 34.8													
Actuated g/C Ratio 0.11 0.07 0.07 0.21 0.14 0.14 0.35 0.63 0.63 0.07 0.32 0.32													
													0.24
													3.2
													0.0
													3.2
LOS D D A D D A D C A D C A		D		A	D		A	D		A	D		A
Approach Delay 34.8 33.6 23.9 22.7													
Approach LOS C C C C	Approach LOS		С			С			С			С	
Intersection Summary	Intersection Summary												
Cycle Length: 110	Cycle Length: 110												
Actuated Cycle Length: 110	Actuated Cycle Length: 110)											
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green	Offset: 0 (0%), Referenced	to phase 2:	NBT and	6:SBT, S	tart of Gr	een							
Natural Cycle: 110													
Control Type: Actuated-Coordinated													
Maximum v/c Ratio: 0.83													
Intersection Signal Delay: 25.0 Intersection LOS: C	Intersection Signal Delay: 2												
Intersection Capacity Utilization 73.6% ICU Level of Service D	Intersection Capacity Utiliza	ation 73.6%	1		l	CU Level	of Service	e D					
Analysis Period (min) 15	Analysis Period (min) 15												

Splits and Phases: 110: East River Road & TH 610 North Ramps/Foley Blvd

Ø1	Ø2 (R)		Ø3		₩ Ø4	
11.5 s	53.5 s		22.5 s		22.5 s	
▲ ø5		Ø6 (R)		₹ø8		
37.2 s		27.8 s	10.3 s	34.7 s		

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	ሻሻ	1	ሻ	A	<u>††</u>	1
Traffic Volume (vph)	1044	172	36	1268	281	108
Future Volume (vph)	1044	172	36	1268	281	108
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	2	2	6	6
Switch Phase						
Minimum Initial (s)	7.0	7.0	12.0	12.0	12.0	12.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	28.1	28.1	31.9	31.9	31.9	31.9
Total Split (%)	46.8%	46.8%	53.2%	53.2%	53.2%	53.2%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	23.0	23.0	28.0	28.0	28.0	28.0
Actuated g/C Ratio	0.38	0.38	0.47	0.47	0.47	0.47
v/c Ratio	0.86	0.26	0.08	0.83	0.18	0.15
Control Delay	25.7	3.3	9.8	20.3	9.9	2.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.7	3.3	9.8	20.3	9.9	2.8
LOS	С	A	A	С	A	A
Approach Delay				20.0	8.0	
Approach LOS				С	A	
Intersection Summary						
Cycle Length: 60						
Actuated Cycle Length: 60					_	
Offset: 0 (0%), Referenced	to phase 2:	NBTL and	d 6:SBTL	, Start of	Green	
Natural Cycle: 60						
Control Type: Actuated-Coo	ordinated					
Maximum v/c Ratio: 0.86						
Intersection Signal Delay: 1					ntersectio	
Intersection Capacity Utiliza	ation 71.9%			10	CU Level	of Service
Analysis Period (min) 15						

Splits and Phases: 120: East River Road & TH 610 South Ramps

Ø2 (R)	A @4
31.9 s	28.1s
●	
31.9 s	

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110: East River Road & TH 610 North Ramps/Foley Blvd

Direction	All	
Future Volume (vph)	3067	
Total Delay / Veh (s/v)	25	
CO Emissions (kg)	2.98	
NOx Emissions (kg)	0.58	
VOC Emissions (kg)	0.69	

120: East River Road & TH 610 South Ramps

Direction	All
Future Volume (vph)	2909
Total Delay / Veh (s/v)	19
CO Emissions (kg)	3.00
NOx Emissions (kg)	0.58
VOC Emissions (kg)	0.69

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	् स्	77	ሻ	↑	1	ሻ	- † †	1	<u>۲</u>	- ††	1
Traffic Volume (vph)	820	205	120	172	187	125	328	753	331	64	667	56
Future Volume (vph)	820	205	120	172	187	125	328	753	331	64	667	56
Turn Type	Split	NA	pm+ov	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4	5	8	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	4	4	4	8	8	8	52	2	2	16	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	15.0	15.0	7.0	15.0	15.0
Minimum Split (s)	13.0	13.0	12.0	34.5	34.5	34.5	12.0	39.5	39.5	12.0	20.5	20.5
Total Split (s)	49.0	49.0	31.0	34.5	34.5	34.5	31.0	53.5	53.5	13.0	35.5	35.5
Total Split (%)	32.7%	32.7%	20.7%	23.0%	23.0%	23.0%	20.7%	35.7%	35.7%	8.7%	23.7%	23.7%
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.5	2.5	2.5	2.0	1.5	1.5	2.0	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	5.0	6.5	6.5	6.5	5.0	5.5	5.5	5.0	5.5	5.5
Lead/Lag	Lead	Lead	Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	43.1	43.1	75.1	20.4	20.4	20.4	26.0	48.2	48.2	7.8	30.0	30.0
Actuated g/C Ratio	0.30	0.30	0.53	0.14	0.14	0.14	0.18	0.34	0.34	0.05	0.21	0.21
v/c Ratio	1.03	1.03	0.08	0.70	0.73	0.38	1.05	0.65	0.45	0.69	0.92	0.14
Control Delay	96.6	95.4	3.1	73.0	74.1	10.0	118.4	43.7	5.4	100.1	74.0	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	96.6	95.4	3.1	73.0	74.1	10.0	118.4	43.7	5.4	100.1	74.0	0.7
LOS	F	F	А	Е	Е	А	F	D	А	F	Е	A
Approach Delay		86.2			57.2			52.1			70.9	
Approach LOS		F			E			D			Е	
Intersection Summary												
Cycle Length: 150												
Actuated Cycle Length: 142	2.5											
Natural Cycle: 150												
Control Type: Actuated-Un	coordinated											
Maximum v/c Ratio: 1.05												
Intersection LOS: E												
Intersection Capacity Utiliza					CU Level		ə F					
Analysis Period (min) 15												

Splits and Phases: 110: Foley Blvd & TH 10 N Ramp/101st Ave

Ø1	ø2		₽ Ø4	₽ _{Ø8}
13 s 53.	5 s		49 s	34.5 s
4 Ø6		\$ Ø5		
35.5 s		31 s		

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Lane Group	EBT	EBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	र्स	1	1	<u></u>	1	1	<u></u>	1	
Traffic Volume (vph)	1	221	27	1138	87	120	633	207	
Future Volume (vph)	1	221	27	1138	87	120	633	207	
Turn Type	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	4		5	2		1	6		
Permitted Phases		4			2			6	
Detector Phase	4	4	5	2	2	1	6	6	
Switch Phase									
Minimum Initial (s)	7.0	7.0	7.0	15.0	15.0	7.0	15.0	15.0	
Minimum Split (s)	13.0	13.0	12.0	30.5	30.5	12.0	20.5	20.5	
Total Split (s)	17.0	17.0	12.0	31.0	31.0	12.0	31.0	31.0	
Total Split (%)	28.3%	28.3%	20.0%	51.7%	51.7%	20.0%	51.7%	51.7%	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	1.5	1.5	2.0	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	5.0	5.5	5.5	5.0	5.5	5.5	
Lead/Lag			Lag	Lead	Lead	Lag	Lead	Lead	
Lead-Lag Optimize?									
Recall Mode	None	None	None	Max	Max	None	Max	Max	
Act Effct Green (s)	10.7	10.7	7.1	25.8	25.8	7.1	30.4	30.4	
Actuated g/C Ratio	0.19	0.19	0.12	0.45	0.45	0.12	0.53	0.53	
v/c Ratio	0.84	0.47	0.13	0.72	0.11	0.55	0.34	0.22	
Control Delay	48.6	7.4	25.4	17.0	1.1	36.8	9.6	2.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	48.6	7.4	25.4	17.0	1.1	36.8	9.6	2.7	
LOS	D	А	С	В	А	D	А	А	
Approach Delay	30.2			16.1			11.5		
Approach LOS	С			В			В		
Intersection Summary									
Cycle Length: 60									
Actuated Cycle Length: 57.3									
Natural Cycle: 60									
Control Type: Actuated-Unco	ordinated								
Maximum v/c Ratio: 0.84									
Intersection Signal Delay: 17	.1			lr	ntersection	n LOS: B			
Intersection Capacity Utilizati	on 67.1%			10	CU Level	of Service	e C		
Analysis Period (min) 15									

Splits and Phases: 120: Foley Blvd & TH 10 S Ramp

f ø2	Ø1	↓ 04
31 s	12 s	17 s
4 Ø6	▲ Ø5	
31 s	12 s	

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Lane Group	EBL	EBR	NBL	NBT	SBT	
Lane Configurations	۲	1	۲	<u></u>	A	
Traffic Volume (vph)	301	189	353	950	380	
Future Volume (vph)	301	189	353	950	380	
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	25	2	6	
Switch Phase						
Minimum Initial (s)	7.0	7.0	5.0	15.0	15.0	
Minimum Split (s)	32.5	32.5	10.0	20.5	34.5	
Total Split (s)	34.0	34.0	10.0	96.0	86.0	
Total Split (%)	26.2%	26.2%	7.7%	73.8%	66.2%	
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	
All-Red Time (s)	2.5	2.5	2.0	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5	5.0	5.5	5.5	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None	None	None	Max	Max	
Act Effct Green (s)	26.0	26.0	91.0	90.5	80.5	
Actuated g/C Ratio	0.20	0.20	0.71	0.71	0.63	
v/c Ratio	0.90	0.42	1.00	0.41	0.41	
Control Delay	77.5	8.3	62.7	8.4	6.2	
Queue Delay	0.0	0.0	0.0	0.0	0.3	
Total Delay	77.5	8.3	62.7	8.4	6.5	
LOS	E	А	E	А	А	
Approach Delay	50.8			23.1	6.5	
Approach LOS	D			С	А	
Intersection Summary						
/						
Cycle Length: 130	' E					
Actuated Cycle Length: 127	.5					
Natural Cycle: 130	oordinated					
Control Type: Actuated-Unc	coruinated					
Maximum v/c Ratio: 1.00	20			١.	ntersectior	108:0
Intersection Signal Delay: 2						of Service D
Intersection Capacity Utiliza	101175.5%				C Level (
Analysis Period (min) 15						
Splits and Phases: 130: F	Foley Blvd a	& 99th Δ.v	e			
		x JULIAV	C			

↑ _{Ø2}	
96 s	34 s
★ Ø5 ↓ Ø6	
10 s 86 s	

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110: Foley Blvd & TH 10 N Ramp/101st Ave

Direction	All
Future Volume (vph)	3828
Total Delay / Veh (s/v)	67
CO Emissions (kg)	7.76
NOx Emissions (kg)	1.51
VOC Emissions (kg)	1.80

120: Foley Blvd & TH 10 S Ramp

Direction	All
Future Volume (vph)	2708
Total Delay / Veh (s/v)	17
CO Emissions (kg)	2.79
NOx Emissions (kg)	0.54
VOC Emissions (kg)	0.65

130: Foley Blvd & 99th Ave

Direction	All
Future Volume (vph)	2647
Total Delay / Veh (s/v)	23
CO Emissions (kg)	2.32
NOx Emissions (kg)	0.45
VOC Emissions (kg)	0.54

East River Road TH 610 Ramp Addition

Foley and TH 1	.0 N Ramps	
Existing Volume	3973	vehicles
Existing Delay	67	sec/veh
Existing Total Delay	266191	seconds
Future Volume	3828	vehicles
Future Delay	67	sec/veh
Future Total Delay	256476	seconds
Total Delay Reduction	9715	seconds
	Existing Volume Existing Delay Existing Total Delay Future Volume Future Delay Future Total Delay	Existing Delay67Existing Total Delay266191Future Volume3828Future Delay67Future Total Delay256476

2	Foley and TH	10 S Ramps	
	Existing Volume	2996	vehicles
	Existing Delay	16	sec/veh
	Existing Total Delay	47936	seconds
	Future Volume	2708	vehicles
	Future Delay	17	sec/veh
	Future Total Delay	46036	seconds
	Total Delay Reduction	1900	seconds

4	East River Rd and Nor	rth TH 610 F	Ramps
	Existing Volume	2816	vehicles
	Existing Delay	15	sec/veh
	Existing Total Delay	42240	seconds
	Future Volume	3067	vehicles
	Future Delay	25	sec/veh
	Future Total Delay	76675	seconds
	Total Delay Reduction	-34435	seconds

5	East River Road and Se	outh TH 610) Ramps
	Existing Volume	2730	vehicles
	Existing Delay	20	sec/veh
	Existing Total Delay	54600	seconds
	Future Volume	2909	vehicles
	Future Delay	19	sec/veh
	Future Total Delay	55271	seconds
	Total Delay Reduction	-671	seconds

3	Foley and	99th Ave	
	Existing Volume	2935	vehicles
	Existing Delay	35	sec/veh
	Existing Total Delay	102725	seconds
	Future Volume	2647	vehicles
	Future Delay	23	sec/veh
	Future Total Delay	60881	seconds
	Total Delay Reduction	41844	seconds

Total Network Delay Reduction

18353 seconds

Emissions						
Existing	1	2	3	4	5	Total
СО	8.01	3.03	3.13	2.71	2.89	19.77
NO	1.56	0.59	0.61	0.42	0.56	3.74
VOC	1.86	0.7	0.73	0.5	0.67	4.46
				Network Total		27.97

Build	1	2	3	4	5	Total
CO	7.76	2.79	2.32	2.98	3	18.85
NO	1.51	0.54	0.45	0.58	0.58	3.66
VOC	1.8	0.65	0.54	0.69	0.69	4.37
				Network Total		26.88

Reduction 1.09

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Lane Group	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	<u> </u>	†	1	<u>۲</u>	<u>†</u> †	1	<u>۲</u>	^	1
Traffic Volume (vph)	99	47	42	469	1531	313	29	146	140
Future Volume (vph)	99	47	42	469	1531	313	29	146	140
Turn Type	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	. 8	8		5	2		1	6	
Permitted Phases			8			2			6
Detector Phase	8	8	8	5	2	2	1	6	6
Switch Phase									
Minimum Initial (s)	7.0	7.0	7.0	7.0	12.0	12.0	7.0	12.0	12.0
Minimum Split (s)	22.5	22.5	22.5	11.5	22.5	22.5	11.5	22.5	22.5
Total Split (s)	22.5	22.5	22.5	27.0	41.0	41.0	11.5	25.5	25.5
Total Split (%)	30.0%	30.0%	30.0%	36.0%	54.7%	54.7%	15.3%	34.0%	34.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag				Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?				Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	10.1	10.1	10.1	27.0	54.1	54.1	7.5	26.8	26.8
Actuated g/C Ratio	0.13	0.13	0.13	0.36	0.72	0.72	0.10	0.36	0.36
//c Ratio	0.46	0.20	0.13	0.80	0.65	0.28	0.18	0.13	0.23
Control Delay	35.5	29.7	0.8	33.0	11.3	1.8	33.2	19.3	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.5	29.7	0.8	33.0	11.3	1.8	33.2	19.3	5.0
LOS	D	С	А	С	В	А	С	В	А
Approach Delay		26.3			14.4			14.2	
Approach LOS		С			В			В	
Intersection Summary									
Cycle Length: 75									
Actuated Cycle Length: 75									
Offset: 0 (0%), Referenced to	phase 2	NBT and	6.SBT_S	tart of Gr	een				
Natural Cycle: 80	p11000 Z.		0.001,0						
Control Type: Actuated-Coord	dinated								
Maximum v/c Ratio: 0.80									
Intersection Signal Delay: 15.	2			Ir	ntersectio	n LOS [,] B			
Intersection Capacity Utilization					CU Level		e C		
Analysis Period (min) 15									

Splits and Phases: 110: East River Road & TH 610 North Ramps/Foley Blvd

Ø1	🖡 🖉 🖉 🖉	₹ Ø8
11.5 s	41 s	22.5 s
▲ ø5	🛡 🔻 Ø6 (R)	
27 s	25.5 s	

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Lane Group	EBL	EBR	NBT	SBT	
Lane Configurations	ካካ	1	A	^	
Traffic Volume (vph)	1044	172	1269	245	
Future Volume (vph)	1044	172	1269	245	
Turn Type	Prot	Perm	NA	NA	
Protected Phases	4		2	6	
Permitted Phases		4			
Detector Phase	4	4	2	6	
Switch Phase					
Minimum Initial (s)	7.0	7.0	12.0	12.0	
Minimum Split (s)	22.5	22.5	22.5	22.5	
Total Split (s)	25.8	25.8	29.2	29.2	
Total Split (%)	46.9%	46.9%	53.1%	53.1%	
Yellow Time (s)	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.5	4.5	4.5	4.5	
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None	None	C-Max	C-Max	
Act Effct Green (s)	20.8	20.8	25.2	25.2	
Actuated g/C Ratio	0.38	0.38	0.46	0.46	
v/c Ratio	0.87	0.26	0.85	0.16	
Control Delay	25.3	3.3	20.6	9.3	
Queue Delay	0.0	0.0	0.0	0.0	
Total Delay	25.3	3.3	20.6	9.3	
LOS	С	А	С	A	
Approach Delay			20.6	9.3	
Approach LOS			С	А	
Intersection Summary					
Cycle Length: 55					
Actuated Cycle Length: 55	i				
Offset: 0 (0%), Referenced		NBT and	6:SBTL,	Start of C	Green
Natural Cycle: 60					
Control Type: Actuated-Co	ordinated				
Maximum v/c Ratio: 0.87					
Intersection Signal Delay:	20.3			I	ntersection LOS: C
Intersection Capacity Utiliz					CU Level of Service C
Analysis Period (min) 15					

Splits and Phases: 120: East River Road & TH 610 South Ramps

Ø2 (R)	A @4
29.2 s	25.8 s
▼ Ø6 (R)	
29.2 s	

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110: East River Road & TH 610 North Ramps/Foley Blvd

Direction	All	
Future Volume (vph)	2816	
Total Delay / Veh (s/v)	15	
CO Emissions (kg)	2.17	
NOx Emissions (kg)	0.42	
VOC Emissions (kg)	0.50	

120: East River Road & TH 610 South Ramps

Direction	All
Future Volume (vph)	2730
Total Delay / Veh (s/v)	20
CO Emissions (kg)	2.89
NOx Emissions (kg)	0.56
VOC Emissions (kg)	0.67

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	र्च	77	ሻ	↑	1	ሻ	- † †	1	<u>۲</u>	<u>^</u>	1
Traffic Volume (vph)	820	205	263	172	187	125	328	753	331	64	669	56
Future Volume (vph)	820	205	263	172	187	125	328	753	331	64	669	56
Turn Type	Split	NA	pm+ov	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4	5	8	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	4	4	4	8	8	8	5 2	2	2	16	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	15.0	15.0	7.0	15.0	15.0
Minimum Split (s)	13.0	13.0	12.0	34.5	34.5	34.5	12.0	39.5	39.5	12.0	20.5	20.5
Total Split (s)	50.0	50.0	32.0	34.5	34.5	34.5	32.0	49.5	49.5	16.0	33.5	33.5
Total Split (%)	33.3%	33.3%	21.3%	23.0%	23.0%	23.0%	21.3%	33.0%	33.0%	10.7%	22.3%	22.3%
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.5	2.5	2.5	2.0	1.5	1.5	2.0	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	5.0	6.5	6.5	6.5	5.0	5.5	5.5	5.0	5.5	5.5
Lead/Lag	Lead	Lead	Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize? Recall Mode	Yes	Yes	Yes	Yes None	Yes	Yes	Yes	Yes	Yes	Yes None	Yes C-Max	Yes
Act Effct Green (s)	None 44.0	None 44.0	None 77.0	21.2	None 21.2	None 21.2	None 27.0	C-Max 54.0	C-Max 54.0	10.2	34.8	C-Max 34.8
Actuated g/C Ratio	44.0 0.29	44.0 0.29	0.51	0.14	0.14	0.14	0.18	0.36	0.36	0.07	0.23	0.23
v/c Ratio	1.06	1.06	0.51	0.14	0.14	0.14	1.07	0.50	0.30	0.07	0.23	0.23
Control Delay	107.6	106.9	2.2	76.2	77.3	10.0	125.5	43.9	5.6	84.6	65.3	0.15
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	40.9	0.0	0.0	0.0	0.0
Total Delay	107.6	106.9	2.2	76.2	77.3	10.0	125.5	43.9	5.6	84.6	65.3	0.0
LOS	107.0	F	Α	70.2 E	E	10.0 A	120.0 F	40.0 D	0.0 A	64.0 F	00.0	0.0 A
Approach Delay		85.8	7.		59.5	~		53.9	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	•	62.3	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
Approach LOS		F			E			D			E	
Intersection Summary												
Cycle Length: 150												
Actuated Cycle Length: 150												
Offset: 0 (0%), Referenced	to phase 2:	NBT and	6:SBT, S	tart of 1st	t Green							
Natural Cycle: 150												
Control Type: Actuated-Coo	rdinated											
Maximum v/c Ratio: 1.07												
Intersection Signal Delay: 6					ntersectio							
Intersection Capacity Utiliza	tion 93.8%			10	CU Level	of Service	e F					
Analysis Period (min) 15												

Splits and Phases: 110: Foley Blvd & TH 10 N Ramp/101st Ave

Ø1	Ø2 (R)		4 04	₽ _{Ø8}
16 s	49.5 s		50 s	34.5 s
Ø6 (R)		\$ Ø5		
33.5 s		32 s		

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Lane Group	EBT	EBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	र्भ	1	ሻ	- † †	1	ሻ	- † †	1	
Traffic Volume (vph)	1	221	27	1138	231	120	777	207	
Future Volume (vph)	1	221	27	1138	231	120	777	207	
Turn Type	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	4		5	2		1	6		
Permitted Phases		4			2			6	
Detector Phase	4	4	5	2	2	1	6	6	
Switch Phase									
Minimum Initial (s)	7.0	7.0	7.0	15.0	15.0	7.0	15.0	15.0	
Minimum Split (s)	13.0	13.0	12.0	30.5	30.5	12.0	20.5	20.5	
Total Split (s)	17.0	17.0	12.0	31.0	31.0	12.0	31.0	31.0	
Total Split (%)	28.3%	28.3%	20.0%	51.7%	51.7%	20.0%	51.7%	51.7%	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	1.5	1.5	2.0	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	5.0	5.5	5.5	5.0	5.5	5.5	
Lead/Lag			Lag	Lead	Lead	Lag	Lead	Lead	
Lead-Lag Optimize?						-			
Recall Mode	None	None	None	C-Max	C-Max	None	C-Max	C-Max	
Act Effct Green (s)	10.9	10.9	7.0	28.0	28.0	7.0	32.8	32.8	
Actuated g/C Ratio	0.18	0.18	0.12	0.47	0.47	0.12	0.55	0.55	
v/c Ratio	0.87	0.48	0.13	0.70	0.27	0.59	0.41	0.22	
Control Delay	52.9	7.5	25.6	16.4	2.8	38.6	10.1	2.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	52.9	7.5	25.6	16.4	2.8	38.6	10.1	2.6	
LOS	D	А	С	В	А	D	В	А	
Approach Delay	32.7			14.3			11.8		
Approach LOS	С			В			В		
Intersection Summary									
Cycle Length: 60									
Actuated Cycle Length: 60									
Offset: 0 (0%), Referenced to	phase 2	NBT and	6.SBT_S	tart of 1st	t Green				
Natural Cycle: 60	p.1000 2.		0.021,0						
Control Type: Actuated-Coord	dinated								
Maximum v/c Ratio: 0.87									
Intersection Signal Delay: 16.4	4			Ir	ntersectio	n LOS [,] B			
Intersection Capacity Utilization					CU Level		э С		
						2. 2011100			

Splits and Phases: 120: Foley Blvd & TH 10 S Ramp

Ø2 (R)	Ø1	₩ Ø4
31s	12 s	17 s
Ø6 (R)	▲ ø5	
31 s	12 s	

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	٦	\mathbf{F}	1	Ť	ţ	
Lane Group	EBL	EBR	NBL	NBT	SBT	
Lane Configurations	٦	1	<u>۲</u>	<u>††</u>	∱ ⊅	
Traffic Volume (vph)	353	189	353	1043	442	
Future Volume (vph)	353	189	353	1043	442	
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	2 5	2	6	
Switch Phase						
Minimum Initial (s)	7.0	7.0	5.0	15.0	15.0	
Minimum Split (s)	32.5	32.5	10.0	20.5	34.5	
Total Split (s)	33.0	33.0	10.0	97.0	87.0	
Total Split (%)	25.4%	25.4%	7.7%	74.6%	66.9%	
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	
All-Red Time (s)	2.5	2.5	2.0	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5	5.0	5.5	5.5	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?	Nama	Mana	Yes	0.14-1	Yes	
Recall Mode	None	None	None	C-Max	C-Max	
Act Effct Green (s)	27.5	27.5	92.0	91.5	81.5	
Actuated g/C Ratio v/c Ratio	0.21 1.02	0.21 0.41	0.71 1.21	0.70	0.63	
Control Delay	102	0.41 8.2	138.1	0.45 9.0	0.49 7.5	
Queue Delay	0.0	0.2	0.0	9.0	0.5	
Total Delay	100.9	8.2	138.1	9.0	0.5 8.0	
LOS	100.9 F	0.2 A	130.1 F	9.0 A	0.0 A	
Approach Delay	г 68.6	A	F	41.7	8.0	
Approach LOS	00.0 E			41.7 D	0.0 A	
	C			U	A	
Intersection Summary						
Cycle Length: 130						
Actuated Cycle Length: 13						
Offset: 0 (0%), Referenced	to phase 2:	NBTL and	d 6:SBT,	Start of 1	st Green	
Natural Cycle: 120						
Control Type: Actuated-Co	ordinated					
Maximum v/c Ratio: 1.21						
Intersection Signal Delay:					ntersection	
Intersection Capacity Utiliz	ation 82.5%			10	CU Level	of Service E
Analysis Period (min) 15						

Splits and Phases: 130: Foley Blvd & 99th Ave

Ø2 (R)	A 04
97 s	33 s
▲ Ø5 ↓ Ø6 (R)	
10 s 87 s	

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110: Foley Blvd & TH 10 N Ramp/101st Ave

Direction	All	
Future Volume (vph)	3973	
Total Delay / Veh (s/v)	67	
CO Emissions (kg)	8.01	
NOx Emissions (kg)	1.56	
VOC Emissions (kg)	1.86	

120: Foley Blvd & TH 10 S Ramp

Direction	All
Future Volume (vph)	2996
Total Delay / Veh (s/v)	16
CO Emissions (kg)	3.03
NOx Emissions (kg)	0.59
VOC Emissions (kg)	0.70

130: Foley Blvd & 99th Ave

Direction	All
Future Volume (vph)	2935
Total Delay / Veh (s/v)	35
CO Emissions (kg)	3.13
NOx Emissions (kg)	0.61
VOC Emissions (kg)	0.73

Future Volume (vph)7236361354742469153131329217140Turn Typepm+ptNAPermProtNAPermProtNAPermProtNAPermProtected Phases74385216Permitted Phases448826Detector Phase74438852216Switch Phase744388522166Minimum Initial (s)5.05.05.07.07.07.07.012.012.07.012.012.012.012.0Minimum Split (s)9.522.522.522.522.522.511.522.5 </th <th></th> <th>٦</th> <th>-</th> <th>\mathbf{r}</th> <th>4</th> <th>+</th> <th>×</th> <th>1</th> <th>1</th> <th>۲</th> <th>1</th> <th>ŧ</th> <th>~</th>		٦	-	\mathbf{r}	4	+	×	1	1	۲	1	ŧ	~
Traffic Volume (vph) 72 36 36 135 47 42 469 1531 313 29 217 140 Future Volume (vph) 72 36 36 135 47 42 469 1531 313 29 217 140 Turn Type pm+pt NA Perm pm+pt NA Perm Prot NA Per	Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Future Volume (vph)7236361354742469153131329217140Turn Typepm+ptNAPermProtNAPermProtNAPermProtNAPermProtected Phases74385216Permitted Phases448826Detector Phase74438852216Switch Phase744388522166Minimum Initial (s)5.05.05.07.07.07.07.012.012.07.012.012.012.012.0Minimum Split (s)9.522.522.522.522.522.511.522.5 </td <td>Lane Configurations</td> <td>ľ</td> <td>•</td> <td>1</td> <td>1</td> <td>•</td> <td>1</td> <td>۲ ۲</td> <td><u></u></td> <td>1</td> <td>ľ</td> <td><u></u></td> <td>1</td>	Lane Configurations	ľ	•	1	1	•	1	۲ ۲	<u></u>	1	ľ	<u></u>	1
Turn Type pm+pt NA Perm pm+pt NA Perm Prot NA Perm	Traffic Volume (vph)	72	36	36	135		42	469			29	217	140
Protected Phases 7 4 3 8 5 2 1 6 Permitted Phases 4 4 8 8 2 6 6 Detector Phase 7 4 4 3 8 8 5 2 1 6 Switch Phase 7 4 4 3 8 8 5 2 2 1 6 6 Switch Phase 7 4 4 3 8 8 5 2 2 1 6 6 Switch Phase 7 4 4 3 8 8 5 2 2 1 6 6 Minimum Initial (s) 5.0 5.0 5.0 7.0 7.0 7.0 7.0 12.0 <t< td=""><td>Future Volume (vph)</td><td>72</td><td>36</td><td>36</td><td>135</td><td>47</td><td>42</td><td>469</td><td>1531</td><td>313</td><td>29</td><td>217</td><td>140</td></t<>	Future Volume (vph)	72	36	36	135	47	42	469	1531	313	29	217	140
Permitted Phases 4 4 8 8 2 6 Detector Phase 7 4 4 3 8 5 2 2 1 6 6 Switch Phase 7 5.0 5.0 7.0 7.0 7.0 12.0		pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Detector Phase 7 4 4 3 8 8 5 2 2 1 6 6 Switch Phase			4			8		5	2		1	6	
Switch PhaseMinimum Initial (s)5.05.07.07.07.012.012.012.012.012.0Minimum Split (s)9.522.522.522.522.511.522.522.522.5		4		4									6
Minimum Initial (s) 5.0 5.0 5.0 7.0 7.0 7.0 12.0		7	4	4	3	8	8	5	2	2	1	6	6
Minimum Split (s) 9.5 22.5 22.5 22.5 22.5 22.5 11.5 22.5 11.5 22.5 11.5 22.5													
Total Split (s) 10.3 22.5 22.5 22.5 34.7 34.7 37.2 53.5 53.5 11.5 27.8 27.8													
	Total Split (s)	10.3	22.5	22.5	22.5	34.7	34.7	37.2	53.5	53.5	11.5	27.8	27.8
													25.3%
Yellow Time (s) 3.5													
													1.0
Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.													
													4.5
Lead/Lag Lead Lag Lead Lag Lag Lead Lag Lag Lag Lead Lag Lag							•					•	
													Yes
Recall Mode None None None None None None C-Max C-Max None C-Max C-Max													
Act Effct Green (s) 12.5 7.8 7.8 23.6 15.3 15.3 38.1 69.6 69.6 7.9 34.8 34.8													
Actuated g/C Ratio 0.11 0.07 0.07 0.21 0.14 0.14 0.35 0.63 0.63 0.07 0.32 0.32													
													0.24
													3.2
													0.0
													3.2
LOS D D A D D A D C A D C A		D		A	D		A	D		A	D		A
Approach Delay 34.8 33.6 23.9 22.7													
Approach LOS C C C C	Approach LOS		С			С			С			С	
Intersection Summary	Intersection Summary												
Cycle Length: 110	Cycle Length: 110												
Actuated Cycle Length: 110	Actuated Cycle Length: 110)											
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green	Offset: 0 (0%), Referenced	to phase 2:	NBT and	6:SBT, S	tart of Gr	een							
Natural Cycle: 110													
Control Type: Actuated-Coordinated	Control Type: Actuated-Coc	ordinated											
Maximum v/c Ratio: 0.83	Maximum v/c Ratio: 0.83												
Intersection Signal Delay: 25.0 Intersection LOS: C	Intersection Signal Delay: 2	25.0			li	ntersectio	n LOS: C						
Intersection Capacity Utilization 73.6% ICU Level of Service D	Intersection Capacity Utiliza	ation 73.6%	1		l	CU Level	of Service	e D					
Analysis Period (min) 15	Analysis Period (min) 15												

Splits and Phases: 110: East River Road & TH 610 North Ramps/Foley Blvd

Ø1	Ø2 (R)		Ø3		₩ Ø4	
11.5 s	53.5 s		22.5 s		22.5 s	
▲ ø5		Ø6 (R)		₹ø8		
37.2 s		27.8 s	10.3 s	34.7 s		

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	ሻሻ	1	ሻ	A	<u>††</u>	1
Traffic Volume (vph)	1044	172	36	1268	281	108
Future Volume (vph)	1044	172	36	1268	281	108
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	2	2	6	6
Switch Phase						
Minimum Initial (s)	7.0	7.0	12.0	12.0	12.0	12.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	28.1	28.1	31.9	31.9	31.9	31.9
Total Split (%)	46.8%	46.8%	53.2%	53.2%	53.2%	53.2%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	23.0	23.0	28.0	28.0	28.0	28.0
Actuated g/C Ratio	0.38	0.38	0.47	0.47	0.47	0.47
v/c Ratio	0.86	0.26	0.08	0.83	0.18	0.15
Control Delay	25.7	3.3	9.8	20.3	9.9	2.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.7	3.3	9.8	20.3	9.9	2.8
LOS	С	A	A	С	A	A
Approach Delay				20.0	8.0	
Approach LOS				С	A	
Intersection Summary						
Cycle Length: 60						
Actuated Cycle Length: 60					_	
Offset: 0 (0%), Referenced	to phase 2:	NBTL and	d 6:SBTL	, Start of	Green	
Natural Cycle: 60						
Control Type: Actuated-Coo	ordinated					
Maximum v/c Ratio: 0.86						
Intersection Signal Delay: 1					ntersectio	
Intersection Capacity Utiliza	ation 71.9%			10	CU Level	of Service
Analysis Period (min) 15						

Splits and Phases: 120: East River Road & TH 610 South Ramps

Ø2 (R)	A @4
31.9 s	28.1s
●	
31.9 s	

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110: East River Road & TH 610 North Ramps/Foley Blvd

Direction	All	
Future Volume (vph)	3067	
Total Delay / Veh (s/v)	25	
CO Emissions (kg)	2.98	
NOx Emissions (kg)	0.58	
VOC Emissions (kg)	0.69	

120: East River Road & TH 610 South Ramps

Direction	All
Future Volume (vph)	2909
Total Delay / Veh (s/v)	19
CO Emissions (kg)	3.00
NOx Emissions (kg)	0.58
VOC Emissions (kg)	0.69

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	् स्	77	ሻ	↑	1	ሻ	- † †	1	<u>۲</u>	- ††	1
Traffic Volume (vph)	820	205	120	172	187	125	328	753	331	64	667	56
Future Volume (vph)	820	205	120	172	187	125	328	753	331	64	667	56
Turn Type	Split	NA	pm+ov	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4	5	8	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	4	4	4	8	8	8	52	2	2	16	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	15.0	15.0	7.0	15.0	15.0
Minimum Split (s)	13.0	13.0	12.0	34.5	34.5	34.5	12.0	39.5	39.5	12.0	20.5	20.5
Total Split (s)	49.0	49.0	31.0	34.5	34.5	34.5	31.0	53.5	53.5	13.0	35.5	35.5
Total Split (%)	32.7%	32.7%	20.7%	23.0%	23.0%	23.0%	20.7%	35.7%	35.7%	8.7%	23.7%	23.7%
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.5	2.5	2.5	2.0	1.5	1.5	2.0	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	5.0	6.5	6.5	6.5	5.0	5.5	5.5	5.0	5.5	5.5
Lead/Lag	Lead	Lead	Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	43.1	43.1	75.1	20.4	20.4	20.4	26.0	48.2	48.2	7.8	30.0	30.0
Actuated g/C Ratio	0.30	0.30	0.53	0.14	0.14	0.14	0.18	0.34	0.34	0.05	0.21	0.21
v/c Ratio	1.03	1.03	0.08	0.70	0.73	0.38	1.05	0.65	0.45	0.69	0.92	0.14
Control Delay	96.6	95.4	3.1	73.0	74.1	10.0	118.4	43.7	5.4	100.1	74.0	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	96.6	95.4	3.1	73.0	74.1	10.0	118.4	43.7	5.4	100.1	74.0	0.7
LOS	F	F	А	Е	Е	А	F	D	А	F	Е	A
Approach Delay		86.2			57.2			52.1			70.9	
Approach LOS		F			E			D			Е	
Intersection Summary												
Cycle Length: 150												
Actuated Cycle Length: 142	2.5											
Natural Cycle: 150												
Control Type: Actuated-Un	coordinated											
Maximum v/c Ratio: 1.05												
Intersection Signal Delay: 6	6.8			Ir	ntersectio	n LOS: E						
Intersection Capacity Utiliza					CU Level		ə F					
Analysis Period (min) 15												

Splits and Phases: 110: Foley Blvd & TH 10 N Ramp/101st Ave

Ø1	ø2		₽ Ø4	₽ _{Ø8}
13 s 53.	5 s		49 s	34.5 s
4 Ø6		\$ Ø5		
35.5 s		31 s		

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Lane Group	EBT	EBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	र्स	1	1	<u></u>	1	۲	<u></u>	1	
Traffic Volume (vph)	1	221	27	1138	87	120	633	207	
Future Volume (vph)	1	221	27	1138	87	120	633	207	
Turn Type	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	4		5	2		1	6		
Permitted Phases		4			2			6	
Detector Phase	4	4	5	2	2	1	6	6	
Switch Phase									
Minimum Initial (s)	7.0	7.0	7.0	15.0	15.0	7.0	15.0	15.0	
Minimum Split (s)	13.0	13.0	12.0	30.5	30.5	12.0	20.5	20.5	
Total Split (s)	17.0	17.0	12.0	31.0	31.0	12.0	31.0	31.0	
Total Split (%)	28.3%	28.3%	20.0%	51.7%	51.7%	20.0%	51.7%	51.7%	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	1.5	1.5	2.0	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	5.0	5.5	5.5	5.0	5.5	5.5	
Lead/Lag			Lag	Lead	Lead	Lag	Lead	Lead	
Lead-Lag Optimize?									
Recall Mode	None	None	None	Max	Max	None	Max	Max	
Act Effct Green (s)	10.7	10.7	7.1	25.8	25.8	7.1	30.4	30.4	
Actuated g/C Ratio	0.19	0.19	0.12	0.45	0.45	0.12	0.53	0.53	
v/c Ratio	0.84	0.47	0.13	0.72	0.11	0.55	0.34	0.22	
Control Delay	48.6	7.4	25.4	17.0	1.1	36.8	9.6	2.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	48.6	7.4	25.4	17.0	1.1	36.8	9.6	2.7	
LOS	D	А	С	В	А	D	А	А	
Approach Delay	30.2			16.1			11.5		
Approach LOS	С			В			В		
Intersection Summary									
Cycle Length: 60									
Actuated Cycle Length: 57.3									
Natural Cycle: 60									
Control Type: Actuated-Unco	ordinated								
Maximum v/c Ratio: 0.84									
Intersection Signal Delay: 17.	.1			Ir	ntersection	n LOS: B			
Intersection Capacity Utilization	on 67 1%			10	CU Level	of Service	с		
Analysis Period (min) 15	011 01 . 1 /0								

Splits and Phases: 120: Foley Blvd & TH 10 S Ramp

f ø2	Ø1	↓ 04
31 s	12 s	17 s
4 Ø6	▲ Ø5	
31 s	12 s	

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Lane Group	EBL	EBR	NBL	NBT	SBT	
Lane Configurations	۲	1	۲	<u></u>	A⊅	
Traffic Volume (vph)	301	189	353	950	380	
Future Volume (vph)	301	189	353	950	380	
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	25	2	6	
Switch Phase						
Minimum Initial (s)	7.0	7.0	5.0	15.0	15.0	
Minimum Split (s)	32.5	32.5	10.0	20.5	34.5	
Total Split (s)	34.0	34.0	10.0	96.0	86.0	
Total Split (%)	26.2%	26.2%	7.7%	73.8%	66.2%	
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	
All-Red Time (s)	2.5	2.5	2.0	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5	5.0	5.5	5.5	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None	None	None	Max	Max	
Act Effct Green (s)	26.0	26.0	91.0	90.5	80.5	
Actuated g/C Ratio	0.20	0.20	0.71	0.71	0.63	
v/c Ratio	0.90	0.42	1.00	0.41	0.41	
Control Delay	77.5	8.3	62.7	8.4	6.2	
Queue Delay	0.0	0.0	0.0	0.0	0.3	
Total Delay	77.5	8.3	62.7	8.4	6.5	
LOS	Е	А	E	А	А	
Approach Delay	50.8			23.1	6.5	
Approach LOS	D			С	А	
Intersection Summary						
Cycle Length: 130	E					
Actuated Cycle Length: 127	.5					
Natural Cycle: 130	oordinated					
Control Type: Actuated-Unc	oordinated					
Maximum v/c Ratio: 1.00	2.0			١.	ntersectior	
Intersection Signal Delay: 22						of Service D
Intersection Capacity Utiliza	101175.5%				SO Level (JI Service D
Analysis Period (min) 15						
Splits and Phases: 130: F	oley Blvd &	& 99th Δ.v	e			
		x JULIAV	C			

↑ _{Ø2}	
96 s	34 s
★ Ø5 ↓ Ø6	
10 s 86 s	

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110: Foley Blvd & TH 10 N Ramp/101st Ave

Direction	All
Future Volume (vph)	3828
Total Delay / Veh (s/v)	67
CO Emissions (kg)	7.76
NOx Emissions (kg)	1.51
VOC Emissions (kg)	1.80

120: Foley Blvd & TH 10 S Ramp

Direction	All
Future Volume (vph)	2708
Total Delay / Veh (s/v)	17
CO Emissions (kg)	2.79
NOx Emissions (kg)	0.54
VOC Emissions (kg)	0.65

130: Foley Blvd & 99th Ave

Direction	All
Future Volume (vph)	2647
Total Delay / Veh (s/v)	23
CO Emissions (kg)	2.32
NOx Emissions (kg)	0.45
VOC Emissions (kg)	0.54

East River Road TH 610 Ramp Addition

Foley and TH 1	.0 N Ramps	
Existing Volume	3973	vehicles
Existing Delay	67	sec/veh
Existing Total Delay	266191	seconds
Future Volume	3828	vehicles
Future Delay	67	sec/veh
Future Total Delay	256476	seconds
Total Delay Reduction	9715	seconds
	Existing Volume Existing Delay Existing Total Delay Future Volume Future Delay Future Total Delay	Existing Delay67Existing Total Delay266191Future Volume3828Future Delay67Future Total Delay256476

2	Foley and TH	10 S Ramps	
	Existing Volume	2996	vehicles
	Existing Delay	16	sec/veh
	Existing Total Delay	47936	seconds
	Future Volume	2708	vehicles
	Future Delay	17	sec/veh
	Future Total Delay	46036	seconds
	Total Delay Reduction	1900	seconds

4	East River Rd and Nor	rth TH 610 F	Ramps
	Existing Volume	2816	vehicles
	Existing Delay	15	sec/veh
	Existing Total Delay	42240	seconds
	Future Volume	3067	vehicles
	Future Delay	25	sec/veh
	Future Total Delay	76675	seconds
	Total Delay Reduction	-34435	seconds

5	East River Road and Se	outh TH 610) Ramps
	Existing Volume	2730	vehicles
	Existing Delay	20	sec/veh
	Existing Total Delay	54600	seconds
	Future Volume	2909	vehicles
	Future Delay	19	sec/veh
	Future Total Delay	55271	seconds
	Total Delay Reduction	-671	seconds

3	Foley and	99th Ave	
	Existing Volume	2935	vehicles
	Existing Delay	35	sec/veh
	Existing Total Delay	102725	seconds
	Future Volume	2647	vehicles
	Future Delay	23	sec/veh
	Future Total Delay	60881	seconds
	Total Delay Reduction	41844	seconds

Total Network Delay Reduction

18353 seconds

Emissions						
Existing	1	2	3	4	5	Total
СО	8.01	3.03	3.13	2.71	2.89	19.77
NO	1.56	0.59	0.61	0.42	0.56	3.74
VOC	1.86	0.7	0.73	0.5	0.67	4.46
				Network Total		27.97

Build	1	2	3	4	5	Total
CO	7.76	2.79	2.32	2.98	3	18.85
NO	1.51	0.54	0.45	0.58	0.58	3.66
VOC	1.8	0.65	0.54	0.69	0.69	4.37
				Network Total		26.88

Reduction 1.09

	-	-	•	1	1	1	1	Ŧ	-
Lane Group	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	<u> </u>	†	1	<u>۲</u>	<u>†</u> †	1	<u>۲</u>	^	1
Traffic Volume (vph)	99	47	42	469	1531	313	29	146	140
Future Volume (vph)	99	47	42	469	1531	313	29	146	140
Turn Type	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	. 8	8		5	2		1	6	
Permitted Phases			8			2			6
Detector Phase	8	8	8	5	2	2	1	6	6
Switch Phase									
Minimum Initial (s)	7.0	7.0	7.0	7.0	12.0	12.0	7.0	12.0	12.0
Minimum Split (s)	22.5	22.5	22.5	11.5	22.5	22.5	11.5	22.5	22.5
Total Split (s)	22.5	22.5	22.5	27.0	41.0	41.0	11.5	25.5	25.5
Total Split (%)	30.0%	30.0%	30.0%	36.0%	54.7%	54.7%	15.3%	34.0%	34.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag				Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?				Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	10.1	10.1	10.1	27.0	54.1	54.1	7.5	26.8	26.8
Actuated g/C Ratio	0.13	0.13	0.13	0.36	0.72	0.72	0.10	0.36	0.36
//c Ratio	0.46	0.20	0.13	0.80	0.65	0.28	0.18	0.13	0.23
Control Delay	35.5	29.7	0.8	33.0	11.3	1.8	33.2	19.3	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.5	29.7	0.8	33.0	11.3	1.8	33.2	19.3	5.0
LOS	D	С	А	С	В	А	С	В	А
Approach Delay		26.3			14.4			14.2	
Approach LOS		С			В			В	
Intersection Summary									
Cycle Length: 75									
Actuated Cycle Length: 75									
Offset: 0 (0%), Referenced to	phase 2	NBT and	6.SBT_S	tart of Gr	een				
Natural Cycle: 80	p11000 Z.		0.001,0						
Control Type: Actuated-Coord	dinated								
Maximum v/c Ratio: 0.80									
Intersection Signal Delay: 15.	2			Ir	ntersectio	n LOS [,] B			
Intersection Capacity Utilization					CU Level		e C		
Analysis Period (min) 15									

Splits and Phases: 110: East River Road & TH 610 North Ramps/Foley Blvd

Ø1	🖡 🖉 🖉 🖉	₹ Ø8
11.5 s	41 s	22.5 s
▲ ø5	🛡 🔻 Ø6 (R)	
27 s	25.5 s	

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Lane Group	EBL	EBR	NBT	SBT	
Lane Configurations	ካካ	1	A	^	
Traffic Volume (vph)	1044	172	1269	245	
Future Volume (vph)	1044	172	1269	245	
Turn Type	Prot	Perm	NA	NA	
Protected Phases	4		2	6	
Permitted Phases		4			
Detector Phase	4	4	2	6	
Switch Phase					
Minimum Initial (s)	7.0	7.0	12.0	12.0	
Minimum Split (s)	22.5	22.5	22.5	22.5	
Total Split (s)	25.8	25.8	29.2	29.2	
Total Split (%)	46.9%	46.9%	53.1%	53.1%	
Yellow Time (s)	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.5	4.5	4.5	4.5	
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None	None	C-Max	C-Max	
Act Effct Green (s)	20.8	20.8	25.2	25.2	
Actuated g/C Ratio	0.38	0.38	0.46	0.46	
v/c Ratio	0.87	0.26	0.85	0.16	
Control Delay	25.3	3.3	20.6	9.3	
Queue Delay	0.0	0.0	0.0	0.0	
Total Delay	25.3	3.3	20.6	9.3	
LOS	С	А	С	A	
Approach Delay			20.6	9.3	
Approach LOS			С	А	
Intersection Summary					
Cycle Length: 55					
Actuated Cycle Length: 55	i				
Offset: 0 (0%), Referenced		NBT and	6:SBTL,	Start of C	Green
Natural Cycle: 60					
Control Type: Actuated-Co	ordinated				
Maximum v/c Ratio: 0.87					
Intersection Signal Delay:	20.3			I	ntersection LOS: C
Intersection Capacity Utiliz					CU Level of Service C
Analysis Period (min) 15					

Splits and Phases: 120: East River Road & TH 610 South Ramps

Ø2 (R)	A @4
29.2 s	25.8 s
▼ Ø6 (R)	
29.2 s	

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110: East River Road & TH 610 North Ramps/Foley Blvd

Direction	All	
Future Volume (vph)	2816	
Total Delay / Veh (s/v)	15	
CO Emissions (kg)	2.17	
NOx Emissions (kg)	0.42	
VOC Emissions (kg)	0.50	

120: East River Road & TH 610 South Ramps

Direction	All
Future Volume (vph)	2730
Total Delay / Veh (s/v)	20
CO Emissions (kg)	2.89
NOx Emissions (kg)	0.56
VOC Emissions (kg)	0.67

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	र्च	77	ሻ	↑	1	ሻ	- † †	1	<u>۲</u>	- † †	1
Traffic Volume (vph)	820	205	263	172	187	125	328	753	331	64	669	56
Future Volume (vph)	820	205	263	172	187	125	328	753	331	64	669	56
Turn Type	Split	NA	pm+ov	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4	5	8	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	4	4	4	8	8	8	5 2	2	2	16	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	15.0	15.0	7.0	15.0	15.0
Minimum Split (s)	13.0	13.0	12.0	34.5	34.5	34.5	12.0	39.5	39.5	12.0	20.5	20.5
Total Split (s)	50.0	50.0	32.0	34.5	34.5	34.5	32.0	49.5	49.5	16.0	33.5	33.5
Total Split (%)	33.3%	33.3%	21.3%	23.0%	23.0%	23.0%	21.3%	33.0%	33.0%	10.7%	22.3%	22.3%
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.5	2.5	2.5	2.0	1.5	1.5	2.0	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	5.0	6.5	6.5	6.5	5.0	5.5	5.5	5.0	5.5	5.5
Lead/Lag	Lead	Lead	Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize? Recall Mode	Yes	Yes	Yes	Yes None	Yes	Yes	Yes	Yes	Yes	Yes None	Yes C-Max	Yes
Act Effct Green (s)	None 44.0	None 44.0	None 77.0	21.2	None 21.2	None 21.2	None 27.0	C-Max 54.0	C-Max 54.0	10.2	34.8	C-Max 34.8
Actuated g/C Ratio	44.0 0.29	44.0 0.29	0.51	0.14	0.14	0.14	0.18	0.36	0.36	0.07	0.23	0.23
v/c Ratio	1.06	1.06	0.51	0.14	0.14	0.14	1.07	0.50	0.30	0.07	0.23	0.23
Control Delay	107.6	106.9	2.2	76.2	77.3	10.0	125.5	43.9	5.6	84.6	65.3	0.15
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	43.9	0.0	0.0	0.0	0.0
Total Delay	107.6	106.9	2.2	76.2	77.3	10.0	125.5	43.9	5.6	84.6	65.3	0.0
LOS	107.0	F	Α	70.2 E	E	10.0 A	120.0 F	40.0 D	0.0 A	64.0 F	00.0	0.0 A
Approach Delay		85.8	7.		59.5	~		53.9	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	•	62.3	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
Approach LOS		F			E			D			E	
Intersection Summary												
Cycle Length: 150												
Actuated Cycle Length: 150												
Offset: 0 (0%), Referenced	to phase 2:	NBT and	6:SBT, S	tart of 1st	t Green							
Natural Cycle: 150												
Control Type: Actuated-Coo	rdinated											
Maximum v/c Ratio: 1.07												
Intersection Signal Delay: 6					ntersectio							
Intersection Capacity Utiliza	tion 93.8%			10	CU Level	of Service	e F					
Analysis Period (min) 15												

Splits and Phases: 110: Foley Blvd & TH 10 N Ramp/101st Ave

Ø1	Ø2 (R)		4 04	₽ _{Ø8}
16 s	49.5 s		50 s	34.5 s
Ø6 (R)		\$ Ø5		
33.5 s		32 s		

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Lane Group	EBT	EBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	र्भ	1	ሻ	- † †	1	ሻ	- † †	1	
Traffic Volume (vph)	1	221	27	1138	231	120	777	207	
Future Volume (vph)	1	221	27	1138	231	120	777	207	
Turn Type	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	4		5	2		1	6		
Permitted Phases		4			2			6	
Detector Phase	4	4	5	2	2	1	6	6	
Switch Phase									
Minimum Initial (s)	7.0	7.0	7.0	15.0	15.0	7.0	15.0	15.0	
Minimum Split (s)	13.0	13.0	12.0	30.5	30.5	12.0	20.5	20.5	
Total Split (s)	17.0	17.0	12.0	31.0	31.0	12.0	31.0	31.0	
Total Split (%)	28.3%	28.3%	20.0%	51.7%	51.7%	20.0%	51.7%	51.7%	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	1.5	1.5	2.0	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	5.0	5.5	5.5	5.0	5.5	5.5	
Lead/Lag			Lag	Lead	Lead	Lag	Lead	Lead	
Lead-Lag Optimize?						-			
Recall Mode	None	None	None	C-Max	C-Max	None	C-Max	C-Max	
Act Effct Green (s)	10.9	10.9	7.0	28.0	28.0	7.0	32.8	32.8	
Actuated g/C Ratio	0.18	0.18	0.12	0.47	0.47	0.12	0.55	0.55	
v/c Ratio	0.87	0.48	0.13	0.70	0.27	0.59	0.41	0.22	
Control Delay	52.9	7.5	25.6	16.4	2.8	38.6	10.1	2.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	52.9	7.5	25.6	16.4	2.8	38.6	10.1	2.6	
LOS	D	А	С	В	А	D	В	А	
Approach Delay	32.7			14.3			11.8		
Approach LOS	С			В			В		
Intersection Summary									
Cycle Length: 60									
Actuated Cycle Length: 60									
Offset: 0 (0%), Referenced to	phase 2	NBT and	6.SBT_S	tart of 1st	t Green				
Natural Cycle: 60	p.1000 2.		0.021,0						
Control Type: Actuated-Coord	dinated								
Maximum v/c Ratio: 0.87									
Intersection Signal Delay: 16.4	4			Ir	ntersectio	n LOS [,] B			
Intersection Capacity Utilization							э С		
ntersection Capacity Utilization 67.1% ICU Level of Service C Analysis Period (min) 15									

Splits and Phases: 120: Foley Blvd & TH 10 S Ramp

Ø2 (R)	Ø1	₩ Ø4
31s	12 s	17 s
Ø6 (R)	▲ ø5	
31 s	12 s	

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Lane Group	EBL	EBR	NBL	NBT	SBT	
Lane Configurations	٦	1	<u>۲</u>	<u>††</u>	∱ ⊅	
Traffic Volume (vph)	353	189	353	1043	442	
Future Volume (vph)	353	189	353	1043	442	
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	2 5	2	6	
Switch Phase						
Minimum Initial (s)	7.0	7.0	5.0	15.0	15.0	
Minimum Split (s)	32.5	32.5	10.0	20.5	34.5	
Total Split (s)	33.0	33.0	10.0	97.0	87.0	
Total Split (%)	25.4%	25.4%	7.7%	74.6%	66.9%	
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	
All-Red Time (s)	2.5	2.5	2.0	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5	5.0	5.5	5.5	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?	Nama	Mana	Yes	0.14-1	Yes	
Recall Mode	None	None	None	C-Max	C-Max	
Act Effct Green (s)	27.5	27.5	92.0	91.5	81.5	
Actuated g/C Ratio v/c Ratio	0.21 1.02	0.21 0.41	0.71 1.21	0.70	0.63	
Control Delay	102	0.41 8.2	138.1	0.45 9.0	0.49 7.5	
Queue Delay	0.0	0.2	0.0	9.0	0.5	
Total Delay	100.9	8.2	138.1	9.0	0.5 8.0	
LOS	100.9 F	0.2 A	130.1 F	9.0 A	0.0 A	
Approach Delay	г 68.6	A	F	41.7	8.0	
Approach LOS	00.0 E			41.7 D	0.0 A	
	C			U	A	
Intersection Summary						
Cycle Length: 130						
Actuated Cycle Length: 13						
Offset: 0 (0%), Referenced	to phase 2:	NBTL and	d 6:SBT,	Start of 1	st Green	
Natural Cycle: 120						
Control Type: Actuated-Co	ordinated					
Maximum v/c Ratio: 1.21						
Intersection Signal Delay:					ntersection	
Intersection Capacity Utiliz	ation 82.5%			10	CU Level	of Service E
Analysis Period (min) 15						

Splits and Phases: 130: Foley Blvd & 99th Ave

Ø2 (R)	A 04
97 s	33 s
▲ Ø5 ↓ Ø6 (R)	
10 s 87 s	

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110: Foley Blvd & TH 10 N Ramp/101st Ave

Direction	All	
Future Volume (vph)	3973	
Total Delay / Veh (s/v)	67	
CO Emissions (kg)	8.01	
NOx Emissions (kg)	1.56	
VOC Emissions (kg)	1.86	

120: Foley Blvd & TH 10 S Ramp

Direction	All
Future Volume (vph)	2996
Total Delay / Veh (s/v)	16
CO Emissions (kg)	3.03
NOx Emissions (kg)	0.59
VOC Emissions (kg)	0.70

130: Foley Blvd & 99th Ave

Direction	All
Future Volume (vph)	2935
Total Delay / Veh (s/v)	35
CO Emissions (kg)	3.13
NOx Emissions (kg)	0.61
VOC Emissions (kg)	0.73

Future Volume (vph)7236361354742469153131329217140Turn Typepm+ptNAPermProtNAPermProtNAPermProtNAPermProtected Phases74385216Permitted Phases448826Detector Phase74438852216Switch Phase744388522166Minimum Initial (s)5.05.05.07.07.07.07.012.012.07.012.012.012.012.0Minimum Split (s)9.522.522.522.522.522.511.522.5 </th <th></th> <th>٦</th> <th>-</th> <th>\mathbf{r}</th> <th>4</th> <th>+</th> <th>×</th> <th>1</th> <th>1</th> <th>۲</th> <th>1</th> <th>ŧ</th> <th>~</th>		٦	-	\mathbf{r}	4	+	×	1	1	۲	1	ŧ	~
Traffic Volume (vph) 72 36 36 135 47 42 469 1531 313 29 217 140 Future Volume (vph) 72 36 36 135 47 42 469 1531 313 29 217 140 Turn Type pm+pt NA Perm pm+pt NA Perm Prot NA Per	Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Future Volume (vph)7236361354742469153131329217140Turn Typepm+ptNAPermProtNAPermProtNAPermProtNAPermProtected Phases74385216Permitted Phases448826Detector Phase74438852216Switch Phase744388522166Minimum Initial (s)5.05.05.07.07.07.07.012.012.07.012.012.012.012.0Minimum Split (s)9.522.522.522.522.522.511.522.5 </td <td>Lane Configurations</td> <td>1</td> <td>•</td> <td>1</td> <td>1</td> <td>•</td> <td>1</td> <td>۲ ۲</td> <td><u></u></td> <td>1</td> <td>ľ</td> <td><u></u></td> <td>1</td>	Lane Configurations	1	•	1	1	•	1	۲ ۲	<u></u>	1	ľ	<u></u>	1
Turn Type pm+pt NA Perm pm+pt NA Perm Prot NA Perm	Traffic Volume (vph)	72	36	36	135		42	469			29	217	140
Protected Phases 7 4 3 8 5 2 1 6 Permitted Phases 4 4 8 8 2 6 6 Detector Phase 7 4 4 3 8 8 5 2 1 6 Switch Phase 7 4 4 3 8 8 5 2 2 1 6 6 Switch Phase 7 4 4 3 8 8 5 2 2 1 6 6 Switch Phase 7 4 4 3 8 8 5 2 2 1 6 6 Minimum Initial (s) 5.0 5.0 5.0 7.0 7.0 7.0 7.0 12.0 <t< td=""><td>Future Volume (vph)</td><td>72</td><td>36</td><td>36</td><td>135</td><td>47</td><td>42</td><td>469</td><td>1531</td><td>313</td><td>29</td><td>217</td><td>140</td></t<>	Future Volume (vph)	72	36	36	135	47	42	469	1531	313	29	217	140
Permitted Phases 4 4 8 8 2 6 Detector Phase 7 4 4 3 8 5 2 2 1 6 6 Switch Phase 7 5.0 5.0 7.0 7.0 7.0 12.0		pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Detector Phase 7 4 4 3 8 8 5 2 2 1 6 6 Switch Phase			4			8		5	2		1	6	
Switch PhaseMinimum Initial (s)5.05.07.07.07.012.012.012.012.012.0Minimum Split (s)9.522.522.522.522.511.522.522.522.5		4		4									6
Minimum Initial (s) 5.0 5.0 5.0 7.0 7.0 7.0 12.0		7	4	4	3	8	8	5	2	2	1	6	6
Minimum Split (s) 9.5 22.5 22.5 22.5 22.5 22.5 11.5 22.5 11.5 22.5 11.5 22.5													
Total Split (s) 10.3 22.5 22.5 22.5 34.7 34.7 37.2 53.5 53.5 11.5 27.8 27.8													
	Total Split (s)	10.3	22.5	22.5	22.5	34.7	34.7	37.2	53.5	53.5	11.5	27.8	27.8
													25.3%
Yellow Time (s) 3.5													
													1.0
Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.													
													4.5
Lead/Lag Lead Lag Lead Lag Lag Lead Lag Lag Lag Lead Lag Lag							•					•	
													Yes
Recall Mode None None None None None None C-Max C-Max None C-Max C-Max													
Act Effct Green (s) 12.5 7.8 7.8 23.6 15.3 15.3 38.1 69.6 69.6 7.9 34.8 34.8													
Actuated g/C Ratio 0.11 0.07 0.07 0.21 0.14 0.14 0.35 0.63 0.63 0.07 0.32 0.32													
													0.24
													3.2
													0.0
													3.2
LOS D D A D D A D C A D C A		D		A	D		A	D		A	D		A
Approach Delay 34.8 33.6 23.9 22.7													
Approach LOS C C C C	Approach LOS		С			С			С			С	
Intersection Summary	Intersection Summary												
Cycle Length: 110	Cycle Length: 110												
Actuated Cycle Length: 110	Actuated Cycle Length: 110)											
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green	Offset: 0 (0%), Referenced	to phase 2:	NBT and	6:SBT, S	tart of Gr	een							
Natural Cycle: 110													
Control Type: Actuated-Coordinated	Control Type: Actuated-Coc	ordinated											
Maximum v/c Ratio: 0.83	Maximum v/c Ratio: 0.83												
Intersection Signal Delay: 25.0 Intersection LOS: C	Intersection Signal Delay: 2	25.0			li	ntersectio	n LOS: C						
Intersection Capacity Utilization 73.6% ICU Level of Service D	Intersection Capacity Utiliza	ation 73.6%	1		l	CU Level	of Service	e D					
Analysis Period (min) 15	Analysis Period (min) 15												

Splits and Phases: 110: East River Road & TH 610 North Ramps/Foley Blvd

Ø1	Ø2 (R)		Ø3		₩ Ø4	
11.5 s	53.5 s		22.5 s		22.5 s	
▲ ø5		Ø6 (R)		₹ø8		
37.2 s		27.8 s	10.3 s	34.7 s		

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	ሻሻ	1	ሻ	A	<u>††</u>	1
Traffic Volume (vph)	1044	172	36	1268	281	108
Future Volume (vph)	1044	172	36	1268	281	108
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	2	2	6	6
Switch Phase						
Minimum Initial (s)	7.0	7.0	12.0	12.0	12.0	12.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	28.1	28.1	31.9	31.9	31.9	31.9
Total Split (%)	46.8%	46.8%	53.2%	53.2%	53.2%	53.2%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	23.0	23.0	28.0	28.0	28.0	28.0
Actuated g/C Ratio	0.38	0.38	0.47	0.47	0.47	0.47
v/c Ratio	0.86	0.26	0.08	0.83	0.18	0.15
Control Delay	25.7	3.3	9.8	20.3	9.9	2.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.7	3.3	9.8	20.3	9.9	2.8
LOS	С	A	A	С	A	A
Approach Delay				20.0	8.0	
Approach LOS				С	A	
Intersection Summary						
Cycle Length: 60						
Actuated Cycle Length: 60					_	
Offset: 0 (0%), Referenced	to phase 2:	NBTL and	d 6:SBTL	, Start of	Green	
Natural Cycle: 60						
Control Type: Actuated-Coo	ordinated					
Maximum v/c Ratio: 0.86						
Intersection Signal Delay: 1					ntersectio	
Intersection Capacity Utiliza	ation 71.9%			10	CU Level	of Service
Analysis Period (min) 15						

Splits and Phases: 120: East River Road & TH 610 South Ramps

Ø2 (R)	A @4
31.9 s	28.1s
●	
31.9 s	

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110: East River Road & TH 610 North Ramps/Foley Blvd

Direction	All	
Future Volume (vph)	3067	
Total Delay / Veh (s/v)	25	
CO Emissions (kg)	2.98	
NOx Emissions (kg)	0.58	
VOC Emissions (kg)	0.69	

120: East River Road & TH 610 South Ramps

Direction	All
Future Volume (vph)	2909
Total Delay / Veh (s/v)	19
CO Emissions (kg)	3.00
NOx Emissions (kg)	0.58
VOC Emissions (kg)	0.69

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	् स्	77	ሻ	↑	1	ሻ	- † †	1	<u>۲</u>	- ††	1
Traffic Volume (vph)	820	205	120	172	187	125	328	753	331	64	667	56
Future Volume (vph)	820	205	120	172	187	125	328	753	331	64	667	56
Turn Type	Split	NA	pm+ov	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4	5	8	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	4	4	4	8	8	8	52	2	2	16	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	15.0	15.0	7.0	15.0	15.0
Minimum Split (s)	13.0	13.0	12.0	34.5	34.5	34.5	12.0	39.5	39.5	12.0	20.5	20.5
Total Split (s)	49.0	49.0	31.0	34.5	34.5	34.5	31.0	53.5	53.5	13.0	35.5	35.5
Total Split (%)	32.7%	32.7%	20.7%	23.0%	23.0%	23.0%	20.7%	35.7%	35.7%	8.7%	23.7%	23.7%
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.5	2.5	2.5	2.0	1.5	1.5	2.0	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	5.0	6.5	6.5	6.5	5.0	5.5	5.5	5.0	5.5	5.5
Lead/Lag	Lead	Lead	Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	43.1	43.1	75.1	20.4	20.4	20.4	26.0	48.2	48.2	7.8	30.0	30.0
Actuated g/C Ratio	0.30	0.30	0.53	0.14	0.14	0.14	0.18	0.34	0.34	0.05	0.21	0.21
v/c Ratio	1.03	1.03	0.08	0.70	0.73	0.38	1.05	0.65	0.45	0.69	0.92	0.14
Control Delay	96.6	95.4	3.1	73.0	74.1	10.0	118.4	43.7	5.4	100.1	74.0	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	96.6	95.4	3.1	73.0	74.1	10.0	118.4	43.7	5.4	100.1	74.0	0.7
LOS	F	F	А	Е	Е	А	F	D	А	F	Е	A
Approach Delay		86.2			57.2			52.1			70.9	
Approach LOS		F			E			D			Е	
Intersection Summary												
Cycle Length: 150												
Actuated Cycle Length: 142	2.5											
Natural Cycle: 150												
Control Type: Actuated-Un	coordinated											
Maximum v/c Ratio: 1.05												
Intersection Signal Delay: 6	6.8			Ir	ntersectio	n LOS: E						
Intersection Capacity Utiliza					CU Level		ə F					
Analysis Period (min) 15												

Splits and Phases: 110: Foley Blvd & TH 10 N Ramp/101st Ave

Ø1	ø2		₽ Ø4	₽ _{Ø8}
13 s 53.	5 s		49 s	34.5 s
4 Ø6		\$ Ø5		
35.5 s		31 s		

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Lane Group	EBT	EBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	र्स	1	1	<u></u>	1	۲	<u></u>	1	
Traffic Volume (vph)	1	221	27	1138	87	120	633	207	
Future Volume (vph)	1	221	27	1138	87	120	633	207	
Turn Type	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	4		5	2		1	6		
Permitted Phases		4			2			6	
Detector Phase	4	4	5	2	2	1	6	6	
Switch Phase									
Minimum Initial (s)	7.0	7.0	7.0	15.0	15.0	7.0	15.0	15.0	
Minimum Split (s)	13.0	13.0	12.0	30.5	30.5	12.0	20.5	20.5	
Total Split (s)	17.0	17.0	12.0	31.0	31.0	12.0	31.0	31.0	
Total Split (%)	28.3%	28.3%	20.0%	51.7%	51.7%	20.0%	51.7%	51.7%	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	1.5	1.5	2.0	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	5.0	5.5	5.5	5.0	5.5	5.5	
Lead/Lag			Lag	Lead	Lead	Lag	Lead	Lead	
Lead-Lag Optimize?									
Recall Mode	None	None	None	Max	Max	None	Max	Max	
Act Effct Green (s)	10.7	10.7	7.1	25.8	25.8	7.1	30.4	30.4	
Actuated g/C Ratio	0.19	0.19	0.12	0.45	0.45	0.12	0.53	0.53	
v/c Ratio	0.84	0.47	0.13	0.72	0.11	0.55	0.34	0.22	
Control Delay	48.6	7.4	25.4	17.0	1.1	36.8	9.6	2.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	48.6	7.4	25.4	17.0	1.1	36.8	9.6	2.7	
LOS	D	А	С	В	А	D	А	А	
Approach Delay	30.2			16.1			11.5		
Approach LOS	С			В			В		
Intersection Summary									
Cycle Length: 60									
Actuated Cycle Length: 57.3									
Natural Cycle: 60									
Control Type: Actuated-Unco	ordinated								
Maximum v/c Ratio: 0.84									
Intersection Signal Delay: 17.	.1			Ir	ntersection	n LOS: B			
Intersection Capacity Utilization	on 67 1%			10	CU Level	of Service	с		
Analysis Period (min) 15	011 01 . 1 /0								

Splits and Phases: 120: Foley Blvd & TH 10 S Ramp

f ø2	Ø1	↓ 04
31 s	12 s	17 s
4 Ø6	▲ Ø5	
31 s	12 s	

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Lane Group	EBL	EBR	NBL	NBT	SBT	
Lane Configurations	۲	1	۲	<u></u>	A⊅	
Traffic Volume (vph)	301	189	353	950	380	
Future Volume (vph)	301	189	353	950	380	
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	25	2	6	
Switch Phase						
Minimum Initial (s)	7.0	7.0	5.0	15.0	15.0	
Minimum Split (s)	32.5	32.5	10.0	20.5	34.5	
Total Split (s)	34.0	34.0	10.0	96.0	86.0	
Total Split (%)	26.2%	26.2%	7.7%	73.8%	66.2%	
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	
All-Red Time (s)	2.5	2.5	2.0	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5	5.0	5.5	5.5	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None	None	None	Max	Max	
Act Effct Green (s)	26.0	26.0	91.0	90.5	80.5	
Actuated g/C Ratio	0.20	0.20	0.71	0.71	0.63	
v/c Ratio	0.90	0.42	1.00	0.41	0.41	
Control Delay	77.5	8.3	62.7	8.4	6.2	
Queue Delay	0.0	0.0	0.0	0.0	0.3	
Total Delay	77.5	8.3	62.7	8.4	6.5	
LOS	Е	А	E	А	А	
Approach Delay	50.8			23.1	6.5	
Approach LOS	D			С	А	
Intersection Summary						
Cycle Length: 130	E					
Actuated Cycle Length: 127	.5					
Natural Cycle: 130	oordinated					
Control Type: Actuated-Unc	oordinated					
Maximum v/c Ratio: 1.00				١.	ntersectior	
Intersection Signal Delay: 22.9						
Intersection Capacity Utilization 75.3% ICU Level of Service D						
Analysis Period (min) 15						
Splits and Phases: 130: F	oley Blvd &	& 99th Δ.v	e			
		x JULI AV	C			

↑ _{Ø2}	
96 s	34 s
★ Ø5 ↓ Ø6	
10 s 86 s	

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110: Foley Blvd & TH 10 N Ramp/101st Ave

Direction	All
Future Volume (vph)	3828
Total Delay / Veh (s/v)	67
CO Emissions (kg)	7.76
NOx Emissions (kg)	1.51
VOC Emissions (kg)	1.80

120: Foley Blvd & TH 10 S Ramp

Direction	All
Future Volume (vph)	2708
Total Delay / Veh (s/v)	17
CO Emissions (kg)	2.79
NOx Emissions (kg)	0.54
VOC Emissions (kg)	0.65

130: Foley Blvd & 99th Ave

Direction	All
Future Volume (vph)	2647
Total Delay / Veh (s/v)	23
CO Emissions (kg)	2.32
NOx Emissions (kg)	0.45
VOC Emissions (kg)	0.54

East River Road TH 610 Ramp Addition

Foley and TH 10 N Ramps				
Existing Volume	3973	vehicles		
Existing Delay	67	sec/veh		
Existing Total Delay	266191	seconds		
Future Volume	3828	vehicles		
Future Delay	67	sec/veh		
Future Total Delay	256476	seconds		
Total Delay Reduction	9715	seconds		
	Existing Volume Existing Delay Existing Total Delay Future Volume Future Delay Future Total Delay	Existing Volume3973Existing Delay67Existing Total Delay266191Future Volume3828Future Delay67Future Total Delay256476		

2	Foley and TH 10 S Ramps				
	Existing Volume	2996	vehicles		
	Existing Delay	16	sec/veh		
	Existing Total Delay	47936	seconds		
	Future Volume	2708	vehicles		
	Future Delay	17	sec/veh		
	Future Total Delay	46036	seconds		
	Total Delay Reduction	1900	seconds		

4	East River Rd and North TH 610 Ramps			
	Existing Volume	2816	vehicles	
	Existing Delay	15	sec/veh	
	Existing Total Delay	42240	seconds	
	Future Volume	3067	vehicles	
	Future Delay	25	sec/veh	
	Future Total Delay	76675	seconds	
	Total Delay Reduction	-34435	seconds	

5	East River Road and South TH 610 Ramps		
	Existing Volume	2730	vehicles
	Existing Delay	20	sec/veh
	Existing Total Delay	54600	seconds
	Future Volume	2909	vehicles
	Future Delay	19	sec/veh
	Future Total Delay	55271	seconds
	Total Delay Reduction	-671	seconds

3	Foley and 99th Ave		
	Existing Volume	2935	vehicles
	Existing Delay	35	sec/veh
	Existing Total Delay	102725	seconds
	Future Volume	2647	vehicles
	Future Delay	23	sec/veh
	Future Total Delay	60881	seconds
	Total Delay Reduction	41844	seconds

Total Network Delay Reduction

18353 seconds

Emissions						
Existing	1	2	3	4	5	Total
СО	8.01	3.03	3.13	2.71	2.89	19.77
NO	1.56	0.59	0.61	0.42	0.56	3.74
VOC	1.86	0.7	0.73	0.5	0.67	4.46
				Network Total		27.97

Build	1	2	3	4	5	Total
CO	7.76	2.79	2.32	2.98	3	18.85
NO	1.51	0.54	0.45	0.58	0.58	3.66
VOC	1.8	0.65	0.54	0.69	0.69	4.37
				Network Total		26.88

Reduction 1.09

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Lane Group	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	<u> </u>	†	1	<u>۲</u>	<u>†</u> †	1	<u>۲</u>	^	1
Traffic Volume (vph)	99	47	42	469	1531	313	29	146	140
Future Volume (vph)	99	47	42	469	1531	313	29	146	140
Turn Type	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	. 8	8		5	2		1	6	
Permitted Phases			8			2			6
Detector Phase	8	8	8	5	2	2	1	6	6
Switch Phase									
Minimum Initial (s)	7.0	7.0	7.0	7.0	12.0	12.0	7.0	12.0	12.0
Minimum Split (s)	22.5	22.5	22.5	11.5	22.5	22.5	11.5	22.5	22.5
Total Split (s)	22.5	22.5	22.5	27.0	41.0	41.0	11.5	25.5	25.5
Total Split (%)	30.0%	30.0%	30.0%	36.0%	54.7%	54.7%	15.3%	34.0%	34.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag				Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?				Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	10.1	10.1	10.1	27.0	54.1	54.1	7.5	26.8	26.8
Actuated g/C Ratio	0.13	0.13	0.13	0.36	0.72	0.72	0.10	0.36	0.36
//c Ratio	0.46	0.20	0.13	0.80	0.65	0.28	0.18	0.13	0.23
Control Delay	35.5	29.7	0.8	33.0	11.3	1.8	33.2	19.3	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.5	29.7	0.8	33.0	11.3	1.8	33.2	19.3	5.0
LOS	D	С	А	С	В	А	С	В	А
Approach Delay		26.3			14.4			14.2	
Approach LOS		С			В			В	
Intersection Summary									
Cycle Length: 75									
Actuated Cycle Length: 75									
Offset: 0 (0%), Referenced to	phase 2	NBT and	6.SBT_S	tart of Gr	een				
Natural Cycle: 80	p11000 Z.		0.001,0						
Control Type: Actuated-Coord	dinated								
Maximum v/c Ratio: 0.80									
Intersection Signal Delay: 15.	2			Ir	ntersectio	n LOS [,] B			
Intersection Capacity Utilization					CU Level		e C		
Analysis Period (min) 15									

Splits and Phases: 110: East River Road & TH 610 North Ramps/Foley Blvd

Ø1	🖡 🖉 🖉 🖉	₹ Ø8
11.5 s	41 s	22.5 s
▲ ø5	🛡 🕈 Ø6 (R)	
27 s	25.5 s	

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Lane Group	EBL	EBR	NBT	SBT	
Lane Configurations	ካካ	1	A	^	
Traffic Volume (vph)	1044	172	1269	245	
Future Volume (vph)	1044	172	1269	245	
Turn Type	Prot	Perm	NA	NA	
Protected Phases	4		2	6	
Permitted Phases		4			
Detector Phase	4	4	2	6	
Switch Phase					
Minimum Initial (s)	7.0	7.0	12.0	12.0	
Minimum Split (s)	22.5	22.5	22.5	22.5	
Total Split (s)	25.8	25.8	29.2	29.2	
Total Split (%)	46.9%	46.9%	53.1%	53.1%	
Yellow Time (s)	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.5	4.5	4.5	4.5	
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None	None	C-Max	C-Max	
Act Effct Green (s)	20.8	20.8	25.2	25.2	
Actuated g/C Ratio	0.38	0.38	0.46	0.46	
v/c Ratio	0.87	0.26	0.85	0.16	
Control Delay	25.3	3.3	20.6	9.3	
Queue Delay	0.0	0.0	0.0	0.0	
Total Delay	25.3	3.3	20.6	9.3	
LOS	С	А	С	A	
Approach Delay			20.6	9.3	
Approach LOS			С	А	
Intersection Summary					
Cycle Length: 55					
Actuated Cycle Length: 55	i				
Offset: 0 (0%), Referenced		NBT and	6:SBTL,	Start of C	Green
Natural Cycle: 60					
Control Type: Actuated-Co	ordinated				
Maximum v/c Ratio: 0.87					
Intersection Signal Delay:	20.3			I	ntersection LOS: C
Intersection Capacity Utiliz					CU Level of Service C
Analysis Period (min) 15					

Splits and Phases: 120: East River Road & TH 610 South Ramps

Ø2 (R)	A @4
29.2 s	25.8 s
▼ Ø6 (R)	
29.2 s	

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110: East River Road & TH 610 North Ramps/Foley Blvd

Direction	All	
Future Volume (vph)	2816	
Total Delay / Veh (s/v)	15	
CO Emissions (kg)	2.17	
NOx Emissions (kg)	0.42	
VOC Emissions (kg)	0.50	

120: East River Road & TH 610 South Ramps

Direction	All
Future Volume (vph)	2730
Total Delay / Veh (s/v)	20
CO Emissions (kg)	2.89
NOx Emissions (kg)	0.56
VOC Emissions (kg)	0.67

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	र्च	77	ሻ	↑	1	ሻ	- † †	1	<u>۲</u>	<u>^</u>	1
Traffic Volume (vph)	820	205	263	172	187	125	328	753	331	64	669	56
Future Volume (vph)	820	205	263	172	187	125	328	753	331	64	669	56
Turn Type	Split	NA	pm+ov	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4	5	8	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	4	4	4	8	8	8	5 2	2	2	16	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	15.0	15.0	7.0	15.0	15.0
Minimum Split (s)	13.0	13.0	12.0	34.5	34.5	34.5	12.0	39.5	39.5	12.0	20.5	20.5
Total Split (s)	50.0	50.0	32.0	34.5	34.5	34.5	32.0	49.5	49.5	16.0	33.5	33.5
Total Split (%)	33.3%	33.3%	21.3%	23.0%	23.0%	23.0%	21.3%	33.0%	33.0%	10.7%	22.3%	22.3%
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.5	2.5	2.5	2.0	1.5	1.5	2.0	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	5.0	6.5	6.5	6.5	5.0	5.5	5.5	5.0	5.5	5.5
Lead/Lag	Lead	Lead	Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize? Recall Mode	Yes	Yes	Yes	Yes None	Yes	Yes	Yes	Yes	Yes	Yes None	Yes C-Max	Yes
Act Effct Green (s)	None 44.0	None 44.0	None 77.0	21.2	None 21.2	None 21.2	None 27.0	C-Max 54.0	C-Max 54.0	10.2	34.8	C-Max 34.8
Actuated g/C Ratio	44.0 0.29	44.0 0.29	0.51	0.14	0.14	0.14	0.18	0.36	0.36	0.07	0.23	0.23
v/c Ratio	1.06	1.06	0.51	0.14	0.14	0.14	1.07	0.50	0.30	0.07	0.23	0.23
Control Delay	107.6	106.9	2.2	76.2	77.3	10.0	125.5	43.9	5.6	84.6	65.3	0.15
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	40.9	0.0	0.0	0.0	0.0
Total Delay	107.6	106.9	2.2	76.2	77.3	10.0	125.5	43.9	5.6	84.6	65.3	0.0
LOS	107.0	F	Α	70.2 E	E	10.0 A	120.0 F	40.0 D	0.0 A	64.0 F	00.0	0.0 A
Approach Delay		85.8	7.		59.5	~		53.9	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	•	62.3	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
Approach LOS		F			E			D			E	
Intersection Summary												
Cycle Length: 150												
Actuated Cycle Length: 150												
Offset: 0 (0%), Referenced	to phase 2:	NBT and	6:SBT, S	tart of 1st	t Green							
Natural Cycle: 150												
Control Type: Actuated-Coo	rdinated											
Maximum v/c Ratio: 1.07												
Intersection Signal Delay: 6					ntersectio							
Intersection Capacity Utiliza	tion 93.8%			10	CU Level	of Service	e F					
Analysis Period (min) 15												

Splits and Phases: 110: Foley Blvd & TH 10 N Ramp/101st Ave

Ø1	Ø2 (R)		4 04	₽ _{Ø8}
16 s	49.5 s		50 s	34.5 s
Ø6 (R)		\$ Ø5		
33.5 s		32 s		

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Lane Group	EBT	EBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	र्भ	1	ሻ	- † †	1	ሻ	- † †	1	
Traffic Volume (vph)	1	221	27	1138	231	120	777	207	
Future Volume (vph)	1	221	27	1138	231	120	777	207	
Turn Type	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	4		5	2		1	6		
Permitted Phases		4			2			6	
Detector Phase	4	4	5	2	2	1	6	6	
Switch Phase									
Minimum Initial (s)	7.0	7.0	7.0	15.0	15.0	7.0	15.0	15.0	
Minimum Split (s)	13.0	13.0	12.0	30.5	30.5	12.0	20.5	20.5	
Total Split (s)	17.0	17.0	12.0	31.0	31.0	12.0	31.0	31.0	
Total Split (%)	28.3%	28.3%	20.0%	51.7%	51.7%	20.0%	51.7%	51.7%	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	1.5	1.5	2.0	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	5.0	5.5	5.5	5.0	5.5	5.5	
Lead/Lag			Lag	Lead	Lead	Lag	Lead	Lead	
Lead-Lag Optimize?						-			
Recall Mode	None	None	None	C-Max	C-Max	None	C-Max	C-Max	
Act Effct Green (s)	10.9	10.9	7.0	28.0	28.0	7.0	32.8	32.8	
Actuated g/C Ratio	0.18	0.18	0.12	0.47	0.47	0.12	0.55	0.55	
v/c Ratio	0.87	0.48	0.13	0.70	0.27	0.59	0.41	0.22	
Control Delay	52.9	7.5	25.6	16.4	2.8	38.6	10.1	2.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	52.9	7.5	25.6	16.4	2.8	38.6	10.1	2.6	
LOS	D	А	С	В	А	D	В	А	
Approach Delay	32.7			14.3			11.8		
Approach LOS	С			В			В		
Intersection Summary									
Cycle Length: 60									
Actuated Cycle Length: 60									
Offset: 0 (0%), Referenced to	phase 2	NBT and	6.SBT_S	tart of 1st	t Green				
Natural Cycle: 60	p.1000 2.		0.021,0						
Control Type: Actuated-Coord	dinated								
Maximum v/c Ratio: 0.87									
Intersection Signal Delay: 16.4	4			Ir	ntersectio	n LOS [,] B			
Intersection Capacity Utilization					CU Level		э С		
						2. 2011100			

Splits and Phases: 120: Foley Blvd & TH 10 S Ramp

Ø2 (R)	Ø1	₩ Ø4
31s	12 s	17 s
Ø6 (R)	▲ ø5	
31 s	12 s	

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Lane Group	EBL	EBR	NBL	NBT	SBT	
Lane Configurations	٦	1	<u>۲</u>	<u>††</u>	∱ ⊅	
Traffic Volume (vph)	353	189	353	1043	442	
Future Volume (vph)	353	189	353	1043	442	
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	2 5	2	6	
Switch Phase						
Minimum Initial (s)	7.0	7.0	5.0	15.0	15.0	
Minimum Split (s)	32.5	32.5	10.0	20.5	34.5	
Total Split (s)	33.0	33.0	10.0	97.0	87.0	
Total Split (%)	25.4%	25.4%	7.7%	74.6%	66.9%	
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	
All-Red Time (s)	2.5	2.5	2.0	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5	5.0	5.5	5.5	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?	Nama	Mana	Yes	0.14-1	Yes	
Recall Mode	None	None	None	C-Max	C-Max	
Act Effct Green (s)	27.5	27.5	92.0	91.5	81.5	
Actuated g/C Ratio v/c Ratio	0.21 1.02	0.21 0.41	0.71 1.21	0.70	0.63	
Control Delay	102	0.41 8.2	138.1	0.45 9.0	0.49 7.5	
Queue Delay	0.0	0.2	0.0	9.0	0.5	
Total Delay	100.9	8.2	138.1	9.0	0.5 8.0	
LOS	100.9 F	0.2 A	130.1 F	9.0 A	0.0 A	
Approach Delay	г 68.6	A	- F	41.7	8.0	
Approach LOS	00.0 E			41.7 D	0.0 A	
	C			U	A	
Intersection Summary						
Cycle Length: 130						
Actuated Cycle Length: 13						
Offset: 0 (0%), Referenced	to phase 2:	NBTL and	d 6:SBT,	Start of 1	st Green	
Natural Cycle: 120						
Control Type: Actuated-Co	ordinated					
Maximum v/c Ratio: 1.21						
Intersection Signal Delay:					ntersection	
Intersection Capacity Utiliz	ation 82.5%			10	CU Level	of Service E
Analysis Period (min) 15						

Splits and Phases: 130: Foley Blvd & 99th Ave

Ø2 (R)	A 04
97 s	33 s
▲ Ø5 ↓ Ø6 (R)	
10 s 87 s	

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110: Foley Blvd & TH 10 N Ramp/101st Ave

Direction	All	
Future Volume (vph)	3973	
Total Delay / Veh (s/v)	67	
CO Emissions (kg)	8.01	
NOx Emissions (kg)	1.56	
VOC Emissions (kg)	1.86	

120: Foley Blvd & TH 10 S Ramp

Direction	All
Future Volume (vph)	2996
Total Delay / Veh (s/v)	16
CO Emissions (kg)	3.03
NOx Emissions (kg)	0.59
VOC Emissions (kg)	0.70

130: Foley Blvd & 99th Ave

Direction	All
Future Volume (vph)	2935
Total Delay / Veh (s/v)	35
CO Emissions (kg)	3.13
NOx Emissions (kg)	0.61
VOC Emissions (kg)	0.73

Future Volume (vph)7236361354742469153131329217140Turn Typepm+ptNAPermProtNAPermProtNAPermProtNAPermProtected Phases74385216Permitted Phases448826Detector Phase74438852216Switch Phase744388522166Minimum Initial (s)5.05.05.07.07.07.07.012.012.07.012.012.012.012.0Minimum Split (s)9.522.522.522.522.522.511.522.5 </th <th></th> <th>٦</th> <th>-</th> <th>\mathbf{r}</th> <th>4</th> <th>+</th> <th>*</th> <th>1</th> <th>1</th> <th>۲</th> <th>1</th> <th>ŧ</th> <th>~</th>		٦	-	\mathbf{r}	4	+	*	1	1	۲	1	ŧ	~
Traffic Volume (vph) 72 36 36 135 47 42 469 1531 313 29 217 140 Future Volume (vph) 72 36 36 135 47 42 469 1531 313 29 217 140 Turn Type pm+pt NA Perm pm+pt NA Perm Prot NA Per	Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Future Volume (vph)7236361354742469153131329217140Turn Typepm+ptNAPermProtNAPermProtNAPermProtNAPermProtected Phases74385216Permitted Phases448826Detector Phase74438852216Switch Phase744388522166Minimum Initial (s)5.05.05.07.07.07.07.012.012.07.012.012.012.012.0Minimum Split (s)9.522.522.522.522.522.511.522.5 </td <td>Lane Configurations</td> <td>ľ</td> <td>•</td> <td>1</td> <td>1</td> <td>•</td> <td>1</td> <td>۲ ۲</td> <td><u></u></td> <td>1</td> <td>ľ</td> <td><u></u></td> <td>1</td>	Lane Configurations	ľ	•	1	1	•	1	۲ ۲	<u></u>	1	ľ	<u></u>	1
Turn Type pm+pt NA Perm pm+pt NA Perm Prot NA Perm	Traffic Volume (vph)	72	36	36	135		42	469			29	217	140
Protected Phases 7 4 3 8 5 2 1 6 Permitted Phases 4 4 8 8 2 6 6 Detector Phase 7 4 4 3 8 8 5 2 1 6 Switch Phase 7 4 4 3 8 8 5 2 2 1 6 6 Switch Phase 7 4 4 3 8 8 5 2 2 1 6 6 Switch Phase 7 4 4 3 8 8 5 2 2 1 6 6 Minimum Initial (s) 5.0 5.0 5.0 7.0 7.0 7.0 7.0 12.0 <t< td=""><td>Future Volume (vph)</td><td>72</td><td>36</td><td>36</td><td>135</td><td>47</td><td>42</td><td>469</td><td>1531</td><td>313</td><td>29</td><td>217</td><td>140</td></t<>	Future Volume (vph)	72	36	36	135	47	42	469	1531	313	29	217	140
Permitted Phases 4 4 8 8 2 6 Detector Phase 7 4 4 3 8 5 2 2 1 6 6 Switch Phase 7 5.0 5.0 7.0 7.0 7.0 12.0		pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Detector Phase 7 4 4 3 8 8 5 2 2 1 6 6 Switch Phase			4			8		5	2		1	6	
Switch PhaseMinimum Initial (s)5.05.07.07.07.012.012.012.012.012.0Minimum Split (s)9.522.522.522.522.511.522.522.522.5		4		4									6
Minimum Initial (s) 5.0 5.0 5.0 7.0 7.0 7.0 12.0		7	4	4	3	8	8	5	2	2	1	6	6
Minimum Split (s) 9.5 22.5 22.5 22.5 22.5 22.5 11.5 22.5 11.5 22.5 11.5 22.5													
Total Split (s) 10.3 22.5 22.5 22.5 34.7 34.7 37.2 53.5 53.5 11.5 27.8 27.8													
	Total Split (s)	10.3	22.5	22.5	22.5	34.7	34.7	37.2	53.5	53.5	11.5	27.8	27.8
													25.3%
Yellow Time (s) 3.5													
													1.0
Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.													
													4.5
Lead/Lag Lead Lag Lead Lag Lag Lead Lag Lag Lag Lead Lag Lag							•					•	
													Yes
Recall Mode None None None None None None C-Max C-Max None C-Max C-Max													
Act Effct Green (s) 12.5 7.8 7.8 23.6 15.3 15.3 38.1 69.6 69.6 7.9 34.8 34.8													
Actuated g/C Ratio 0.11 0.07 0.07 0.21 0.14 0.14 0.35 0.63 0.63 0.07 0.32 0.32													
													0.24
													3.2
													0.0
													3.2
LOS D D A D D A D C A D C A		D		A	D		A	D		A	D		A
Approach Delay 34.8 33.6 23.9 22.7													
Approach LOS C C C C	Approach LOS		С			С			С			С	
Intersection Summary	Intersection Summary												
Cycle Length: 110	Cycle Length: 110												
Actuated Cycle Length: 110	Actuated Cycle Length: 110)											
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green	Offset: 0 (0%), Referenced	to phase 2:	NBT and	6:SBT, S	tart of Gr	een							
Natural Cycle: 110													
Control Type: Actuated-Coordinated	Control Type: Actuated-Coc	ordinated											
Maximum v/c Ratio: 0.83	Maximum v/c Ratio: 0.83												
Intersection Signal Delay: 25.0 Intersection LOS: C	Intersection Signal Delay: 2	25.0			li	ntersectio	n LOS: C						
Intersection Capacity Utilization 73.6% ICU Level of Service D	Intersection Capacity Utiliza	ation 73.6%	1		l	CU Level	of Service	e D					
Analysis Period (min) 15	Analysis Period (min) 15												

Splits and Phases: 110: East River Road & TH 610 North Ramps/Foley Blvd

Ø1	Ø2 (R)		Ø3		₩ Ø4	
11.5 s	53.5 s		22.5 s		22.5 s	
▲ ø5		Ø6 (R)		₹ø8		
37.2 s		27.8 s	10.3 s	34.7 s		

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	ሻሻ	1	ሻ	A	<u>††</u>	1
Traffic Volume (vph)	1044	172	36	1268	281	108
Future Volume (vph)	1044	172	36	1268	281	108
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	2	2	6	6
Switch Phase						
Minimum Initial (s)	7.0	7.0	12.0	12.0	12.0	12.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	28.1	28.1	31.9	31.9	31.9	31.9
Total Split (%)	46.8%	46.8%	53.2%	53.2%	53.2%	53.2%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	23.0	23.0	28.0	28.0	28.0	28.0
Actuated g/C Ratio	0.38	0.38	0.47	0.47	0.47	0.47
v/c Ratio	0.86	0.26	0.08	0.83	0.18	0.15
Control Delay	25.7	3.3	9.8	20.3	9.9	2.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.7	3.3	9.8	20.3	9.9	2.8
LOS	С	A	A	С	A	A
Approach Delay				20.0	8.0	
Approach LOS				С	A	
Intersection Summary						
Cycle Length: 60						
Actuated Cycle Length: 60					_	
Offset: 0 (0%), Referenced	to phase 2:	NBTL and	d 6:SBTL	, Start of	Green	
Natural Cycle: 60						
Control Type: Actuated-Coo	ordinated					
Maximum v/c Ratio: 0.86						
Intersection Signal Delay: 1					ntersectio	
Intersection Capacity Utiliza	ation 71.9%			10	CU Level	of Service
Analysis Period (min) 15						

Splits and Phases: 120: East River Road & TH 610 South Ramps

Ø2 (R)	A @4
31.9 s	28.1s
●	
31.9 s	

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110: East River Road & TH 610 North Ramps/Foley Blvd

Direction	All	
Future Volume (vph)	3067	
Total Delay / Veh (s/v)	25	
CO Emissions (kg)	2.98	
NOx Emissions (kg)	0.58	
VOC Emissions (kg)	0.69	

120: East River Road & TH 610 South Ramps

Direction	All
Future Volume (vph)	2909
Total Delay / Veh (s/v)	19
CO Emissions (kg)	3.00
NOx Emissions (kg)	0.58
VOC Emissions (kg)	0.69

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	् स्	77	ሻ	↑	1	ሻ	- † †	1	<u>۲</u>	- ††	1
Traffic Volume (vph)	820	205	120	172	187	125	328	753	331	64	667	56
Future Volume (vph)	820	205	120	172	187	125	328	753	331	64	667	56
Turn Type	Split	NA	pm+ov	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4	5	8	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	4	4	4	8	8	8	52	2	2	16	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	15.0	15.0	7.0	15.0	15.0
Minimum Split (s)	13.0	13.0	12.0	34.5	34.5	34.5	12.0	39.5	39.5	12.0	20.5	20.5
Total Split (s)	49.0	49.0	31.0	34.5	34.5	34.5	31.0	53.5	53.5	13.0	35.5	35.5
Total Split (%)	32.7%	32.7%	20.7%	23.0%	23.0%	23.0%	20.7%	35.7%	35.7%	8.7%	23.7%	23.7%
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.5	2.5	2.5	2.0	1.5	1.5	2.0	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	5.0	6.5	6.5	6.5	5.0	5.5	5.5	5.0	5.5	5.5
Lead/Lag	Lead	Lead	Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	43.1	43.1	75.1	20.4	20.4	20.4	26.0	48.2	48.2	7.8	30.0	30.0
Actuated g/C Ratio	0.30	0.30	0.53	0.14	0.14	0.14	0.18	0.34	0.34	0.05	0.21	0.21
v/c Ratio	1.03	1.03	0.08	0.70	0.73	0.38	1.05	0.65	0.45	0.69	0.92	0.14
Control Delay	96.6	95.4	3.1	73.0	74.1	10.0	118.4	43.7	5.4	100.1	74.0	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	96.6	95.4	3.1	73.0	74.1	10.0	118.4	43.7	5.4	100.1	74.0	0.7
LOS	F	F	А	Е	Е	А	F	D	А	F	Е	A
Approach Delay		86.2			57.2			52.1			70.9	
Approach LOS		F			E			D			Е	
Intersection Summary												
Cycle Length: 150												
Actuated Cycle Length: 142	2.5											
Natural Cycle: 150												
Control Type: Actuated-Un	coordinated											
Maximum v/c Ratio: 1.05												
Intersection Signal Delay: 6	6.8			Ir	ntersectio	n LOS: E						
Intersection Capacity Utiliza					CU Level		ə F					
Analysis Period (min) 15												
Analysis Fellow (mini) 13												

Splits and Phases: 110: Foley Blvd & TH 10 N Ramp/101st Ave

Ø1	ø2		₽ Ø4	₽ _{Ø8}
13 s 53.	5 s		49 s	34.5 s
4 Ø6		\$ Ø5		
35.5 s		31 s		

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Lane Group	EBT	EBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	र्स	1	۲	<u></u>	1	۲	<u></u>	1	
Traffic Volume (vph)	1	221	27	1138	87	120	633	207	
Future Volume (vph)	1	221	27	1138	87	120	633	207	
Turn Type	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	4		5	2		1	6		
Permitted Phases		4			2			6	
Detector Phase	4	4	5	2	2	1	6	6	
Switch Phase									
Minimum Initial (s)	7.0	7.0	7.0	15.0	15.0	7.0	15.0	15.0	
Minimum Split (s)	13.0	13.0	12.0	30.5	30.5	12.0	20.5	20.5	
Total Split (s)	17.0	17.0	12.0	31.0	31.0	12.0	31.0	31.0	
Total Split (%)	28.3%	28.3%	20.0%	51.7%	51.7%	20.0%	51.7%	51.7%	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	1.5	1.5	2.0	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	5.0	5.5	5.5	5.0	5.5	5.5	
Lead/Lag			Lag	Lead	Lead	Lag	Lead	Lead	
Lead-Lag Optimize?									
Recall Mode	None	None	None	Max	Max	None	Max	Max	
Act Effct Green (s)	10.7	10.7	7.1	25.8	25.8	7.1	30.4	30.4	
Actuated g/C Ratio	0.19	0.19	0.12	0.45	0.45	0.12	0.53	0.53	
v/c Ratio	0.84	0.47	0.13	0.72	0.11	0.55	0.34	0.22	
Control Delay	48.6	7.4	25.4	17.0	1.1	36.8	9.6	2.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	48.6	7.4	25.4	17.0	1.1	36.8	9.6	2.7	
LOS	D	А	С	В	А	D	А	А	
Approach Delay	30.2			16.1			11.5		
Approach LOS	С			В			В		
Intersection Summary									
Cycle Length: 60									
Actuated Cycle Length: 57.3									
Natural Cycle: 60									
Control Type: Actuated-Unco									
Maximum v/c Ratio: 0.84									
Intersection Signal Delay: 17.	.1			Ir	ntersection	n LOS: B			
Intersection Capacity Utilization	Intersection Capacity Utilization 67.1%				CU Level	of Service	с		
Analysis Period (min) 15									

Splits and Phases: 120: Foley Blvd & TH 10 S Ramp

f ø2	Ø1	↓ 04
31 s	12 s	17 s
4 Ø6	▲ Ø5	
31 s	12 s	

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Lane Group	EBL	EBR	NBL	NBT	SBT	
Lane Configurations	۲	1	۲	<u></u>	A⊅	
Traffic Volume (vph)	301	189	353	950	380	
Future Volume (vph)	301	189	353	950	380	
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	25	2	6	
Switch Phase						
Minimum Initial (s)	7.0	7.0	5.0	15.0	15.0	
Minimum Split (s)	32.5	32.5	10.0	20.5	34.5	
Total Split (s)	34.0	34.0	10.0	96.0	86.0	
Total Split (%)	26.2%	26.2%	7.7%	73.8%	66.2%	
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	
All-Red Time (s)	2.5	2.5	2.0	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5	5.0	5.5	5.5	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None	None	None	Max	Max	
Act Effct Green (s)	26.0	26.0	91.0	90.5	80.5	
Actuated g/C Ratio	0.20	0.20	0.71	0.71	0.63	
v/c Ratio	0.90	0.42	1.00	0.41	0.41	
Control Delay	77.5	8.3	62.7	8.4	6.2	
Queue Delay	0.0	0.0	0.0	0.0	0.3	
Total Delay	77.5	8.3	62.7	8.4	6.5	
LOS	Е	А	E	А	А	
Approach Delay	50.8			23.1	6.5	
Approach LOS	D			С	А	
Intersection Summary						
Cycle Length: 130	E					
Actuated Cycle Length: 127	.5					
Natural Cycle: 130	oordinated					
Control Type: Actuated-Unc	oordinated					
Maximum v/c Ratio: 1.00	2.0			١.	ntersectior	
Intersection Signal Delay: 22						of Service D
Intersection Capacity Utiliza	101175.5%				SO Level (JI Service D
Analysis Period (min) 15						
Splits and Phases: 130: F	oley Blvd &	& 99th Δ.v	e			
		x JULI AV	C			

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96 s	34 s
★ Ø5 ↓ Ø6	
10 s 86 s	

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110: Foley Blvd & TH 10 N Ramp/101st Ave

Direction	All
Future Volume (vph)	3828
Total Delay / Veh (s/v)	67
CO Emissions (kg)	7.76
NOx Emissions (kg)	1.51
VOC Emissions (kg)	1.80

120: Foley Blvd & TH 10 S Ramp

Direction	All
Future Volume (vph)	2708
Total Delay / Veh (s/v)	17
CO Emissions (kg)	2.79
NOx Emissions (kg)	0.54
VOC Emissions (kg)	0.65

130: Foley Blvd & 99th Ave

Direction	All
Future Volume (vph)	2647
Total Delay / Veh (s/v)	23
CO Emissions (kg)	2.32
NOx Emissions (kg)	0.45
VOC Emissions (kg)	0.54

East River Road TH 610 Ramp Addition

Foley and TH 10 N Ramps						
Existing Volume	3973	vehicles				
Existing Delay	67	sec/veh				
Existing Total Delay	266191	seconds				
Future Volume	3828	vehicles				
Future Delay	67	sec/veh				
Future Total Delay	256476	seconds				
Total Delay Reduction	9715	seconds				
	Existing Volume Existing Delay Existing Total Delay Future Volume Future Delay Future Total Delay	Existing Volume3973Existing Delay67Existing Total Delay266191Future Volume3828Future Delay67Future Total Delay256476				

2	Foley and TH 10 S Ramps							
	Existing Volume	2996	vehicles					
	Existing Delay	16	sec/veh					
	Existing Total Delay	47936	seconds					
	Future Volume	2708	vehicles					
	Future Delay	17	sec/veh					
	Future Total Delay	46036	seconds					
	Total Delay Reduction	1900	seconds					

4	East River Rd and North TH 610 Ramps					
	Existing Volume	2816	vehicles			
	Existing Delay	15	sec/veh			
	Existing Total Delay	42240	seconds			
	Future Volume	3067	vehicles			
	Future Delay	25	sec/veh			
	Future Total Delay	76675	seconds			
	Total Delay Reduction	-34435	seconds			

5	East River Road and South TH 610 Ramps					
	Existing Volume	2730	vehicles			
	Existing Delay	20	sec/veh			
	Existing Total Delay	54600	seconds			
	Future Volume	2909	vehicles			
	Future Delay	19	sec/veh			
	Future Total Delay	55271	seconds			
	Total Delay Reduction	-671	seconds			

3	Foley and 99th Ave										
	Existing Volume	2935	vehicles								
	Existing Delay	35	sec/veh								
	Existing Total Delay	102725	seconds								
	Future Volume	2647	vehicles								
	Future Delay	23	sec/veh								
	Future Total Delay	60881	seconds								
	Total Delay Reduction	41844	seconds								

Total Network Delay Reduction

18353 seconds

Emissions						
Existing	1	2	3	4	5	Total
СО	8.01	3.03	3.13	2.71	2.89	19.77
NO	1.56	0.59	0.61	0.42	0.56	3.74
VOC	1.86	0.7	0.73	0.5	0.67	4.46
				Network Total		27.97

Build	1	2	3	4	5	Total
CO	7.76	2.79	2.32	2.98	3	18.85
NO	1.51	0.54	0.45	0.58	0.58	3.66
VOC	1.8	0.65	0.54	0.69	0.69	4.37
				Network Total		26.88

Reduction 1.09

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Lane Group	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	<u> </u>	†	1	<u>۲</u>	<u>†</u> †	1	<u>۲</u>	^	1
Traffic Volume (vph)	99	47	42	469	1531	313	29	146	140
Future Volume (vph)	99	47	42	469	1531	313	29	146	140
Turn Type	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	. 8	8		5	2		1	6	
Permitted Phases			8			2			6
Detector Phase	8	8	8	5	2	2	1	6	6
Switch Phase									
Minimum Initial (s)	7.0	7.0	7.0	7.0	12.0	12.0	7.0	12.0	12.0
Minimum Split (s)	22.5	22.5	22.5	11.5	22.5	22.5	11.5	22.5	22.5
Total Split (s)	22.5	22.5	22.5	27.0	41.0	41.0	11.5	25.5	25.5
Total Split (%)	30.0%	30.0%	30.0%	36.0%	54.7%	54.7%	15.3%	34.0%	34.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag				Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?				Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	10.1	10.1	10.1	27.0	54.1	54.1	7.5	26.8	26.8
Actuated g/C Ratio	0.13	0.13	0.13	0.36	0.72	0.72	0.10	0.36	0.36
//c Ratio	0.46	0.20	0.13	0.80	0.65	0.28	0.18	0.13	0.23
Control Delay	35.5	29.7	0.8	33.0	11.3	1.8	33.2	19.3	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.5	29.7	0.8	33.0	11.3	1.8	33.2	19.3	5.0
LOS	D	С	А	С	В	А	С	В	А
Approach Delay		26.3			14.4			14.2	
Approach LOS		С			В			В	
Intersection Summary									
Cycle Length: 75									
Actuated Cycle Length: 75									
Offset: 0 (0%), Referenced to	phase 2	NBT and	6.SBT_S	tart of Gr	een				
Natural Cycle: 80	p11000 Z.		0.001,0						
Control Type: Actuated-Coord	dinated								
Maximum v/c Ratio: 0.80									
Intersection Signal Delay: 15.	2			Ir	ntersectio	n LOS [,] B			
Intersection Capacity Utilization					CU Level		e C		
Analysis Period (min) 15									

Splits and Phases: 110: East River Road & TH 610 North Ramps/Foley Blvd

Ø1	∮ø2 (R) ■	₹ Ø8
11.5 s	41 s	22.5 s
▲ ø5	🛡 🔻 Ø6 (R)	
27 s	25.5 s	

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Lane Group	EBL	EBR	NBT	SBT	
Lane Configurations	ካካ	1	A	^	
Traffic Volume (vph)	1044	172	1269	245	
Future Volume (vph)	1044	172	1269	245	
Turn Type	Prot	Perm	NA	NA	
Protected Phases	4		2	6	
Permitted Phases		4			
Detector Phase	4	4	2	6	
Switch Phase					
Minimum Initial (s)	7.0	7.0	12.0	12.0	
Minimum Split (s)	22.5	22.5	22.5	22.5	
Total Split (s)	25.8	25.8	29.2	29.2	
Total Split (%)	46.9%	46.9%	53.1%	53.1%	
Yellow Time (s)	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.5	4.5	4.5	4.5	
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None	None	C-Max	C-Max	
Act Effct Green (s)	20.8	20.8	25.2	25.2	
Actuated g/C Ratio	0.38	0.38	0.46	0.46	
v/c Ratio	0.87	0.26	0.85	0.16	
Control Delay	25.3	3.3	20.6	9.3	
Queue Delay	0.0	0.0	0.0	0.0	
Total Delay	25.3	3.3	20.6	9.3	
LOS	С	А	С	A	
Approach Delay			20.6	9.3	
Approach LOS			С	А	
Intersection Summary					
Cycle Length: 55					
Actuated Cycle Length: 55	i				
Offset: 0 (0%), Referenced		NBT and	6:SBTL,	Start of C	Green
Natural Cycle: 60					
Control Type: Actuated-Co	ordinated				
Maximum v/c Ratio: 0.87					
Intersection Signal Delay:	20.3			I	ntersection LOS: C
Intersection Capacity Utiliz					CU Level of Service C
Analysis Period (min) 15					

Splits and Phases: 120: East River Road & TH 610 South Ramps

Ø2 (R)	A @4
29.2 s	25.8 s
▼ Ø6 (R)	
29.2 s	

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110: East River Road & TH 610 North Ramps/Foley Blvd

Direction	All	
Future Volume (vph)	2816	
Total Delay / Veh (s/v)	15	
CO Emissions (kg)	2.17	
NOx Emissions (kg)	0.42	
VOC Emissions (kg)	0.50	

120: East River Road & TH 610 South Ramps

Direction	All
Future Volume (vph)	2730
Total Delay / Veh (s/v)	20
CO Emissions (kg)	2.89
NOx Emissions (kg)	0.56
VOC Emissions (kg)	0.67

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	र्च	77	ሻ	↑	1	ሻ	- † †	1	<u>۲</u>	<u>^</u>	1
Traffic Volume (vph)	820	205	263	172	187	125	328	753	331	64	669	56
Future Volume (vph)	820	205	263	172	187	125	328	753	331	64	669	56
Turn Type	Split	NA	pm+ov	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4	5	8	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	4	4	4	8	8	8	5 2	2	2	16	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	15.0	15.0	7.0	15.0	15.0
Minimum Split (s)	13.0	13.0	12.0	34.5	34.5	34.5	12.0	39.5	39.5	12.0	20.5	20.5
Total Split (s)	50.0	50.0	32.0	34.5	34.5	34.5	32.0	49.5	49.5	16.0	33.5	33.5
Total Split (%)	33.3%	33.3%	21.3%	23.0%	23.0%	23.0%	21.3%	33.0%	33.0%	10.7%	22.3%	22.3%
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.5	2.5	2.5	2.0	1.5	1.5	2.0	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	5.0	6.5	6.5	6.5	5.0	5.5	5.5	5.0	5.5	5.5
Lead/Lag	Lead	Lead	Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize? Recall Mode	Yes	Yes	Yes	Yes None	Yes	Yes	Yes	Yes	Yes	Yes None	Yes C-Max	Yes
Act Effct Green (s)	None 44.0	None 44.0	None 77.0	21.2	None 21.2	None 21.2	None 27.0	C-Max 54.0	C-Max 54.0	10.2	34.8	C-Max
Actuated g/C Ratio	44.0 0.29	44.0 0.29	0.51	0.14	0.14	0.14	0.18	0.36	0.36	0.07	0.23	
v/c Ratio	1.06	1.06	0.51	0.14	0.14	0.14	1.07	0.50	0.30	0.07	0.23	0.23
Control Delay	107.6	106.9	2.2	76.2	77.3	10.0	125.5	43.9	5.6	84.6	65.3	0.15
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	43.9	0.0	0.0	0.0	0.0
Total Delay	107.6	106.9	2.2	76.2	77.3	10.0	125.5	43.9	5.6	84.6	65.3	0.0
LOS	107.0	F	Α	70.2 E	E	10.0 A	120.0 F	40.0 D	0.0 A	64.0 F	00.0	0.0 A
Approach Delay		85.8	7.		59.5	~		53.9	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	•	62.3	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
Approach LOS		F			E			D			E	
Intersection Summary												
Cycle Length: 150												
Actuated Cycle Length: 150												
Offset: 0 (0%), Referenced	to phase 2:	NBT and	6:SBT, S	tart of 1st	t Green							
Natural Cycle: 150												
Control Type: Actuated-Coo	rdinated											
Maximum v/c Ratio: 1.07												
Intersection Signal Delay: 6					ntersectio							
Intersection Capacity Utiliza	tion 93.8%			10	CU Level	of Service	e F					
Analysis Period (min) 15												

Splits and Phases: 110: Foley Blvd & TH 10 N Ramp/101st Ave

Ø1	Ø2 (R)		4 04	₽ _{Ø8}
16 s	49.5 s		50 s	34.5 s
Ø6 (R)		\$ Ø5		
33.5 s		32 s		

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Lane Group	EBT	EBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	र्भ	1	ሻ	- † †	1	ሻ	- † †	1	
Traffic Volume (vph)	1	221	27	1138	231	120	777	207	
Future Volume (vph)	1	221	27	1138	231	120	777	207	
Turn Type	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	4		5	2		1	6		
Permitted Phases		4			2			6	
Detector Phase	4	4	5	2	2	1	6	6	
Switch Phase									
Minimum Initial (s)	7.0	7.0	7.0	15.0	15.0	7.0	15.0	15.0	
Minimum Split (s)	13.0	13.0	12.0	30.5	30.5	12.0	20.5	20.5	
Total Split (s)	17.0	17.0	12.0	31.0	31.0	12.0	31.0	31.0	
Total Split (%)	28.3%	28.3%	20.0%	51.7%	51.7%	20.0%	51.7%	51.7%	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	1.5	1.5	2.0	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	5.0	5.5	5.5	5.0	5.5	5.5	
Lead/Lag			Lag	Lead	Lead	Lag	Lead	Lead	
Lead-Lag Optimize?						-			
Recall Mode	None	None	None	C-Max	C-Max	None	C-Max	C-Max	
Act Effct Green (s)	10.9	10.9	7.0	28.0	28.0	7.0	32.8	32.8	
Actuated g/C Ratio	0.18	0.18	0.12	0.47	0.47	0.12	0.55	0.55	
v/c Ratio	0.87	0.48	0.13	0.70	0.27	0.59	0.41	0.22	
Control Delay	52.9	7.5	25.6	16.4	2.8	38.6	10.1	2.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	52.9	7.5	25.6	16.4	2.8	38.6	10.1	2.6	
LOS	D	А	С	В	А	D	В	А	
Approach Delay	32.7			14.3			11.8		
Approach LOS	С			В			В		
Intersection Summary									
Cycle Length: 60									
Actuated Cycle Length: 60									
Offset: 0 (0%), Referenced to	phase 2	NBT and	6.SBT_S	tart of 1st	t Green				
Natural Cycle: 60	p.1000 2.		0.021,0						
Control Type: Actuated-Coord	dinated								
Maximum v/c Ratio: 0.87									
Intersection Signal Delay: 16.4	4			Ir	ntersectio	n LOS [,] B			
Intersection Capacity Utilization					CU Level		э С		
						2. 2011100			

Splits and Phases: 120: Foley Blvd & TH 10 S Ramp

Ø2 (R)	Ø1	₩ Ø4
31s	12 s	17 s
Ø6 (R)	▲ ø5	
31 s	12 s	

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Lane Group	EBL	EBR	NBL	NBT	SBT	
Lane Configurations	٦	1	<u>۲</u>	<u>††</u>	∱ ⊅	
Traffic Volume (vph)	353	189	353	1043	442	
Future Volume (vph)	353	189	353	1043	442	
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	2 5	2	6	
Switch Phase						
Minimum Initial (s)	7.0	7.0	5.0	15.0	15.0	
Minimum Split (s)	32.5	32.5	10.0	20.5	34.5	
Total Split (s)	33.0	33.0	10.0	97.0	87.0	
Total Split (%)	25.4%	25.4%	7.7%	74.6%	66.9%	
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	
All-Red Time (s)	2.5	2.5	2.0	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5	5.0	5.5	5.5	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?	Nama	Mana	Yes	0.14-1	Yes	
Recall Mode	None	None	None	C-Max	C-Max	
Act Effct Green (s)	27.5	27.5	92.0	91.5	81.5	
Actuated g/C Ratio v/c Ratio	0.21 1.02	0.21 0.41	0.71 1.21	0.70	0.63	
Control Delay	102	0.41 8.2	138.1	0.45 9.0	0.49 7.5	
Queue Delay	0.0	0.2	0.0	9.0	0.5	
Total Delay	100.9	8.2	138.1	9.0	0.5 8.0	
LOS	100.9 F	0.2 A	130.1 F	9.0 A	0.0 A	
Approach Delay	г 68.6	A	- F	41.7	8.0	
Approach LOS	00.0 E			41.7 D	0.0 A	
	C			U	A	
Intersection Summary						
Cycle Length: 130						
Actuated Cycle Length: 13						
Offset: 0 (0%), Referenced	to phase 2:	NBTL and	d 6:SBT,	Start of 1	st Green	
Natural Cycle: 120						
Control Type: Actuated-Co	ordinated					
Maximum v/c Ratio: 1.21						
Intersection Signal Delay:					ntersection	
Intersection Capacity Utiliz	ation 82.5%			10	CU Level	of Service E
Analysis Period (min) 15						

Splits and Phases: 130: Foley Blvd & 99th Ave

Ø2 (R)	A 04
97 s	33 s
▲ Ø5 ↓ Ø6 (R)	
10 s 87 s	

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110: Foley Blvd & TH 10 N Ramp/101st Ave

Direction	All	
Future Volume (vph)	3973	
Total Delay / Veh (s/v)	67	
CO Emissions (kg)	8.01	
NOx Emissions (kg)	1.56	
VOC Emissions (kg)	1.86	

120: Foley Blvd & TH 10 S Ramp

Direction	All
Future Volume (vph)	2996
Total Delay / Veh (s/v)	16
CO Emissions (kg)	3.03
NOx Emissions (kg)	0.59
VOC Emissions (kg)	0.70

130: Foley Blvd & 99th Ave

Direction	All
Future Volume (vph)	2935
Total Delay / Veh (s/v)	35
CO Emissions (kg)	3.13
NOx Emissions (kg)	0.61
VOC Emissions (kg)	0.73

Future Volume (vph)7236361354742469153131329217140Turn Typepm+ptNAPermProtNAPermProtNAPermProtNAPermProtected Phases74385216Permitted Phases448826Detector Phase74438852216Switch Phase744388522166Minimum Initial (s)5.05.05.07.07.07.07.012.012.07.012.012.012.012.0Minimum Split (s)9.522.522.522.522.522.511.522.5 </th <th></th> <th>٦</th> <th>-</th> <th>\mathbf{r}</th> <th>4</th> <th>+</th> <th>×</th> <th>1</th> <th>1</th> <th>۲</th> <th>1</th> <th>ŧ</th> <th>~</th>		٦	-	\mathbf{r}	4	+	×	1	1	۲	1	ŧ	~
Traffic Volume (vph) 72 36 36 135 47 42 469 1531 313 29 217 140 Future Volume (vph) 72 36 36 135 47 42 469 1531 313 29 217 140 Turn Type pm+pt NA Perm pm+pt NA Perm Prot NA Per	Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Future Volume (vph)7236361354742469153131329217140Turn Typepm+ptNAPermProtNAPermProtNAPermProtNAPermProtected Phases74385216Permitted Phases448826Detector Phase74438852216Switch Phase744388522166Minimum Initial (s)5.05.05.07.07.07.07.012.012.07.012.012.012.012.0Minimum Split (s)9.522.522.522.522.522.511.522.5 </td <td>Lane Configurations</td> <td>1</td> <td>•</td> <td>1</td> <td>1</td> <td>•</td> <td>1</td> <td>۲ ۲</td> <td><u></u></td> <td>1</td> <td>ľ</td> <td><u></u></td> <td>1</td>	Lane Configurations	1	•	1	1	•	1	۲ ۲	<u></u>	1	ľ	<u></u>	1
Turn Type pm+pt NA Perm pm+pt NA Perm Prot NA Perm	Traffic Volume (vph)	72	36	36	135		42	469			29	217	140
Protected Phases 7 4 3 8 5 2 1 6 Permitted Phases 4 4 8 8 2 6 6 Detector Phase 7 4 4 3 8 8 5 2 1 6 Switch Phase 7 4 4 3 8 8 5 2 2 1 6 6 Switch Phase 7 4 4 3 8 8 5 2 2 1 6 6 Switch Phase 7 4 4 3 8 8 5 2 2 1 6 6 Minimum Initial (s) 5.0 5.0 5.0 7.0 7.0 7.0 7.0 12.0 <t< td=""><td>Future Volume (vph)</td><td>72</td><td>36</td><td>36</td><td>135</td><td>47</td><td>42</td><td>469</td><td>1531</td><td>313</td><td>29</td><td>217</td><td>140</td></t<>	Future Volume (vph)	72	36	36	135	47	42	469	1531	313	29	217	140
Permitted Phases 4 4 8 8 2 6 Detector Phase 7 4 4 3 8 5 2 2 1 6 6 Switch Phase 7 5.0 5.0 7.0 7.0 7.0 12.0		pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Detector Phase 7 4 4 3 8 8 5 2 2 1 6 6 Switch Phase			4			8		5	2		1	6	
Switch PhaseMinimum Initial (s)5.05.07.07.07.012.012.012.012.012.0Minimum Split (s)9.522.522.522.522.511.522.522.522.5		4		4									6
Minimum Initial (s) 5.0 5.0 5.0 7.0 7.0 7.0 12.0		7	4	4	3	8	8	5	2	2	1	6	6
Minimum Split (s) 9.5 22.5 22.5 22.5 22.5 22.5 11.5 22.5 11.5 22.5 11.5 22.5													
Total Split (s) 10.3 22.5 22.5 22.5 34.7 34.7 37.2 53.5 53.5 11.5 27.8 27.8													
	Total Split (s)	10.3	22.5	22.5	22.5	34.7	34.7	37.2	53.5	53.5	11.5	27.8	27.8
													25.3%
Yellow Time (s) 3.5													
													1.0
Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.													
													4.5
Lead/Lag Lead Lag Lead Lag Lag Lead Lag Lag Lag Lead Lag Lag							•					•	
													Yes
Recall Mode None None None None None None C-Max C-Max None C-Max C-Max													
Act Effct Green (s) 12.5 7.8 7.8 23.6 15.3 15.3 38.1 69.6 69.6 7.9 34.8 34.8													
Actuated g/C Ratio 0.11 0.07 0.07 0.21 0.14 0.14 0.35 0.63 0.63 0.07 0.32 0.32													
													0.24
													3.2
													0.0
													3.2
LOS D D A D D A D C A D C A		D		A	D		A	D		A	D		A
Approach Delay 34.8 33.6 23.9 22.7													
Approach LOS C C C C	Approach LOS		С			С			С			С	
Intersection Summary	Intersection Summary												
Cycle Length: 110	Cycle Length: 110												
Actuated Cycle Length: 110	Actuated Cycle Length: 110)											
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green	Offset: 0 (0%), Referenced												
Natural Cycle: 110													
Control Type: Actuated-Coordinated	Control Type: Actuated-Coc												
Maximum v/c Ratio: 0.83	Maximum v/c Ratio: 0.83												
Intersection Signal Delay: 25.0 Intersection LOS: C	Intersection Signal Delay: 2	25.0			lı	ntersectio	n LOS: C						
Intersection Capacity Utilization 73.6% ICU Level of Service D	Intersection Capacity Utiliza	ation 73.6%	1		l	CU Level	of Service	e D					
Analysis Period (min) 15	Analysis Period (min) 15												

Splits and Phases: 110: East River Road & TH 610 North Ramps/Foley Blvd

Ø1	Ø2 (R)		Ø3		₩ Ø4	
11.5 s	53.5 s		22.5 s		22.5 s	
▲ ø5		Ø6 (R)		₹ø8		
37.2 s		27.8 s	10.3 s	34.7 s		

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	ሻሻ	1	ሻ	A	<u>††</u>	1
Traffic Volume (vph)	1044	172	36	1268	281	108
Future Volume (vph)	1044	172	36	1268	281	108
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	2	2	6	6
Switch Phase						
Minimum Initial (s)	7.0	7.0	12.0	12.0	12.0	12.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	28.1	28.1	31.9	31.9	31.9	31.9
Total Split (%)	46.8%	46.8%	53.2%	53.2%	53.2%	53.2%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	23.0	23.0	28.0	28.0	28.0	28.0
Actuated g/C Ratio	0.38	0.38	0.47	0.47	0.47	0.47
v/c Ratio	0.86	0.26	0.08	0.83	0.18	0.15
Control Delay	25.7	3.3	9.8	20.3	9.9	2.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.7	3.3	9.8	20.3	9.9	2.8
LOS	С	A	A	С	A	A
Approach Delay				20.0	8.0	
Approach LOS				С	A	
Intersection Summary						
Cycle Length: 60						
Actuated Cycle Length: 60					_	
Offset: 0 (0%), Referenced	to phase 2:	NBTL and	d 6:SBTL	, Start of	Green	
Natural Cycle: 60						
Control Type: Actuated-Coo	ordinated					
Maximum v/c Ratio: 0.86						
Intersection Signal Delay: 1					ntersectio	
Intersection Capacity Utiliza	ation 71.9%			10	CU Level	of Service
Analysis Period (min) 15						

Splits and Phases: 120: East River Road & TH 610 South Ramps

Ø2 (R)	A @4
31.9 s	28.1s
●	
31.9 s	

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110: East River Road & TH 610 North Ramps/Foley Blvd

Direction	All	
Future Volume (vph)	3067	
Total Delay / Veh (s/v)	25	
CO Emissions (kg)	2.98	
NOx Emissions (kg)	0.58	
VOC Emissions (kg)	0.69	

120: East River Road & TH 610 South Ramps

Direction	All
Future Volume (vph)	2909
Total Delay / Veh (s/v)	19
CO Emissions (kg)	3.00
NOx Emissions (kg)	0.58
VOC Emissions (kg)	0.69

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	् स्	77	ሻ	↑	1	ሻ	- † †	1	<u>۲</u>	- ††	1
Traffic Volume (vph)	820	205	120	172	187	125	328	753	331	64	667	56
Future Volume (vph)	820	205	120	172	187	125	328	753	331	64	667	56
Turn Type	Split	NA	pm+ov	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4	5	8	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	4	4	4	8	8	8	52	2	2	16	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	15.0	15.0	7.0	15.0	15.0
Minimum Split (s)	13.0	13.0	12.0	34.5	34.5	34.5	12.0	39.5	39.5	12.0	20.5	20.5
Total Split (s)	49.0	49.0	31.0	34.5	34.5	34.5	31.0	53.5	53.5	13.0	35.5	35.5
Total Split (%)	32.7%	32.7%	20.7%	23.0%	23.0%	23.0%	20.7%	35.7%	35.7%	8.7%	23.7%	23.7%
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.5	2.5	2.5	2.0	1.5	1.5	2.0	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	5.0	6.5	6.5	6.5	5.0	5.5	5.5	5.0	5.5	5.5
Lead/Lag	Lead	Lead	Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	43.1	43.1	75.1	20.4	20.4	20.4	26.0	48.2	48.2	7.8	30.0	30.0
Actuated g/C Ratio	0.30	0.30	0.53	0.14	0.14	0.14	0.18	0.34	0.34	0.05	0.21	0.21
v/c Ratio	1.03	1.03	0.08	0.70	0.73	0.38	1.05	0.65	0.45	0.69	0.92	0.14
Control Delay	96.6	95.4	3.1	73.0	74.1	10.0	118.4	43.7	5.4	100.1	74.0	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	96.6	95.4	3.1	73.0	74.1	10.0	118.4	43.7	5.4	100.1	74.0	0.7
LOS	F	F	А	Е	Е	А	F	D	А	F	Е	A
Approach Delay		86.2			57.2			52.1			70.9	
Approach LOS		F			E			D			Е	
Intersection Summary												
Cycle Length: 150												
Actuated Cycle Length: 142	2.5											
Natural Cycle: 150												
Control Type: Actuated-Un	coordinated											
Maximum v/c Ratio: 1.05												
Intersection Signal Delay: 6	6.8			Ir	ntersectio	n LOS: E						
	Intersection Capacity Utilization 93.7% ICU Level of Service F											
Analysis Period (min) 15												

Splits and Phases: 110: Foley Blvd & TH 10 N Ramp/101st Ave

Ø1	ø2		₽ Ø4	₽ _{Ø8}
13 s 53.	5 s		49 s	34.5 s
4 Ø6		\$ Ø5		
35.5 s		31 s		

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Lane Group	EBT	EBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	र्स	1	۲	<u></u>	1	۲	<u></u>	1	
Traffic Volume (vph)	1	221	27	1138	87	120	633	207	
Future Volume (vph)	1	221	27	1138	87	120	633	207	
Turn Type	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	4		5	2		1	6		
Permitted Phases		4			2			6	
Detector Phase	4	4	5	2	2	1	6	6	
Switch Phase									
Minimum Initial (s)	7.0	7.0	7.0	15.0	15.0	7.0	15.0	15.0	
Minimum Split (s)	13.0	13.0	12.0	30.5	30.5	12.0	20.5	20.5	
Total Split (s)	17.0	17.0	12.0	31.0	31.0	12.0	31.0	31.0	
Total Split (%)	28.3%	28.3%	20.0%	51.7%	51.7%	20.0%	51.7%	51.7%	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	1.5	1.5	2.0	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	5.0	5.5	5.5	5.0	5.5	5.5	
Lead/Lag			Lag	Lead	Lead	Lag	Lead	Lead	
Lead-Lag Optimize?									
Recall Mode	None	None	None	Max	Max	None	Max	Max	
Act Effct Green (s)	10.7	10.7	7.1	25.8	25.8	7.1	30.4	30.4	
Actuated g/C Ratio	0.19	0.19	0.12	0.45	0.45	0.12	0.53	0.53	
v/c Ratio	0.84	0.47	0.13	0.72	0.11	0.55	0.34	0.22	
Control Delay	48.6	7.4	25.4	17.0	1.1	36.8	9.6	2.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	48.6	7.4	25.4	17.0	1.1	36.8	9.6	2.7	
LOS	D	А	С	В	А	D	А	А	
Approach Delay	30.2			16.1			11.5		
Approach LOS	С			В			В		
Intersection Summary									
Cycle Length: 60									
Actuated Cycle Length: 57.3									
Natural Cycle: 60									
Control Type: Actuated-Unco	ordinated								
Maximum v/c Ratio: 0.84									
Intersection Signal Delay: 17.	.1			Ir	ntersection	n LOS: B			
Intersection Capacity Utilization	Intersection Capacity Utilization 67.1% ICU Level of Service C								
Analysis Period (min) 15	011 01 . 1 /0								

Splits and Phases: 120: Foley Blvd & TH 10 S Ramp

f ø2	Ø1	↓ 04
31 s	12 s	17 s
4 Ø6	▲ Ø5	
31 s	12 s	

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Lane Group	EBL	EBR	NBL	NBT	SBT	
Lane Configurations	۲	1	۲	<u></u>	A⊅	
Traffic Volume (vph)	301	189	353	950	380	
Future Volume (vph)	301	189	353	950	380	
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	25	2	6	
Switch Phase						
Minimum Initial (s)	7.0	7.0	5.0	15.0	15.0	
Minimum Split (s)	32.5	32.5	10.0	20.5	34.5	
Total Split (s)	34.0	34.0	10.0	96.0	86.0	
Total Split (%)	26.2%	26.2%	7.7%	73.8%	66.2%	
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	
All-Red Time (s)	2.5	2.5	2.0	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5	5.0	5.5	5.5	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None	None	None	Max	Max	
Act Effct Green (s)	26.0	26.0	91.0	90.5	80.5	
Actuated g/C Ratio	0.20	0.20	0.71	0.71	0.63	
v/c Ratio	0.90	0.42	1.00	0.41	0.41	
Control Delay	77.5	8.3	62.7	8.4	6.2	
Queue Delay	0.0	0.0	0.0	0.0	0.3	
Total Delay	77.5	8.3	62.7	8.4	6.5	
LOS	Е	А	E	А	А	
Approach Delay	50.8			23.1	6.5	
Approach LOS	D			С	А	
Intersection Summary						
Cycle Length: 130	E					
Actuated Cycle Length: 127	.5					
Natural Cycle: 130	oordinated					
Control Type: Actuated-Unc	oordinated					
Maximum v/c Ratio: 1.00	2.0			١.	ntersectior	
Intersection Signal Delay: 22						of Service D
Intersection Capacity Utiliza	101175.5%				SO Level (JI Service D
Analysis Period (min) 15						
Splits and Phases: 130: F	oley Blvd &	& 99th Δ.v	e			
		x JULI AV	C			

↑ _{Ø2}	
96 s	34 s
★ Ø5 ↓ Ø6	
10 s 86 s	

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110: Foley Blvd & TH 10 N Ramp/101st Ave

Direction	All
Future Volume (vph)	3828
Total Delay / Veh (s/v)	67
CO Emissions (kg)	7.76
NOx Emissions (kg)	1.51
VOC Emissions (kg)	1.80

120: Foley Blvd & TH 10 S Ramp

Direction	All
Future Volume (vph)	2708
Total Delay / Veh (s/v)	17
CO Emissions (kg)	2.79
NOx Emissions (kg)	0.54
VOC Emissions (kg)	0.65

130: Foley Blvd & 99th Ave

Direction	All
Future Volume (vph)	2647
Total Delay / Veh (s/v)	23
CO Emissions (kg)	2.32
NOx Emissions (kg)	0.45
VOC Emissions (kg)	0.54

East River Road TH 610 Ramp Addition

Foley and TH 10 N Ramps											
Existing Volume	3973	vehicles									
Existing Delay	67	sec/veh									
Existing Total Delay	266191	seconds									
Future Volume	3828	vehicles									
Future Delay	67	sec/veh									
Future Total Delay	256476	seconds									
Total Delay Reduction	9715	seconds									
	Existing Volume Existing Delay Existing Total Delay Future Volume Future Delay Future Total Delay	Existing Volume3973Existing Delay67Existing Total Delay266191Future Volume3828Future Delay67Future Total Delay256476									

2	Foley and TH 10 S Ramps								
	Existing Volume	2996	vehicles						
	Existing Delay	16	sec/veh						
	Existing Total Delay	47936	seconds						
	Future Volume	2708	vehicles						
	Future Delay	17	sec/veh						
	Future Total Delay	46036	seconds						
	Total Delay Reduction	1900	seconds						

4	East River Rd and North TH 610 Ramps							
	Existing Volume	2816	vehicles					
	Existing Delay	15	sec/veh					
	Existing Total Delay	42240	seconds					
	Future Volume	3067	vehicles					
	Future Delay	25	sec/veh					
	Future Total Delay	76675	seconds					
	Total Delay Reduction	-34435	seconds					

5	East River Road and South TH 610 Ramps							
	Existing Volume	2730	vehicles					
	Existing Delay	20	sec/veh					
	Existing Total Delay	54600	seconds					
	Future Volume	2909	vehicles					
	Future Delay	19	sec/veh					
	Future Total Delay	55271	seconds					
	Total Delay Reduction	-671	seconds					

3	Foley and 99th Ave								
	Existing Volume	2935	vehicles						
	Existing Delay	35	sec/veh						
	Existing Total Delay	102725	seconds						
	Future Volume	2647	vehicles						
	Future Delay	23	sec/veh						
	Future Total Delay	60881	seconds						
	Total Delay Reduction	41844	seconds						

Total Network Delay Reduction

18353 seconds

Emissions						
Existing	1	2	3	4	5	Total
СО	8.01	3.03	3.13	2.71	2.89	19.77
NO	1.56	0.59	0.61	0.42	0.56	3.74
VOC	1.86	0.7	0.73	0.5	0.67	4.46
				Network Total		27.97

Build	1	2	3	4	5	Total
CO	7.76	2.79	2.32	2.98	3	18.85
NO	1.51	0.54	0.45	0.58	0.58	3.66
VOC	1.8	0.65	0.54	0.69	0.69	4.37
				Network Total		26.88

Reduction 1.09

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Lane Group	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	<u> </u>	†	1	<u>۲</u>	<u>†</u> †	1	<u>۲</u>	^	1
Traffic Volume (vph)	99	47	42	469	1531	313	29	146	140
Future Volume (vph)	99	47	42	469	1531	313	29	146	140
Turn Type	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	. 8	8		5	2		1	6	
Permitted Phases			8			2			6
Detector Phase	8	8	8	5	2	2	1	6	6
Switch Phase									
Minimum Initial (s)	7.0	7.0	7.0	7.0	12.0	12.0	7.0	12.0	12.0
Minimum Split (s)	22.5	22.5	22.5	11.5	22.5	22.5	11.5	22.5	22.5
Total Split (s)	22.5	22.5	22.5	27.0	41.0	41.0	11.5	25.5	25.5
Total Split (%)	30.0%	30.0%	30.0%	36.0%	54.7%	54.7%	15.3%	34.0%	34.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag				Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?				Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	10.1	10.1	10.1	27.0	54.1	54.1	7.5	26.8	26.8
Actuated g/C Ratio	0.13	0.13	0.13	0.36	0.72	0.72	0.10	0.36	0.36
//c Ratio	0.46	0.20	0.13	0.80	0.65	0.28	0.18	0.13	0.23
Control Delay	35.5	29.7	0.8	33.0	11.3	1.8	33.2	19.3	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.5	29.7	0.8	33.0	11.3	1.8	33.2	19.3	5.0
LOS	D	С	А	С	В	А	С	В	А
Approach Delay		26.3			14.4			14.2	
Approach LOS		С			В			В	
Intersection Summary									
Cycle Length: 75									
Actuated Cycle Length: 75									
	phase 2	NBT and	6.SBT_S	tart of Gr	een				
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green Natural Cycle: 80									
Control Type: Actuated-Coord	dinated								
Maximum v/c Ratio: 0.80									
Intersection Signal Delay: 15.	2			Ir	ntersectio	n LOS [,] B			
Intersection Capacity Utilization					CU Level		e C		
Analysis Period (min) 15									

Splits and Phases: 110: East River Road & TH 610 North Ramps/Foley Blvd

Ø1	∮ø2 (R) ■	₹ Ø8
11.5 s	41 s	22.5 s
▲ ø5	🛡 🔻 Ø6 (R)	
27 s	25.5 s	

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Lane Group	EBL	EBR	NBT	SBT		
Lane Configurations	ካካ	1	A	^		
Traffic Volume (vph)	1044	172	1269	245		
Future Volume (vph)	1044	172	1269	245		
Turn Type	Prot	Perm	NA	NA		
Protected Phases	4		2	6		
Permitted Phases		4				
Detector Phase	4	4	2	6		
Switch Phase						
Minimum Initial (s)	7.0	7.0	12.0	12.0		
Minimum Split (s)	22.5	22.5	22.5	22.5		
Total Split (s)	25.8	25.8	29.2	29.2		
Total Split (%)	46.9%	46.9%	53.1%	53.1%		
Yellow Time (s)	3.5	3.5	3.5	3.5		
All-Red Time (s)	1.0	1.0	1.0	1.0		
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		
Total Lost Time (s)	4.5	4.5	4.5	4.5		
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Max	C-Max		
Act Effct Green (s)	20.8	20.8	25.2	25.2		
Actuated g/C Ratio	0.38	0.38	0.46	0.46		
v/c Ratio	0.87	0.26	0.85	0.16		
Control Delay	25.3	3.3	20.6	9.3		
Queue Delay	0.0	0.0	0.0	0.0		
Total Delay	25.3	3.3	20.6	9.3		
LOS	С	А	С	A		
Approach Delay			20.6	9.3		
Approach LOS			С	А		
Intersection Summary						
Cycle Length: 55						
Actuated Cycle Length: 55	i					
Offset: 0 (0%), Referenced		NBT and	6:SBTL,	Start of C	Green	
Natural Cycle: 60						
Control Type: Actuated-Co	ordinated					
Maximum v/c Ratio: 0.87						
Intersection Signal Delay:	20.3			I	ntersection LOS: C	
Intersection Capacity Utiliz					CU Level of Service C	
Analysis Period (min) 15						

Splits and Phases: 120: East River Road & TH 610 South Ramps

Ø2 (R)	A @4
29.2 s	25.8 s
▼ Ø6 (R)	
29.2 s	

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110: East River Road & TH 610 North Ramps/Foley Blvd

Direction	All	
Future Volume (vph)	2816	
Total Delay / Veh (s/v)	15	
CO Emissions (kg)	2.17	
NOx Emissions (kg)	0.42	
VOC Emissions (kg)	0.50	

120: East River Road & TH 610 South Ramps

Direction	All
Future Volume (vph)	2730
Total Delay / Veh (s/v)	20
CO Emissions (kg)	2.89
NOx Emissions (kg)	0.56
VOC Emissions (kg)	0.67

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	र्च	77	ሻ	↑	1	<u>۲</u>	- † †	1	<u>۲</u>	- † †	1
Traffic Volume (vph)	820	205	263	172	187	125	328	753	331	64	669	56
Future Volume (vph)	820	205	263	172	187	125	328	753	331	64	669	56
Turn Type	Split	NA	pm+ov	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4	5	8	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	4	4	4	8	8	8	5 2	2	2	16	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	15.0	15.0	7.0	15.0	15.0
Minimum Split (s)	13.0	13.0	12.0	34.5	34.5	34.5	12.0	39.5	39.5	12.0	20.5	20.5
Total Split (s)	50.0	50.0	32.0	34.5	34.5	34.5	32.0	49.5	49.5	16.0	33.5	33.5
Total Split (%)	33.3%	33.3%	21.3%	23.0%	23.0%	23.0%	21.3%	33.0%	33.0%	10.7%	22.3%	22.3%
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.5	2.5	2.5	2.0	1.5	1.5	2.0	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	5.0	6.5	6.5	6.5	5.0	5.5	5.5	5.0	5.5	5.5
Lead/Lag	Lead	Lead	Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize? Recall Mode	Yes	Yes	Yes	Yes None	Yes	Yes	Yes	Yes	Yes	Yes None	Yes C-Max	Yes
Act Effct Green (s)	None 44.0	None 44.0	None 77.0	21.2	None 21.2	None 21.2	None 27.0	C-Max 54.0	C-Max 54.0	10.2	34.8	C-Max 34.8
Actuated g/C Ratio	44.0 0.29	44.0 0.29	0.51	0.14	0.14	0.14	0.18	0.36	0.36	0.07	0.23	0.23
v/c Ratio	1.06	1.06	0.51	0.14	0.14	0.14	1.07	0.50	0.30	0.07	0.23	0.23
Control Delay	107.6	106.9	2.2	76.2	77.3	10.0	125.5	43.9	5.6	84.6	65.3	0.15
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	43.9	0.0	0.0	0.0	0.0
Total Delay	107.6	106.9	2.2	76.2	77.3	10.0	125.5	43.9	5.6	84.6	65.3	0.0
LOS	107.0	F	Α	70.2 E	E	10.0 A	120.0 F	40.0 D	0.0 A	64.0 F	00.0	0.0 A
Approach Delay		85.8	7.		59.5	~		53.9	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	•	62.3	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
Approach LOS		F			E			D			E	
Intersection Summary												
Cycle Length: 150												
Actuated Cycle Length: 150												
Offset: 0 (0%), Referenced	to phase 2:	NBT and	6:SBT, S	tart of 1st	t Green							
Natural Cycle: 150												
Control Type: Actuated-Coo	rdinated											
Maximum v/c Ratio: 1.07												
Intersection Signal Delay: 6					ntersectio							
Intersection Capacity Utiliza	tion 93.8%			10	CU Level	of Service	e F					
Analysis Period (min) 15												

Splits and Phases: 110: Foley Blvd & TH 10 N Ramp/101st Ave

Ø1	Ø2 (R)		4 04	₽ _{Ø8}
16 s	49.5 s		50 s	34.5 s
Ø6 (R)		\$ Ø5		
33.5 s		32 s		

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Lane Group	EBT	EBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	र्भ	1	ሻ	- † †	1	ሻ	- † †	1	
Traffic Volume (vph)	1	221	27	1138	231	120	777	207	
Future Volume (vph)	1	221	27	1138	231	120	777	207	
Turn Type	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	4		5	2		1	6		
Permitted Phases		4			2			6	
Detector Phase	4	4	5	2	2	1	6	6	
Switch Phase									
Minimum Initial (s)	7.0	7.0	7.0	15.0	15.0	7.0	15.0	15.0	
Minimum Split (s)	13.0	13.0	12.0	30.5	30.5	12.0	20.5	20.5	
Total Split (s)	17.0	17.0	12.0	31.0	31.0	12.0	31.0	31.0	
Total Split (%)	28.3%	28.3%	20.0%	51.7%	51.7%	20.0%	51.7%	51.7%	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	1.5	1.5	2.0	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	5.0	5.5	5.5	5.0	5.5	5.5	
Lead/Lag			Lag	Lead	Lead	Lag	Lead	Lead	
Lead-Lag Optimize?						-			
Recall Mode	None	None	None	C-Max	C-Max	None	C-Max	C-Max	
Act Effct Green (s)	10.9	10.9	7.0	28.0	28.0	7.0	32.8	32.8	
Actuated g/C Ratio	0.18	0.18	0.12	0.47	0.47	0.12	0.55	0.55	
v/c Ratio	0.87	0.48	0.13	0.70	0.27	0.59	0.41	0.22	
Control Delay	52.9	7.5	25.6	16.4	2.8	38.6	10.1	2.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	52.9	7.5	25.6	16.4	2.8	38.6	10.1	2.6	
LOS	D	А	С	В	А	D	В	А	
Approach Delay	32.7			14.3			11.8		
Approach LOS	С			В			В		
Intersection Summary									
Cycle Length: 60									
Actuated Cycle Length: 60									
Offset: 0 (0%), Referenced to	phase 2	NBT and	6.SBT_S	tart of 1st	t Green				
Natural Cycle: 60	p.1000 2.		0.021,0						
Control Type: Actuated-Coord	dinated								
Maximum v/c Ratio: 0.87									
Intersection Signal Delay: 16.4	4			Ir	ntersectio	n LOS [,] B			
Intersection Capacity Utilization					CU Level		э С		
						2. 2011100			

Splits and Phases: 120: Foley Blvd & TH 10 S Ramp

Ø2 (R)	Ø1	₩ Ø4
31s	12 s	17 s
Ø6 (R)	▲ ø5	
31 s	12 s	

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Lane Group	EBL	EBR	NBL	NBT	SBT	
Lane Configurations	٦	1	<u>۲</u>	<u>††</u>	∱ ⊅	
Traffic Volume (vph)	353	189	353	1043	442	
Future Volume (vph)	353	189	353	1043	442	
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	2 5	2	6	
Switch Phase						
Minimum Initial (s)	7.0	7.0	5.0	15.0	15.0	
Minimum Split (s)	32.5	32.5	10.0	20.5	34.5	
Total Split (s)	33.0	33.0	10.0	97.0	87.0	
Total Split (%)	25.4%	25.4%	7.7%	74.6%	66.9%	
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	
All-Red Time (s)	2.5	2.5	2.0	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5	5.0	5.5	5.5	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?	Nama	Mana	Yes	0.14-1	Yes	
Recall Mode	None	None	None	C-Max	C-Max	
Act Effct Green (s)	27.5	27.5	92.0	91.5	81.5	
Actuated g/C Ratio v/c Ratio	0.21 1.02	0.21 0.41	0.71 1.21	0.70	0.63	
Control Delay	102	0.41 8.2	138.1	0.45 9.0	0.49 7.5	
Queue Delay	0.0	0.2	0.0	9.0	0.5	
Total Delay	100.9	8.2	138.1	9.0	0.5 8.0	
LOS	100.9 F	0.2 A	130.1 F	9.0 A	0.0 A	
Approach Delay	г 68.6	A	- F	41.7	8.0	
Approach LOS	00.0 E			41.7 D	0.0 A	
	C			U	A	
Intersection Summary						
Cycle Length: 130						
Actuated Cycle Length: 13						
Offset: 0 (0%), Referenced	to phase 2:	NBTL and	d 6:SBT,	Start of 1	st Green	
Natural Cycle: 120						
Control Type: Actuated-Co	ordinated					
Maximum v/c Ratio: 1.21						
Intersection Signal Delay:					ntersection	
Intersection Capacity Utiliz	ation 82.5%			10	CU Level	of Service E
Analysis Period (min) 15						

Splits and Phases: 130: Foley Blvd & 99th Ave

Ø2 (R)	A 04
97 s	33 s
▲ Ø5 ↓ Ø6 (R)	
10 s 87 s	

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110: Foley Blvd & TH 10 N Ramp/101st Ave

Direction	All	
Future Volume (vph)	3973	
Total Delay / Veh (s/v)	67	
CO Emissions (kg)	8.01	
NOx Emissions (kg)	1.56	
VOC Emissions (kg)	1.86	

120: Foley Blvd & TH 10 S Ramp

Direction	All
Future Volume (vph)	2996
Total Delay / Veh (s/v)	16
CO Emissions (kg)	3.03
NOx Emissions (kg)	0.59
VOC Emissions (kg)	0.70

130: Foley Blvd & 99th Ave

Direction	All
Future Volume (vph)	2935
Total Delay / Veh (s/v)	35
CO Emissions (kg)	3.13
NOx Emissions (kg)	0.61
VOC Emissions (kg)	0.73

Future Volume (vph)7236361354742469153131329217140Turn Typepm+ptNAPermProtNAPermProtNAPermProtNAPermProtected Phases74385216Permitted Phases448826Detector Phase74438852216Switch Phase744388522166Minimum Initial (s)5.05.05.07.07.07.07.012.012.07.012.012.012.012.0Minimum Split (s)9.522.522.522.522.522.511.522.5 </th <th></th> <th>٦</th> <th>-</th> <th>\mathbf{r}</th> <th>4</th> <th>+</th> <th>×</th> <th>1</th> <th>1</th> <th>۲</th> <th>1</th> <th>ŧ</th> <th>~</th>		٦	-	\mathbf{r}	4	+	×	1	1	۲	1	ŧ	~
Traffic Volume (vph) 72 36 36 135 47 42 469 1531 313 29 217 140 Future Volume (vph) 72 36 36 135 47 42 469 1531 313 29 217 140 Turn Type pm+pt NA Perm pm+pt NA Perm Prot NA Per	Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Future Volume (vph)7236361354742469153131329217140Turn Typepm+ptNAPermProtNAPermProtNAPermProtNAPermProtected Phases74385216Permitted Phases448826Detector Phase74438852216Switch Phase744388522166Minimum Initial (s)5.05.05.07.07.07.07.012.012.07.012.012.012.012.0Minimum Split (s)9.522.522.522.522.522.511.522.5 </td <td>Lane Configurations</td> <td>ľ</td> <td>•</td> <td>1</td> <td>1</td> <td>•</td> <td>1</td> <td><u>ار</u></td> <td><u></u></td> <td>1</td> <td>ľ</td> <td><u></u></td> <td>1</td>	Lane Configurations	ľ	•	1	1	•	1	<u>ار</u>	<u></u>	1	ľ	<u></u>	1
Turn Type pm+pt NA Perm pm+pt NA Perm Prot NA Perm	Traffic Volume (vph)	72	36	36	135		42	469			29	217	140
Protected Phases 7 4 3 8 5 2 1 6 Permitted Phases 4 4 8 8 2 6 6 Detector Phase 7 4 4 3 8 8 5 2 1 6 Switch Phase 7 4 4 3 8 8 5 2 2 1 6 6 Switch Phase 7 4 4 3 8 8 5 2 2 1 6 6 Switch Phase 7 4 4 3 8 8 5 2 2 1 6 6 Minimum Initial (s) 5.0 5.0 5.0 7.0 7.0 7.0 7.0 12.0 <t< td=""><td>Future Volume (vph)</td><td>72</td><td>36</td><td>36</td><td>135</td><td>47</td><td>42</td><td>469</td><td>1531</td><td>313</td><td>29</td><td>217</td><td>140</td></t<>	Future Volume (vph)	72	36	36	135	47	42	469	1531	313	29	217	140
Permitted Phases 4 4 8 8 2 6 Detector Phase 7 4 4 3 8 5 2 2 1 6 6 Switch Phase 7 5.0 5.0 7.0 7.0 7.0 12.0		pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Detector Phase 7 4 4 3 8 8 5 2 2 1 6 6 Switch Phase			4			8		5	2		1	6	
Switch PhaseMinimum Initial (s)5.05.07.07.07.012.012.012.012.012.0Minimum Split (s)9.522.522.522.522.511.522.522.522.5		4		4									6
Minimum Initial (s) 5.0 5.0 5.0 7.0 7.0 7.0 12.0		7	4	4	3	8	8	5	2	2	1	6	6
Minimum Split (s) 9.5 22.5 22.5 22.5 22.5 22.5 11.5 22.5 11.5 22.5 11.5 22.5													
Total Split (s) 10.3 22.5 22.5 22.5 34.7 34.7 37.2 53.5 53.5 11.5 27.8 27.8													
	Total Split (s)	10.3	22.5	22.5	22.5	34.7	34.7	37.2	53.5	53.5	11.5	27.8	27.8
													25.3%
Yellow Time (s) 3.5													
													1.0
Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.													
													4.5
Lead/Lag Lead Lag Lead Lag Lag Lead Lag Lag Lag Lead Lag Lag							•					•	
													Yes
Recall Mode None None None None None None C-Max C-Max None C-Max C-Max													
Act Effct Green (s) 12.5 7.8 7.8 23.6 15.3 15.3 38.1 69.6 69.6 7.9 34.8 34.8													
Actuated g/C Ratio 0.11 0.07 0.07 0.21 0.14 0.14 0.35 0.63 0.63 0.07 0.32 0.32													
													0.24
													3.2
													0.0
													3.2
LOS D D A D D A D C A D C A		D		A	D		A	D		A	D		A
Approach Delay 34.8 33.6 23.9 22.7													
Approach LOS C C C C	Approach LOS		С			С			С			С	
Intersection Summary	Intersection Summary												
Cycle Length: 110	Cycle Length: 110												
Actuated Cycle Length: 110	Actuated Cycle Length: 110)											
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green	Offset: 0 (0%), Referenced	to phase 2:	NBT and	6:SBT, S	tart of Gr	een							
Natural Cycle: 110													
Control Type: Actuated-Coordinated	Control Type: Actuated-Coc	ordinated											
Maximum v/c Ratio: 0.83	Maximum v/c Ratio: 0.83												
Intersection Signal Delay: 25.0 Intersection LOS: C	Intersection Signal Delay: 2	25.0			li	ntersectio	n LOS: C						
Intersection Capacity Utilization 73.6% ICU Level of Service D	Intersection Capacity Utiliza	ation 73.6%	1		l	CU Level	of Service	e D					
Analysis Period (min) 15	Analysis Period (min) 15												

Splits and Phases: 110: East River Road & TH 610 North Ramps/Foley Blvd

Ø1	Ø2 (R)		Ø3		₩ Ø4	
11.5 s	53.5 s		22.5 s		22.5 s	
▲ ø5		Ø6 (R)		₹ø8		
37.2 s		27.8 s	10.3 s	34.7 s		

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	ካካ	1	ሻ	∱1 }	<u></u>	1
Traffic Volume (vph)	1044	172	36	1268	281	108
Future Volume (vph)	1044	172	36	1268	281	108
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	2	2	6	6
Switch Phase						
Minimum Initial (s)	7.0	7.0	12.0	12.0	12.0	12.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	28.1	28.1	31.9	31.9	31.9	31.9
Total Split (%)	46.8%	46.8%	53.2%	53.2%	53.2%	53.2%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	23.0	23.0	28.0	28.0	28.0	28.0
Actuated g/C Ratio	0.38	0.38	0.47	0.47	0.47	0.47
v/c Ratio	0.86	0.26	0.08	0.83	0.18	0.15
Control Delay	25.7	3.3	9.8	20.3	9.9	2.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.7	3.3	9.8	20.3	9.9	2.8
LOS	C	A	A	C	A	A
Approach Delay				20.0	8.0	
Approach LOS				C	A	
				0		
Intersection Summary						
Cycle Length: 60						
Actuated Cycle Length: 60						
Offset: 0 (0%), Referenced	to phase 2:	NBTL and	d 6:SBTL	, Start of	Green	
Natural Cycle: 60						
Control Type: Actuated-Coo	ordinated					
Maximum v/c Ratio: 0.86						
Intersection Signal Delay: 19.5				ntersectio	n LOS: B	
Intersection Capacity Utiliza				10	CU Level	of Service
Analysis Period (min) 15						
,						

Splits and Phases: 120: East River Road & TH 610 South Ramps

Ø2 (R)	A @4
31.9 s	28.1s
Ø6 (R)	
31.9 s	

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110: East River Road & TH 610 North Ramps/Foley Blvd

Direction	All	
Future Volume (vph)	3067	
Total Delay / Veh (s/v)	25	
CO Emissions (kg)	2.98	
NOx Emissions (kg)	0.58	
VOC Emissions (kg)	0.69	

120: East River Road & TH 610 South Ramps

Direction	All
Future Volume (vph)	2909
Total Delay / Veh (s/v)	19
CO Emissions (kg)	3.00
NOx Emissions (kg)	0.58
VOC Emissions (kg)	0.69

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	् स्	77	ሻ	↑	1	ሻ	- † †	1	<u>۲</u>	- † †	1
Traffic Volume (vph)	820	205	120	172	187	125	328	753	331	64	667	56
Future Volume (vph)	820	205	120	172	187	125	328	753	331	64	667	56
Turn Type	Split	NA	pm+ov	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4	5	8	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	4	4	4	8	8	8	52	2	2	16	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	15.0	15.0	7.0	15.0	15.0
Minimum Split (s)	13.0	13.0	12.0	34.5	34.5	34.5	12.0	39.5	39.5	12.0	20.5	20.5
Total Split (s)	49.0	49.0	31.0	34.5	34.5	34.5	31.0	53.5	53.5	13.0	35.5	35.5
Total Split (%)	32.7%	32.7%	20.7%	23.0%	23.0%	23.0%	20.7%	35.7%	35.7%	8.7%	23.7%	23.7%
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.5	2.5	2.5	2.0	1.5	1.5	2.0	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	5.0	6.5	6.5	6.5	5.0	5.5	5.5	5.0	5.5	5.5
Lead/Lag	Lead	Lead	Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	43.1	43.1	75.1	20.4	20.4	20.4	26.0	48.2	48.2	7.8	30.0	30.0
Actuated g/C Ratio	0.30	0.30	0.53	0.14	0.14	0.14	0.18	0.34	0.34	0.05	0.21	0.21
v/c Ratio	1.03	1.03	0.08	0.70	0.73	0.38	1.05	0.65	0.45	0.69	0.92	0.14
Control Delay	96.6	95.4	3.1	73.0	74.1	10.0	118.4	43.7	5.4	100.1	74.0	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	96.6	95.4	3.1	73.0	74.1	10.0	118.4	43.7	5.4	100.1	74.0	0.7
LOS	F	F	А	E	Е	А	F	D	А	F	Е	A
Approach Delay		86.2			57.2			52.1			70.9	
Approach LOS		F			E			D			E	
Intersection Summary												
Cycle Length: 150												
Actuated Cycle Length: 142.5												
Natural Cycle: 150												
Control Type: Actuated-Uncoordinated												
Maximum v/c Ratio: 1.05												
Intersection Signal Delay: 66.8 Intersection LOS: E												
Intersection Capacity Utiliza						of Service	e F					
Analysis Period (min) 15					20.01	0.0011100						

Splits and Phases: 110: Foley Blvd & TH 10 N Ramp/101st Ave

Ø1	∎ ø2		₽ Ø4	₽ _{Ø8}
13 s 53.	5 s		49 s	34.5 s
4 Ø6		\$ Ø5		
35.5 s		31 s		

Coon Rapids Regional Solicitation Build PM

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Lane Group	EBT	EBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	र्स	1	۲	<u></u>	1	۲	<u></u>	1	
Traffic Volume (vph)	1	221	27	1138	87	120	633	207	
Future Volume (vph)	1	221	27	1138	87	120	633	207	
Turn Type	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	4		5	2		1	6		
Permitted Phases		4			2			6	
Detector Phase	4	4	5	2	2	1	6	6	
Switch Phase									
Minimum Initial (s)	7.0	7.0	7.0	15.0	15.0	7.0	15.0	15.0	
Minimum Split (s)	13.0	13.0	12.0	30.5	30.5	12.0	20.5	20.5	
Total Split (s)	17.0	17.0	12.0	31.0	31.0	12.0	31.0	31.0	
Total Split (%)	28.3%	28.3%	20.0%	51.7%	51.7%	20.0%	51.7%	51.7%	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	1.5	1.5	2.0	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	5.0	5.5	5.5	5.0	5.5	5.5	
Lead/Lag			Lag	Lead	Lead	Lag	Lead	Lead	
Lead-Lag Optimize?									
Recall Mode	None	None	None	Max	Max	None	Max	Max	
Act Effct Green (s)	10.7	10.7	7.1	25.8	25.8	7.1	30.4	30.4	
Actuated g/C Ratio	0.19	0.19	0.12	0.45	0.45	0.12	0.53	0.53	
v/c Ratio	0.84	0.47	0.13	0.72	0.11	0.55	0.34	0.22	
Control Delay	48.6	7.4	25.4	17.0	1.1	36.8	9.6	2.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	48.6	7.4	25.4	17.0	1.1	36.8	9.6	2.7	
LOS	D	А	С	В	А	D	А	А	
Approach Delay	30.2			16.1			11.5		
Approach LOS	С			В			В		
Intersection Summary									
Cycle Length: 60									
Actuated Cycle Length: 57.3									
Natural Cycle: 60									
Control Type: Actuated-Uncoordinated									
Maximum v/c Ratio: 0.84									
Intersection Signal Delay: 17.	.1			Ir	ntersection	n LOS: B			
Intersection Capacity Utilization		10	CU Level	of Service	с				
Analysis Period (min) 15	011 01 . 1 /0								

Splits and Phases: 120: Foley Blvd & TH 10 S Ramp

f ø2	Ø1	↓ 04
31 s	12 s	17 s
4 Ø6	▲ Ø5	
31 s	12 s	

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Coon Rapids Regional Solicitation Build PM

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Lane Group	EBL	EBR	NBL	NBT	SBT	
Lane Configurations	۲	1	۲	<u></u>	A⊅	
Traffic Volume (vph)	301	189	353	950	380	
Future Volume (vph)	301	189	353	950	380	
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	25	2	6	
Switch Phase						
Minimum Initial (s)	7.0	7.0	5.0	15.0	15.0	
Minimum Split (s)	32.5	32.5	10.0	20.5	34.5	
Total Split (s)	34.0	34.0	10.0	96.0	86.0	
Total Split (%)	26.2%	26.2%	7.7%	73.8%	66.2%	
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	
All-Red Time (s)	2.5	2.5	2.0	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5	5.0	5.5	5.5	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None	None	None	Max	Max	
Act Effct Green (s)	26.0	26.0	91.0	90.5	80.5	
Actuated g/C Ratio	0.20	0.20	0.71	0.71	0.63	
v/c Ratio	0.90	0.42	1.00	0.41	0.41	
Control Delay	77.5	8.3	62.7	8.4	6.2	
Queue Delay	0.0	0.0	0.0	0.0	0.3	
Total Delay	77.5	8.3	62.7	8.4	6.5	
LOS	Е	А	E	А	А	
Approach Delay	50.8			23.1	6.5	
Approach LOS	D			С	А	
Intersection Summary						
Cycle Length: 130	E					
Actuated Cycle Length: 127	.5					
Natural Cycle: 130	oordinated					
Control Type: Actuated-Unc	oordinated					
Maximum v/c Ratio: 1.00	2.0			١.	ntersectior	
Intersection Signal Delay: 22.9						
Intersection Capacity Utilization 75.3% ICU Level of Service D						
Analysis Fellou (IIIII) 10	Analysis Period (min) 15					
Splits and Phases: 130: F	oley Blvd &	& 99th Δ.v	e			
		x JULIAV	C			

↑ _{Ø2}	
96 s	34 s
★ Ø5 ↓ Ø6	
10 s 86 s	

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110: Foley Blvd & TH 10 N Ramp/101st Ave

Direction	All
Future Volume (vph)	3828
Total Delay / Veh (s/v)	67
CO Emissions (kg)	7.76
NOx Emissions (kg)	1.51
VOC Emissions (kg)	1.80

120: Foley Blvd & TH 10 S Ramp

Direction	All
Future Volume (vph)	2708
Total Delay / Veh (s/v)	17
CO Emissions (kg)	2.79
NOx Emissions (kg)	0.54
VOC Emissions (kg)	0.65

130: Foley Blvd & 99th Ave

Direction	All
Future Volume (vph)	2647
Total Delay / Veh (s/v)	23
CO Emissions (kg)	2.32
NOx Emissions (kg)	0.45
VOC Emissions (kg)	0.54

Traffic Safety Benefit-Cost Calculation

Highway Safety Improvement Program (HSIP) Reactive Project

DEPARTMENT OF TRANSPORTATION

Route Begin RP Location	ay Description Foley Blvd Foley Blvd and 99th A	District End RP	ection	County Miles	Anoka	
	Description					
Proposed			to added rai	mps at TH 610/East Rive		
Project Co Project Se		100		Installation Year Traffic Growth Factor	2026	
	Right of Way from Project	ct Cost			2.076	_
	Nodification Factor					
0.78	Fatal (K) Crashes	_	Reference	Crash Analysis		
0.78	Serious Injury (A) Cras		< 1 -	A 11		
0.78	Moderate Injury (B) C		Crash Type	All		
0.78 0.78	Possible Injury (C) Cras Property Damage Only				www.CMFclearing	thouse and
0.78	Property Damage Only	y clashes				gnouse.org
D. Crash M	Aodification Factor	(optional se	-)		
	Fatal (K) Crashes	_	Reference			
L	Serious Injury (A) Cras					
<u> </u>	Moderate Injury (B) C		Crash Type			
<u> </u>	Possible Injury (C) Cras Property Damage Only				www.CMFclearing	thouse and
	Property Damage Only	y Clashes				gnouse.org
E. Crash D	ata					
Begin Date)	End Date	12/31/202	2	3 years
Data Sour						
	Crash Severity K crashes	All	0	< option	nal 2nd CMF >	1
			0			-
	A crashes B crashes		0			
	C crashes		1			-
	PDO crashes		7			
F. Benefit-	Cost Calculation	Den eft /-	ant			
	\$805,717	Benefit (pre	esent value)	B/C	Ratio = 0.03	
\$ <u>`</u>	35,687,100	Cost		•	-	

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

F. Analysis Assumptions

Crash Severity	Crash Cost		
K crashes	\$1,600,000	Link: mndot.gov/	planning/program/appendix_a.html
A crashes	\$800,000		
B crashes	\$250,000	Real Discount Rate	0.7%
C crashes	\$130,000	Traffic Growth Rate	2.0%
PDO crashes	\$15,000	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	0.22	0.07	\$18,333
C crashes	0.22	0.07	\$9,533
PDO crashes	1.54	0.51	\$7,700
			\$35,567

H. Amortized Benefit

n. Amoruze			
Year	Crash Benefits	Present Value	
2026	\$35,567	\$35,567	Total = \$805,717
2027	\$36,278	\$36,026	
2028	\$37,004	\$36,491	
2029	\$37,744	\$36,962	
2030	\$38,499	\$37,439	
2031	\$39,268	\$37,922	
2032	\$40,054	\$38,412	
2033	\$40,855	\$38,908	
2034	\$41,672	\$39,410	
2035	\$42,505	\$39,919	
2036	\$43,356	\$40,434	
2037	\$44,223	\$40,956	
2038	\$45,107	\$41,485	
2039	\$46,009	\$42,021	
2040	\$46,929	\$42,563	
2041	\$47,868	\$43,113	
2042	\$48,825	\$43,669	
2043	\$49,802	\$44,233	
2044	\$50,798	\$44,804	
2045	\$51,814	\$45,382	
0	\$O	\$0	
0	\$0	\$0	
0	\$O	\$0	
0	\$O	\$0	
0	\$O	\$O	
0	\$O	\$0	
0	\$O	\$O	
0	\$O	\$O	
0	\$0	\$O	
0	\$O	\$O	
0	\$0	\$0	

Traffic Safety Benefit-Cost Calculation

Highway Safety Improvement Program (HSIP) Reactive Project



DEPARTMENT OF
TRANSPORTATION

A. Roadw	ay Description	on				
Route	Foley Blvd	District		County	Anoka	
Begin RP		End RP		Miles		
Location	TH 10 and Fo	ley Blvd North Ramps				
B. Project	Description	1				
Proposed	-		to added rai	nps at TH 610/East Rive	er Road	
Project Co	_	35,687,100		Installation Year	2026	
, Project Se	<u> </u>	0 years		Traffic Growth Factor		
		om Project Cost				
	Aodification					_
0.94	Fatal (K) Crasl		Reference	Crash Analysis		_
0.94	Serious Injury	(A) Crashes				
0.94	Moderate Inju	ıry (B) Crashes	Crash Type	All		
0.94	Possible Injur	y (C) Crashes				
0.94	Property Dam	age Only Crashes			www.CMFclearinghouse.o	org
D. Crash I	Modification	Factor (optional se	econd CMF			
	Fatal (K) Crasl		Reference			
	- Serious Injury	(A) Crashes				
	-	ıry (B) Crashes	Crash Type			
	Possible Injur					
	-	age Only Crashes			www.CMFclearinghouse.o	org
E. Crash D						
		/1/2020	End Date	12/31/202	2	ore
Begin Dat Data Sour	_	/1/2020 /InDOT	-	12/31/202	2 3 yea	212
	Crash Seve			< ontion	al 2nd CMF >	_
	K crashes		0			
	A crashes		0			
	B crashes		2			
	C crashes		4			
	PDO crash	es	30			
			50			
F. Benefit	-Cost Calcula	ation				
	\$666,019	Benefit (pro	esent value)	R/C	Ratio = 0.02	
\$	35,687,100	Cost		D/C		

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

F. Analysis Assumptions

Crash Severity	Crash Cost		
K crashes	\$1,600,000	Link: mndot.gov/p	planning/program/appendix_a.html
A crashes	\$800,000		
B crashes	\$250,000	Real Discount Rate	0.7%
C crashes	\$130,000	Traffic Growth Rate	2.0%
PDO crashes	\$15,000	Project Service Life	20 years
	K crashes A crashes B crashes C crashes	K crashes \$1,600,000 A crashes \$800,000 B crashes \$250,000 C crashes \$130,000	K crashes\$1,600,000Link: mndot.gov/rA crashes\$800,000Real Discount RateB crashes\$250,000Real Discount RateC crashes\$130,000Traffic Growth Rate

G. Annual Benefit

Crash Severity	Crash Reduction	Annual Reduction	Annual Benefit
K crashes	0.00	0.00	\$O
A crashes	0.00	0.00	\$O
B crashes	0.12	0.04	\$10,000
C crashes	0.24	0.08	\$10,400
PDO crashes	1.80	0.60	\$9,000
			\$29,400

H. Amortized Benefit

<u>Year</u>	Crash Benefits	Present Value	
2026	\$29,400	\$29,400	Total = \$666,019
2027	\$29,988	\$29,780	
2028	\$30,588	\$30,164	
2029	\$31,200	\$30,553	
2030	\$31,824	\$30,948	
2031	\$32,460	\$31,347	
2032	\$33,109	\$31,752	
2033	\$33,771	\$32,162	
2034	\$34,447	\$32,577	
2035	\$35,136	\$32,998	
2036	\$35,838	\$33,424	
2037	\$36,555	\$33,855	
2038	\$37,286	\$34,292	
2039	\$38,032	\$34,735	
2040	\$38,793	\$35,183	
2041	\$39,569	\$35,638	
2042	\$40,360	\$36,098	
2043	\$41,167	\$36,564	
2044	\$41,990	\$37,036	
2045	\$42,830	\$37,514	
0	\$O	\$0	
0	\$O	\$O	
0	\$0	\$O	
0	\$O	\$O	
0	\$O	\$O	
0	\$0	\$O	
0	\$0	\$O	
0	\$0	\$O	

Traffic Safety Benefit-Cost Calculation

Highway Safety Improvement Program (HSIP) Reactive Project



DEPARTMENT OF TRANSPORTATION

A. Roadw	ay Description					
Route	Foley Blvd	District		County	Anoka	
Begin RP		End RP		Miles		
Location	TH 10 and Foley B	lvd South Ramp	s			
R Project	Description					
Proposed	-	ed Volumes due	to added rai	mps at TH 610/East Rive	ar Road	
Project Co				Installation Year	2026	
Project Se	<u> </u>	•		Traffic Growth Factor		
· ·	Right of Way from Pr			-		
-	Aodification Fact	or				
0.87	Fatal (K) Crashes		Reference	Crash Analysis		
0.87	Serious Injury (A) C					
0.87	Moderate Injury (B	-	Crash Type	All		
0.87	Possible Injury (C)					
0.87	Property Damage C	Only Crashes			www.CMFclearing	shouse.org
D. Crash N	Nodification Fact	or (optional s	econd CMF)		
	Fatal (K) Crashes		Reference			
	Serious Injury (A) C	rashes				
	Moderate Injury (B) Crashes	Crash Type			
	Possible Injury (C)	Crashes				
	Property Damage C	Only Crashes			www.CMFclearing	house.org
E. Crash D	ata					
Begin Dat	e 1/1/20)20	End Date	12/31/202	2	3 years
Data Sour	ce MnDO	т	_			
	Crash Severity	All		< option	al 2nd CMF >	
	K crashes		0			
	A crashes		1			
	B crashes		1			
	C crashes		3			
	PDO crashes		10			
F. Benefit	-Cost Calculation					
	\$1,560,840		esent value)			
	35,687,100	Cost	,	B/C	Ratio = 0.05	

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

F. Analysis Assumptions

Crash Severity	Crash Cost		
K crashes	\$1,600,000	Link: mndot.gov/	planning/program/appendix_a.html
A crashes	\$800,000		
B crashes	\$250,000	Real Discount Rate	0.7%
C crashes	\$130,000	Traffic Growth Rate	2.0%
PDO crashes	\$15,000	Project Service Life	20 years

G. Annual Benefit

Crash Severity	Crash Reduction	Annual Reduction	Annual Benefit
K crashes	0.00	0.00	\$O
A crashes	0.13	0.04	\$34,667
B crashes	0.13	0.04	\$10,833
C crashes	0.39	0.13	\$16,900
PDO crashes	1.30	0.43	\$6,500
			\$68,900

H. Amortized Benefit

	a benefit		
<u>Year</u>	Crash Benefits	Present Value	
2026	\$68,900	\$68,900	Total = \$1,560,840
2027	\$70,278	\$69,789	
2028	\$71,684	\$70,690	
2029	\$73,117	\$71,603	
2030	\$74,580	\$72,527	
2031	\$76,071	\$73,464	
2032	\$77,593	\$74,412	
2033	\$79,144	\$75,373	
2034	\$80,727	\$76,346	
2035	\$82,342	\$77,331	
2036	\$83,989	\$78,330	
2037	\$85,668	\$79,341	
2038	\$87,382	\$80,365	
2039	\$89,129	\$81,403	
2040	\$90,912	\$82,453	
2041	\$92,730	\$83,518	
2042	\$94,585	\$84,596	
2043	\$96,477	\$85,688	
2044	\$98,406	\$86,794	
2045	\$100,374	\$87,915	
0	\$O	\$O	
0	\$0	\$O	
0	\$0	\$O	
0	\$0	\$0	

Coon Rapids Crash Analysis 2024 Regional Solicitation

	Intersections	Total Number of Accidents	Years of Data	ADT*	Calculated Crash Rate (Million Entering Vehicles)
Existing	Foley Blvd and North TH 10 Ramps	36	3	34900	0.95
Future	Foley Blvd and North TH 10 Ramps	34	3	33400	0.93
Existing	Foley Blvd and South TH 10 Ramps	15	3	20750	0.67
Future	Foley Blvd and South TH 10 Ramps	13	3	17750	0.67
Existing	Foley Blvd and 99th Ave	9	3	23250	0.36
Future	Foley Blvd and 99th Ave	7	3	20250	0.32

Reduction or increase based on volume modifications	CM	F
Foley/North Ramps	6%	0.94
Foley/South Ramps	13%	0.87
Foley/99th	22%	0.78

Foley Blvd and 99th Ave

INCIDENTIE RTESYSCOE R	TENUMBE ME	ASURE COUNTY	S CITY_NAM TO	WNSHIP MNDOT_D	STATE_PAT TRIBAL	_GC LOCALID	ACCIDENT_0	CRASH_MC
834045 04-CSAH	11	1.042 Anoka	Coon Rapids	D-METRO	Golden Valley	20192981	2.02E+08	8-Aug
1002079 04-CSAH	11	1.045 Anoka	Coon Rapids	D-METRO	Golden Valley	22018089	2.2E+08	1-Jan
1048034 04-CSAH	11	1.047 Anoka	Coon Rapids	D-METRO	Golden Valley	22215415	2.23E+08	9-Sep
1051127 04-CSAH	11	1.119 Anoka	Coon Rapids	D-METRO	Golden Valley	22227318	2.23E+08	10-Oct
786577 05-MSAS	103	0.561 Anoka	Coon Rapids	D-METRO	Golden Valley	20033982	2E+08	2-Feb
940332 05-MSAS	103	0.561 Anoka	Coon Rapids	D-METRO	Golden Valley	21206570	2.13E+08	9-Sep
911356 05-MSAS	103	0.566 Anoka	Coon Rapids	D-METRO	Golden Valley	21124764	2.12E+08	6-Jun
813677 05-MSAS	103	0.57 Anoka	Coon Rapids	D-METRO	Golden Valley	20137303	2.02E+08	6-Jun
905105 05-MSAS	103	0.572 Anoka	Coon Rapids	D-METRO	Golden Valley	21099321	2.11E+08	5-May

TH 47 and Foley Blvd North Ramps

INCIDENTIC RTESYSCOL RT	ENUMBE MEASURE	COUNTY	S CITY_NAM TOW	NSHIP MNDOT_D	STATE_PAT TRIBAL	_GC LOCALID	ACCIDENT_	CRASH_MC
903305 04-CSAH	11 1.264	Anoka	Coon Rapids	D-METRO	Golden Valley	21090150	2.11E+08	4-Apr
776773 04-CSAH	11 1.298	Anoka	Coon Rapids	D-METRO	Golden Valley	20001937	2E+08	1-Jan
847739 04-CSAH	11 1.321	Anoka	Coon Rapids	D-METRO	Golden Valley	20258499	2.03E+08	10-Oct
1051693 04-CSAH	11 1.339	Anoka	Coon Rapids	D-METRO	Golden Valley	22511524	2.23E+08	10-Oct
1046563 04-CSAH	11 1.355	Anoka	Coon Rapids	D-METRO	Golden Valley	22209442	2.23E+08	9-Sep
804088 04-CSAH	11 1.357	Anoka	Coon Rapids	D-METRO	Golden Valley	20063819	2.01E+08	3-Mar
1037620 04-CSAH	11 1.357	Anoka	Coon Rapids	D-METRO	Golden Valley	22169867	2.22E+08	8-Aug
1028803 04-CSAH	11 1.359	Anoka	Coon Rapids	D-METRO	Golden Valley	22128459	2.22E+08	6-Jun
985129 04-CSAH	11 1.359	Anoka	Coon Rapids	D-METRO	Golden Valley	21295030	2.14E+08	12-Dec
1054775 04-CSAH	11 1.359	Anoka	Coon Rapids	D-METRO	Golden Valley	22242263	2.23E+08	10-Oct
842222 04-CSAH	11 1.362	Anoka	Coon Rapids	D-METRO	Golden Valley	20229884	2.03E+08	9-Sep
1033795 04-CSAH	11 1.361	Anoka	Coon Rapids	D-METRO	Golden Valley	22153020	2.22E+08	7-Jul
865167 04-CSAH	11 1.363	Anoka	Coon Rapids	D-METRO	Golden Valley	20285184	2.03E+08	11-Nov
799848 04-CSAH	11 1.363	Anoka	Coon Rapids	D-METRO	Golden Valley	20043871	2.01E+08	2-Feb
836647 04-CSAH	11 1.364	Anoka	Coon Rapids	D-METRO	Golden Valley	20202573	2.02E+08	8-Aug
941356 04-CSAH	11 1.365	Anoka	Coon Rapids	D-METRO	Golden Valley	21210588	2.13E+08	9-Sep
1069276 04-CSAH	11 1.365	Anoka	Coon Rapids	D-METRO	Golden Valley	22284468	2.24E+08	12-Dec
870591 04-CSAH	11 1.366	Anoka	Coon Rapids	D-METRO	Golden Valley	20307649	2.04E+08	12-Dec
1020936 04-CSAH	11 1.366	Anoka	Coon Rapids	D-METRO	Golden Valley	22092202	2.21E+08	5-May
983501 04-CSAH	11 1.368	Anoka	Coon Rapids	D-METRO	Golden Valley	21289504	2.14E+08	12-Dec
1018013 04-CSAH	11 1.375	Anoka	Coon Rapids	D-METRO	Golden Valley	22077145	2.21E+08	4-Apr
974182 04-CSAH	11 1.377	Anoka	Coon Rapids	D-METRO	Golden Valley	21260993	2.13E+08	11-Nov

1015943 04-CSAH	11	1.378 Anoka	Coon Rapids	D-METRO	Golden Valley	22068957	2.21E+08	4-Apr
811405 04-CSAH	11	1.389 Anoka	Coon Rapids	D-METRO	Golden Valley	20119683	2.01E+08	5-May
933204 04-CSAH	11	1.412 Anoka	Coon Rapids	D-METRO	Golden Valley	21177335	2.12E+08	8-Aug
917041 05-MSAS	128	0 Anoka	Coon Rapids	D-METRO	Golden Valley	21149346	2.12E+08	7-Jul
971602 05-MSAS	128	0.003 Anoka	Coon Rapids	D-METRO	Golden Valley	21250360	2.13E+08	11-Nov
985976 05-MSAS	128	0.007 Anoka	Coon Rapids	D-METRO	Golden Valley	21294595	2.14E+08	12-Dec
808644 05-MSAS	128	0.039 Anoka	Coon Rapids	D-METRO	Golden Valley	20502373	2.01E+08	2-Feb
1049054 05-MSAS	128	0.068 Anoka	Coon Rapids	D-METRO	Golden Valley	22218475	2.23E+08	9-Sep
982162 22-RAMP	5887	0.762 Anoka	Coon Rapids	D-METRO	Golden Valley	21511985	2.13E+08	12-Dec
928558 22-RAMP	5887	0.762 Anoka	Coon Rapids	D-METRO	Golden Valley	21506367	2.12E+08	7-Jul
943522 22-RAMP	5887	0.776 Anoka	Coon Rapids	D-METRO	Golden Valley	21219772	2.13E+08	9-Sep
802138 22-RAMP	5887	0.779 Anoka	Coon Rapids	D-METRO	Golden Valley	20053802	2.01E+08	3-Mar
808866 22-RAMP	5887	0.785 Anoka	Coon Rapids	D-METRO	Golden Valley	20099670	2.01E+08	5-May
909331 22-RAMP	5888	0 Anoka	Coon Rapids	D-METRO	Golden Valley	21115786	2.12E+08	5-May

TH 47 and Foley Blvd South Ramps

INCIDENTIE RTESYSCOE R	TENUMBE MEASUR	E COUNT	Y_S CITY_NAMITOWN	NSHIP MNDOT_D	STATE_PAT TRIBAL	_GC LOCALID	ACCIDENT_	CRASH_MC
1009856 04-CSAH	11 1.13	89 Anoka	Coon Rapids	D-METRO	Golden Valley	22502628	2.21E+08	2-Feb
820247 04-CSAH	11 1.14	1 Anoka	Coon Rapids	D-METRO	Golden Valley	20173474	2.02E+08	7-Jul
785218 04-CSAH	11 1.14	4 Anoka	Coon Rapids	D-METRO	Golden Valley	20028170	2E+08	2-Feb
903993 04-CSAH	11 1.14	l6 Anoka	Coon Rapids	D-METRO	Golden Valley	21094216	2.11E+08	5-May
1047818 04-CSAH	11 1.1	3 Anoka	Coon Rapids	D-METRO	Golden Valley	22213065	2.23E+08	9-Sep
1037133 04-CSAH	11 1.1	9 Anoka	Coon Rapids	D-METRO	Golden Valley	22167690	2.22E+08	7-Jul
935028 04-CSAH	11 1.20)1 Anoka	Coon Rapids	D-METRO	Golden Valley	21507721	2.12E+08	8-Aug
1015947 04-CSAH	11 1.	21 Anoka	Coon Rapids	D-METRO	Golden Valley	22065894	2.21E+08	3-Mar
897517 04-CSAH	11 1.2	1 Anoka	Coon Rapids	D-METRO	Golden Valley	21060985	2.11E+08	3-Mar
1054949 04-CSAH	11 1.2	7 Anoka	Coon Rapids	D-METRO	Golden Valley	22242986	2.23E+08	10-Oct
1065415 22-RAMP	523 0.2	98 Anoka	Coon Rapids	D-METRO	Golden Valley	22277006	2.23E+08	12-Dec
911186 22-RAMP	523 0.3)3 Anoka	Coon Rapids	D-METRO	Golden Valley	21505189	2.12E+08	6-Jun
1020291 22-RAMP	523 0.3	5 Anoka	Coon Rapids	D-METRO	Golden Valley	22064914	2.21E+08	3-Mar
944434 22-RAMP	523 0.32	23 Anoka	Coon Rapids	D-METRO	Golden Valley	21223417	2.13E+08	10-Oct
1061027 22-RAMP	4571 0.03	9 Anoka	Coon Rapids	D-METRO	Golden Valley	22513313	2.23E+08	11-Nov

CRAS	H_DA [®] CR	ASH_YE/CRASH_D	A CRASI	H_HO DIVIDED	RD CRASHSEVERITY	NUMBERKI NUM	BERO MANNERO FIRSTHARN RELATIVE_I RELATION	١T
07		2020 06-Fri		13 Not App	lic: Property Damage Only	0	2 Angle Motor Veh On RoadwaT Intersed	cti
	25	2022 03-Tues		12 Not App	lica Property Damage Only	0	2 Front to Re Motor Veh On RoadwaT Intersed	cti
	26	2022 02-Mon		16 Not App	lica Possible Injury	0	2 Angle Motor Veh On Roadwa Four-Way	уI
	11	2022 03-Tues		16 South	Property Damage Only	0	2 Front to Re Motor Veh On Roadwa Not at Int	tei
09		2020 01-Sun	06	Not App	lic: Property Damage Only	0	2 Sideswipe - Motor Veh On Roadwa Four-Way	уI
	13	2021 02-Mon		18 East	Property Damage Only	0	3 Front to Re Motor Veh On RoadwaT Intersed	cti
09		2021 04-Wed		20 Not App	lic: Property Damage Only	0	2 Sideswipe - Motor Veh On RoadwaT Intersed	cti
09		2020 03-Tues		14	Minor Injury	0	1 Pedalcyclis On Roadwa T Intersed	cti
	11	2021 03-Tues		18	Property Damage Only	0	2 Front to Re Motor Veh On RoadwaT Intersed	cti
CRAS	п_DA СК 30	2021 06-Fri	A CRASI	13 South	RD CRASHSEVERITY		BERO MANNERO FIRSTHARN RELATIVE_IRELATION 2 Angle Motor Veh On Roadwa Four-Way	
02	30	2021 06-Fri 2020 06-Fri			Property Damage Only	0		•
03	20			10 South	Property Damage Only	0	2 Front to Re Motor Veh On Roadwa Four-Way	•
	20	2020 03-Tues		14 North	Property Damage Only	0	2 Front to Re Motor Veh On Roadwa Intersecti	
	14	2022 06-Fri	~~	16 North	Property Damage Only	0	3 Front to Re Motor Veh On Roadwa Four-Way	•
	19	2022 02-Mon	08		Property Damage Only	0	2 Sideswipe - Motor Veh On Roadwa Four-Way	•
	15	2020 01-Sun		12 South	Possible Injury	0	2 Angle Motor Veh On Roadwa Four-Way	•
03		2022 04-Wed	07	South	Property Damage Only	0	2 Angle Motor Veh On Roadwa Four-Way	
	16	2022 05-Thu	07	South	Property Damage Only	0	2 Angle Motor Veh On Roadwa Four-Way	•
	31	2021 06-Fri			lica Minor Injury	0	2 Angle Motor Veh On Roadwa Four-Way	•
	30	2022 01-Sun		19	Property Damage Only	0	2 Angle Motor Veh On Roadwa Four-Way	•
	16	2020 04-Wed	04		lica Property Damage Only	0	2 Sideswipe - Motor Veh On Roadwa Four-Way	
	14	2022 05-Thu	08	South	Property Damage Only	0	2 Angle Motor Veh On Roadwa Four-Way	уI
	24	2020 03-Tues		18 Not App	lica Property Damage Only	0	2 Angle Motor Veh On Roadwa Four-Way	уI
	21	2020 06-Fri		12 South	Property Damage Only	0	2 Angle Motor Veh On Roadwa Four-Way	уI
	18	2020 03-Tues	09	East	Property Damage Only	0	2 Sideswipe - Motor Veh On Roadwa Four-Way	уI
	18	2021 07-Sat		10	Possible Injury	0	2 Angle Motor Veh On Roadwa Four-Way	уI
	23	2022 06-Fri		20 North	Possible Injury	0	2 Other Motor Veh On Roadwa Four-Way	уI
	25	2020 06-Fri		13	Property Damage Only	0	2 Angle Motor Veh On Roadwa Four-Way	уI
05		2022 05-Thu		16 Not App	lic: Property Damage Only	0	2 Front to Re Motor Veh On Roadwa Four-Way	уI
	23	2021 05-Thu		14 South	Property Damage Only	0	2 Angle Motor Veh On Roadwa Four-Way	y I
	15	2022 06-Fri		12 South	Property Damage Only	0	2 Front to Re Motor Veh On Roadwa Four-Way	уI
	17	2021 04-Wed		12 Not App	lica Property Damage Only	0	2 Angle Motor Veh On Roadwa Four-Way	γI

04		2022 02-Mon	15	Minor Injury	0	3 Front to Re Motor Veh On Roadwa Four-Way I
	23	2020 07-Sat	22 North	Property Damage Only	0	1 Mailboxes/ On Roadwa Not at Inter
09		2021 02-Mon	15 South	Property Damage Only	0	2 Sideswipe - Motor Veh On Roadwa Not at Inte
09		2021 06-Fri 09	Not Appl	lica Property Damage Only	0	2 Angle Motor Veh On Roadwa Four-Way I
04		2021 05-Thu	12	Property Damage Only	0	2 Sideswipe - Motor Veh On Roadwa Four-Way I
	30	2021 05-Thu	21 Not App	lic: Property Damage Only	0	2 Angle Motor Veh On Roadwa Four-Way I
	27	2020 05-Thu	14 West	Property Damage Only	0	2 Front to Re Motor Veh On Roadwa Not at Inte
	30	2022 06-Fri	14 West	Property Damage Only	0	2 Angle Motor Veh On Roadwa Not at Inter
09		2021 05-Thu	15 West	Property Damage Only	0	2 Front to Re Motor Veh On Roadwa Entrance/E
	10	2021 07-Sat	19 West	Property Damage Only	0	2 Front to Re Motor Veh On Roadwa Four-Way I
	28	2021 03-Tues	19 East	Property Damage Only	0	2 Front to Re Motor Veh On Roadwa Not at Inter
03		2020 03-Tues	22 East	Property Damage Only	0	2 Sideswipe - Motor Veh On Roadwa Interchang
01		2020 06-Fri	15 West	Possible Injury	0	2 Angle Motor Veh On Roadwa Four-Way I
	31	2021 02-Mon	12 West	Property Damage Only	0	2 Front to Re Motor Veh On Roadwa Four-Way I

CRASH_DA CRASH_YE/ CRASH_DA CRASH_HO DIVIDEDRD CRASHSEVERITY

	—		-	-	
	24	2022 05-Thu		14 East	Property Damage Only
	17	2020 06-Fri		16 South	Property Damage Only
02		2020 01-Sun		14 South	Property Damage Only
05		2021 04-Wed		13 South	Possible Injury
	23	2022 06-Fri		14	Possible Injury
	31	2022 01-Sun		13	Serious Injury
	15	2021 01-Sun		16 North	Property Damage Only
	31	2022 05-Thu		13 South	Property Damage Only
	24	2021 04-Wed	02	Not Applic	a Property Damage Only
	31	2022 02-Mon		15 Not Applic	a Property Damage Only
	14	2022 04-Wed		15 Not Applic	a Possible Injury
09		2021 04-Wed		12 East	Property Damage Only
	30	2022 04-Wed	08	South	Property Damage Only
02		2021 07-Sat		20	Minor Injury
	25	2022 06-Fri		11 East	Property Damage Only

NUMBERKI NUMBERO MANNERO FIRSTHARN RELATIVE_I RELATIONT

2	2 Front to Re	Motor	Veh	On	Roadwa Four-Way I
1	L	Guardr	rail (I	On	Shoulde Not at Inter
2	2 Front to Re	Motor	Veh	On	Roadwa Four-Way I
3	3 Front to Re	Motor	Veh	On	Roadwa Four-Way I
2	2 Front to Re	Motor	Veh	On	Roadwa Four-Way I
2	2 Angle	Motor	Veh	On	Roadwa Four-Way I
2	2 Angle	Motor	Veh	On	Roadwa Four-Way I
2	2 Front to Re	Motor	Veh	On	Roadwa Four-Way I
2	2 Front to Fro	Motor	Veh	On	Roadwa Four-Way I
2	2 Rear to Sid	Motor	Veh	On	Roadwa Four-Way I
2	2 Front to Re	Motor	Veh	On	Roadwa Entrance/E
2	2 Front to Re	Motor	Veh	On	Roadwa Intersectio
2	2 Front to Re	Motor	Veh	On	Roadwa Four-Way I
2	2 Angle	Motor	Veh	On	Roadwa Entrance/E
2	2 Front to Re	Motor	Veh	On	Roadwa Interchang

LIGHTCONI WEATHERF WEA	ATHERS RDWYSU	RFWORKZON ROADWAY INTERSEC	T ROUTE_ID BASIC_TYPE	UNITTYPEU VEHICLETY
Daylight Cloudy	Dry	NOT APPLI(FOLEY BLVD NW	040000659 Angle	Motor Vehi Passenger
Daylight Clear	Dry	NOT APPLI(FOLEY BLVD NW	040000659 Rear End	Motor Vehi Passenger
Daylight Clear	Dry	NOT APPLICFOLEY BLVI 99TH	040000659 Left Turn	Motor Vehi Passenger
Daylight Clear	Dry	NOT APPLICFOLEY BLVD NW	040000659 Rear End	Motor Vehi Passenger
Dark (Str Li Snow	Snow	NOT APPLICFOLEY BLVI 99TH AVE	E 1050002393 Sideswipe Opposing	Motor Vehi Passenger
Daylight Cloudy	Dry	NOT APPLI(99TH AVE NW	050002393 Rear End	Motor Vehi Passenger
Dark (Str Li Clear	Dry	NOT APPLI(99TH AVE NW	050002393 Sideswipe Same Direction	Motor Vehi Passenger
Daylight Cloudy	Dry	NOT APPLI(99TH AVE NW	050002393 Bike	Bicycle
Daylight Clear	Dry	NOT APPLI(99TH AVE I FOLEY BL	VI 050002393 Rear End	Motor Vehi Passenger

LIGHTCON	I WEATHERF	WEATHERS	RDWYSURF	WORKZON	ROADW	VAY_INTER	SECT	ROUTE_ID BASIC_TYPE		UNITTYPEU VEHICLETY
Daylight	Clear		Dry	NOT APPLI	FOLEY E	BLVD NW		040000659 Left Turn		Motor Veh Sport Utilit
Daylight	Cloudy		Wet	NOT APPLI	FOLEY E	BLVD NW		040000659 Rear End		Motor Veh Sport Utilit
Daylight	Snow		Slush	NOT APPLI	FOLEY E	BLVD NW		040000659 Rear End		Hit-And-Run Vehicle
Daylight	Cloudy	Rain	Wet	NOT APPLI	N/B FO	LEY BLVD N	NW @	040000659 Rear End		Motor Vehi Passenger
Daylight	Clear		Dry	NOT APPLI	FOLEY E	BLVI 101ST	AVE	040000659 Sideswipe S	ame Direction	Motor Vehi Passenger
Daylight	Clear		Dry	NOT APPLI(FOLEY E	BLVD NW		040000659 Angle		Motor Vehi Passenger
Daylight	Clear		Dry	NOT APPLI(FOLEY E	BLVI 101ST	AVE	040000659 Other		Motor Vehi Passenger
Daylight	Clear		Dry	NOT APPLI(FOLEY E	BLVI 101ST	AVE	040000659 Angle		Motor Veh Sport Utilit
Daylight	Snow		Snow	NOT APPLI(FOLEY E	BLVI 101ST	AVE	040000659 Left Turn		Motor Vehi Passenger
Dark (Str Li	i Clear		Dry	NOT APPLI(FOLEY E	BLVI 101ST	AVE	040000659 Angle		Motor Veh Sport Utilit
Dark (Str Li	i Clear		Dry	NOT APPLI(FOLEY E	BLVD NW		040000659 Sideswipe O	pposing	Motor Veh Passenger
Daylight	Clear		Dry	NOT APPLI(FOLEY E	3LVI 101ST	AVE	040000659 Angle		Motor Veh Passenger
Dark (Unkr	n Rain		Wet	NOT APPLI(FOLEY E	BLVD NW		040000659 Left Turn		Motor Veh Passenger
Daylight	Clear		Dry	NOT APPLI(FOLEY E	BLVD NW		040000659 Angle		Motor Veh Sport Utilit
Daylight	Clear		Dry	NOT APPLI(FOLEY E	BLVD NW		040000659 Sideswipe S	ame Direction	Motor Veh Medium / I
Daylight	Clear		Dry	NOT APPLI	FOLEY E	BLVI 101ST	AVE	040000659 Left Turn		Motor Vehi Passenger
Dark (Str Li	Snow		Snow	NOT APPLI	FOLEY E	BLVI 101ST	AVE	040000659 Other		Motor Veh Other Light
Daylight	Clear		Slush	NOT APPLI(FOLEY E	BLVD NW		040000659 Angle		Motor Veh Passenger
Daylight	Cloudy		Dry	NOT APPLI(FOLEY E	3LVI 101ST	AVE	040000659 Rear End		Hit-And-Ru Passenger
Daylight	Clear		Dry	NOT APPLI(FOLEY E	3LVI 101ST	AVE	040000659 Angle		Motor Veh Pickup
Daylight	Cloudy		Dry	NOT APPLI	FOLEY E	BLVI 101ST	AVE	040000659 Rear End		Hit-And-Run Vehicle
Daylight	Cloudy		Dry	NOT APPLI	FOLEY E	BLVI 101ST	AVE	040000659 Angle		Motor Vehi Passenger

Daylight Clear	Dry	NOT APPLI(FOLEY BLVI RAMP	888 040000659 Rear End	Motor Veh Passenger
Dark (Str Li Cloudy	Dry	NOT APPLICFOLEY BLVD NW	040000659 Single Vehicle Run Off Road	Motor Veh Pickup
Daylight Clear	Dry	NOT APPLICFOLEY BLVI 101ST	AVE 040000659 Sideswipe Same Direction	Motor Veh Passenger
Daylight Clear	Dry	NOT APPLI 101ST AVE FOLEY	' BVLI 050002393 Left Turn	Motor Veh Passenger
Daylight Clear	Dry	NOT APPLI 101ST AVE FOLEY	BLVI 050002393 Sideswipe Same Direction	Motor Veh Passenger
Dark (Str Li Clear	Slush	NOT APPLI(101ST AVE NW	050002393 Angle	Motor Veh Passenger
Daylight Clear	Dry	NOT APPLI 101ST AVE NW A	FOL 050002393 Rear End	Motor Veh Other Light
Daylight Clear	Dry	NOT APPLI(101ST AVE NW	050002393 Angle	Motor Veh School Bus
Daylight Clear	Dry	NOT APPLICRAMP FRO RAMP	TO F 220000659 Rear End	Motor Veh Medium / I
Daylight Cloudy	Dry	NOT APPLICWB USTH 10 TO F	OLEY 220000659 Rear End	Motor Veh Sport Utilit
Dark (Str Li Clear	Dry	NOT APPLI(RAMP887	220000659 Rear End	Motor Veh Sport Utilit
Dark (Str Li Cloudy	Dry	NOT APPLI(RAMP887 FOLEY	BLVI 220000659 Sideswipe Same Direction	Hit-And-Run Vehicle
Daylight Clear	Dry	NOT APPLI(RAMP887	220000659 Angle	Motor Veh Passenger
Daylight Clear	Dry	NOT APPLI(RAMP888	220000659 Rear End	Motor Veh Passenger

LIGHTCONI W	/EATHERF WEATHERS	RDWYSURF	WORKZON ROAD	WAY INTERSECT	ROUTE_ID BASIC_TYPE	UNITTYPEU VEHICLETY
Daylight Cl	loudy	Dry	NOT APPLICEB US	TH 10 AT FOLEY	040000659 Rear End	Motor Veh Sport Utilit
Daylight Cl	lear	Dry	NOT APPLICFOLEY	BLVD NW	040000659 Single Vehicle Run Off Road	Hit-And-Run Vehicle
Daylight Cl	lear	Dry	NOT APPLICFOLEY	BLVD NW	040000659 Rear End	Motor Vehi Passenger
Daylight Cl	lear	Dry	NOT APPLI(FOLEY	BLVI RAMP529	040000659 Rear End	Motor Veh Passenger
Daylight Cl	loudy	Dry	NOT APPLICFOLEY	BLVI HWY 10	040000659 Rear End	Motor Veh Sport Utilit
Daylight Cl	lear	Dry	NOT APPLICFOLEY	BLVIHIGHWAY	040000659 Angle	Motor Veh Motorcycle
Daylight Cl	lear	Dry	NOT APPLI(FOLEY	BLVD NW AT US	040000659 Angle	Motor Veh Pickup
Daylight Cl	loudy	Dry	NOT APPLI(FOLEY	BLVI 101ST AVE	040000659 Rear End	Motor Veh Sport Utilit
Dark (Str Li Ra	ain	Wet	NOT APPLI(FOLEY	BLVD NW	040000659 Head On	Motor Veh Pickup
Daylight Cl	lear	Dry	NOT APPLICFOLEY	BLVD NW	040000659 Other	Motor Veh Passenger
Daylight Cl	loudy	Slush	NOT APPLICRAMP	523 FOLEY BLVI	220000659 Rear End	Motor Veh Sport Utilit
Daylight Cl	lear	Dry	NOT APPLI(RAMP	523	220000659 Rear End	Motor Veh Sport Utilit
Daylight Sl	eet, Hail (Snow	Slush	NOT APPLICRAMP	523	220000659 Rear End	Motor Veh Passenger
Dark (Str Li Cl	loudy	Dry	NOT APPLICRAMP	523	220000659 Angle	Motor Veh Passenger
Daylight Cl	lear	Dry	NOT APPLICE/B US	STH 10@FOLEY B	220000659 Rear End	Motor Veh Sport Utilit

DIRECTION PRECRASHIAGEU	1 SEXU1	PHYSICALC CONTRIBF# CONTRIBF# NONMOTC NONMC	TC RDWYDESI(TRAFFICCO SPE	EDLIMI [:] ALIGNMEN
Southboun Moving For	38 Female	Apparently Failure to Yield Right-of-Way	Two-Way, Traffic Con	40 Straight
Northboun Vehicle Sto	58 Female	Apparently No Clear Contributing Action	Two-Way, Traffic Con	40 Straight
Southboun Moving For	58 Female	Apparently Unknown	Two-Way, Traffic Con	40 Straight
Southboun Moving For	30 Female	Apparently No Clear Contributing Action	Two-Way, Not Applica	40 Straight
Southboun Turning Rig	22 Male	Apparently No Clear Contributing Action	Two-Way, Traffic Con	40 Straight
Eastbound Vehicle Sto	40 Male	Apparently No Clear Contributing Action	Two-Way, Traffic Con	30 Straight
Eastbound Turning Lef	27 Male	Unknown Unknown	Two-Way, Traffic Con	30 Straight
-	25 Male	Apparently Unknown Walk/Cycle Intersec	tion - Marked Crosswalk	_
Eastbound Moving For	33 Male	Apparently Unknown	Two-Way, Traffic Con	30 Straight
DIRECTION PRECRASHIAGEU Northboun Turning Lef	1 SEXU1 42 Female	PHYSICALC CONTRIBF/ CONTRIBF/ NONMOTC NONMC		40 Straight
Southboun Moving For	42 Female 69 Male	Apparently Failed to K Failure to Yield Right-of-Way Apparently Ran Red Light	Two-Way, Traffic Con Other Traffic Con	•
Northboun Slowing	09 Male	Apparentiy kan ked Light	Two-Way, Traffic Con	40 Straight 40 Straight
Northboun Moving For	37 Male	Apparently Improper Turn/Merge	Two-Way, Marine Con Two-Way, No Control	40 Straight
Northboun Turning Lef	57 Male	Apparently No Clear Contributing Action	Two-Way, Traffic Con	45 Straight
Eastbound Moving For	51 Male	Apparently No Clear Contributing Action	Two-Way, Traffic Con	35 Straight
Northboun Turning Lef	21 Male	Apparently Ran Red Light	Two-Way, Traffic Con	40 Straight
Southboun Moving For	19 Male	Apparently Driver Disti Ran Red Light	Two-Way, Traffic Con	45 Straight
Northboun Moving For	41 Male	Apparently No Clear Contributing Action	Two-Way, Traffic Con	40 Straight
Southboun Moving For	30 Female	Apparently Driver Disti Ran Red Light	Two-Way, Traffic Con	40 Straight
Northboun Moving For	59 Male	Apparently No Clear Contributing Action	Two-Way, Traffic Con	40 Straight
Southboun Moving For	19 Male	Apparently Disregard (Failure to Yield Right-of-Way	Two-Way, Traffic Con	45 Straight
Northboun Moving For	57 Female	Apparently Other Contributing Action	Two-Way, Traffic Con	40 Straight
Eastbound Moving For	30 Female	Apparently No Clear Contributing Action	Two-Way, Traffic Con	30 Straight
Eastbound Turning Lef	32 Male	Apparently Failed to Keep in Proper Lane	Other Traffic Con	40 Straight
Southboun Turning Lef	83 Female	Apparently Failure to Yield Right-of-Way	Two-Way, Traffic Con	45 Straight
Westbound Moving For	27 Female	Apparently No Clear Contributing Action	Two-Way, Traffic Con	30 Straight
Northboun Moving For	18 Male	Apparently Ran Red Light	Two-Way, Traffic Con	40 Straight
Southboun Moving Forward	10 Maie		Two-Way, Traffic Con	40 Straight
Southboun Moving For	36 Male	Apparently Ran Red Light	Two-Way, Traffic Con	40 Straight
Southboun Moving Forward			Two-Way, Traffic Con	40 Straight
Eastbound Turning Lef	33 Male	Apparently No Clear Contributing Action	Two-Way, Traffic Con	40 Straight
		Apparently the clear contributing Action		io strugit

Southboun Moving For	24 Male	Apparently Driver Distracted	Two-Way, Traffic Con	40 Curve Right
Northboun Moving For	30 Male	Has Been T Failed to Ke Operated Motor Vehicle: Careless	Two-Way, No Control	40 Straight
Southboun Changing L	61 Female	Apparently Unknown	Two-Way, No Control	40 Straight
Northboun Turning Lef	40 Female	Apparently Failure to Yield Right-of-Way	Two-Way, Traffic Con	40 Straight
Eastbound Turning Lef	34 Male	Apparently Unknown	Two-Way, Traffic Con	40 Straight
Northboun Moving For	17 Female	Apparently Swerved or Avoided Due to Wind	Two-Way, Traffic Con	40 Straight
Westbount Moving For	57 Male	Apparently Following Too Closely	One Way T No Control	45 Straight
Westbount Moving For	55 Male	Apparently No Clear Contributing Action	Two-Way, No Control	30 Straight
Westbount Moving For	35 Male	Apparently Following Too Closely	Two-Way, Traffic Con	65 Straight
Westbounc Vehicle Sto	34 Female	Apparently No Clear Contributing Action	One Way T Traffic Con	65 Curve Right
Eastbound Vehicle Sto	19 Female	Apparently No Clear Contributing Action	Two-Way, Not Applica	65 Straight
Eastbound Moving Forward			Two-Way, Traffic Con	30 Straight
Westbount Moving For	58 Female	Apparently No Clear Contributing Action	Two-Way, Traffic Con	45 Straight
Southboun Vehicle Sto	42 Female	Apparently No Clear Contributing Action	Two-Way, Traffic Con	40 Straight

DIRECTION PRECRASHI AGEU1	SEXU1	PHYSICALC CONTRIBF# CONTRIBF# NONMOTC NONMO	TC RDWYDESI(TRAFFICCO SPEEI	DLIMI [®] ALIGNMEN
Eastbound Vehicle Sto	58 Male	Apparently No Clear Contributing Action	Two-Way, Traffic Con	45 Straight
Unknown Unknown			Two-Way, INo Control	40 Straight
Southboun Turning Rig	24 Male	Apparently Following Too Closely	One Way T Yield Sign	65 Curve Right
Southboun Turning Rig	20 Male	Apparently No Clear Contributing Action	Two-Way, Traffic Con	40 Curve Right
Northboun Vehicle Sto	36 Female	Apparently Improper Backing	Two-Way, Traffic Con	40 Straight
Northboun Moving For	34 Male	Unknown Ran Red Light	Two-Way, Traffic Con	40 Straight
Northboun Changing L	56 Male	Apparently Operated N Failure to Yield Right-of-Way	Two-Way, Traffic Con	35 Straight
Southboun Vehicle Sto	52 Female	Apparently No Clear Contributing Action	Two-Way, Traffic Con	45 Straight
Northboun Moving For	48 Male	Apparently Ran Red Light	Two-Way, Traffic Con	40 Straight
Southboun Changing L	52 Male	Apparently Unknown	Two-Way, Traffic Con	45 Straight
Southboun Vehicle Sto	34 Female	Apparently No Clear Contributing Action	One Way T Yield Sign	40 Curve Right
Eastbound Moving For	27 Male	Apparently Following Too Closely	One Way T Traffic Con	40 Straight
Eastbound Turning Rig	39 Female	Apparently No Clear Contributing Action	Two-Way, Traffic Con	40 Straight
Eastbound Vehicle Sto	40 Male	Apparently Unknown	Two-Way, Traffic Con	65 Straight
Eastbound Vehicle Sto	35 Female	Apparently No Clear Contributing Action	One Way T Yield Sign	65 Straight

GRADEU1	UNITTYPEL VEHICLETY DIRECTION PRECRASHI AGEU2	2 SEXU2	PHYSICALC CONTRIBF# CONTRIBF# NONMOTC NONMOT	CRDWYDESI
Downhill	Motor Veh Passenger (Eastbound Turning Lef	88 Male	Apparently No Clear Contributing Action	Two-Way, I
Level	Motor Veh Pickup Northboun Moving For	36 Male	Apparently No Clear Contributing Action	Two-Way, I
Downhill	Motor Veh Passenger (Northboun Turning Lef	33 Male	Apparently Unknown	Two-Way, I
Downhill	Hit-And-Ru Passenger (Southboun Moving For	37	Unknown Unknown	Two-Way, I
Downhill	Motor Veh Sport Utilit Eastbound Vehicle Sto	75 Male	Apparently No Clear Contributing Action	Two-Way, I
Level	Motor Veh Sport Utilit Eastbound Vehicle Sto	63 Male	Apparently No Clear Contributing Action	Two-Way, I
Level	Hit-And-Run Vehicle Eastbound Turning Left			Two-Way, I
	Hit-And-Run Vehicle Eastbound Turning Right			Two-Way, I
Level	Motor Veh Sport Utilit Eastbound Vehicle Sto	42 Male	Apparently No Clear Contributing Action	Two-Way, I
GRADEU1	UNITTYPEL VEHICLETY DIRECTION PRECRASHI AGEU2	2 SEXU2	PHYSICALC CONTRIBF4 CONTRIBF4 NONMOTC NONMOT	
Level	Motor Veh Passenger 'Southboun Moving For	71 Male	Apparently No Clear Contributing Action	Two-Way, I
Level	Motor Veh Sport Utilit Westbound Moving For	60 Female	Apparently No Clear Contributing Action	Two-Way, I
Level	Motor Veh Pickup Northboun Vehicle Sto	59 Male	Apparently No Clear Contributing Action	Two-Way, I
Level	Motor Veh Passenger (Northboun Moving For	59 Male	Apparently No Clear Contributing Action	Two-Way, I
Level	Motor Veh Passenger (Northboun Moving For	40 Female	Apparently Failed to Keep in Proper Lane	Two-Way, I
Level	Motor Veh Sport Utilit Southboun Moving For	72 Male	Apparently Ran Red Light	Two-Way, I
Level	Motor Veh Pickup Eastbound Turning Lef	28 Male	Apparently Other Contributing Action	Two-Way, I
Level	Motor Veh Pickup Southboun Moving For	40 Male	Apparently No Clear Contributing Action	Two-Way, I
Level	Motor Veh Sport Utilit Southboun Turning Lef	28 Female	Apparently Failure to Yield Right-of-Way	Two-Way, I
Uphill	Motor Veh Passenger (Westbound Moving For	49 Male	Apparently No Clear Contributing Action	Two-Way, I
Uphill	Motor Veh Sport Utilit Eastbound Turning Lef	28 Male	Unknown Disregard (Operated Motor Vehicle: Careles	•
Level	Motor Veh Passenger 'Southboun Moving For	36 Female	Apparently No Clear Contributing Action	Two-Way, I
Level	Motor Veh Passenger (Southboun Turning Lef	18 Female	Apparently No Clear Contributing Action	Two-Way, I
Level	Motor Veh Passenger (Southboun Moving For	39 Female	Apparently Ran Red Light	Two-Way, I
Level	Motor Veh Pickup Eastbound Turning Lef	61 Male	Apparently No Clear Contributing Action	Other
Level	Motor Veh Sport Utilit Northboun Moving For	28 Male	Apparently No Clear Contributing Action	Two-Way, I
Level	Motor Veh Medium / I Northboun Moving For	18 Male	Apparently Other Contributing Action	Two-Way, I
Downhill	Motor Veh Passenger (Westbound Turning Lef	27 Male	Apparently No Clear Contributing Action	Two-Way, I
Uphill	Motor Veh Pickup Southboun Vehicle Sto	53 Male	Apparently No Clear Contributing Action	Two-Way, I
Level	Motor Veh Passenger 'Eastbound Turning Lef	44 Male	Apparently No Clear Contributing Action	Two-Way, I
Level	Motor Veh Sport Utilit Southboun Moving For	66 Female	Apparently No Clear Contributing Action	Two-Way, I
			··· · · · · · · · · · · · · · · · · ·	

38 Female

Apparently Ran Red Light

Two-Way, I

Motor Veh Sport Utilit Southboun Moving For Motor Veh Passenger 'Southboun Moving For

Level

Downhill Level	Motor Veh Sport Utilit Southboun Vehicle Sto	74 Male	Apparently No Clear Contributing Action	Two-Way, I
Level	Motor Veh Sport Utilit Southboun Moving For	40 Female	Apparently No Clear Contributing Action	Two-Way, I
Level	Motor Veh Passenger (Southboun Moving For	55 Female	Apparently No Clear Contributing Action	Two-Way, I
Level	Motor Veh Passenger (Eastbound Turning Lef	40 Male	Apparently Unknown	Two-Way, I
Level	Motor Veh Passenger (Eastbound Moving For	39 Male	Apparently No Clear Contributing Action	Two-Way, I
Level	Motor Veh Passenger (Westbound Moving For	33 Male	Apparently Operated Motor Vehicle: Careless/Negligent	/ One Way T
Level	Motor Veh Passenger (Westbound Moving For	71 Male	Apparently No Clear Contributing Action	Two-Way, I
Level	Motor Veh Passenger (Westbound Moving For	30 Male	Apparently No Clear Contributing Action	Two-Way, I
Uphill	Motor Veh Passenger (Westbound Moving For	54 Female	Apparently Driver Distracted	One Way T
Level	Hit-And-Run Vehicle Eastbound Moving Forward			Two-Way, I
Uphill	Motor Veh Passenger (Eastbound Turning Lef	24 Female	Apparently No Clear Contributing Action	Two-Way, I
Level	Motor Veh Sport Utilit Southboun Moving For	44 Female	Apparently Ran Red Light	Two-Way, I
Level	Hit-And-Ru Passenger (Southboun Moving For	29 Male	Apparently Unknown	Two-Way, I
GRADEU1 Level Downhill	UNITTYPEL VEHICLETYI DIRECTION PRECRASHI AGEU2 Motor Veh Sport Utilit Eastbound Moving For	SEXU2 34 Male	PHYSICALC CONTRIBF# CONTRIBF# NONMOTC NONMOT Apparently Following Too Closely	CRDWYDESI Two-Way, I
Level	Motor Veh Passenger (Southboun Turning Rig	18 Male	Apparently No Clear Contributing Action	One Way T
Level	Motor Veh Sport Utilit Southboun Turning Rig	56 Female	Apparently No Clear Contributing Action	Two-Way, I
Level	Motor Veh Passenger 'Northboun Vehicle Sto	58 Male	Apparently No Clear Contributing Action	Two-Way, I
Uphill	Motor Veh Sport Utilit Eastbound Turning Lef	40 Male	Apparently No Clear Contributing Action	Two-Way, I
Level	Motor Veh Pickup Northboun Moving For	25 Male	Apparently No Clear Contributing Action	Two-Way, I
Uphill	Motor Veh Sport Utilit Southboun Moving For	20 Female	Apparently Following Too Closely	Two-Way, I
Uphill	Motor Veh Pickup Southboun Turning Lef	44 Male	Apparently No Clear Contributing Action	Two-Way,
Level	Motor Veh Passenger (Southboun Moving For	52 Female	Apparently Unknown	Two-Way, I
Level	Motor Veh Sport Utilit Southboun Turning Rig	63 Female	Apparently No Clear Contributing Action	Two-Way, I
Uphill	Motor Veh Passenger (Eastbound Moving For	18 Male	Apparently No Clear Contributing Action	One Way T
Level	Motor Veh Sport Utilit Eastbound Moving For	44 Female	Apparently Improper Turn/Merge	Two-Way I
Level	Motor Veh Pickup Eastbound Moving For	40 Male	Apparently Unknown	Two-Way, I
Level	Motor Veh Passenger (Eastbound Turning Rig	69 Male	Apparently Driver Disti Following Too Closely	One Way T
			Apparently Driver Distribution wing rob closely	Che way I

TRAFFICCO SPEEDLIMI' ALIGNMEN GRADEU2 UNITTYPEL VEHICLETY DIRECTION PRECRASHI AGEU3 SEXU3 PHYSICALC CONTRIBF/ CONTRIBF/

Traffic Cont	30 Straight	Level			
Traffic Cont	40 Straight	Level			
Traffic Cont	40 Straight	Level			
No Control	40 Straight	Downhill			
Traffic Cont	35 Straight	Level			
Traffic Cont	30 Straight	Level	Motor Veh Sport Utilit Eastbound Moving For	46 Male	Apparently Driver Distracted
Traffic Cont	30 Straight	Level			
Traffic Cont	30 Straight	Level			
Traffic Cont	30 Straight	Level			

TRAFFICCO SPEEDL	IMI' ALIGNMEN	GRADEU2	UNITTYPEL VEHICLETY DIRECTION PRECRASHI AGEU3	SEXU3	PHYSICALC CONTRIBFA CONTRIBFA
Traffic Cont	40 Straight	Level			
Traffic Cont	40 Straight	Level			
Traffic Cont	40 Straight	Level			
No Control	40 Straight	Level	Motor Veh Passenger Northboun Moving For	26 Male	Apparently Other Contributing Act
Traffic Cont	45 Straight	Level			
Traffic Cont	35 Straight	Level			
Traffic Cont	40 Curve Left	Level			
Traffic Cont	45 Straight	Level			
Traffic Cont	40 Straight	Level			
Traffic Cont	40 Straight	Level			
Traffic Cont	35 Straight	Level			
Traffic Cont	45 Straight	Level			
Traffic Cont	40 Straight	Level			
Traffic Cont	45 Straight	Level			
Traffic Cont	40 Straight	Level			
Traffic Cont	45 Straight	Downhill			
Traffic Cont	45 Straight	Sag (Bottor	m)		
Traffic Cont	40 Straight	Level			
Traffic Cont	40 Straight	Uphill			
Traffic Cont	40 Straight	Level			
Traffic Cont	40 Straight	Level			
Traffic Cont	40 Straight	Level			

Traffic Coni 40 Curve Right Downhill Motor Veh Passenger ' Southboun Vehicle Sto

28 Female Apparently No Clear Contributing ,

No Control: 40 Straight Level Traffic Cont 40 Straight Level Traffic Cont 40 Straight Level Traffic Cont 40 Straight Level No Control 45 Straight Level 30 Straight No Control Level Traffic Cont 65 Straight Level Traffic Cont 65 Curve Right Uphill Not Applica 65 Straight Level Traffic Cont 30 Straight Uphill Traffic Cont 45 Straight Level Traffic Cont 40 Straight Level

TRAFFICCO SPEEI	DLIMI [:] ALIGNME	N GRADEU2	UNITTYPEL VEHICLETY DIRECTION PRECRASHI AGEU3	SEXU3	PHYSICALC CONTRIBF# CONTRIBF#
Traffic Cont	45 Straight	Level			

Yield Sign	65 Curve Righ	nt Level			
Traffic Cont	40 Curve Righ	nt Level	Motor Veh Passenger Southboun Moving For	33 Male	Apparently Unknown
Traffic Cont	40 Straight	Level			
Traffic Cont	40 Straight	Downhill			
Traffic Cont	35 Straight	Level			
Traffic Cont	45 Straight	Uphill			
Traffic Cont	40 Straight	Downhill			
Traffic Cont	45 Straight	Level			
Yield Sign	40 Curve Righ	nt Level			
Traffic Cont	40 Straight	Uphill			
Traffic Cont	40 Straight	Level			
Traffic Cont	65 Straight	Level			
Yield Sign	65 Straight	Level			

NONMOTO NONMOTO RDWYDESI/TRAFFICCO SPEEDLIMI' ALIGNMEN GRADEU3 UNITTYPEU VEHICLETY/ DIRECTION PRECRASHI AGEU4 SEXU4

Two-Way, |Traffic Con 30 Straight Level

NONMOTO NONMOTO RDWYDESI/TRAFFICCO SPEEDLIMI' ALIGNMEN GRADEU3 UNITTYPEU VEHICLETY/ DIRECTION PRECRASHI AGEU4 SEXU4

ion

Two-Way, INo Control

40 Straight Level

Two-Way, ITraffic Con[.] 40 Curve Righ Downhill

Action

NONMOTO NONMOTO RDWYDESI/TRAFFICCO SPEEDLIMI' ALIGNMEN GRADEU3 UNITTYPEU VEHICLETY/ DIRECTION PRECRASHI AGEU4 SEXU4

Two-Way, I Traffic Con 40 Curve Righ Level

PHYSICALC^I CONTRIBFA CONTRIBFA NONMOTC NONMOTC RDWYDESI^I TRAFFICCO SPEEDLIMI^I ALIGNMEN GRADEU4 UTMX UTMY LATITUDE

- 478298.80! 4999617.4(45.14971
 - 478300.41 4999622.1 45.14975
 - 478301.71 4999626.0 45.14979
 - 478343.42.4999735.0 45.15077 478283.19.4999626.0 45.14978
 - 478283.20! 4999626.0(45.14978
 - 478290.81(4999626.0) 45.14978
 - 478298.25, 4999626.0(45.14978
 - 478301.27.4999626.0(45.14979

PHYSICALC CONTRIBF CONTRIBF NONMOTC NONMOTC RDWYDESI TRAFFICCO SPEEDLIMI' ALIGNMEN GRA	DEU4	UTMX	UTMY	LATITUI	DE
		478436.05	4999948.6	45.152	269
		478470.12	4999989.1	45.153	306
		478484.21(5000022.20	45.153	336
		478483.57	5000059.93	45.15	537
		478493.49(5000083.1	45.153	391
		478494.774	5000085.6	45.153	393
		478495.29	5000086.6	45.153	394
		478508.254	5000078.8	45.153	387
		478508.48	5000079.5	45.153	387
		478496.71(5000089.3	45.153	396
		478498.41!	5000092.6	45.153	399
		478509.54	5000082.6	45.15	539
		478499.05	5000094.1	45.154	401
		478499.28	5000095.2	45.154	401
		478499.66			
		478511.26	5000087.6	45.153	395
		478511.49!	5000088.3	45.153	395
		478511.95	5000090.0	45.153	397
		478500.28(5000099.8	45.154	406
		478512.76	5000093.0	45.1	154
		478503.40	5000114.3	45.154	419
		478493.49	5000083.1	45.153	391

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-93.2736	########	Accepted	Reportable Coon Rapic Police	UNIT 1

-93.2735	########	Accepted	Reportable Coon Rapic Police	#3 WAS
-93.2733	########	Accepted	Reportable Coon Rapic Police	UNIT 1 NB
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-93.2734	########	Accepted	Reportable Coon Rapic Police	**ACCIDE
-93.2728	########	Accepted	Reportable MN State P State Patro	Westboun
-93.2723	########	Accepted	Reportable Coon Rapic Police	DISPATCH
-93.2741	########	Accepted	Reportable MN State P State Patro	Crash occurred on the ramp from USTH 10 westbound to Foley Blvd. Vehicle twc
-93.2741	########	Accepted	Reportable MN State P State Patro	BOTH
-93.2738	########	Accepted	Reportable Coon Rapic Police	RAMP
-93.2737	########	Accepted	Reportable Coon Rapic Police	UNIT#2
-93.2736	########	Accepted	Reportable Coon Rapic Police	INDEPENDENT WITNESS REPORTED WATCHING LISA RUN A RED LIGHT. FADUMA
-93.2735	########	Accepted	Reportable Coon Rapic Police	I WAS

LONGITUDI CRASH_DA STATUS	STATUS_N(AGENCY_OAGENCY_C	DNARRATIVE
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-93.2753 ######## Accepted	Reportable Coon Rapic Police	PASSERBY REPORTED A GUARD RAIL IN THE ROADWAY NEAR FOLEY BLVD AND F
-93.2753 ######## Accepted	Reportable Coon Rapic Police	Veh 1 and
-93.2753 ######## Accepted	Reportable Coon Rapic Police	SOUTHBO
-93.2751 ######## Accepted	Reportable Coon Rapic Police	Veh 1 and
-93.275 ######## Accepted	Reportable Coon Rapic Police	UNIT 1
-93.2748 ######## Accepted	Reportable MN State P State Patro	o Foley
-93.2748 ######## Accepted	Reportable Coon Rapic Police	D-1 STOPPED AT RED LIGHT 101ST AVE AND FOLEY. D-2 BEHIND D-1. D-2 SAW TF
-93.2746 ######## Accepted	Reportable Coon Rapic Police	DRIVER #1 SAID HE WAS DRIVING NB FOLEY BLVD AND FAILED TO STOP AT THE F
-93.2744 ######## Accepted	Reportable Coon Rapic Police	THE
-93.2757 ######## Accepted	Reportable Coon Rapic Police	UNIT #1 WAS EXITING HIGHWAY 10 ON TO SOUTHBOUND FOLEY BLVD NW. UNI
-93.2756 ######## Accepted	Reportable MN State P State Patro	DAT THE
-93.2754 ######## Accepted	Reportable Coon Rapic Police	*****LOC
-93.2752 ######## Accepted	Reportable Coon Rapic Police	UNIT 1
-93.2755 ######## Accepted	Reportable MN State P State Patro	DE/BUSTH

CH OCCURED YESTERDAY. DRIVER #1 SAID HE WAS EB 99TH AVE AT FOLEY BLVD (AT THE TRAFFIC LIGHT). DRIVER #1 SAID HE WAS MAKING A LEFT TUR

ON GREEN LIGHT. D-1 RAN RED LIGHT AND STRUCK D-2. D-2 CITED FOR RED LIGHT. D-2 CITED FOR CANCELED DL.

T #1 WAS YIELDING TO TURN SOUTHBOUND FOLEY BLVD FROM THE EXIT RAMP. UNIT #2 WAS BEHIND UNIT #1 ALSO WAITING TO TURN SOUTHBOUN

RAFFIC START TO MOVE AND STARTED TO PULL FORWARD. D-2 PULLED FORWARD TOO FAST AND REAR ENDED D-1. RED LIGHT, CRASHING INTO UNIT #2. DRIVER #2 SAID HE WAS MAKING A LEFT TURN FROM SB FOLEY TO EB HIGHWAY 47 WHEN UNIT #1 CRASHED IN⁻

IIGHWAY 10 NW. I ARRIVED AND FOUND THE GUARDRAIL AND TWO SIGNS HAD BEEN CRASHED INTO BY A VEHICLE. I OBSERVED ONE SET OF VEHICLE

A WAS TRAVELING THROUGH A GREEN LIGHT AND MADE CONTACT WITH LISA. LISA SAID TO OFFICER PLATZ; I MUST HAVE RUN THE LIGHT. LISA CITED

) began to turn to go westbound off the ramp. Unit one was driving behind unit two also attempting to go westbound. Unit one failed to apply brakes

IN WHEN ANOTHER UNKNOWN VEHICLE (UNIT #2) PASSED HIM ON THE RIGHT, BUT ALSO MAKING A LEFT TURN. DRIVER #1 SAID HE CRASHED INTO T

in time and crashed into the rear of unit two. Unit one stated they thought unit two was about to about to make the turn. 670

FOR FAILURE TO DRIVE WITH DUE CARE. DAVID SAW THE CRASH BUT DID NOT SEE THE CAUSE.

TRACKS LEADING TO THE PARKING LOT BELOW NEAR STARBUCKS AND SOME VEHICLE PARTS LEFT BEHIND. I PATROLLED THE AREA, BUT WAS UTLA

TO HIM. DRIVER #2 SAID DRIVER #1 RAN THE RED LIGHT. DRIVER #2 SAID HE HAD A GREEN LIGHT.

JD ON TO FOLEY BLVD. UNIT #2 STRUCK UNIT #1 IN THE REAR. MINOR INJURIES, VERY MINOR DAMAGES, NO TOWS.

'HE DRIVER'S DOOR OF UNIT #2 AND THE VEHICLE FLED THE SCENE. DRIVER #1 SAID HE HAS DAMAGE TO HIS FRONT PASSENGER SIDE BUMPER. DRIVE

VEHICLE. NO IDENTIFYING FEATURES LEFT BEHIND AT THE SCENE. YELLOW NOTICE LEFT AT THE SCENE. NO FURTHER ACTION

ER #1 SAID UNIT #2 SHOULD HAVE DAMAGE TO THE DRIVER'S DOOR. DRIVER #1 DESCRIPTION DRIVER #2 HAS A BLACK MALE IN HIS 20'S. NO VEHICLE

INFO FOR UNIT #2. NO VIDEO FOOTAGE. NO REPORTED INJURIES. DRIVER #1 SAID HE BELIEVES DRIVER #2 WAS COMING FROM THE MOVIE THEATER

NEARBY. DRIVER #1 SAID HE WAS ALSO AT THE THEATER. DRIVER #1 DENIED HAVING ANY ROAD RAGE ISSUES. DRIVER #1 SAID HE BELIEVES DRIVER #

2 LOST HIS PATIENTS TO MAKE THE LEFT HAND TURN ONTO FOLEY BLVD AND TRIED TO PASS HIM. NO FURTHER ACTION.

Level 1	STUDY LAYOUT APF	PROVAL
Programmed L	etting DateTBD	
Prepared By	ISRF	20
Reviewed By	Metro District Preliminary Design Engineer	20
Reviewed By	Metro District Maintenance Operations Engineer	20
Reviewed By	Metro District Traffic Engineer	20
Reviewed By	State Geometrics Engineer	20
Approved By	Metro District Engineer	20
Approved By		20
I HEREBY CERTIFY T Supervision and th The laws of the s	HAT I AM A DULY LICENSED PROFESSIONAL	R UNDER MY DIRECT Engineer under

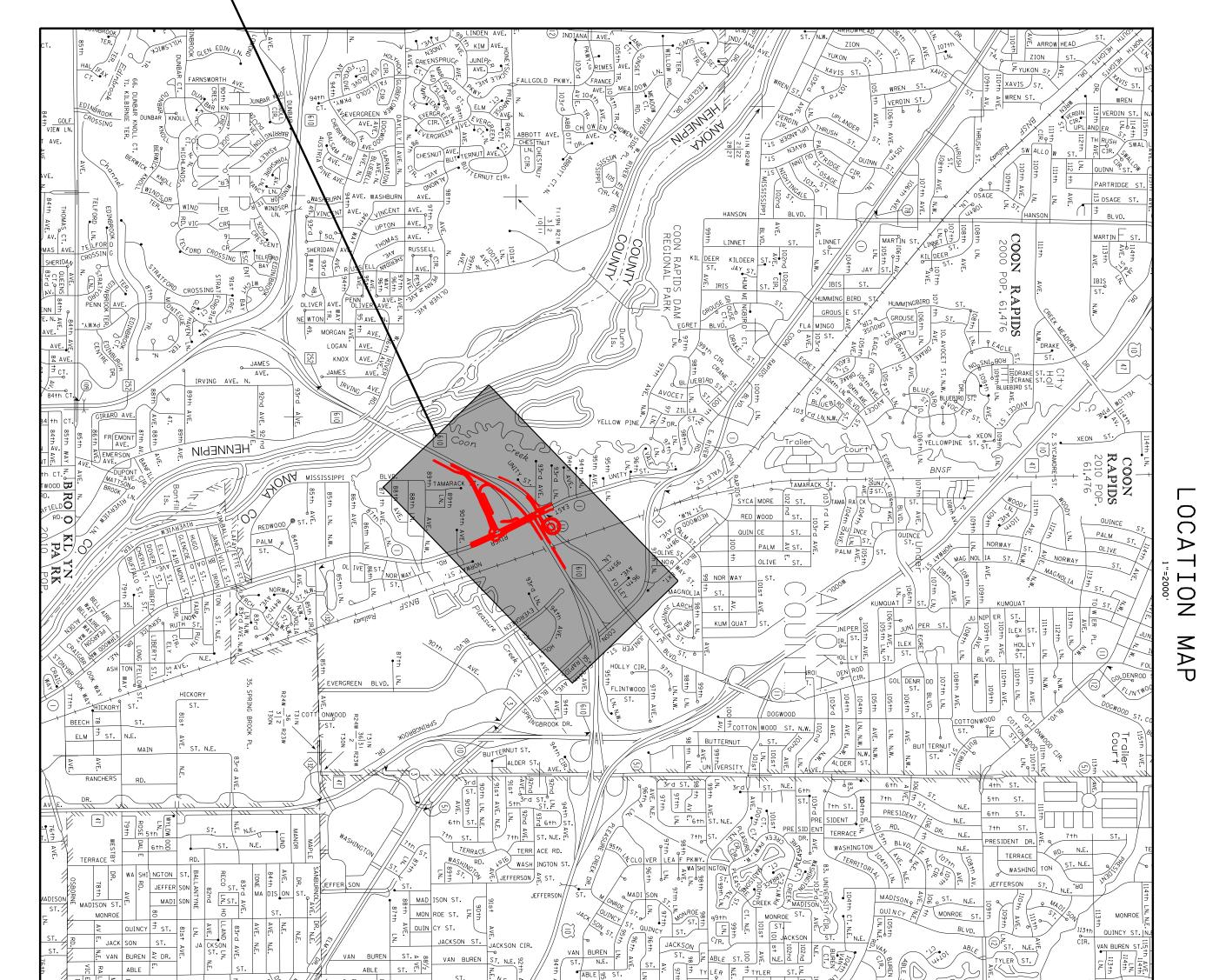
DATE: ______ LIC. NO.: _53680 ENGR.: ____

STUDY LAYOUT T.H. <u>610</u> VICINIT		
		00' EAST OF EAST RIVER ROAD
convert half access to f Prepared <u>NOVE</u> By ISRF		^{IGE} cale: Hor. 1 inch = <u>100</u> ft.
The alignment and grades shown on this map are tentative and subject to change without notice.		The traffic volumes shown are estimated for year _ 2040_ TH GID AND EAST RIVER ROAD (CSAH 1) INTERCHANCE MODIFICATION SUBMITTAL OF TRAFFIC MODELS USED FOR CURRENT CONCEPTS Prepared
		PPMS Activity
		PPMS Activity
Сору То:	F	or:

PROJECT

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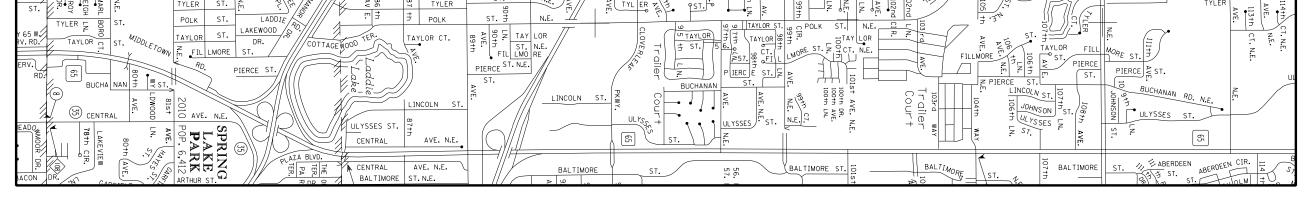


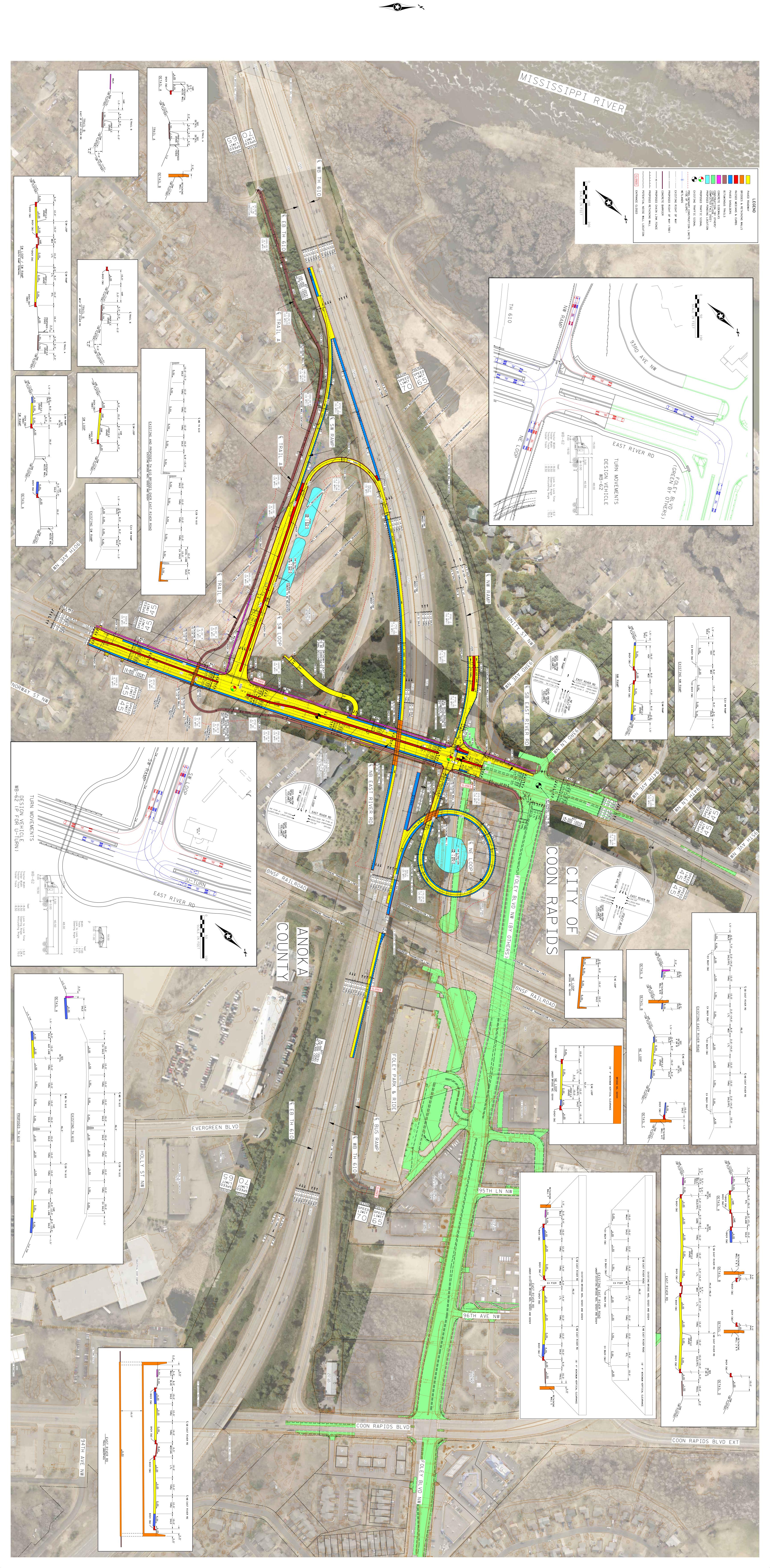


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1 0







Anoka County TRANSPORTATION DIVISION

Highway

Joseph J. MacPherson, P.E. County Engineer

October 19, 2023

Mr. Jim Hovland, Chair Metropolitan Council, Transportation Advisory Board 390 North Robert Street St. Paul, MN 55101

Subject: Letter of Support for TH 610 and CSAH 1 Interchange Improvements Coon Rapids, MN

Dear Mr. Hovland and Board Members;

We support the City of Coon Rapids' application for Federal Highway Administration (FHWA) funding to convert the TH 610 and CSAH 1 (East River Rd) interchange to a full access interchange. Currently, the interchange provides access to East River Road from eastbound TH 610 and provides access to westbound TH 610 from East River Road. The proposed project will provide access to eastbound TH 610 from East River Road and provide access to East River Road from westbound TH 610.

The proposed conversion to full access will significantly shorten existing access routes to businesses, retail centers and residential developments. Additionally, providing full access will help with overall traffic mobility to and from the TH 610 corridor, as well as on the local roadway networks.

We strongly support the City of Coon Rapids in their application for this important funding.

Sincerely,

oseph MacPherson

Joe MacPherson, P.E. County Engineer

cc: Tim Himmer, Coon Rapids Public Works Director Mark Hansen, Coon Rapids City Engineer Jerry Auge, Assistant County Engineer Jack Forslund, Anoka County Transportation Planner

DEPARTMENT OF TRANSPORTATION

11/29/2023

Mark Hansen, PE City Engineer City of Coon Rapids 1831 111th Avenue NW Coon Rapids, MN 55433

Re: MnDOT Letter for the City of Coon Rapids Metropolitan Council/Transportation Advisory Board 2024 Regional Solicitation Funding Request for the TH 610 and East River Road Project.

Dear Mark Hansen,

This letter documents MnDOT Metro District's recognition for Coon Rapids to pursue funding for the Metropolitan Council/Transportation Advisory Board's (TAB) 2024 Regional Solicitation for the TH 610 and East River Road Project.

The proposed project will add ramp access at East River Road and 610 and construct bridges and a ramp system that adds an eastbound on ramp, and a westbound off ramp to the 610 and East River Road interchange. As the agency with jurisdiction over TH 610, MnDOT will allow the City of Coon Rapids to seek improvements proposed in the application. If funded, details of how the project is delivered and any future maintenance agreement with the City will need to be determined during the project's development to define how the improvements will be maintained for the project's useful life.

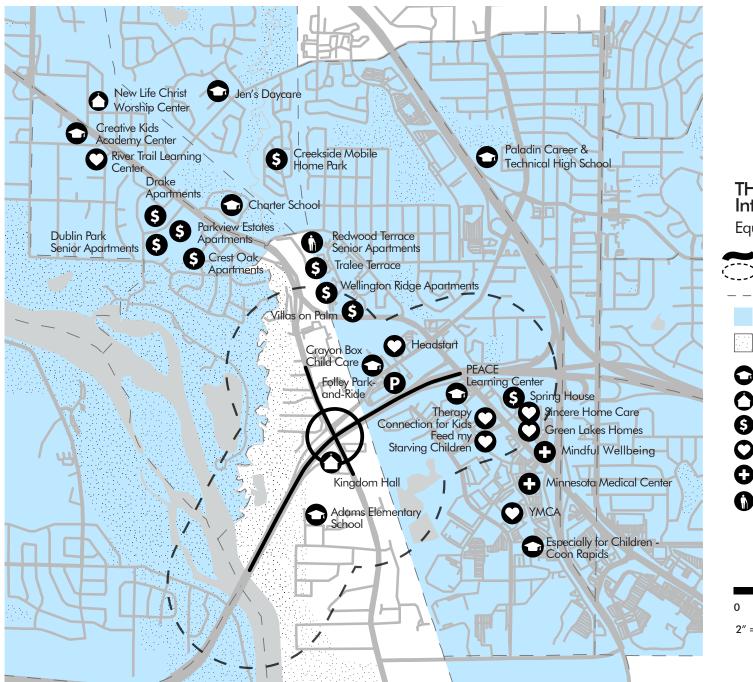
MnDOT does not anticipate partnering on local projects beyond current agreements. If your project receives funding, continue to work with MnDOT Area staff to coordinate and review needs and opportunities for cooperation.

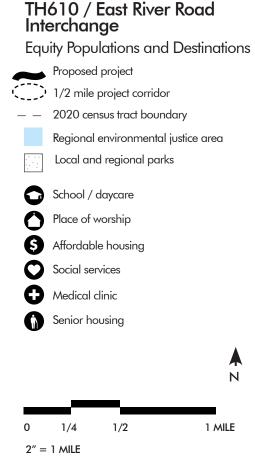
MnDOT Metro District looks forward to continued cooperation with the City of Coon Rapids as this project moves forward and as we work together to improve safety and travel options within the Metro Area.

If you have questions or require additional information at this time, please reach out to your Area Manager at Molly.McCartney@state.mn.us or 651-775-0326.

Sincerely,

Sheila Kauppi, PE Metro District Engineer CC: Molly McCartney, North Area Manager Aaron Tag, Metro Program Director Dan Erickson, Metro State Aid Engineer





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City of Coon Rapids ADA Transition Plan



Adopted by the Coon Rapids City Council March 6, 2018

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Introduction

Transition Plan Need and Purpose

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:

- 1. Employment
- 2. State and local government services
- 3. Public accommodations
- 4. Telecommunications
- 5. 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 Coon Rapids 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." (<u>42 USC. Sec. 12132</u>; <u>28</u> <u>CFR. Sec. 35.130</u>)

As required by Title II of <u>ADA, 28 CFR. Part 35 Sec. 35.105 and Sec. 35.150</u>, the City of Coon Rapids has conducted a self-evaluation of its facilities within public rights of way and has developed this Transition Plan detailing how the organization will ensure that all of those facilities are accessible to all individuals.

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. The Architectural Barriers Act 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 Coon Rapids 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 C.F.R. 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 C.F.R. 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 C.F.R. 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 C.F.R. 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 [29 C.F.R. Sec. 35.160(a)].
- Must designate at least one responsible employee to coordinate ADA compliance [28 <u>CFR Sec. 35.107(a)</u>]. 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]. The notice must include the identification of the employee serving as the ADA coordinator and must provide this information on an ongoing basis [28 CFR Sec. 104.8(a)].
- Must establish a grievance procedure. Public entities must adopt and publish grievance procedures providing for prompt and equitable resolution of complaints [<u>28 CFR Sec.</u> <u>35.107(b)</u>]. 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.

This document has been created to specifically cover accessibility within the public rights of way and does not include information on City of Coon Rapids programs, practices, or building facilities not related to public rights of way.

Self-Evaluation

Overview

The City of Coon Rapids (City) is required, under Title II of the Americans with Disabilities Act (ADA) and 28CFR35.105, to perform a self-evaluation of its current transportation infrastructure policies, practices, and programs. This self-evaluation will identify what policies and practices impact accessibility and examine how the City implements these policies. The goal of the self-evaluation is to verify that, in implementing the City policies and practices, the department is providing accessibility and not adversely affecting the full participation of individuals with disabilities.

The self-evaluation also examines the condition of the City Pedestrian Circulation Route/Pedestrian Access Route (PCR/PAR) and identifies potential need for PCR/PAR infrastructure improvements. This includes the sidewalks, curb ramps, bicycle/pedestrian trails, traffic control signals and transit facilities that are located within the City's rights of way, but does not include any sidewalks, curb ramps, bicycle/pedestrian trails, traffic control signals and transit facilities under the jurisdiction of Anoka County or the Minnesota Department of Transportation. Any barriers to accessibility identified in the self-evaluation and the remedy to the identified barrier are set out in this transition plan.

Summary

In 2017, the City conducted an inventory of pedestrian facilities within its public right-of-way consisting of the evaluation of the following:

- 94.3 miles of sidewalks
- 1,192 curb ramps
- 60 miles of trails
- 81 traffic control signals
- 333 bus stops

A detailed evaluation on how these facilities relate to ADA standards is found in Appendix A and will be updated periodically.

Policies and Practices

Previous Practices

Since the adoption of the ADA, the City has provided accessible pedestrian features as part of City capital improvement projects. As additional information was made available regarding methods to provide accessible pedestrian features, the City updated their procedures to accommodate these methods.

Policy

The City's goal is to continue to provide accessible pedestrian design features as part of City capital improvement projects. The City has established ADA design standards and procedures as listed in Appendix F. These standards and procedures will be kept up to date with nationwide and local best management practices.

The City will consider and respond to all accessibility improvement requests. All accessibility improvements that have been deemed reasonable will be scheduled consistent with transportation project priorities. The City will coordinate with external agencies to ensure that all new or altered pedestrian facilities within the City's jurisdiction are ADA compliant to the maximum extent feasible.

Maintenance of pedestrian facilities within the public right-of-way will continue to follow the policies set forth by the City.

Requests for accessibility improvements can be submitted to the ADA Coordinator. Contact information for this individual is located in Appendix E.

Improvement Schedule

Priority Areas

The City has identified specific locations as priority areas for planned accessibility improvement projects. These areas have been selected due to their proximity to specific land uses such as schools, government offices and medical facilities, as well as from the receipt of public comments. The priority areas as identified in the self-evaluation are as follows:

- Mercy Hospital; Port Medical Area
- Schools; Anoka Ramsey Community College; Parks
- Coon Rapids Ice Center; Boulevard Plaza; City Hall; Transit Corridors

Additional priority will be given to any location where an improvement project or alteration was constructed after January 26, 1991, and accessibility features were omitted.

External Agency Coordination

Many other agencies are responsible for pedestrian facilities within the jurisdiction of the City. The City will coordinate with those agencies to track and assist in the elimination of accessibility barriers along their routes.

Schedule

The City has set the following schedule goals for improving the accessibility of its pedestrian facilities within the City jurisdiction:

• After 30 years, 80% of accessibility features within the jurisdiction of Coon Rapids would be ADA compliant.

ADA Coordinator

In accordance with 28 CFR 35.107(a), the City of Coon Rapids has identified an ADA Title II Coordinator to oversee City ADA policies and procedures. Contact information for this individual is located in Appendix E.

Implementation Schedule

Methodology

The City will utilize two methods for upgrading pedestrian facilities to current ADA standards. The first and most comprehensive of the two methods is scheduled street and utility improvement projects. All pedestrian facilities impacted by these projects will be upgraded to current ADA accessibility standards. The second method is stand-alone sidewalk and ADA accessibility improvement projects. These projects will be incorporated on a case by case basis as determined by City staff. Every five years, the City evaluates all roads under the City's jurisdiction and a 5-year street reconstruction plan is developed, which includes a schedule for specific improvements. During that 5-year period, roads that were planned to be reconstructed may be rescheduled or removed from the 5-year plan and other roads may be added. This is due to potential needs in other areas or budgetary constraints in any given year.

Public Outreach

The City recognizes that public participation is an important component in the development of this document. Input from the community has been gathered and used to help define priority areas for improvements within the jurisdiction of the City.

Public outreach for the creation of this document consisted of the following activities:

Engineering staff met with the City Safety Commission in November 2016 and February 2017 to identify recommended high-priority projects the City should focus on. With that information in mind, the City held a public open house meeting on April 13, 2017. The purpose of the open house was to gain feedback on the draft ADA plan from the public, determine potential improvements to enhance ADA compliance efforts, and establish how the public believes the City should focus its efforts.

The City publishes quarterly newsletters which are distributed to all residents and businesses within the City. The spring 2017 newsletter announced the public meeting and invited residents to participate. On April 14, 2017, CTN Studios (the City's cable news program provider) broadcast a segment to explain what the ADA Transition Plan is, the City's efforts thus far, and to contact the Engineering department with any questions or comments.

This document was also made available for public comment. A summary of public outreach efforts is located in Appendix C.

Grievance Procedure

Under the Americans with Disabilities Act, each agency is required to publish its responsibilities in regards to the ADA. A draft of this public notice is provided in Appendix D. If users of City 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 purpose of the prompt and equitable resolution of citizens' complaints, concerns, comments, and other grievances. This grievance procedure is outlined in Appendix D.

Monitor the Progress

This document will continue to be updated as conditions within the City and standards evolve. The appendices in this document will be updated periodically, while the main body of the document will be updated in (short term period, 5 years) with a future update schedule to be developed at that time. With each main body update, a public comment period will be established to continue the public outreach.

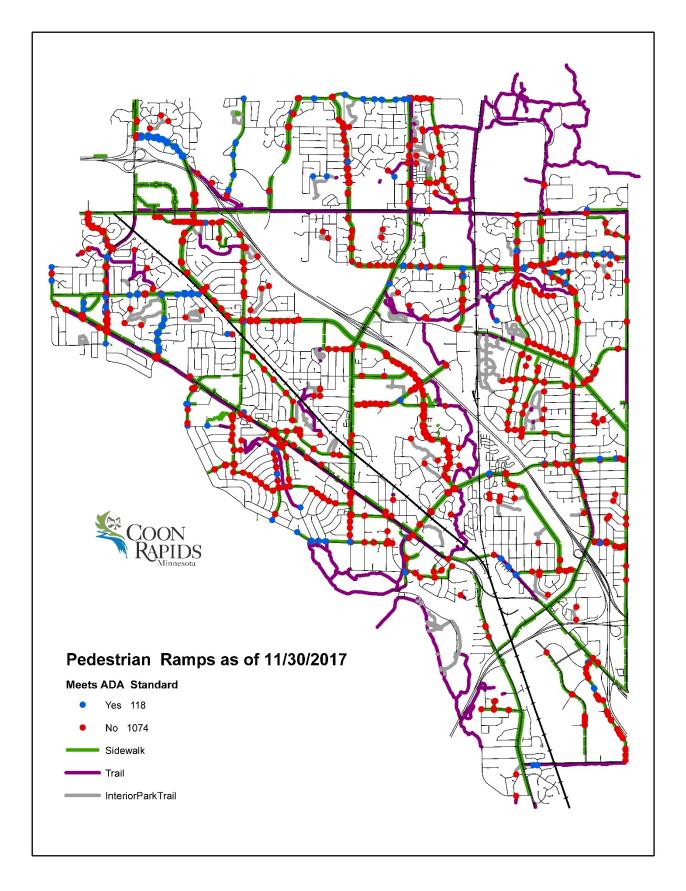
Appendices

- A. Self-Evaluation Results
- **B. Schedule / Budget Information**
- C. Public Outreach
- **D. Grievance Procedure**
- **E. Contact Information**
- F. Agency ADA Design Standards and Procedures
- **G.** Glossary of Terms

Appendix A – Self-Evaluation Results

This initial self-evaluation of pedestrian facilities yielded the following results:

- 80% of sidewalks met accessibility criteria
- 10% of curb ramps met accessibility criteria
- 55% intersections did not have any curb ramps (due to no sidewalks or trails at those intersections)
- 80% of trails met accessibility criteria
- 100% of traffic control signals had push buttons that are accessible, or had the pedestrian indications on recall
- 0% of traffic control signals had APS
- 0% of bus stops met accessibility criteria
- 0% of bus stops had amenities that met accessibility criteria



Appendix B – Schedule / Budget Information

Cost Information

Unit Prices

Construction costs for upgrading facilities can vary depending on each individual improvement and conditions of each site. Costs can also vary on the type and size of project the improvements are associated with. Listed below are representative 2017 cost estimates for typical accessibility improvements based on whether the improvements are included as part of a retrofit-type project, or as part of a larger comprehensive capital improvement project.

Intersection corner ADA improvement retrofit: +/- \$5,000 per corner

Intersection corner ADA improvement as part of adjacent capital project: +/- \$2,600 per corner

Traffic control signal APS upgrade retrofit: +/-\$ 16,000

Traffic control signal APS upgrade as part of full traffic control signal installation: +/- \$12,000

Sidewalk / Trail ADA improvement retrofit: +/- \$5.50 per SF

Sidewalk / Trail ADA improvement as part of adjacent capital project: +/- \$4.00 per SF

Bus Stop ADA improvement retrofit: +/- \$400 per stop

Bus Stop ADA improvement as part of adjacent capital project: +/- \$250 per stop

Priority Areas

Based on the results of the self-evaluation, the estimated costs associated with eliminating accessibility barriers within the targeted priority areas is as follows:

- Mercy Hospital; Port Medical Area \$500,000
- Schools; Anoka Ramsey Community College \$750,000
- Coon Rapids Ice Center; Boulevard Plaza; City Hall \$500,000

Entire Jurisdiction

Based on the results of the self-evaluation, the estimated costs associated with providing ADA accessibility within the entire jurisdiction is \$9,500,000. This amount represents a significant investment that the City is committed to making in the upcoming years. A systematic approach to providing accessibility will be taken in order to absorb the cost into the City budget for improvements within the public right-of-way.

Appendix C – Public Outreach

Safety Commission Survey Summary:

Safety Commission ADA Transition Plan Ranking Form
Please numerically rank the following items in regards to the City of Coon Rapids ADA Transition Plan Rank items with 1 being considered the most important
1. ADA Priority Item for Transition Plan to Address
Other 2. What issue is most important to address with Pedestrian Curb Ramps? 2. Slopes (not too steep) 3 Detectable Warnings (Truncated Domes) Installed Ramps are Installed at Correct Locations Drainage (no water ponding in front of ramp) Other
3. What issue is most important to address with Traffic Control Signals? Installed at all locations where pedestrians cross traffic Provide push button with accessible surface Provide push button with verbal messages/audible tones and accessible surface Provide push button with vibrating surfaces and accessible surface Other
4. What issue is most important to address with Bus Stops?
5. What areas should be considered priorities for the transition plan to address? Areas close to schools Areas close to medical facilities Areas close to government offices Other
6. What specific areas in Coop Rapids should be considered a priority for the transition plan to address? CR Blid and Mississipp. Blid intersection
 7. What schedule most close aligns with your beliefs on how the City of Coon Rapids should reach full ADA compliance? After 20 years, 100% of accessibility features within the jurisdiction of Coon Rapids would be ADA compliant. After 25 years, 100% of accessibility features within the jurisdiction of Coon Rapids would be ADA compliant. After 30 years, 100% of accessibility features within the jurisdiction of Coon Rapids would be ADA compliant. After 40 years, 100% of accessibility features within the jurisdiction of Coon Rapids would be ADA compliant. After 40 years, 100% of accessibility features within the jurisdiction of Coon Rapids would be ADA compliant. Other

(This form was presented to and filled out by the City's Safety Commission. The responses were averaged and are shown above.)

Spring 2017 Newsletter:



Appendix D – Grievance Procedure

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 Coon Rapids will not discriminate against qualified individuals with disabilities on the basis of disability in the City of Coon Rapids 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 U.S. 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 City programs, services, and activities, including 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 policies and programs to ensure that people with disabilities have an equal opportunity to enjoy all City 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 City program, service, or activity, should contact the office of the ADA Coordinator as soon as possible but no later than 48 hours before the 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 a particular 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.

Grievance Form Instructions

City of Coon Rapids Grievance Procedure under the Americans with Disabilities Act

This Grievance Procedure is established to meet the requirements of the Americans with Disabilities Act of 1990 ("ADA"). 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 Coon Rapids. The City of Coon Rapids' Personnel Policy governs employment-related complaints of disability discrimination.

The complaint shall be in writing by an approved method detailed herein and contain information about the alleged discrimination such as name, address, and phone number of complainant, and 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 shall be submitted by the grievant and/or his/her designee as soon as possible but no later than 60 calendar days after the alleged violation to:

Joan Lenzmeier ADA Coordinator/City Clerk JLenzmeier@coonrapidsmn.gov

Within 15 calendar days after receipt of the complaint, the ADA Coordinator or his/her designee will meet with the complainant to discuss the complaint and the possible resolutions. Within 15 calendar days of the meeting, the ADA Coordinator or his/her designee will respond in writing, and where appropriate, in a format accessible to the complainant, such as large print, Braille, or audio tape. The response will explain the position of the City of Coon Rapids and offer options for substantive resolution of the complaint.

If the response by the ADA Coordinator or his/her his designee does not satisfactorily resolve the issue, the complainant and/or his/her designee may appeal the decision within 15 calendar days after receipt of the response to the City Manager or his/her designee.

Within 15 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 15 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 his/her designee, appeals to the City Manager or his/her designee, and responses from these two offices will be retained by the City for at least three years.

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

Internet

Visit the City website <u>www.coonrapidsmn.gov</u> and click the "ADA" link to access the <u>ADA</u> <u>Grievance Form</u>. Fill in the form online and click "submit." A copy of The ADA Grievance Form is included in this Appendix.

Telephone

Contact the pertinent City of Coon Rapids staff person listed in the **Contact Information** section of Appendix E to submit an oral grievance. The staff person will utilize the Internet method above to submit the grievance on behalf of the person filing the grievance.

Paper Submittal

Contact the pertinent City staff person listed in the **Contact Information** section of Appendix E to request a paper copy of the City's grievance form, complete the form, and submit it to the ADA Coordinator.

The ADA Grievance Form requires the following information:

The name, address, telephone number, and email address for the person filing the grievance

The **name**, **address**, **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 alleged violation 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.

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

The City will document each resolution of a filed grievance and retain such documentation in the department's ADA Grievance File for a period of three years.

The City will consider all specific grievances within its particular context or setting. Furthermore, the City will consider many varying circumstances including: 1) the nature of the access to services, programs, or facilities at issue; 2) the specific nature of the disability; 3) the essential eligibility requirements for participation; 4) the health and safety of others; and 5) the degree to which an accommodation would constitute a fundamental alteration to the program, service, or facility, or cause an undue hardship to the City.

Accordingly, the resolution by the City of any one grievance 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 grievance files for a period of three years.

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

For more information, contact:

U.S. Department of Justice Civil Rights Division 950 Pennsylvania Avenue, NW Disability Rights Section - NYAV Washington, D.C. 20530 <u>www.ada.gov</u> (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.

Grievance Form (Available online at www.coonrapidsmn.gov or at City Hall):

RAPIDS	11155 Robinson Drive NW, Coon Rapids, MN 5543 Web: coonrapidsmn.gov Phone: 763-755-288
Americans with Disabilities Act Tit	la II Grievance Form
Today's Date: Complainant Name:	
Address:	
City, State, Zip:	
Telephone and email:	
Individual discriminated against (if other than con	
Name:	
City, State, Zip:	
Telephone and email:	
What efforts have been made to resolve this compl Department?	aint using the internal grievance procedures of the City
If you have documentation copies would be helpful	. Examples are letters, email messages, written notes, etc.
	aency? Yes No
Has complaint been filed with State or Federal Ag	
Has complaint been filed with State or Federal Ag	gency? Yes No Date Filed:
Has complaint been filed with State or Federal Ag Name of Agency: Contact Person:	
Has complaint been filed with State or Federal Ag Name of Agency: Contact Person: TENNESSEN WARNING The data you supply on this form will be used to process the	
Has complaint been filed with State or Federal Ag Name of Agency: Contact Person: TENNESSEN WARNING The data you supply on this form will be used to process the provide this data, but we will not be able to process the AD	Date Filed: ADA grievance you are submitting. You are not legally required to A grievance without it. The data will constitute a public record if

Appendix E – Contact Information

ADA Title II Coordinator

Name: Joan Lenzmeier Address: 11155 Robinson Drive, Coon Rapids, MN 55433

Phone: 763-767-6493 Fax: 763-767-6531 E-mail: JLenzmeier@coonrapidsmn.gov

Public Right-of-Way ADA Implementation Coordinator

Name: Tim Himmer Address: 11155 Robinson Drive, Coon Rapids, MN 55433

Phone: 763-767-6465 Fax: 763-767-6573 E-mail: THimmer@coonrapidsmn.gov

Appendix F - City of Coon Rapids ADA Procedures & Standards

Design Procedures

Intersection Corners

Every attempt shall be made to construct or upgrade curb ramps and/or blended transitions to achieve ADA compliance within all capital improvement projects. There may be limitations which make it technically infeasible to achieve full accessibility to an intersection corner within the scope of any project. Those limitations will be noted and those intersection corners will remain on the transition plan. As future projects or opportunities arise, those intersection corners shall continue to be incorporated into future work. Regardless of whether full compliance can be achieved or not, each intersection corner shall be made as compliant as possible in accordance with the judgment of City of Coon Rapids staff.

Sidewalks / Trails

Every attempt shall be made to construct or upgrade sidewalks and trails to achieve ADA compliance within all capital improvement projects. There may be limitations which make it technically infeasible to achieve full accessibility to segments of sidewalks or trails within the scope of any project. Those limitations will be noted and those segments will remain on the transition plan. As future projects or opportunities arise, those segments shall continue to be incorporated into future work. Regardless of whether full compliance can be achieved or not, every sidewalk or trail shall be made as compliant as possible in accordance with the judgment of City of Coon Rapids staff.

Traffic Control Signals

Every attempt shall be made to construct or upgrade traffic control signals to achieve ADA compliance within all capital improvement projects. There may be limitations which make it technically infeasible to achieve full accessibility to individual traffic control signal locations within the scope of any project. Those limitations will be noted and those locations will remain on the transition plan. As future projects or opportunities arise, those locations shall continue to be incorporated into future work. Regardless of whether full compliance can be achieved or not, each traffic signal control location shall be made as compliant as possible in accordance with the judgment of City of Coon Rapids or Anoka County staff.

Bus Stops

Every attempt shall be made to construct or upgrade bus stops to achieve ADA compliance within all capital improvement projects. There may be limitations which make it technically infeasible to achieve full accessibility to individual bus stop locations within the scope of any project. Those limitations will be noted and those locations will remain on the transition plan. As future projects or opportunities arise, those locations shall continue to be incorporated into future work. Regardless of whether full compliance can be achieved or not, each bus stop location shall be made as compliant as possible in accordance with the judgment of City or Metro Transit staff. Transit facilities present within the limits of the City of Coon Rapids fall under the jurisdiction of Metro Transit. The City of Coon Rapids will work with Metro Transit to ensure that those facilities meet all appropriate accessibility standards.

Other policies, practices and programs

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

Design Standards

The City has adopted PROWAG, as adopted by the Minnesota Department of Transportation (MnDOT), as its design standard.

Appendix G – Glossary of Terms

ABA: See Architectural Barriers Act.

ADA: See Americans with Disabilities Act.

ADA Transition Plan: The City of Coon Rapids' transportation system plan that identifies accessibility needs and the process to fully integrate accessibility improvements, and ensures all transportation facilities, services, programs, and activities are accessible to all individuals.

ADAAG: See Americans with Disabilities Act Accessibility Guidelines.

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 phase in audible and 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; Civil rights legislation passed in 1990 and effective 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): contains scoping and technical requirements for accessibility to buildings and public facilities by individuals with disabilities under the Americans with Disabilities Act (ADA) of 1990.

APS: See Accessible Pedestrian Signal.

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

Capital Improvement Program (CIP): The CIP for the Transportation Department includes an annual capital budget and a five-year plan for funding the new construction and reconstruction projects on 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 way.

DOJ: See United States Department of Justice.

Federal Highway Administration (FHWA): A branch of the U.S. 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.

FHWA: See Federal Highway Administration.

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 *Guidelines for Accessible Public Rights-of-Way* issued in 2005 by the U. S. 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 rights-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.

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.

East River Road TH 610 Ramp Addition

Foley and TH 10 N Ramps		
Existing Volume	3973	vehicles
Existing Delay	67	sec/veh
Existing Total Delay	266191	seconds
Future Volume	3828	vehicles
Future Delay	67	sec/veh
Future Total Delay	256476	seconds
Total Delay Reduction	9715	seconds
	Existing Volume Existing Delay Existing Total Delay Future Volume Future Delay Future Total Delay	Existing Volume3973Existing Delay67Existing Total Delay266191Future Volume3828Future Delay67Future Total Delay256476

2	Foley and TH 10 S Ramps		
	Existing Volume	2996	vehicles
	Existing Delay	16	sec/veh
	Existing Total Delay	47936	seconds
	Future Volume	2708	vehicles
	Future Delay	17	sec/veh
	Future Total Delay	46036	seconds
	Total Delay Reduction	1900	seconds

4	East River Rd and North TH 610 Ramps		Ramps
	Existing Volume	2816	vehicles
	Existing Delay	15	sec/veh
	Existing Total Delay	42240	seconds
	Future Volume	3067	vehicles
	Future Delay	25	sec/veh
	Future Total Delay	76675	seconds
	Total Delay Reduction	-34435	seconds

5	East River Road and South TH 610 Ramps) Ramps
	Existing Volume	2730	vehicles
	Existing Delay	20	sec/veh
	Existing Total Delay	54600	seconds
	Future Volume	2909	vehicles
	Future Delay	19	sec/veh
	Future Total Delay	55271	seconds
	Total Delay Reduction	-671	seconds

3	Foley and 99th Ave		
	Existing Volume	2935	vehicles
	Existing Delay	35	sec/veh
	Existing Total Delay	102725	seconds
	Future Volume	2647	vehicles
	Future Delay	23	sec/veh
	Future Total Delay	60881	seconds
	Total Delay Reduction	41844	seconds

Total Network Delay Reduction

18353 seconds

Emissions						
Existing	1	2	3	4	5	Total
СО	8.01	3.03	3.13	2.71	2.89	19.77
NO	1.56	0.59	0.61	0.42	0.56	3.74
VOC	1.86	0.7	0.73	0.5	0.67	4.46
				Network Total		27.97

Build	1	2	3	4	5	Total
CO	7.76	2.79	2.32	2.98	3	18.85
NO	1.51	0.54	0.45	0.58	0.58	3.66
VOC	1.8	0.65	0.54	0.69	0.69	4.37
				Network Total		26.88

Reduction 1.09

Coon Rapids Regional Solicitation Existing PM

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Lane Group	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	<u> </u>	†	1	<u>۲</u>	<u>†</u> †	1	<u>۲</u>	^	1
Traffic Volume (vph)	99	47	42	469	1531	313	29	146	140
Future Volume (vph)	99	47	42	469	1531	313	29	146	140
Turn Type	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	. 8	8		5	2		1	6	
Permitted Phases			8			2			6
Detector Phase	8	8	8	5	2	2	1	6	6
Switch Phase									
Minimum Initial (s)	7.0	7.0	7.0	7.0	12.0	12.0	7.0	12.0	12.0
Minimum Split (s)	22.5	22.5	22.5	11.5	22.5	22.5	11.5	22.5	22.5
Total Split (s)	22.5	22.5	22.5	27.0	41.0	41.0	11.5	25.5	25.5
Total Split (%)	30.0%	30.0%	30.0%	36.0%	54.7%	54.7%	15.3%	34.0%	34.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag				Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?				Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	10.1	10.1	10.1	27.0	54.1	54.1	7.5	26.8	26.8
Actuated g/C Ratio	0.13	0.13	0.13	0.36	0.72	0.72	0.10	0.36	0.36
//c Ratio	0.46	0.20	0.13	0.80	0.65	0.28	0.18	0.13	0.23
Control Delay	35.5	29.7	0.8	33.0	11.3	1.8	33.2	19.3	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.5	29.7	0.8	33.0	11.3	1.8	33.2	19.3	5.0
LOS	D	С	А	С	В	А	С	В	А
Approach Delay		26.3			14.4			14.2	
Approach LOS		С			В			В	
Intersection Summary									
Cycle Length: 75									
Actuated Cycle Length: 75									
Offset: 0 (0%), Referenced to	phase 2	NBT and	6.SBT_S	tart of Gr	een				
Natural Cycle: 80	prid00 2.		0.001,0						
Control Type: Actuated-Coord	dinated								
Maximum v/c Ratio: 0.80									
Intersection Signal Delay: 15.	2			Ir	ntersectio	n LOS [,] B			
Intersection Capacity Utilization					CU Level		e C		
Analysis Period (min) 15									

Splits and Phases: 110: East River Road & TH 610 North Ramps/Foley Blvd

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27 s	25.5 s	

Coon Rapids Regional Solicitation Existing PM

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Lane Group	EBL	EBR	NBT	SBT	
Lane Configurations	ካካ	1	A	^	
Traffic Volume (vph)	1044	172	1269	245	
Future Volume (vph)	1044	172	1269	245	
Turn Type	Prot	Perm	NA	NA	
Protected Phases	4		2	6	
Permitted Phases		4			
Detector Phase	4	4	2	6	
Switch Phase					
Minimum Initial (s)	7.0	7.0	12.0	12.0	
Minimum Split (s)	22.5	22.5	22.5	22.5	
Total Split (s)	25.8	25.8	29.2	29.2	
Total Split (%)	46.9%	46.9%	53.1%	53.1%	
Yellow Time (s)	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.5	4.5	4.5	4.5	
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None	None	C-Max	C-Max	
Act Effct Green (s)	20.8	20.8	25.2	25.2	
Actuated g/C Ratio	0.38	0.38	0.46	0.46	
v/c Ratio	0.87	0.26	0.85	0.16	
Control Delay	25.3	3.3	20.6	9.3	
Queue Delay	0.0	0.0	0.0	0.0	
Total Delay	25.3	3.3	20.6	9.3	
LOS	С	А	С	A	
Approach Delay			20.6	9.3	
Approach LOS			С	А	
Intersection Summary					
Cycle Length: 55					
Actuated Cycle Length: 55	i				
Offset: 0 (0%), Referenced		NBT and	6:SBTL,	Start of C	Green
Natural Cycle: 60					
Control Type: Actuated-Co	ordinated				
Maximum v/c Ratio: 0.87					
Intersection Signal Delay:	20.3			I	ntersection LOS: C
Intersection Capacity Utiliz					CU Level of Service C
Analysis Period (min) 15					

Splits and Phases: 120: East River Road & TH 610 South Ramps

Ø2 (R)	A @4
29.2 s	25.8 s
▼ Ø6 (R)	
29.2 s	

K:\Trans\Grant Applications\2024 Grants\Regional Solicitation\CoonRapids\Traffic\East River Road - Existing PM Peak.syn Synchro 11 Report

110: East River Road & TH 610 North Ramps/Foley Blvd

Direction	All	
Future Volume (vph)	2816	
Total Delay / Veh (s/v)	15	
CO Emissions (kg)	2.17	
NOx Emissions (kg)	0.42	
VOC Emissions (kg)	0.50	

120: East River Road & TH 610 South Ramps

Direction	All
Future Volume (vph)	2730
Total Delay / Veh (s/v)	20
CO Emissions (kg)	2.89
NOx Emissions (kg)	0.56
VOC Emissions (kg)	0.67

Coon Rapids Regional Solicitation Existing PM

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	र्च	77	ሻ	↑	1	ሻ	- † †	1	<u>۲</u>	<u>^</u>	1
Traffic Volume (vph)	820	205	263	172	187	125	328	753	331	64	669	56
Future Volume (vph)	820	205	263	172	187	125	328	753	331	64	669	56
Turn Type	Split	NA	pm+ov	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4	5	8	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	4	4	4	8	8	8	5 2	2	2	16	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	15.0	15.0	7.0	15.0	15.0
Minimum Split (s)	13.0	13.0	12.0	34.5	34.5	34.5	12.0	39.5	39.5	12.0	20.5	20.5
Total Split (s)	50.0	50.0	32.0	34.5	34.5	34.5	32.0	49.5	49.5	16.0	33.5	33.5
Total Split (%)	33.3%	33.3%	21.3%	23.0%	23.0%	23.0%	21.3%	33.0%	33.0%	10.7%	22.3%	22.3%
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.5	2.5	2.5	2.0	1.5	1.5	2.0	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	5.0	6.5	6.5	6.5	5.0	5.5	5.5	5.0	5.5	5.5
Lead/Lag	Lead	Lead	Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize? Recall Mode	Yes	Yes	Yes	Yes None	Yes	Yes	Yes	Yes	Yes	Yes None	Yes C-Max	Yes
Act Effct Green (s)	None 44.0	None 44.0	None 77.0	21.2	None 21.2	None 21.2	None 27.0	C-Max 54.0	C-Max 54.0	10.2	34.8	C-Max 34.8
Actuated g/C Ratio	44.0 0.29	44.0 0.29	0.51	0.14	0.14	0.14	0.18	0.36	0.36	0.07	0.23	0.23
v/c Ratio	1.06	1.06	0.51	0.14	0.14	0.14	1.07	0.50	0.30	0.07	0.23	0.23
Control Delay	107.6	106.9	2.2	76.2	77.3	10.0	125.5	43.9	5.6	84.6	65.3	0.15
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	40.9	0.0	0.0	0.0	0.0
Total Delay	107.6	106.9	2.2	76.2	77.3	10.0	125.5	43.9	5.6	84.6	65.3	0.0
LOS	107.0	F	Α	70.2 E	E	10.0 A	120.0 F	40.0 D	0.0 A	64.0 F	00.0	0.0 A
Approach Delay		85.8	7.		59.5	~		53.9	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	•	62.3	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
Approach LOS		F			E			D			E	
Intersection Summary												
Cycle Length: 150												
Actuated Cycle Length: 150												
Offset: 0 (0%), Referenced	to phase 2:	NBT and	6:SBT, S	tart of 1st	t Green							
Natural Cycle: 150												
Control Type: Actuated-Coo	rdinated											
Maximum v/c Ratio: 1.07												
Intersection Signal Delay: 6					ntersectio							
Intersection Capacity Utiliza	tion 93.8%			10	CU Level	of Service	e F					
Analysis Period (min) 15												

Splits and Phases: 110: Foley Blvd & TH 10 N Ramp/101st Ave

Ø1	Ø2 (R)		4 04	₽ _{Ø8}
16 s	49.5 s		50 s	34.5 s
Ø6 (R)		\$ Ø5		
33.5 s		32 s		

Coon Rapids Regional Solicitation Existing PM

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Lane Group	EBT	EBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	र्भ	1	ሻ	- † †	1	ሻ	- † †	1	
Traffic Volume (vph)	1	221	27	1138	231	120	777	207	
Future Volume (vph)	1	221	27	1138	231	120	777	207	
Turn Type	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	4		5	2		1	6		
Permitted Phases		4			2			6	
Detector Phase	4	4	5	2	2	1	6	6	
Switch Phase									
Minimum Initial (s)	7.0	7.0	7.0	15.0	15.0	7.0	15.0	15.0	
Minimum Split (s)	13.0	13.0	12.0	30.5	30.5	12.0	20.5	20.5	
Total Split (s)	17.0	17.0	12.0	31.0	31.0	12.0	31.0	31.0	
Total Split (%)	28.3%	28.3%	20.0%	51.7%	51.7%	20.0%	51.7%	51.7%	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	1.5	1.5	2.0	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	5.0	5.5	5.5	5.0	5.5	5.5	
Lead/Lag			Lag	Lead	Lead	Lag	Lead	Lead	
Lead-Lag Optimize?						-			
Recall Mode	None	None	None	C-Max	C-Max	None	C-Max	C-Max	
Act Effct Green (s)	10.9	10.9	7.0	28.0	28.0	7.0	32.8	32.8	
Actuated g/C Ratio	0.18	0.18	0.12	0.47	0.47	0.12	0.55	0.55	
v/c Ratio	0.87	0.48	0.13	0.70	0.27	0.59	0.41	0.22	
Control Delay	52.9	7.5	25.6	16.4	2.8	38.6	10.1	2.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	52.9	7.5	25.6	16.4	2.8	38.6	10.1	2.6	
LOS	D	А	С	В	А	D	В	А	
Approach Delay	32.7			14.3			11.8		
Approach LOS	С			В			В		
Intersection Summary									
Cycle Length: 60									
Actuated Cycle Length: 60									
Offset: 0 (0%), Referenced to	phase 2	NBT and	6.SBT_S	tart of 1st	t Green				
Natural Cycle: 60	p.1000 2.		0.021,0						
Control Type: Actuated-Coord	dinated								
Maximum v/c Ratio: 0.87									
Intersection Signal Delay: 16.4	4			Ir	ntersectio	n LOS [,] B			
Intersection Capacity Utilization							э С		
ntersection Capacity Utilization 67.1% ICU Level of Service C Analysis Period (min) 15									

Splits and Phases: 120: Foley Blvd & TH 10 S Ramp

Ø2 (R)	Ø1	₩ Ø4
31s	12 s	17 s
Ø6 (R)	▲ ø5	
31 s	12 s	

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Lane Group	EBL	EBR	NBL	NBT	SBT	
Lane Configurations	٦	1	<u>۲</u>	<u>††</u>	∱ ⊅	
Traffic Volume (vph)	353	189	353	1043	442	
Future Volume (vph)	353	189	353	1043	442	
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	2 5	2	6	
Switch Phase						
Minimum Initial (s)	7.0	7.0	5.0	15.0	15.0	
Minimum Split (s)	32.5	32.5	10.0	20.5	34.5	
Total Split (s)	33.0	33.0	10.0	97.0	87.0	
Total Split (%)	25.4%	25.4%	7.7%	74.6%	66.9%	
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	
All-Red Time (s)	2.5	2.5	2.0	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5	5.0	5.5	5.5	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?	Nama	Mana	Yes	0.14-1	Yes	
Recall Mode	None	None	None	C-Max	C-Max	
Act Effct Green (s)	27.5	27.5	92.0	91.5	81.5	
Actuated g/C Ratio v/c Ratio	0.21 1.02	0.21 0.41	0.71 1.21	0.70	0.63	
Control Delay	102	0.41 8.2	138.1	0.45 9.0	0.49 7.5	
Queue Delay	0.0	0.2	0.0	9.0	0.5	
Total Delay	100.9	8.2	138.1	9.0	0.5 8.0	
LOS	100.9 F	0.2 A	130.1 F	9.0 A	0.0 A	
Approach Delay	г 68.6	A	F	41.7	8.0	
Approach LOS	00.0 E			41.7 D	0.0 A	
	C			U	A	
Intersection Summary						
Cycle Length: 130						
Actuated Cycle Length: 13						
Offset: 0 (0%), Referenced	to phase 2:	NBTL and	d 6:SBT,	Start of 1	st Green	
Natural Cycle: 120						
Control Type: Actuated-Co	ordinated					
Maximum v/c Ratio: 1.21						
Intersection Signal Delay:					ntersection	
Intersection Capacity Utiliz	ation 82.5%			10	CU Level	of Service E
Analysis Period (min) 15						

Splits and Phases: 130: Foley Blvd & 99th Ave

Ø2 (R)	A 04
97 s	33 s
▲ Ø5 ↓ Ø6 (R)	
10 s 87 s	

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110: Foley Blvd & TH 10 N Ramp/101st Ave

Direction	All	
Future Volume (vph)	3973	
Total Delay / Veh (s/v)	67	
CO Emissions (kg)	8.01	
NOx Emissions (kg)	1.56	
VOC Emissions (kg)	1.86	

120: Foley Blvd & TH 10 S Ramp

Direction	All
Future Volume (vph)	2996
Total Delay / Veh (s/v)	16
CO Emissions (kg)	3.03
NOx Emissions (kg)	0.59
VOC Emissions (kg)	0.70

130: Foley Blvd & 99th Ave

Direction	All
Future Volume (vph)	2935
Total Delay / Veh (s/v)	35
CO Emissions (kg)	3.13
NOx Emissions (kg)	0.61
VOC Emissions (kg)	0.73

Future Volume (vph)7236361354742469153131329217140Turn Typepm+ptNAPermProtNAPermProtNAPermProtNAPermProtected Phases74385216Permitted Phases448826Detector Phase74438852216Switch Phase744388522166Minimum Initial (s)5.05.05.07.07.07.07.012.012.07.012.012.012.012.0Minimum Split (s)9.522.522.522.522.522.511.522.5 </th <th></th> <th>٦</th> <th>-</th> <th>\mathbf{r}</th> <th>4</th> <th>+</th> <th>×</th> <th>1</th> <th>1</th> <th>۲</th> <th>1</th> <th>ŧ</th> <th>~</th>		٦	-	\mathbf{r}	4	+	×	1	1	۲	1	ŧ	~
Traffic Volume (vph) 72 36 36 135 47 42 469 1531 313 29 217 140 Future Volume (vph) 72 36 36 135 47 42 469 1531 313 29 217 140 Turn Type pm+pt NA Perm pm+pt NA Perm Prot NA Per	Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Future Volume (vph)7236361354742469153131329217140Turn Typepm+ptNAPermProtNAPermProtNAPermProtNAPermProtected Phases74385216Permitted Phases448826Detector Phase74438852216Switch Phase744388522166Minimum Initial (s)5.05.05.07.07.07.07.012.012.07.012.012.012.012.0Minimum Split (s)9.522.522.522.522.522.511.522.5 </td <td>Lane Configurations</td> <td>1</td> <td>•</td> <td>1</td> <td>1</td> <td>•</td> <td>1</td> <td>۲ ۲</td> <td><u></u></td> <td>1</td> <td>ľ</td> <td><u></u></td> <td>1</td>	Lane Configurations	1	•	1	1	•	1	۲ ۲	<u></u>	1	ľ	<u></u>	1
Turn Type pm+pt NA Perm pm+pt NA Perm Prot NA Perm	Traffic Volume (vph)	72	36	36	135		42	469			29	217	140
Protected Phases 7 4 3 8 5 2 1 6 Permitted Phases 4 4 8 8 2 6 6 Detector Phase 7 4 4 3 8 8 5 2 1 6 Switch Phase 7 4 4 3 8 8 5 2 2 1 6 6 Switch Phase 7 4 4 3 8 8 5 2 2 1 6 6 Switch Phase 7 4 4 3 8 8 5 2 2 1 6 6 Minimum Initial (s) 5.0 5.0 5.0 7.0 7.0 7.0 7.0 12.0 <t< td=""><td>Future Volume (vph)</td><td>72</td><td>36</td><td>36</td><td>135</td><td>47</td><td>42</td><td>469</td><td>1531</td><td>313</td><td>29</td><td>217</td><td>140</td></t<>	Future Volume (vph)	72	36	36	135	47	42	469	1531	313	29	217	140
Permitted Phases 4 4 8 8 2 6 Detector Phase 7 4 4 3 8 5 2 2 1 6 6 Switch Phase 7 5.0 5.0 7.0 7.0 7.0 12.0		pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Detector Phase 7 4 4 3 8 8 5 2 2 1 6 6 Switch Phase			4			8		5	2		1	6	
Switch PhaseMinimum Initial (s)5.05.07.07.07.012.012.012.012.012.0Minimum Split (s)9.522.522.522.522.511.522.522.522.5		4		4									6
Minimum Initial (s) 5.0 5.0 5.0 7.0 7.0 7.0 12.0		7	4	4	3	8	8	5	2	2	1	6	6
Minimum Split (s) 9.5 22.5 22.5 22.5 22.5 22.5 11.5 22.5 11.5 22.5 11.5 22.5													
Total Split (s) 10.3 22.5 22.5 22.5 34.7 34.7 37.2 53.5 53.5 11.5 27.8 27.8													
	Total Split (s)	10.3	22.5	22.5	22.5	34.7	34.7	37.2	53.5	53.5	11.5	27.8	27.8
													25.3%
Yellow Time (s) 3.5													
													1.0
Lost Time Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.													
													4.5
Lead/Lag Lead Lag Lead Lag Lag Lead Lag Lag Lag Lead Lag Lag							•					•	
													Yes
Recall Mode None None None None None None C-Max C-Max None C-Max C-Max													
Act Effct Green (s) 12.5 7.8 7.8 23.6 15.3 15.3 38.1 69.6 69.6 7.9 34.8 34.8													
Actuated g/C Ratio 0.11 0.07 0.07 0.21 0.14 0.14 0.35 0.63 0.63 0.07 0.32 0.32													
													0.24
													3.2
													0.0
													3.2
LOS D D A D D A D C A D C A		D		A	D		A	D		A	D		A
Approach Delay 34.8 33.6 23.9 22.7													
Approach LOS C C C C	Approach LOS		С			С			С			С	
Intersection Summary	Intersection Summary												
Cycle Length: 110	Cycle Length: 110												
Actuated Cycle Length: 110	Actuated Cycle Length: 110)											
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green	Offset: 0 (0%), Referenced	to phase 2:	NBT and	6:SBT, S	tart of Gr	een							
Natural Cycle: 110													
Control Type: Actuated-Coordinated	Control Type: Actuated-Coc	ordinated											
Maximum v/c Ratio: 0.83	Maximum v/c Ratio: 0.83												
Intersection Signal Delay: 25.0 Intersection LOS: C	Intersection Signal Delay: 2	25.0			li	ntersectio	n LOS: C						
Intersection Capacity Utilization 73.6% ICU Level of Service D	Intersection Capacity Utiliza	ation 73.6%	1		l	CU Level	of Service	e D					
Analysis Period (min) 15	Analysis Period (min) 15												

Splits and Phases: 110: East River Road & TH 610 North Ramps/Foley Blvd

Ø1	Ø2 (R)		Ø3		₩ Ø4	
11.5 s	53.5 s		22.5 s		22.5 s	
▲ ø5		Ø6 (R)		₹ø8		
37.2 s		27.8 s	10.3 s	34.7 s		

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Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	ሻሻ	1	ሻ	A	<u>††</u>	1
Traffic Volume (vph)	1044	172	36	1268	281	108
Future Volume (vph)	1044	172	36	1268	281	108
Turn Type	Prot	Perm	Perm	NA	NA	Perm
Protected Phases	4			2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	2	2	6	6
Switch Phase						
Minimum Initial (s)	7.0	7.0	12.0	12.0	12.0	12.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	28.1	28.1	31.9	31.9	31.9	31.9
Total Split (%)	46.8%	46.8%	53.2%	53.2%	53.2%	53.2%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	23.0	23.0	28.0	28.0	28.0	28.0
Actuated g/C Ratio	0.38	0.38	0.47	0.47	0.47	0.47
v/c Ratio	0.86	0.26	0.08	0.83	0.18	0.15
Control Delay	25.7	3.3	9.8	20.3	9.9	2.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.7	3.3	9.8	20.3	9.9	2.8
LOS	С	A	A	С	A	A
Approach Delay				20.0	8.0	
Approach LOS				С	A	
Intersection Summary						
Cycle Length: 60						
Actuated Cycle Length: 60					_	
Offset: 0 (0%), Referenced	to phase 2:	NBTL and	d 6:SBTL	, Start of	Green	
Natural Cycle: 60						
Control Type: Actuated-Coo	ordinated					
Maximum v/c Ratio: 0.86						
Intersection Signal Delay: 1					ntersectio	
Intersection Capacity Utiliza	ation 71.9%			10	CU Level	of Service
Analysis Period (min) 15						

Splits and Phases: 120: East River Road & TH 610 South Ramps

Ø2 (R)	A @4
31.9 s	28.1s
●	
31.9 s	

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110: East River Road & TH 610 North Ramps/Foley Blvd

Direction	All	
Future Volume (vph)	3067	
Total Delay / Veh (s/v)	25	
CO Emissions (kg)	2.98	
NOx Emissions (kg)	0.58	
VOC Emissions (kg)	0.69	

120: East River Road & TH 610 South Ramps

Direction	All
Future Volume (vph)	2909
Total Delay / Veh (s/v)	19
CO Emissions (kg)	3.00
NOx Emissions (kg)	0.58
VOC Emissions (kg)	0.69

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	् स्	77	ሻ	↑	1	ሻ	- † †	1	<u>۲</u>	- † †	1
Traffic Volume (vph)	820	205	120	172	187	125	328	753	331	64	667	56
Future Volume (vph)	820	205	120	172	187	125	328	753	331	64	667	56
Turn Type	Split	NA	pm+ov	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4	5	8	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	4	4	4	8	8	8	52	2	2	16	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	15.0	15.0	7.0	15.0	15.0
Minimum Split (s)	13.0	13.0	12.0	34.5	34.5	34.5	12.0	39.5	39.5	12.0	20.5	20.5
Total Split (s)	49.0	49.0	31.0	34.5	34.5	34.5	31.0	53.5	53.5	13.0	35.5	35.5
Total Split (%)	32.7%	32.7%	20.7%	23.0%	23.0%	23.0%	20.7%	35.7%	35.7%	8.7%	23.7%	23.7%
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.5	2.5	2.5	2.0	1.5	1.5	2.0	1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	5.0	6.5	6.5	6.5	5.0	5.5	5.5	5.0	5.5	5.5
Lead/Lag	Lead	Lead	Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	43.1	43.1	75.1	20.4	20.4	20.4	26.0	48.2	48.2	7.8	30.0	30.0
Actuated g/C Ratio	0.30	0.30	0.53	0.14	0.14	0.14	0.18	0.34	0.34	0.05	0.21	0.21
v/c Ratio	1.03	1.03	0.08	0.70	0.73	0.38	1.05	0.65	0.45	0.69	0.92	0.14
Control Delay	96.6	95.4	3.1	73.0	74.1	10.0	118.4	43.7	5.4	100.1	74.0	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	96.6	95.4	3.1	73.0	74.1	10.0	118.4	43.7	5.4	100.1	74.0	0.7
LOS	F	F	А	Е	Е	А	F	D	А	F	Е	A
Approach Delay		86.2			57.2			52.1			70.9	
Approach LOS		F			E			D			Е	
Intersection Summary												
Cycle Length: 150												
Actuated Cycle Length: 142	2.5											
Natural Cycle: 150												
Control Type: Actuated-Un	coordinated											
Maximum v/c Ratio: 1.05												
Intersection Signal Delay: 6	6.8			Ir	ntersectio	n LOS: E						
Intersection Capacity Utiliza					CU Level		ə F					
Analysis Period (min) 15												

Splits and Phases: 110: Foley Blvd & TH 10 N Ramp/101st Ave

Ø1	ø2		₽ Ø4	₽ _{Ø8}
13 s 53.	5 s		49 s	34.5 s
4 Ø6		\$ Ø5		
35.5 s		31 s		

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Lane Group	EBT	EBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	र्स	1	۲	<u></u>	1	۲	<u></u>	1	
Traffic Volume (vph)	1	221	27	1138	87	120	633	207	
Future Volume (vph)	1	221	27	1138	87	120	633	207	
Turn Type	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	
Protected Phases	4		5	2		1	6		
Permitted Phases		4			2			6	
Detector Phase	4	4	5	2	2	1	6	6	
Switch Phase									
Minimum Initial (s)	7.0	7.0	7.0	15.0	15.0	7.0	15.0	15.0	
Minimum Split (s)	13.0	13.0	12.0	30.5	30.5	12.0	20.5	20.5	
Total Split (s)	17.0	17.0	12.0	31.0	31.0	12.0	31.0	31.0	
Total Split (%)	28.3%	28.3%	20.0%	51.7%	51.7%	20.0%	51.7%	51.7%	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	1.5	1.5	2.0	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	5.0	5.5	5.5	5.0	5.5	5.5	
Lead/Lag			Lag	Lead	Lead	Lag	Lead	Lead	
Lead-Lag Optimize?									
Recall Mode	None	None	None	Max	Max	None	Max	Max	
Act Effct Green (s)	10.7	10.7	7.1	25.8	25.8	7.1	30.4	30.4	
Actuated g/C Ratio	0.19	0.19	0.12	0.45	0.45	0.12	0.53	0.53	
v/c Ratio	0.84	0.47	0.13	0.72	0.11	0.55	0.34	0.22	
Control Delay	48.6	7.4	25.4	17.0	1.1	36.8	9.6	2.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	48.6	7.4	25.4	17.0	1.1	36.8	9.6	2.7	
LOS	D	А	С	В	А	D	А	А	
Approach Delay	30.2			16.1			11.5		
Approach LOS	С			В			В		
Intersection Summary									
Cycle Length: 60									
Actuated Cycle Length: 57.3									
Natural Cycle: 60									
Control Type: Actuated-Unco	ordinated								
Maximum v/c Ratio: 0.84									
Intersection Signal Delay: 17.	.1			Ir	ntersection	n LOS: B			
Intersection Capacity Utilization	on 67 1%			10	CU Level	of Service	с		
Analysis Period (min) 15	011 01 . 1 /0								

Splits and Phases: 120: Foley Blvd & TH 10 S Ramp

f ø2	Ø1	↓ 04
31 s	12 s	17 s
4 Ø6	▲ Ø5	
31 s	12 s	

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	٦	\mathbf{r}	1	1	ţ	
Lane Group	EBL	EBR	NBL	NBT	SBT	
Lane Configurations	۲	1	۲	<u></u>	A⊅	
Traffic Volume (vph)	301	189	353	950	380	
Future Volume (vph)	301	189	353	950	380	
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	25	2	6	
Switch Phase						
Minimum Initial (s)	7.0	7.0	5.0	15.0	15.0	
Minimum Split (s)	32.5	32.5	10.0	20.5	34.5	
Total Split (s)	34.0	34.0	10.0	96.0	86.0	
Total Split (%)	26.2%	26.2%	7.7%	73.8%	66.2%	
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	
All-Red Time (s)	2.5	2.5	2.0	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5	5.0	5.5	5.5	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None	None	None	Max	Max	
Act Effct Green (s)	26.0	26.0	91.0	90.5	80.5	
Actuated g/C Ratio	0.20	0.20	0.71	0.71	0.63	
v/c Ratio	0.90	0.42	1.00	0.41	0.41	
Control Delay	77.5	8.3	62.7	8.4	6.2	
Queue Delay	0.0	0.0	0.0	0.0	0.3	
Total Delay	77.5	8.3	62.7	8.4	6.5	
LOS	Е	А	E	А	А	
Approach Delay	50.8			23.1	6.5	
Approach LOS	D			С	А	
Intersection Summary						
Cycle Length: 130	E					
Actuated Cycle Length: 127	.5					
Natural Cycle: 130	oordinated					
Control Type: Actuated-Unc	oordinated					
Maximum v/c Ratio: 1.00	2.0			١.	ntersectior	
Intersection Signal Delay: 22						of Service D
Intersection Capacity Utiliza	101175.5%				SO Level (JI Service D
Analysis Period (min) 15						
Splits and Phases: 130: F	oley Blvd &	& 99th Δ.v	e			
		x JULIAV	C			

↑ _{Ø2}	
96 s	34 s
★ Ø5 ↓ Ø6	
10 s 86 s	

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110: Foley Blvd & TH 10 N Ramp/101st Ave

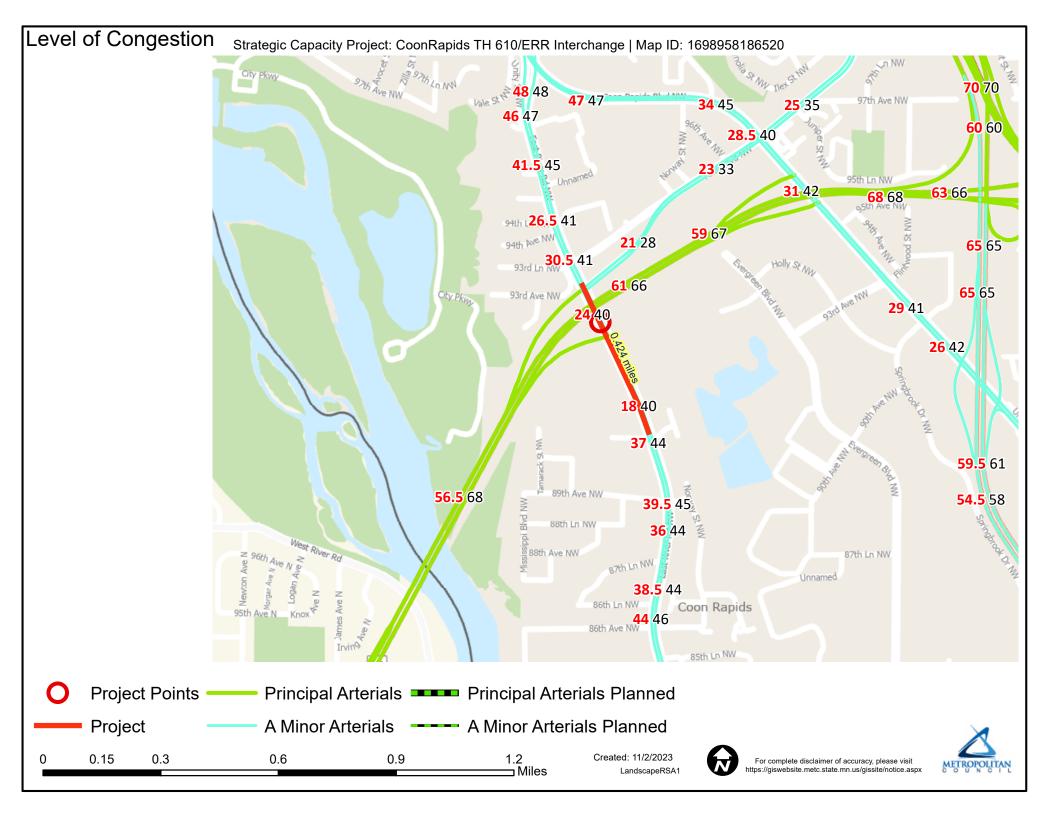
Direction	All
Future Volume (vph)	3828
Total Delay / Veh (s/v)	67
CO Emissions (kg)	7.76
NOx Emissions (kg)	1.51
VOC Emissions (kg)	1.80

120: Foley Blvd & TH 10 S Ramp

Direction	All
Future Volume (vph)	2708
Total Delay / Veh (s/v)	17
CO Emissions (kg)	2.79
NOx Emissions (kg)	0.54
VOC Emissions (kg)	0.65

130: Foley Blvd & 99th Ave

Direction	All
Future Volume (vph)	2647
Total Delay / Veh (s/v)	23
CO Emissions (kg)	2.32
NOx Emissions (kg)	0.45
VOC Emissions (kg)	0.54



Traffic Safety Benefit-Cost Calculation

Highway Safety Improvement Program (HSIP) Reactive Project

DEPARTMENT OF TRANSPORTATION

Route Begin RP Location	ay Description Foley Blvd Foley Blvd and 99th A	District End RP	ection	County Miles	Anoka	
	Description					
Proposed			to added rai	mps at TH 610/East Rive		
Project Co Project Se		100		Installation Year Traffic Growth Factor	2026	
	Right of Way from Project	ct Cost			2.076	_
	Nodification Factor					
0.78	Fatal (K) Crashes	_	Reference	Crash Analysis		
0.78	Serious Injury (A) Cras		< 1 -	A 11		
0.78	Moderate Injury (B) C		Crash Type	All		
0.78 0.78	Possible Injury (C) Cras Property Damage Only				www.CMFclearing	thouse and
0.78	Property Damage Only	y clashes				gnouse.org
D. Crash M	Aodification Factor	(optional se	-)		
	Fatal (K) Crashes	_	Reference			
L	Serious Injury (A) Cras					
<u> </u>	Moderate Injury (B) C		Crash Type			
<u> </u>	Possible Injury (C) Cras Property Damage Only				www.CMFclearing	thouse and
	Property Damage Only	y Clashes				gnouse.org
E. Crash D	ata					
Begin Date)	End Date	12/31/202	2	3 years
Data Sour						
	Crash Severity K crashes	All	0	< option	nal 2nd CMF >	1
			0			-
	A crashes B crashes		0			
	C crashes		1			-
	PDO crashes		7			
F. Benefit-	Cost Calculation	Den eft /-	ant			
	\$805,717	Benefit (pre	esent value)	B/C	Ratio = 0.03	
\$ <u>`</u>	35,687,100	Cost		•	-	

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

F. Analysis Assumptions

Crash Severity	Crash Cost		
K crashes	\$1,600,000	Link: mndot.gov/	planning/program/appendix_a.html
A crashes	\$800,000		
B crashes	\$250,000	Real Discount Rate	0.7%
C crashes	\$130,000	Traffic Growth Rate	2.0%
PDO crashes	\$15,000	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	0.22	0.07	\$18,333
C crashes	0.22	0.07	\$9,533
PDO crashes	1.54	0.51	\$7,700
			\$35,567

H. Amortized Benefit

n. Amoruze			
Year	Crash Benefits	Present Value	
2026	\$35,567	\$35,567	Total = \$805,717
2027	\$36,278	\$36,026	
2028	\$37,004	\$36,491	
2029	\$37,744	\$36,962	
2030	\$38,499	\$37,439	
2031	\$39,268	\$37,922	
2032	\$40,054	\$38,412	
2033	\$40,855	\$38,908	
2034	\$41,672	\$39,410	
2035	\$42,505	\$39,919	
2036	\$43,356	\$40,434	
2037	\$44,223	\$40,956	
2038	\$45,107	\$41,485	
2039	\$46,009	\$42,021	
2040	\$46,929	\$42,563	
2041	\$47,868	\$43,113	
2042	\$48,825	\$43,669	
2043	\$49,802	\$44,233	
2044	\$50,798	\$44,804	
2045	\$51,814	\$45,382	
0	\$O	\$0	
0	\$0	\$0	
0	\$O	\$0	
0	\$O	\$0	
0	\$O	\$O	
0	\$O	\$0	
0	\$O	\$O	
0	\$O	\$O	
0	\$0	\$O	
0	\$O	\$O	
0	\$0	\$0	

Traffic Safety Benefit-Cost Calculation

Highway Safety Improvement Program (HSIP) Reactive Project



DEPARTMENT OF
TRANSPORTATION

A. Roadw	ay Description	on				
Route	Foley Blvd	District		County	Anoka	
Begin RP		End RP		Miles		
Location	TH 10 and Fo	ley Blvd North Ramps				
B. Project	Description	1				
Proposed	-		to added rai	nps at TH 610/East Rive	er Road	
Project Co	_	35,687,100		Installation Year	2026	
, Project Se	<u> </u>	0 years		Traffic Growth Factor		
		om Project Cost				
	Aodification					_
0.94	Fatal (K) Crasl		Reference	Crash Analysis		_
0.94	Serious Injury	(A) Crashes				
0.94	Moderate Inju	ıry (B) Crashes	Crash Type	All		
0.94	Possible Injur	y (C) Crashes				
0.94	Property Dam	age Only Crashes			www.CMFclearinghouse.o	org
D. Crash I	Modification	Factor (optional se	econd CMF			
	Fatal (K) Crasl		Reference			
	- Serious Injury	(A) Crashes				
	-	ıry (B) Crashes	Crash Type			
	Possible Injur					
	-	age Only Crashes			www.CMFclearinghouse.o	org
E. Crash D						
		/1/2020	End Date	12/31/202	2	ore
Begin Dat Data Sour	_	/1/2020 /InDOT	-	12/31/202	2 3 yea	212
	Crash Seve			< ontion	al 2nd CMF >	_
	K crashes		0			
	A crashes		0			
	B crashes		2			
	C crashes		4			
	PDO crash	es	30			
			50			
F. Benefit	-Cost Calcula	ation				
	\$666,019	Benefit (pro	esent value)	R/C	Ratio = 0.02	
\$	35,687,100	Cost		D/C		

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

F. Analysis Assumptions

Crash Severity	Crash Cost		
K crashes	\$1,600,000	Link: mndot.gov/p	planning/program/appendix_a.html
A crashes	\$800,000		
B crashes	\$250,000	Real Discount Rate	0.7%
C crashes	\$130,000	Traffic Growth Rate	2.0%
PDO crashes	\$15,000	Project Service Life	20 years
	K crashes A crashes B crashes C crashes	K crashes \$1,600,000 A crashes \$800,000 B crashes \$250,000 C crashes \$130,000	K crashes\$1,600,000Link: mndot.gov/rA crashes\$800,000Real Discount RateB crashes\$250,000Real Discount RateC crashes\$130,000Traffic Growth Rate

G. Annual Benefit

Crash Severity	Crash Reduction	Annual Reduction	Annual Benefit
K crashes	0.00	0.00	\$O
A crashes	0.00	0.00	\$O
B crashes	0.12	0.04	\$10,000
C crashes	0.24	0.08	\$10,400
PDO crashes	1.80	0.60	\$9,000
			\$29,400

H. Amortized Benefit

<u>Year</u>	Crash Benefits	Present Value	
2026	\$29,400	\$29,400	Total = \$666,019
2027	\$29,988	\$29,780	
2028	\$30,588	\$30,164	
2029	\$31,200	\$30,553	
2030	\$31,824	\$30,948	
2031	\$32,460	\$31,347	
2032	\$33,109	\$31,752	
2033	\$33,771	\$32,162	
2034	\$34,447	\$32,577	
2035	\$35,136	\$32,998	
2036	\$35,838	\$33,424	
2037	\$36,555	\$33,855	
2038	\$37,286	\$34,292	
2039	\$38,032	\$34,735	
2040	\$38,793	\$35,183	
2041	\$39,569	\$35,638	
2042	\$40,360	\$36,098	
2043	\$41,167	\$36,564	
2044	\$41,990	\$37,036	
2045	\$42,830	\$37,514	
0	\$O	\$0	
0	\$O	\$O	
0	\$0	\$O	
0	\$O	\$O	
0	\$O	\$O	
0	\$0	\$O	
0	\$0	\$O	
0	\$0	\$O	

Traffic Safety Benefit-Cost Calculation

Highway Safety Improvement Program (HSIP) Reactive Project



DEPARTMENT OF TRANSPORTATION

A. Roadw	ay Description					
Route	Foley Blvd	District		County	Anoka	
Begin RP		End RP		Miles		
Location	TH 10 and Foley B	lvd South Ramp	s			
R Project	Description					
Proposed	-	ed Volumes due	to added rai	mps at TH 610/East Rive	er Road	
Project Co				Installation Year	2026	
Project Se	<u> </u>	•		- Traffic Growth Factor		
· ·	Right of Way from Pr			-		
-	Aodification Fact	or				
0.87	Fatal (K) Crashes		Reference	Crash Analysis		
0.87	Serious Injury (A) C					
0.87	Moderate Injury (B	-	Crash Type	All		
0.87	Possible Injury (C)					
0.87	Property Damage C	Only Crashes			www.CMFclearing	shouse.org
D. Crash N	Nodification Fact	or (optional s	econd CMF)		
	Fatal (K) Crashes		Reference			
	Serious Injury (A) C	rashes				
	Moderate Injury (B) Crashes	Crash Type			
	Possible Injury (C)	Crashes				
	Property Damage C	Only Crashes			www.CMFclearing	house.org
E. Crash D	ata					
Begin Dat	e 1/1/20)20	End Date	12/31/202	2	3 years
Data Sour	ce MnDO	т	_			
	Crash Severity	All		< option	al 2nd CMF >	
	K crashes		0			
	A crashes		1			
	B crashes		1			
	C crashes		3			
	PDO crashes		10			
F. Benefit	-Cost Calculation					
	\$1,560,840		esent value)			
	35,687,100	Cost	,	B/C	Ratio = 0.05	

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

F. Analysis Assumptions

Crash Severity	Crash Cost		
K crashes	\$1,600,000	Link: mndot.gov/	planning/program/appendix_a.html
A crashes	\$800,000		
B crashes	\$250,000	Real Discount Rate	0.7%
C crashes	\$130,000	Traffic Growth Rate	2.0%
PDO crashes	\$15,000	Project Service Life	20 years

G. Annual Benefit

Crash Severity	Crash Reduction	Annual Reduction	Annual Benefit
K crashes	0.00	0.00	\$O
A crashes	0.13	0.04	\$34,667
B crashes	0.13	0.04	\$10,833
C crashes	0.39	0.13	\$16,900
PDO crashes	1.30	0.43	\$6,500
			\$68,900

H. Amortized Benefit

	a benefit		
<u>Year</u>	Crash Benefits	Present Value	
2026	\$68,900	\$68,900	Total = \$1,560,840
2027	\$70,278	\$69,789	
2028	\$71,684	\$70,690	
2029	\$73,117	\$71,603	
2030	\$74,580	\$72,527	
2031	\$76,071	\$73,464	
2032	\$77,593	\$74,412	
2033	\$79,144	\$75,373	
2034	\$80,727	\$76,346	
2035	\$82,342	\$77,331	
2036	\$83,989	\$78,330	
2037	\$85,668	\$79,341	
2038	\$87,382	\$80,365	
2039	\$89,129	\$81,403	
2040	\$90,912	\$82,453	
2041	\$92,730	\$83,518	
2042	\$94,585	\$84,596	
2043	\$96,477	\$85,688	
2044	\$98,406	\$86,794	
2045	\$100,374	\$87,915	
0	\$O	\$O	
0	\$0	\$O	
0	\$0	\$O	
0	\$0	\$0	

Coon Rapids Crash Analysis 2024 Regional Solicitation

	Intersections	Total Number of Accidents	Years of Data	ADT*	Calculated Crash Rate (Million Entering Vehicles)
Existing	Foley Blvd and North TH 10 Ramps	36	3	34900	0.95
Future	Foley Blvd and North TH 10 Ramps	34	3	33400	0.93
Existing	Foley Blvd and South TH 10 Ramps	15	3	20750	0.67
Future	Foley Blvd and South TH 10 Ramps	13	3	17750	0.67
Existing	Foley Blvd and 99th Ave	9	3	23250	0.36
Future	Foley Blvd and 99th Ave	7	3	20250	0.32

Reduction or increase based on volume modifications	CM	F
Foley/North Ramps	6%	0.94
Foley/South Ramps	13%	0.87
Foley/99th	22%	0.78

Foley Blvd and 99th Ave

INCIDENTIE RTESYSCOE R	TENUMBE ME	ASURE COUNTY	S CITY_NAM TO	WNSHIP MNDOT_D	STATE_PAT TRIBAL	_GC LOCALID	ACCIDENT_0	CRASH_MC
834045 04-CSAH	11	1.042 Anoka	Coon Rapids	D-METRO	Golden Valley	20192981	2.02E+08	8-Aug
1002079 04-CSAH	11	1.045 Anoka	Coon Rapids	D-METRO	Golden Valley	22018089	2.2E+08	1-Jan
1048034 04-CSAH	11	1.047 Anoka	Coon Rapids	D-METRO	Golden Valley	22215415	2.23E+08	9-Sep
1051127 04-CSAH	11	1.119 Anoka	Coon Rapids	D-METRO	Golden Valley	22227318	2.23E+08	10-Oct
786577 05-MSAS	103	0.561 Anoka	Coon Rapids	D-METRO	Golden Valley	20033982	2E+08	2-Feb
940332 05-MSAS	103	0.561 Anoka	Coon Rapids	D-METRO	Golden Valley	21206570	2.13E+08	9-Sep
911356 05-MSAS	103	0.566 Anoka	Coon Rapids	D-METRO	Golden Valley	21124764	2.12E+08	6-Jun
813677 05-MSAS	103	0.57 Anoka	Coon Rapids	D-METRO	Golden Valley	20137303	2.02E+08	6-Jun
905105 05-MSAS	103	0.572 Anoka	Coon Rapids	D-METRO	Golden Valley	21099321	2.11E+08	5-May

TH 47 and Foley Blvd North Ramps

INCIDENTIC RTESYSCOL RT	ENUMBE MEASURE	COUNTY	S CITY_NAM TOW	NSHIP MNDOT_D	STATE_PAT TRIBAL	_GC LOCALID	ACCIDENT_	CRASH_MC
903305 04-CSAH	11 1.264	Anoka	Coon Rapids	D-METRO	Golden Valley	21090150	2.11E+08	4-Apr
776773 04-CSAH	11 1.298	Anoka	Coon Rapids	D-METRO	Golden Valley	20001937	2E+08	1-Jan
847739 04-CSAH	11 1.321	Anoka	Coon Rapids	D-METRO	Golden Valley	20258499	2.03E+08	10-Oct
1051693 04-CSAH	11 1.339	Anoka	Coon Rapids	D-METRO	Golden Valley	22511524	2.23E+08	10-Oct
1046563 04-CSAH	11 1.355	Anoka	Coon Rapids	D-METRO	Golden Valley	22209442	2.23E+08	9-Sep
804088 04-CSAH	11 1.357	Anoka	Coon Rapids	D-METRO	Golden Valley	20063819	2.01E+08	3-Mar
1037620 04-CSAH	11 1.357	Anoka	Coon Rapids	D-METRO	Golden Valley	22169867	2.22E+08	8-Aug
1028803 04-CSAH	11 1.359	Anoka	Coon Rapids	D-METRO	Golden Valley	22128459	2.22E+08	6-Jun
985129 04-CSAH	11 1.359	Anoka	Coon Rapids	D-METRO	Golden Valley	21295030	2.14E+08	12-Dec
1054775 04-CSAH	11 1.359	Anoka	Coon Rapids	D-METRO	Golden Valley	22242263	2.23E+08	10-Oct
842222 04-CSAH	11 1.362	Anoka	Coon Rapids	D-METRO	Golden Valley	20229884	2.03E+08	9-Sep
1033795 04-CSAH	11 1.361	Anoka	Coon Rapids	D-METRO	Golden Valley	22153020	2.22E+08	7-Jul
865167 04-CSAH	11 1.363	Anoka	Coon Rapids	D-METRO	Golden Valley	20285184	2.03E+08	11-Nov
799848 04-CSAH	11 1.363	Anoka	Coon Rapids	D-METRO	Golden Valley	20043871	2.01E+08	2-Feb
836647 04-CSAH	11 1.364	Anoka	Coon Rapids	D-METRO	Golden Valley	20202573	2.02E+08	8-Aug
941356 04-CSAH	11 1.365	Anoka	Coon Rapids	D-METRO	Golden Valley	21210588	2.13E+08	9-Sep
1069276 04-CSAH	11 1.365	Anoka	Coon Rapids	D-METRO	Golden Valley	22284468	2.24E+08	12-Dec
870591 04-CSAH	11 1.366	Anoka	Coon Rapids	D-METRO	Golden Valley	20307649	2.04E+08	12-Dec
1020936 04-CSAH	11 1.366	Anoka	Coon Rapids	D-METRO	Golden Valley	22092202	2.21E+08	5-May
983501 04-CSAH	11 1.368	Anoka	Coon Rapids	D-METRO	Golden Valley	21289504	2.14E+08	12-Dec
1018013 04-CSAH	11 1.375	Anoka	Coon Rapids	D-METRO	Golden Valley	22077145	2.21E+08	4-Apr
974182 04-CSAH	11 1.377	Anoka	Coon Rapids	D-METRO	Golden Valley	21260993	2.13E+08	11-Nov

1015943 04-CSAH	11	1.378 Anoka	Coon Rapids	D-METRO	Golden Valley	22068957	2.21E+08	4-Apr
811405 04-CSAH	11	1.389 Anoka	Coon Rapids	D-METRO	Golden Valley	20119683	2.01E+08	5-May
933204 04-CSAH	11	1.412 Anoka	Coon Rapids	D-METRO	Golden Valley	21177335	2.12E+08	8-Aug
917041 05-MSAS	128	0 Anoka	Coon Rapids	D-METRO	Golden Valley	21149346	2.12E+08	7-Jul
971602 05-MSAS	128	0.003 Anoka	Coon Rapids	D-METRO	Golden Valley	21250360	2.13E+08	11-Nov
985976 05-MSAS	128	0.007 Anoka	Coon Rapids	D-METRO	Golden Valley	21294595	2.14E+08	12-Dec
808644 05-MSAS	128	0.039 Anoka	Coon Rapids	D-METRO	Golden Valley	20502373	2.01E+08	2-Feb
1049054 05-MSAS	128	0.068 Anoka	Coon Rapids	D-METRO	Golden Valley	22218475	2.23E+08	9-Sep
982162 22-RAMP	5887	0.762 Anoka	Coon Rapids	D-METRO	Golden Valley	21511985	2.13E+08	12-Dec
928558 22-RAMP	5887	0.762 Anoka	Coon Rapids	D-METRO	Golden Valley	21506367	2.12E+08	7-Jul
943522 22-RAMP	5887	0.776 Anoka	Coon Rapids	D-METRO	Golden Valley	21219772	2.13E+08	9-Sep
802138 22-RAMP	5887	0.779 Anoka	Coon Rapids	D-METRO	Golden Valley	20053802	2.01E+08	3-Mar
808866 22-RAMP	5887	0.785 Anoka	Coon Rapids	D-METRO	Golden Valley	20099670	2.01E+08	5-May
909331 22-RAMP	5888	0 Anoka	Coon Rapids	D-METRO	Golden Valley	21115786	2.12E+08	5-May

TH 47 and Foley Blvd South Ramps

INCIDENTIE RTESYSCOE R	TENUMBE MEASUR	E COUNT	Y_S CITY_NAMITOWN	NSHIP MNDOT_D	STATE_PAT TRIBAL	_GC LOCALID	ACCIDENT_	CRASH_MC
1009856 04-CSAH	11 1.13	89 Anoka	Coon Rapids	D-METRO	Golden Valley	22502628	2.21E+08	2-Feb
820247 04-CSAH	11 1.14	1 Anoka	Coon Rapids	D-METRO	Golden Valley	20173474	2.02E+08	7-Jul
785218 04-CSAH	11 1.14	4 Anoka	Coon Rapids	D-METRO	Golden Valley	20028170	2E+08	2-Feb
903993 04-CSAH	11 1.14	l6 Anoka	Coon Rapids	D-METRO	Golden Valley	21094216	2.11E+08	5-May
1047818 04-CSAH	11 1.1	3 Anoka	Coon Rapids	D-METRO	Golden Valley	22213065	2.23E+08	9-Sep
1037133 04-CSAH	11 1.1	9 Anoka	Coon Rapids	D-METRO	Golden Valley	22167690	2.22E+08	7-Jul
935028 04-CSAH	11 1.20)1 Anoka	Coon Rapids	D-METRO	Golden Valley	21507721	2.12E+08	8-Aug
1015947 04-CSAH	11 1.	21 Anoka	Coon Rapids	D-METRO	Golden Valley	22065894	2.21E+08	3-Mar
897517 04-CSAH	11 1.2	1 Anoka	Coon Rapids	D-METRO	Golden Valley	21060985	2.11E+08	3-Mar
1054949 04-CSAH	11 1.2	7 Anoka	Coon Rapids	D-METRO	Golden Valley	22242986	2.23E+08	10-Oct
1065415 22-RAMP	523 0.2	98 Anoka	Coon Rapids	D-METRO	Golden Valley	22277006	2.23E+08	12-Dec
911186 22-RAMP	523 0.3)3 Anoka	Coon Rapids	D-METRO	Golden Valley	21505189	2.12E+08	6-Jun
1020291 22-RAMP	523 0.3	5 Anoka	Coon Rapids	D-METRO	Golden Valley	22064914	2.21E+08	3-Mar
944434 22-RAMP	523 0.32	23 Anoka	Coon Rapids	D-METRO	Golden Valley	21223417	2.13E+08	10-Oct
1061027 22-RAMP	4571 0.03	9 Anoka	Coon Rapids	D-METRO	Golden Valley	22513313	2.23E+08	11-Nov

CRAS	H_DA [®] CR	ASH_YE/CRASH_D	A CRASI	H_HO DIVIDED	RD CRASHSEVERITY	NUMBERKI NUM	BERO MANNERO FIRSTHARN RELATIVE_I RELATION	١T
07		2020 06-Fri		13 Not App	lic: Property Damage Only	0	2 Angle Motor Veh On RoadwaT Intersed	cti
	25	2022 03-Tues		12 Not App	lica Property Damage Only	0	2 Front to Re Motor Veh On RoadwaT Intersed	cti
	26	2022 02-Mon		16 Not App	lica Possible Injury	0	2 Angle Motor Veh On Roadwa Four-Way	уI
	11	2022 03-Tues		16 South	Property Damage Only	0	2 Front to Re Motor Veh On Roadwa Not at Int	tei
09		2020 01-Sun	06	Not App	lic: Property Damage Only	0	2 Sideswipe - Motor Veh On Roadwa Four-Way	уI
	13	2021 02-Mon		18 East	Property Damage Only	0	3 Front to Re Motor Veh On RoadwaT Intersed	cti
09		2021 04-Wed		20 Not App	lic: Property Damage Only	0	2 Sideswipe - Motor Veh On RoadwaT Intersed	cti
09		2020 03-Tues		14	Minor Injury	0	1 Pedalcyclis On Roadwa T Intersed	cti
	11	2021 03-Tues		18	Property Damage Only	0	2 Front to Re Motor Veh On RoadwaT Intersed	cti
CRAS	п_DA СК 30	2021 06-Fri	A CRASI	13 South	RD CRASHSEVERITY		BERO MANNERO FIRSTHARN RELATIVE_IRELATION 2 Angle Motor Veh On Roadwa Four-Way	
02	30	2021 06-Fri 2020 06-Fri			Property Damage Only	0		•
03	20			10 South	Property Damage Only	0	2 Front to Re Motor Veh On Roadwa Four-Way	•
	20	2020 03-Tues		14 North	Property Damage Only	0	2 Front to Re Motor Veh On Roadwa Intersecti	
	14	2022 06-Fri	~~	16 North	Property Damage Only	0	3 Front to Re Motor Veh On Roadwa Four-Way	•
	19	2022 02-Mon	08		Property Damage Only	0	2 Sideswipe - Motor Veh On Roadwa Four-Way	•
	15	2020 01-Sun		12 South	Possible Injury	0	2 Angle Motor Veh On Roadwa Four-Way	•
03		2022 04-Wed	07	South	Property Damage Only	0	2 Angle Motor Veh On Roadwa Four-Way	
	16	2022 05-Thu	07	South	Property Damage Only	0	2 Angle Motor Veh On Roadwa Four-Way	•
	31	2021 06-Fri			lica Minor Injury	0	2 Angle Motor Veh On Roadwa Four-Way	•
	30	2022 01-Sun		19	Property Damage Only	0	2 Angle Motor Veh On Roadwa Four-Way	•
	16	2020 04-Wed	04		lica Property Damage Only	0	2 Sideswipe - Motor Veh On Roadwa Four-Way	
	14	2022 05-Thu	08	South	Property Damage Only	0	2 Angle Motor Veh On Roadwa Four-Way	уI
	24	2020 03-Tues		18 Not App	lica Property Damage Only	0	2 Angle Motor Veh On Roadwa Four-Way	уI
	21	2020 06-Fri		12 South	Property Damage Only	0	2 Angle Motor Veh On Roadwa Four-Way	уI
	18	2020 03-Tues	09	East	Property Damage Only	0	2 Sideswipe - Motor Veh On Roadwa Four-Way	уI
	18	2021 07-Sat		10	Possible Injury	0	2 Angle Motor Veh On Roadwa Four-Way	уI
	23	2022 06-Fri		20 North	Possible Injury	0	2 Other Motor Veh On Roadwa Four-Way	уI
	25	2020 06-Fri		13	Property Damage Only	0	2 Angle Motor Veh On Roadwa Four-Way	уI
05		2022 05-Thu		16 Not App	lic: Property Damage Only	0	2 Front to Re Motor Veh On Roadwa Four-Way	уI
	23	2021 05-Thu		14 South	Property Damage Only	0	2 Angle Motor Veh On Roadwa Four-Way	y I
	15	2022 06-Fri		12 South	Property Damage Only	0	2 Front to Re Motor Veh On Roadwa Four-Way	уI
	17	2021 04-Wed		12 Not App	lica Property Damage Only	0	2 Angle Motor Veh On Roadwa Four-Way	γI

04		2022 02-Mon	15	Minor Injury	0	3 Front to Re Motor Veh On Roadwa Four-Way I
	23	2020 07-Sat	22 North	Property Damage Only	0	1 Mailboxes/ On Roadwa Not at Inter
09		2021 02-Mon	15 South	Property Damage Only	0	2 Sideswipe - Motor Veh On Roadwa Not at Inte
09		2021 06-Fri 09	Not Appl	lica Property Damage Only	0	2 Angle Motor Veh On Roadwa Four-Way I
04		2021 05-Thu	12	Property Damage Only	0	2 Sideswipe - Motor Veh On Roadwa Four-Way I
	30	2021 05-Thu	21 Not App	lic: Property Damage Only	0	2 Angle Motor Veh On Roadwa Four-Way I
	27	2020 05-Thu	14 West	Property Damage Only	0	2 Front to Re Motor Veh On Roadwa Not at Inte
	30	2022 06-Fri	14 West	Property Damage Only	0	2 Angle Motor Veh On Roadwa Not at Inter
09		2021 05-Thu	15 West	Property Damage Only	0	2 Front to Re Motor Veh On Roadwa Entrance/E
	10	2021 07-Sat	19 West	Property Damage Only	0	2 Front to Re Motor Veh On Roadwa Four-Way I
	28	2021 03-Tues	19 East	Property Damage Only	0	2 Front to Re Motor Veh On Roadwa Not at Inter
03		2020 03-Tues	22 East	Property Damage Only	0	2 Sideswipe - Motor Veh On Roadwa Interchang
01		2020 06-Fri	15 West	Possible Injury	0	2 Angle Motor Veh On Roadwa Four-Way I
	31	2021 02-Mon	12 West	Property Damage Only	0	2 Front to Re Motor Veh On Roadwa Four-Way I

CRASH_DA CRASH_YE/ CRASH_DA CRASH_HO DIVIDEDRD CRASHSEVERITY

	—		-	_	
	24	2022 05-Thu		14 East	Property Damage Only
	17	2020 06-Fri		16 South	Property Damage Only
02		2020 01-Sun		14 South	Property Damage Only
05		2021 04-Wed		13 South	Possible Injury
	23	2022 06-Fri		14	Possible Injury
	31	2022 01-Sun		13	Serious Injury
	15	2021 01-Sun		16 North	Property Damage Only
	31	2022 05-Thu		13 South	Property Damage Only
	24	2021 04-Wed	02	Not Applic	a Property Damage Only
	31	2022 02-Mon		15 Not Applic	a Property Damage Only
	14	2022 04-Wed		15 Not Applic	a Possible Injury
09		2021 04-Wed		12 East	Property Damage Only
	30	2022 04-Wed	08	South	Property Damage Only
02		2021 07-Sat		20	Minor Injury
	25	2022 06-Fri		11 East	Property Damage Only

NUMBERKI NUMBERO MANNERO FIRSTHARN RELATIVE_I RELATIONT

2	2 Front to Re	Motor	Veh	On	Roadwa Four-Way I
1	L	Guardr	rail (I	On	Shoulde Not at Inter
2	2 Front to Re	Motor	Veh	On	Roadwa Four-Way I
3	3 Front to Re	Motor	Veh	On	Roadwa Four-Way I
2	2 Front to Re	Motor	Veh	On	Roadwa Four-Way I
2	2 Angle	Motor	Veh	On	Roadwa Four-Way I
2	2 Angle	Motor	Veh	On	Roadwa Four-Way I
2	2 Front to Re	Motor	Veh	On	Roadwa Four-Way I
2	2 Front to Fro	Motor	Veh	On	Roadwa Four-Way I
2	2 Rear to Sid	Motor	Veh	On	Roadwa Four-Way I
2	2 Front to Re	Motor	Veh	On	Roadwa Entrance/E
2	2 Front to Re	Motor	Veh	On	Roadwa Intersectio
2	2 Front to Re	Motor	Veh	On	Roadwa Four-Way I
2	2 Angle	Motor	Veh	On	Roadwa Entrance/E
2	2 Front to Re	Motor	Veh	On	Roadwa Interchang

LIGHTCONI WEATHERF WEA	ATHERS RDWYSU	RFWORKZON ROADWAY INTERSEC	T ROUTE_ID BASIC_TYPE	UNITTYPEU VEHICLETY
Daylight Cloudy	Dry	NOT APPLI(FOLEY BLVD NW	040000659 Angle	Motor Vehi Passenger
Daylight Clear	Dry	NOT APPLI(FOLEY BLVD NW	040000659 Rear End	Motor Vehi Passenger
Daylight Clear	Dry	NOT APPLICFOLEY BLVI 99TH	040000659 Left Turn	Motor Vehi Passenger
Daylight Clear	Dry	NOT APPLICFOLEY BLVD NW	040000659 Rear End	Motor Vehi Passenger
Dark (Str Li Snow	Snow	NOT APPLICFOLEY BLVI 99TH AVE	E 1050002393 Sideswipe Opposing	Motor Vehi Passenger
Daylight Cloudy	Dry	NOT APPLI(99TH AVE NW	050002393 Rear End	Motor Vehi Passenger
Dark (Str Li Clear	Dry	NOT APPLI(99TH AVE NW	050002393 Sideswipe Same Direction	Motor Vehi Passenger
Daylight Cloudy	Dry	NOT APPLI(99TH AVE NW	050002393 Bike	Bicycle
Daylight Clear	Dry	NOT APPLI(99TH AVE I FOLEY BL	VI 050002393 Rear End	Motor Vehi Passenger

LIGHTCON	I WEATHERF	WEATHERS	RDWYSURF	WORKZON	ROADW	VAY_INTER	SECT	ROUTE_ID BASIC_TYPE		UNITTYPEU VEHICLETY
Daylight	Clear		Dry	NOT APPLI	FOLEY E	BLVD NW		040000659 Left Turn		Motor Veh Sport Utilit
Daylight	Cloudy		Wet	NOT APPLI	FOLEY E	BLVD NW		040000659 Rear End		Motor Veh Sport Utilit
Daylight	Snow		Slush	NOT APPLI	FOLEY E	BLVD NW		040000659 Rear End		Hit-And-Run Vehicle
Daylight	Cloudy	Rain	Wet	NOT APPLI	N/B FO	LEY BLVD N	NW @	040000659 Rear End		Motor Vehi Passenger
Daylight	Clear		Dry	NOT APPLI	FOLEY E	BLVI 101ST	AVE	040000659 Sideswipe S	ame Direction	Motor Vehi Passenger
Daylight	Clear		Dry	NOT APPLI	FOLEY E	BLVD NW		040000659 Angle		Motor Vehi Passenger
Daylight	Clear		Dry	NOT APPLI	FOLEY E	BLVI 101ST	AVE	040000659 Other		Motor Vehi Passenger
Daylight	Clear		Dry	NOT APPLI	FOLEY E	BLVI 101ST	AVE	040000659 Angle		Motor Veh Sport Utilit
Daylight	Snow		Snow	NOT APPLI	FOLEY E	BLVI 101ST	AVE	040000659 Left Turn		Motor Vehi Passenger
Dark (Str Li	i Clear		Dry	NOT APPLI	FOLEY E	BLVI 101ST	AVE	040000659 Angle		Motor Veh Sport Utilit
Dark (Str Li	i Clear		Dry	NOT APPLI(FOLEY E	BLVD NW		040000659 Sideswipe O	pposing	Motor Veh Passenger
Daylight	Clear		Dry	NOT APPLI(FOLEY E	3LVI 101ST	AVE	040000659 Angle		Motor Veh Passenger
Dark (Unkr	n Rain		Wet	NOT APPLI(FOLEY E	BLVD NW		040000659 Left Turn		Motor Veh Passenger
Daylight	Clear		Dry	NOT APPLI(FOLEY E	BLVD NW		040000659 Angle		Motor Veh Sport Utilit
Daylight	Clear		Dry	NOT APPLI(FOLEY E	BLVD NW		040000659 Sideswipe S	ame Direction	Motor Veh Medium / I
Daylight	Clear		Dry	NOT APPLI	FOLEY E	BLVI 101ST	AVE	040000659 Left Turn		Motor Vehi Passenger
Dark (Str Li	Snow		Snow	NOT APPLI	FOLEY E	BLVI 101ST	AVE	040000659 Other		Motor Veh Other Light
Daylight	Clear		Slush	NOT APPLI(FOLEY E	BLVD NW		040000659 Angle		Motor Veh Passenger
Daylight	Cloudy		Dry	NOT APPLI(FOLEY E	3LVI 101ST	AVE	040000659 Rear End		Hit-And-Ru Passenger
Daylight	Clear		Dry	NOT APPLI(FOLEY E	3LVI 101ST	AVE	040000659 Angle		Motor Veh Pickup
Daylight	Cloudy		Dry	NOT APPLI	FOLEY E	BLVI 101ST	AVE	040000659 Rear End		Hit-And-Run Vehicle
Daylight	Cloudy		Dry	NOT APPLI	FOLEY E	BLVI 101ST	AVE	040000659 Angle		Motor Vehi Passenger

Daylight Clear	Dry	NOT APPLI(FOLEY BLVI RAMP	888 040000659 Rear End	Motor Veh Passenger
Dark (Str Li Cloudy	Dry	NOT APPLICFOLEY BLVD NW	040000659 Single Vehicle Run Off Road	Motor Veh Pickup
Daylight Clear	Dry	NOT APPLICFOLEY BLVI 101ST	AVE 040000659 Sideswipe Same Direction	Motor Veh Passenger
Daylight Clear	Dry	NOT APPLI 101ST AVE FOLEY	' BVLI 050002393 Left Turn	Motor Veh Passenger
Daylight Clear	Dry	NOT APPLI 101ST AVE FOLEY	BLVI 050002393 Sideswipe Same Direction	Motor Veh Passenger
Dark (Str Li Clear	Slush	NOT APPLI 101ST AVE NW	050002393 Angle	Motor Veh Passenger
Daylight Clear	Dry	NOT APPLI 101ST AVE NW A	FOL 050002393 Rear End	Motor Veh Other Light
Daylight Clear	Dry	NOT APPLI 101ST AVE NW	050002393 Angle	Motor Veh School Bus
Daylight Clear	Dry	NOT APPLICRAMP FRO RAMP	TO F 220000659 Rear End	Motor Veh Medium / I
Daylight Cloudy	Dry	NOT APPLICWB USTH 10 TO F	OLEY 220000659 Rear End	Motor Veh Sport Utilit
Dark (Str Li Clear	Dry	NOT APPLI(RAMP887	220000659 Rear End	Motor Veh Sport Utilit
Dark (Str Li Cloudy	Dry	NOT APPLI(RAMP887 FOLEY	BLVI 220000659 Sideswipe Same Direction	Hit-And-Run Vehicle
Daylight Clear	Dry	NOT APPLI(RAMP887	220000659 Angle	Motor Veh Passenger
Daylight Clear	Dry	NOT APPLI(RAMP888	220000659 Rear End	Motor Veh Passenger

LIGHTCONI W	/EATHERF WEATHERS	RDWYSURF	WORKZON ROAD	WAY INTERSECT	ROUTE_ID BASIC_TYPE	UNITTYPEU VEHICLETY
Daylight Cl	loudy	Dry	NOT APPLICEB US	TH 10 AT FOLEY	040000659 Rear End	Motor Veh Sport Utilit
Daylight Cl	lear	Dry	NOT APPLICFOLEY	BLVD NW	040000659 Single Vehicle Run Off Road	Hit-And-Run Vehicle
Daylight Cl	lear	Dry	NOT APPLICFOLEY	BLVD NW	040000659 Rear End	Motor Vehi Passenger
Daylight Cl	lear	Dry	NOT APPLI(FOLEY	BLVI RAMP529	040000659 Rear End	Motor Veh Passenger
Daylight Cl	loudy	Dry	NOT APPLICFOLEY	BLVI HWY 10	040000659 Rear End	Motor Veh Sport Utilit
Daylight Cl	lear	Dry	NOT APPLICFOLEY	BLVIHIGHWAY	040000659 Angle	Motor Veh Motorcycle
Daylight Cl	lear	Dry	NOT APPLI(FOLEY	BLVD NW AT US	040000659 Angle	Motor Veh Pickup
Daylight Cl	loudy	Dry	NOT APPLI(FOLEY	BLVI 101ST AVE	040000659 Rear End	Motor Veh Sport Utilit
Dark (Str Li Ra	ain	Wet	NOT APPLI(FOLEY	BLVD NW	040000659 Head On	Motor Veh Pickup
Daylight Cl	lear	Dry	NOT APPLICFOLEY	BLVD NW	040000659 Other	Motor Veh Passenger
Daylight Cl	loudy	Slush	NOT APPLI(RAMP	523 FOLEY BLVI	220000659 Rear End	Motor Veh Sport Utilit
Daylight Cl	lear	Dry	NOT APPLI(RAMP	523	220000659 Rear End	Motor Veh Sport Utilit
Daylight Sl	eet, Hail (Snow	Slush	NOT APPLICRAMP	523	220000659 Rear End	Motor Veh Passenger
Dark (Str Li Cl	loudy	Dry	NOT APPLICRAMP	523	220000659 Angle	Motor Veh Passenger
Daylight Cl	lear	Dry	NOT APPLICE/B US	STH 10@FOLEY B	220000659 Rear End	Motor Veh Sport Utilit

DIRECTION PRECRASHIAGEU	1 SEXU1	PHYSICALC CONTRIBF# CONTRIBF# NONMOTC NONMC	TC RDWYDESI(TRAFFICCO SPE	EDLIMI [:] ALIGNMEN
Southboun Moving For	38 Female	Apparently Failure to Yield Right-of-Way	Two-Way, Traffic Con	40 Straight
Northboun Vehicle Sto	58 Female	Apparently No Clear Contributing Action	Two-Way, Traffic Con	40 Straight
Southboun Moving For	58 Female	Apparently Unknown	Two-Way, Traffic Con	40 Straight
Southboun Moving For	30 Female	Apparently No Clear Contributing Action	Two-Way, Not Applica	40 Straight
Southboun Turning Rig	22 Male	Apparently No Clear Contributing Action	Two-Way, Traffic Con	40 Straight
Eastbound Vehicle Sto	40 Male	Apparently No Clear Contributing Action	Two-Way, Traffic Con	30 Straight
Eastbound Turning Lef	27 Male	Unknown Unknown	Two-Way, Traffic Con	30 Straight
-	25 Male	Apparently Unknown Walk/Cycle Intersec	tion - Marked Crosswalk	_
Eastbound Moving For	33 Male	Apparently Unknown	Two-Way, Traffic Con	30 Straight
DIRECTION PRECRASHIAGEU Northboun Turning Lef	1 SEXU1 42 Female	PHYSICALC CONTRIBF/ CONTRIBF/ NONMOTC NONMC		40 Straight
Southboun Moving For	42 Female 69 Male	Apparently Failed to K Failure to Yield Right-of-Way Apparently Ran Red Light	Two-Way, Traffic Con Other Traffic Con	•
Northboun Slowing	09 Male	Apparentiy kan ked Light	Two-Way, Traffic Con	40 Straight 40 Straight
Northboun Moving For	37 Male	Apparently Improper Turn/Merge	Two-Way, Marine Con Two-Way, No Control	40 Straight
Northboun Turning Lef	57 Male	Apparently No Clear Contributing Action	Two-Way, Traffic Con	45 Straight
Eastbound Moving For	51 Male	Apparently No Clear Contributing Action	Two-Way, Traffic Con	35 Straight
Northboun Turning Lef	21 Male	Apparently Ran Red Light	Two-Way, Traffic Con	40 Straight
Southboun Moving For	19 Male	Apparently Driver Disti Ran Red Light	Two-Way, Traffic Con	45 Straight
Northboun Moving For	41 Male	Apparently No Clear Contributing Action	Two-Way, Traffic Con	40 Straight
Southboun Moving For	30 Female	Apparently Driver Disti Ran Red Light	Two-Way, Traffic Con	40 Straight
Northboun Moving For	59 Male	Apparently No Clear Contributing Action	Two-Way, Traffic Con	40 Straight
Southboun Moving For	19 Male	Apparently Disregard (Failure to Yield Right-of-Way	Two-Way, Traffic Con	45 Straight
Northboun Moving For	57 Female	Apparently Other Contributing Action	Two-Way, Traffic Con	40 Straight
Eastbound Moving For	30 Female	Apparently No Clear Contributing Action	Two-Way, Traffic Con	30 Straight
Eastbound Turning Lef	32 Male	Apparently Failed to Keep in Proper Lane	Other Traffic Con	40 Straight
Southboun Turning Lef	83 Female	Apparently Failure to Yield Right-of-Way	Two-Way, Traffic Con	45 Straight
Westbound Moving For	27 Female	Apparently No Clear Contributing Action	Two-Way, Traffic Con	30 Straight
Northboun Moving For	18 Male	Apparently Ran Red Light	Two-Way, Traffic Con	40 Straight
Southboun Moving Forward	10 Maie		Two-Way, Traffic Con	40 Straight
Southboun Moving For	36 Male	Apparently Ran Red Light	Two-Way, Traffic Con	40 Straight
Southboun Moving Forward			Two-Way, Traffic Con	40 Straight
Eastbound Turning Lef	33 Male	Apparently No Clear Contributing Action	Two-Way, Traffic Con	40 Straight
		Apparently the clear contributing Action		io strugit

Southboun Moving For	24 Male	Apparently Driver Distracted	Two-Way, Traffic Con	40 Curve Right
Northboun Moving For	30 Male	Has Been T Failed to Ke Operated Motor Vehicle: Careless	Two-Way, No Control	40 Straight
Southboun Changing L	61 Female	Apparently Unknown	Two-Way, No Control	40 Straight
Northboun Turning Lef	40 Female	Apparently Failure to Yield Right-of-Way	Two-Way, Traffic Con	40 Straight
Eastbound Turning Lef	34 Male	Apparently Unknown	Two-Way, Traffic Con	40 Straight
Northboun Moving For	17 Female	Apparently Swerved or Avoided Due to Wind	Two-Way, Traffic Con	40 Straight
Westbount Moving For	57 Male	Apparently Following Too Closely	One Way T No Control	45 Straight
Westbount Moving For	55 Male	Apparently No Clear Contributing Action	Two-Way, No Control	30 Straight
Westbount Moving For	35 Male	Apparently Following Too Closely	Two-Way, Traffic Con	65 Straight
Westbounc Vehicle Sto	34 Female	Apparently No Clear Contributing Action	One Way T Traffic Con	65 Curve Right
Eastbound Vehicle Sto	19 Female	Apparently No Clear Contributing Action	Two-Way, Not Applica	65 Straight
Eastbound Moving Forward			Two-Way, Traffic Con	30 Straight
Westbount Moving For	58 Female	Apparently No Clear Contributing Action	Two-Way, Traffic Con	45 Straight
Southboun Vehicle Sto	42 Female	Apparently No Clear Contributing Action	Two-Way, Traffic Con	40 Straight

DIRECTION PRECRASHI AGEU1	SEXU1	PHYSICALC CONTRIBF# CONTRIBF# NONMOTC NONMO	TC RDWYDESI(TRAFFICCO SPEEI	DLIMI [®] ALIGNMEN
Eastbound Vehicle Sto	58 Male	Apparently No Clear Contributing Action	Two-Way, Traffic Con	45 Straight
Unknown Unknown			Two-Way, INo Control	40 Straight
Southboun Turning Rig	24 Male	Apparently Following Too Closely	One Way T Yield Sign	65 Curve Right
Southboun Turning Rig	20 Male	Apparently No Clear Contributing Action	Two-Way, Traffic Con	40 Curve Right
Northboun Vehicle Sto	36 Female	Apparently Improper Backing	Two-Way, Traffic Con	40 Straight
Northboun Moving For	34 Male	Unknown Ran Red Light	Two-Way, Traffic Con	40 Straight
Northboun Changing L	56 Male	Apparently Operated N Failure to Yield Right-of-Way	Two-Way, Traffic Con	35 Straight
Southboun Vehicle Sto	52 Female	Apparently No Clear Contributing Action	Two-Way, Traffic Con	45 Straight
Northboun Moving For	48 Male	Apparently Ran Red Light	Two-Way, Traffic Con	40 Straight
Southboun Changing L	52 Male	Apparently Unknown	Two-Way, Traffic Con	45 Straight
Southboun Vehicle Sto	34 Female	Apparently No Clear Contributing Action	One Way T Yield Sign	40 Curve Right
Eastbound Moving For	27 Male	Apparently Following Too Closely	One Way T Traffic Con	40 Straight
Eastbound Turning Rig	39 Female	Apparently No Clear Contributing Action	Two-Way, Traffic Con	40 Straight
Eastbound Vehicle Sto	40 Male	Apparently Unknown	Two-Way, Traffic Con	65 Straight
Eastbound Vehicle Sto	35 Female	Apparently No Clear Contributing Action	One Way T Yield Sign	65 Straight

GRADEU1	UNITTYPEL VEHICLETY DIRECTION PRECRASHI AGEU2	2 SEXU2	PHYSICALC CONTRIBF# CONTRIBF# NONMOTC NONMO	IC RDWYDESI
Downhill	Motor Veh Passenger (Eastbound Turning Lef	88 Male	Apparently No Clear Contributing Action	Two-Way, I
Level	Motor Veh Pickup Northboun Moving For	36 Male	Apparently No Clear Contributing Action	Two-Way, I
Downhill	Motor Veh Passenger (Northboun Turning Lef	33 Male	Apparently Unknown	Two-Way, I
Downhill	Hit-And-Ru Passenger (Southboun Moving For	37	Unknown Unknown	Two-Way, I
Downhill	Motor Veh Sport Utilit Eastbound Vehicle Sto	75 Male	Apparently No Clear Contributing Action	Two-Way, I
Level	Motor Veh Sport Utilit Eastbound Vehicle Sto	63 Male	Apparently No Clear Contributing Action	Two-Way, I
Level	Hit-And-Run Vehicle Eastbound Turning Left			Two-Way, I
	Hit-And-Run Vehicle Eastbound Turning Right			Two-Way, I
Level	Motor Veh Sport Utilit Eastbound Vehicle Sto	42 Male	Apparently No Clear Contributing Action	Two-Way, I
GRADEU1	UNITTYPEL VEHICLETY DIRECTION PRECRASHI AGEU2	2 SEXU2	PHYSICALC CONTRIBF4 CONTRIBF4 NONMOTC NONMOT	
Level	Motor Veh Passenger 'Southboun Moving For	71 Male	Apparently No Clear Contributing Action	Two-Way, I
Level	Motor Veh Sport Utilit Westbound Moving For	60 Female	Apparently No Clear Contributing Action	Two-Way, I
Level	Motor Veh Pickup Northboun Vehicle Sto	59 Male	Apparently No Clear Contributing Action	Two-Way, I
Level	Motor Veh Passenger (Northboun Moving For	59 Male	Apparently No Clear Contributing Action	Two-Way, I
Level	Motor Veh Passenger (Northboun Moving For	40 Female	Apparently Failed to Keep in Proper Lane	Two-Way, I
Level	Motor Veh Sport Utilit Southboun Moving For	72 Male	Apparently Ran Red Light	Two-Way, I
Level	Motor Veh Pickup Eastbound Turning Lef	28 Male	Apparently Other Contributing Action	Two-Way, I
Level	Motor Veh Pickup Southboun Moving For	40 Male	Apparently No Clear Contributing Action	Two-Way, I
Level	Motor Veh Sport Utilit Southboun Turning Lef	28 Female	Apparently Failure to Yield Right-of-Way	Two-Way, I
Uphill	Motor Veh Passenger (Westbound Moving For	49 Male	Apparently No Clear Contributing Action	Two-Way, I
Uphill	Motor Veh Sport Utilit Eastbound Turning Lef	28 Male	Unknown Disregard (Operated Motor Vehicle: Carele	
Level	Motor Veh Passenger 'Southboun Moving For	36 Female	Apparently No Clear Contributing Action	Two-Way, I
Level	Motor Veh Passenger (Southboun Turning Lef	18 Female	Apparently No Clear Contributing Action	Two-Way, I
Level	Motor Veh Passenger (Southboun Moving For	39 Female	Apparently Ran Red Light	Two-Way, I
Level	Motor Veh Pickup Eastbound Turning Lef	61 Male	Apparently No Clear Contributing Action	Other
Level	Motor Veh Sport Utilit Northboun Moving For	28 Male	Apparently No Clear Contributing Action	Two-Way, I
Level	Motor Veh Medium / I Northboun Moving For	18 Male	Apparently Other Contributing Action	Two-Way, I
Downhill	Motor Veh Passenger (Westbound Turning Lef	27 Male	Apparently No Clear Contributing Action	Two-Way, I
Uphill	Motor Veh Pickup Southboun Vehicle Sto	53 Male	Apparently No Clear Contributing Action	Two-Way, I
Level	Motor Veh Passenger 'Eastbound Turning Lef	44 Male	Apparently No Clear Contributing Action	Two-Way, I
Level	Motor Veh Sport Utilit Southboun Moving For	66 Female	Apparently No Clear Contributing Action	Two-Way, I
			······	

38 Female

Apparently Ran Red Light

Two-Way, I

Motor Veh Sport Utilit Southboun Moving For Motor Veh Passenger 'Southboun Moving For

Level

Downhill Level	Motor Veh Sport Utilit Southboun Vehicle Sto	74 Male	Apparently No Clear Contributing Action	Two-Way, I
Level	Motor Veh Sport Utilit Southboun Moving For	40 Female	Apparently No Clear Contributing Action	Two-Way, I
Level	Motor Veh Passenger (Southboun Moving For	55 Female	Apparently No Clear Contributing Action	Two-Way, I
Level	Motor Veh Passenger (Eastbound Turning Lef	40 Male	Apparently Unknown	Two-Way, I
Level	Motor Veh Passenger (Eastbound Moving For	39 Male	Apparently No Clear Contributing Action	Two-Way, I
Level	Motor Veh Passenger (Westbound Moving For	33 Male	Apparently Operated Motor Vehicle: Careless/Negligent	/ One Way T
Level	Motor Veh Passenger (Westbound Moving For	71 Male	Apparently No Clear Contributing Action	Two-Way, I
Level	Motor Veh Passenger (Westbound Moving For	30 Male	Apparently No Clear Contributing Action	Two-Way, I
Uphill	Motor Veh Passenger (Westbound Moving For	54 Female	Apparently Driver Distracted	One Way T
Level	Hit-And-Run Vehicle Eastbound Moving Forward			Two-Way, I
Uphill	Motor Veh Passenger (Eastbound Turning Lef	24 Female	Apparently No Clear Contributing Action	Two-Way, I
Level	Motor Veh Sport Utilit Southboun Moving For	44 Female	Apparently Ran Red Light	Two-Way, I
Level	Hit-And-Ru Passenger (Southboun Moving For	29 Male	Apparently Unknown	Two-Way, I
GRADEU1 Level Downhill	UNITTYPEL VEHICLETYI DIRECTION PRECRASHI AGEU2 Motor Veh Sport Utilit Eastbound Moving For	SEXU2 34 Male	PHYSICALC CONTRIBF# CONTRIBF# NONMOTC NONMOT Apparently Following Too Closely	CRDWYDESI Two-Way, I
Level	Motor Veh Passenger (Southboun Turning Rig	18 Male	Apparently No Clear Contributing Action	One Way T
Level	Motor Veh Sport Utilit Southboun Turning Rig	56 Female	Apparently No Clear Contributing Action	Two-Way, I
Level	Motor Veh Passenger 'Northboun Vehicle Sto	58 Male	Apparently No Clear Contributing Action	Two-Way, I
Uphill	Motor Veh Sport Utilit Eastbound Turning Lef	40 Male	Apparently No Clear Contributing Action	Two-Way, I
Level	Motor Veh Pickup Northboun Moving For	25 Male	Apparently No Clear Contributing Action	Two-Way, I
Uphill	Motor Veh Sport Utilit Southboun Moving For	20 Female	Apparently Following Too Closely	Two-Way, I
Uphill	Motor Veh Pickup Southboun Turning Lef	44 Male	Apparently No Clear Contributing Action	Two-Way,
Level	Motor Veh Passenger (Southboun Moving For	52 Female	Apparently Unknown	Two-Way, I
Level	Motor Veh Sport Utilit Southboun Turning Rig	63 Female	Apparently No Clear Contributing Action	Two-Way, I
Uphill	Motor Veh Passenger (Eastbound Moving For	18 Male	Apparently No Clear Contributing Action	One Way T
Level	Motor Veh Sport Utilit Eastbound Moving For	44 Female	Apparently Improper Turn/Merge	Two-Way I
Level	Motor Veh Pickup Eastbound Moving For	40 Male	Apparently Unknown	Two-Way, I
Level	Motor Veh Passenger (Eastbound Turning Rig	69 Male	Apparently Driver Disti Following Too Closely	One Way T
			Apparently Driver Distribution wing rob closely	Che way I

TRAFFICCO SPEEDLIMI' ALIGNMEN GRADEU2 UNITTYPEL VEHICLETY DIRECTION PRECRASHI AGEU3 SEXU3 PHYSICALC CONTRIBF/ CONTRIBF/

Traffic Cont	30 Straight	Level			
Traffic Cont	40 Straight	Level			
Traffic Cont	40 Straight	Level			
No Control	40 Straight	Downhill			
Traffic Cont	35 Straight	Level			
Traffic Cont	30 Straight	Level	Motor Veh Sport Utilit Eastbound Moving For	46 Male	Apparently Driver Distracted
Traffic Cont	30 Straight	Level			
Traffic Cont	30 Straight	Level			
Traffic Cont	30 Straight	Level			

TRAFFICCO SPEEDL	IMI' ALIGNMEN	GRADEU2	UNITTYPEL VEHICLETY DIRECTION PRECRASHI AGEUS	B SEXU3	PHYSICALC CONTRIBFA CONTRIBFA
Traffic Cont	40 Straight	Level			
Traffic Cont	40 Straight	Level			
Traffic Cont	40 Straight	Level			
No Control	40 Straight	Level	Motor Veh Passenger (Northboun Moving For	26 Male	Apparently Other Contributing Act
Traffic Cont	45 Straight	Level			
Traffic Cont	35 Straight	Level			
Traffic Cont	40 Curve Left	Level			
Traffic Cont	45 Straight	Level			
Traffic Cont	40 Straight	Level			
Traffic Cont	40 Straight	Level			
Traffic Cont	35 Straight	Level			
Traffic Cont	45 Straight	Level			
Traffic Cont	40 Straight	Level			
Traffic Cont	45 Straight	Level			
Traffic Cont	40 Straight	Level			
Traffic Cont	45 Straight	Downhill			
Traffic Cont	45 Straight	Sag (Bottor	m)		
Traffic Cont	40 Straight	Level			
Traffic Cont	40 Straight	Uphill			
Traffic Cont	40 Straight	Level			
Traffic Cont	40 Straight	Level			
Traffic Cont	40 Straight	Level			

Traffic Coni 40 Curve Right Downhill Motor Veh Passenger ' Southboun Vehicle Sto

28 Female Apparently No Clear Contributing ,

No Control: 40 Straight Level Traffic Cont 40 Straight Level Traffic Cont 40 Straight Level Traffic Cont 40 Straight Level No Control 45 Straight Level 30 Straight No Control Level Traffic Cont 65 Straight Level Traffic Cont 65 Curve Right Uphill Not Applica 65 Straight Level Traffic Cont 30 Straight Uphill Traffic Cont 45 Straight Level Traffic Cont 40 Straight Level

TRAFFICCO SPEEI	DLIMI [:] ALIGNME	N GRADEU2	UNITTYPEL VEHICLETY DIRECTION PRECRASHI AGEU3	SEXU3	PHYSICALC CONTRIBF# CONTRIBF#
Traffic Cont	45 Straight	Level			

Yield Sign	65 Curve Righ	nt Level			
Traffic Cont	40 Curve RightLevel		Motor Veh Passenger Southboun Moving For	33 Male	Apparently Unknown
Traffic Cont	40 Straight Level				
Traffic Cont	40 Straight	Downhill			
Traffic Cont	35 Straight	Level			
Traffic Cont	45 Straight	Uphill			
Traffic Cont	40 Straight	Downhill			
Traffic Cont	45 Straight	Level			
Yield Sign	40 Curve Righ	nt Level			
Traffic Cont	40 Straight	Uphill			
Traffic Cont	40 Straight	Level			
Traffic Cont	65 Straight	Level			
Yield Sign	65 Straight	Level			

NONMOTO NONMOTO RDWYDESI/TRAFFICCO SPEEDLIMI' ALIGNMEN GRADEU3 UNITTYPEU VEHICLETY/ DIRECTION PRECRASHI AGEU4 SEXU4

Two-Way, |Traffic Con 30 Straight Level

NONMOTO NONMOTO RDWYDESI/TRAFFICCO SPEEDLIMI' ALIGNMEN GRADEU3 UNITTYPEU VEHICLETY/ DIRECTION PRECRASHI AGEU4 SEXU4

ion

Two-Way, INo Control

40 Straight Level

Two-Way, ITraffic Con[.] 40 Curve Righ Downhill

Action

NONMOTO NONMOTO RDWYDESI/TRAFFICCO SPEEDLIMI' ALIGNMEN GRADEU3 UNITTYPEU VEHICLETY/ DIRECTION PRECRASHI AGEU4 SEXU4

Two-Way, I Traffic Con 40 Curve Righ Level

PHYSICALC^I CONTRIBFA CONTRIBFA NONMOTC NONMOTC RDWYDESI^I TRAFFICCO SPEEDLIMI^I ALIGNMEN GRADEU4 UTMX UTMY LATITUDE

- 478298.80! 4999617.4(45.14971
 - 478300.41 4999622.1 45.14975
 - 478301.71 4999626.0 45.14979
 - 478343.42.4999735.0 45.15077 478283.19.4999626.0 45.14978
 - 478283.20! 4999626.0(45.14978
 - 478290.81(4999626.0) 45.14978
 - 478298.25, 4999626.0(45.14978
 - 478301.27.4999626.0(45.14979

PHYSICALC CONTRIBF CONTRIBF NONMOTC NONMOTC RDWYDESI TRAFFICCO SPEEDLIMI' ALIGNMEN GRA	DEU4	UTMX	UTMY	LATITUI	DE
		478436.05	4999948.6	45.152	269
		478470.12	4999989.1	45.153	306
		478484.21(5000022.20	45.153	336
		478483.57	5000059.93	45.15	537
		478493.49(5000083.1	45.153	391
		478494.774	5000085.6	45.153	393
		478495.29	5000086.6	45.153	394
		478508.254	5000078.8	45.153	387
		478508.48	5000079.5	45.153	387
		478496.71(5000089.3	45.153	396
		478498.41!	5000092.6	45.153	399
		478509.54	5000082.6	45.15	539
		478499.05	5000094.1	45.154	401
		478499.28	5000095.2	45.154	401
		478499.66			
		478511.26	5000087.6	45.153	395
		478511.49!	5000088.3	45.153	395
		478511.95	5000090.0	45.153	397
		478500.28(5000099.8	45.154	406
		478512.76	5000093.0	45.1	154
		478503.40	5000114.3	45.154	419
		478493.49	5000083.1	45.153	391

478504.18: 5000117.9:45.15422478521.41: 5000125.2:45.15429478508.34: 5000137.2:45.15439478499.13: 500093.5:45.15389478498.09: 5000081.2:45.15396478509.79: 5000089.0:45.15378478596.15: 5000046.7:45.15378478459.04: 5000095.2:45.15401478480.95: 5000087.4:45.15394478493.30: 5000083.2:45.15391478498.94: 500093.6:45.15401

UTMY

LATITUDE

478355.60; 4999764.4;45.15103478356.51; 4999766.5;45.1510478358.56; 4999771.5;45.1511478360.00; 4999775.0;45.15113478378.35; 4999774.6;45.15113478382.14; 4999783.0;45.1512478395.62; 499985.5;45.1518478401.43; 4999868.5;45.1519478415.15; 4999860.4;45.1519478326.38; 499980.5;45.1512478326.38; 499980.5;45.1513478334.06; 499982.5;45.1513478343.6; 499980.5;45.1513478343.6; 499970.8;45.1513478364.13; 499970.8;45.1512478343.2; 499980.5;45.1512478343.2; 499980.5;45.1513

PHYSICALC CONTRIBF/ CONTRIBF/ NONMOTC NONMOTC RDWYDESI TRAFFICCO SPEEDLIMI' ALIGNMEN GRADEU4 UTMX

LONGITUD	CRASH_DA	STATUS	STATUS_N(AGENCY_O AGENCY_C) NARRATIVE
-93.2761	########	Accepted	Reportable Coon Rapic Police	***THIS
-93.276	########	Accepted	Reportable Coon Rapic Police	*****LOC
-93.276	########	Accepted	Reportable Coon Rapic Police	UNIT 1
-93.2755	########	Accepted	Reportable Coon Rapic Police	***THIS
-93.2763	########	Accepted	Reportable Coon Rapic Police	DRIVER 1
-93.2763	########	Accepted	Reportable Coon Rapic Police	IWAS
-93.2762	########	Accepted	Reportable Coon Rapic Police	DRIVER #1 REQUESTED A PHONE CALL REGARDING A HIT AND RUN CRASH WHIC
-93.2761	########	Accepted	Reportable Coon Rapic Police	BICYCLE 1
-93.276	########	Accepted	Reportable Coon Rapic Police	DRIVER
	CRASH_DA S		STATUS_N(AGENCY_O AGENCY_C	DNARRATIVE
	########	•	Reportable Coon Rapic Police	FOLEY
	########	•	Reportable Coon Rapic Police	LOCATION
	########	•	Reportable Coon Rapic Police	***THIS
-93.2737	########	Accepted	Reportable MN State P State Patro	
	########	•	Reportable Coon Rapic Police	IWAS
	########	•	Reportable Coon Rapic Police	DRIVER
	########	•	Reportable Coon Rapic Police	D-1 SB FOLEY AT INTERSECTION OF 101ST AVE. D-2 TURNING LEFT ONTO FOLEY
	########	•	Reportable Coon Rapic Police	VEHICLE #
	########	•	Reportable Coon Rapic Police	UNIT 1
	########	•	Reportable Coon Rapic Police	OFC
	########	•	Reportable Coon Rapic Police	OFFICER
	########	•	Reportable Coon Rapic Police	VEHICLE #
	########	•	Reportable Coon Rapic Police	UNIT 1
	########	•	Reportable Coon Rapic Police	ACCIDENT
	########	•	Reportable Coon Rapic Police	Veh 1 and
	########	•	Reportable Coon Rapic Police	UNIT 1
-93.2734	########	Accepted	Reportable Coon Rapic Police	VEHICLE
	########	•	Reportable Coon Rapic Police	I, OFFICER
-93.2735	########	Accepted	Reportable Coon Rapic Police	D1 SAID
	########	•	Reportable Coon Rapic Police	UNIT #1
-93.2735	########	Accepted	Reportable Coon Rapic Police	Veh 1 and
-93.2736	########	Accepted	Reportable Coon Rapic Police	UNIT 1

-93.2735	########	Accepted	Reportable Coon Rapic Police	#3 WAS
-93.2733	########	Accepted	Reportable Coon Rapic Police	UNIT 1 NB
-93.2734	########	Accepted	Reportable Coon Rapic Police	DRIVER
-93.2735	########	Accepted	Reportable Coon Rapic Police	***ACCID
-93.2736	########	Accepted	Reportable Coon Rapic Police	DISPATCH
-93.2734	########	Accepted	Reportable Coon Rapic Police	**ACCIDE
-93.2728	########	Accepted	Reportable MN State P State Patro	Westboun
-93.2723	########	Accepted	Reportable Coon Rapic Police	DISPATCH
-93.2741	########	Accepted	Reportable MN State P State Patro	Crash occurred on the ramp from USTH 10 westbound to Foley Blvd. Vehicle twc
-93.2741	########	Accepted	Reportable MN State P State Patro	BOTH
-93.2738	########	Accepted	Reportable Coon Rapic Police	RAMP
-93.2737	########	Accepted	Reportable Coon Rapic Police	UNIT#2
-93.2736	########	Accepted	Reportable Coon Rapic Police	INDEPENDENT WITNESS REPORTED WATCHING LISA RUN A RED LIGHT. FADUMA
-93.2735	########	Accepted	Reportable Coon Rapic Police	I WAS

LONGITUDI CRASH_DA STATUS	STATUS_N(AGENCY_OAGENCY_C	DNARRATIVE
-93.2754 ######## Accepted	Reportable MN State P State Patro	b Eastbound
-93.2753 ######## Accepted	Reportable Coon Rapic Police	PASSERBY REPORTED A GUARD RAIL IN THE ROADWAY NEAR FOLEY BLVD AND F
-93.2753 ######## Accepted	Reportable Coon Rapic Police	Veh 1 and
-93.2753 ######## Accepted	Reportable Coon Rapic Police	SOUTHBO
-93.2751 ######## Accepted	Reportable Coon Rapic Police	Veh 1 and
-93.275 ######## Accepted	Reportable Coon Rapic Police	UNIT 1
-93.2748 ######## Accepted	Reportable MN State P State Patro	o Foley
-93.2748 ######## Accepted	Reportable Coon Rapic Police	D-1 STOPPED AT RED LIGHT 101ST AVE AND FOLEY. D-2 BEHIND D-1. D-2 SAW TF
-93.2746 ######## Accepted	Reportable Coon Rapic Police	DRIVER #1 SAID HE WAS DRIVING NB FOLEY BLVD AND FAILED TO STOP AT THE F
-93.2744 ######## Accepted	Reportable Coon Rapic Police	THE
-93.2757 ######## Accepted	Reportable Coon Rapic Police	UNIT #1 WAS EXITING HIGHWAY 10 ON TO SOUTHBOUND FOLEY BLVD NW. UNI
-93.2756 ######## Accepted	Reportable MN State P State Patro	DAT THE
-93.2754 ######## Accepted	Reportable Coon Rapic Police	*****LOC
-93.2752 ######## Accepted	Reportable Coon Rapic Police	UNIT 1
-93.2755 ######## Accepted	Reportable MN State P State Patro	DE/BUSTH

CH OCCURED YESTERDAY. DRIVER #1 SAID HE WAS EB 99TH AVE AT FOLEY BLVD (AT THE TRAFFIC LIGHT). DRIVER #1 SAID HE WAS MAKING A LEFT TUR

ON GREEN LIGHT. D-1 RAN RED LIGHT AND STRUCK D-2. D-2 CITED FOR RED LIGHT. D-2 CITED FOR CANCELED DL.

T #1 WAS YIELDING TO TURN SOUTHBOUND FOLEY BLVD FROM THE EXIT RAMP. UNIT #2 WAS BEHIND UNIT #1 ALSO WAITING TO TURN SOUTHBOUN

RAFFIC START TO MOVE AND STARTED TO PULL FORWARD. D-2 PULLED FORWARD TOO FAST AND REAR ENDED D-1. RED LIGHT, CRASHING INTO UNIT #2. DRIVER #2 SAID HE WAS MAKING A LEFT TURN FROM SB FOLEY TO EB HIGHWAY 47 WHEN UNIT #1 CRASHED IN⁻

IIGHWAY 10 NW. I ARRIVED AND FOUND THE GUARDRAIL AND TWO SIGNS HAD BEEN CRASHED INTO BY A VEHICLE. I OBSERVED ONE SET OF VEHICLE

A WAS TRAVELING THROUGH A GREEN LIGHT AND MADE CONTACT WITH LISA. LISA SAID TO OFFICER PLATZ; I MUST HAVE RUN THE LIGHT. LISA CITED

) began to turn to go westbound off the ramp. Unit one was driving behind unit two also attempting to go westbound. Unit one failed to apply brakes

IN WHEN ANOTHER UNKNOWN VEHICLE (UNIT #2) PASSED HIM ON THE RIGHT, BUT ALSO MAKING A LEFT TURN. DRIVER #1 SAID HE CRASHED INTO T

in time and crashed into the rear of unit two. Unit one stated they thought unit two was about to about to make the turn. 670

FOR FAILURE TO DRIVE WITH DUE CARE. DAVID SAW THE CRASH BUT DID NOT SEE THE CAUSE.

TRACKS LEADING TO THE PARKING LOT BELOW NEAR STARBUCKS AND SOME VEHICLE PARTS LEFT BEHIND. I PATROLLED THE AREA, BUT WAS UTLA

TO HIM. DRIVER #2 SAID DRIVER #1 RAN THE RED LIGHT. DRIVER #2 SAID HE HAD A GREEN LIGHT.

JD ON TO FOLEY BLVD. UNIT #2 STRUCK UNIT #1 IN THE REAR. MINOR INJURIES, VERY MINOR DAMAGES, NO TOWS.

'HE DRIVER'S DOOR OF UNIT #2 AND THE VEHICLE FLED THE SCENE. DRIVER #1 SAID HE HAS DAMAGE TO HIS FRONT PASSENGER SIDE BUMPER. DRIVE

VEHICLE. NO IDENTIFYING FEATURES LEFT BEHIND AT THE SCENE. YELLOW NOTICE LEFT AT THE SCENE. NO FURTHER ACTION

ER #1 SAID UNIT #2 SHOULD HAVE DAMAGE TO THE DRIVER'S DOOR. DRIVER #1 DESCRIPTION DRIVER #2 HAS A BLACK MALE IN HIS 20'S. NO VEHICLE

INFO FOR UNIT #2. NO VIDEO FOOTAGE. NO REPORTED INJURIES. DRIVER #1 SAID HE BELIEVES DRIVER #2 WAS COMING FROM THE MOVIE THEATER

NEARBY. DRIVER #1 SAID HE WAS ALSO AT THE THEATER. DRIVER #1 DENIED HAVING ANY ROAD RAGE ISSUES. DRIVER #1 SAID HE BELIEVES DRIVER #

2 LOST HIS PATIENTS TO MAKE THE LEFT HAND TURN ONTO FOLEY BLVD AND TRIED TO PASS HIM. NO FURTHER ACTION.



Project Summary

Project Name: TH 610 and East River Road Interchange Reconstruction

Applicant: City of Coon Rapids

Project Location: TH 610 and East River Road (CSAH 1) Interchange between the Mississippi River and Coon Rapids Boulevard in Coon Rapids, Anoka County

Total Project Cost: \$35,687,000

Requested Federal Dollars: \$10,000,000

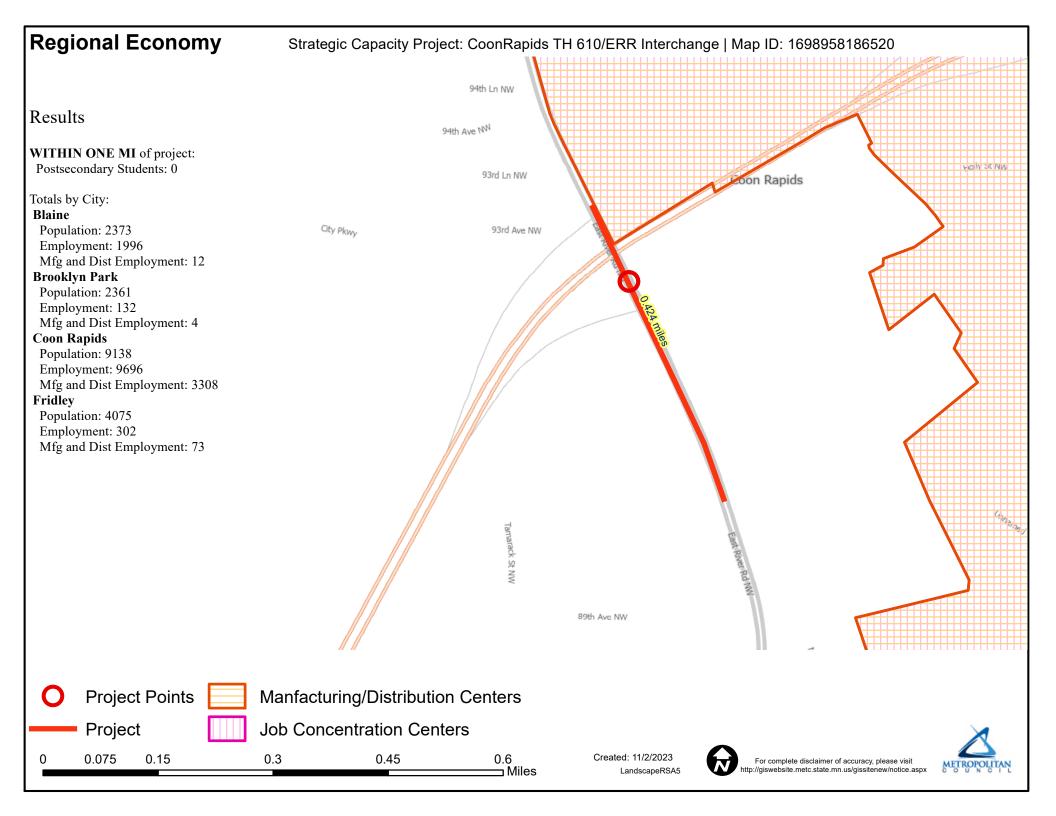


Project Description: The project will complete the transportation system by providing a full-access interchange at TH 610 and East River Road with a westbound off-ramp loop and a folded eastbound onramp with TH 610 auxiliary lanes between East River Road and Coon Rapids Boulevard. In addition, multimodal improvements include the construction of a new 10-foot trail along and under East River Road (via a grade-separated underpass) provide safer connections between neighborhoods, businesses regional trails and transit facilities.

Project Benefits: The TH 610 and East River Road interchange reconstruction will provide the following benefits:

- Improved travel times and safer access for transit users, residents, and businesses within the project area.
- A more direct route for regional trips and emergency response teams originating and destined ٠ for this area.
- Improved traffic congestion and safety issues at the TH10 and Foley Boulevard interchange.
- Safer transit operations with a connection to East River Road and the closure of the westbound • on-ramp to TH 610.
- An interconnected trail and sidewalk system with access to the Foley Park & Ride facility and other local and regional trails.

Project Map:



BOARD OF COUNTY COMMISSIONERS *Anoka County, Minnesota*

DATE: December 1, 2023 OFFERED BY COMMISSIONER: Schulte **RESOLUTION #2023-135**

AUTHORIZING SUBMITTAL OF A FEDERAL FUNDING APPLICATION FOR THE TH 610 / CSAH 1 INTERCHANGE IMPROVEMENT PROJECT

WHEREAS, the interchange of TH 610, a Principal Arterial, and CSAH 1 (East River Road), an "A" Minor Arterial Expander, serves as an important regional access point to Anoka County; and,

WHEREAS, Anoka County and the City of Coon Rapids have identified the need to improve the TH 610 / CSAH 1 interchange to support economic development and better serve the City of Coon Rapids and surrounding communities; and,

WHEREAS, the proposed improvement project will provide full access to TH 610 from CSAH 1; and,

WHEREAS, Anoka County and the City of Coon Rapids are proposing to submit an application to the Transportation Advisory Board through the Metropolitan Council's 2024 Regional Solicitation Program to receive federal transportation funds to create a full access interchange at TH 610 and CSAH 1 in the city of Coon Rapids; and,

WHEREAS, Anoka County has the necessary capabilities to adequately fund its local cost share for this public improvement project:

NOW, THEREFORE, BE IT RESOLVED that Anoka County, by and through its Board of Commissioners, hereby authorizes the Anoka County Highway Department to submit an application to the Transportation Advisory Board through the Metropolitan Council's 2024 Regional Solicitation program in the Roadway Expansion category, to receive federal transportation funds to make capacity and safety improvements to the TH 610 / CSAH 1 interchange in the city of Coon Rapids.

STATE OF MINNESOTA) COUNTY OF ANOKA) ^{SS}		YES	NO
I, Rhonda Sivarajah, County Administrator, Anoka County, Minnesota, hereby certify that I have compared the foregoing copy	District #1 – look	Х	
of the resolution of the county board of said county with the original record thereof on file in the Administration Office, Anoka County,	District #2 – braastad	Х	
Minnesota, as stated in the minutes of the proceedings of said board at a meeting duly held on December 1, 2023, and that the same is a true	District #3 – reinert	X	
and correct copy of said original record and of the whole thereof, and that said resolution was duly passed by said board at said meeting.	District #4 – schulte	Х	
Witness my hand and seal this 1st day of December 2023.	District #5 – gamache	Х	
Ancuela Swaiga M	DISTRICT #6 – JEPPSON	Х	
RHONDA ŠIVARAJAH COUNTY ADMINISTRATOR	District #7 – meisner	Х	

RESOLUTION NO. 23-118

A RESOLUTION AUTHORIZING SUBMITTAL OF FEDERAL FUNDING APPLICATION FOR CONSTRUCTION OF TH 610 AND EAST RIVER ROAD (CSAH 1) FULL ACCESS INTERCHANGE

- WHEREAS, Trunk Highway 610 and East River Road (CSAH 1) serve as important regional transportation corridors in southern Anoka County; and
- WHEREAS, Anoka County and the City of Coon Rapids have identified the need to improve access to Trunk Highway 610 from East River Road (CSAH 1) to better serve the community of Coon Rapids and surrounding communities; and
- WHEREAS, the proposed improvement of providing an eastbound access ramp and a westbound exit ramp from Trunk Highway 610 to East River Road (CSAH 1) would address existing regional transportation deficiencies caused by the lack of a full access interchange; and
- WHEREAS, proposed transportation improvements in and around the Trunk Highway 610 and East River Road (CSAH 1) interchange will facilitate additional economic development in the area; and
- WHEREAS, the City of Coon Rapids with the support of Anoka County will submit an application to the Transportation Advisory Board of the Metropolitan Council for 2025 2029 federal transportation funds to improve the interchange to provide full access to Trunk Highway 610 to and from East River Road (CSAH 1).
- NOW, THEREFORE, BE IT RESOLVED, in accordance with the foregoing, and all ordinances and regulations of the City of Coon Rapids, Minnesota, the City Council of Coon Rapids makes the following findings of fact:

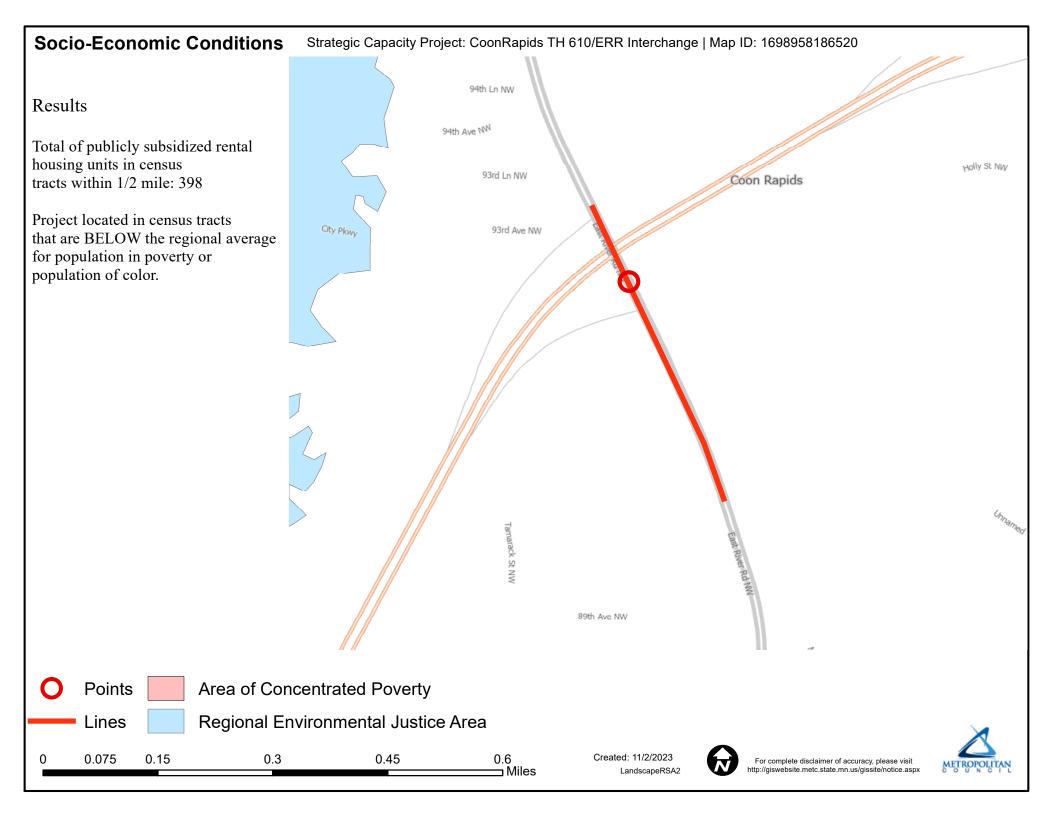
The City Council adopts this Resolution in support of the request for Federal Funds for the TH 610 and East River Road (CSAH 1) full access interchange; and

The Engineering Department is hereby authorized to submit an application through the Metropolitan Council's 2024 Regional Solicitation program to the Transportation Advisory Board to receive federal transportation funds to make improvements by creating a full access interchange at TH 610 and East River Road (CSAH 1) in the Roadway Expansion category; and

That a copy of this Resolution be provided to the Metropolitan Council Transportation Advisory Board and Technical Advisory Commission as part of the TH 610 and East River Road (CSAH 1) full access interchange application for Federal Funds under the Regional Solicitation Program.

Adopted by the Coon Rapids City Council this 7th day of November, 2023.

AT **FEST**: Kon Jerry Koch, Mayor City Cler Joan Lenzmeier ANOKA CL



Level 1	STUDY LAYOUT APP	PROVAL
Programmed L	etting DateTBD	
Prepared By	ISRF	20
Reviewed By	Metro District Preliminary Design Engineer	20
Reviewed By	Metro District Maintenance Operations Engineer	20
Reviewed By	Metro District Traffic Engineer	20
Reviewed By	State Geometrics Engineer	20
Approved By	Metro District Engineer	20
Approved By		20
I HEREBY CERTIFY T Supervision and th The laws of the s	HAT I AM A DULY LICENSED PROFESSIONAL	R UNDER MY DIRECT Engineer under

DATE: ______ LIC. NO.: _53680 ENGR.: ____

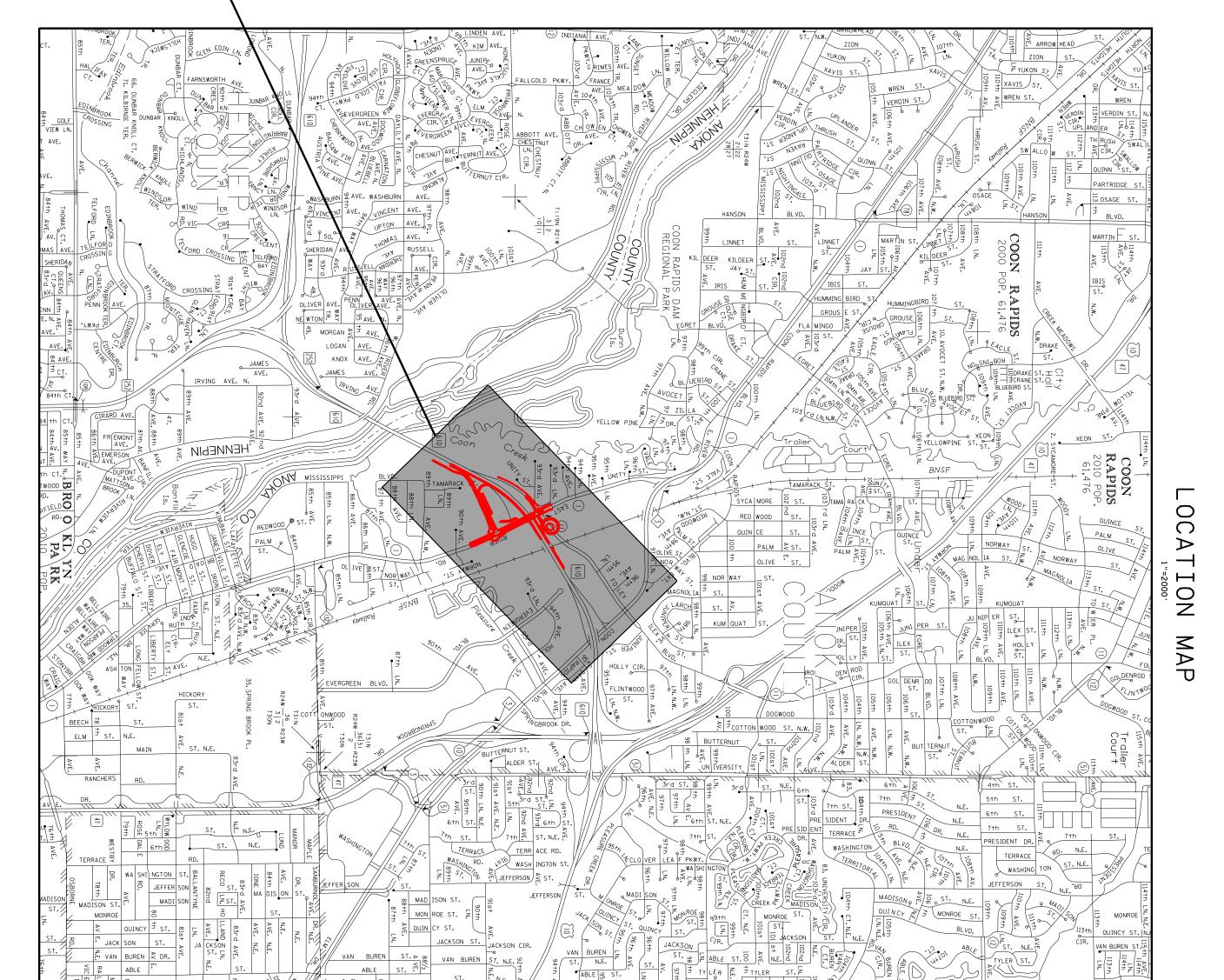
STUDY LAYOUT T.H. <u>610</u> VICINIT		
		00' EAST OF EAST RIVER ROAD
convert half access to f PreparedNOVE By [SRF		^{IGE} cale: Hor. 1 inch = <u>100</u> ft.
The alignment and grades shown on this map are tentative and subject to change without notice.		The traffic volumes shown are estimated for year _2040_ TH GIO AND EAST RIVER ROAD (CSAH I) INTERCHANCE MODIFICATION SUBMITTAL OF TRAFFIC MODELS USED FOR CURRENT CONCEPTS Prepared _MARCH_2022
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PROJECT

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YOUT 1B UPDATES: THE SW INTERCHANGE QUADRANT WAS UP DISTANCE TO TAPER IN PRIOR TO THE POND LOCATIONS AND KINGDOM HALL OF TRAIL A AND SW NOISE WALL UPDATED A NEW GRADE SEPERATED PEDESTRIAN L CONCERNS ALONG EAST RIVER ROAD. RECONSTRUCTION OF EAST RIVER ROAD SW LOOP APPROVED LAYOUT 1A. SW LOOP RE-ALIGNED TO HOLD A CONST SW LOOP PROFILE REVISED TO REFLECT SW LOOP PROFILE REVISED TO REFLECT SW RAMP PAVEMENT RECONSTRUCT EXTEN TRAIL A RE-ALIGNED TO PROVIDE A CON TRAIL A EAST OF INTERSECTION WITH POTENTIAL NOISE WALL ALIGNMENT REV	LAYOUT 1A RECEIVED STUDY LAYOUT STAFF APPROVAL IN DECEMBER OF 2022 AND THE PROJECT ADVANCED IN TO FINAL DESIGN DURING FINAL DESIGN, BNSF RAILROAD INFORMED THE DESIGN TEAM THAT THE PROPOSED WIDENING OF THE EB TH 610 BRIDGE OVER BNSF TRACK WOULD NO LONGER BE ALLOWED DUE TO FUTURE TRACK EXPANSION PLANS FOR THIS RAIL CORRIDOR AND THAT FULL RECONSTRUCTION OF BOTH EB AND WB TH 610 BRIDGES OVER BNSF TRACKS WOULD BE REQUIRED FOR THE PROJECT TO ADVANCE. DUE TO THE SIGNIFICANT COST IMPLICATIONS OF RECONSTRUCTING THE TH 610 BRIDGES, THE PRELIMINARY DESIGN TEAM WAS RE-ENGAGED TO SEE IF AN ALTERNATIVE DESIGN COULD BE PURSUED WHICH WOULD AVOID WIDENING OF THE EXISTING BNSF BRIDGE, NOT ESCALATE PROJECT COSTS, AND STILL ACHIEVE THE OVERALL PROJECT PURPOSE AND NEED. THE PRELIMINARY DESIGN TEAM MET WITH MNDOT METRO STAFF AND GDSU TO DISCUSS SEVERAL POTENTIAL DESIGN MODIFICATIONS TO THE STAFF APPROVED LAYOUT TO ACHIEVE THE OVERALL PROJECT PURPOSE AND NEED. AND AN INVERTED FLY OVER LOOP ENTRANCE RAMP TO ACHIEVE THE NOTED GOALS. DESIGN MODIFICATIONS INCLUDED A AND AN INVERTED FLY OVER LOOP ENTRANCE RAMP TO EB TH 610. THE BWITTON HOX DESIGN WITH A LOOP OVER RAMP FLYOVER IN THE SW QUADRANT, A BUTTON HOX DESIGN IN THE SW QUADRANT, AN EB THA LOOP AND AN INVERTED FLY OVER LOOP ENTRANCE RAMP TO EB TH 610. THE SW QUADRANT, AN EB THA 00 CONSTRAINTS TO ADVANCE FORWARD AS THE DESIGN WITH THE BEST BALANCE OF PROJECT COSTS, IMPACTS, AND DESIGN CONSTRAINTS TO ADVANCE FORWARD WITH FOR A REVISED LAYOUT 1B SUBMITTAL.	NCREASE THE FUNCTIONALITY OF TH 610 AS AN IMPORTANT ROUTE IN THE STATEWIDE TRANSPORTATION SYSTEM. AYOUT 1A UPDATES: OMMENTS RECEIVED IN RESPONSE TO THE LAYOUT 1 SUBMITTAL HAVE BEEN REVIEWED AND INCORPORATED AS APPROPRI ELOW IS A SUMMARY OF KEY UPDATES MADE FOR LAYOUT 1A. EB TH 610 AUXILIARY LANE SHOULDER WIDTH INCREASED TO 10' TO BETTER ACCOMMODATE MAINTENANCE ACTIVITIES NE LOOP EXIT GORE AREA REVISED TO CONNECT RETAINING WALL BARRIER WITH ADJACENT TH 610 BRIDGES. GEOMETRICS UPDATED TO LENGTHEN TURN LANES ALONG NB EAST RIVER ROAD, SW RAMP, AND NE LOOP TO BETTER ACCOMMODATE FUTURE QUEUE LENGTHS. NE LOOP SIGNAL SIGHTLINE CHECK ADDED TO PROFILE LAYOUT. TRAIL PROFILE REVISED TO END AT A POINT WHERE EXISTING DRIVEWAY CURB LINE CONTROLS THE PROFILE DESIGN MINOR PROFILE REVISED TO END AT A POINT WHERE EXISTING DRIVEWAY CURB LINE CONTROLS THE PROFILE DESIGN MINOR PROFILE REVISION MADE TO EAST RIVER ROAD PROFILES AND TIES TO PROPOSED RAMPS TO ACCOMMODATE REVISED CLEARANCE NEED DUE TO EB TH 610 SHOULDER WIDENING.	N 2021, THE CONSULTANT TEAM OF TKDA AND SRF, ALONG WITH AGENCY STAKEHOLDERS, BEGAN EVALUATING NUMEROUS ARIATIONS OF TIGHT DIAMOND, SINGLE POINT, DIVERGING DIAMOND, FOLDED DIAMOND, INTERCHANGE TYPES AS WELL AS OME UNIQUE CONCEPTS INCLUDING INVERTED AND 360 DEGREE LOOP DESIGNS. PROJECT CONSTRAINTS INCLUDING BNSF AILWAY, METRO TRANSIT PARK AND RIDE LOT, PROXIMITY OF COON RAPIDS BLVD RAMPS, AND DEVELOPED COMMERCIAL ND RESIDENTIAL AREAS ALONG WITH HIGH-COST INFLICATIONS LED TO THE DISMISSAL OF MANY PROJECT CONCEPTS. TAKEHOLDER ENGAGEMENT, INCLUDING PUBLIC OPEN HOUSE EVENTS, REDUCED CONCEPTS DOWN TO TRADITIONAL FOLDED IAMOND AND MODIFIED NORTHEAST 360 DEGREE LOOP FOLDED DIAMOND OPTIONS. THE 360 DEGREE LOOP WAS ULTIMATELY HOSEN AS THE PREFERRED CONCEPT AS IT'S IMPACTS TO THE DEVELOPED RESIDENTIAL AREA WERE SIGNIFICANTLY LESS HAN THE TRADITIONAL FOLDED DIAMOND CONCEPT. N JUNE OF 2022, A VALUE ENGINEERING (VE) STUDY WAS COMPLETED FOR THE PROJECT. THE VE TEAM CONSISTED OF ITH 8 DESIGN RECOMMENDATIONS FOR POTENTIAL PROJECT COSTS SAVINGS/ADDITIONAL VALUE. THE PROJECT TEAM VALUATED THE RECOMMENDATIONS AND INCORPORATED WHERE APPROPRIATE. HE PURPOSE AND NEED OF THE TH 610 AND EAST RIVER ROAD PROJECT IS TO ADDRESS LIMITED ACCESS TO AND FROM TH O SUPPORT EXISTING AND FUTURE LAND USES IN COON RAPIDS, IMPROVE SAFETY AND EMERGENCY RESPONSE ACCESS, AND	LAYOUT HISTORY COUNCIL DIRECTED STAFF TO INVESTIGATE BETTER ACCESS TO AND FROM THE EAST AT TH 6 IN 2011, THE COON RAPIDS CITY COUNCIL DIRECTED STAFF TO INVESTIGATE BETTER ACCESS TO AND FROM THE EAST AT TH 6 REDEVELOPMENT AND IMPROVED ACCESS TO/FROM THE SURROUNDING PROPERTIES WERE INTERESTED IN POTENTIAL COMPLETING ANALYSIS, REVIEW OF CONCEPTS, AND WORKING WITH ACENCY STAKEHODERS, INSTALLING THE MISSING INTERCHANGE RAMPS WAS GOING TO HAVE SIGNIFICANT CHALLENGES AT COON RAPIDS BLVD. AND THE CITY OF COON RAPIDS DECIDED TO PAUSE EFFORTS TO ADVANCE THE PROJECT. IN 2019, DESIGN WORK BEGAN ON A NEW GRADE SEPARATED BNSF RAILWAY CROSSING OF FOLEY BLVD (CSAH 11), IMMEDIATELY NORTH OF THE TH 610 AND EAST RIVER ROAD INTERCHANGE. PROJECT ALTERNATIVES REOPENED DISCUSSIONS ON POTENTIAL FUTURE ACCESS TO TH 610 AND ULTIMATELY. THE FOLEY BLVD. PROJECT WAS DESIGNED AS TO NOT PRECLUDE A WESTBOUND FOLDED DIAMOND CONFIGURATION TYING THE REALIGNED FOLEY BLVD. RENEWED DISCUSSIONS ON TH 610 AND EAST RIVER ROAD THE CITY OF COON RAPIDS AND ANKA COUNTY TO PURSUE DEVELOPMENT OF A NEW CONCEPT PLAN THAT RESULTS IN AN IMPROVED TRANSPORTATION SYSTEM SOLUTION BY MODIFYING THE EXISTING INTERCHANGE AT TH 610 AND EAST RIVER ROAD.
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