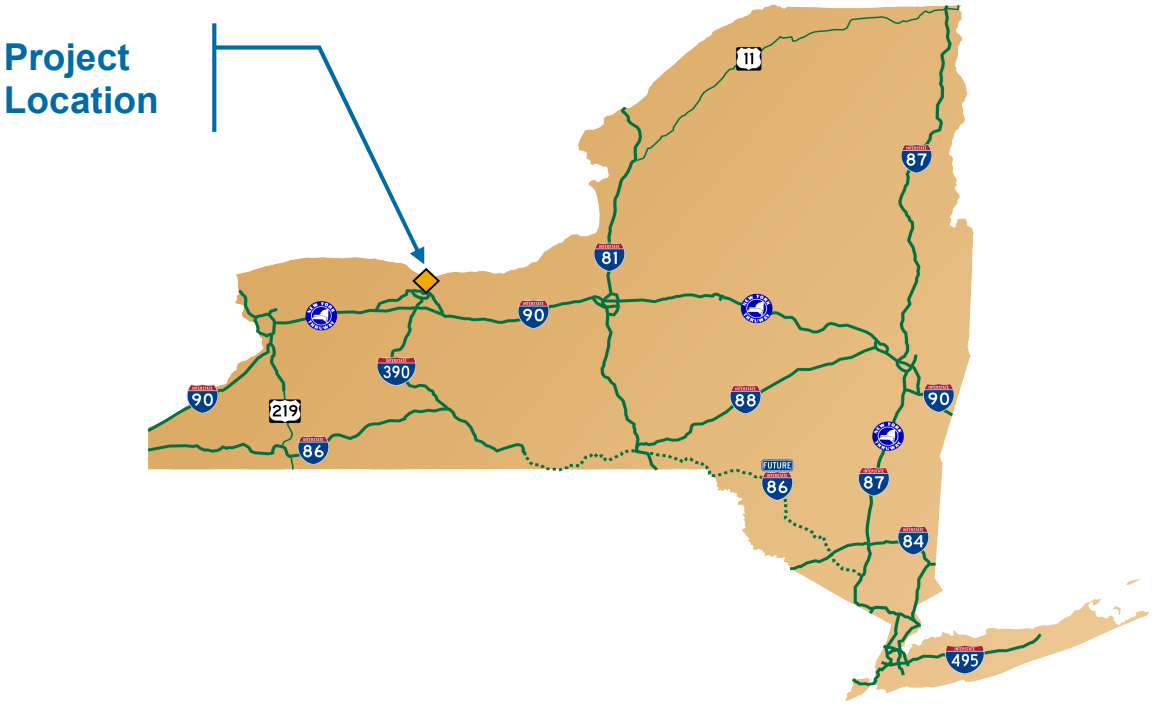
Transportation Project Report

Initial Project Proposal/Final Design Report

June 2022

Highway Preventive Maintenance – Group 1
- South Avenue (East Henrietta Road to Elmwood Avenue)
- University Avenue (Culver Road to Blossom Road)
- East Avenue (Culver Road to Probert Street)
- Culver Road (Garson Avenue to Laurelton Road & Clifford Avenue to Norton Street)

Project Identification Number (PIN): 4CR0.13
City of Rochester
Monroe County



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U.S. Department of Transportation
Federal Highway Administration

Project Approval Sheet

Milestones	Signatures	Dates
A. Recommendation for, Initiation, Scope and Design Approval:	The project cost and schedule are consistent with the Regional Capital Program. Christopher Reeve, Acting Regional Director	Date
B. Recommendation for Scope, Design, and Nonstandard Feature Approval:	All requirements requisite to these actions and approvals have been met, the required independent quality control reviews separate from the functional group reviews have been accomplished, and the work is consistent with established standards, policies, regulations and procedures, except as otherwise noted and explained. The nonstandard features have been adequately justified and it is not prudent to eliminate them as part of this project. Robert Schiller, Project Manager, Erdman Anthony	6/16/2022 Date
C. Categorical Exclusion Determination on Behalf of FHWA:	This project qualifies as a Categorical Exclusion under the National Environmental Policy Act per the NYSDOT/FHWA Programmatic Agreement Regarding Categorical Exclusions. Christopher Reeve, Acting Regional Director	Date
D. Recommendation for Scoping & Design Approval	The project cost and schedule are consistent with the Regional Capital Program. Joel Kleinberg, NYSDOT Acting RPPM Services	Date
E. Public Hearing Certification (Pursuant to 23 USC 128 and 23 CFR 771.111):	A public meeting will be held on July 28, 2022. Holly E. Barrett, PE, City Engineer, Dept. of Environmental Services	Date

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PROJECT MANAGER

List of Preparers

Group Director Responsible for Production of this Initial Project Proposal/Final Design Report (IPP/FDR):

Robert J. Schiller, PE, PTOE, Senior Associate, Erdman Anthony
Description of Work Performed:
Directed the preparation of the IPP/FDR Approval Document in accordance with established standards, policies, regulations and procedures, except as otherwise explained in this document.

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1.1 PUBLIC FRIENDLY DESCRIPTION OF PROJECT

The proposed work involves milling, resurfacing and isolated deep repairs of the existing pavement to extend the service life of the project roadways. Work would also include sidewalk repair and replacement of sidewalk access ramps that do not meet current ADA regulations. This preventive maintenance project would address the following five roadways in the City of Rochester:

- South Avenue from East Henrietta Road to Elmwood Avenue
- University Avenue from Culver Road to Blossom Road
- East Avenue from Culver Road to Probert Street
- Culver Road (1) from Garson Avenue to Laurelton Road
- Culver Road (2) from Clifford Avenue to Norton Street

The project includes spot curb repair, adjustment of existing drainage structures and manholes, replacement of traffic loops and signage, new pavement markings, and adding designated bicycle lanes. This project would ensure these roadways meet current safety standards. Potential for curb bump-outs at select locations to improve pedestrian safety would be investigated. The project would maintain traffic on site via staged construction and daily lane closures.

1.2 PROJECT LOCATION

Refer to **Appendix A** for the project location map.

MUNICIPALITY: City of Rochester **COUNTY:** Monroe

ROUTE: South Avenue, University Avenue, East Avenue (NY-96), Culver Road

LIMITS: **South Avenue** – East Henrietta Road to Elmwood Avenue. South of Elmwood Avenue, the work limit would match to the City of Rochester's South Avenue & Elmwood Avenue 131-K Arterial Reconstruction project.

University Avenue – Culver Road to Blossom Road. At Blossom Road, the work limit would match to the City of Rochester's 2015 Preventive Maintenance project, PIN 4760.48.

East Avenue – Culver Road to Probert Street

Culver Road (1) – Garson Avenue to Laurelton Road

Culver Road (2) – Clifford Avenue to Norton Street. At the southeast project limit, work would match to the NYSDOT's D264144 Empire Boulevard project. The project would stop and resume on either side of the Culver Road / Waring Road / Woodman Park intersection and match to the limits of City of Rochester's Waring Road Improvements project, PIN 4754.40.

FEDERAL AID SYSTEM: Non-NHS

FUNCTIONAL CLASS / EXISTING AADT & TRUCK %: Varies, see table on following page.

Road Name	Limits	Project Length	Functional Class	AADT[1]	% Trucks[1]
South Avenue	East Henrietta Road to Rosemount Street	0.42 Centerline Miles, 0.95 Lane Miles	(16) Urban Minor Arterial	11,461	2
	Rosemount Street to Elmwood Avenue		(16) Urban Minor Arterial	11,926	3
University Avenue	Culver Road to Blossom Road	0.33 Centerline Miles, 1.29 Lane Miles	(16) Urban Minor Arterial	15,724	3
East Avenue	Culver Road to Probert Street	0.61 Centerline Miles, 1.10 Lane Miles	(16) Urban Minor Arterial	14,606	2
Culver Road (1)	Garson Avenue to Laurelton Road	0.63 Centerline Miles, 1.29 Lane Miles	(16) Urban Minor Arterial	11,426	3
Culver Road (2)	Clifford Avenue to Norton Street	0.89 Centerline Miles, 1.09 Lane Miles	(16) Urban Minor Arterial	13,673	3

[1] As per NYSDOT 2021 Traffic Volume Report (2019 estimates)

1.3 PROJECT NEED

South Avenue, University Avenue, East Avenue and Culver Road are minor arterial roads in the City of Rochester. These roads are well traveled and accommodate various types of users. Each of the roadways are primarily residential with intermittent commercial use. Deterioration and distress of the pavement exists for each roadway. The pedestrian accommodations along each corridor require upgrades to meet current standards outlined in the American with Disabilities Act Accessibility Guidelines (ADAAG) and the Proposed Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way (PROWAG).

ELEMENT	MEASURE/INDICATOR
Pavement Condition Assessment	All roadway surfaces have various levels of pavement distress which if not addressed would make the pavement susceptible to accelerated deterioration. Available pavement history and record drawings were used to evaluate the pavement surfaces before conducting a field review consisting of visual observation as well as pavement cores as shown in the tables below. Refer to **Appendix D** *Pavement Information* for the Pavement Evaluation and Treatment Selection Report (PETSR*)*. Based on the core results, South Avenue has an average of 9.38” hot mix asphalt with no crushed stone subbase. Original construction of this street is unknown; the road was milled and resurfaced in 1978, 1989 and 2007. Crack sealing last occurred 2014. Overall the pavement is in fair condition. Wheelpath and edge cracking are prevalent in addition to transverse cracks which appear to be evenly spaced and possibly fall on underlying pavement joints. Random asphalt road patches for potholes, utilities and/or small road repair locations are also present.

SOUTH AVENUE CORE DATA (EAST HENRIETTA ROAD TO ELMWOOD AVENUE)					
Core No. and Approximate Location on South Avenue		Pavement Thickness			Top Thickness
		Asphalt	Concrete	Total	
S-1	North of Science Parkway NB center of lane	10.00"	0"	10.00"	7.50"
S-2	North of Knob Trautman Road NB inside wheel path	9.00"	0"	9.00"	5.75"
S-3	North of Fort Hill Terrace NB center of lane	9.25"	0"	9.25"	6.00"
S-4	South of Elmwood Avenue NB inside wheel path	9.25"	0"	9.25"	7.25"

Based on the core results, University Avenue has an average of 11.35" hot mix asphalt over an average of 11.30" crushed stone subbase. The road was constructed in 1906 and reconstructed in 1994. Chip and seal last occurred in 2010. Overall the pavement is in fair condition. Wheelpath, longitudinal and transverse cracking are prevalent with random asphalt road patches for potholes, utilities and/or small road repair locations.

UNIVERSITY AVENUE CORE DATA (CULVER ROAD TO BLOSSOM ROAD)					
Core No. and Approximate Location on University Avenue		Pavement Thickness			Top Thickness
		Asphalt	Concrete	Total	
U-1	West of Culver Road EB center of through lane	12.50"	0"	12.50"	1.50"
U-2	East of Culver Road Center of two way left turn lane	10.50"	0"	10.50"	1.50"
U-3	West of East Boulevard EB center of lane	11.50"	0"	11.50"	2.00"
U-4	East of East Boulevard Center of two way left turn lane	11.75"	0"	11.75"	1.50"
U-5	West of Blossom Road EB center of lane	10.50"	0"	10.50"	2.00"

Based on the core results, East Avenue has an average of 11.25" hot mix asphalt over an average of 7.75" crushed stone subbase. The road was constructed in 1909 and reconstructed in 1982. Crack filling last occurred in 2006. Overall the pavement is in poor condition. Wheelpath, longitudinal and transverse cracking are prevalent with random asphalt road patches for potholes, utilities and/or small road repair locations.

EAST AVENUE CORE DATA (CULVER ROAD TO PROBERT STREET)					
Core No. and Approximate Location on East Avenue		Pavement Thickness			Top Thickness
		Asphalt	Concrete	Total	
E-1	East of Culver Road WB center of lane	10.75"	0"	10.75"	1.25"
E-2	West of Hawthorne Street EB center of lane	11.00"	0"	11.00"	1.00"
E-3	East of Hawthorne Street WB outside wheel path	11.75"	0"	11.75"	1.50"
E-4	West of Colby Street EB center of lane	10.50"	0"	10.50"	2.00"
E-5	East of Colby Street WB center of lane	11.25"	0"	11.25"	1.25"
E-6	Across from Farrington Place EB center of lane	12.00"	0"	12.00"	1.00"

Based on the core results from Garson Avenue to Laurelton Road, Culver Road has an average of 11.63” hot mix asphalt over an average of 12.38” crushed stone subbase. Culver Road from Parsells Avenue to Laurelton Road was constructed in 1914 and 1915 while Culver Road from Garson Avenue to Parsells Avenue was constructed in 1949. Both sections were reconstructed in 1993. Crack filling last occurred in 2008. Overall the pavement is in fair condition. Wheelpath, longitudinal and transverse cracking are prevalent with random asphalt road patches for potholes, utilities and/or small road repair locations.

Based on the core results from Clifford Avenue / Empire Boulevard to Waring Road / Woodman Park, Culver Road has an average of 12.50” hot mix asphalt over an average of 7.25” crushed stone subbase. The road was constructed in 1923 and reconstructed in 1975. Crack filling last occurred in 2007. Overall the pavement is in fair condition. Wheelpath and transverse cracking are prevalent with random asphalt road patches for potholes, utilities and/or small road repair locations.

Based on the core results from Waring Road / Woodman Park to Norton Street, Culver Road has an average of 3.56” hot mix asphalt over an average of 8.88” reinforced PCC no crushed stone subbase. The road was constructed in 1930 and was milled and resurfaced in 1986 and 2006. Overall the pavement is in fair condition. Transverse cracks are prevalent and appear to be evenly spaced; possibly falling on underlying concrete pavement joints. Wheelpath cracking and random asphalt road patches for potholes, utilities and/or small road repair locations are also present.

CULVER ROAD CORE DATA (GARSON AVENUE TO LAURELTON ROAD; CLIFFORD AVENUE / EMPIRE BOULEVARD TO NORTON STREET)					
Core No. and Approximate Location on Culver Road		Pavement Thickness			Top Thickness
		Asphalt	Concrete	Total	
C-1	South of McKinley Street NB center of lane	10.75"	0"	10.75"	1.25"
C-2	North of Melville Street NB inside wheel path	13.25"	0"	13.25"	1.00"
C-3	Across from Vermont Street NB center of lane	11.25"	0"	11.25"	1.25"
C-4	North of Ferris Street SB inside wheel path	11.25"	0"	11.25"	1.25"
C-5	South of Lancraft Street NB inside wheel path	13.25"	0"	13.25"	3.25"
C-6	North of Lancraft Street NB center of lane	11.75"	0"	11.75"	2.75"
C-7	North of Waring Road SB center of lane	3.25"	9.00"	12.25"	2.50"
C-8	South of Densmore Street NB center of lane	2.75"	8.50"	11.25"	2.75"
C-9	North of Densmore Street SB outside wheel path	4.25"	9.25"	13.50"	2.75"
C-10	South of Norton St NB center of lane	4.00"	8.75"	12.75"	2.50"

Sidewalks All project roadways have continuous sidewalks on both sides of the road. Overall, the sidewalks are in good condition. Isolated locations with tripping hazards or segments in poor condition would be evaluated further during final design to determine if the concrete should be replaced.

Sidewalk Ramps Curb ramps or curb cuts exist at all intersections along all project roadways. The curb ramps that are not in compliance would be evaluated further in the final design phase and designed to meet current 1991 ADAAG / PROWAG and NYSDOT standards or would be justified as non-standard features. All new, repaired and replaced sidewalk curb ramps would receive detectable truncated dome warning devices.

Project Element(s) To Be Addressed:

- ☒ Highway Element-Specific
- ☐ Bridge Element-Specific
- ☐ Other:
- ☐ Operational Maintenance
- ☐ Where & When

Priority Results:

- ☒ Mobility & Reliability
- ☐ Economic Competitiveness
- ☒ Safety
- ☐ Security
- ☐ Environmental Stewardship

1.4 PURPOSE/OBJECTIVES

(1) Improve overall traffic conditions using cost effective methods to reduce delay and to provide an acceptable level of service, for a design period of 10 years.
(2) Correct identified pavement deficiencies that would extend the useful life of the roadway and maintain it in a structurally sound condition using cost effective pavement treatments which provide low life cycle costs.
(3) Improve pedestrian safety and accessibility to meet current standards, including curb bump outs.
(4) Replace defective sidewalks and install new ADA compliant sidewalk curb ramps to ensure safe accommodation of pedestrians along these City streets.
(5) Improve accommodations for bicyclists by adding designated bicycle lanes and shared use lanes where sufficient street width exists.

1.5 DESCRIPTION OF PROPOSED WORK

Two primary alternatives are under consideration. They are:
1) No Action Alternative
2) Build Alternative 1

A discussion of each of the alternatives follows:

No Action Alternative

This alternative would not provide any improvements nor satisfy any of the project objectives. It would be carried forward as a baseline for comparison to the other alternative being considered.

Build Alternative 1

Pavement
The recommended alternative for this project is to restore the pavement sections on all roadways as follows:

1) Milling existing pavement;
2) Localized / spot deep pavement repairs at deteriorated pavement base sections;
3) Localized / spot clean and adjust drainage basins and manholes, including replacement of frames, grates and covers as needed, including concrete collars;
4) Replace signal loops impacted by the project;
5) Install a warm mix asphalt (WMA) binder course where warranted and recommended;
6) Install a new WMA top surface; and
7) Install new reflective pavement markings. In general, existing travel lane and turn lane widths and configuration and existing marked crosswalks would be retained. Bicycle lanes would be added as indicated on the preliminary plans.

The recommended milling and resurfacing depths are as follows:

RECOMMENDED MILLING AND RESURFACING			
Street	Limits	Depths	
		Milling	Resurfacing
South Avenue	East Henrietta Road to Elmwood Avenue	1.5"	1.5"
University Avenue	Culver Road to Blossom Road	1.5"	1.5"
East Avenue	Culver Road to Probert Street	1.5"	1.5"
Culver Road (1)	Garson Avenue to Laurelton Road	1.5"	1.5"
Culver Road (2)	Clifford Road to Norton Street	1.5"	1.5"

After milling, the pavement would be evaluated to identify the areas of deep pavement repair which could include two course (1.5" WMA top, 2" WMA binder) or three course (1.5" WMA top, 2" WMA binder, 4" WMA base) milling and overlay. A truing and leveling course would be applied, as necessary, to attain desired pavement cross slope.

Travel Lanes
Existing lane configurations are as follows:

South Avenue: East Henrietta Road to Science Parkway, a southbound 13-ft shared use lane and 10-ft travel lane is provided as well as a northbound 13-ft shared use and 11-ft right turn lane. North of Science Parkway, southbound one shared use lane and one travel lane are provided entering the intersection. From Science Parkway to Fort Hill Terrace, an 11-ft travel lane and 5-ft bicycle lane are provided northbound and 10-ft travel lane and 8-ft shoulder with parking accommodations, where allowed by ordinance, are provided southbound. Fort Hill Terrace to Elmwood Avenue consists of a northbound 14-ft travel lane, southbound 11-ft travel lane and 5-ft bicycle lanes in each direction.

University Avenue: Generally, consists of 11-ft shared use lanes in each direction with a 12-ft center turn lane. The center turn lane transitions to a left turn lane entering the intersections at Culver Road and Blossom Road. An additional travel lane is provided westbound at the Culver Road intersection. On-street 8-ft parking lanes are provided eastbound Culver Road to East Boulevard and westbound Blossom Road to East Boulevard. An eastbound bicycle lane is also provided east of East Boulevard.

East Avenue: Culver Road to Park Avenue consists of 11-ft travel lanes and 7-ft shoulders with parking accommodations where allowed by ordinance, in each direction. Park Avenue to Farrington Place consists of a 13-ft travel lane in both directions and a 10-ft center turn lane. Farrington Place to Probert Street, westbound two 10-ft travel lanes narrow into one 13-ft travel lane while eastbound the center turn lane transitions into a 10-ft left turn lane and one 13-ft travel lane widens into two 10-ft travel lanes.

Culver Road (1): Generally, consists of 20-ft lanes in each direction with on-street parking accommodations where allowed by ordinance. A 12-ft left turn lane is provided at the Garson Avenue intersection. Two 10-ft travel lanes are provided in both directions entering the intersections at Merchants Road and at Bay Street / Culver Parkway.

Culver Road (2): Clifford Avenue to Waring Road consists of 11-ft travel lanes and 5-ft bicycle lanes in each direction. Waring Road to Norton Street consists of 12-ft travel lanes and 8-ft shoulders with parking accommodations where allowed by ordinance, in each direction. Left turn lanes are provided at the intersection with Clifford Avenue / Empire Boulevard, Waring Road / Woodman Park (southbound only), and Norton Street. A right turn lane is provided at the intersection with Waring Road / Woodman Park (northbound).

For detailed proposed layouts and lane widths, reference Section 2.1 Design Standards and **Appendix A** *Maps, Plans, Profiles, and Typical Sections.* Typical proposed lane configurations of each roadway are shown below:

South Avenue (34' section)
- 6' bicycle lane
- 11' travel lane
- 11' travel lane
- 6' bicycle lane

University Avenue (50' section)
- 8' parking lane
- 5' bicycle lane
- 11' travel lane
- 10' center turn lane
- 11' travel lane
- 5' bicycle lane

East Avenue (36' section)
- 6' bicycle lane
- 12' travel lane
- 12' travel lane
- 6' bicycle lane

Culver Road-1 (38-40' section)
- 6' bicycle lane
- 12' travel lane
- 12' travel lane
- 6' bicycle lane

or
- 8' parking lane
- 12' shared use lane
- 12' shared use lane
- 8' parking lane

Culver Road-2 (40' section)
- 6' bicycle lane
- 3' buffer space
- 11' travel lane
- 11' travel lane
- 3' buffer space
- 6' bicycle lane

Intersection Realignment - Culver Road (2) at Master Street / Densmore Street
In the existing condition, Master Street and Densmore Street intersections with Culver Road are closely spaced and connected with a large area of asphalt. The intersection poses safety concerns and the expansive pavement area (in excess of 80 feet wide) invites speeding vehicles to use Densmore Street as a cut-through from Culver Road to Waring Road. Under the proposed alternative, Densmore Street would be realigned to intersect with Master Street west of Culver Road. Vehicles on Densmore St would access Culver Road through Master Street as the existing alignment of Master Street would remain unchanged. The existing asphalt pavement for Densmore Street at Culver Road would be removed and turf would be established. New curb radii would be installed on Master Street at Culver Road. The existing sidewalk along Culver Road would be extended to the intersection.

Sidewalks
All project roadways have continuous sidewalks on both sides of the road. Overall, the sidewalks are in good condition. Isolated locations with tripping hazards or segments in poor condition would be evaluated further during final design to determine if the concrete should be replaced. Sidewalks would be visually inspected for deterioration and condition during final design. New sidewalk would be installed across commercial and residential driveways that have existing asphalt covered sidewalks through the driveways according to City standards.

Sidewalk Ramps
Curb ramps or curb cuts exist at all intersections along all project roadways. An analysis of pedestrian facilities was completed and identified 95 ramps that are not in compliance with 1991 ADAAG standards and 21 ramps that do not need to be replaced as part of the project but require an embedded detectable warning unit to be installed. The curb ramps that are not in compliance would be evaluated further in the final design and designed to meet current 1991 ADAAG / PROWAG and NYSDOT standards or would be justified as non-standard features. See Pedestrian Facilities Analysis in **Appendix E** for more information.

Bicycle Facilities
Bicycle lanes exist in the northbound direction on South Avenue, eastbound direction on University Avenue east of East Boulevard, and in both directions on Culver Road from Clifford Avenue to Waring Road. Shared use lanes are marked on South Avenue in both directions from East Henrietta Road to Science Parkway and on University Avenue in both directions.

Bicycle lanes or shared use markings would be installed as noted in the proposed lane configurations section above. In the final design, bicycle crossing treatments such as bicycle boxes would be evaluated to support the bicycle lanes at signalized intersections.

Traffic Considerations and Level of Service
A traffic analysis was performed at several study intersections to evaluate the existing and future traffic conditions and impacts as a result of removing or reconfiguring lanes at signalized intersections in order to provide space for bicycle lanes. The analysis recommended removal of the northbound right turn lane at South Avenue / Science Parkway, converting the westbound through-right lane to right turn only at University Avenue / Culver Road, and removal of the northbound and southbound left turn lanes on Culver Road / Garson Avenue. The proposed recommendations and analysis results are provided in a Technical Memorandum to MCDOT dated April 13, 2022 which is contained in **Appendix C.**

MCDOT should reevaluate signal timing as needed in the future for the Culver Road / Clifford Avenue / Empire Boulevard / Deerfield Drive intersection as the SB left turn movement operates at Level of Service F in the Build ETC+5 scenario. The level of service tables are included in the memorandum.

Traffic Safety Assessment
Available crash reports for the latest three-year period of September 1, 2018 through August 30, 2021 were reviewed and analyzed by type, location, and trend. The annual crash rates were calculated and compared to the average annual crash rates in Monroe County. A summary of the crash rates is shown in the tables below by street. A technical memorandum with detailed crash information is included in **Appendix C.**

Along South Avenue, there were 68 collisions from East Henrietta Road to Elmwood Avenue during the three-year review. The apparent contributing factors for the crashes include failure to yield right-of-way, following too closely, and driver inattention/distraction. The apparent predominate collisions were rear end, sideswipe and right angle crashes.

Segment or Intersection	No. of Crashes	Computed Crash Rate	County Average Crash Rate
South Avenue (East Henrietta Road to Elmwood Avenue)	68	8.64 Acc/MVM	3.01 Acc/MVM
South Avenue / East Henrietta Road	6	0.16 Acc/MEV	1.23 Acc/MEV
South Avenue / Science Parkway	4	0.26 Acc/MEV	0.56 Acc/MEV
South Avenue / Boothe Street	2	0.13 Acc/MEV	0.20 Acc/MEV
South Avenue / Warren Street	2	0.13 Acc/MEV	0.20 Acc/MEV
South Avenue / Rosemount Street	1	0.07 Acc/MEV	0.20 Acc/MEV
South Avenue / Fort Hill Terrace	5	0.33 Acc/MEV	0.20 Acc/MEV
South Avenue / Elmwood Ave[1]	44	1.16 Acc/MEV	0.84 Acc/MEV

[1] Intersection outside of project limits.
[2] Intersections with 0 crashes during the three-year study period were omitted from the table.

The computed crash rates at the intersections of Fort Hill Terrace and Elmwood Avenue at South Avenue exceed the county average crash rate. The South Avenue / Elmwood Avenue intersection is out of the project limits and will be addressed in the City of Rochester's South Avenue & Elmwood Avenue 131-K Arterial Reconstruction project. No accident patterns were identified at the South Avenue / Fort Hill Terrace intersection.

Along University Avenue, there were 57 collisions during the three-year review. The apparent contributing factors for the crashes include failure to yield right-of-way, following too closely, and driver inattention/distraction. The apparent predominate collisions were rear end, sideswipe and right angle crashes.

Segment or Intersection	No. of Crashes	Computed Crash Rate	County Average Crash Rate
University Avenue (Culver Road to Blossom Road)	57	9.70 Acc/MVM	3.01 Acc/MVM
University Avenue / Culver Road	32	0.90 Acc/MEV	1.23 Acc/MEV
University Avenue / East Boulevard	4	0.21 Acc/MEV	0.20 Acc/MEV
University Avenue / Blossom Road[1]	8	0.33 Acc/MEV	1.23 Acc/MEV

[1] Intersection outside of project limits.

The computed crash rate at the intersection of East Boulevard and University Avenue exceeds the county average crash rate. However, no accident patterns were identified.

Along East Avenue, there were 82 collisions during the three-year review. The apparent contributing factors for the crashes were failure to yield right-of-way, following too closely, driver inattention/distraction, and traffic control disregarded. The apparent predominate collisions being rear end, right angle and sideswipe/overtaking crashes.

Segment or Intersection	No. of Crashes	Computed Crash Rate	County Average Crash Rate
East Avenue (Culver Road to Probert Street)	82	7.12 Acc/MVM	3.01 Acc/MVM
East Avenue / Culver Road[1]	35	1.02 Acc/MEV	1.23 Acc/MEV
East Avenue / Douglas Road	2	0.11 Acc/MEV	0.20 Acc/MEV
East Avenue / East Boulevard	12	0.66 Acc/MEV	0.20 Acc/MEV
East Avenue / Hawthorne Street	1	0.06 Acc/MEV	0.20 Acc/MEV
East Avenue / Colby Street	7	0.39 Acc/MEV	0.56 Acc/MEV
East Avenue / Park Avenue	4	0.21 Acc/MEV	0.67 Acc/MEV
East Avenue / Farrington Place	2	0.11 Acc/MEV	0.20 Acc/MEV
East Avenue / Probert Street[1]	16	0.88 Acc/MEV	0.20 Acc/MEV

[1] Intersection outside of project limits.

The computed crash rates at the intersections of East Boulevard and Probert Street at East Avenue exceed the county average crash rate. MCDOT previously studied the East Avenue / East Boulevard intersection due to a history of right angle collisions and recommended bump-outs be added at each quadrant to improve sight distances on East Boulevard. Bump-outs are proposed at this intersection to improve safety conditions. At the East Avenue / Probert Street intersection, a crash pattern exists of vehicles turning left and right out of the McDonald's exit road situated across from Probert Street. In the existing condition, vehicles cross up to five lanes of traffic to turn left out of the McDonald's driveway. Under the proposed alternative, a

travel lane in each direction has been removed and vehicles will only need to cross up to three lanes of vehicular traffic and should improve safety of vehicles pulling out from the driveway.

Along Culver Road, there were 25 collisions during the three-year review. The apparent contributing factors for the crashes were failure to yield right-of-way, following too closely, and driver inattention/distraction. The apparent predominate collisions were rear end, sideswipe, and left turn crashes.

Segment or Intersection	No. of Crashes	Computed Crash Rate	County Average Crash Rate
Culver Road (Garson Avenue to Laurelton Road)	110	13.45 Acc/MVM	3.01 Acc/MVM
Culver Road / Garson Avenue	15	1.03 Acc/MEV	0.56 Acc/MEV
Culver Road / Grand Avenue	10	0.69 Acc/MEV	0.20 Acc/MEV
Culver Road / McKinley Street	3	0.21 Acc/MEV	0.20 Acc/MEV
Culver Road / Parsells Avenue	14	0.96 Acc/MEV	0.56 Acc/MEV
Culver Road / Melville Street	7	0.48 Acc/MEV	0.20 Acc/MEV
Culver Road / Hazelwood Terrace	3	0.21 Acc/MEV	0.20 Acc/MEV
Culver Road / Rosewood Terrace	4	0.28 Acc/MEV	0.20 Acc/MEV
Culver Road / Queens Street	1	0.07 Acc/MEV	0.20 Acc/MEV
Culver Road / Vermont Street	3	0.21 Acc/MEV	0.20 Acc/MEV
Culver Road / Ferris Street	4	0.28 Acc/MEV	0.20 Acc/MEV
Culver Road / Richland Street	2	0.14 Acc/MEV	0.20 Acc/MEV
Culver Road / Merchants Road	13	0.56 Acc/MEV	1.16 Acc/MEV
Culver Road / Bay St / Culver Parkway	26	1.35 Acc/MEV	1.23 Acc/MEV
Culver Rd / Laurelton Road	5	0.34 Acc/MEV	0.20 Acc/MEV
Culver Road (Clifford Avenue / Empire Boulevard to Norton Street)	100	7.52 Acc/MVM	3.01 Acc/MVM
Culver Road / Clifford Avenue / Empire Boulevard / Deerfield Drive	32	1.37 Acc/MEV	1.23 Acc/MEV
Culver Road / Meredith Street	1	0.07 Acc/MEV	0.20 Acc/MEV
Culver Road / Lancraft Street	1	0.07 Acc/MEV	0.20 Acc/MEV
Culver Road / Waring Road / Woodman Park[1]	15	0.67 Acc/MEV	1.23 Acc/MEV
Culver Road / Seymour Road	1	0.06 Acc/MEV	0.20 Acc/MEV
Culver Road / Charwood Circle	3	0.18 Acc/MEV	0.20 Acc/MEV
Culver Road / Densmore Street / Master Street	5	0.29 Acc/MEV	0.20 Acc/MEV
Culver Road / Costich Road / Culverton Drive	1	0.06 Acc/MEV	0.20 Acc/MEV
Culver Road / Norton Street	28	1.20 Acc/MEV	1.23 Acc/MEV

[1] Intersection outside of project limits.
[2] Intersections with 0 crashes during the three-year study period were omitted from the table.

The computed crash rates at the intersections of Garson Avenue, Grand Avenue, McKinley Street, Parsells Avenue, Melville Street, Hazelwood Terrace, Rosewood Terrace, Vermont Street, Ferris Street, Bay Street / Culver Parkway, Laurelton Road, Clifford Avenue / Empire Boulevard, and Densmore Street / Master Street at Culver Road exceed the county average crash rate. A crash cluster of rear end and sideswipe collisions was identified at Culver Road / Bay Street / Culver Parkway. New white edge lines and stop bars would be installed between Bay Street / Culver Parkway and Merchants Road to help guide vehicles through the two

intersections. No accident patterns were identified at the other intersections that exceeded the county average crash rate. However, the crash analysis revealed that the traffic signal timing for the yellow and all-red phases should be evaluated at the intersection of Culver Road and Norton Street as a crash cluster of right angle and left turn collisions was identified.

The crash analysis did not reveal any additional safety issues that this project could remediate or would make worse. Placement of a new asphalt pavement surface with a high coefficient of friction could help reduce skidding.

Curb
Granite curb exists on South Avenue (East Henrietta Road to north of Science Parkway), University Avenue (Culver Road to Blossom Road), East Avenue (Culver Road to Probert Street) and Culver Road (Garson Avenue to Laurelton Road and Clifford Avenue to Warning Road / Woodman Park). The curb is in fair to good condition with 6" +/- reveal.
Medina curb exists on South Avenue (north of Science Parkway to south of Elmwood Avenue) and Culver Road (Waring Road / Woodman Park to Norton Street). The curb is in poor to fair condition with an average 4" +/- reveal and minimum 1.5" reveal.

For both types, existing curb would remain and curb reveal would be maintained. Curb would be reset where it has settled adjacent to utility patches and to achieve properly aligned curb ramps; and replaced where it is missing.

Traffic Signals
Traffic signals are located at the following intersections within the project limits:

1. South Avenue / East Henrietta Road
2. South Avenue / Science Parkway
3. University Avenue / Culver Road
4. East Avenue / Colby Street
5. Culver Road / Garson Avenue
6. Culver Road / Parsells Avenue
7. Culver Road / Merchants Road
8. Culver Road / Bay Street / Culver Parkway
9. Culver Road / Clifford Avenue / Empire Boulevard / Deerfield Drive
10. Culver Road / Norton Street

According to observation the traffic signals appear to meet minimum MUTCD requirements. Pedestrian signals with bi-modal hand/man symbols are provided at each signalized intersection and some signals include pedestrian count down timers. The equipment appears to be working properly and the pedestrian signals would be evaluated further during the final design phase for their compliance with ADA standards.

Traffic signal loops impacted by the milling and resurfacing would be replaced in kind per MCDOT policies and standards. At some locations, existing single long loops (i.e. 50' loop) would be replaced with multiple detection loops (i.e. 20' loop & 30' loop).

Parking
South Avenue: On-street parking is permitted on the west side of the street from Science Parkway to Fort Hill Terrace where allowed by ordinance. Under the proposed alternative, on-street parking would be eliminated and replaced with a bicycle lane.

University Avenue: On-street parking is permitted on the south side of the street from Culver Road to East Boulevard and on the north side of the street from East Boulevard to Blossom Road where allowed by ordinance. Under the proposed alternative, most of the on-street

parking would be maintained on the north side of the street from East Boulevard to Blossom Road. On-street parking would be eliminated on the south side of the street and replaced with a bicycle lane.

East Avenue: On-street parking is permitted on both sides of the street from Culver Road to Colby Street and on the south side of the street from Colby Street to Park Avenue where ordinances allow. Under the proposed alternative, on-street parking would be eliminated and replaced with bicycle lanes.

Culver Road (1): On-street parking is permitted on both sides of the street from Garson Avenue to Merchants Road where ordinances allow except at the intersections with Garson Avenue, Parsells Avenue and Merchants Road. Under the proposed alternative, on-street parking would be maintained near businesses without parking lots and eliminated in residential areas to be replaced with bicycle lanes.
Culver Road (2): Unrestricted on-street parking is permitted on both sides of the street from Waring Road / Woodman Park to Norton Street. Under the proposed alternative, on-street parking would be eliminated and replaced with bicycle lanes.

A parking survey was conducted to determine the utilization of existing parking spaces and evaluate where on-street parking could be eliminated. Refer to **Appendix H** *Traffic Signs, Curb and Parking Evaluation* for additional information.

Pedestrian Crossings
For all project roadways, pedestrian crossings are provided at the signalized intersections. Crosswalks would be evaluated for ADA compliance during the final design phase. Marked midblock crossings are provided on South Avenue north of Fort Hill Terrace and on Culver Road at Hazelwood Terrace. Existing advanced warning and crossing signs are provided. These pedestrian crossings would be maintained. The need for rectangular rapid flashing beacons (RRFBs) at the midblock crossings will be evaluated in final design.

Under the proposed alternative, the need for a marked crosswalk at East Avenue / East Boulevard, University Avenue / East Boulevard, and Culver Road / Master Street would be evaluated in final design. New ADA curb ramps, advance warning and crossing signs will be installed according to standards. The designated crossing will be clearly marked for users and advanced warning signs would alert vehicles.

Signage and Pavement Markings
A visual inspection of existing regulatory and parking signs within the project limits was conducted for reflectivity, sign panel damage, mounting condition, and compliance with the Manual on Uniform Traffic Control Devices (MUTCD) and the New York Supplement to the Manual on Uniform Traffic Control Devices (NYSMUTCD). Traffic signs and posts would be replaced as needed. New signage would be installed on all roadways within the project limits to support the bicycle lanes and midblock pedestrian crossings.

Existing pavement markings are in poor to fair condition. Several segments have faded or missing striping. New reflective pavement markings would be installed on all roads within the project limits, including crosswalks and bicycle lane symbols.

Driveways
All driveway aprons are paved with asphalt or concrete and are in good condition. Driveway openings on South Avenue and Culver Road (2) do not have existing header curb across the driveways.

Drainage System
Drainage basins and manholes would be cleaned, and frames, grates and covers would be replaced as needed. All road iron would be adjusted to grade to match the proposed finished roadway.

Transit
There are several existing bus stop locations throughout the project limits. Coordination with RTS would be required during the detailed design phase to address potential removals, improvements, or enhancements at bus stops with concrete pads.

Right of Way
All construction would be performed within the City of Rochester Public Right-of-Way. No fee acquisitions, easements, or grading releases are required for this project.

2.1 DESIGN STANDARDS

Design Standards	
Project Type	**NYSDOT Design Guidance**
1R Projects	NYSDOT Highway Design Manual Chapter 7
Sign and/or Traffic Signal Upgrading Projects	NYSDOT Highway Design Manual Chapter 11
Bicycle and Pedestrian Facilities	NYSDOT Highway Design Manual Chapters 17 & 18

Critical Design Elements for South Avenue					
PIN	4CR0.13	**BIN** (if applicable)		NA	
Functional Class:	Urban Minor Arterial	**NHS**	☐	**Non-NHS**	☑
Design Class:	Arterial	**Context Class:**		Urban	
Project Type:	1R	**Terrain:**		Flat	
Design Year AADT:	11,926	**Percentage of Trucks:**		2.5	
Truck Access or Qualifying Highway (QH)?	Neither	**If not a QH, is project within 1 mi of a QH?**		Yes	
Existing or Proposed Bicycle Route?	Yes	**Anticipated level of bicycle activity**		High	

	Element	Standard	Existing Condition	Proposed Condition
1	Design Speed	30 mph[1] HDM Section 2.7.2.3	30 mph posted	30 mph
2	Lane Width	Travel lanes: 11 ft min, 12 ft desirable Shared use: 13 ft min, 15 ft desirable Bicycle lane: 5 ft min, 6-7 ft desirable Turn lanes: 11 ft min, 12 ft desirable Parking lanes: 8 ft min HDM Exhibit 2-4	Travel lanes: 10[2] - 14 ft Shared use: 13 ft Bicycle lane: 5 ft Turn lanes: 10[2] - 11 ft Parking lane: 8 ft	Travel lanes: 10[2] - 12 ft Shared use: 12[2] - 19 ft Bicycle lane: 5 - 6 ft
3	Shoulder Width	Without cyclists: 0 ft min, 4 ft desirable With cyclists: 4 ft min, 5 ft desirable HDM Exhibit 2-4	No shoulder	No shoulder
4	Horizontal Curve Radius	188 ft Min (at e_{max}= **4%**) 177 ft Min (at e_{max}= **6%)** HDM Exhibit 2-4	700 ft	700 ft
5	Superelevation	e_{max} = **4%** HDM Exhibit 2-1b	Normal crown	Normal crown
6	Stopping Sight Distance (Horizontal and Vertical)	175 ft Min. HDM Exhibit 2-4	> 175 ft	> 175 ft
7	Maximum Grade	7% HDM Exhibit 2-4	< 7%	< 7%
8	Cross Slope	1.5% Min., 3% Max. HDM Section 2.7.2.3	2 %	2 %
9	Vertical Clearance	14 ft min., 14 ft 6 in desirable BM Section 2.3.1, Table 2-2	NA	NA
10	Design Loading Structural Capacity	NYSDOT LRFD Specifications AASHTO HL-93 Design Live Load and NYSDOT Design Permit Vehicle with LRFR 1.2 or higher BM Sections 1.3 and 1.5 NYSDOT LRFD Specifications AASHTO HL-93 Live Load and	NA	NA

Critical Design Elements for South Avenue					
PIN	4CR0.13	**BIN** (if applicable)		NA	
Functional Class:	Urban Minor Arterial	**NHS**	☐	**Non-NHS**	☑
Design Class:	Arterial	**Context Class:**		Urban	
Project Type:	1R	**Terrain:**		Flat	
Design Year AADT:	11,926	**Percentage of Trucks:**		2.5	
Truck Access or Qualifying Highway (QH)?	Neither	**If not a QH, is project within 1 mi of a QH?**		Yes	
Existing or Proposed Bicycle Route?	Yes	**Anticipated level of bicycle activity**		High	

	Element	**Standard**	**Existing Condition**	**Proposed Condition**
		NYSDOT Design Permit Vehicle HDM Section 19.5.3		
11	Americans with Disabilities Act Compliance[3]	HDM Chapter 18	Facilities would be evaluated in final design	If pedestrian facilities are found to have noncompliant elements that cannot be made compliant, they would be justified as nonstandard.[4]

Notes:

1 Design Speed of 30 mph is consistent with the anticipated off-peak 85th percentile speed and is within the design classification's range of design speeds for terrain and volume.

2 Denotes non-standard feature.

3 Refer to **Appendix E** for detailed pedestrian facility analysis.

4. Pedestrian facility nonstandard features to be retained or created would be justified in the final design report.

Critical Design Elements for University Avenue					
PIN	4CR0.13	**BIN** (if applicable)		NA	
Functional Class:	Urban Minor Arterial	**NHS**	☐	**Non-NHS**	☑
Design Class:	Arterial	**Context Class:**		Urban	
Project Type:	1R	**Terrain:**		Flat	
Design Year AADT:	15,724	**Percentage of Trucks:**		3	
Truck Access or Qualifying Highway (QH)?	Neither (Access Highway)	**If not a QH, is project within 1 mi of a QH?**		Yes	
Existing or Proposed Bicycle Route?	Yes	**Anticipated level of bicycle activity**		High	

	Element	Standard	Existing Condition	Proposed Condition
1	Design Speed	30 mph[1] HDM Section 2.7.2.3	30 mph posted	30 mph
2	Lane Width	Travel lanes: 11 ft min Shared use 13 ft min, 15 ft desirable Bicycle lane: 5 ft min, 6-7 ft desirable Turn lanes: L/R 11 ft min, 12 ft desirable Two way 11 ft min, 14 ft desirable Parking lanes: 8 ft min HDM Exhibit 2-4	Travel lanes: 10[2] - 12 ft Shared use: 11[2] ft Bicycle lanes: 5 - 6 ft Turn lanes: Left/right 10[2] - 11 ft Two way 11 - 12 ft Parking lanes: 8 ft	Travel lanes: 10[2]- 13 ft Bicycle lanes: 5 - 6 ft Turn lanes: Left/right 10[2] – 12 ft Two way 10[2] – 12 ft Parking lanes: 8 ft
3	Shoulder Width	Without cyclists: 0 ft min, 4 ft desirable With cyclists: 4 ft min, 5 ft desirable HDM Exhibit 2-4	No shoulder	No shoulder
4	Horizontal Curve Radius	188 ft Min (at e_{max}= **4%**) 177 ft Min (at e_{max}= **6%**) HDM Exhibit 2-4	400 ft	400 ft
5	Superelevation	e_{max} = **4%** HDM Exhibit 2-1b	Normal crown	Normal crown
6	Stopping Sight Distance (Horizontal and Vertical)	175 ft Min. HDM Exhibit 2-4	> 175 ft	> 175 ft
7	Maximum Grade	7% HDM Exhibit 2-4	2%	< 7%
8	Cross Slope	1.5% Min., 3% Max. HDM Section 2.7.2.3	2 %	2 %
9	Vertical Clearance	14 ft min., 14 ft 6 in desirable BM Section 2.3.1, Table 2-2	NA	NA
10	Design Loading Structural Capacity	NYSDOT LRFD Specifications AASHTO HL-93 Design Live Load and NYSDOT Design Permit Vehicle with LRFR 1.2 or higher BM Sections 1.3 and 1.5	NA	NA

Critical Design Elements for University Avenue					
PIN	4CR0.13	**BIN** (if applicable)		NA	
Functional Class:	Urban Minor Arterial	**NHS**	☐	**Non-NHS**	☑
Design Class:	Arterial	**Context Class:**		Urban	
Project Type:	1R	**Terrain:**		Flat	
Design Year AADT:	15,724	**Percentage of Trucks:**		3	
Truck Access or Qualifying Highway (QH)?	Neither (Access Highway)	**If not a QH, is project within 1 mi of a QH?**		Yes	
Existing or Proposed Bicycle Route?	Yes	**Anticipated level of bicycle activity**		High	

	Element	**Standard**	**Existing Condition**	**Proposed Condition**
		NYSDOT LRFD Specifications AASHTO HL-93 Live Load and NYSDOT Design Permit Vehicle HDM Section 19.5.3		
11	Americans with Disabilities Act Compliance[3]	HDM Chapter 18	Facilities would be evaluated in final design	If pedestrian facilities are found to have noncompliant elements that cannot be made compliant, they would be justified as nonstandard.[4]

Notes:

1 Design Speed of 30 mph is consistent with the anticipated off-peak 85th percentile speed and is within the design classification's range of design speeds for terrain and volume.

2 Denotes non-standard feature.

3 Refer to **Appendix E** for detailed pedestrian facility analysis.

4. Pedestrian facility nonstandard features to be retained or created would be justified in the final design report.

Critical Design Elements for East Avenue					
PIN	4CR0.13	**BIN** (if applicable)		NA	
Functional Class:	Urban Minor Arterial	**NHS**	☐	**Non-NHS**	☑
Design Class:	Arterial	**Context Class:**		Urban	
Project Type:	1R	**Terrain:**		Flat	
Design Year AADT:	14,606	**Percentage of Trucks:**		2	
Truck Access or Qualifying Highway (QH)?	Neither	**If not a QH, is project within 1 mi of a QH?**		Yes	
Existing or Proposed Bicycle Route?	Yes	**Anticipated level of bicycle activity**		High	

	Element	Standard	Existing Condition	Proposed Condition
1	Design Speed	30 mph[1] HDM Section 2.7.2.3	30 mph posted	30 mph
2	Lane Width	Travel lanes: 10 ft min Bicycle lane: 5 ft min, 6-7 ft desirable Turn lanes: L/R 10 ft min, 11 ft desirable Two way 11 ft min, 14 ft desirable Parking lanes: 8 ft min HDM Exhibit 2-4	Travel lanes: 10 - 13 ft Turn lanes: Left 10 ft Two way 10[2] ft Parking lanes: 7[2] ft	Travel lanes: 12-13 ft Bicycle lanes: 6 ft Turn lanes: Left 11 ft
3	Shoulder Width	4 ft min, 5 ft desirable HDM Exhibit 2-4	No shoulder	No shoulder
4	Horizontal Curve Radius	188 ft Min (at e_{max}= **4%**) 177 ft Min (at e_{max}= **6%**) HDM Exhibit 2-4	NA	NA
5	Superelevation	e_{max} = **4%** HDM Exhibit 2-1b	Normal crown	Normal crown
6	Stopping Sight Distance (Horizontal and Vertical)	175 ft Min. HDM Exhibit 2-4	> 175 ft	> 175 ft
7	Maximum Grade	7% HDM Exhibit 2-4	< 7%	< 7%
8	Cross Slope	1.5% Min., 3% Max. HDM Section 2.7.2.3	2 %	2 %
9	Vertical Clearance	14 ft min., 14 ft 6 in desirable BM Section 2.3.1, Table 2-2	NA	NA
10	Design Loading Structural Capacity	NYSDOT LRFD Specifications AASHTO HL-93 Design Live Load and NYSDOT Design Permit Vehicle with LRFR 1.2 or higher BM Sections 1.3 and 1.5 NYSDOT LRFD Specifications AASHTO HL-93 Live Load and NYSDOT Design Permit Vehicle	NA	NA

Critical Design Elements for East Avenue					
PIN	4CR0.13	**BIN** (if applicable)		NA	
Functional Class:	Urban Minor Arterial	**NHS**	☐	**Non-NHS**	☑
Design Class:	Arterial	**Context Class:**		Urban	
Project Type:	1R	**Terrain:**		Flat	
Design Year AADT:	14,606	**Percentage of Trucks:**		2	
Truck Access or Qualifying Highway (QH)?	Neither	**If not a QH, is project within 1 mi of a QH?**		Yes	
Existing or Proposed Bicycle Route?	Yes	**Anticipated level of bicycle activity**		High	

	Element	**Standard**	**Existing Condition**	**Proposed Condition**
		HDM Section 19.5.3		
11	Americans with Disabilities Act Compliance[3]	HDM Chapter 18	Facilities would be evaluated in final design	If pedestrian facilities are found to have noncompliant elements that cannot be made compliant, they would be justified as nonstandard.[4]

Notes:

1 Design Speed of 30 mph is consistent with the anticipated off-peak 85th percentile speed and is within the design classification's range of design speeds for terrain and volume.

2 Denotes non-standard feature.

3 Refer to **Appendix E** for detailed pedestrian facility analysis.

4. Pedestrian facility nonstandard features to be retained or created would be justified in the final design report.

Critical Design Elements for Culver Road (1)			
PIN	4CR0.13	**BIN** (if applicable)	NA
Functional Class:	Urban Minor Arterial	**NHS** ☐	**Non-NHS** ☑
Design Class:	Arterial	**Context Class:**	Urban
Project Type:	1R	**Terrain:**	Flat
Design Year AADT:	11,426	**Percentage of Trucks:**	3
Truck Access or Qualifying Highway (QH)?	Neither	**If not a QH, is project within 1 mi of a QH?**	Yes
Existing or Proposed Bicycle Route?	Yes	**Anticipated level of bicycle activity**	High

	Element	Standard	Existing Condition	Proposed Condition
1	Design Speed	30 mph[1] HDM Section 2.7.2.3	30 mph posted	30 mph
2	Lane Width	Travel lanes: 11 ft min, 12 ft desirable Shared lane 13 ft min, 15 ft desirable Bicycle lane: 5 ft min, 6-7 ft desirable Turn lanes: 11 ft min, 12 ft desirable Parking lanes: 8 ft min HDM Exhibit 2-4	Travel lanes: 10[2] - 20 ft Turn lanes: 11 ft	Travel lanes: 10[2] - 17 ft Shared use: 12[2] ft Bicycle lane: 6 ft Parking lane: 8 ft
3	Shoulder Width	Without cyclists: 0 ft min, 4 ft desirable With cyclists: 4 ft min, 5 ft desirable HDM Exhibit 2-4	No shoulder	No shoulder
4	Horizontal Curve Radius	188 ft Min (at e_{max}= **4%**) 177 ft Min (at e_{max}= **6%**) HDM Exhibit 2-4	NA	NA
5	Superelevation	e_{max} = **4%** HDM Exhibit 2-1b	Normal crown	Normal crown
6	Stopping Sight Distance (Horizontal and Vertical)	175 ft Min. HDM Exhibit 2-4	> 175 ft	> 175 ft
7	Maximum Grade	7% HDM Exhibit 2-4	< 7%	< 7%
8	Cross Slope	1.5% Min., 3% Max. HDM Section 2.7.2.3	2 %	2 %
9	Vertical Clearance	14 ft min., 14 ft 6 in desirable BM Section 2.3.1, Table 2-2	NA	NA
10	Design Loading Structural Capacity	NYSDOT LRFD Specifications AASHTO HL-93 Design Live Load and NYSDOT Design Permit Vehicle with LRFR 1.2 or higher BM Sections 1.3 and 1.5 NYSDOT LRFD Specifications AASHTO HL-93 Live Load and NYSDOT Design Permit Vehicle	NA	NA

Critical Design Elements for Culver Road (1)					
PIN	4CR0.13	**BIN** (if applicable)		NA	
Functional Class:	Urban Minor Arterial	**NHS**	☐	**Non-NHS**	☑
Design Class:	Arterial	**Context Class:**		Urban	
Project Type:	1R	**Terrain:**		Flat	
Design Year AADT:	11,426	**Percentage of Trucks:**		3	
Truck Access or Qualifying Highway (QH)?	Neither	**If not a QH, is project within 1 mi of a QH?**		Yes	
Existing or Proposed Bicycle Route?	Yes	**Anticipated level of bicycle activity**		High	

	Element	**Standard**	**Existing Condition**	**Proposed Condition**
		HDM Section 19.5.3		
11	Americans with Disabilities Act Compliance[3]	HDM Chapter 18	Facilities would be evaluated in final design	If pedestrian facilities are found to have noncompliant elements that cannot be made compliant, they would be justified as nonstandard.[4]

Notes:

1 Design Speed of 30 mph is consistent with the anticipated off-peak 85th percentile speed and is within the design classification's range of design speeds for terrain and volume.

2 Denotes non-standard feature.

3 Refer to **Appendix E** for detailed pedestrian facility analysis.

4. Pedestrian facility nonstandard features to be retained or created would be justified in the final design report.

Critical Design Elements for Culver Road (2)			
PIN	4CR0.13	**BIN** (if applicable)	NA
Functional Class:	Urban Minor Arterial	**NHS** ☐	**Non-NHS** ☑
Design Class:	Arterial	**Context Class:**	Urban
Project Type:	1R	**Terrain:**	Flat
Design Year AADT:	13,673	**Percentage of Trucks:**	3
Truck Access or Qualifying Highway (QH)?	Neither	**If not a QH, is project within 1 mi of a QH?**	Yes
Existing or Proposed Bicycle Route?	Yes	**Anticipated level of bicycle activity**	High

	Element	Standard	Existing Condition	Proposed Condition
1	Design Speed	30 mph[1] HDM Section 2.7.2.3	30 mph posted	30 mph
2	Lane Width	Travel lanes: 11 ft min, 12 ft desirable Shared lane 13 ft, 15 ft desirable Bicycle lane: 5 ft min, 6-7 ft desirable Turn lanes: 11 ft min, 12 ft desirable Parking lanes: 8 ft min HDM Exhibit 2-4	Travel lanes: 10[2] - 12 ft Bicycle lanes: 5 ft Turn lane: 12 ft Parking lane: 8 ft	Travel lanes: 10[2] - 13 ft Bicycle lanes: 5 - 6 ft Turn lanes: 10[2] - 12 ft
3	Shoulder Width	Without cyclists: 0 ft min, 4 ft desirable With cyclists: 4 ft min, 5 ft desirable HDM Exhibit 2-4	No shoulder	No shoulder
4	Horizontal Curve Radius	188 ft Min (at e_{max}= **4%**) 177 ft Min (at e_{max}= **6%)** HDM Exhibit 2-4	600 ft	600 ft
5	Superelevation	e_{max} = **4%** HDM Exhibit 2-1b	Normal crown	Normal crown
6	Stopping Sight Distance (Horizontal and Vertical)	175 ft Min. HDM Exhibit 2-4	> 175 ft	> 175 ft
7	Maximum Grade	7% HDM Exhibit 2-4	< 7%	< 7%
8	Cross Slope	1.5% Min., 3% Max. HDM Section 2.7.2.3	2 %	2 %
9	Vertical Clearance	14 ft min., 14 ft 6 in desirable BM Section 2.3.1, Table 2-2	NA	NA
10	Design Loading Structural Capacity	NYSDOT LRFD Specifications AASHTO HL-93 Design Live Load and NYSDOT Design Permit Vehicle with LRFR 1.2 or higher BM Sections 1.3 and 1.5 NYSDOT LRFD Specifications AASHTO HL-93 Live Load and	NA	NA

Critical Design Elements for Culver Road (2)					
PIN	4CR0.13	**BIN** (if applicable)		NA	
Functional Class:	Urban Minor Arterial	**NHS**	☐	**Non-NHS**	☑
Design Class:	Arterial	**Context Class:**		Urban	
Project Type:	1R	**Terrain:**		Flat	
Design Year AADT:	13,673	**Percentage of Trucks:**		3	
Truck Access or Qualifying Highway (QH)?	Neither	**If not a QH, is project within 1 mi of a QH?**		Yes	
Existing or Proposed Bicycle Route?	Yes	**Anticipated level of bicycle activity**		High	

	Element	**Standard**	**Existing Condition**	**Proposed Condition**
		NYSDOT Design Permit Vehicle HDM Section 19.5.3		
11	Americans with Disabilities Act Compliance[3]	HDM Chapter 18	Facilities would be evaluated in final design	If pedestrian facilities are found to have noncompliant elements that cannot be made compliant, they would be justified as nonstandard.[4]

Notes:

1 Design Speed of 30 mph is consistent with the anticipated off-peak 85th percentile speed and is within the design classification's range of design speeds for terrain and volume.

2 Denotes non-standard feature.

3 Refer to **Appendix E** for detailed pedestrian facility analysis.

4. Pedestrian facility nonstandard features to be retained or created would be justified in the final design report.

2.2 OTHER DESIGN PARAMETERS

Other Design Parameters			
Element	**Parameter**	**Existing Conditions**	**Proposed Condition**
Design Vehicle	CITY BUS	CITY BUS	CITY BUS

2.3 NONSTANDARD/NONCONFORMING FEATURES

There are nonstandard or nonconforming roadway features within the project limits.

Some of the proposed lane widths along the project roadways do not meet the minimum requirements as outlined in the NYSDOT Highway Design Manual, Chapter 2, however, are considered acceptable by MCDOT policy. Meeting standard lane widths would require significant impacts including curb relocation, roadway reconstruction and disturbance of existing development adjacent to the roadway. Furthermore, full roadway reconstruction is not in the scope of work and is not part of the project objectives. Refer to **Appendix F** for non-standard feature justification forms.

Existing pedestrian facilities within the scope of this project would be evaluated in final design for conformance with the applicable standards in the NYSDOT Critical Elements for the Design, Layout and Acceptance of Pedestrian Facilities found on the NYSDOT Highway Design Manual Chapter 18 webpage. If the work at any facility would not meet the applicable standards, then the procedural requirements identified in ED 15-004 - Design, Construction and Inspection of Pedestrian Facilities in the Public Right of Way would be followed and the facility would be rehabilitated, replaced, or justified as nonstandard.

2.4 SPECIAL TECHNICAL ACTIVITIES REQUIRED

There are no special technical activities associated with this project.

2.5 WORKZONE SAFETY AND MOBILITY

Sponsor has determined that this project is not significant per 23 CFR 630.1010.

A Transportation Management Plan (TMP) would be prepared for the project consistent with 23 CFR 630.1012. The TMP would consist of a Temporary Traffic Control (TTC) plan. Transportation Operations (TO) and Public Information (PI) components of a TMP would be considered during final design.

Construction of the project is anticipated to be complete in one construction season. Vehicular traffic would be maintained on site via stage construction and daily lane closures. No off-site detours would be required. The work zone traffic control plan would consist of lane shifts or closures, and work hour restrictions for peak travel. On-site work would require daily lane closures by utilizing flag persons to control alternating one-way traffic, with minimal delays to motorists.

Upon completion of work activities at the end of each work day, the road would be reopened to two-way operation, with traffic driving on the milled or paved surface. Sections of the project with two lanes and a parking lane could support two-way traffic if parking is restricted during construction activities. Access to all driveways would be maintained during construction.

Advance notification to property owners, commuters, school districts and emergency service providers would be made prior to conducting any road work requiring lane closures.

2.6 ASSET MANAGEMENT

☐ Applies ☒ Not Applicable

2.7 POTENTIAL UTILITY INVOLVEMENT

☒ Yes ☐ No

Coordination with utility companies within the project areas would be required in final design, so that valve boxes, manholes, and other elements can be adjusted as needed in conjunction with the paving work. Utility agreements would be executed as necessary. Adjustments to City water valve boxes, sanitary and storm sewer manholes, and drainage structures would be performed as part of the project.

The following utilities could be present in the general vicinity of the project improvement area:

- Traffic signal loops and inductance loops owned by Monroe County Department of Transportation (public)
- Underground water and distribution lines owned by Monroe County Water Authority (public)
- Underground water and distribution lines owned by the City of Rochester Water Bureau (public)
- Underground gas, electric lines and/or fiber optics owned by Rochester Gas and Electric (private)
- Overhead and/or underground telephone lines owned by Frontier and/or Rochester Telephone (private)
- Overhead and/or underground cable TV lines owned by Charter Communications (private)
- Underground sanitary and storm sewers, including combined sewer overflow abatement program (CSOAP) tunnels, owned by Monroe County Pure Waters (public)
- Overhead street lighting owned by the City of Rochester (public)

MCDOT Signals
Anticipated work within the project limits includes replacement of traffic signal loops, as needed, and could include adjustment of manholes.

Monroe County Water Authority
Anticipated work within the project limits includes adjustment of water valve boxes and curb, as needed.

City of Rochester Water Bureau
Anticipated work within the project limits includes adjustment of water valve boxes and curb stops, as needed.

Rochester Gas and Electric (RG&E)
Anticipated work within the project limits includes electric and fiber optics handholes and gas valve adjustments, as needed.

Frontier & Rochester Telephone
Anticipated work within the project limits includes manhole and handhole adjustments, as needed.

Charter Communications
Anticipated work within the project limits includes manhole and handhole adjustments, as needed.

Monroe County Pure Waters
Anticipated work within the project limits includes adjustment of all sanitary and storm sewer manholes, as needed.

City Street Lighting
Anticipated work within the project limits includes handhole adjustments, as needed.

For all utility involvement and coordination refer to **Appendix G** *Stakeholders and Public Input*.

2.8 RIGHT OF WAY

All proposed work would be accomplished within the existing right of way; therefore, it is anticipated that no right of way acquisitions would be required for the project. Property releases would be obtained to address issues of minor grading behind the sidewalk adjacent to the right-of-way as needed. The ROW Clearance Certificate would be attached to the PS&E transmittal memo.

3.1 ENVIRONMENTAL CLASSIFICATION

NEPA (National Environmental Policy Act):

This project is being progressed as a NEPA Class II action (Categorical Exclusion).

In accordance with the Federal Highway Administration's regulations in 23 CFR 771.117(c) this is an action which would not have significant environmental effects and does not normally require additional federal approval regarding NEPA. Specifically this action meets the description in 23 CFR 771.117(c)(26) described as "Modernization of a highway by resurfacing, restoration, rehabilitation, reconstruction, adding shoulders, or adding auxiliary lanes (including parking, weaving, turning, and climbing lanes)," and meets the constraints listed in 23 CFR 771.117(e). This is further detailed in the Federal Environmental Approvals Worksheet (FEAW) included in **Appendix B**.

SEQRA (State Environmental Quality Review Act):

The proposed project meets the criteria established for a SEQRA Type II Action per 6 NYCRR Section 617.5, Subdivision (c), Item 2, "replacement, rehabilitation of a structure or facility in kind, on the same site, including upgrading buildings to meet building or fire codes, unless such action meets or exceeds any thresholds in Section 617.4 of this part." This permits the project to be classified as Type II since the project does not meet or exceed any of the criteria contained in Section 617.4. No further review under SEQR is required. Additional information related to how the project meets the SEQR Type II criteria is included in **Appendix B**.

The following Checklist(s) are attached:

☒ Federal Environmental Approvals Worksheet (FEAW)
☒ Social, Economic and Environmental Resources Checklist
☒ Capital Projects Complete Streets Checklist

3.2 ENVIRONMENTAL DOCUMENTATION

For topics checked yes on the Social, Economic, and Environmental Resources Checklist or applicable on the FEAW in the appendix, resolution is as follows:

Neighborhoods and Community Cohesion
There is potential to impact transportation options; these impacts would be considered positive impacts, as walking and bicycling opportunities would increase as a result of the project. Installation of bike lanes where existing roadway space is available would provide additional opportunity, and replacement of sidewalk pedestrian curb ramps to current standards would improve pedestrian facilities.

Community Services
There is potential to positively affect access to or use of Schools, Recreation Areas or Places of Worship; through the replacement of sidewalk pedestrian curb ramps to current standards.

Business Districts
Bicycle opportunities would be affected, as installation of bike lanes would occur where existing roadway space is available. Sidewalks would be affected; positive impacts are anticipated as pedestrian curb ramps would be replaced to current standards.

Specific Business Impacts
This project has the potential to positively impact businesses through the installation of bike lanes and replacement of curb ramps to current standards in many locations within the project.

Section 106
This federal-aid project is an undertaking subject to review under Section 106 of the National Historic Preservation Act and its implementing regulation, 36 CFR Part 800. The NYSDOT Regional Cultural Resource Coordinator completed a review of the project information submitted by the sponsor to assess Section 106 obligations for the project.

Based on the project activities for the proposed scope of work the NYSDOT recommended, and FHWA determined that the project has no potential to cause effects on historic properties in accordance with 36 CFR 800.3(a)(1) and meets the conditions described in the determination letter from FHWA (dated March 23, 2022) found in **Appendix B**.

Endangered Species
Federal USFWS IPaC revealed that the Monarch Butterfly has potential to be located within the project area. Currently, the monarch butterfly does not have protection under ESA Section 7 so consultation or conference with USFWS is not required at this time. NYSDEC Environmental Resource Mapper screening revealed that no State threatened or endangered species are expected to occur within the project sites. Additional documentation of the FHWA Section 7 Process for Compliance and Consultation, including Transmittal Sheet and USFWS Species List are included in **Appendix B**.

Hazardous Waste
A hazardous waste screening/assessment was conducted for the project sites utilizing procedures in the NYSDOT TEM Chapter 5.1. The assessment was prepared in general accordance with the American Society for Testing and Materials (ASTM) Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process (Designation E1527-13). Conditions that would result in the exposure of Hazardous Waste and/or Contaminated Materials during project activities were not discovered during the assessment. No further studies are recommended. The Hazardous Waste/Contaminated Materials Screening Report can be found in **Appendix B**.

Asbestos
The site was reviewed for the presence of potential Asbestos Containing Materials (ACMs). A site visit was performed and potential ACMs were identified that may be impacted by project activities. A sample of each potential ACM was collected and sent to a NYSDOH Certified laboratory for analysis.

Results of the screening and sampling for ACM showed that none of the materials were determined to contain asbestos.

The Asbestos Survey Report, including asbestos analytical results is found in **Appendix B**.

3.3 ANTICIPATED PERMITS/CERTIFICATIONS/COORDINATION

Others
- Local Permits
- NYSDOT PERM #33

Coordination
- Federal Highway Administration
- New York State Historic Preservation Officer (SHPO)
- NYSDOT
- Regional Transit Services
- Department of Motor Vehicles
- Rochester City School District
- City of Rochester
- MCDOT
- Utility Agencies

3.4 NYS SMART GROWTH PUBLIC INFRASTRUCTURE POLICY ACT (SGPIPA)

To the extent practicable this project has met the relevant criteria as described in ECL § 6-0107. The Smart Growth Screening Tool was used to assess the project's consistency and alignment with relevant Smart Growth criteria; the tool was completed by the Region's Planning and Program Management group on and reflects the current project scope. Refer to "*Smart Growth – Complete Streets"* in **Appendix B** for more information.

4.1 FUNDING

FUNDING SOURCE: ☐ 100% State ☒ Federal

MPO INVOLVEMENT: ☐ No ☒ Yes

TIP Name: Highway Preventive Maintenance - Group 1
TIP No.: H20-11-MN1

TIP AMENDMENT REQUIRED: ☒ No ☐ Yes; Needed by:

STIP STATUS: ☒ On STIP ☐ Not on STIP

4.2 COST AND SCHEDULE

☒ Public Meeting ☐ 4(f)/106 FHWA sign-off
☐ Permits ☒ Consultant(s) for: Design and Construction Support
☐ Other – Identify e.g., utilities, endangered species (ESA)

Schedule and Cost				
Project Phase	**Activity Duration**	**Estimated Cost**	**Fund Source**	**Obligation Date**
Design V-VI	9 months	$0.600	STIP URB	**2022**
Construction	10 months	$4.500	STIP URB	**2023**
Construction Inspection	10 months	$0.750	STIP URB	**2023**
TOTAL ESTIMATED COST		**$5.850**		

BASIS OF ESTIMATE: Estimates are those from the approved STIP. The estimates have been compared to previous City of Rochester preventive maintenance project data and appear to be adequate.

PROGRAM DISPOSITION/LETTING: Scheduled for letting in SFY 2022

STATEWIDE SIGNIFICANCE: ☒ No Remarks:

Design approval is scheduled for September of 2022 with construction scheduled to begin in March of 2023 and anticipated to be completed in December of 2023 and last eight months.

Project Schedule	
Activity	**Date Occurred/Tentative**
Scope Approval	Winter 2021/2022
Design Approval	September 2022
ROW Acquisition	Not Applicable
Construction Start	March 2023
Construction Complete	December 2023

Project Cost		
Activities		**Build Alternative 1**
Construction Costs	Highway	$4,848,885.64
	Field Change Item	$242,444.28
Incidentals (5%)		$254,566.50
Subtotal 1		$5,345,896.42
Contingency (5% at Design Approval)		$267,294.82
Mobilization (4%)		$213,835.86
Subtotal 2		$5,827,027.09
Expected Award Amount See HDM 21.6.3.2 B		$6,001,837.91
Construction Inspection		$750,000.00
ROW Costs		$0
Total Alternative Costs		$6,752,000.00

5.1 PUBLIC INVOLVEMENT

Notifications to public officials, potential stakeholders, emergency responders and schools would be issued.

Public Involvement Plan Schedule of Milestone Dates	
Activity	**Scheduled Date**
Public Informational Meeting	July 28, 2022

Refer to **Appendix G** for project correspondence.

5.2 SPECIAL CIRCUMSTANCES

There are no special circumstances on this project.