OHIO PUBLIC WORKS FOR YOU

Public Works Commission

Application for Financial Assistance

IMPORTANT: Please consult "Instructions for Financial Assistance for Capital Infrastructure Projects" for guidance in completion of this form.

Applicant

Applicant: Montgomery County Subdivision Code: 113-00113

District Number: 4 County: Montgomery Date: 08/10/2023

Contact: Joseph Dura Phone: 937-225-5507
(The individual who will be available during business hours and who can best answer or coordinate the response to questions)

Email: duraj@mcohio.org FAX:

Project

Project Name: MOT-Social Row Road Zip Code: 45458

Subdivision Type

County

SFN

Project Type

(Select single largest component by $)

x 1. Road
2. Bridge/Culvert
3. Water Supply
4. Wastewater
5. Solid Waste
6. Stormwater

Funding Request Summary

(Automatically populates from page 2)

Total Project Cost:	7,700,000 .00
1. Grant:	1,500,000 .00
2. Loan:	500,000 .00
3. Loan Assistance/ Credit Enhancement:	0 .00
Funding Requested:	2,000,000 .00

District Recommendation (To be completed by the District Committee)

Funding Type Requested
(Select one)

- ☐ State Capital Improvement Program
- ☐ Local Transportation Improvement Program
- ☐ Revolving Loan Program
- ☐ Small Government Program

District SG Priority: _____

SCIP Loan - Rate: ____ % Term: ____ Yrs Amount: _____ .00

RLP Loan - Rate: ____ % Term: ____ Yrs Amount: _____ .00

Grant: Amount: _____ .00

LTIP: Amount: _____ .00

Loan Assistance / Credit Enhancement: Amount: _____ .00

For OPWC Use Only

STATUS

Project Number: _____

Release Date: _____

OPWC Approval: _____

Grant Amount: _____ .00

Loan Amount: _____ .00

Total Funding: _____ .00

Local Participation: _____ %

OPWC Participation: _____ %

Loan Type: ☐ SCIP ☐ RLP

Date Construction End: _____

Date Maturity: _____

Rate: _____ %

Term: _____ Yrs

1.0 Project Financial Information (All Costs Rounded to Nearest Dollar)

1.1 Project Estimated Costs

SCIP Financials

Engineering Services

Preliminary / Final Design: 0 .00

Construction Administration: 0 .00

Total Engineering Services:	a.)	0 .00	0 %
Right of Way:	b.)	0 .00	
Construction:	c.)	7,000,000 .00	
Permits, Advertising, Legal:	e.)	0 .00	
Construction Contingencies:	f.)	700,000 .00	
Total Estimated Costs:	g.)	7,700,000 .00	

1.2 Project Financial Resources

Local Resources

Local In-Kind or Force Account:	a.)	0 .00	
Local Revenues:	b.)	1,125,812 .00	
Other Public Revenues:			
Local / ODOT - Let: Local-Let	d.)	4,574,188 .00	
ODOT PID: 115191			
OEPA / OWDA:	e.)	0 .00	
CDBG:	f.)	.00	
Other:	g.)	0 .00	
Subtotal Local Resources:	i.)	5,700,000 .00	74 %

OPWC Funds (Check all requested and enter Amount)

Grant: 75 % of OPWC Funds	j.)	1,500,000 .00	
Loan: 25 % of OPWC Funds	k.)	500,000 .00	10 yrs
Loan Assistance / Credit Enhancement:	l.)	0 .00	
Subtotal OPWC Funds:	m.)	2,000,000 .00	26 %
Total Financial Resources:	n.)	7,700,000 .00	100 %

OPWC Project Financial Information

LTIP Financials

Subdivision: Montgomery County

Project Name: MOT-Social Row Road

Project Estimated Costs

(All Costs Rounded to Nearest Dollar)

Engineering Services

Estimated Engineering:	0 .00		
Construction Administration:	0 .00		
Total Engineering Services:		0 .00	0.0 %
Right of Way:		0 .00	
Construction:		7,000,000 .00	
Permits, Advertising, Legal:		.00	
Construction Contingencies:		700,000 .00	10.0 %
Total Estimated Costs:		7,700,000 .00	

Project Financial Resources

Local Resources

Local In-Kind or Force Account:		.00	
Local Revenues:		2,025,812 .00	
Other Public Revenues:			
ODOT / FHWA PID:	115191	4,574,188 .00	
OEPA / OWDA:		.00	
Other:		.00	
Subtotal Local Resources:		6,600,000 .00	85.7 %

OPWC Funds

Grant:	100 % of OPWC Funds	1,100,000 .00	
Loan:	0 % of OPWC Funds	.00	
Loan Assistance / Credit Enhancement:		0 .00	
Subtotal OPWC Funds:		1,100,000 .00	14.3 %
Total Financial Resources:		7,700,000 .00	100.0 %

1.3 Availability of Local Funds

Attach a statement signed by the Chief Financial Officer listed in section 5.2 certifying all local resources required for the project will be available on or before the earliest date listed in the Project Schedule section. The OPWC Agreement will not be released until the local resources are certified. Failure to meet local share may result in termination of the project. Applicant needs to provide written confirmation for funds coming from other funding sources.

2.0 Repair / Replacement or New / Expansion

2.1 Total Portion of Project New / Expansion: 0 .00

3.0 Project Schedule

3.1 Engineering / Design / Right of Way	Begin Date:	07/20/2020	End Date:	02/14/2025
3.2 Bid Advertisement and Award	Begin Date:	03/28/2025	End Date:	04/23/2025
3.3 Construction	Begin Date:	05/30/2025	End Date:	11/20/2026

Construction cannot begin prior to release of executed Project Agreement and issuance of Notice to Proceed.

Failure to meet project schedule may result in termination of agreement for approved projects. Modification of dates must be requested in writing by project official of record and approved by the Commission once the Project Agreement has been executed.

4.0 Project Information

If the project is multi-jurisdictional, information must be consolidated in this section.

4.1 Useful Life / Cost Estimate / Age of Infrastructure

Project Useful Life: 28 Years Age: 2004 (Year built or year of last major improvement)

Attach Registered Professional Engineer's statement, with seal or stamp and signature confirming the project's useful life indicated above and detailed cost estimate.

4.2 User Information

Road or Bridge: Current ADT 12370 Year 2023

Water / Wastewater: Based on monthly usage of 4,500 gallons per household; attach current ordinances.

Residential Water Rate	Current $ 0	Number of households served:	
Residential Wastewater Rate	Current $ 0	Number of households served:	

Stormwater: Number of households served:

4.3 Project Description

A: SPECIFIC LOCATION (Supply a written location description that includes the project termini; a map does not replace this requirement.) 2000 character limit.

Social Row Road, from Waterbury Ridge Lane to 1,450’ east of Sheehan Road

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B: IDENTIFY THE PROBLEM (Describe the issue to be addressed) 2000 character limit.

Insufficient capacity at the intersections of Social Row Road & Paragon Road as well as Social Row Road & Sheehan Road. In addition, an excessive accident rate exists at the intersection of Social Row Road and Paragon Road.

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C: PROJECT SCOPE (Describe the work to be completed) 2000 character limit.

Widen Social Row Rd to 5-lanes, provide dedicated left turn lanes at all approaches of both the Social Row Rd & Paragon Rd and Social Row Rd & Sheehan Rd intersections. Install curb & gutter with a closed storm sewer system. Relocate portion of an existing 16” water main due to conflict with said closed storm sewer system. Reconstruct existing traffic signal at Social Row Rd & Sheehan Rd. Construct a new traffic signal at the intersection of Social Row Rd and Paragon Rd. Add decorative lighting and landscaping at both said intersections. Finally, Install sidewalk and sidepath along Social Row Rd from existing said facilities in the area of the Social Row Rd & Waterbury Ridge Ln intersection, east to Sheehan Rd.

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D. How do you intend to promote this project? 1000 character limit.

Funding transparency

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E: Additional Notes From Applicant - 1000 character limit.

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5.0 Project Officials

Changes in Project Officials must be submitted in writing from an officer of record.

5.1 Chief Executive Officer

(Person authorized in legislation to sign project agreements)

Name: Michael B. Colbert

Title: County Administrator

Address: 451 West Third Street

City: Dayton State: OH Zip: 45422

Phone: 937-225-4582

FAX:

E-Mail: colbertm@mcohio.org

5.2 Chief Financial Officer

(Can not also serve as CEO)

Name: Ronelle Kinney

Title: Fiscal Officer

Address: 451 West Third Street

City: Dayton State: OH Zip: 45422

Phone: 937-225-4904

FAX:

E-Mail: kinneyr@mcohio.org

5.3 Project Manager

Name: Joseph Dura

Title: Roadway Engineer

Address: 451 West Third Street

City: Dayton State: OH Zip: 45422

Phone: 937-225-5507

FAX:

E-Mail: duraj@mcohio.org

6.0 Attachments / Completeness review

Confirm in the boxes below that each item listed is attached (Check each box)

X A certified copy of the legislation by the governing body of the applicant authorizing a designated official to sign and submit this application and execute contracts. This individual should sign under 7.0, Applicant Certification, below.

X A certification signed by the applicant's chief financial officer stating the amount of all local share funds required for the project will be available on or before the dates listed in the Project Schedule section. If the application involves a request for loan (RLP or SCIP), a certification signed by the CFO which identifies a specific revenue source for repaying the loan also must be attached. Both certifications can be accomplished in the same letter.

X A registered professional engineer's detailed cost estimate and useful life statement, as required in 164-1-13, 164-1-14, and 164-1-16 of the Ohio Administrative Code. Estimates shall contain an engineer's seal or stamp and signature.

A cooperative agreement (if the project involves more than one subdivision or district) which identifies the fiscal and administrative responsibilities of each participant.

Farmland Preservation Review - The Governor's Executive Order 98-IIV, "Ohio Farmland Protection Policy" requires the Commission to establish guidelines on how it will take protection of productive agricultural and grazing land into account in its funding decision making process. Please include a Farm Land Preservation statement for projects that have an impact on farmland.

Capital Improvements Report. CIR Required by O.R.C. Chapter 164.06 on standard form.

X Supporting Documentation: Materials such as additional project description, photographs, economic impact (temporary and/or full time jobs likely to be created as a result of the project), accident reports, impact on school zones, and other information to assist your district committee in ranking your project. Be sure to include supplements which may be required by your local District Public Works Integrating Committee.

7.0 Applicant Certification

The undersigned certifies: (1) he/she is legally authorized to request and accept financial assistance from the Ohio Public Works Commission as identified in the attached legislation; (2) to the best of his/her knowledge and belief, all representations that are part of this application are true and correct; (3) all official documents and commitments of the applicant that are part of this application have been duly authorized by the governing body of the applicant; and, (4) should the requested financial assistance be provided, that in the execution of this project, the applicant will comply with all assurances required by Ohio Law, including those involving Buy Ohio and prevailing wages.

Applicant certifies that physical construction on the project as defined in the application has NOT begun, and will not begin until a Project Agreement for this project has been executed with the Ohio Public Works Commission. Action to the contrary will result in termination of the agreement and withdrawal of Ohio Public Works Commission funding from the project.

Certifying Representative (Printed form, Type or Print Name and Title)

Original Signature / Date Signed

RESOLUTION NO. 23-1027
AUGUST 08, 2023

RESOLUTION AUTHORIZING THE MONTGOMERY COUNTY ENGINEER'S OFFICE TO PREPARE AND SUBMIT APPLICATIONS TO PARTICIPATE IN THE OHIO PUBLIC WORKS COMMISSION (OPWC) STATE CAPITAL IMPROVEMENT PROGRAM (SCIP) OR THE LOCAL TRANSPORTATION IMPROVEMENT PROGRAM (LTIP), AND TO EXECUTE CONTRACTS AS REQUIRED FOR PROJECT APPLICATIONS TO BE SUBMITTED FOR FISCAL YEAR 2025, AS SHOWN IN ATTACHED EXHIBIT "A".

WHEREAS, the Montgomery County Engineer's Office has been notified that OPWC Program Funds will be available to jurisdictions within the area covered by the District 4 Public Works Integrating Committee for Fiscal Year 2025; and

WHEREAS, the OPWC's State Capital Improvement Program and the Local Transportation Improvement Program both provide financial assistance to political subdivisions for public infrastructure projects; and

WHEREAS, the Montgomery County Engineer's Office is planning to construct the capital improvements listed in Exhibit "A"; and

WHEREAS, the Montgomery County Engineer's Office commits to funding all local share project costs exceeding the total of the OPWC's grants and/or loans received; and

WHEREAS, the County Administrator is the County's authorized agent to sign the OPWC applications and subsequent contracts for project applications to be submitted for Fiscal Year 2025; and

WHEREAS, the Montgomery County Engineer's Office is authorized to provide additional information concerning the projects listed in Exhibit "A" and commits to meeting the reporting requirements for OPWC.

NOW, THEREFORE, BE IT RESOLVED by the Board of County Commissioners of Montgomery County, Ohio, that the resolution authorizing the transmittal of the applications and entering into of any agreements necessary and appropriate for obtaining OPWC funds as described above for the projects listed in Exhibit "A", be and is hereby approved.

BE IT FURTHER RESOLVED that the Clerk shall certify a copy of this resolution to the County Engineer. The County Engineer shall forward a copy of the certified resolution to the OPWC's District 4 Public Works Integrating Committee. The resolution is also available on Montgomery County, Ohio's website at http://www.mcohio.org.

GES:th

RESOLUTION NO: 23-1027
AUGUST 08, 2023

CERTIFICATE

Ms. Dodge moved the adoption of the foregoing resolution. It was seconded by Mrs. Rice, and upon call of the roll the following vote resulted:

Ms. Dodge, aye; Mrs. Rice, aye; Mrs. Lieberman, aye: Carried.

I hereby certify that the foregoing is a true and correct copy of a resolution duly adopted by the Board of County Commissioners of Montgomery County, Ohio, on the 8th day of August, 2023.

THE BOARD OF COUNTY COMMISSIONERS HEREBY FINDS AND DETERMINES THAT ALL FORMAL ACTIONS RELATIVE TO THE ADOPTION OF THIS RESOLUTION WERE TAKEN IN AN OPEN MEETING OF THIS BOARD OF COUNTY COMMISSIONERS, AND THAT ALL DELIBERATIONS OF THIS BOARD OF COUNTY COMMISSIONERS, AND OF ITS COMMITTEES, IF ANY WHICH RESULTED IN FORMAL ACTION, WERE TAKEN IN MEETINGS OPEN TO THE PUBLIC, IN FULL COMPLIANCE WITH APPLICABLE LEGAL REQUIREMENTS, INCLUDING SECTION 121.22 OF THE REVISED CODE.

Emily Bradford

Emily Bradford, Clerk
Board of County Commissioners
Montgomery County, Ohio

COMMISSIONERS' OFFICE · MONTGOMERY COUNTY, OHIO ·

Exhibit A

Ohio Public Works Commission (OPWC) Round 2023-2024
State Capital Improvement Program (SCIP) and
Local Transportation Improvement Project (LTIP) Applications

OPWC SCIP Project Application	Job Number	Program Manager	SCIP Total Project Costs	Total SCIP Request	SCIP Grant Request	SCIP Loan Request	MCEO Road A&G	Funds for Others Sources	SCIP Loan Term
Dayton-Cincinnati Retaining Wall	2020-07	Rick Splawinski	$ 1,300,000	$ 500,000	$ 325,000	$ 175,000	$ 800,000	$ -	10-years
Shank (MOR-44-4.80; PID 113925)	2020-23	Cedric McGhee	$ 1,613,000	$ 200,000	$ 100,000	$ 100,000	$ 373,000	$ 1,040,000	5-years
Wilmington Pike (KET-85-1.59)	2023-10	Henry Brierton	$ 1,084,000	$ 500,000	$ 125,000	$ 375,000	$ 584,000	$ -	10-years
Lutheran Church Road (JEF-19-3.83)	2022-27	David Shields	$ 237,300	$ 200,000	$ 50,000	$ 150,000	$ 37,300	$ -	5-years
Wellbaum Road (CLY-T0223-02.05)	2023-08	Brierton	$ 430,000	$ 200,000	$ 100,000	$ 100,000	$ 230,000	$ -	5-years
Amity Road (PER-T0056-2.00)	2023-05	Shields	$ 483,500	$ 200,000	$ 100,000	$ 100,000	$ 283,500	$ -	5-years
Social Row Road Widening, Phases 1 & 2 (PID 113360)	2020-17	Joe Dura	$ 7,700,000	$ 2,000,000	$ 1,500,000	$ 500,000	$ 1,125,812	$ 4,574,188	10-years

OPWC LTIP Project Application	Job Number	Program Manager	LTIP Total Project Costs	LTIP Grant Request	[redacted]	MCEO Road A&G	Funds for Others Sources	[redacted]
Dayton-Cincinnati Retaining Wall	2020-07	Rick Splawinski	$ 1,300,000	$ 400,000		$ 900,000	$ -	
Shank (MOR-44-4.80; PID 113925)	2020-23	Cedric McGhee	$ 1,613,000	$ 400,000		$ 173,000	$ 1,040,000	
Wilmington Pike (KET-85-1.59)	2023-10	Henry Brierton	$ 1,084,000	$ 400,000		$ 684,000	$ -	
Lutheran Church Road (JEF-19-3.83)	2022-27	David Shields	$ 237,300	$ 118,650		$ 118,650	$ -	
Wellbaum Road (CLY-T0223-02.05)	2023-08	Henry Brierton	$ 430,000	$ 107,500		$ 322,500	$ -	
Amity Road (PER-T0056-2.00)	2023-05	David Shields	$ 483,500	$ 120,875		$ 362,625	$ -	
Social Row Road Widening, Phases 1 & 2 (PID 113360)	2019-10	Joe Dura	$ 7,700,000	$ 1,100,000		$ 2,025,812	$ 4,574,188	

MONTGOMERY COUNTY ENGINEER'S OFFICE
CHIEF FINANCIAL OFFICERS CERTIFICATION

I, Ronelle Kinney, Comptroller, of the Montgomery County Engineer's Office, hereby certify that the Montgomery County Engineer's Office will have the amount of $1,625,812.00 available in the Road A&G Fund. A Sum of $500,000.00 amount will be used to repay the SCIP or RLP loan requested, and a sum of $1,125,812.00 amount will be used to pay the remainder contractor balance for the MOT-Social Row Road Project, Washington Township and City of Centerville, Job #2020-17, over a 10 year term.

Fiscal Year:	FY25
Project Name:	MOT-Social Row Road
Loan Amount	$500,000.00
Grant Amount	$1,500,000.00
Road A&G	$1,125,812.00

These funds will be available for repayment use July 1, 2024, immediately after formal project approval.

Ronelle Kinney, Comptroller
Montgomery County Engineer's Office

Date: 8/1/2023

MONTGOMERY COUNTY ENGINEER'S OFFICE
CHIEF FINANCIAL OFFICERS CERTIFICATION

I, Ronelle Kinney, Comptroller, of the Montgomery County Engineer's Office, hereby certify that The Montgomery County Engineer's Office will have the amount of $2,025,812.00 available in the Road A&G Fund and that this amount will be added to the LTIP grant amount of $1,100,000 requested for the MOT-Social Row Road Project, Washington Township and City of Centerville, Job #2020-17.

Fiscal Year:	FY25
Project Name:	MOT-Social Row Road
Grant Amount	$1,100,000.00
Road A&G	$2,025,812.00

These funds will be available for payment July 1, 2024, immediately after formal project approval.

Ronelle Kinney, Comptroller
Montgomery County Engineer's Office

Date: 8/1/2023

RESOLUTION NO. 23-0793
JUNE 13, 2023

RESOLUTION AUTHORIZING AMENDMENT NO. 1 TO A PREVIOUSLY AUTHORIZED LPA AGREEMENT WITH THE OHIO DEPARTMENT OF TRANSPORTATION FOR FEDERAL FUNDING IN CONNECTION WITH MOT-SOCIAL ROW ROAD, PHASE 2 PROJECT, JOB #2020-17, PID 115191, FOR THE PURPOSE OF REVISING THE FEDERAL FUNDING ALLOCATIONS.

WHEREAS, the Board of County Commissioners originally authorized an LPA Agreement with the Ohio Department of Transportation per Resolution 21-0884, dated July 20, 2021; and

WHEREAS, the LPA Agreement established the cooperative effort, as well as the funding, to widen Social Row Road in Washington Township and the City of Centerville; and

WHEREAS, the amended LPA Agreement will revise the federal funding allocations by increasing State Transportation Program funding from $2,252,136 to a maximum of $4,894,382 and increase federal participation from 60% to 63% of eligible Construction and Construction Engineering/Inspection costs; and

WHEREAS, the added Construction and Construction Engineering/Inspection funds were transferred from the MOT-Social Row Road, Phase 1 Project, Job #2019-10, PID 113360, for which the Board of County Commissioners entered into an LPA Agreement with the Ohio Department of Transportation per Resolution 20-0809, dated June 30, 2020; and

WHEREAS, the Montgomery County Engineer's Office agrees to secure or provide all other local share funds necessary to complete the MOT-Social Row Road, Phase 2 project.

NOW, THEREFORE, BE IT RESOLVED by the Board of County Commissioners of Montgomery County, Ohio, that execution of Amendment No. 1 to a previously authorized LPA Agreement with the Ohio Department of Transportation for federal funding in connection with the MOT-Social Row Road, Phase 2 Project, Job # 2020-17, PID 115191, for the purposes of revising the federal funding allocations, be and is hereby approved.

BE IT FURTHER RESOLVED that the Clerk of Commission shall return three originals to the County Engineer for final execution by the Ohio Department of Transportation, then certify this Resolution and make an imaged copy of this Resolution available on the Montgomery County, Ohio, website at http://www.mcohio.org.

JBD;ha

RESOLUTION NO: 23-0793
JUNE 13, 2023

CERTIFICATE

Ms. Dodge moved the adoption of the foregoing resolution. It was seconded by Mrs. Rice, and upon call of the roll the following vote resulted:

Ms. Dodge, aye; Mrs. Rice, aye; Mrs. Lieberman, aye: Carried.

I hereby certify that the foregoing is a true and correct copy of a resolution duly adopted by the Board of County Commissioners of Montgomery County, Ohio, on the 13th day of June, 2023.

THE BOARD OF COUNTY COMMISSIONERS HEREBY FINDS AND DETERMINES THAT ALL FORMAL ACTIONS RELATIVE TO THE ADOPTION OF THIS RESOLUTION WERE TAKEN IN AN OPEN MEETING OF THIS BOARD OF COUNTY COMMISSIONERS, AND THAT ALL DELIBERATIONS OF THIS BOARD OF COUNTY COMMISSIONERS, AND OF ITS COMMITTEES, IF ANY WHICH RESULTED IN FORMAL ACTION, WERE TAKEN IN MEETINGS OPEN TO THE PUBLIC, IN FULL COMPLIANCE WITH APPLICABLE LEGAL REQUIREMENTS, INCLUDING SECTION 121.22 OF THE REVISED CODE.

Emily Bradford

Emily Bradford, Clerk
Board of County Commissioners
Montgomery County, Ohio

COMMISSIONERS' OFFICE · MONTGOMERY COUNTY, OHIO ·

MOT – Social Row Road, Phase 2
COUNTY – ROUTE - SECTION

115191
PID NUMBER

38930
AGREEMENT NUMBER

VP74BLN1XAX1
UEI NUMBER

CFDA 20.205

LPA FEDERAL LOCAL-LET PROJECT AGREEMENT - AMENDMENT No. 001

ODOT amends *SECTION 3* and *Attachment 1* to provide clarity regarding the funding sources authorized by ODOT for this PROJECT.

3. FUNDING

3.1 The total cost for the PROJECT is estimated to be $ 7,768,860.00 as set forth in Attachment 1.

Scope of Work: Project Construction and Construction Engineering/Inspection

Funding Sources: FHWA (4TA7) at 63%; not to exceed $4,894,382

ODOT shall provide to the LPA the above stated percentage of eligible costs, up to the maximums documented above for each scope of PROJECT work. This maximum amount reflects the funding limit for the PROJECT set by the applicable Program Manager. Unless otherwise provided, funds through ODOT shall be applied only to the eligible costs associated with the actual construction of the transportation project improvements and construction engineering/inspection activities.

3.2 The LPA shall provide all other financial resources necessary to fully complete the PROJECT, including all 100 percent Locally-funded work, cost overruns and contractor claims.

The parties hereto have caused this Agreement to be duly executed as of the day and year last written below.

BOARD OF COUNTY COMMISSIONERS OF MONTGOMERY COUNTY, OHIO	**STATE OF OHIO OHIO DEPARTMENT OF TRANSPORTATION**
By:	By: Jack Marchbanks /JD
Title: Deborah A. Lieberman President	Jack Marchbanks Director
By:	Date: 6/27/2023
Title: Carolyn Rice Commissioner	
By:	
Title: Judy Dodge Commissioner	

OR	
By: DocuSigned by: Michael B. Colbert F5E2F67AA7B3245D...	
Title: Michael B. Colbert County Administrator Montgomery County, Ohio	
Date: 6/13/2023	
By: DocuSigned by: Nathaniel Peterson 6AD7407747ED8439...	
Title: Mathias H. Heck, Jr. Prosecuting Attorney Montgomery County, Ohio	
Date: 6/6/2023	

Attachment 1 **PID:** 115191 **C-R-S:** MOT - Social Row Road Phase 2

PROJECT BUDGET - SOURCES AND USES OF FUNDS

SOURCES	LPA FUNDS			FHWA FUNDS			STATE FUNDS			TOTALS
USES	Amount	%	SAC	Amount	%	SAC	Amount	%	SAC	
PRELIMINARY ENGINEERING - COSTS										**$0**
RIGHT OF WAY - COSTS										**$0**
PROJECT CONSTRUCTION COSTS	$2,686,428	37%	LNTP	$4,574,189	63%	4TA7				**$7,260,617**
CONSTRUCTION ENGINEERING / INSPECTION COSTS	$188,050	37%	LNTP	$320,193	63%	4TA7				**$508,243**
TOTALS	**$2,874,478**			**$4,894,382**						**$7,768,860**

DocuSign

Certificate Of Completion

Envelope Id: 6FD4FEF878734756933E27F507046ADD
Subject: 115191 LPA Agreement Amendment 001 (20230799)
ResolutionID: 20230799
Source Envelope:
Document Pages: 3
Certificate Pages: 2
AutoNav: Enabled
EnvelopeId Stamping: Enabled
Time Zone: (UTC-05:00) Eastern Time (US & Canada)

Signatures: 2
Initials: 0

Status: Completed

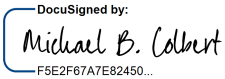
Envelope Originator:
Hope Arnett
451 W. Third St.
Dayton, OH 45422
arnetth@mcohio.org
IP Address: 12.197.122.3

Record Tracking

Status: Original
6/6/2023 | 09:15 AM

Holder: Hope Arnett
arnetth@mcohio.org

Location: DocuSign

Signer Events	Signature	Timestamp
Nathaniel Peterson petersonn@mcohio.org Assistant County Prosecutor Montgomery County Security Level: Email, Account Authentication (None) **Electronic Record and Signature Disclosure:** Not Offered via DocuSign	DocuSigned by:  6AD740747ED8430... Signature Adoption: Pre-selected Style Using IP Address: 12.197.122.3	Sent: 6/6/2023 | 09:18 AM Viewed: 6/6/2023 | 10:29 AM Signed: 6/6/2023 | 10:29 AM
Emily Bradford bradforde@mcohio.org Clerk of Commission Montgomery County Signing Group: Clerks Office Security Level: Email, Account Authentication (None) **Electronic Record and Signature Disclosure:** Not Offered via DocuSign	**Completed** Using IP Address: 144.121.183.134	Sent: 6/6/2023 | 10:29 AM Viewed: 6/10/2023 | 02:26 PM Signed: 6/10/2023 | 02:26 PM
Michael B. Colbert colbertm@mcohio.org County Administrator Montgomery County Security Level: Email, Account Authentication (None) **Electronic Record and Signature Disclosure:** Not Offered via DocuSign	DocuSigned by:  F5E2F67A7E82450... Signature Adoption: Pre-selected Style Using IP Address: 144.121.183.134	Sent: 6/10/2023 | 02:26 PM Viewed: 6/13/2023 | 04:25 PM Signed: 6/13/2023 | 04:26 PM
Emily Bradford bradforde@mcohio.org Clerk of Commission Montgomery County Signing Group: Clerks Office Security Level: Email, Account Authentication (None) **Electronic Record and Signature Disclosure:** Not Offered via DocuSign	**Completed** Using IP Address: 12.197.122.3	Sent: 6/13/2023 | 04:26 PM Viewed: 6/13/2023 | 04:32 PM Signed: 6/13/2023 | 04:32 PM

In Person Signer Events	Signature	Timestamp

Editor Delivery Events	Status	Timestamp
Agent Delivery Events	**Status**	**Timestamp**
Intermediary Delivery Events	**Status**	**Timestamp**
Certified Delivery Events	**Status**	**Timestamp**
Carbon Copy Events	**Status**	**Timestamp**
Witness Events	**Signature**	**Timestamp**
Notary Events	**Signature**	**Timestamp**
Envelope Summary Events	**Status**	**Timestamps**
Envelope Sent	Hashed/Encrypted	6/6/2023 | 09:18 AM
Envelope Updated	Security Checked	6/9/2023 | 08:35 AM
Certified Delivered	Security Checked	6/13/2023 | 04:32 PM
Signing Complete	Security Checked	6/13/2023 | 04:32 PM
Completed	Security Checked	6/13/2023 | 04:32 PM
Payment Events	**Status**	**Timestamps**

RESOLUTION NO. 23-0792
JUNE 13, 2023

RESOLUTION AUTHORIZING AMENDMENT NO. 1 TO A PREVIOUSLY AUTHORIZED LPA AGREEMENT WITH THE OHIO DEPARTMENT OF TRANSPORTATION FOR FEDERAL FUNDING IN CONNECTION WITH MOT-SOCIAL ROW ROAD, PHASE 1 PROJECT, JOB #2019-10, PID 113360, FOR THE PURPOSE OF REVISING THE FEDERAL FUNDING ALLOCATIONS.

WHEREAS, the Board of County Commissioners originally authorized an LPA Agreement with the Ohio Department of Transportation per Resolution 20-0809, dated June 30, 2020; and

WHEREAS, the LPA Agreement established the cooperative effort, as well as the funding, to widen Social Row Road in Washington Township and the City of Centerville; and

WHEREAS, the amended LPA Agreement will revise the federal funding allocations by removing project Construction and Construction Engineering/Inspection costs from Phase 1 of the above referenced project; and

WHEREAS, said project Construction and Construction Engineering/Inspection costs have been transferred to the MOT-Social Row Road, Phase 2 Project, Job #2020-17, PID 115191, for which the Board of County Commissioners entered into an LPA Agreement with the Ohio Department of Transportation per Resolution 21-0884, dated July 20, 2021; and

WHEREAS, the Montgomery County Engineer's Office agrees to secure or provide all other local share funds necessary to complete the MOT-Social Row Road, Phase 1 project.

NOW, THEREFORE, BE IT RESOLVED by the Board of County Commissioners of Montgomery County, Ohio, that execution of Amendment No. 1 to a previously authorized LPA Agreement with the Ohio Department of Transportation for federal funding in connection with the MOT-Social Row Road, Phase 1 Project, Job # 2019-10, PID 113360, for the purposes of revising the federal funding allocations, be and is hereby approved.

BE IT FURTHER RESOLVED that the Clerk of Commission shall return three originals to the County Engineer for final execution by the Ohio Department of Transportation, then certify this Resolution and make an imaged copy of this Resolution available on the Montgomery County, Ohio, website at http://www.mcohio.org.

JBD;ha

RESOLUTION NO: 23-0792
JUNE 13, 2023

CERTIFICATE

Ms. Dodge moved the adoption of the foregoing resolution. It was seconded by Mrs. Rice, and upon call of the roll the following vote resulted:

Ms. Dodge, aye; Mrs. Rice, aye; Mrs. Lieberman, aye: Carried.

I hereby certify that the foregoing is a true and correct copy of a resolution duly adopted by the Board of County Commissioners of Montgomery County, Ohio, on the 13th day of June, 2023.

THE BOARD OF COUNTY COMMISSIONERS HEREBY FINDS AND DETERMINES THAT ALL FORMAL ACTIONS RELATIVE TO THE ADOPTION OF THIS RESOLUTION WERE TAKEN IN AN OPEN MEETING OF THIS BOARD OF COUNTY COMMISSIONERS, AND THAT ALL DELIBERATIONS OF THIS BOARD OF COUNTY COMMISSIONERS, AND OF ITS COMMITTEES, IF ANY WHICH RESULTED IN FORMAL ACTION, WERE TAKEN IN MEETINGS OPEN TO THE PUBLIC, IN FULL COMPLIANCE WITH APPLICABLE LEGAL REQUIREMENTS, INCLUDING SECTION 121.22 OF THE REVISED CODE.

Emily Bradford

Emily Bradford, Clerk
Board of County Commissioners
Montgomery County, Ohio

COMMISSIONERS' OFFICE · MONTGOMERY COUNTY, OHIO ·

MOT – Social Row Road, Phase 1
COUNTY – ROUTE - SECTION

113360
PID NUMBER

34842
AGREEMENT NUMBER

VP74BLN1XAX1
UEI NUMBER

CFDA 20.205

LPA FEDERAL LOCAL-LET PROJECT AGREEMENT - AMENDMENT No. 001

ODOT amends *SECTION 3* and *Attachment 1* to provide clarity regarding the funding sources authorized by ODOT for this PROJECT.

3. FUNDING

3.1 The total cost for the PROJECT is estimated to be $ 600,000.00 as set forth in Attachment 1.

Scope of Work: Project Right-of-Way Acquisition Costs

Funding Sources: FHWA (4TA7) at 65%; not to exceed $390,000

ODOT shall provide to the LPA the above stated percentage of eligible costs, up to the maximums documented above for each scope of PROJECT work. This maximum amount reflects the funding limit for the PROJECT set by the applicable Program Manager. Unless otherwise provided, funds through ODOT shall be applied only to the eligible costs associated with the actual construction of the transportation project improvements and construction engineering/inspection activities.

3.2 The LPA shall provide all other financial resources necessary to fully complete the PROJECT, including all 100 percent Locally-funded work, cost overruns and contractor claims.

The parties hereto have caused this Agreement to be duly executed as of the day and year last written below.

BOARD OF COUNTY COMMISSIONERS OF MONTGOMERY COUNTY, OHIO	**STATE OF OHIO OHIO DEPARTMENT OF TRANSPORTATION**
By:	By: Jack Marchbanks /JD
Title: Deborah A. Lieberman President	Jack Marchbanks Director
By:	Date: 6/27/2023
Title: Carolyn Rice Commissioner	
By:	
Title: Judy Dodge Commissioner	

OR	
By: DocuSigned by: Michael B. Colbert F5E2F67A7E8245D...	
Title: Michael B. Colbert County Administrator Montgomery County, Ohio	
Date: 6/13/2023	
By: DocuSigned by: Nathaniel Peterson 6A574B747ED8439...	
Title: Mathias H. Heck, Jr. Prosecuting Attorney Montgomery County, Ohio	
Date: 6/6/2023	

Attachment 1 **PID:** 113360 **C-R-S:** MOT - Social Row Road Phase 1

PROJECT BUDGET - SOURCES AND USES OF FUNDS

SOURCES	LPA FUNDS			FHWA FUNDS			STATE FUNDS			TOTALS
USES	Amount	%	SAC	Amount	%	SAC	Amount	%	SAC	
PRELIMINARY ENGINEERING - COSTS										**$0**
RIGHT OF WAY - COSTS	$210,000	35%	LNTP	$390,000	65%	4TA7				**$600,000**
PROJECT CONSTRUCTION COSTS										**$0**
CONSTRUCTION ENGINEERING / INSPECTION COSTS										**$0**
TOTALS	**$210,000**		**LNTP**	**$390,000**		**4TA7**				**$600,000**

DocuSign

Certificate Of Completion

Envelope Id: 1C9FE1EE2FB84A4BA76312292E354B5F
Subject: 113360 LPA Agreement Amendment 001 (20230800)
ResolutionID: 20230800
Source Envelope:
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Certificate Pages: 2
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EnvelopeId Stamping: Enabled
Time Zone: (UTC-05:00) Eastern Time (US & Canada)

Signatures: 2
Initials: 0

Status: Completed

Envelope Originator:
Hope Arnett
451 W. Third St.
Dayton, OH 45422
arnetth@mcohio.org
IP Address: 144.121.183.134

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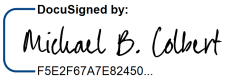
Status: Original
6/6/2023 | 09:37 AM

Holder: Hope Arnett
arnetth@mcohio.org

Location: DocuSign

Signer Events	Signature	Timestamp
Nathaniel Peterson petersonn@mcohio.org Assistant County Prosecutor Montgomery County Security Level: Email, Account Authentication (None) **Electronic Record and Signature Disclosure:** Not Offered via DocuSign	DocuSigned by:  6AD740747ED8430... Signature Adoption: Pre-selected Style Using IP Address: 12.197.122.3	Sent: 6/6/2023 | 09:40 AM Viewed: 6/6/2023 | 10:31 AM Signed: 6/6/2023 | 10:31 AM
Emily Bradford bradforde@mcohio.org Clerk of Commission Montgomery County Signing Group: Clerks Office Security Level: Email, Account Authentication (None) **Electronic Record and Signature Disclosure:** Not Offered via DocuSign	**Completed** Using IP Address: 144.121.183.134	Sent: 6/6/2023 | 10:31 AM Viewed: 6/10/2023 | 02:26 PM Signed: 6/10/2023 | 02:26 PM
Michael B. Colbert colbertm@mcohio.org County Administrator Montgomery County Security Level: Email, Account Authentication (None) **Electronic Record and Signature Disclosure:** Not Offered via DocuSign	DocuSigned by:  F5E2F67A7E82450... Signature Adoption: Pre-selected Style Using IP Address: 144.121.183.134	Sent: 6/10/2023 | 02:26 PM Viewed: 6/13/2023 | 04:27 PM Signed: 6/13/2023 | 04:27 PM
Emily Bradford bradforde@mcohio.org Clerk of Commission Montgomery County Signing Group: Clerks Office Security Level: Email, Account Authentication (None) **Electronic Record and Signature Disclosure:** Not Offered via DocuSign	**Completed** Using IP Address: 12.197.122.3	Sent: 6/13/2023 | 04:27 PM Viewed: 6/13/2023 | 04:32 PM Signed: 6/13/2023 | 04:32 PM

In Person Signer Events	Signature	Timestamp

Editor Delivery Events	Status	Timestamp
Agent Delivery Events	**Status**	**Timestamp**
Intermediary Delivery Events	**Status**	**Timestamp**
Certified Delivery Events	**Status**	**Timestamp**
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Notary Events	**Signature**	**Timestamp**
Envelope Summary Events	**Status**	**Timestamps**
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Envelope Updated	Security Checked	6/9/2023 | 08:34 AM
Certified Delivered	Security Checked	6/13/2023 | 04:32 PM
Signing Complete	Security Checked	6/13/2023 | 04:32 PM
Completed	Security Checked	6/13/2023 | 04:32 PM
Payment Events	**Status**	**Timestamps**

MOT-SOCIAL ROW ROAD (PID# 115191)
MONTGOMERY COUNTY, OHIO

OPINION OF PROBABLE CONSTRUCTION COST

ITEM	ITEM EXTENSION	TOTAL QUANTITY	UNIT	DESCRIPTION	UNIT PRICE	TOTALS
				ROADWAY		
201	11001	1	LUMP	CLEARING AND GRUBBING, AS PER PLAN	$ 58,533.00	$ 58,533.00
202	20010	8	EACH	HEADWALL REMOVED	$ 488.00	$ 3,904.00
202	23000	105	SQ YD	PAVEMENT REMOVED (CONCRETE)	$ 22.00	$ 2,310.00
202	30000	241	SQ FT	WALK REMOVED (CONCRETE)	$ 4.00	$ 964.00
202	32000	179	FT	CURB REMOVED	$ 11.00	$ 1,969.00
202	32500	791	FT	CURB AND GUTTER REMOVED	$ 7.00	$ 5,537.00
202	35100	1262	FT	PIPE REMOVED, 24" AND UNDER	$ 20.00	$ 25,240.00
202	35200	124	FT	PIPE REMOVED, OVER 24"	$ 54.00	$ 6,696.00
202	38000	503	FT	GUARDRAIL REMOVED	$ 5.00	$ 2,515.00
202	58100	11	EACH	CATCH BASIN REMOVED	$ 537.00	$ 5,907.00
202	75000	153	FT	FENCE REMOVED	$ 24.00	$ 3,672.00
203	10000	14640	CU YD	EXCAVATION	$ 16.00	$ 234,240.00
203	20000	5404	CU YD	EMBANKMENT	$ 14.00	$ 75,656.00
204	10000	49880	SQ YD	SUBGRADE COMPACTION	$ 1.00	$ 49,880.00
204	13000	4557	CY	EXCAVATION OF SUBGRADE	$ 22.00	$ 100,254.00
204	30010	4677	CY	GRANULAR MATERIAL, TYPE B	$ 42.00	$ 196,434.00
204	45000	22	HOUR	PROOF ROLLING	$ 244.00	$ 5,368.00
204	50000	13713	SQ YD	GEOTEXTILE FABRIC	$ 1.00	$ 13,713.00
206	10500	423	TON	CEMENT	$ 161.00	$ 68,103.00
206	11000	16317	SQ YD	CURING COAT	$ 1.00	$ 16,317.00
206	15010	16317	SQ YD	CEMENT STABILIZED SUBGRADE, 12 INCHES DEEP	$ 5.00	$ 81,585.00
606	13000	12.5	FT	GUARDRAIL, TYPE 5	$ 34.00	$ 425.00
606	26100	1	EACH	ANCHOR ASSEMBLY, TYPE E	$ 2,927.00	$ 2,927.00
606	98200	1	LUMP	GUARDRAIL, MISC.: CONCRETE ANCHOR REMOVED	$ 488.00	$ 488.00
607	98000	110	FT	FENCE, MISC.: SPLIT RAIL WOOD FENCE	$ 39.00	$ 4,290.00
607	98000	226	FT	FENCE, MISC.: SPLIT RAIL WOOD FENCE REMOVED & REPLACED	$ 44.00	$ 9,944.00
607	98000	846	FT	FENCE, MISC.: SPLIT RAIL VINYL FENCE REMOVED & REPLACED	$ 44.00	$ 37,224.00
608	10000	7824	SQ FT	4" CONCRETE WALK	$ 8.00	$ 62,592.00
608	52000	2341	SQ FT	CURB RAMP	$ 16.00	$ 37,456.00
608	98000	7484	SQ FT	WALKWAY, MISC.: 6" STAMPED CONCRETE WALK	$ 20.00	$ 149,680.00
623	38500	4	EACH	MONUMENT ASSEMBLY, TYPE C	$ 1,073.00	$ 4,292.00
623	40520	20	EACH	RIGHT-OF-WAY MONUMENT, TYPE B	$ 220.00	$ 4,400.00
690	50100	6	EACH	SPECIAL - MAILBOX SUPPORT SYSTEM, SINGLE	$ 195.00	$ 1,170.00
					TOTAL	**$ 1,273,685.00**
				EROSION CONTROL		
601	20010	14	CU YD	CRUSHED AGGREGATE SLOPE PROTECTION	$ 127.00	$ 1,778.00
601	32204	6	CU YD	ROCK CHANNEL PROTECTION, TYPE C WITH GEOTEXTILE FABRIC	$ 254.00	$ 1,524.00
602	20000	0.08	CU YD	CONCRETE MASONRY	$ 2,439.00	$ 195.12
659	00300	2031	CU YD	TOPSOIL	$ 24.00	$ 48,744.00
659	00301	632	CU YD	TOPSOIL, AS PER PLAN	$ 24.00	$ 15,168.00
659	00500	22066	SQ YD	SEEDING AND MULCHING, CLASS 1	$ 1.00	$ 22,066.00
659	14000	1103	SQ YD	REPAIR SEEDING AND MULCHING	$ 1.00	$ 1,103.00
659	15000	1103	SQ YD	INTER-SEEDING	$ 1.00	$ 1,103.00
659	20000	3.08	TON	COMMERCIAL FERTILIZER	$ 732.00	$ 2,254.56
659	31000	4.55	ACRE	LIME	$ 29.00	$ 131.95
659	35000	120	M GAL	WATER	$ 3.00	$ 360.00
832	15000	1	LUMP	STORM WATER POLLUTION PREVENTION PLAN	$ 2,439.00	$ 2,439.00
832	15002	1	LUMP	STORM WATER POLLUTION PREVENTION INSPECTIONS	$ 7,317.00	$ 7,317.00
832	15010	1	LUMP	STORM WATER POLLUTION PREVENTION INSPECTION SOFTWARE	$ 12,682.00	$ 12,682.00
832	30000	95000	EACH	EROSION CONTROL	$ 1.00	$ 95,000.00
					TOTAL	**$ 211,865.63**

MOT-SOCIAL ROW ROAD (PID# 115191)
MONTGOMERY COUNTY, OHIO

OPINION OF PROBABLE CONSTRUCTION COST

ITEM	ITEM EXTENSION	TOTAL QUANTITY	UNIT	DESCRIPTION	UNIT PRICE	TOTALS
				DRAINAGE		
602	20000	0.9	CU YD	CONCRETE MASONRY	$ 2,439.00	$ 2,195.10
605	14020	7988	FT	6" BASE PIPE UNDERDRAINS WITH GEOTEXTILE FABRIC	$ 14.00	$ 111,832.00
611	00400	211	FT	4" CONDUIT, TYPE E, 707.32	$ 15.00	$ 3,165.00
611	00510	717	FT	6" CONDUIT, TYPE F FOR UNDERDRAIN OUTLETS	$ 25.00	$ 17,925.00
611	01400	200	FT	6" CONDUIT, TYPE E, 707.32	$ 20.00	$ 4,000.00
611	01800	15	FT	8" CONDUIT, TYPE B	$ 49.00	$ 735.00
611	02000	60	FT	8" CONDUIT, TYPE C	$ 39.00	$ 2,340.00
611	04400	3494	FT	12" CONDUIT, TYPE B	$ 78.00	$ 272,532.00
611	04400	357	FT	12" CONDUIT, TYPE B (706.02)	$ 83.00	$ 29,631.00
611	04600	85	FT	12" CONDUIT, TYPE C	$ 73.00	$ 6,205.00
611	05900	782	FT	15" CONDUIT, TYPE B	$ 83.00	$ 64,906.00
611	05900	163	FT	15" CONDUIT, TYPE B (706.02)	$ 93.00	$ 15,159.00
611	07400	635	FT	18" CONDUIT, TYPE B	$ 88.00	$ 55,880.00
611	07400	106	FT	18" CONDUIT, TYPE B (706.02)	$ 98.00	$ 10,388.00
611	08900	469	FT	21" CONDUIT, TYPE B	$ 107.00	$ 50,183.00
611	11900	657	FT	27" CONDUIT, TYPE B	$ 122.00	$ 80,154.00
611	12100	495	FT	27" CONDUIT, TYPE C	$ 107.00	$ 52,965.00
611	98150	8	EACH	CATCH BASIN, NO. 3	$ 3,658.00	$ 29,264.00
611	98151	3	EACH	CATCH BASIN, NO. 3, AS PER PLAN	$ 3,902.00	$ 11,706.00
611	98180	42	EACH	CATCH BASIN, NO. 3A	$ 3,024.00	$ 127,008.00
611	98181	6	EACH	CATCH BASIN, NO. 3A, AS PER PLAN	$ 3,171.00	$ 19,026.00
611	98390	3	EACH	CATCH BASIN, NO. 7	$ 2,439.00	$ 7,317.00
611	98470	10	EACH	CATCH BASIN, NO. 2-2B	$ 2,195.00	$ 21,950.00
611	98690	1	EACH	CATCH BASIN ADJUSTED TO GRADE	$ 829.00	$ 829.00
611	98634	1	EACH	CATCH BASIN RECONSTRUCTED TO GRADE	$ 1,658.00	$ 1,658.00
611	98690	11	EACH	CATCH BASIN, MISC.: CATCH BASIN, NO. 3 MODIFIED, AS PER PLAN	$ 5,853.00	$ 64,383.00
611	99574	8	EACH	MANHOLE, NO. 3	$ 4,634.00	$ 37,072.00
611	99584	1	EACH	MANHOLE, NO. 3 WITH 96" BASE I.D. AND 9" WEIR	$ 10,243.00	$ 10,243.00
611	99710	1	EACH	PRECAST REINFORCED CONCRETE OUTLET	$ 317.00	$ 317.00
895	10030	1	EACH	MANUFACTURED WATER QUALITY STRUCTURE, TYPE 3	$ 29,267.00	$ 29,267.00
					TOTAL	**$ 1,140,235.10**
				PAVEMENT		
254	01000	7934	SQ YD	PAVEMENT PLANING, ASPHALT CONCRETE (VARIABLE DEPTH)	$ 5.00	$ 39,670.00
301	56000	6177	CU YD	ASPHALT CONCRETE BASE, PG64-22, (449)	$ 132.00	$ 815,364.00
304	20000	6365	CU YD	AGGREGATE BASE	$ 54.00	$ 343,710.00
407	20000	5807	GALLON	NON-TRACKING TACK COAT	$ 4.00	$ 23,228.00
441	70000	1418	CU YD	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (449), PG64-22	$ 224.00	$ 317,632.00
441	70200	6	CU YD	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 1, (449)	$ 463.00	$ 2,778.00
441	70300	1348	CU YD	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (449)	$ 185.00	$ 249,380.00
441	70500	22	CU YD	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (449), (DRIVEWAYS)	$ 488.00	$ 10,736.00
441	70700	9	CU YD	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (449), (DRIVEWAYS)	$ 610.00	$ 5,490.00
452	10050	266	SQ YD	6" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC MS	$ 68.00	$ 18,088.00
452	12050	61	SQ YD	8" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC MS	$ 84.00	$ 5,124.00
609	12000	7200	FT	COMBINATION CURB AND GUTTER, TYPE 2	$ 24.00	$ 172,800.00
609	12001	1492	FT	COMBINATION CURB AND GUTTER, MCE TYPE 2, AS PER PLAN	$ 24.00	$ 35,808.00
609	26000	175	FT	CURB, TYPE 6	$ 41.00	$ 7,175.00
					TOTAL	**$ 2,046,983.00**

MOT-SOCIAL ROW ROAD (PID# 115191)
MONTGOMERY COUNTY, OHIO

OPINION OF PROBABLE CONSTRUCTION COST

ITEM	ITEM EXTENSION	TOTAL QUANTITY	UNIT	DESCRIPTION	UNIT PRICE	TOTALS
				WATER WORK		
202	34900	260	FT	PIPE REMOVED (WATER MAIN & HYDRANT BRANCHES ONLY)	$ 20.00	$ 5,200.00
202	75610	2	EACH	VALVE BOX REMOVED	$ 180.00	$ 360.00
638	00704	23	FT	6" WATER MAIN DUCTILE IRON PIPE ANSI CLASS 53, MECHANICAL JOINTS AND FITTINGS	$ 244.00	$ 5,612.00
638	04900	34	FT	1" COPPER SERVICE BRANCH	$ 49.00	$ 1,666.00
638	07800	1	EACH	6" GATE VALVE AND VALVE BOX	$ 1,415.00	$ 1,415.00
638	08650	1	EACH	16" INSERTING VALVE AND VALVE BOX	$ 29,267.00	$ 29,267.00
638	10200	5	EACH	6" FIRE HYDRANT	$ 6,244.00	$ 31,220.00
638	10400	1	EACH	FIRE HYDRANT ADJUSTED TO GRADE	$ 1,366.00	$ 1,366.00
638	10700	5	EACH	FIRE HYDRANT REMOVED AND DISPOSED OF TO MCES	$ 976.00	$ 4,880.00
638	10800	13	EACH	VALVE BOX ADJUSTED TO GRADE	$ 415.00	$ 5,395.00
638	10900	2	EACH	SERVICE BOX ADJUSTED TO GRADE	$ 366.00	$ 732.00
638	11100	5	EACH	METER AND CHAMBER REMOVED AND RESET	$ 1,707.00	$ 8,535.00
638	98000	1	EACH	WATER WORK, MISC.: 1" CORPORATION STOP AND TAP	$ 512.00	$ 512.00
638	98000	2	EACH	WATER WORK, MISC.: 1" CURB STOP AND BOX	$ 488.00	$ 976.00
638	98000	3	EACH	WATER WORK, MISC.: COUPLE NEW SERVICE TO EXISTING SERVICE	$ 341.00	$ 1,023.00
638	98000	1	EACH	WATER WORK, MISC.: 24" X 6" TAPPING SLEEVE, VALVE AND VALVE BOX (CONCRETE WATER MAIN)	$ 19,511.00	$ 19,511.00
638	98100	1	LUMP	WATER WORK, MISC.: WATER WORK PERMITS	$ 6,341.00	$ 6,341.00
638	98100	1	LUMP	WATER WORK, MISC.: EXISTING IRRIGATION RELOCATION	$ 29,267.00	$ 29,267.00
638	98600	39	FT	WATER WORK, MISC.: FURNISH & INSTALL 6" DUCTILE IRON POLYWRAPPED ANCHORING PIPE AND FITTINGS	$ 176.00	$ 6,864.00
638	98600	210	FT	WATER WORK, MISC.: FURNISH & INSTALL 16" DUCTILE IRON POLYWRAPPED PIPE, CLASS 53, RESTRAINED JOINTS AND FITTINGS	$ 244.00	$ 51,240.00
					TOTAL	**$ 211,382.00**
				LIGHTING		
625		16	EACH	LIGHT POLE, DECORATIVE, AS PER PLAN	$ 3,873.00	$ 61,968.00
625		16	EACH	LIGHT POLE FOUNDATION, 24" X 6' DEEP	$ 1,658.00	$ 26,528.00
625		850	FT	NO. 10 AWG POLE AND BRACKET CABLE	$ 3.00	$ 2,550.00
625		1260	FT	NO. 4 AWG 600 VOLT DISTRIBUTION CABLE	$ 3.00	$ 3,780.00
625		24	EACH	CONNECTION, FUSED PULL APART	$ 112.00	$ 2,688.00
625		24	EACH	CONNECTION, UNFUSED PERMANENT	$ 112.00	$ 2,688.00
625		2	EACH	PULL BOX, 725.08, 18"	$ 1,049.00	$ 2,098.00
625		500	FT	CONDUIT, 2", 725.051, AS PER PLAN	$ 10.00	$ 5,000.00
625		660	FT	CONDUIT, 2", JACKED OR DRILLED, 725.051	$ 44.00	$ 29,040.00
625		16	EACH	LUMINAIRE, DECORATIVE, AS PER PLAN	$ 1,541.00	$ 24,656.00
625		16	EACH	GROUND ROD	$ 293.00	$ 4,688.00
625		8	EACH	LUMINAIRE, CONVENTIONAL, SOLID STATE (LED)	$ 561.00	$ 4,488.00
625		8	EACH	BRACKET ARM, 20'	$ 1,268.00	$ 10,144.00
					TOTAL	**$ 180,316.00**
				TRAFFIC CONTROL		
621	00100	275	EACH	RPM	$ 60.00	$ 16,500.00
621	54000	185	EACH	RAISED PAVEMENT MARKER REMOVED	$ 15.00	$ 2,775.00
630	03100	278	FT	GROUND MOUNTED SUPPORT, NO. 3 POST	$ 15.00	$ 4,170.00
630	80100	145	SQ FT	SIGN, FLAT SHEET	$ 25.00	$ 3,625.00
630	84900	40	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	$ 23.00	$ 920.00
630	86002	40	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	$ 25.00	$ 1,000.00
630	87500	4	EACH	REMOVAL OF POLE MOUNTED SIGN AND DISPOSAL	$ 31.00	$ 124.00
644	00100	1.22	MILE	EDGE LINE, 4"	$ 4,292.00	$ 5,236.24
644	00200	1.82	MILE	LANE LINE, 4"	$ 1,951.00	$ 3,550.82
644	00300	2.07	MILE	CENTER LINE	$ 5,951.00	$ 12,318.57
644	00400	1818	FT	CHANNELIZING LINE, 8"	$ 2.00	$ 3,636.00
644	00500	266	FT	STOP LINE	$ 9.00	$ 2,394.00
644	00620	1097	FT	CROSSWALK LINE, 12"	$ 5.00	$ 5,485.00
644	01300	36	EACH	LANE ARROW	$ 107.00	$ 3,852.00
644	01350	2	EACH	LANE REDUCTION ARROW	$ 268.00	$ 536.00
644	01500	1131	FT	DOTTED LINE, 4"	$ 1.00	$ 1,131.00
644	30000	242	FT	REMOVAL OF PAVEMENT MARKING	$ 7.00	$ 1,694.00
644	30020	6	EACH	REMOVAL OF PAVEMENT MARKING	$ 171.00	$ 1,026.00
644	30030	0.98	MILE	REMOVAL OF PAVEMENT MARKING	$ 4,000.00	$ 3,920.00
					TOTAL	**$ 73,893.63**

MOT-SOCIAL ROW ROAD (PID# 115191)
MONTGOMERY COUNTY, OHIO

OPINION OF PROBABLE CONSTRUCTION COST

ITEM	ITEM EXTENSION	TOTAL QUANTITY	UNIT	DESCRIPTION	UNIT PRICE	TOTALS
				TRAFFIC SIGNALS		
625		250	FT	CONDUIT, 2", 725.051	$ 10.00	$ 2,500.00
625		60	FT	CONDUIT, 3", 725.051	$ 14.00	$ 840.00
625		660	FT	CONDUIT, 3", JACKED OR DRILLED, 725.051	$ 41.00	$ 27,060.00
625		6	EACH	PULL BOX, 725.08, 18"	$ 1,049.00	$ 6,294.00
625		2	EACH	PULL BOX, 725.08, 24"	$ 1,268.00	$ 2,536.00
625		310	FT	TRENCH	$ 13.00	$ 4,030.00
625		18	EACH	GROUND ROD	$ 293.00	$ 5,274.00
625		40	FT	CONDUIT, 2", 725.04 (POWER CABLE)	$ 29.00	$ 1,160.00
625		2	EACH	POWER SERVICE	$ 4,390.00	$ 8,780.00
630		62	SQ FT	SIGN, FLAT SHEET	$ 34.00	$ 2,108.00
630		16	EACH	SIGN, STREET NAME	$ 341.00	$ 5,456.00
630		24	EACH	SIGN HANGER ASSEMBLY, MAST ARM, AS PER PLAN	$ 390.00	$ 9,360.00
632		2400	FT	SIGNAL CABLE, 5 CONDUCTOR, NO. 14 AWG	$ 3.00	$ 7,200.00
632		1860	FT	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG	$ 3.00	$ 5,580.00
632		2240	FT	LOOP DETECTOR LEAD-IN CABLE	$ 2.00	$ 4,480.00
632		8	EACH	VEHICULAR SIGNAL HEAD, (LED), 3-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, WITH BACKPLATE	$ 868.00	$ 6,944.00
632		12	EACH	VEHICULAR SIGNAL HEAD, (LED), 5-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, WITH BACKPLATE	$ 1,449.00	$ 17,388.00
632		16	EACH	PEDESTRIAN SIGNAL HEAD (LED), TYPE D2, COUNTDOWN	$ 585.00	$ 9,360.00
632		16	EACH	ACCESSIBLE PEDESTRIAN PUSHBUTTON	$ 873.00	$ 13,968.00
632		8	EACH	PEDESTAL FOUNDATION	$ 1,190.00	$ 9,520.00
632		210	FT	SERVICE CABLE, 3 CONDUCTOR, NO. 6 AWG	$ 6.00	$ 1,260.00
632		70	FT	POWER CABLE, 3 CONDUCTOR, NO. 8 AWG	$ 5.00	$ 350.00
632		2	EACH	CONDUIT RISER, 2" DIAMETER (POWER SERVICE)	$ 780.00	$ 1,560.00
632		8	EACH	PEDESTAL, 8'; TRANSFORMER BASE	$ 1,008.00	$ 8,064.00
632		6	EACH	COMBINATION SIGNAL SUPPORT, TYPE TC-81.22 DESIGN 13	$ 23,706.00	$ 142,236.00
632		2	EACH	SIGNAL SUPPORT, TYPE TC-81.22 DESIGN 13	$ 23,706.00	$ 47,412.00
632		8	EACH	SIGNAL SUPPORT FOUNDATION	$ 6,341.00	$ 50,728.00
633		2	EACH	GPS (GLOBAL POSITIONING SYSTEM) CLOCK ASSEMBLY	$ 1,098.00	$ 2,196.00
633		2	EACH	CABINET, TYPE TS-2	$ 12,194.00	$ 24,388.00
633		2	EACH	CABINET FOUNDATION	$ 2,439.00	$ 4,878.00
633		2	EACH	CONTROLLER WORK PAD	$ 951.00	$ 1,902.00
633		2	EACH	UNINTERRUPTIBLE POWER SUPPLY (UPS), 1000 WATT	$ 6,487.00	$ 12,974.00
809		8	EACH	STOP LINE RADAR DETECTION	$ 7,804.00	$ 62,432.00
809		6	EACH	ADVANCED DETECTION RADAR	$ 7,804.00	$ 46,824.00
809		2	EACH	ATC CONTROLLER	$ 4,780.00	$ 9,560.00
					TOTAL	**$ 566,602.00**
				LANDSCAPING		
661	00501	90	CU YD	2" (MIN.) DOUBLE SHREDDED HARDWOOD MULCH	$ 29.00	$ 2,610.00
653	10001	540	CU YD	18" BACKFILL MIX	$ 39.00	$ 21,060.00
661	14001	182	EACH	PERENNIAL, 1 GALLON	$ 21.00	$ 3,822.00
661	14001	752	EACH	ORNAMENTAL GRASS, 1 GALLON	$ 21.00	$ 15,792.00
661	14001	240	EACH	ORNAMENTAL GRASS, 2 GALLON	$ 24.00	$ 5,760.00
661	20021	146	EACH	DECIDUOUS SHRUB, 5 GALLON	$ 78.00	$ 11,388.00
661	20021	148	EACH	EVERGREEN SHRUB, 2 GALLON	$ 73.00	$ 10,804.00
661	99900	14	EACH	ORNAMENTAL TREE, 2.5 CAL. 6-8' HGT. MULTI-STEM	$ 732.00	$ 10,248.00
					TOTAL	**$ 81,484.00**

MOT-SOCIAL ROW ROAD (PID# 115191)
MONTGOMERY COUNTY, OHIO

OPINION OF PROBABLE CONSTRUCTION COST

ITEM	ITEM EXTENSION	TOTAL QUANTITY	UNIT	DESCRIPTION	UNIT PRICE	TOTALS
				BUILDING DEMOLITION		
202	56001	1	LUMP	BUILDING DEMOLISHED, AS PER PLAN	$ 48,778.00	$ 48,778.00
202	62700	1	EACH	SEPTIC TANK REMOVED	$ 4,878.00	$ 4,878.00
202	66000	1	EACH	SPECIAL - DRILLED WATER WELL ABANDONED	$ 2,195.00	$ 2,195.00
					TOTAL	**$ 55,851.00**
				MAINTENANCE OF TRAFFIC		
410	14001	700	CU YD	TRAFFIC COMPACTED SURFACE, AS PER PLAN	$ 55.00	$ 38,500.00
614	11110	256	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE	$ 84.00	$ 21,504.00
614	20100	0.12	MILE	WORK ZONE LANE LINE, CLASS I, 4", 642 PAINT	$ 1,707.00	$ 204.84
614	20550	1.64	MILE	WORK ZONE LANE LINE, CLASS III, 4", 642 PAINT	$ 610.00	$ 1,000.40
614	21100	2.94	MILE	WORK ZONE CENTER LINE, CLASS I, 642 PAINT	$ 2,049.00	$ 6,024.06
614	21200	0.26	MILE	WORK ZONE CENTER LINE, CLASS I, 740.06, TYPE I	$ 14,633.00	$ 3,804.58
614	21550	1.94	MILE	WORK ZONE CENTER LINE, CLASS III, 642 PAINT	$ 1,707.00	$ 3,311.58
614	22100	4.64	MILE	WORK ZONE EDGE LINE, CLASS I, 4", 642 PAINT	$ 1,512.00	$ 7,015.68
614	22200	0.2	MILE	WORK ZONE EDGE LINE, CLASS I, 4", 740.06, TYPE I	$ 8,780.00	$ 1,756.00
614	22350	0.64	MILE	WORK ZONE EDGE LINE, CLASS III, 4", 642 PAINT	$ 1,171.00	$ 749.44
614	23200	488	FT	WORK ZONE CHANNELIZING LINE, CLASS I, 8", 642 PAINT	$ 1.00	$ 488.00
614	23400	400	FT	WORK ZONE CHANNELIZING LINE, CLASS I, 8", 740.06, TYPE I	$ 3.00	$ 1,200.00
614	23680	1450	FT	WORK ZONE CHANNELIZING LINE, CLASS III, 8", 642 PAINT	$ 1.00	$ 1,450.00
614	26200	154	FT	WORK ZONE STOP LINE, CLASS I, 642 PAINT	$ 7.00	$ 1,078.00
614	26610	244	FT	WORK ZONE STOP LINE, CLASS III, 642 PAINT	$ 4.00	$ 976.00
614	27050	220	FT	WORK ZONE CROSSWALK LINE, CLASS I, 12", 642 PAINT	$ 2.00	$ 440.00
614	27250	956	FT	WORK ZONE CROSSWALK LINE, CLASS III, 12", 642 PAINT	$ 2.00	$ 1,912.00
614	30200	6	EACH	WORK ZONE ARROW, CLASS I, 642 PAINT	$ 63.00	$ 378.00
614	30400	6	EACH	WORK ZONE ARROW, CLASS I, 740.06, TYPE I	$ 220.00	$ 1,320.00
614	30650	32	EACH	WORK ZONE ARROW, CLASS III, 642 PAINT	$ 54.00	$ 1,728.00
615	10001	1	LUMP	ROADS FOR MAINTAINING TRAFFIC, AS PER PLAN	$ 156,089.00	$ 156,089.00
615	25001	7610	SQ YD	PAVEMENT FOR MAINTAINING TRAFFIC, CLASS B, AS PER PLAN	$ 37.00	$ 281,570.00
616	10000	90	M GAL	WATER	$ 21.00	$ 1,890.00
					TOTAL	**$ 534,389.58**
				INCIDENTALS		
614	11000	1	LUMP	MAINTAINING TRAFFIC	$ 369,669.06	$ 369,669.06
623	10000	1	LUMP	CONSTRUCTION LAYOUT STAKES AND SURVEYING	$ 58,533.00	$ 58,533.00
624	10000	1	LUMP	MOBILIZATION	$ 195,111.00	$ 195,111.00
					TOTAL	**$ 623,313.06**

SUB-TOTAL	$ 7,000,000.00
10% CONTINGINCY	$ 700,000.00
TOTAL ESTIMATED CONSTRUCTION COST	**$ 7,700,000.00**

CERTIFICATION

I hereby certify the above estimate to be realistic based on the level of detail currently available for

Joseph B. Dura
Ohio Engineer's License #72661

8/1/2023
Date

STATE OF OHIO
JOSEPH B DURA
E-72661
REGISTERED
PROFESSIONAL ENGINEER

MOT-Social Row Road, PID 115191, Job #2020-17

A weighted useful life statement stamped/sealed and signed by a licensed professional engineer must be included with the project application.

This spreadsheet has formulas to make a weighted useful life calculation and is populated with an example for illustrative purposes. Items can be added to column a.

Weighted Useful Life & Design Service Capacity Calculations

Major Component	Cost ($1,000)	Portion Repair / Replacement (%)	Repair / Replace Product	Useful Life (Years)	Useful Life Product
Full-depth road construction w/ drainage	5398.6549	100	539865.5	25	134966.4
Full-depth road construction w/o drainage				25	
Partial-depth road construction w/ drainage				15	
Partial-depth road construction w/o drainage				15	
Storm Sewers	1140.2351	100	114023.5	40	45609.4
Sanitary Sewers				40	
Water Lines	211.382	100	21138.2	40	8455.28
Bridge				75	
Pumps, Lift Stations				15	
Sidewalks	249.728	100	24972.8	25	6243.2
Bike Facility				7	
Totals	7000		700000		195274.3

Weighted Useful Life: 27.9 Years

Design Service Capacity (Project Application, Section 2.0):

Portion Repair / Replace	100 %
Portion New / Expansion	%

USEFUL LIFE CERTIFICATION

I hereby certify that this project has an expected useful life of normal usage in this specific situation; in evidence, whereof, I have set my signature and seal as of this date.

Joseph B. Dura

Joseph B. Dura, P.E.
Ohio Engineer's License #72661

8/1/2023
Date

OHIO PUBLIC WORKS COMMISSION
DISTRICT 4
FY25 Supplemental Questionnaire

Applicant: Montgomery County

Project Title: MOT-Social Row Road

Application Summary:

Briefly describe the project:

To improve capacity and safety at the intersections of Social Row Road & Paragon Road and Social Row Road & Sheehan Road, this project will reconstruct roughly 4,650 feet of Social Row Road from two existing lanes with narrow shoulders to a five-lane curb & gutter section with a sidewalk and shared-use path. Left turn lanes will be constructed for all approaches at both said intersections. The overall length of the project is dictated by the need to develop the 5-lane section along Social Row Road per ODOT L&D Vol 1, Section 4, figure 402-1, to achieve the needed capacity and safety improvements, and provide adequate left turn lane storage per L&D Vol 1, Section 4, figures 401-9 and 401-10. In addition, the project will include new closed storm drainage, post construction storm water treatment, and landscaping. Finally, the existing traffic signal at the intersection of Social Row Road and Sheehan Road will be reconstructed, while a new traffic signal will be installed at the intersection of Social Row Road and Paragon Road.

Priority:

Is this application your priority project? (Circle One)	
Yes ◉	No ○

Generation of Revenue:

Will new user fees or assessments be assessed as part of this project? (Circle One)	
Yes ○	No ◉
What will the new user fees or assessments be used for?	
N/A	

Additional Funding:

Will OPWC match, in part, a committed grant or loan? (Circle One)	
Yes ◉	No ○
If no, was the project submitted to an appropriate agency for funding, but denied due to lack of funding? (Circle One)	
Yes – Appropriate Documentation Attached ◉	No ○

Readiness of Project:

Will this project be <u>substantially</u> underway on or before June 1, 2025? (Circle One)	
Yes ◉	No ○

Health & Safety:

Describe the specific health or safety issue being addressed by this project. What deficiency or condition is causing the health or safety issue?
This project involves the reconstruction and widening of the intersections of Social Row Road & Paragon Road and Social Row Road & Sheehan Road. Both said intersections, which are only 1,200 feet apart, experience capacity problems. The intersection of Social Row Road and Paragon Road operates at a LOS of F while the intersection of Social Row Road and Sheehan Road operates at a LOS D. Without widening Social Row Road to 5-lanes and providing dedicated left turn lanes for all approaches at both said intersections, the LOS for both said intersections will be a LOS F by the 2045 design year. Please see section 4.0, Analysis of Key Issues in the attached project Feasibility Study which summarizes the findings in the project's Traffic Engineering Assessment Report. Said Traffic Engineering Assessment Report is provided within said Feasibility Study as an Appendix. Should the OPWC District 4 Integrating Committee request, the entire 408 page Feasibility study, which includes the full Traffic Engineering Assessment Report, it can be provided. In addition, as seen on the County's High Crash locations list, see attached, the intersection of Social Row Road and Paragon Road does experience an excessive accident rate. The proposed improvements are tested counter measures for the angle crashes occurring at the intersection of Social Row Road & Paragon Road. See also attached Collision Diagram & summary.

Addresses District Infrastructure Needs:

Is this project located in more than one community? (Circle One)		
Yes ◉	No ○	
What percentage of the community will be served by this project? (Circle One)		
Less than 25% ◉	25% to 40% ○	More than 40% ○

Economic Development

How many jobs are being created as a result of this project?	N/A
How many jobs will be retained as a result of this project?	N/A
Why is it necessary to fund this improvement to secure this development?	
N/A	
What type of industry is proposed in this development?	
N/A	

Relieve Existing Traffic Congestion:

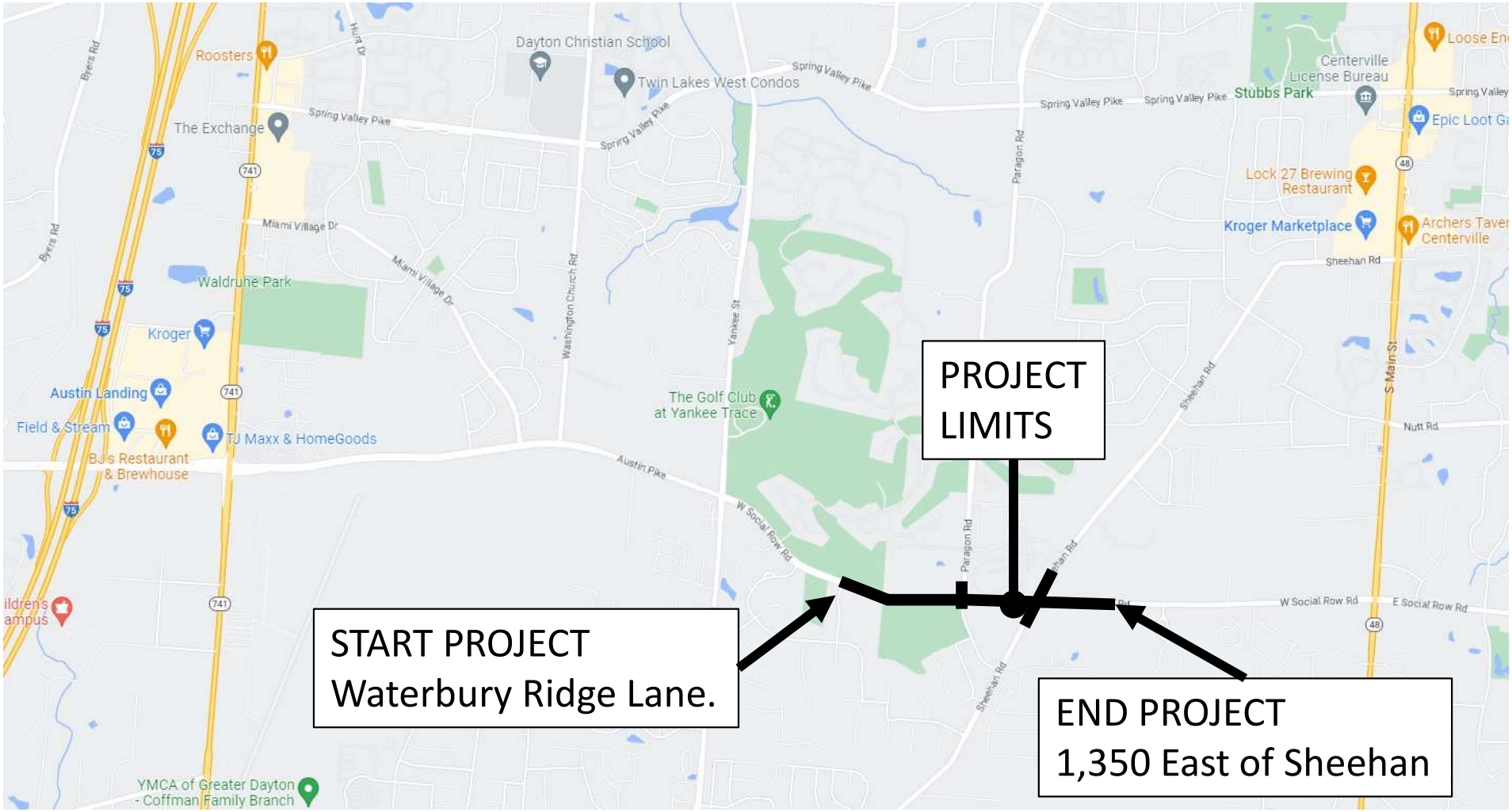
What is the level of service?	F and D. See Feasibility Study attached

Other Factors

What other factors exist that make this project more important than other like projects?
None

MOT-SOCIAL ROW ROAD
Washington Township & City of Centerville
Project Location Map

N



MOT-Social Row Road, PID 115191

Left: Looking west along Social Row Road from Paragon Road.

Right: Looking east along Social Row Road from Paragon Road.

MOT-Social Row Road, PID 115191

Left: Looking west along Social Row Road from Sheehan Road

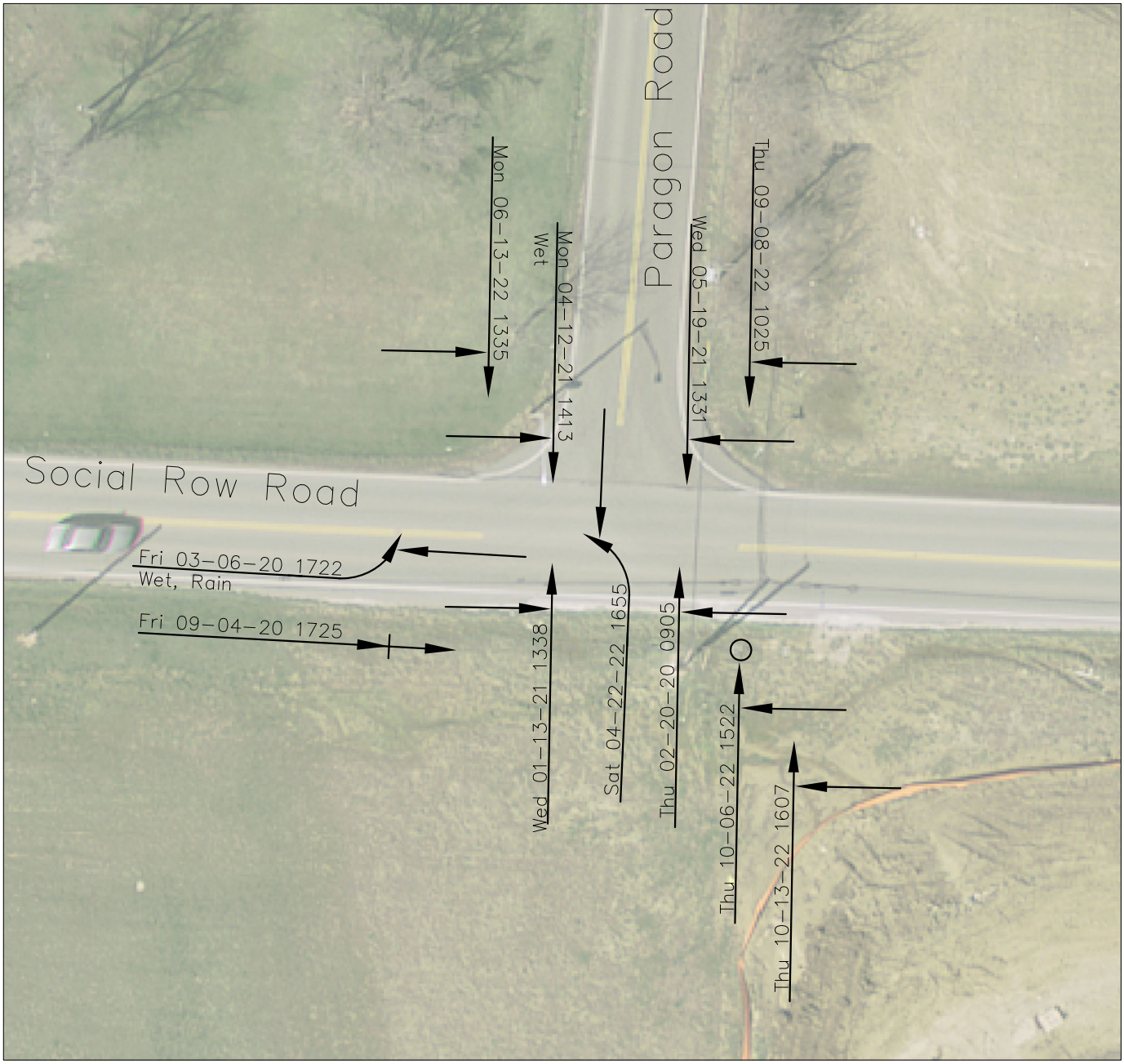
Right: Looking east along Social Row Road from Sheehan Road

Collision Diagram

Intersection Paragon Road and Social Row Road

Period 3 years From January 1, 2020 To December 31,2022

By KRL Date February 01, 2023



Symbols	Types of Collisions	Show For Each Accident
Moving Vehicle	Rear End	1. Day. Date and Time.
Backing Vehicle	Head On	2. Weather and Road Surface - if Unusual Condition Existed.
Non-involved Vehicle	Side Swipe	3. Night - if Between Dusk and Dawn.
Pedestrian	Out of Control	
Parked Vehicle	Left Turn	
Fixed Object	Right Angle	
Fatal Accident		
Injury Accident		

Summary of Major Accident Types

Location: Paragon Road & Social Row Road **County:** Montgomery County

Log Point: 0026 - 0849 **By:** KRL **Date:** 2/1/2023

Time Period: 1/1/2020 **To:** 12/31/2022

	Time		*Pavement*			*Type Crash*						*Circumstance*		*Total Accidents*			
Year	Day	Night	Dry	Wet	Snow or Ice	Angle	Head On	Rear End	Side Swipe	Fixed Object	Other	TCD	HBD	Property Damage	Injury	Fatal	Total
2020	3	0	2	1	0	2	0	1	0	0	0	0	0	3	0	0	3
2021	3	0	2	1	0	3	0	0	0	0	0	0	0	3	0	0	3
2022	5	0	5	0	0	5	0	0	0	0	0	0	0	4	1	0	5
Total	**11**	**0**	**9**	**2**	**0**	**10**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**10**	**1**	**0**	**11**
%	**100%**	**0%**	**82%**	**18%**	**0%**	**91%**	**0%**	**9%**	**0%**	**0%**	**0%**	**0%**	**0%**	**91%**	**9%**	**0%**	

2020-2022 Intersection Crash Locations by Rate

Street Name #1	Route Number		Street Name #2	Route Number		Intersection Average Daily Traffic	2020	2021	2022	Total	Trend	Rate Acc/M Veh	Signal Y/N
Meeker Road	TR	28	Frederick Pike	CR	165	1800	7	2	1	10	0.60	5.07	U
Dog Leg Road	CR	24	Meeker Road	TR	28	4700	6	2	6	14	0.43	2.72	U
Siebenthaler Avenue	CR	32	Catalpa Drive	CR	69	15500	12	18	9	39	1.38	2.30	S
Wolf Road	CR	53	Turner Road	CR	74	14700	10	14	9	33	1.27	2.05	S
Needmore Road	CR	74	North Dixie Drive	CR	99	44000	26	26	22	74	1.05	1.54	S
Peters Pike	CR	159	Little York Road	CR	228	8700	6	4	3	13	0.92	1.36	S
Turner Road	CR	74	Philadelphia Drive	CR	159	27100	9	12	18	39	0.92	1.31	S
Byers Road	TR	147	Lyons Road	CR	150	29400	15	10	10	35	0.86	1.09	S
Gettysburg Avenue	CR	53A	Salem Avenue	CR	249	18300	7	10	4	21	1.43	1.05	S
Siebenthaler Avenue	CR	32	Salem Avenue	CR	249	27700	5	16	10	31	1.55	1.02	S
Alex-Bell Pike	CR	78	Mad River Road	CR	79	17900	9	9	2	20	1.35	1.02	U
Benchwood Road	TR	68	Miller Lane	TR	1723	31100	11	11	9	31	1.06	0.91	S
Byers Road	TR	147	Benner Road	TR	154	11100	5	3	3	11	0.82	0.91	U
Shoup Mill Road	CR	74	Riverside Drive	CR	539	32700	11	10	11	32	0.94	0.89	S
Siebenthaler Avenue	CR	32	Klepinger Road	TR	133	22700	11	6	4	21	0.86	0.84	S
Siebenthaler Avenue	CR	32	North Dixie Drive	CR	99	25200	6	7	9	22	0.95	0.80	S
Benchwood Road	TR	68	North Dixie Drive	CR	99	25600	10	6	5	21	0.86	0.75	S
Alex-Bell Pike	CR	78	Lamme Road	CR	175	23000	7	4	8	19	0.63	0.75	S
Clyo Road	CR	83	Spring Valley Pike	CR	86	16800	6	3	4	13	0.69	0.71	S
Needmore Road	CR	74	Webster Street	CR	87	25100	5	7	7	19	1.11	0.69	S
Needmore Road	CR	74	Payne Avenue	TR	1319	35100	8	9	9	26	1.04	0.68	S
Spring Valley Pike	CR	86	Yankee Street	CR	175	31200	8	11	4	23	1.43	0.67	S
North Dixie Drive	CR	99	Wagner Ford Road	CR	218	27000	5	8	6	19	1.26	0.64	S
Austin Boulevard	CR	166	Byers/Wood Road	TR	147	21700	7	3	4	14	0.64	0.59	S
Spring Valley Pike	TR	86	Paragon Road	CR	145	21500	7	5	2	14	1.07	0.59	S
Austin Boulevard	CR	166	Austin Landing	TR	1035	44900	8	12	8	28	1.29	0.57	S
Klepinger Road	TR	133	Salem Avenue	CR	249	18600	6	3	2	11	0.82	0.54	S
Paragon	TR	145	Social Row Road	CR	166	18500	3	3	5	11	0.82	0.54	U
Austin Boulevard	CR	166	Yankee Street	CR	175	30100	4	9	4	17	1.59	0.52	S
Lyons Road	CR	150	Yankee Street	CR	175	39800	5	6	11	22	0.82	0.50	S
Needmore Road	CR	74	Wadsworth Road	TR	1299	32900	4	8	5	17	1.41	0.47	S
North Dixie Drive	CR	99	Little York Road	CR	228	28500	4	5	5	14	1.07	0.45	S
Farmington	CR	66	Union	CR	125	2100	2	3	2	5	1.80	2.17	U
Manning	CR	64	Diamond Mill	CR	217	5100	1	6	1	8	2.25	1.43	U
Alex-Bell Pike	CR	78	Munger Road	TR	175	14000	5	2	2	9	0.67	0.59	S
Benner	TR	154	Miamisburg Springboro	CR	166	12500	3	4	1	8	1.50	0.58	U
Kingsridge Drive	TR	2660	Lyonsridge Drive	TR	3940	16700	4	3	2	9	1.00	0.49	S
Lamme Road	CR	175	Lehigh Place	TR	1763	12100	3	1	1	5	0.60	0.38	U
North Dixie Drive	CR	99	York Commons	TR	4064	24800	7	1	0	8	0.38	0.29	S
Turner Road	CR	74	Klepinger Road	TR	133	17000	1	2	2	5	1.20	0.27	U

***** Red Text indicates intersections that are new to the list this year

***** Green Text indicates intersections that have been removed from the list this year

Montgomery County Engineer's Office
Traffic Department

Location : Social Row Road
Cross Street : 525' W of Sheehan Road
By : KRL

Site: 23 462
3/21/2023
Tuesday

24 Hour Volume

Interval Start	Eastbound		Westbound		Combined	
12:00 PM	82	315	101	385	183	700
12:15 PM	74		93		167	
12:30 PM	86		105		191	
12:45 PM	73		86		159	
1:00 PM	68	302	89	359	157	661
1:15 PM	80		94		174	
1:30 PM	72		90		162	
1:45 PM	82		86		168	
2:00 PM	110	398	95	381	205	779
2:15 PM	88		74		162	
2:30 PM	92		98		190	
2:45 PM	108		114		222	
3:00 PM	97	444	96	440	193	884
3:15 PM	111		109		220	
3:30 PM	109		105		214	
3:45 PM	127		130		257	
4:00 PM	126	588	123	489	249	1077
4:15 PM	155		114		269	
4:30 PM	146		120		266	
4:45 PM	161		132		293	
5:00 PM	152	679	117	513	269	1192
5:15 PM	190		122		312	
5:30 PM	187		128		315	
5:45 PM	150		146		296	
6:00 PM	136	461	124	459	260	920
6:15 PM	93		147		240	
6:30 PM	121		96		217	
6:45 PM	111		92		203	
7:00 PM	140	408	80	301	220	709
7:15 PM	102		86		188	
7:30 PM	83		64		147	
7:45 PM	83		71		154	
8:00 PM	93	341	65	205	158	546
8:15 PM	98		42		140	
8:30 PM	84		55		139	
8:45 PM	66		43		109	
9:00 PM	61	184	30	109	91	293
9:15 PM	49		28		77	
9:30 PM	39		29		68	
9:45 PM	35		22		57	
10:00 PM	29	113	21	62	50	175
10:15 PM	23		17		40	
10:30 PM	28		15		43	
10:45 PM	33		9		42	
11:00 PM	18	55	6	25	24	80
11:15 PM	17		9		26	
11:30 PM	12		5		17	
11:45 PM	8		5		13	

Interval Start	Eastbound		Westbound		Combined	
3/22/2023 12:00 AM	2	18	3	9	5	27
12:15 AM	4		2		6	
12:30 AM	9		2		11	
12:45 AM	3		2		5	
1:00 AM	4	9	4	5	8	14
1:15 AM	3		0		3	
1:30 AM	2		0		2	
1:45 AM	0		1		1	
2:00 AM	1	3	3	7	4	10
2:15 AM	1		1		2	
2:30 AM	0		1		1	
2:45 AM	1		2		3	
3:00 AM	1	6	1	6	2	12
3:15 AM	0		0		0	
3:30 AM	2		3		5	
3:45 AM	3		2		5	
4:00 AM	5	12	2	43	7	55
4:15 AM	3		11		14	
4:30 AM	3		7		10	
4:45 AM	1		23		24	
5:00 AM	3	20	13	107	16	127
5:15 AM	2		20		22	
5:30 AM	4		25		29	
5:45 AM	11		49		60	
6:00 AM	17	115	46	331	63	446
6:15 AM	29		54		83	
6:30 AM	32		103		135	
6:45 AM	37		128		165	
7:00 AM	44	203	118	680	162	883
7:15 AM	52		130		182	
7:30 AM	59		184		243	
7:45 AM	48		248		296	
8:00 AM	63	263	232	666	295	929
8:15 AM	68		165		233	
8:30 AM	68		147		215	
8:45 AM	64		122		186	
9:00 AM	54	239	117	409	171	648
9:15 AM	58		100		158	
9:30 AM	79		98		177	
9:45 AM	48		94		142	
10:00 AM	53	231	81	348	134	579
10:15 AM	52		95		147	
10:30 AM	58		89		147	
10:45 AM	68		83		151	
11:00 AM	58	251	100	373	158	624
11:15 AM	63		91		154	
11:30 AM	62		88		150	
11:45 AM	68		94		162	

Volume Totals

	Eastbound	Westbound	Combined
12:00 AM - 12:00 PM			
	1370	2984	4354
	(31.5%)	(68.5%)	
12:00 PM - 12:00 AM			
	4288	3728	8016
	(53.5%)	(46.5%)	
24 Hours			
	5658	6712	12370
	(45.7%)	(54.3%)	

Peak Hours

12:00 AM - 12:00 PM

	Eastbound	Westbound	Combined
Started	8:00 AM	7:30 AM	7:30 AM
Volume	263	829	1067
Factor	0.97	0.84	0.90

12:00 PM - 12:00 AM

	Eastbound	Westbound	Combined
Started	4:45 PM	5:30 PM	5:00 PM
Volume	690	545	1192
Factor	0.91	0.93	0.95

Montgomery County Engineer's Office
Traffic Department

Location : Social Row Road
Cross Street : 525' W of Sheehan Road
By : KRL

Site: 23 462
3/21/2023
Tuesday

24 Hour Classification

Eastbound

Interval Start	Total	Motor Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi
12:00 PM	315	2	199	77	4	28	0	0	4	1	0	0	0	0
1:00 PM	302	5	203	57	3	25	0	1	8	0	0	0	0	0
2:00 PM	398	5	259	99	8	19	1	0	7	0	0	0	0	0
3:00 PM	444	1	272	120	15	25	0	1	8	1	0	1	0	0
4:00 PM	588	5	389	129	27	32	0	0	6	0	0	0	0	0
5:00 PM	679	19	457	139	22	30	0	0	7	1	1	1	1	1
6:00 PM	461	10	309	98	7	29	0	0	7	0	1	0	0	0
7:00 PM	408	2	285	89	6	21	1	0	3	1	0	0	0	0
8:00 PM	341	0	269	60	1	10	0	0	1	0	0	0	0	0
9:00 PM	184	0	139	38	0	7	0	0	0	0	0	0	0	0
10:00 PM	113	0	84	26	1	2	0	0	0	0	0	0	0	0
11:00 PM	55	0	37	16	1	1	0	0	0	0	0	0	0	0
3/22/2023 12:00 AM	18	0	12	4	0	2	0	0	0	0	0	0	0	0
1:00 AM	9	0	6	2	0	1	0	0	0	0	0	0	0	0
2:00 AM	3	0	3	0	0	0	0	0	0	0	0	0	0	0
3:00 AM	6	0	4	2	0	0	0	0	0	0	0	0	0	0
4:00 AM	12	0	8	4	0	0	0	0	0	0	0	0	0	0
5:00 AM	20	0	11	6	0	3	0	0	0	0	0	0	0	0
6:00 AM	115	0	77	23	1	14	0	0	0	0	0	0	0	0
7:00 AM	203	6	131	46	3	15	0	0	2	0	0	0	0	0
8:00 AM	263	2	137	73	22	24	0	1	4	0	0	0	0	0
9:00 AM	239	2	126	63	5	33	0	0	9	1	0	0	0	0
10:00 AM	231	0	130	64	4	26	1	0	5	1	0	0	0	0
11:00 AM	251	3	143	73	7	21	1	0	3	0	0	0	0	0
Total	5658	62	3690	1308	137	368	4	3	74	6	2	2	1	1
%		1.1	65.2	23.1	2.4	6.5	0.1	0.1	1.3	0.1	0.0	0.0	0.0	0.0

Montgomery County Engineer's Office
Traffic Department

Location : Social Row Road
Cross Street : 525' W of Sheehan Road
By : KRL

Site: 23 462
3/21/2023
Tuesday

24 Hour Classification

Westbound

Interval Start	Total	Motor Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi
12:00 PM	385	4	237	92	9	35	0	0	8	0	0	0	0	0
1:00 PM	359	2	241	77	8	28	0	0	3	0	0	0	0	0
2:00 PM	381	4	242	88	8	35	0	1	3	0	0	0	0	0
3:00 PM	440	5	261	108	14	43	0	0	9	0	0	0	0	0
4:00 PM	489	5	312	114	14	37	0	0	5	2	0	0	0	0
5:00 PM	513	9	322	115	10	48	0	0	8	0	0	1	0	0
6:00 PM	459	5	303	109	7	32	0	0	3	0	0	0	0	0
7:00 PM	301	3	205	66	1	22	0	0	3	1	0	0	0	0
8:00 PM	205	0	140	46	1	18	0	0	0	0	0	0	0	0
9:00 PM	109	0	82	18	0	9	0	0	0	0	0	0	0	0
10:00 PM	62	0	48	13	0	1	0	0	0	0	0	0	0	0
11:00 PM	25	0	20	5	0	0	0	0	0	0	0	0	0	0
3/22/2023 12:00 AM	9	0	9	0	0	0	0	0	0	0	0	0	0	0
1:00 AM	5	0	4	1	0	0	0	0	0	0	0	0	0	0
2:00 AM	7	0	7	0	0	0	0	0	0	0	0	0	0	0
3:00 AM	6	0	4	1	0	0	0	0	0	1	0	0	0	0
4:00 AM	43	0	27	10	0	6	0	0	0	0	0	0	0	0
5:00 AM	107	0	71	18	0	18	0	0	0	0	0	0	0	0
6:00 AM	331	1	212	68	11	37	0	0	2	0	0	0	0	0
7:00 AM	680	6	450	149	24	46	0	0	4	0	0	1	0	0
8:00 AM	666	2	438	160	8	44	0	1	12	1	0	0	0	0
9:00 AM	409	3	266	79	11	44	0	1	5	0	0	0	0	0
10:00 AM	348	0	227	77	2	35	0	1	5	1	0	0	0	0
11:00 AM	373	1	235	95	5	34	1	0	2	0	0	0	0	0
Total	6712	50	4363	1509	133	572	1	4	72	6	0	2	0	0
%		0.7	65.0	22.5	2.0	8.5	0.0	0.1	1.1	0.1	0.0	0.0	0.0	0.0

Montgomery County Engineer's Office
Traffic Department

Location : Social Row Road
Cross Street : 525' W of Sheehan Road
By : KRL

Site: 23 462
3/21/2023
Tuesday

24 Hour Speed

Eastbound

mph	Total	0 - < 15	15 - < 20	20 - < 25	25 - < 30	30 - < 35	35 - < 40	40 - < 45	45 - < 50	50 - < 55	55 - < 60	60 - < 65	65 - < 70	70 - < 200	Avg.
12:00 PM	315	4	2	5	4	17	76	114	70	22	1	0	0	0	41.5
1:00 PM	302	1	1	3	5	24	61	108	70	21	7	1	0	0	42.3
2:00 PM	398	4	3	2	1	11	77	165	106	24	5	0	0	0	42.8
3:00 PM	444	13	4	1	4	34	111	159	89	26	2	1	0	0	41.0
4:00 PM	588	10	5	19	21	78	198	165	77	12	2	1	0	0	38.5
5:00 PM	679	35	22	33	58	111	193	141	65	15	2	2	0	2	35.8
6:00 PM	461	17	4	5	21	53	127	130	82	17	3	1	1	0	39.1
7:00 PM	408	6	0	0	8	34	99	151	93	16	1	0	0	0	41.1
8:00 PM	341	0	0	1	7	18	86	147	58	20	4	0	0	0	42.1
9:00 PM	184	0	0	0	0	8	27	54	62	25	6	2	0	0	45.1
10:00 PM	113	1	0	0	0	1	10	24	52	17	6	1	1	0	46.9
11:00 PM	55	0	0	0	0	0	3	20	22	7	3	0	0	0	46.3
3/22/2023 12:00 AM	18	0	0	0	0	0	1	4	6	5	1	1	0	0	48.3
1:00 AM	9	0	0	0	0	0	2	4	0	3	0	0	0	0	43.8
2:00 AM	3	0	0	0	0	0	1	2	0	0	0	0	0	0	41.6
3:00 AM	6	0	0	0	0	0	1	1	3	1	0	0	0	0	45.9
4:00 AM	12	0	0	0	0	0	0	4	5	3	0	0	0	0	47.0
5:00 AM	20	0	0	0	0	0	5	2	10	2	1	0	0	0	45.3
6:00 AM	115	1	0	0	0	5	17	34	43	13	2	0	0	0	44.3
7:00 AM	203	3	4	3	1	14	42	76	42	13	5	0	0	0	41.4
8:00 AM	263	7	3	2	10	34	63	82	46	14	2	0	0	0	39.6
9:00 AM	239	3	3	0	1	14	61	96	52	6	3	0	0	0	41.5
10:00 AM	231	1	0	1	1	9	41	87	70	21	0	0	0	0	43.3
11:00 AM	251	2	2	0	3	14	52	102	53	21	1	1	0	0	42.4
Total	5658	108	53	75	145	479	1354	1872	1176	324	57	11	2	2	40.8
%		1.9	0.9	1.3	2.6	8.5	23.9	33.1	20.8	5.7	1.0	0.2	0.0	0.0	

Average (Mean) 40.8 mph **Minimum** 10.0 mph **Maximum** 87.4 mph **Pace Range** 36.9 - 46.9 mph 3434 vehicles (60.7%)

Percentile Speeds	10%	15%	50%	85%	90%
(mph)	32.5	34.9	41.7	47.4	48.9

Speeds Exceeded	25 mph	35 mph	45 mph	55 mph	65 mph	75 mph
	95.8% (5422)	84.8% (4798)	27.8% (1572)	1.3% (72)	0.1% (4)	0.0% (2)

Montgomery County Engineer's Office
Traffic Department

Location : Social Row Road
Cross Street : 525' W of Sheehan Road
By : KRL

Site: 23 462
3/21/2023
Tuesday

24 Hour Speed

Westbound

mph	Total	0 - < 15	15 - < 20	20 - < 25	25 - < 30	30 - < 35	35 - < 40	40 - < 45	45 - < 50	50 - < 55	55 - < 60	60 - < 65	65 - < 70	70 - < 200	Avg.
12:00 PM	385	3	1	3	9	15	83	164	84	20	3	0	0	0	41.9
1:00 PM	359	3	3	2	0	6	67	142	105	25	6	0	0	0	43.1
2:00 PM	381	5	3	4	7	16	72	162	91	21	0	0	0	0	41.8
3:00 PM	440	11	4	4	4	28	110	172	78	25	4	0	0	0	40.9
4:00 PM	489	9	4	6	9	25	117	187	105	24	2	0	0	1	41.3
5:00 PM	513	11	16	14	23	40	137	202	57	12	1	0	0	0	38.6
6:00 PM	459	12	3	6	6	29	91	187	86	36	3	0	0	0	41.2
7:00 PM	301	3	0	0	0	15	65	117	81	17	2	1	0	0	42.5
8:00 PM	205	2	0	0	0	3	26	81	67	22	4	0	0	0	44.4
9:00 PM	109	0	0	0	1	0	8	32	41	21	4	2	0	0	46.7
10:00 PM	62	0	1	0	0	3	6	15	17	16	3	0	0	1	46.4
11:00 PM	25	0	0	0	0	0	2	12	6	2	2	1	0	0	46.1
3/22/2023 12:00 AM	9	0	0	0	0	0	0	3	2	4	0	0	0	0	47.9
1:00 AM	5	0	0	0	0	0	1	2	0	1	1	0	0	0	47.3
2:00 AM	7	0	0	0	0	0	1	0	2	2	2	0	0	0	50.0
3:00 AM	6	0	0	0	0	0	0	1	1	4	0	0	0	0	48.9
4:00 AM	43	0	0	0	0	0	1	5	15	15	4	3	0	0	50.6
5:00 AM	107	0	0	0	0	0	3	24	32	28	17	1	2	0	49.6
6:00 AM	331	2	0	0	2	6	24	106	119	55	12	3	2	0	45.9
7:00 AM	680	6	7	10	29	64	207	244	93	19	1	0	0	0	39.6
8:00 AM	666	9	3	6	38	53	207	254	83	13	0	0	0	0	39.3
9:00 AM	409	3	2	2	4	29	93	167	94	14	1	0	0	0	41.5
10:00 AM	348	0	0	0	1	15	79	154	82	17	0	0	0	0	42.7
11:00 AM	373	2	1	0	1	7	88	169	82	23	0	0	0	0	42.6
Total	6712	81	48	57	134	354	1488	2602	1423	436	72	11	4	2	41.8
%		1.2	0.7	0.8	2.0	5.3	22.2	38.8	21.2	6.5	1.1	0.2	0.1	0.0	

Average (Mean) 41.8 mph **Minimum** 10.0 mph **Maximum** 83.9 mph **Pace Range** 37.0 - 47.0 mph 4524 vehicles (67.4%)

Percentile Speeds	10%	15%	50%	85%	90%
(mph)	35.0	36.9	42.3	47.6	49.1

Speeds Exceeded	25 mph	35 mph	45 mph	55 mph	65 mph	75 mph
	97.2% (6526)	90.0% (6038)	29.0% (1948)	1.3% (89)	0.1% (6)	0.0% (1)

MOT-Social Row Road
PID 113360
Feasibility Study

Prepared for:

Montgomery County Engineer's Office

July 13, 2021

fishbeck

Engineers | Architects | Scientists | Constructors

Table of Contents

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List of Abbreviations/Acronyms

CLRBP	Comprehensive Local-Regional Bikeway Plan
CR	County Road
CWPD	Centerville-Washington Park District
HCM	Highway Capacity Manual
HCS	Highway Capacity Software
LOS	Level of Service
LPA	Local Public Agency
MCEO	Montgomery County Engineer's Office
MPH	Mile Per Hour
MUTTF	Multi-Use Trail Task Force
MVRPC	Miami Valley Regional Planning Commission
ODNR	Ohio Department of Natural Resources
ODOT	Ohio Department of Transportation
OMUTCD	Ohio Manual of Uniform Traffic Control Devices
ORC	Ohio Revised Code
OUPS	Ohio Utilities Protection Service
SR	State Route
TWLTL	Two-Way Left-Turn Lane
V/C	Volume to capacity

1.0 Introduction

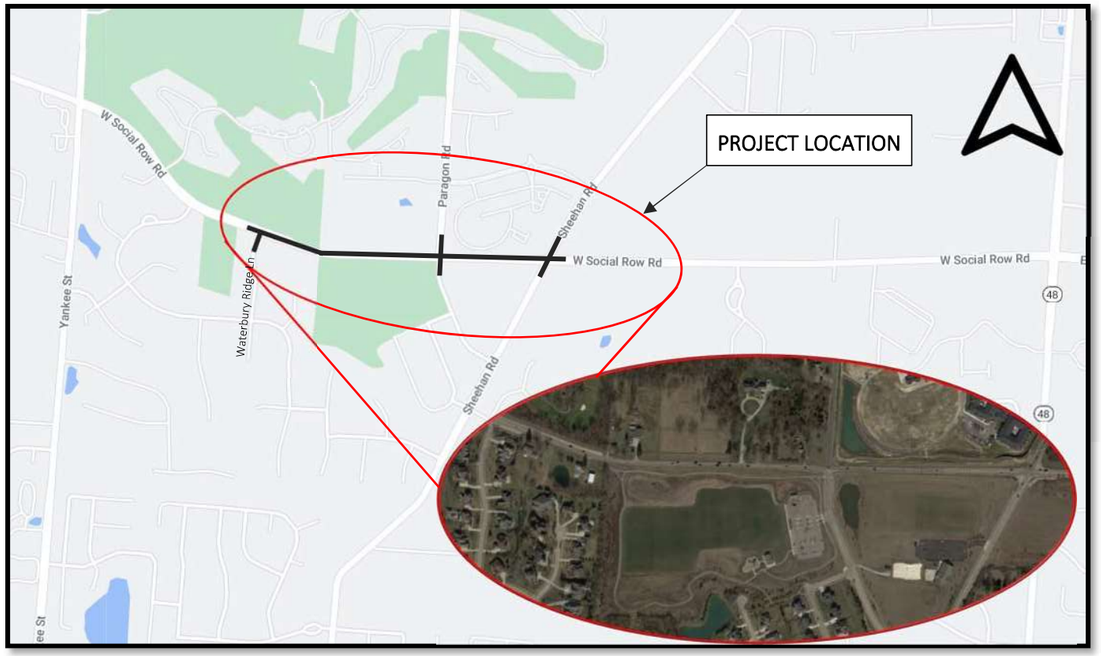
Social Row Road is an urban minor arterial which begins in Montgomery County, connecting Austin Pike (at the Yankee Street intersection) to Ferry Road in Greene County. The corridor connects many residential neighborhoods within Washington Township and Centerville to Interstate 75 and the Austin Landing Development.

The Montgomery County Engineer's Office (MCEO) contracted with Fishbeck in October 2020 to address existing and future congestion, as well as provide for pedestrian/bicycle access, on Social Row Road, between the existing 5-lane section at Waterbury Ridge Lane, 0.5 miles west of the Austin Pike/Yankee Street intersection to Sheehan Road. Upon approval of Stage 1 plans and environmental clearance, Fishbeck will complete design on MOT-Social Row Road Phase 1 (Waterbury Ridge Lane to Paragon Road), PID 113360, and MOT-Social Row Road Phase 2 (Paragon Road to Sheehan Road) will be designed under a separate contract.

1.1 Project Location

The proposed project focuses on the section of Social Row Road intersecting with Waterbury Ridge Lane, Paragon Road, and Sheehan Road. This project is located within Washington Township and the City of Centerville, suburbs of Dayton, within Montgomery County, Ohio, and falls under the jurisdiction of Montgomery County. A location map for the project limits can be seen in *Figure 1 – Project Location* below.

Figure 1 – Project Location



1.2 Project History

As a result of support for the Austin Pike/I-75 interchange project, an Austin Pike Area Transportation Study was prepared which included a Major Investment Study (MIS). The MIS, which was endorsed by the Miami Valley Regional Planning Commission (MVRPC) Transportation Committee in April 2003, concluded with eight basic recommendations. One of the eight recommendations was to evaluate widening Austin Pike/Social Row Road between State Route (SR) 741 and SR 48 east of the proposed interchange.

The Austin Pike/Social Row Road conceptual corridor study was prepared in February of 2005 and was intended to perform sufficient level of conceptual engineering to enable stakeholders to reach consensus on decisions affecting project costs, and to prepare cost estimates that could be used for funding applications. The roadway improvements discussed within the report were the reconstruction and widening of Austin Pike between SR 741 and Yankee Street and of Social Row Road between Yankee Street and SR 48.

In the years following the 2005 conceptual corridor study, several projects have been performed which widened and reconstructed Austin Pike (also known as the Austin Boulevard) between SR 741 and Yankee Street. The most recent of which (MOT-County Road (CR)-166-7.03, PID 84240) widened and reconstructed Austin Boulevard between Washington Church Road and Yankee Street.

Social Row Road east of Yankee Street had previously been widened and realigned to meet Austin Boulevard by a project constructed in the early 90's. This project widened Social Row Road from the intersection with Yankee Street east to The Woods – Section One development. The Woods – Section One development constructed Waterbury Ridge Lane and completed the widening of Social Row Road to its current state.

The proposed project involves Social Row Road from Waterbury Ridge Lane to just east of Sheehan Road. The corridor can be characterized as a mix of residential properties, a park, a church, and a new assisted living community. The Golf Club at Yankee Trace and the Randall Residence of Centerville are located within the City of Centerville on the north side of the road. Robert F. Mays Park, Epiphany Lutheran Church, and remaining properties are located within Washington Township.

The proposed project has received federal funds to be administered by the Ohio Department of Transportation (ODOT) through the Local-Let Program process. The MCEO is acting as a Local Public Agency (LPA) and will sell the project and administer the construction contract with ODOT oversight.

Certified traffic data was supplied to ODOT for review and approval was received on January 11, 2021. A Traffic Engineering Assessment Report was prepared and submitted to ODOT and their comments were addressed on March 19, 2021. This report analyzed signal warrants, crash history, intersection capacity, queueing, and storage lengths within the Social Row Road improvement area.

The Highway Capacity Manual (HCM) provides several measures of effectiveness for a transportation facility based on geometric configurations and operational conditions:

- Level of Service (LOS) is a letter grade that describes traffic operations based on the amount of delay experienced by vehicles at an intersection and along an intersection approach. LOS is measured using letter grades ranging from A to F, with LOS A being the best and LOS F being the worst.
- Volume to capacity (v/c) ratio is a second output from Highway Capacity Software (HCS) analysis showing the amount of vehicle volume compared to the capacity for the standard roadway lane. A v/c ratio of greater than 1.00 is considered deficient with 0.93 or less being the preferred v/c ratio.

Utilizing ODOT Certified Traffic Plates, Synchro, and SimTraffic operational analysis software, and the criteria laid out in the HCM, the Traffic Engineering Assessment Report submitted to ODOT on February 12, 2021, identified several congestion related needs in regard to existing roadway conditions:

- The existing unsignalized intersection of Social Row Road and Paragon Road was determined to operate at a LOS F for the 2025 construction year traffic volumes. Long delays are due to heavy traffic volumes on Social Row Road not allowing gaps in traffic for the Paragon Road vehicles. The intersection continues to operate at a LOS F under the 2045 design year traffic volumes. The v/c ratio is greater than 1.00 for the northbound and southbound movements and is considered deficient under 2045 traffic volumes.
- The existing signalized intersection of Social Row Road and Sheehan Road operates at an acceptable LOS D or better and the v/c ratio is considered acceptable for all approaches under 2025 traffic volumes. As traffic volumes increase, however, the intersection degrades to LOS F for 2045 traffic volumes. The v/c ratio is greater than 1.00 and is considered deficient for several movements under 2045 traffic volumes.
- Under 2025 traffic volumes the existing signalized intersection of Social Row Road and Sheehan Road was determined to experience long queue lengths in the PM peak hour with the eastbound approach queue over 1,000 feet and the northbound approach queue over 750 feet. Projected 2045 traffic volumes result in all four approaches experiencing extreme queues (over 1,000 feet). Eastbound queue lengths under 2045 traffic volumes were also determined to negatively influence the upstream Paragon Road intersection.

The Social Row Road corridor between Waterbury Ridge Lane and Sheehan Road is identified in long-term shared use trail plans by both MVRPC and the CWPD. There is an existing shared use path along the north side of Social Row Road, adjacent to The Golf Club at Yankee Trace. This path dead ends roughly 650 feet east of Waterbury Ridge Lane. An existing sidewalk on the south side of Social Row Road also dead ends roughly 175 feet east of the Waterbury Ridge Lane intersection. Currently, the corridor lacks pedestrian and bicycle-friendly facilities east of the existing multi-use trail and sidewalk to provide multi-modal connections to Robert F. Mays Park and properties in the area.

1.3 Shared Use Path History

In September 2002, the City of Centerville and Washington Township initiated a process to create a joint community plan titled *Create the Vision: Our Community Our Future*. The elements of the community plan were comprehensive and included land use, economic development, parks and recreation, transportation, utilities, and implementation. Objectives to support improving the transportation network of the community were identified as part of the transportation plan. Objective #1 of the plan was to *increase opportunities for walkers and bikers.*

Several strategies were outlined to support this objective:

- Create regulations that require pedestrian facilities and multi-use path systems along new streets and during street upgrade projects.
- Plan to expand the multi-use path system to connect destinations.
- Incorporate multi-use paths in new development or when a change in land use occurs.
- Recommend the adoption of a multi-use pathway plan for the community.

In October 2003, the Centerville-Washington Park District (CWPD) formed a Multi-Use Trail Task Force (MUTTF) to adopt a pathway plan for the community. The current copy of this plan is included herein as *Appendix 1 – Centerville and Washington Township Multi-Use Trail Plan.*

In 2008, the Miami Valley Regional Planning Commission (MVRPC) adopted the Comprehensive Local-Regional Bikeway Plan (CLRBP). This plan was updated in November 2015 and identifies the Great-Little Trail. This facility was identified as "T" on the appended map (see *Appendix 2 – MVRPC 2015 Bikeway Plan Update*) and was described as follows:

> *Connect between the Great Miami River Recreation Trail and the Little Miami Scenic Trail along the Medlar Trail; new shared-use path along Miamisburg- Springboro Rd./Austin Pike/Social Row Rd. widen shoulders on Ferry Rd./Lytle Rd. between Wilmington-Dayton Rd. and North St. in Corwin develop signed on-street bikeway along North St./Corwin Rd. to Little Miami Scenic Trail.*

Reference was also made to the Great-Little Trail in a 2016 MVRPC Long Range Transportation Plan. This facility was identified as "N" on the appended map (see *Appendix 3 – MVRPC Long Range Transportation Plan, Regional Bikeway and Pedestrian Network Map*) and had an entry in the Long Range Regional Bikeway and Pedestrian Projects (unfunded) listing. Various jurisdictions were identified as the owners responsible for maintaining the path. The Great-Little Trail was shown as On/Off-Street, variable in width, and 10.7 miles long. At the time, cost was estimated at $4.77 million for the entire length.

2.0 Purpose and Need Summary

2.1 Purpose

The purpose of the project is to alleviate congestion on Social Row Road caused by increased traffic volumes and to improve pedestrian/bicycle access to area parks and parcels.

2.2 Need Elements

The project is intended to:

- Address existing and anticipated future congestion at intersections within the project corridor, in order to provide an acceptable level of service.
- Provide safe and efficient pedestrian and non-motorized vehicle access to Robert F. Mays Park and adjacent parcels.
- Advance the long-term shared use path plans for MVRPC and the CWPD.

2.3 Logical Termini and Independent Utility

The logical termini for the proposed project are established based on the scope of problems identified in the Traffic Engineering Assessment Report. This report identified congestion related issues at the intersections of Paragon Road and Sheehan Road. Therefore, the termini include Social Row Road from the existing 5-lane section near Waterbury Ridge Lane up to and including the Sheehan Road intersection. The project has independent utility which is usable and a reasonable expenditure even if no additional improvements are made in the project area.

2.4 Key Issues

In addition to the need elements above, the project alternatives will be evaluated with respect to the following key issues:

- Roadway and Drainage Design Issues (Including Post Construction BMPs)
- Maintenance of Traffic / Property Access
- Right-of-Way Impacts
- Preliminary Geotechnical Assessments
- Utility Issues

- Environmental Impacts (Displacements, Park Impacts, Potentially Regulated Waterways, Air/Noise Impacts)
- Aesthetics
- Project Cost

3.0 Alternatives Considered

The following alternatives were considered in the development of this project:

1. No Build
2. Three-Lane Build
3. Five-Lane Build

These alternatives were included in the Traffic Engineering Assessment Report, see Appendix 11 for the report.

3.1 Alternatives Description

- Alternative 1 – No Build

  This alternative maintains the existing two-lane roadway with no improvements to the existing roadway or intersections, and no connectivity between the existing sidewalk or shared use path.

  The existing congestion is anticipated to increase at the Sheehan Road and Paragon Road intersections within the project corridor and is projected to result in an overall LOS of F at both intersections in 2045. There is no safe and efficient pedestrian/bicycle access to Robert F. Mays Park. This alternative does not meet any of the objectives of the project's Purpose and Need and therefore has been dismissed from further consideration.

- Alternative 2 – Three-Lane Build

  This alternative widens Social Row Road symmetrically to a continuous three-lane section throughout the project area: one lane in each direction with a two-way-left-turn-lane (TWLTL). Left turn lanes would be constructed on Social Row Road at the intersection of Paragon Road. This would include converting the existing two-way stop-controlled intersection of Social Row Road and Paragon Road into a signalized intersection based on the existing traffic volumes meeting the four-hour signal warrant and peak hour signal warrant, thus warranting a traffic signal. On Paragon Road, a southbound left turn lane would be constructed to match the existing northbound left turn lane to align the northbound/southbound thru lanes at the intersection for safety, and to provide the opportunity for protected left turn phasing in the future. At the intersection of Social Row Road and Sheehan Road, left turn lanes would be constructed on the northbound and southbound Sheehan Road approaches to provide storage for the turning movements and allow the prospect of protected left turn phasing in the future.

  The addition of a turn lane improves congestion slightly at the intersections in the project corridor but is still projected to result in a failing Level of Service at both signalized intersections by 2045 and therefore has been dismissed from further consideration.

- Alternative 3 – Five-Lane Build

  This alternative widens Social Row Road to a continuous five-lane section throughout the project area: two lanes in each direction with a TWLTL. Left turn lanes would be constructed on Social Row Road at the intersection of Paragon Road. This would include converting the existing two-way stop-controlled intersection of Social Row Road and Paragon Road into a signalized intersection based on the existing traffic volumes meeting the four-hour signal warrant and peak hour signal warrant, thus warranting a traffic signal. On Paragon Road, a southbound left turn lane would be constructed to match the existing northbound left turn lane to align the northbound/southbound thru lanes at the intersection for safety, and to provide the opportunity for protected left turn phasing in the future. At the intersection of Social Row Road and Sheehan Road, left turn lanes would be constructed on the northbound and southbound Sheehan Road approaches to provide storage for the turning movements and allow the prospect of protected left turn phasing in the future.

  This study considers several variations of Alternative 3. Each includes a five-lane section with a 10-foot shared use path and 5 feet of sidewalk through the project area. These variations are described below.

  - ***Variation 3A – Path on the North to Paragon Road, Existing Curvature (see Appendix 4 for aerial overview and plan)***

    The pavement is widened symmetrically along the existing centerline. Connecting to the existing path, the proposed shared use path remains on the north side of Social Row Road until the Paragon Road intersection. The proposed sidewalk is on the south.

    All of the objectives listed in Section 2.2 Need Elements are met with this variation and the design meets all requirements of ODOT's Location and Design Manual, Volume 1 and is consistent with the remainder of the corridor. The existing single-family home at 1087 Social Row Road is impacted and will result in demolition of the structure.

  - ***Variation 3B – Path on the North to Paragon Road, Realignment of Social Row Road (see Appendix 5 for aerial overview and plan)***

    The alignment of Social Row Road is diverted to the south between Waterbury Ridge Lane and Paragon Road and requires reverse curvature to tie into the existing centerline at the Paragon Road intersection. Connecting to the existing path, the proposed shared use path remains on the north side of Social Row Road until the Paragon Road intersection. The proposed sidewalk is on the south.

    All of the objectives listed in Section 2.2 Need Elements are met with this variation and the design meets all requirements of ODOT's Location and Design Manual, Volume 1, however the horizontal realignment results in additional impacts to Robert F. Mays Park. The lane configuration and pedestrian / bicycle access are consistent with the remainder of the corridor. The existing single-family home at 1087 Social Row Road is not impacted by the alternative.

  - ***Variation 3C – Path on the North to Paragon Road, TWLTL Elimination (see Appendix 6 for aerial overview)***

    The pavement is widened symmetrically along the existing centerline. Connecting to the existing path, the proposed shared use path remains on the north side of Social Row Road until the Paragon Road intersection. The proposed sidewalk is on the south. The proposed TWLTL is eliminated between Waterbury Ridge Lane and Paragon Road. A westbound left turn lane is provided at Waterbury Ridge Lane and an eastbound left turn lane at Paragon Road.

    Real Life Church has purchased a property on the North side of Social Row Road between Waterbury Ridge Lane and Paragon Road and has plans for future development. This alternative eliminates the TWLTL, thus conflicting with future land use and left turn lane requirements for this development. The lane configuration is not consistent with the remainder of the corridor. The elimination of the TWLTL would require adjacent property owners to occupy a through lane while making left turn maneuvers, thereby increasing the delay to through vehicles and likelihood of rear-end collisions. The existing single-family home at 1087 Social Row Road is impacted and will result in demolition of the structure. This alternative has been dismissed from further consideration for the reasons noted above.

- ***Variation 3D – Path on the South (see Appendix 7 for aerial overview)***

  The pavement is widened symmetrically along the existing centerline. The shared use path crosses Social Row Road mid-block west of the Waterbury Ridge Lane intersection and continues along the south side of Social Row Road. The proposed sidewalk is on the north.

  According to the Federal Highway Administration (FHWA) pedestrians are especially vulnerable at non-intersection locations, where 72 percent of pedestrian fatalities occur. Social Row Road has a posted speed limit of 45 mph and a design ADT of 23,040. The volume of traffic on Waterbury Ridge Lane is not sufficient to warrant a traffic signal installation. To mitigate the threat posed to pedestrians and cyclist and allow for a shared use path crossing of Social Row Road the FHWA and OMUTCD recommend that a Pedestrian Hybrid Beacon (PHB), pedestrian refuge island, and additional markings and signage be constructed a minimum of 100 feet west of the Waterbury Ridge Lane intersection. This requirement will involve additional right of way impacts and added construction costs. Without these costly countermeasures this alternative does not provide safe and efficient pedestrian and non-motorized vehicle access to Robert F. Mays Park and adjacent parcels. Need Elements are met with this variation and the design meets all requirements of ODOT's Location and Design Manual, Volume 1 and is consistent with the remainder of the corridor. The existing single-family home at 1087 Social Row Road is impacted and will result in demolition of the structure. This alternative has been dismissed from further consideration for the reasons noted above.

4.0 Analysis of Key Issues

4.1 Traffic Analysis

As discussed in Section 3.0, the Traffic Engineering Assessment Report submitted to ODOT on February 12, 2021 analyzed the preferred alternative based on future traffic data provided in the Certified Traffic Plates approved by ODOT on January 11, 2021. Four components were considered to determine the preferred alternatives: signal warrants, safety analysis, capacity analysis, and queueing analysis.

The report performed signal warrant analysis in accordance with ODOT and Ohio Manual of Uniform Traffic Control Devices (OMUTCD) criteria. Traffic signal warrants are based on thresholds for average traffic conditions. The warrant analysis focused on the warrants related to vehicular and pedestrian volumes. The signal warrant analysis determined the intersection of Social Row Road and Paragon Road met the criteria for the four-hour vehicle signal warrant, the peak hour vehicle signal warrant and thus warranted a traffic signal. The signal warrant analysis determined the intersection of Social Row Road and Sheehan Road, met the criteria for the eight-hour signal warrant, the four-hour signal warrant, the peak hour signal warrant, and thus warranted the existing traffic signal.

The report also performed a crash analysis finding that there were 29 crashes within the study area over the five years from 2015-2019. A large percentage (38%) of the crashes, including three injury crashes, were related to turning movements (i.e. angle and left turn crashes). With the proposed installation of left-turn lanes and traffic signals at the Paragon Road and Sheehan Road intersections, vehicles making left turns will have exclusive turn lanes and side street traffic will use a traffic signal, instead of finding gaps in traffic, to access Social Row Road.

The report also performed capacity analyses for the morning and afternoon peak hours during the construction year (2025) and the design year (2045) to compare the no-build scenario with the alternatives using Synchro software. The capacity analysis reviewed the level of service (LOS), delay, and volume-to-capacity (v/c) ratio for vehicles. These measures of effectiveness document the expected traffic operations for the various scenarios. The results showed that under Alternative 1 (No-Build) and Alternative 2 (Three-lane section) the Social Row Road intersections with Paragon Road and Sheehan Road would operate at an overall LOS F. Under Alternative 3 (Five-lane section), Social Row Road and the intersections would operate acceptably.

A queue analysis was also performed as part of the Traffic Engineering Assessment Report. Results showed that under Alternative 1 (No-Build) and Alternative 2 (Three-lane section) there would be excessive queue lengths at both Sheehan Road and Paragon Road intersections in the opening year (2025) and design year (2045). Under Alternative 3 (Five-lane section), Social Row Road and the intersections would operate with queue lengths all under 450 feet.

The Traffic Engineering Assessment Report, see Appendix 11 for the report, recommended a five-lane section for Social Row Road based on the results of the analyses mentioned previously. The report concluded with the following recommended improvements:

- Widen Social Row Road to a 5-lane section (two lanes in each direction with a TWLTL between Paragon Road and Sheehan Road) extending the 2 westbound Social Row Road lanes 440 feet east of Sheehan Road to accommodate the westbound through queue.
- Install a traffic signal at the intersection of Social Row Road and Paragon Road.
- Install a 150-foot southbound left turn lane on Paragon Road, a 165-foot southbound left turn lane on Sheehan Road, and a 365-foot northbound left turn lane on Sheehan Road. All turn lane lengths include a 50-foot taper.
- Provide eastbound 275-foot and westbound 175-foot left turn lanes (including 50-foot tapers) for Social Row Road at the Paragon Road intersections (the turn lane storage can be taken from the TWLTL).
- Provide eastbound 400-foot and westbound 225-foot left turn lanes (including 50-foot tapers) for Social Row Road at the Sheehan Road intersections (the turn lane storage can be taken from the TWLTL).

4.2 Roadway Design Issues

4.2.1 Design Speed and Functional Class

The design/legal speeds and functional classifications are as follows:

• Social Row Road	45/45 MPH	Urban Minor Arterial
• Waterbury Ridge Lane	25/25 MPH	Urban Local Road
• Paragon Road (North of Social Row Road)	35/35 MPH	Urban Major Collector
• Paragon Road (South of Social Row Road)	35/25 MPH	Urban Local Road
• Sheehan Road (North of Social Row Road)	40/40 MPH	Urban Major Collector
• Sheehan Road (South of Social Row Road)	55/55 MPH*	Urban Local Road

* Montgomery County has requested a change to the prima facia speed limit for this segment of Sheehan Road. This request would change the posted speed limit to 45 MPH.

4.2.2 Typical Section

For Social Row Road, the typical section utilized for all build alternatives consists of two 12-foot outside lanes and three 11-foot inside lanes, resulting in 57 feet of pavement width. The minimum lane width of 11' is required per Figure 301-4 in ODOT's Location and Design Manual, Volume 1. The outside lanes are 12' to satisfy the Throughfare Plan requirements published by Montgomery County.

A pavement design was performed based on the existing and projected traffic volumes outlined in the Traffic Engineering Assessment Report. The proposed full depth pavement buildup utilized for all build alternatives consists of 3 inches of asphalt on top of 8 inches of asphalt concrete base and 6 inches of aggregate base.

4.2.3 Bicycle/Pedestrian Facilities

All build alternatives include a 10-foot wide shared use path offset a minimum of 5 feet from the face of curb, and a 5-foot wide sidewalk offset 6 feet from the face of curb. All build alternatives connect bicycle and pedestrian facilities from the existing multi-use trail and sidewalk at the west end of the project through the project corridor to the intersection with Sheehan Road. Intersection improvements involve construction of new ADA ramps, crosswalks, and pedestrian pushbuttons. The existing single-family home at 1087 Social Row Road is impacted by Alternatives 3A, 3C and 3D and would result in demolition of the structure. The only 5-lane alternative which avoids impacting the existing residence at 1087 Social Row Road is Alternative 3B. See appendices 4 through 7 for aerial overviews of 5-lane alternatives. This section addresses only Alternatives 3A and 3B as the others were eliminated as outlined in Section 3.0 above.

4.2.3.1 Shared Use Path Location

4.2.3.1.1 Waterbury Ridge Lane to Paragon Road

Between Waterbury Ridge Lane and Paragon Road, the proposed location for the shared use path is along the north side of Social Row Road to avoid an unsafe uncontrolled crossing just west of Waterbury Ridge Lane. Shared use path connectivity to Robert F. Mays Park is proposed via a well-lighted signalized crossing at Paragon Road.

As discussed in Section 3.1, switching the path to the south side of Social Row Road along this section as considered in Alternative 3D, would require the construction of a Pedestrian Hybrid Beacon (PHB), pedestrian refuge island, and additional markings and signage a minimum of 100 feet west of the Waterbury Ridge Lane intersection. Furthermore, proper offset for a shared use path in combination with the extra width required for the path itself would necessitate additional right-of-way acquisition from two parcels within The Woods – Section One development.

4.2.3.1.2 Paragon Road to Sheehan Road

Between Paragon Road and Sheehan Road, the proposed location for the shared use path is along the south side of Social Row Road. Constructing the path on the south side of Social Row Road requires no additional permanent right-of-way takes, whereas a path constructed along the north side would require additional right-of-way.

4.2.4 Horizontal Geometry

Between Waterbury Ridge Lane and Paragon Road, several alternative alignments were considered. From the intersection with Paragon Road, roadway widening is symmetrical on both sides of the existing centerline of right-of-way and there is no difference between the build alternatives considered. There are no horizontal curves within the project area east of Paragon Road. The length of the project is dictated by the lane reduction required east of the Sheehan Road intersection. This lane reduction is designed based on OMUTCD taper rates and ODOT Standard Construction Drawing TC-71.10.

4.2.4.1 Alternative 3A

This alignment consists of two tangents centered on the existing centerline of right-of-way and connected with a 1,260-foot radius curve. This curvature matches the existing curvature created with prior widening projects and minimizes the full depth reconstruction required on the west end of the project. Refer to Appendix 4 for plan and profile sheets depicting Alternative 3A geometry.

4.2.4.2 Alternative 3B

This alignment consists of two tangents centered on the existing centerline of right-of-way and connected with reverse curvature utilizing two 1260-foot radius curves separated by a 100-foot tangent section. Refer to Appendix 5 for a plan sheet depicting Alternative 3B geometry.

4.2.5 Drainage

Due to the pavement widening, relocated ditches and new storm sewer will be required for all build alternatives. Proposed drainage outfalls include:

- An existing storm sewer constructed along the north side of Social Row Road from Waterbury Ridge Lane east to the end of the existing widened section.
- A proposed storm sewer running along the west side of the Real Life Church parcel (Parcel ID# O67 03813 0004) to the existing stream at the rear of the property. This storm sewer will consolidate two existing culvert crossings:
    - The first crossing is located near the east side of the parcel at 1087 West Social Row Road and is drained by a private clay pipe which runs north through the property. This clay pipe is undersized and actively failing.
    - The second crossing is located near the east side of the parcel at 957 West Social Row Road and is drained by a private corrugated plastic pipe which runs north through the property, adjacent to the existing leach field for this parcel. This corrugated plastic pipe is insufficiently sized to handle flows generated by the existing culvert crossing under Social Row Road.
- An existing storm sewer on the west side of Paragon Road just south of the intersection with Social Row Road.
- An existing retention pond on the Randall Residence parcel at the northeast corner of Social Row Road and Paragon Road which was designed to accommodate runoff from both roadways.
- An existing stream located on the south side of the parcel at 10407 Paragon Road.
- An existing storm sewer located on the west side of Sheehan Road, south of the intersection with Social Row Road, in front of the Epiphany Evangelical Lutheran Church parcel at 10551 Sheehan Road.
- An existing roadside ditch in front of the parcel at 10616 Sheehan Road.
- An existing storm sewer constructed along the west side of Sheehan Road north of the intersection with Social Row Road.
- An existing roadside ditch located along the east side of Sheehan Road, just north of the parcel at 10440 Sheehan Road.
- Two roadside ditches located on the north and south sides of Social Row Road east on the intersection with Sheehan Road.

All build alternatives perpetuate the existing drainage patterns. Underdrains are recommended and have been included in the cost estimates. Storm sewers will be sized utilizing the criteria prescribed in ODOT's Location and Design Manual, Volume 2. Alternative 3B would directly impact the existing detention basin constructed at the northwest corner of Robert F. Mays Park. This detention basin would need to be relocated to accommodate the realigned roadway.

Required Post-Construction Storm Water Best Management Practices will be satisfied utilizing a combination of Manufactured Systems, Vegetated Biofilters, and existing Retention Basins. Alternative 3B exceeds the thresholds for impervious area outside of existing right-of-way and would result in the need to treat both water quality as well as water quantity. This could be addressed through the construction of a new detention basin on the north side of Social Row Road at the southwest corner of the Real Life Church parcel (Parcel ID# O67 03813 0004).

4.2.6 Constructability

All build alternatives considered are similar in their ability to be constructed and all aspects of the construction are typical, commonly performed activities. Construction of large diameter storm sewer crossings may require short term detours of Paragon Road and Sheehan Road. The presence of bedrock was not encountered with project soil borings; however, borings did indicate the presence of very dense granular materials with cobble/boulder (possibly

decomposed rock) in a boring east of Sheehan. Past projects also encountered this material. This may impact utility, signal support foundation, and proposed storm sewer construction. No unusual construction methods are anticipated.

4.2.7 Property Access

Access to adjacent properties will be maintained and normal construction methods will be utilized. Seven residential properties have drives which will be impacted by the project. Epiphany Evangelical Lutheran Church has a drive within the project area, but this drive will not be directly impacted. There are two existing field access drives on the north side of Social Row Road, east of Sheehan Road within the project limits. These drives will only be impacted by resurfacing.

4.3 Maintenance of Traffic

Social Row Road will remain open to traffic during construction. Construction is anticipated to take approximately 14 months. Part-width construction will be utilized for all build alternatives. Minimum 10-foot lane widths with 2-foot shoulders will be maintained at all times. To accommodate part-width construction, temporary pavement will be necessary. All lane shifts required will be performed in accordance with OMUTCD criteria for temporary traffic control zones. Closure of side streets will be kept to a minimum and will be coordinated with local schools and emergency services. The following is a summary of the proposed sequence of construction:

Phase 1

Construct temporary pavement and shift traffic to the north side of Social Row Road. Utilize 10-foot lanes. Construct the proposed work along the south side of Social Row Road. Detour the south legs of Paragon Road and Sheehan Road. Simultaneous closure of Paragon Road and Sheehan Road will not be permitted.

Phase 2

Shift traffic to the newly constructed south side of Social Row Road. Utilize 10-foot lanes. Construct the proposed work on the north side of Social Row Road. Detour the north legs of Paragon Road and Sheehan Road. Simultaneous closure of Paragon Road and Sheehan Road will not be permitted.

Phase 3

Apply final surface course and pavement markings.

4.4 Right-of-Way Requirements

All build alternatives will require the acquisition of new right-of-way. From the Paragon Road intersection to the east, all build alternatives are identical and require the same acquisitions of right-of-way.

West of Paragon Road:

- Alternative 3A will involve the least amount of right-of-way acquisition by acreage, but proposed construction will impact an existing single-family home at 1087 West Social Row Road (Parcel ID# O67 03813 0024). Refer to the conceptual relocation discussion below. A detailed breakdown of proposed preliminary permanent and temporary acquisitions by parcel is shown on the Alternative 3A plans included in Appendix 4.
- Alternative 3B will involve the most right-of-way acquisition by acreage. As discussed in Section 4.2.5, this alternative directly impacts an existing detention basin; and, due to post-construction storm water best management practice requirements, would require the construction of a new detention basin on the north side of Social Row Road at the southwest corner of the Real Life Church parcel (Parcel ID# O67 03813 0004).

Conceptual Relocation: Alternative 3 may require the removal of one 1,595-square foot detached single-family home in an area of dispersed single-family housing. There are multiple for sale listings of similarly sized detached single-family homes within a 1.5-mile radius of the household to be displaced. As potential relocation is limited to one single-family home with multiple housing options in close proximity, the project will not have divisive or disruptive effects on the community, such as separation of residences from community facilities. The estimated time for right-of-way coordination for this project is 24 months.

Table 1 – Preliminary Total Right-of-Way Acquisition by Alternative

Alternative	Permanent Right-of-Way (Acres)	Storm Sewer Easement (Acres)	Temporary Right-of-Way (Acres)	Estimated Cost
Alternative 3A	1.9761	0.3004	3.1704	$ 355,000*
Alternative 3B	3.2993	0.2580	4.9645	$ 270,000

**The estimated cost includes the purchase of the existing single-family residence previously noted. Demolition costs have been included in the construction estimate.*

4.5 Preliminary Geotechnical Assessments

Terracon Consultants, Inc. performed subgrade exploration within the project limits. All work was performed in accordance with ODOT Geotechnical Bulletin (GB1). A subgrade exploration report was generated and submitted to the MCEO on January 15, 2021. A map depicting boring locations as well as the boring logs can be found in Appendix 8. A total of ten borings were performed. The following is a summary of the relevant findings and recommendations:

- Exploration encountered high soil moisture content in a majority of the borings. The report recommends the use of underdrains and ditches to promote drainage of the subgrade and improve subgrade stability.
- The report recommends two alternatives to address unstable subgrades:
  - Undercut 12 inches below design subgrade and replace with granular material and geotextile, or
  - Chemical stabilization using cement for the uppermost 12 inches of subgrade.
- Groundwater was identified within borings B-003-0-20 and B-006-0-20 at depths of approximately 6 and 5 feet, respectively.
- Bedrock was not encountered by project soil borings; however, boring B-010-0-20 did indicate the presence of very dense granular materials with cobble/boulder (possibly decomposed rock). Past projects also encountered this material. Utility, signal support foundation, and proposed storm sewer construction may be impacted in this area.

4.6 Utility Issues

Initial utility coordination has revealed the following utilities within the project area:

- AES Ohio (formerly known as Dayton Power & Light)
- AT&T
- Centerpoint Energy (formerly known as Vectren)
- City of Centerville
- Crown Castle Fiber
- Montgomery County Engineer's Office
- Montgomery County Environmental Services
- MCI (Verizon)

- Miami Valley Lighting
- Spectrum/Charter Communications (formerly known as Time Warner Cable)

The following is a summary of utility conflicts that are known or may exist:

- Numerous utility poles will be required to relocate due to pavement widening.
- All build alternatives will require lowering a portion of an existing 16-inch water main just east of Waterbury Ridge Lane due to loss of cover caused by road widening. Additionally, Alternative 3B will result in roughly 1,100 feet of additional water main relocation due to loss of cover caused by road realignment.
- Numerous utility risers and pullboxes will be affected by widening/grading and will require adjustment or relocation.

A more detailed consideration of impacts will be completed during Stage 1 plan development.

4.7 Environmental Analysis

The following is a summary of environmental resources with the project area and anticipated involvement with those resources under the build alternatives:

4.7.1 Streams and Wetlands

No streams or mapped wetlands were identified within the project corridor. The storm ditch on the south side of the corridor, which will be impacted under all build alternatives, will be evaluated for the presence of wetlands. If regulated waterways are present, all necessary permits will be obtained.

4.7.2 Floodplain

The project corridor is not located within a designated special flood hazard area.

4.7.3 Threatened and Endangered Species

Montgomery County is within the known habitat ranges of the Indiana and northern long-eared bats, the bald eagle, rayed bean and snuffbox mussels, and the eastern massasauga rattlesnake. Habitat for these species is not present within the corridor. A review of the Ohio Department of Natural Resources (ODNR) Natural Heritage database did not identify any records of protected or sensitive species within the project area.

4.7.4 Cultural Resources

Within the project area, there are no National Historic Landmarks, sites listed on or have been determined eligible for the National Register of Historic Places, or sites for which Ohio Historic Inventory forms have been completed for much of the Yankee Trace development, with scattered archaeological resources identified; none of these resources are located within the potential footprint of any of the build alternatives.

Buildings within the corridor are primarily residential, with construction dates ranging from mid-1900s to the early 2000s. One c.1890 home is present on the south side of the corridor. Under Alternative 3A, the project will require demolition of the existing single-family home at 1087 Social Row Road, with a reported construction date of 1941. The project will be evaluated for impacts to cultural resources. If historic properties are present, efforts to avoid or minimize impacts will be considered.

4.7.5 Section 4(f)/6(f) Resources

Multiple publicly owned recreational resources are present within the corridor and are protected under Section 4(f) of the US DOT Act of 1966:

- The Great-Little Trail, a multi-use trail owned and maintained by Montgomery County and CWPD is adjacent to Yankee Trace within the public right-of-way at the project's western limits. Under all alternatives, the project will provide a connection between this trail and Robert F. Mays Park. Minor modifications to the existing trail, which currently lacks a logical eastern terminus, may be necessary to ensure appropriate connections/reduce environmental impacts.
- Yankee Trace Golf Course is owned and maintained by the City of Centerville. Under all build alternatives, minor right-of-way and construction impacts are anticipated, to allow for the proposed Shared Use Path construction. Of the build alternatives, Alternative 3B will have the greatest impact (0.0162 acres permanent right-of-way and 0.0453 acres temporary right-of-way), and Alternative 3A will have the least impact (0.0012 acres permanent right-of-way and 0.0067 acres temporary right-of-way).
- Waterbury Woods Park, owned and maintained by the CWPD. Under all build alternatives, the project is not expected to have direct involvement with this park.
- Robert F. Mays Park, owned and maintained by the CWPD, is located west of Paragon Road, on the south side of Social Row Road. Under all build alternatives, minor right-of-way and construction impacts are anticipated to allow for the proposed road widening and connection to the trail system at the park. Of the build alternatives, Alternative 3A will have the least impact (0.5406 acres permanent right-of-way and 0.6168 acres temporary right-of-way), and Alternative 3B will have the greatest impacts (1.2049 acres permanent right-of-way and 2.4971 acres temporary right-of-way).

The project will include new sidewalk connections to a walking trail at the Randall Residence, at the project's eastern limits. The Randall Residence is at least partially in public ownership and the path has connections to the existing sidewalk system. After consultation with ODOT Office of Environmental Services, it has been determined the path is intended to serve residents and staff of the nursing home and is not a recreation feature protected under Section 4(f).

Impacts under the project will be minor, with access to the recreational facilities maintained. The project will improve connectivity to and between the Great-Little Trail, Waterbury Woods Park, and Robert F. Mays Park. Under all alternatives impacts to these recreational resources are expected to meet the criteria of de minimis or enhancement. None of these resources have been developed with Land & Water Conservation Funds and are not protected under Section 6(f) of the Land & Water Conservation Act. Alternative 3B will have the most involvement with the Robert F. Mays Park. This alternative will involve the realignment of the existing path within Robert F. Mays Park and relocation of the existing detention pond at the park.

4.7.6 Air Quality

The project is not located in an area currently in non-attainment for criteria air pollutants under the National Ambient Air Quality Standards. The project is located in an area in non-attainment under the 1996 standards and has been analyzed for inclusion on the MVRPC and State Transportation Improvement Programs. Under all build alternatives, a qualitative analysis for mobile source air toxics (MSAT) will be required, due to the addition of through travel lanes. The project is not expected to exceed the thresholds requiring a quantitative MSAT analysis.

4.7.7 Noise Levels

Under all build alternatives, the project will increase capacity through the addition of through travel lanes. A noise analysis will be undertaken. If the project will result in noise impacts as defined under federal regulations, the project will be evaluated to determine if noise abatement is feasible and reasonable.

4.7.8 Drinking Water Resources

The project is not located within the boundaries of a designated sole source aquifer.

4.7.9 Farmland

The project is located entirely within an urbanized area and does not require coordination under the Farmland Protection Policy Act. Additionally, acquisition under this project will not exceed the coordination thresholds of Ohio Revised Code (ORC) 929.05.

4.7.10 Regulated Materials

ODOT's Regulated Materials Review GIS Mapping did not identify any properties of concern adjacent to the corridor. Land use within the corridor is a mix of residential, agricultural, and park lands. The project is not expected to encounter regulated materials requiring special materials management.

4.7.11 Underserved Populations

US Census data for underserved populations for census tracts including the project corridor are detailed in the table below. Under the build alternatives, traffic on Social Row Road will be maintained. There are no Greater Dayton RTA Transit routes within the corridor. A senior living facility is present at the eastern limits of the corridor. Impacts to the existing perimeter path are required due to horizontal and vertical conflicts with proposed pedestrian facilities at the intersections. The existing perimeter path will have to be reconstructed in these areas whether or not a connection is ultimately provided to the proposed Social Row Road pedestrian facilities. The project is not expected to result in disproportionate adverse impacts to underserved populations.

Table 2 – US Census Data for Undeserved Populations in Project Corridor

Census Tracts	% Population by Block Group
People of Color	16% to 25%
Individuals in Poverty	2% to 12%
Limited English Proficiency	0% to 1%
Elderly	8% to 37%

4.7.12 Public Involvement

Public involvement will be performed, and public input will be considered, prior to advancing a build alternative to detailed design, consistent with ODOT's public involvement guidance.

4.8 Aesthetics

POD Design has assisted with the creation of artistic renderings of aesthetic enhancements proposed at the intersections of Social Row Road and Paragon Road as well as Social Row Road and Sheehan Road. These renderings have been included in Appendix 9. As the design progresses, aesthetic options will be coordinated with stakeholders from Washington Township, City of Centerville, and Montgomery County.

4.9 Cost Estimates

Detailed cost analyses were completed for both Alternatives 3A and 3B and are contained in Appendix 10. Cost estimates include projected construction costs and proposed right-of-way costs, as well as preliminary engineering and construction administration.

Table 3 – Summary of Cost Estimates

Project Cost Estimates	No Build	Alternative 3A – Path on the North to Paragon Road, Existing Curvature	Alternative 3B – Path on the North to Paragon Road, Realignment of Social Row Road
Preliminary Engineering	$ 0	$ 1,585,000	$ 1,774,000
Construction Costs	$ 0	$ 6,339,000	$ 7,095,000
Right-of-Way Costs	$ 0	$ 355,000	$ 270,000
Construction Administration	$ 0	$ 634,000	$ 710,000
Total Cost Estimate	**$ 0**	**$ 8,913,000**	**$ 9,849,000**

5.0 Comparison of Alternatives

The No Build, Alternative 3A, and Alternative 3B are evaluated against the goals and objectives of the project as identified in the Purpose and Need section of the report.

Table 4 - Alternatives Comparison Matrix

Primary Needs: Congestion and Improved Pedestrian Access			
Need Elements	**No Build**	**Alternative 3A**	**Alternative 3B**
Reduce congestion at the Paragon Road intersection caused by increased traffic volumes, resulting in a LOS of F for 2025 and 2045 traffic volumes	Does not improve LOS (2025 AM B/13.4 seconds) (2025 PM F/78.5 seconds) (2045 AM F/264.8 seconds) (2045 PM F/Failure)	Improves LOS (2025 AM B/15.1 seconds) (2025 PM B/15.8 seconds) (2045 AM C/20.9 seconds) (2045 PM C/23.9 seconds)	Improves LOS (2025 AM B/15.1 seconds) (2025 PM B/15.8 seconds) (2045 AM C/20.9 seconds) (2045 PM C/23.9 seconds)
Reduce congestion at the Sheehan Road intersection caused by increased traffic volumes, resulting in a LOS of F for 2045 traffic volumes	Does not improve LOS (2045 AM F/105.6 seconds) (2045 PM F/125.9 seconds)	Improves LOS (2045 AM D/37.7 seconds) (2045 PM D/44.5 seconds)	Improves LOS (2045 AM D/37.7 seconds) (2045 PM D/44.5 seconds)
Reduce extreme queue lengths at the Sheehan Road intersection (all four approaches over 1,000 feet) for 2045 traffic volumes	Does not improve queue lengths (2045 PM EB/1,317 feet) (2045 PM WB/644 feet) (2045 PM NB/1,221 feet) (2045 PM SB/1,003 feet)	Improves queue lengths (2045 PM EB/444 feet) (2045 PM WB/305 feet) (2045 PM NB/186 feet) (2045 PM SB/391 feet)	Improves queue lengths (2045 PM EB/444 feet) (2045 PM WB/305 feet) (2045 PM NB/186 feet) (2045 PM SB/391 feet)
Provide safe and efficient pedestrian and non-motorized vehicle access to Robert F. Mays Park and adjacent parcels	No	Yes. Connects existing sidewalk and shared use path to Robert F. Mays Park and adjacent parcels	Yes. Connects existing sidewalk and shared use path to Robert F. Mays Park and adjacent parcels
Advance the long-term shared use path plans for MVRPC and the CWPD	No	Yes. Connects existing shared use path to Robert F. Mays Park, extends path to Sheehan Road, and provides connection to existing shared use path on west side of Sheehan Road (South of Social Row Road)	Yes. Connects existing shared use path to Robert F. Mays Park, extends path to Sheehan Road, and provides connection to existing shared use path on west side of Sheehan Road (South of Social Row Road)
Key Considerations			
Key Issues	**No Build**	**Alternative 3A**	**Alternative 3B**
Avoids Roadway and Drainage Design Issues (Including Post Construction BMPs)	Yes	Yes	No. Impacts existing detention pond in Robert F. Mays Park requiring relocation and exceeds thresholds for addition of impervious area resulting in the requirement for a new detention pond.
Avoids Right of Way Impacts (Buildings)	Yes	No. Impacts existing single-family home at 1087 West Social Row Road	Yes
Avoids Right of Way Impacts (R/W Acreage)	No R/W	1.9761	3.2993
Avoids Environmental Issues (Impacts to Parks)	Yes	Yes	No. Detention pond relocation impacts existing athletic field within Robert F. Mays Park
Avoids Environmental Issues (Impacts to Potentially Regulated Waterways)	Yes	No. Impacts existing ditch on south side of road.	No. Impacts existing ditch on south side of road.
Avoids Environmental Issues (Impacts to Air Quality/Noise)	Yes	To Be Determined	To Be Determined
Project Cost	$ 0	$ 8,913,000	$ 9,849,000

Note: Red text used to indicate that primary project needs and/or key issues were not satisfied.

Note: Key Issues which did not influence the selection of the preferred alternative (i.e. Maintenance of Traffic/Property Access, Preliminary Geotechnical Assessments, Utility Issues, and Aesthetics) have been excluded from the table.

6.0 Conclusion

MCEO seeks to identify a preferred alternative to alleviate congestion on Social Row Road caused by increased traffic volumes and to improve pedestrian access to area parks and parcels. This feasibility study considers a no build alternative and two proposed build alternatives identified as Alternative 3A and Alternative 3B.

The no build alternative does not satisfy the purpose of the project or address the need elements identified within this report.

Both build alternatives, Alternative 3A and Alternative 3B, satisfy the purpose for the project. **Alternative 3A is recommended as the preferred alternative:**

- While Alternative 3A does involve a purchase and demolition of the existing single-family home at 1087 West Social Row Road, it avoids extensive right-of-way impacts to other parcels, minimizes impacts to Robert F. Mays Park, and has a lower overall cost.

7.0 Next Steps

Next steps in the development of this project include:

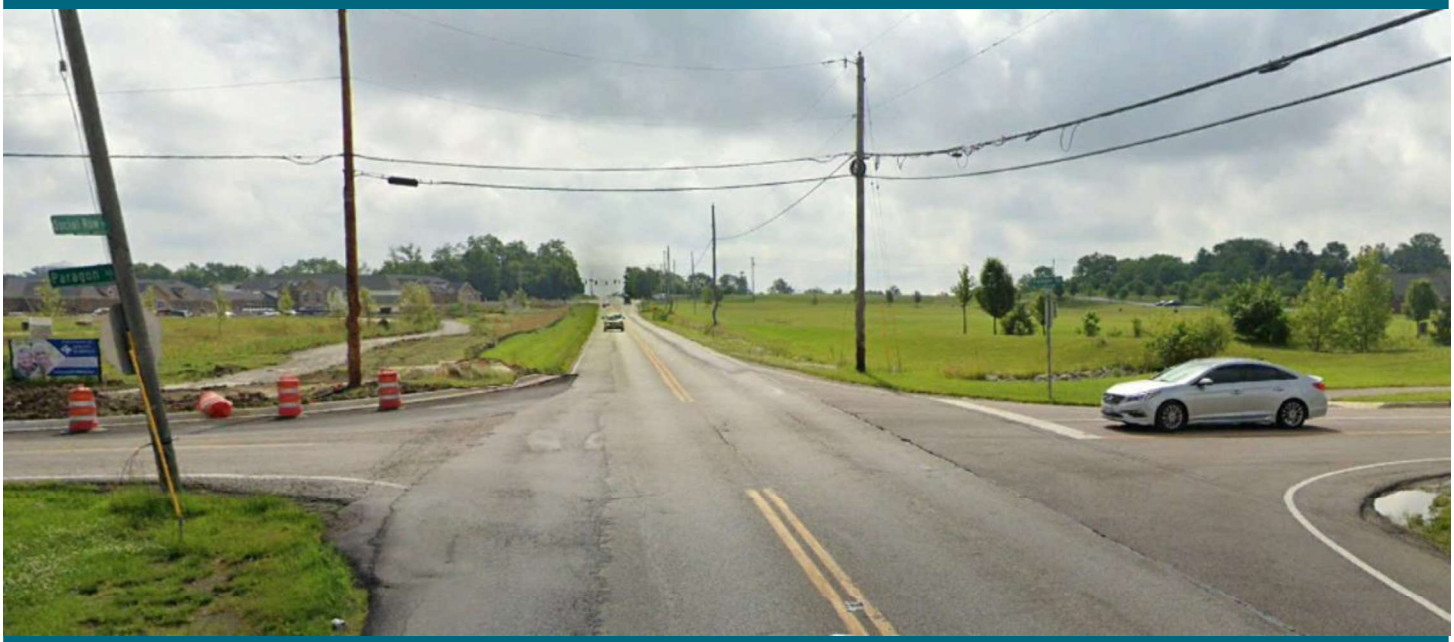
- Public outreach.
- Further develop plans for a Stage 1 submittal due 2/01/2022.
- The NEPA start date is 10/1/2022, with the environmental document approved by 3/1/2023.
- Initiate development of Phase 1. Final Tracings are to be complete November 2024. The sale date is scheduled for January 15, 2025.
- System enhancement and operations funds have been obtained for this project with a 65% federal and 35% local cost sharing.

Traffic Engineering Assessment Report

Social Row Road Improvement Project
Montgomery County, Ohio

PID. 113360

February 2021



fishbeck
Engineers | Architects | Scientists | Constructors

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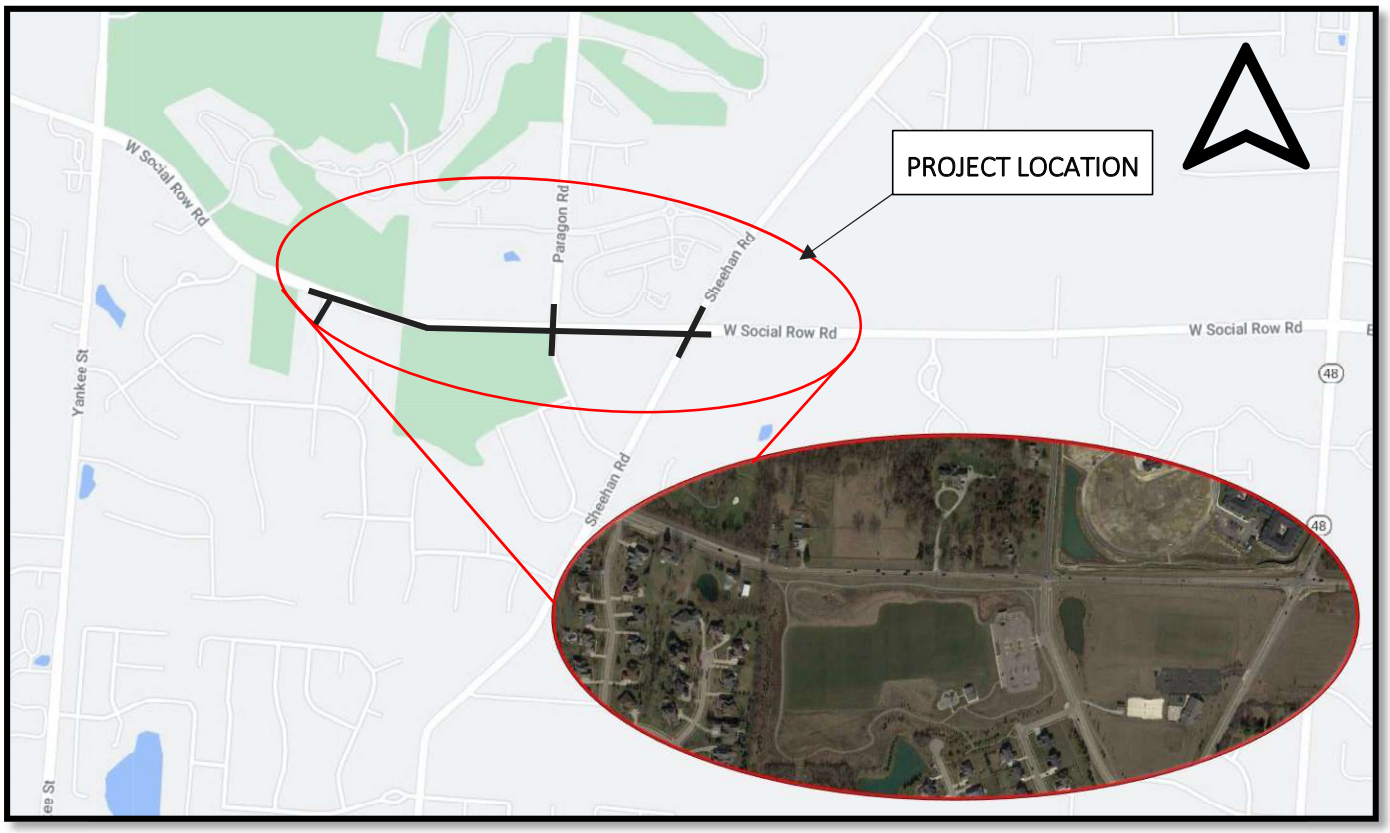
1.0 Project Description (Purpose of Report)

At the request of Montgomery County, Fishbeck has conducted a Traffic Engineering Assessment Report (EAR) to evaluate the purpose and needs for improvements to a section of Social Row Road (CR-166) from Waterbury Ridge Lane to 300' east of Sheehan Road.

1.1 Project Location

The proposed project focuses on the section of Social Row Road that intersects with Waterbury Ridge Lane, Paragon Road and Sheehan Road. This project is located in Washington Township and the City of Centerville, suburbs of Dayton, within Montgomery County, Ohio. This project falls under the jurisdiction of Montgomery County. In the vicinity of the project, Social Row Road runs east to west, and Waterbury Ridge Lane, Paragon Road and Sheehan Road run north to south. A location map for the project limits can be seen in *Figure 1 – Project Location* below.

Figure 1 – Project Location



1.2 Project Need and Purpose

The need for this project is due to the increased traffic volumes along Social Row Road and to provide non-vehicular pathways through the project area, including a new 5' walk and 10' shared use path. The purpose of the report is to document the engineering assessment for the proposed project and determine if potential roadway improvements are needed for the project location. The intent of the project is to improve the capacity along Social Row Road and the three intersections, while also considering traffic delays and mobility.

A feasibility study will be developed, in addition to this EAR, to determine any necessary improvements along the Social Row Road corridor. Montgomery County would like to increase capacity and safety by installing left-turn

storage along Social Row Road. There is also a concern that the existing two-lane roadway will not be able to handle increased traffic volumes in the area.

2.0 Existing Facilities

2.1 Roadways

The characteristics of the study area roadways are described below:

2.1.1 Social Row Road

Social Row Road (CR-166) is classified by ODOT as an urban minor arterial. The posted speed limit on Social Row Road is 45 mph. Through the Waterbury Ridge Lane intersection and to the west there are two 12-foot thru lanes in the westbound direction and one 12-foot thru lane in the eastbound direction. East of the Waterbury Ridge Lane intersection there is a 12-foot paved median that tapers down to no median approximately 300' east of the intersection. There is curb and gutter on both sides of the road for this section.

Through the rest of the project area, starting approximately 300' east of Waterbury Ridge Lane, there is one 12-foot thru lane in each direction with no median and a one-foot paved shoulder.

2.1.2 Sheehan Road

Sheehan Road is classified by ODOT as an urban major collector to the north of Social Row Road and an urban local road to the south of the intersection. The posted speed limit on Sheehan Road is 40 mph. Through the project area there is one 12-foot thru lane in each direction. There is a 5-foot shoulder with curb and gutter on the west side of Sheehan Road and a one-foot shoulder on the east side.

2.1.3 Paragon Road

Paragon Road is classified by ODOT as an urban major collector to the north of Social Row Road and an urban local road to the south of the intersection. The posted speed limit on Paragon Road is 35 mph north of Social Row Road and 25 mph south of the intersection. North of Social Row Road there is one 12-foot thru lane in each direction, south of Social Road there is one 12-foot thru lane in each direction with a 12-foot turn lane/median. North of Social Row Road there is a one-foot shoulder with curb and gutter on the east side of Paragon Road and a one-foot shoulder on the west side. South of Social Row Road there is curb and gutter on both sides of the road.

2.1.4 Waterbury Ridge Lane

Waterbury Ridge Lane is classified by ODOT as an urban local road. The posted speed limit on Waterbury Ridge Lane is 25 mph. Through the project area there is one 13-foot thru lane in each direction with curb and gutter on both sides of the road.

2.2 Intersections

The characteristics of the study area roadways are described below:

2.2.1 Social Row Road and Sheehan Road

The existing intersection of Social Row Road and Sheehan Road is signalized. Social Row Road has one shared thru/right turn lane and a dedicated 100-foot left turn lane for each approach. Sheehan Road has one shared left/thru/right turn lane for each approach.

The traffic control at the intersection includes overhead three-section signal heads for each approach. The left turn movements are permissive with no left turn phasing. The signals are supported by a messenger wire signal support.

There is a 8-9 foot paved path on the west side of Sheehan Road going north to south for non-motorized vehicles. There is a pedestrian signal and pushbutton on the Social Row Road east crossing of the intersection. There are no other pedestrian or non-motorized facilities provided at the intersection.

2.2.2 Social Row Road and Paragon Road

The existing intersection of Social Row Road and Paragon Road is unsignalized and has two-way stop control on Paragon Road. Social Row Road has one shared left/thru/right turn lane for each approach. Paragon Road has one shared left/thru/right turn lane for the southbound approach and has one shared thru/right turn lane and a dedicated 175-foot left turn lane for the northbound approach.

On the northbound approach of Paragon Road there is a shared-use path running along the east side that crosses Paragon Road 30 feet south of the intersection and continues west along the southern side of Social Row Road. There are no other pedestrian or non-motorized facilities provided at the intersection.

2.2.3 Social Row Road and Waterbury Ridge Lane

The existing intersection of Social Row Road and Waterbury Ridge Lane is an unsignalized T-intersection with a one-way stop control on Waterbury Ridge Lane. Social Row Road has one thru lane and a dedicated right turn lane for the eastbound approach and two thru lanes (with a shared left turn) for the westbound approach. Waterbury Ridge Lane has one shared left/right turn lane for the northbound approach.

There is a 8-9 foot paved path on the north side of the intersection. There is a sidewalk and crossing on the southern side of the intersection. There are no other pedestrian or non-motorized facilities provided at the intersection.

2.3 Related Projects

In the years following the construction of the Austin Pike Interchange (PID# 77246) several projects have been performed which widened and reconstructed Austin Pike (n.k.a. Austin Boulevard) between SR 741 and Yankee Street. The most recent of which (MOT-C.R. 166-7.03, PID# 84240) widened and reconstructed Austin Boulevard between Washington Church Road and Yankee Street.

Social Row Road east of Yankee Street had previously been widened and realigned to meet Austin Boulevard by a project constructed in the early 90's. This project widened Social Row Road from the intersection with Yankee east to The Woods – Section One development. The Woods – Section One development constructed Waterbury Ridge Lane and completed the widening of Social Row Road to its current state.

3.0 Traffic Analysis

As a part of the project, traffic volumes and crash history were reviewed along Social Row Road at the three intersections. For this report, average daily traffic (ADT), design hourly volumes (DHV), and truck percentage information has been acquired from traffic counts performed on October 22, 2020 and were submitted as Certified Traffic Plates to ODOT and approved on January 11, 2021. These are provided in *Appendix 1 – ODOT Correspondence*.

3.1 Evaluating Alternatives for Analysis

Fishbeck analyzed a variety of improvements to determine which are applicable, following the *ODOT Manual of Uniform Traffic Control Devices (OMUTCD).* The purpose of this study is to determine how many lanes are needed and what additional improvements, if any, are needed at the intersections in the study area. The following is a list of scenarios analyzed:

- Scenario 1 – No Build: This scenario involves no improvements to the existing roadway and intersections.
- Scenario 2 – Three-Lane Build: This scenario looked at Social Row Road with a continuous three-lane section throughout the project area, one lane in each direction with a two-way-left-turn-lane (TWLTL). Left turn lanes would be constructed on Social Row Road at the intersection of Paragon Road. This would include converting the existing two-way stop-controlled intersection of Social Row Road and Paragon Road into a signalized intersection based on the Signal Warrant results in Section 3.2. On Paragon Road a southbound left turn lane would be constructed to match the existing northbound left turn lane to align the northbound/southbound thru lanes at the intersection for safety and to provide the opportunity for protected left turn phasing in the future. At the intersection of Social Row Road and Sheehan Road left turn lanes would be constructed on the northbound and southbound Sheehan Road approaches to provide storage for the turning movements and allow for the opportunity of protected left turn phasing in the future.
- Scenario 3 – Five-Lane Build: This scenario would include all of the improvements from Scenario 2, with the addition of widening Social Row Road to a five-lane section through the project area: two lanes in each direction with a TWLTL.

These three scenarios were analyzed to determine the preferred improvements to increase capacity, improve safety, and improve traffic operations at the three intersections along Social Row Road.

3.2 Signal Warrant Analysis

A signal warrant analysis was performed using the 2020 existing traffic volumes counted on October 22, 2020 to evaluate the need for a signal at the intersections of Social Row Road and Paragon Road and to evaluate the existing signal at the intersection of Social Row Road and Sheehan Road. The signal warrant analysis was performed following the guidelines from the ODOT OMUTCD and utilizing the ODOT Traffic Signal Warrant Spreadsheet.

The pedestrian warrant was reviewed but found not applicable at either the Sheehan Road or the Paragon Road intersections, due to the lack of existing pedestrian facilities at the intersections and low pedestrian volumes. To meet the pedestrian warrant minimum over a four-hour pedestrian a total of 75 pedestrians are needed. The eight-hour pedestrian volume totals at both intersections are below 11 pedestrians and therefore would not meet the warrant.

A summary of the signal warrant analysis is provided in *Table 1 – Signal Warrant Summary*. The Signal Warrant analysis can be found in in *Appendix 2 – Signal Warrant Analysis*.

Table 1 – Signal Warrant Summary

Intersection	Warrant 1 Eight-Hour Vehicular Volume	Warrant 2 Four-Hour Vehicular Volume	Warrant 3 Peak Hour Vehicular Volume	Warrant 4 Pedestrian Volume	Warrant 5 School Crossing	Warrant 6 Coordinated Signal System	Warrant 7 Crash Experience	Warrant 8 Roadway Network	Warrant 9 Intersection Near a Grade Crossing
Social Row Rd & Paragon Rd	Not Met	Met (70%)	Met	N/A	N/A	N/A	N/A	N/A	N/A
Social Row Rd & Sheehan Rd	Met	Met (70%)	Met	N/A	N/A	N/A	N/A	N/A	N/A

The intersection of Social Row Road and Paragon Road has four approaches and under current conditions is stop controlled on the Paragon Road approaches. Table 1 provides a summary of the signal warrant analyses for the intersection. The table indicates that the intersection meets the 70% Four-Hour Vehicular Volume warrant and Peak Hour Vehicular Volume warrants for the background 2020 traffic volumes. Based on Signal Warrant 2 and Signal Warrant 3 meeting the warrant, along with the background capacity analysis found in Section 3.4, a traffic signal is recommended at the intersection of Social Row Road and Paragon Road.

The intersection of Social Row Road and Sheehan Road has four approaches and is signalized under current conditions. Table 1 provides a summary of the signal warrant analyses for the intersection. The table indicates that the intersection meets the Eight Hour Vehicular Volume, 70% Four-Hour Vehicular Volume warrant, and Peak Hour Vehicular Volume warrants for the background 2020 traffic volumes. Based on Signal Warrants 1-3 meeting the warrant criteria, it is recommended that the traffic control at the intersection of Social Row Road and Sheehan Road remains signalized.

3.3 Crash Data and Safety Analysis

A safety analysis was performed to evaluate the crash history within the project limits. Crash data was analyzed along Social Row Road and within 250' of the three intersections. Historic crash data was reviewed for a 5-year period from January 2015 through December 2019, as provided by ODOT's Transportation Information Mapping System (TIMS). Analysis was performed using ODOT's CAM Tool spreadsheet. A summary of the crash data and collision types is provided in *Table 2 – Crash Data Collision Type*. The crash reports data pulled from TIMS can be found in *Appendix 3 – Safety Analysis*.

Table 2 – Crash Data Collision Type (2015-2019)

Crash Type	2015	2016	2017	2018	2019	Total (%)
Rear End	2	4	0	0	4	**10 (34%)**
Angle	1	2	0	3	2	**8 (28%)**
Fixed Object	2	1	0	2	1	**6 (21%)**
Left Turn	0	0	0	1	2	**3 (10%)**
Sideswipe - Passing	0	1	0	0	1	**2 (7%)**
Total	**5**	**8**	**0**	**6**	**10**	**29**

There was a total of 29 crashes within the study area over the five-year period. An analysis of the crashes shows that 66% of the crashes have resulted in property damage, and 14% have resulted in an incapacitating injury. There were no crashes with fatalities within the study area over the five-year period. Rear end collisions account for 34% of the crashes that have occurred, and angle and left turn crashes combined to make up 38% of the crashes. 72% of the collisions have occurred during dry conditions. Following too close and failure to yield the right of way are the highest contributing circumstance to these collisions at 35% and 31% respectively. 45% of the crashes occurred at either the Paragon Road or Sheehan Road intersections. A summary of the crash severity is provided in *Table 3 – Crash Severity Data*.

Table 3 – Crash Severity Data (2015-2019)

Crash Type	2015	2016	2017	2018	2019	Total
Property Damage	3	4	0	6	6	**19 (66%)**
Non-Incapacitating Injury	0	3	0	0	3	**6 (20%)**
Incapacitating Injury	2	1	0	0	1	**4 (14%)**
Fatality	0	0	0	0	0	**0 (0%)**
Total	**5**	**8**	**0**	**6**	**10**	29

There were a total of 10 crashes at the intersection of Social Row Road and Paragon Road. Of those 10 crashes,70% involved a left turning vehicle on Social Row Road or a vehicle turning off the stop controlled minor approaches. These crashes all fell under left turn, angle, or rear end crash categories. Of these seven turning related crashes, three of them were injury crashes. With the proposed signal installation and left turn lanes for all approaches at both intersections, vehicles making left turns will have applicable turn lane storage and vehicles on Sheehan Road/Paragon Road will have a permitted left turn phase for making a turn without having to wait for a gap on Social Row Road.

The installation of left-turn lanes and traffic signals at the Paragon Road and Sheehan Road intersections should help mitigate a number of these crashes.

3.4 Traffic Data Forecasting

The analyses for the existing conditions and proposed scenarios were studied for the Construction Year (2025) and Design Year (2045). For this report, ADT, DHV, and truck percentage information from the approved Certified Traffic Plates were used for traffic analysis. The average annual daily traffic (AADT) was calculated for the Construction Year and Design Year; these results are summarized in *Table 4 – Projected Traffic Volumes*. Additional traffic volume and peak hour data can be found in *Appendix 1 – ODOT Correspondence*.

Table 4 – Projected Traffic Volumes

Roadway	Location	Construction Year AADT (2025)	Design Year AADT (2045)
Social Row Road	East of Sheehan Road	11,180	17,440
Social Row Road	East of Paragon Road	13,770	21,810
Social Row Road	West of Paragon Road	14,290	23,040
Social Row Road	West of Waterbury Ridge Lane	14,570	23,600
Sheehan Road	North of Social Row Road	6,430	8,140
Sheehan Road	South of Social Row Road	5,300	6,590
Paragon Road	North of Social Row Road	2,510	3,470
Paragon Road	South of Social Row Road	1,590	2,200
Waterbury Ridge Lane	South of Social Row Road	640	900

3.5 Capacity Analysis

Synchro (Version 10.3.122.0) was used to perform operational analyses for the intersections in this study for all three scenarios. Synchro uses methodologies described in the Highway Capacity Manual (HCM) 2010 to provide several measures of effectiveness for a transportation network based on geometric configurations and operational conditions. Level of Service (LOS) is a letter grade that describes traffic operations based on the amount of delay experienced by vehicles at an intersection, along an intersection approach. LOS is measured using letter grades ranging from A to F, with LOS A being the best and LOS F being the worst. Volume to capacity (v/c) ratio is a second output from HCS analysis showing the amount of vehicle volume compared to the capacity for the standard roadway lane. A v/c ratio of greater than 1.00 is considered deficient with 0.93 or less being the preferred v/c ratio. For the studied roadways, ODOT's State Highway Access Management Manual (SHAMM) specifies when comparing the No-Build condition to the Build condition, degradation occurs when:

- The overall intersection delay drops to LOS D or worse, or if a LOS F is made worse.
- The control delay drops to LOS E or a LOS F is made worse.
- Turn lane queuing exceeds available turn storage or turn lanes are blocked by thru queuing (when Queue Storage Ratios are greater than 1.0, microsimulation must be used to verify that queuing is an issue).

Table 5 – LOS Criteria for Intersections presents the HCM criteria for various LOS for unsignalized and signalized intersections. The color coding in the table is used in the capacity analysis summary tables later in this report.

Table 5 – LOS Criteria for Intersections

LOS	Average Stopped Vehicle Delay (seconds)	
	Unsignalized	Signalized
A	≤ 10	≤ 10
B	> 10 and ≤ 15	> 10 and ≤ 20
C	> 15 and ≤ 25	> 20 and ≤ 35
D	> 25 and ≤ 35	> 35 and ≤ 55
E	> 35 and ≤ 50	> 55 and ≤ 80
F	> 50	> 80

TEC provided turning movement volumes, in 15-minute increments, that were collected at the three intersections on October 22, 2020. From that data, it was determined that the morning peak hour was from 7:30-8:30 AM and the afternoon peak hour was from 5:00-6:00 PM for all three intersections. The traffic volumes, percentage of heavy vehicles, and peak hour factors from that data set were used in the Synchro capacity analysis.

3.5.1 Construction Year 2025 Capacity Analysis Summary

Synchro was used for the capacity analysis for the Construction Year (2025) No Build, 3-Lane Build, and 5-Lane Build scenarios. A summary of the results can be seen below in *Table 6 – Construction Year 2025 LOS, Delay, and v/c*. The Synchro analysis reports can be found in *Appendix 4 – Operational Analysis*.

Table 6 – Construction Year 2025 LOS, Delay and v/c

Approach / Lane Group		2025 Background (No Mitigation)				2025 3-Lane Build (With Added Signals & Left Turn Lanes)				2025 5-Lane Build (With Added Signals & Left Turn Lanes)			
		a.m. Peak Hour		p.m. Peak Hour		a.m. Peak Hour		p.m. Peak Hour		a.m. Peak Hour		p.m. Peak Hour	
		LOS (sec)	v/c	LOS (sec)	v/c	LOS (sec)	v/c	LOS (sec)	v/c	LOS (sec)	v/c	LOS (sec)	v/c
Social Row Rd & Waterbury Ridge Ln		*Minor Stop Control*				*Minor Stop Control*				*Minor Stop Control*			
Social Row (EB)	*Approach*	*A (0.0)*	*~*	*A (0.0)*	*~*	*A (0.0)*	*~*	*A (0.0)*	*~*	*A (0.0)*	*~*	*A (0.0)*	*~*
Social Row (WB)	*Approach*	*A (0.2)*	*0.01*	*A (0.3)*	*0.02*	*A (0.2)*	*0.01*	*A (0.3)*	*0.02*	*A (0.2)*	*0.01*	*A (0.3)*	*0.02*
Waterbury Ridge (NB)	*Approach*	*B (13.9)*	*0.15*	*E (36.1)*	*0.38*	*B (13.9)*	*0.15*	*E (36.1)*	*0.38*	*B (13.9)*	*0.15*	*E (36.1)*	*0.38*
Intersection Total		***A (0.8)***	***~***	***A (1.5)***	***~***	***A (0.8)***	***~***	***A (1.5)***	***~***	***A (0.8)***	***~***	***A (1.5)***	***~***
Social Row Rd & Paragon Rd		*Minor Stop Control*				*Signal*				*Signal*			
Social Row (EB)	*Left*	*~*	*~*	*~*	*~*	*C (30.7)*	*0.26*	*B (15.2)*	*0.15*	*C (23.2)*	*0.22*	*B (18.8)*	*0.19*
	Thru/Right	*A (1.1)*	*0.07*	*A (0.5)*	*0.07*	*A (8.3)*	*0.42*	*B (17.9)*	*0.91*	*B (12.9)*	*0.33*	*B (17.5)*	*0.75*
	Approach	*A (1.1)*	*~*	*A (0.5)*	*~*	*B (10.5)*	*~*	*B (17.8)*	*~*	*B (13.9)*	*~*	*B (17.6)*	*~*
Social Row (WB)	*Left*	*~*	*~*	*~*	*~*	*B (10.9)*	*0.02*	*C (32.7)*	*0.7*	*B (14.7)*	*0.03*	*C (23.3)*	*0.05*
	Thru/Right	*A (0.1)*	*0.01*	*A (0.2)*	*0.02*	*B (18.1)*	*0.89*	*A (9.0)*	*0.59*	*B (16.3)*	*0.70*	*B (14.1)*	*0.48*
	Approach	*A (0.1)*	*~*	*A (0.2)*	*~*	*B (18.0)*	*~*	*A (9.3)*	*~*	*B (16.3)*	*~*	*B (14.3)*	*~*
Paragon (NB)	*Left*	*F (194.5)*	*0.90*	*F (88.1)*	*0.54*	*C (25.6)*	*0.15*	*C (32.6)*	*0.09*	*B (12.2)*	*0.09*	*B (13.5)*	*0.04*
	Thru/Right	*E (43.2)*	*0.13*	*A (9.6)*	*0.54*	*C (21.7)*	*0.03*	*C (28.2)*	*0.12*	*B (10.5)*	*0.02*	*B (11.7)*	*0.06*
	Approach	*F (194.2)*	*~*	*F (Error)*	*~*	*C (24.8)*	*~*	*C (29.7)*	*~*	*B (11.9)*	*~*	*B (12.3)*	*~*
Paragon (SB)	*Left*	*~*	*~*	*~*	*~*	*C (22.6)*	*0.08*	*C (30.6)*	*0.17*	*B (10.9)*	*0.05*	*B (12.6)*	*0.09*
	Thru/Right	*F (93.4)*	*0.79*	*F (915.7)*	*2.72*	*C (23.6)*	*0.20*	*C (32.0)*	*0.36*	*B (11.3)*	*0.12*	*B (12.8)*	*0.19*
	Approach	*F (93.4)*	*~*	*F (915.7)*	*~*	*C (23.3)*	*~*	*D (31.5)*	*~*	*B (11.2)*	*~*	*B (12.7)*	*~*
Intersection Total		***B (13.4)***	***~***	***F (78.5)***	***~***	***B (16.5)***	***~***	***B (16.3)***	***~***	***B (15.1)***	***~***	***B (15.8)***	***~***
Social Row Rd & Sheehan Rd		*Signal*				*Signal*				*Signal*			
Social Row (EB)	*Left*	*D (38.8)*	*0.45*	*C (28.4)*	*0.52*	*C (31.7)*	*0.39*	*C (25.2)*	*0.50*	*C (29.1)*	*0.37*	*C (27.1)*	*0.53*
	Thru/Right	*B (14.4)*	*0.39*	*C (31.6)*	*0.91*	*B (11.9)*	*0.38*	*C (25.4)*	*0.89*	*C (17.3)*	*0.28*	*C (20.1)*	*0.60*
	Approach	*B (19.2)*	*~*	*C (31.0)*	*~*	*B (15.7)*	*~*	*C (25.4)*	*~*	*B (19.6)*	*~*	*C (21.3)*	*~*
Social Row (WB)	*Left*	*B (17.9)*	*0.05*	*D (38.9)*	*0.23*	*B (14.7)*	*0.05*	*C (34.5)*	*0.21*	*B (19.5)*	*0.06*	*C (26.6)*	*0.15*
	Thru/Right	*C (25.5)*	*0.83*	*B (15.9)*	*0.58*	*B (18.9)*	*0.81*	*B (14.0)*	*0.57*	*C (20.5)*	*0.61*	*B (17.6)*	*0.39*
	Approach	*C (25.3)*	*~*	*B (17.2)*	*~*	*B (18.7)*	*~*	*B (15.2)*	*~*	*C (20.4))*	*~*	*B (18.1)*	*~*

Table 6 – Construction Year 2025 LOS, Delay and v/c

Approach / Lane Group		2025 Background (No Mitigation)				2025 3-Lane Build (With Added Signals & Left Turn Lanes)				2025 5-Lane Build (With Added Signals & Left Turn Lanes)			
		a.m. Peak Hour		p.m. Peak Hour		a.m. Peak Hour		p.m. Peak Hour		a.m. Peak Hour		p.m. Peak Hour	
		LOS (sec)	v/c	LOS (sec)	v/c	LOS (sec)	v/c	LOS (sec)	v/c	LOS (sec)	v/c	LOS (sec)	v/c
Sheehan (NB)	*Left*	~	~	~	~	*C (30.8)*	*0.41*	*D (37.0)*	*0.37*	*B (16.2)*	*0.25*	*C (22.5)*	*0.22*
	Thru/Right	*C (27.3)*	*0.6*	*C (26.6)*	*0.56*	*C (20.9)*	*0.36*	*C (22.1)*	*0.38*	*B (11.4)*	*0.25*	*B (14.1)*	*0.28*
	Approach	*C (27.3)*	~	*C (26.6)*	~	*C (24.6)*	~	*C (26.1)*	~	*B (13.2)*	~	*B (16.4)*	~
Sheehan (SB)	*Left*	~	~	~	~	*C (22.3)*	*0.03*	*C (24.0)*	*0.06*	*B (12.4)*	*0.02*	*B (15.7)*	*0.04*
	Thru/Right	*C (22.9)*	*0.42*	*C (28.4)*	*0.64*	*C (22.9)*	*0.47*	*C (29.4)*	*0.68*	*B (12.2)*	*0.32*	*B (17.3)*	*0.50*
	Approach	*C (22.9)*	~	*C (28.4)*	~	*C (22.8)*	~	*C (29.1)*	~	*B (12.2)*	~	*B (17.2)*	~
Intersection Total		***C (24.0)***	**~**	***C (26.4)***	**~**	***B (19.9)***	**~**	***C (23.6)***	**~**	***B (17.6)***	**~**	***B (19.1)***	**~**

**ERROR represents a delay that exceeds Synchro's capacity limits*

As indicated in Table 6, the intersection of Social Row Road and Waterbury Ridge Lane will operate at an acceptable overall LOS A for all 2025 scenarios. The NB approach would operate at a LOS E at this intersection in the PM peak hour for all 2025 scenarios. The v/c ratio is acceptable for all approaches at the intersection for all 2025 scenarios.

At the intersection of Social Row Road and Paragon Road, the intersection operates at a LOS F in the 2025 background PM Peak hour with the NB and SB approaches operating at LOS F in both the AM and PM peak hours. The long delays are due to the high traffic volumes on Social Row Road not allowing for gaps in traffic for the Paragon Road vehicles. A signal installation with left turns for all approaches is recommended at this intersection based on the unacceptable LOS in addition to the intersection meeting the signal warrant criteria. In both the 3-Lane and 5-Lane Build scenarios, the intersection and all movements operate at an acceptable LOS D or better for both peak hours. The v/c ratio is acceptable for all approaches at the intersection for all 2025 scenarios.

At the intersection of Social Row Road and Sheehan Road, the intersection and all approaches will operate at an acceptable LOS D or better for all 2025 scenarios. The v/c ratio is acceptable for all approaches at the intersection for all 2025 scenarios.

3.5.2 Design Year 2045 Capacity Analysis Summary

Synchro was used for the capacity analysis for the Design Year (2045) No Build, 3-Lane Build, and 5-Lane Build scenarios. A summary of the results can be seen below in *Table 7 – Design Year 2045 LOS, Delay, and v/c*. The Synchro analysis reports can be found in *Appendix 4 – Operational Analysis*.

Table 7 – Design Year 2045 LOS, Delay and v/c

Approach / Lane Group		2045 Background (No Mitigation)				2045 3-Lane Build (With Added Signals & Left Turn Lanes)				2045 5-Lane Build (With Added Signals & Left Turn Lanes)			
		a.m. Peak Hour		p.m. Peak Hour		a.m. Peak Hour		p.m. Peak Hour		a.m. Peak Hour		p.m. Peak Hour	
		LOS (sec)	v/c	LOS (sec)	v/c	LOS (sec)	v/c	LOS (sec)	v/c	LOS (sec)	v/c	LOS (sec)	v/c
Social Row Rd & Waterbury Ridge Ln		*Minor Stop Control*				*Minor Stop Control*				*Minor Stop Control*			
Social Row (EB)	*Approach*	*A (0.0)*	*~*	*A (0.0)*	*~*	*A (0.0)*	*~*	*A (0.0)*	*~*	*A (0.0)*	*~*	*A (0.0)*	*~*
Social Row (WB)	*Approach*	*A (0.5)*	*0.01*	*A (0.6)*	*0.03*	*A (0.5)*	*0.01*	*A (0.6)*	*0.03*	*A (0.5)*	*0.01*	*A (0.6)*	*0.03*
Waterbury Ridge (NB)	*Approach*	*E (48.4)*	*0.52*	*F (527.0)*	*1.72*	*E (48.4)*	*0.52*	*F (527.0)*	*1.72*	*E (48.4)*	*0.52*	*F (527.0)*	*1.72*
Intersection Total		***A (2.1)***	***~***	***B (16.1)***	***~***	***A (2.1)***	***~***	***B (16.1)***	***~***	***A (2.1)***	***~***	***B (16.1)***	***~***
Social Row Rd & Paragon Rd		*Minor Stop Control*				*Signal*				*Signal*			
Social Row (EB)	*Left*	*~*	*~*	*~*	*~*	*C (33.8)*	*0.53*	*C (30.3)*	*0.49*	*B (18.7)*	*0.36*	*B (11.5)*	*0.27*
	Thru/Right	*A (1.8)*	*0.20*	*A (0.7)*	*0.15*	*B (13.3)*	*0.58*	*F (199.8)*	*1.41*	*B (12.3)*	*0.36*	*C (27.7)*	*0.90*
	Approach	*A (1.8)*	*~*	*A (0.7)*	*~*	*B (10.5)*	*~*	*B (17.8)*	*~*	*B (13.9)*	*~*	*B (17.6)*	*~*
Social Row (WB)	*Left*	*~*	*~*	*~*	*~*	*A (8.7)*	*0.03*	*C (30.9)*	*0.19*	*B (10.4)*	*0.03*	*B (16.6)*	*0.12*
	Thru/Right	*A (0.1)*	*0.01*	*A (0.3)*	*0.05*	*F (169.4)*	*1.32*	*D (37.1)*	*0.96*	*C (22.7)*	*0.82*	*B (16.6)*	*0.64*
	Approach	*A (0.1)*	*~*	*A (0.3)*	*~*	*F (168.2)*	*~*	*D (37.0)*	*~*	*C (22.5)*	*~*	*B (16.6)*	*~*
Paragon (NB)	*Left*	*F (Error)*	*Err*	*F (Error)*	*Err*	*E (66.2)*	*0.52*	*E (57.5)*	*0.25*	*D (39.6)*	*0.83*	*C (33.3)*	*0.14*
	Thru/Right	*F (390.8)*	*Err*	*E (37.3)*	*0.29*	*D (43.8)*	*0.05*	*D (44.1)*	*0.16*	*C (29.5)*	*0.03*	*C (26.6)*	*0.12*
	Approach	*F (Error)*	*~*	*F (Error)*	*~*	*E (63.0)*	*~*	*D (49.8)*	*~*	*D (38.1)*	*~*	*C (29.5)*	*~*
Paragon (SB)	*Left*	*~*	*~*	*~*	*~*	*D (47.0)*	*0.18*	*D (51.0)*	*0.35*	*C (31.4)*	*0.13*	*C (30.1)*	*0.24*
	Thru/Right	*F (4133.8)*	*9.26*	*F (Error)*	*Err*	*D (54.9)*	*0.52*	*E (56.4)*	*0.65*	*C (33.5)*	*0.35*	*C (32.5)*	*0.46*
	Approach	*F (4133.8)*	*~*	*F (Error)*	*~*	*D (52.8)*	*~*	*E (56.4)*	*~*	*C (33.5)*	*~*	*C (31.7)*	*~*
Intersection Total		***F (264.8)***	***~***	***F (Error)***	***~***	***F (112.8)***	***~***	***F (124.4)***	***~***	***C (20.9)***	***~***	***C (23.9)***	***~***
Social Row Rd & Sheehan Rd		*Signal*				*Signal*				*Signal*			
Social Row (EB)	*Left*	*F (402.2)*	*1.69*	*F (255.8)*	*1.41*	*E (68.0)*	*0.87*	*F (111.9)*	*1.05*	*C (33.1)*	*0.68*	*C (30.7)*	*0.74*
	Thru/Right	*B (13.4)*	*0.55*	*F (183.4)*	*1.35*	*C (20.2)*	*0.58*	*F (273.6)*	*1.53*	*C (24.2)*	*0.39*	*D (55.0)*	*0.94*
	Approach	*F (93.9)*	*~*	*F (194.9)*	*~*	*C (30.1)*	*~*	*F (248.1)*	*~*	*C (26.1)*	*~*	*D (51.0)*	*~*
Social Row (WB)	*Left*	*B (19.2)*	*0.09*	*D (52.0)*	*0.54*	*B (14.8)*	*0.09*	*C (29.4)*	*0.31*	*C (20.0)*	*0.09*	*C (29.8)*	*0.28*
	Thru/Right	*F (119.3)*	*1.20*	*C (25.0)*	*0.86*	*F (177.1)*	*1.31*	*F (96.7)*	*1.10*	*D (47.2)*	*0.90*	*D (382)*	*0.72*
	Approach	*F (116.5)*	*~*	*C (26.3)*	*~*	*F (172.5)*	*~*	*F (93.5)*	*~*	*D (46.3)*	*~*	*D (37.7)*	*~*

Table 7 – Design Year 2045 LOS, Delay and v/c

Approach / Lane Group		2045 Background (No Mitigation)				2045 3-Lane Build (With Added Signals & Left Turn Lanes)				2045 5-Lane Build (With Added Signals & Left Turn Lanes)			
		a.m. Peak Hour		p.m. Peak Hour		a.m. Peak Hour		p.m. Peak Hour		a.m. Peak Hour		p.m. Peak Hour	
		LOS (sec)	v/c	LOS (sec)	v/c	LOS (sec)	v/c	LOS (sec)	v/c	LOS (sec)	v/c	LOS (sec)	v/c
Sheehan (NB)	*Left*	~	~	~	~	*F (228.6)*	*1.30*	*F (394.1)*	*1.64*	*D (52.1)*	*0.67*	*E (77.1)*	*0.77*
	Thru/Right	*F (149.5)*	*1.20*	*F (192.8)*	*1.31*	*D (38.2)*	*0.45*	*C (33.8)*	*0.42*	*C (25.0)*	*0.32*	*C (25.5)*	*0.34*
	Approach	*F (149.5)*	~	*F (192.8)*	~	*F (128.0)*	~	*F (169.1)*	~	*D (37.7)*	~	*D (44.9)*	~
Sheehan (SB)	*Left*	~	~	~	~	*D (41.4)*	*0.05*	*D (37.8)*	*0.07*	*C (27.7)*	*0.03*	*C (25.8)*	*0.06*
	Thru/Right	*C (32.1)*	*0.62*	*D (49.5)*	*0.90*	*D (48.4)*	*0.73*	*E (64.3)*	*0.93*	*C (29.1)*	*0.52*	*D (37.7)*	*0.75*
	Approach	*C (32.1)*	~	*D (49.5)*	~	*D (48.2)*	~	*E (63.2)*	~	*C (29.0)*	~	*D (37.3)*	~
Intersection Total		***F (105.6)***	**~**	***F (125.9)***	**~**	***F (114.6)***	**~**	***F (167.5)***	**~**	***D (37.7)***	**~**	***D (44.5)***	**~**

**ERROR represents a delay that exceeds Synchro's capacity limits*

As indicated in Table 7, the intersection of Social Row Road and Waterbury Ridge Lane overall will operate at an acceptable LOS D or better for all 2045 scenarios. The only approach that would operate at a LOS E or F at this intersection is the NB approach in the AM and PM peak hour for all 2045 scenarios. The v/c ratio is greater than 1.00 and is considered deficient for all PM 2045 scenarios.

At the intersection of Social Row Road and Paragon Road the intersection continues to operate at a LOS F in the 2045 Background AM and PM Peak hours with the NB and SB approaches operating at LOS F in both the AM and PM peak hours. The v/c ratio is greater than a 1.00 for the NB and SB movements and is considered deficient in the 2045 AM and PM background. In the 3-Lane Build 2045 scenario the intersection will operate at a LOS F in both the AM and PM peak hours. The WB and NB approaches will operate at a LOS F and E (respectively) in the AM peak hour and the EB and SB approaches will operate at a LOS F and E (respectively) in the PM peak hour. The v/c ratio for the EB thru lane and WB thru lane is greater than 1.00 in the PM and AM 3-Lane Build 2045 scenarios, respectively. Based on the heavy thru volumes on Social Row Road and the intersection operating at a LOS F, adding an additional thru lane on Social Row Road (five lane cross section) was also analyzed. In the 5-Lane Build 2045 scenario the intersection and all movements operate at an acceptable LOS D or better for both peak hours. The v/c ratio is acceptable for all approaches at the intersection for the 5-Lane Build 2045 scenario.

At the intersection of Social Row Road and Sheehan Road the intersection operates at a LOS F in the 2045 Background AM and PM peak hours. The EB, WB and NB approaches will operate at a LOS F in the AM peak hour and the EB and NB approaches will operate at a LOS F in the PM peak hour. The v/c ratio is greater than 1.00 and is deficient for the EB left, WB thru, and NB thru movements in the AM 2045 Background. The v/c ratio is greater than 1.00 and is deficient for the EB left, EB thru, and NB thru movements in the PM 2045 Background. In the 3-Lane Build 2045 scenario the intersection will operate at a LOS F in both the AM and PM peak hours. The WB and NB approaches will operate at a LOS F in the AM peak hour and the EB, WB, and NB approaches will operate at a LOS F in the PM peak hour, with the SB approach operating at a LOS E. The v/c ratio is greater than 1.00 and is deficient for the WB thru and NB left movements in the AM 3-Lane Build 2045 scenario. The v/c ratio is greater than 1.00 and is deficient for the EB left, EB thru, WB left, and NB left movements in the PM 3-Lane Build 2045 scenario. Based on the heavy thru volumes on Social Row Road and the intersection operating at a LOS F, adding an additional thru lane on Social Row Road (five lane cross section) was also analyzed. In the 5-Lane Build 2045

scenario the intersection and all approaches will operate at an acceptable LOS D or better for both peak hours, with only the NB left turn lane operating at a LOS E in the PM peak hour. The v/c ratio is acceptable for all approaches at the intersection for the 5-Lane Build 2045 scenario.

The next section provides further explanation regarding queue lengths at each of the intersections.

3.6 Queue Analysis

SimTraffic10 was used to perform queue analyses and to evaluate the implications of queueing at the existing intersections for each scenario. The Social Row Road eastbound and westbound approaches at Sheehan Road have existing left turn lane lengths of approximately 100 feet each. The Paragon Road northbound approach has an existing left turn lane that is approximately 175 feet long. The Social Row Road eastbound approach at Waterbury Ridge Lane has an existing right turn lane that is approximately 100 feet long.

3.6.1 Construction Year 2025 Queue Analysis Summary

The queue length results are shown for the Construction Year (2025) in *Table 8 – Construction Year 2025 Queue Lengths.* The 95th percentile queue lengths are shown in feet. The 95th percentile queue is defined as the queue length that has a 5% probability of being exceeded in the analyzed time period. The 95th percentile queue is useful for determining turn lane lengths but is not typical of what the average motorist experiences. The SimTraffic analysis reports can be found in *Appendix 4 – Operational Analysis*.

Table 8 – Construction Year 2025 Queue Lengths

Approach / Lane Group		Existing Storage Length	2025 Background (No Mitigation)		2025 3-Lane Build (Added Signal & Left Turn Lanes)		2025 5-Lane Build (Added Signal & Left Turn Lanes)	
			a.m. Peak Hour	p.m. Peak Hour	a.m. Peak Hour	p.m. Peak Hour	a.m. Peak Hour	p.m. Peak Hour
Social Row Rd & Waterbury Ridge Lane			Minor Stop Control		Minor Stop Control		Minor Stop Control	
Social Row (EB)	Thru	~	-	-	-	-	-	-
	Right	100’	-	-	-	-	-	-
Social Row (WB)	Left/Thru	~	19’	20’	12’	26’	17‘	40’
	Thru	~	-	-	-	-	-	-
Waterbury Ridge (NB)	Approach	~	40’	44’	41’	49’	49’	54’
Social Row Rd & Paragon Rd			Minor Stop Control		Signal		Signal	
Social Row (EB)	Left	~	-	-	77’	75’	68’	70’
	Thru/Right	~	140’	407’	136’	320’	106’	186’
Social Row (WB)	Left	~	-	-	25’	32’	21’	26’
	Thru/Right	~	41’	203’	266’	235’	165’	144’
Paragon (NB)	Left	175’	94’	97’	63’	53’	62’	39’
	Thru/Right	~	31’	176’	21’	62’	22’	56’
Paragon (SB)	Left	~	-	-	37’	76’	36’	68’

Table 8 – Construction Year 2025 Queue Lengths

Approach / Lane Group		Existing Storage Length	2025 Background (No Mitigation)		2025 3-Lane Build (Added Signal & Left Turn Lanes)		2025 5-Lane Build (Added Signal & Left Turn Lanes)	
			a.m. Peak Hour	p.m. Peak Hour	a.m. Peak Hour	p.m. Peak Hour	a.m. Peak Hour	p.m. Peak Hour
	Thru/Right	~	199’	906’	78’	121’	64’	97’
Social Row Rd & Sheehan Rd			Signal		Signal		Signal	
Social Row (EB)	Left	100’	120’	153’	96’	160’	109’	190’
	Thru/Right	~	291’	1019’	171’	398’	120’	246’
Social Row (WB)	Left	100’	65’	66’	32’	48’	25’	46’
	Thru/Right	~	430’	248’	289’	203’	163’	140’
Sheehan (NB)	Left	~	~	~	145’	122’	87’	70’
	Thru/Right	~	257’	781’	121’	131’	90’	102’
Sheehan (SB)	Left	~	~	~	22’	61’	21’	45’
	Thru/Right	~	147’	323’	152’	257’	112’	213’

As indicated in Table 8, the intersection of Social Row Road and Waterbury Ridge Lane will see no significant queues under all 2025 scenarios. All simulated queues are less than 60’.

At the intersection of Social Row Road and Paragon Road, the intersection experiences long queue lengths in the background PM peak hour with the SB approach queue over 900’. The SB queue is due to the high traffic volumes on Social Row Road not providing gaps in traffic for the Paragon Road approach stop controlled vehicles to maneuver the intersection. In the 2025 3-Lane Build and 5-Lane Build scenarios, the intersection will see no queues greater than 320’.

At the intersection of Social Row Road and Sheehan Road, the intersection experiences long queue lengths in the background PM peak hour with the EB approach queue over 1000’ and the NB approach queue over 750’. In the 2025 3-Lane Build scenario, the intersection will see no queues greater than 300’, except for the EB thru lane in the PM peak reaching 398’. Based on the heavy thru volumes on Social Row Road operating at a LOS F, an additional thru lane to create a five-lane cross section was also analyzed. In the 2025 5-Lane Build scenario, the intersection will see no queues greater than 250’.

3.6.2 Design Year 2045 Queue Analysis Summary

The queue length results are shown for the Design Year (2045) in *Table 9 – Design Year 2045 Queue Lengths.* The 95th percentile queue lengths are shown in feet. The 95th percentile queue is defined as the queue length that has a 5% probability of being exceeded in the analyzed time period. The 95th percentile queue is useful for determining turn lane lengths but is not typical of what the average motorist experiences. The SimTraffic analysis reports can be found in *Appendix 4 – Operational Analysis*.

Table 9 – Design Year 2045 Queue Lengths

Approach / Lane Group		Existing Storage Length	2045 Background (No Mitigation)		2045 3-Lane Build (Added Signal & Left Turn Lanes)		2045 5-Lane Build (Added Signal & Left Turn Lanes)	
			a.m. Peak Hour	p.m. Peak Hour	a.m. Peak Hour	p.m. Peak Hour	a.m. Peak Hour	p.m. Peak Hour
Social Row Rd & Waterbury Ridge Lane			Minor Stop Control		Minor Stop Control		Minor Stop Control	
Social Row (EB)	Thru	~	875’	956’	-	1002’	-	-
	Right	100’	81’	127’	-	105’	-	3’
Social Row (WB)	Left/Thru	~	100’	47’	19’	49’	23’	80’
	Thru	~	102’	21’	-	4’	-	63’
Waterbury Ridge (NB)	Approach	~	88’	212’	83’	828’	88’	646’
Social Row Rd & Paragon Rd			Minor Stop Control		Signal		Signal	
Social Row (EB)	Left	~	-	-	98’	636’	93’	88’
	Thru/Right	~	2071’	1829’	211’	1795’	125’	266’
Social Row (WB)	Left	~	-	-	160’	36’	21’	40’
	Thru/Right	~	297’	578’	1077’	381’	365’	285’
Paragon (NB)	Left	175’	219’	208’	120’	64’	92’	50’
	Thru/Right	~	909’	808’	66’	74’	29’	58’
Paragon (SB)	Left	~	-	-	78’	150’	61’	87’
	Thru/Right	~	851’	729’	148’	252’	113’	110’
Social Row Rd & Sheehan Rd			Signal		Signal		Signal	
Social Row (EB)	Left	100’	133’	151’	129’	716’	127’	271’
	Thru/Right	~	1408’	1317’	332’	1271’	182’	444’
Social Row (WB)	Left	100’	79’	116’	419’	579’	33’	53’
	Thru/Right	~	1947’	644’	1768’	1834’	437’	305’
Sheehan (NB)	Left	~	-	-	344’	308’	180’	194’
	Thru/Right	~	1296’	1221’	1253’	1284’	157’	186’
Sheehan (SB)	Left	~	-	-	50’	130’	20’	88’
	Thru/Right	~	233’	1003’	252’	783’	215’	391’

As indicated in Table 9, the intersection of Social Row Road and Waterbury Ridge Lane will see significant queues in the EB approach with a queue over 850’ under the AM and PM 2045 Background scenarios. This queue is due to the EB queues at the two downstream intersections of Paragon Road and Sheehan Road. The significant queue also exists in the 2045 3-Lane Build scenario. In the 2045 5-Lane Build scenario, the intersection will see no

significant queues, except for the Waterbury Ridge Lane NB approach which will back up due to lack of sufficient gaps on Social Row Road caused by high thru volumes.

At the intersection of Social Row Road and Paragon Road, the intersection experience long queue lengths in the 2045 Background AM and PM peak hours with the EB, NB, and SB approach queue over 1800', 800' and 700' respectively. The NB and SB queue is due to the high traffic volumes on Social Row Road not providing gaps in the traffic for the Paragon Road approach stop controlled vehicles to maneuver the intersection. The EB queue is due to the EB queues at the downstream intersection of Sheehan Road. The significant EB queue also exists in the 2045 3-Lane Build scenario. In the 2045 5-Lane Build scenario the intersection will see no queues greater than 370'.

At the intersection of Social Row Road and Sheehan Road, the intersection experience long queue lengths in the 2045 Background AM and PM peak hours, with all four approaches experiencing extreme queues (over 1000'). In the 2045 3-Lane Build scenario, all four approaches will continue to experience long queues (over 780'). In the 2045 5-Lane Build scenario, the intersection will see no queues greater than 450'.

3.7 Storage Length Calculations

Turn lane storage lengths were calculated for the proposed left turn lanes at both the Sheehan Road and Paragon Road intersections. This analysis used the Design Year (2045) traffic volumes to calculate storage lengths and queue-storage ratio (QSR) and these were compared to the left turn and thru lane queue lengths in Section 3.6 to determine the recommended turn lane lengths. Storage length calculations were performed following the guidelines from the ODOT Locations and Design Manual. The storage length calculation results are shown for the Design Year (2045) in *Table 10 – Design Year Storage Length Calcs* which includes the recommended storage lengths for each left turn lane. The calculations can be found in *Appendix 4 – Operational Analysis*.

Table 10 – Design Year 2045 Storage Length Calcs

Approach / Lane Group		Existing Storage Length	2045 5-Lane Build Queue Lengths				2045 5-Lane Build ODOT Calculated Storage Length (Conditions A-C)		Recommended Storage Length
			a.m. Peak Hour		p.m. Peak Hour		a.m. Peak Hour	p.m. Peak Hour	
			95th Queue	QSR	95th Queue	QSR	95th Queue	95th Queue	
Social Row Rd & Paragon Rd			Signal				Signal		
Social Row (EB)	Left	~	93'	0.34	88'	0.32	275'	275'	**275'**
	Thru/Right	~	125'	~	266'	~	~	~	**~**
Social Row (WB)	Left	~	21'	0.12	40'	0.23	175'	175'	**175'**
	Thru/Right	~	365'	~	285'	~	~	~	**~**
Paragon (NB)	Left	175'	92'	0.53	50'	0.29	100'	150'	**175' (Existing)**
	Thru/Right	~	29'	~	58'	~	~	~	**~**
Paragon (SB)	Left	~	61'	0.41	87'	0.58	150'	100'	**150'**
	Thru/Right	~	113'	~	110'	~	~	~	**~**

Table 10 – Design Year 2045 Storage Length Calcs

Approach / Lane Group		Existing Storage Length	2045 5-Lane Build Queue Lengths				2045 5-Lane Build ODOT Calculated Storage Length (Conditions A-C)		Recommended Storage Length
			a.m. Peak Hour		p.m. Peak Hour		a.m. Peak Hour	p.m. Peak Hour	
			95th Queue	QSR	95th Queue	QSR	95th Queue	95th Queue	
Social Row Rd & Sheehan Rd			Signal				Signal		
Social Row (EB)	Left	100'	127'	0.32	271'	0.68	300'	400'	**400'**
	Thru/Right	~	182'	~	444'	~	~	~	**~**
Social Row (WB)	Left	100'	33'	0.15	53'	0.24	225'	175'	**225'**
	Thru/Right	~	437'	~	305'	~	~	~	**~**
Sheehan (NB)	Left	~	180'	0.49	194'	0.53	365'	290'	**365'**
	Thru/Right	~	157'	~	186'	~	~	~	**~**
Sheehan (SB)	Left	~	20'	0.12	88'	0.53	165'	165'	**165'**
	Thru/Right	~	215'	~	391'	~	~	~	**~**

*Storage lengths include a 50-foot taper.

All recommended storage lengths include a 50-foot taper and provide adequate left turn storage with a QSR below 1.00. All recommended storage lengths evaluated the ODOT condition A-C calculated lengths and the SimTraffic through and left turn queue lengths, except for the locations mentioned below.

The first exceptions are the WB Social Row Road left turn lane at Paragon Road and the EB Social Row Road left turn lane at Sheehan Road. These two movements back up to each other on Social Row Road where there is approximately 1,200 feet between the intersections. It is recommended to have a TWLTL connecting the left turn lanes in between these two intersections. By shortening the storage length and providing a TWLTL, it allows for additional left turn storage for either direction during peak hours based on which lane needs more queueing. This also serves the dual purpose of leaving a TWLTL in the middle for any future development drives or roads to be place between these intersections.

The other exceptions are the WB Social Row Road left turn lane and the SB Sheehan Road left turn lane at the Sheehan Road intersection. Both movements have a SimTraffic through queue length exceeding the calculated left turn storage length, but it is recommended to keep the ODOT condition A-C calculated left turn lane length as both of the turn lanes have less than a 40 vehicles in either peak hour, provide adequate storage for the left turn queue length and minimize the projects impacts to adjacent parcels. It is also recommended to carry the two WB Social Row Road lanes at least 440 feet east of Sheehan Road to accommodate the 437-foot WB AM peak through lane queue length.

4.0 Recommendations (Preferred Improvements)

Fishbeck analyzed and reviewed signal warrants, crash history, capacity, queueing, and storage lengths. The three previously discussed scenarios were evaluated. In summary the following improvements are recommended as a part of the Social Row Road Improvement Project:

- Widen Social Row Road to a 5-lane section (two lanes in each direction with a TWLTL between Paragon Road and Sheehan Road) extending the 2 WB Social Row Road lanes 440 feet east of Sheehan Row Road to accommodate the WB through queue.
- Install a traffic signal at the intersection of Social Row Road and Paragon Road.
- Install a 150-foot SB left turn lane on Paragon Road, a 165-foot SB left turn lane on Sheehan Road, and a 365-foot NB left turn lane on Sheehan Road. All turn lane lengths include a 50-foot taper.
- Provide an EB 275-foot and a WB 175-foot left turn lanes (including 50-foot tapers) for Social Road at the Paragon Road intersections (the turn lane storage can be taken from the TWLTL).
- Provide an EB 400-foot and a WB 225-foot left turn lanes (including 50-foot tapers) for Social Road at the Sheehan Road intersections (the turn lane storage can be taken from the TWLTL).