

## TwinCATS 2020-2023 Road Project Prioritization System

Project Name: LangleyAgency: City of St. JosephProposed Year: 2021Total Points: 42

Criteria	Points	
<b>System Preservation</b>	<b>18 points max</b>	
<b>a. Most recent PASER rating</b>		
3-4	10	
5-6	8	
1-2	<u>5</u>	<u>5</u>
<b>b. Extension of Remaining Service Life (RSL) based on MDOT Geometric Guidelines</b>		
Extends RSL by 15 years or more (4R project)	<u>8</u>	<u>8</u>
Extends RSL by 10-14 years (3R Project)	6	
Extends RSL by 5-9 years (Preventative Maintenance)	4	
Extends RSL by 2-4 years (Preventative Maintenance)	2	
<b>Safety</b>	<b>7 points max</b>	
<b>a. Expected Crash Reduction - Based on MDOT approved Crash Reduction Factors</b>		
50% or greater	<u>5</u>	<u>5</u>
40%-49.9%	4	
30% - 39.9%	3	
20% - 29.9%	2	
10% - 19.9%	1	
Less than 10%	0	
<b>b. Addressing High Crash Locations.</b>		
Number of crashes is 20% higher than MPO median (4 or more)	<u>2</u>	<u>2</u>
Number of crashes are within 20% of MPO median (2-3)	1	
Number of crashes is lower than 20% of the MPO median (0-1)	0	
<b>Non-motorized Transportation / Complete Streets</b>	<b>6 points max</b>	
<b>a. Follows the Complete Streets Policy</b>	<u>4</u>	<u>4</u>
<b>b. Pedestrian and bicycle elements of the project connect to existing bicycle and pedestrian facilities or those that can reasonably expect to be completed between 2019 and 2023.</b>	<u>2</u>	<u>2</u>

Criteria	Points	
<b>Regional Connectivity</b>	<b>10 points max</b>	
<b>a. Average daily traffic (ADT) based on most recent traffic count</b>		
ADT is 10,000 or more	5	
ADT is 5,000 – 9,999	4	4
ADT is 2,000 – 4,999	3	
ADT is less than 2,000	0	
<b>b. Functional Classification of the Road</b>		
Principal Arterial	3	
Minor Arterial	2	2
Major Collector	1	
Minor Collector	0	
<b>c. Fixed route transit (TCATA Red or Blue line) uses the road</b>	2	2
<b>Strategic Investment/ Project Planning</b>	<b>11 points max</b>	
a. Project is identified in an Asset Management or Capital Improvement Plan	3	3
b. Project is identified as a priority in another planning document such as a master plan or parks and recreation plan	1	1
c. Project crosses jurisdictional boundaries (i.e. city to township) and is arranged in such a way to be bid as a single project.	1	
d. Project continues resurfacing, reconstruction, or preventative maintenance on a segment of roadway adjacent to a project completed during the 2017-2020 TIP cycle or through Rural Task Force funding.	2	
<b>e. Additional Local Match</b>		
Agency will provide 40% or more local match	4	4
Agency will provide 30% to 39.9% local match	2	
Note: An 18.15% local match is the minimum required		
Project Readiness (no points)	Yes	
Coordination with sewer or other infrastructure (no points)	Yes	
<b>Total Score (out of 52)</b>		42

**Twin Cities Area Transportation Study  
2020-2023 Transportation Improvement Program (TIP)  
Federal Surface Transportation Block Grant Funds  
Project Application**

Click "Enable Editing" to begin filling out this form. You may save this form at any time.

**Section 1. Applicant Information**

Agency Name	City of St. Joseph		
Contact Name	Tim Zebell	Title	City Engineer
Phone Number	269-983-5541	Email	tzebell@sjcity.com

**Section 2. Project Information**

Project Name/Road Name	Langley Avenue Reconstruction Project		
Project Limits (e.g. Napier Ave. to Britain Ave.)	Pearl Street to Napier Avenue		
Project Length (nearest hundredth of a mile)	0.85	Proposed Year of Funding	2021
Primary Work Type	<input checked="" type="checkbox"/> Reconstruct <input type="checkbox"/> Restore & Rehabilitate <input type="checkbox"/> Roadside Facility <input type="checkbox"/> Resurface <input type="checkbox"/> Traffic Operations/Safety <input type="checkbox"/> Other		
Project Description (Please provide major work items including sidewalks, utility work, ADA upgrades etc.)	Full reconstruction of Langley Avenue from Pearl Street to Napier Avenue including all underground utilities (water main, sanitary sewer and storm sewer). Non-motorized facilities: either a non-motorized path or bike lanes will be added. Crosswalks, sidewalks, etc. will be designed to meet current ADA standards.		
Was this project awarded funding for the 2017-2020 TIP, but was either canceled or failed to be obligated	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, please explain:		

**Section 3. Project Funding**

Federal Funding Requested	\$ 1,307,000
Local Match (18.15% minimum)	\$ 872,000
Total	\$ 4,583,000 (construction), \$5,950,000 (total project)
Local Match Percentage (local match/total cost)	40%
Does your agency have the financial capacity to Advance Construct (AC) all or part of this project if necessary? If yes, what is the maximum dollar	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Maximum Dollar Amount you can AC? \$ 650,000

amount your agency is willing to Advance Construct (AC)?	
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#### Section 4. System Preservation

2018 PASER rating (available as an excel file)	2
Current state of drainage	<input type="checkbox"/> Adequate <input type="checkbox"/> Minor and tolerable drainage problems <input type="checkbox"/> Occasional drainage problems with some maintenance required <input checked="" type="checkbox"/> Inadequate drainage, frequent flooding, excessive maintenance required
Expected increase in Remaining Service life (RSL)	<input type="checkbox"/> 0-3 years <input type="checkbox"/> 4-6 <input type="checkbox"/> 7-9 <input type="checkbox"/> 10-14 <input checked="" type="checkbox"/> 15-20 Use MDOT's <u>Guidelines for Geometrics on Local Projects</u>
What MDOT guidelines does the project conform to?	<input checked="" type="checkbox"/> Reconstruction (4R) <input type="checkbox"/> Resurfacing, restoration, and Rehabilitation (3R) <input type="checkbox"/> Preventative Maintenance (PM)

#### Section 5. Safety

Please list the number and severity of crashes within the proposed project limits over the last 5 yrs. (2013-2017) (see <u>Michigan Crash Facts</u> for crash data)			
Total Crashes	21	Pedestrian & Bicycle Crashes	1
Fatalities	0	Serious Injuries	0
Using the attached Crash Reduction Factors sheet, please check each safety counter measure that will be included in the project			
Describe any other safety improvements this project will provide	Roadway will be narrowed to add non-motorized path or bike lanes. Parking will be reduced or eliminated as needed to accommodate non-motorized facilities and improve sight distance. Lighting and Napier/Langley signal timing to be analyzed/improved.		

#### Section 6. Complete Streets

Does this project meet the <u>TwinCATS Complete Streets Policy</u> , approved in 2014?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
If yes, Please explain what pedestrian and/or bicycle improvements are included	A non-motorized path or bike lanes will be added. The City is in the process of soliciting public input on several concepts.



If No, please state the reason why this project should be exempt from the TwinCATS Complete Streets Policy.	
Does this project connect to an existing pedestrian/bicycle facility or one that is planned to be completed from 2020-2023?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, please provide a map of the connecting facilities
<b>Section 7. Regional Connectivity</b>	
What is the most current daily traffic count for the limits of this project?	<input type="checkbox"/> Less than 2000 <input type="checkbox"/> 2000-5000 <input checked="" type="checkbox"/> 5000-10,000 <input type="checkbox"/> Above 10,000 Year of count: 2015    Source: SWMPC
National Functional Classification (NFC) for this roadway (Berrien County NFC Map)	Minor Arterial
Does one of <u>TCATA fixed route transit lines</u> use the road? (Only indicate yes if it carries a current route, not a planned route).	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

<b>Section 8. Strategic Planning &amp; Investment</b>	
Is the project identified in a Asset Management Plan, or Capital Improvement Plan	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, please cite the plan and page number: Asset Management Plan: Appendix G, Page 3 Water System Reliability Study: Page 24
Is the project identified in another planning documents such as a master plan or parks and recreation plan	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, please cite the plan and page number: Master Plan: Appendix G, Map 6 (attached)
Does the project cross jurisdictional boundaries?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If yes, will it be bid as a single project?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
Will this project coordinate with other infrastructure projects (i.e. utility, water, sewer, etc.)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, please indicate the project type and construction year: Both water mains and sanitary sewer mains will be replaced concurrently with the project.
How many water main breaks have you had at this location in the past five years?	3
Is there a completed a utilities assessment that included televising the sewers in the project area?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Will this project require environmental mitigation, purchase of Right of Way (ROW), or railroad permits?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not Sure If yes, which items are required:
Does this project perform Resurfacing, Reconstruction, or Preventative Maintenance on a segment adjacent to	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

<p>a segment where a federally-funded project was done during the <u>2017-2020 TwinCATS TIP</u> cycle or <u>RTF</u> cycle?</p>	<p>What segment was the PREVIOUS project done on? Answered No because Napier Avenue resurfaced in 2012 with TIP funding.</p>
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## Section 9. Existing and Proposed Roadway Design

	Existing			Proposed		
Number of Vehicle Lanes	Through Traffic Lanes	Center Turn Lane	On Street Parking	Through Traffic Lanes	Center Turn Lane	On Street Parking
	2*	0*	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2*	*0	<input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Shoulder Surface	<input type="checkbox"/> Paved <input type="checkbox"/> Unpaved		Width (ft.) NA	<input type="checkbox"/> Paved <input type="checkbox"/> Unpaved		Width (ft.) NA
Sidewalk/ path information	<b>Placement</b> <input type="checkbox"/> One Side <input checked="" type="checkbox"/> Both Sides <input type="checkbox"/> Intermittent <input type="checkbox"/> None		Width (ft.) 5 FT (both)	<b>Placement</b> <input type="checkbox"/> One Side <input checked="" type="checkbox"/> Both Sides <input type="checkbox"/> Intermittent <input type="checkbox"/> None		Width (ft.) 5 FT (1 side)** 10 FT (1 side)
On road bicycle facilities	<input type="checkbox"/> Bike Lane <input type="checkbox"/> Other (specify) <input type="checkbox"/> Sharrows <input type="checkbox"/> Wide Shoulders <input checked="" type="checkbox"/> None			<input type="checkbox"/> Bike Lane <input checked="" type="checkbox"/> Other (specify) <input type="checkbox"/> Sharrows <u>non-motorized path**</u> <input type="checkbox"/> Wide Shoulders <input type="checkbox"/> None		
Utilities, Sewer and Water	<input checked="" type="checkbox"/> Utilities Upgrades Needed <input checked="" type="checkbox"/> Sewer and water work needed			<input checked="" type="checkbox"/> Replaced Utilities <input checked="" type="checkbox"/> Relocating Utilities <input checked="" type="checkbox"/> Sewer and Water Line Work		
Please describe any improvements being made as part of this project to crosswalks, signage or signals, or streetscape elements not discussed in project description			<p>* Most of Langley is 2 lane road, intersections with turn lanes will remain the same. Anticipate reducing On Street parking or eliminating it altogether based upon early feedback during public input process.</p> <p>** Either a non-motorized path or bike lanes will be added. Non-motorized option included on this TIP application for estimating purposes.</p>			
Does this project enhance connectivity of pedestrian or bicyclists to fixed route or Dial-A-Ride transit?			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, how? Project is on Red Route and connects directly to Spectrum Health Lakeland Hospital. Anticipate connecting to non-motorized facilities constructed as part of the Morton-Orchard-Kingsley Project slated for 2020.			

## Section 10. Estimated Project Schedule

Activity	Estimated Date
Resolution of Support for <input type="checkbox"/> Local Match Submitted to SWMPC	July 2019
Project Application Submitted to MOT	August 2020
Grade Inspection Package Submitted to MDOT	August 2020
Grade Inspection Meeting Scheduled	October 2020
Final Plan and Estimate to MDOT	December 2020

Right of Way (ROW) certified*	December 2020
Rail Road Permits*	N/A
Environmental Mitigation*	N/A
Project Obligated	December 2020
Project Letting	February 2021
Construction Start <input type="checkbox"/>	April 2021
Project Completion	October 2021

\*Enter NA if these items will not be required.

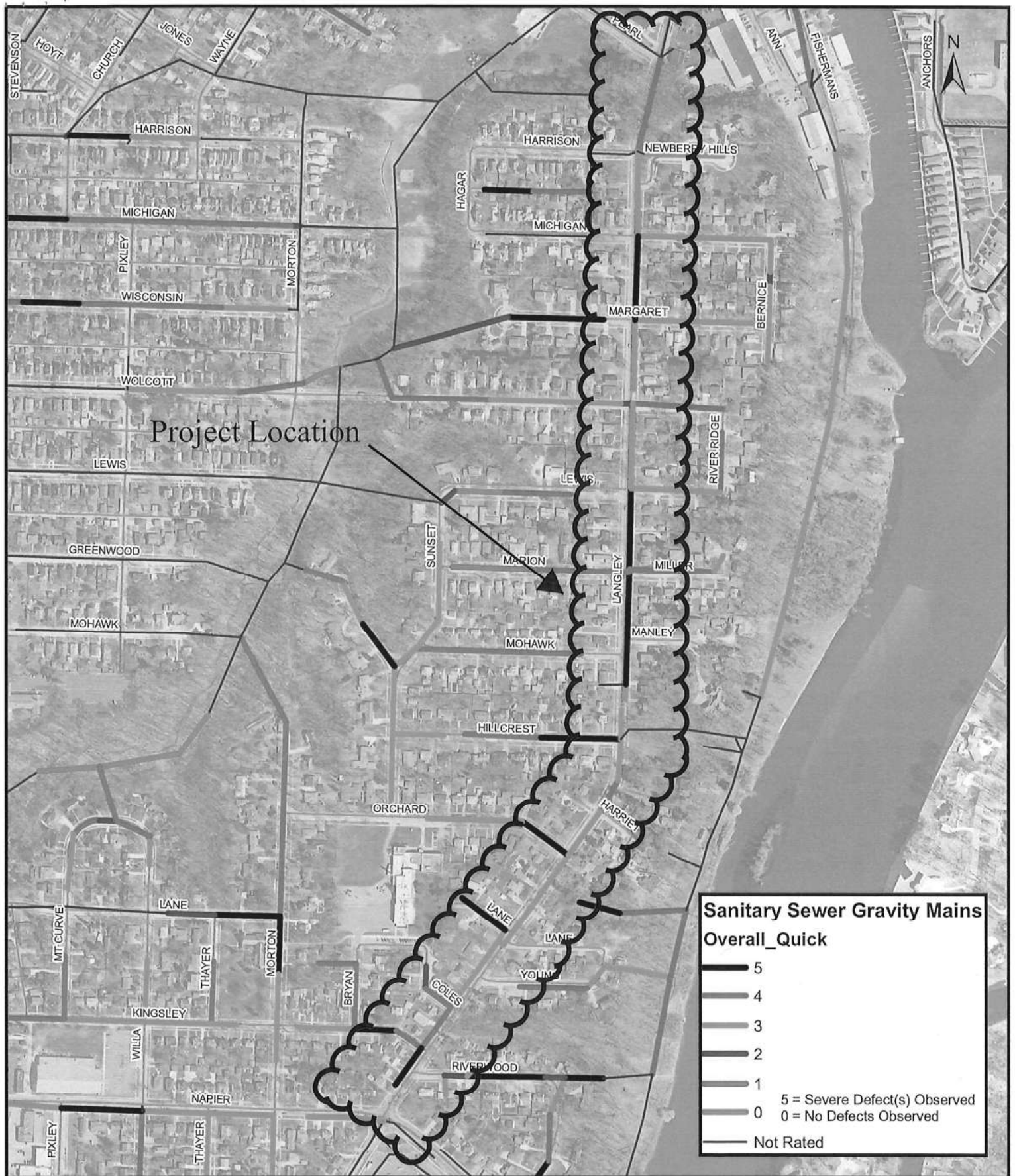
Proposed Improvement		% Reduction		Associated Crash Types	
SEGMENT CRASH REDUCTION FACTORS					
Geometric Safety Enhancements					
<input type="checkbox"/>	Center Left-Turn Lane - Construct		80%	Rear-End Left-Turn	
			50%	Head-On Left-Turn	
			20%	Head-On, Angle, Sideswipe*	
			15%	Non Left-Turn Rear-End, Other*	
<input type="checkbox"/>	Right-Turn Lane - Construct		65%	Rear-End Right-Turn	
			30%	Angle	
			15%	Rear-End	
			10%	Other*	
<input checked="" type="checkbox"/>	Horizontal Curve Flattening		30%	Lane Departure***	
<input type="checkbox"/>	Shoulders - Widen to Standard Width (add 1' each side)		5%	Lane Departure***	
<input type="checkbox"/>	Shoulders - Widen to Standard Width (add 2' each side)		10%	Lane Departure***	
<input type="checkbox"/>	Shoulders - Widen to Standard Width (add 3' each side)		15%	Lane Departure***	
<input type="checkbox"/>	Shoulders - Widen to Standard Width (add 4' each side)		20%	Lane Departure***	
<input type="checkbox"/>	Shoulders - Widen to Standard Width (add 5' each side)		25%	Lane Departure***	
<input type="checkbox"/>	Shoulders - Widen to Standard Width (add 6' each side)		30%	Lane Departure***	
<input type="checkbox"/>					
<input type="checkbox"/>	Shoulders - Widen to Standard Width (add 7' each side)		35%	Lane Departure***	
<input type="checkbox"/>	Vertical Curve Modification		20%	All Applicable Crash Types +++	
General Segment Enhancements					
<input type="checkbox"/>	Access Management - Improve		15%	Drive-way Related Applicable Crashes	
<input type="checkbox"/>	Centerline Rumble Strips - Install		44%	K and A injury Applicable Crashes	
			46%	Single Vehicle Run off Road Left Crashes	
			43%	Sideswipe Same Crashes	
			55%	Sideswipe Opposite Crashes	
<input type="checkbox"/>	High Friction Surface Treatment - Install		35%	Wet Crashes	
			20%	All Other Applicable Crashes	
<input checked="" type="checkbox"/>	Recessed Durable Pavement Markings		5%	All Applicable Crashes	
<input type="checkbox"/>	Pedestrian Refuge - Install		50%	Pedestrian Crashes (Review NCHRP Report 841)	
<input type="checkbox"/>	Road Diet (4-3 Lane Conversion) - Install		50%	Suburban - All Applicable Crashes	
<input type="checkbox"/>	Shoulder Rumble Strips		20%	Run-Off the Road Right Crashes	
<input checked="" type="checkbox"/>	Signing/Delineation on Horizontal Curves (Including Recessed Durable Pavement Markings) - Install		20%	Lane Departure***	
<input type="checkbox"/>	Safety Edge Improvement		13%	All non-intersection crashes (CMF Clearing House ID 8658)	



Roadside Enhancements			
<input type="checkbox"/>	Bicycle Lanes - Install per standards	50%	Bicycle Crashes
<input checked="" type="checkbox"/>	Shared Use Path - <i>Install</i>	33%	Bicycle and Pedestrian Related Crashes
<input checked="" type="checkbox"/>	Fixed Objects From Clearzone (Trees, Culverts, Etc.) - <i>Removal</i>	75%	Fixed-Object Applicable Crashes
<input type="checkbox"/>	Guardrail - <i>Install</i>	55%	Lane Departure ***Fatalities and "A" Injury Applicable Crashes
<input type="checkbox"/>	Sidewalk for Pedestrians - <i>Construct</i>	85%	Pedestrian Crashes
<input type="checkbox"/>	Slope Flattening	15%	Fixed-Object, Overturn Applicable Crashes
<input type="checkbox"/>	Living Snow Fence	20%	Crashes due to wintry surface conditions
<input type="checkbox"/>	Lighting - <i>install on segment</i>	20%	Dark Unlighted Crashes
INTERSECTION CRASH REDUCTION FACTORS			
Pedestrian / Bicycle Enhancements			
<input checked="" type="checkbox"/>	Bump Out / Curb Extension - <i>Remove Parking / Install</i>	30%	All Crashes
<input type="checkbox"/>	Bicycle Lanes - Install per standards	25%	Bicycle Crashes
<input type="checkbox"/>	Sidewalk for Pedestrians - <i>Construct</i>	85%	Pedestrian Crashes
<input type="checkbox"/>	Intersection Lighting - <i>install</i>	75%	Pedestrian Fatal - Dark Unlighted Crashes
		40%	Pedestrian A-Injury - Dark Unlighted Crashes
		30%	All Applicable Dark Unlighted Crashes
<input type="checkbox"/>	Rectangular Rapid Flashing Beacons	47%	Pedestrian Crashes
<input type="checkbox"/>	Ped. Countdown Signals - <i>Install new Pedestrian signal</i>	30%	Pedestrian Crashes
<input type="checkbox"/>	Ped. Countdown Signals - <i>Upgrade from existing Pedestrian signal</i>	25%	Pedestrian Crashes
Signal Timing / Hardware Enhancements			
<input checked="" type="checkbox"/>	Multiple Low-Cost Improvements	3%	Rear-End
		12%	Right-Angle
		3%	Nighttime
<input checked="" type="checkbox"/>	Install ReflectORIZED Backplates	15%	All Applicable Crashes
<input checked="" type="checkbox"/>	Add All-Red Clearance Interval - <i>Add per ITE</i>	20%	Head-On Left-Turn, Angle
<input checked="" type="checkbox"/>	Yellow-Change Interval - <i>Increase</i>	10%	All Crash Types
		65%	Angle
<input type="checkbox"/>	Box Span Signal - <i>Upgrade from Stop Control</i>	-25%	Rear-End (Increases Crashes)
		20%	All Other Non Rear-End Crashes
<input type="checkbox"/>	Box Span Signal - <i>Upgrade from Diagonal Span</i>	10%	All Applicable Crashes+
<input type="checkbox"/>	Protected Left-Turn Signal Phase - <i>Add</i>	30%	Left-Turn
<input type="checkbox"/>	Signal Head Size - <i>Increase to 12 "</i>	10%	All Applicable Crashes +
<input checked="" type="checkbox"/>	Signal Optimization & Timing Updates	10%	All Applicable Crashes +
<input checked="" type="checkbox"/>	Removing Night Flash from Signal Timing	50%	Nighttime Flash mode Related Crashes

Intersection Geometric Enhancements			
<input type="checkbox"/>	Center Left-Turn Lane - Construct	80%	Rear-End Left-Turn
		50%	Head-On Left-Turn
		20%	Head-On, Angle, Other
		15%	Non Left-Turn Rear-End
		30%	Angle
<input checked="" type="checkbox"/>	Intersection Improvements (Realignment, Sight-Distance Improvements, Radii Improvements, Etc.)	15%	Rear-End
		10%	Head-On, Sideswipe, Pedestrian, Bicycle, Left-Turn Related
<input type="checkbox"/>	Offset Left-Turn Lane - Construct	65%	Angle-Turn, Head-On Left-Turn
		20%	Rear-End Left-Turn
		65%	Angle-Turn
<input type="checkbox"/>	Offset Right-Turn Lane - Construct	50%	Other Applicable Crashes
		20%	Rear-End Right Turn
<input type="checkbox"/>	Right-Turn Lane - Construct	65%	Rear-End Right-Turn
		20%	Applicable Rear-End Crashes, Sideswipe Same Direction
<input type="checkbox"/>	Roundabout	78%	Fatal and A-Injury Reduction
		57%	Minor Crash Reduction
<input type="checkbox"/>	Lighting	-	See MDOT Interchange Warranted Lighting Guidance and overall MDOT Lighting Guidance
General Intersection Enhancements (Non-Signalized Intersections)			
<input type="checkbox"/>	All-Way Stop Control - New Installation	60%	All Applicable Crashes
<input type="checkbox"/>	Ground Mounted Flashing Beacons (Red) - Install **	30%	All Crashes On Install Approach
<input type="checkbox"/>	Ground Mounted Flashing Beacons(Amber) - Install **	20%	All Crashes On Install Approach
<input checked="" type="checkbox"/>	Signing - Improve/Upgrade	30%	Angle, Rear-End Crashes
<input checked="" type="checkbox"/>	Pavement Markings - Improve/Upgrade	30%	Angle, Rear-End Crashes
<input checked="" type="checkbox"/>	Reflective Sheeting on Sign Posts (lollipop)	15%	All Applicable Crashes





City of St. Joseph  
700 Broad Street  
St. Joseph, MI 49085

P: 269-983-5541  
F: 269-985-0346  
www.sjcity.com

## Langley Avenue Sanitary Sewer Condition

1 inch = 500 feet

User Name: aaustin

Date: 11/28/2018





## TwinCATS 2020-2023 Road Project Prioritization System

Project Name: Upton Drive

Agency: City of St. Joseph

Proposed Year: 2022

Total Points: 40

Criteria	Points	
<b>System Preservation</b>	<b>18 points max</b>	
<b>a. Most recent PASER rating</b>		
3-4	10	10
5-6	8	
1-2	5	
<b>b. Extension of Remaining Service Life (RSL) based on MDOT Geometric Guidelines</b>		
Extends RSL by 15 years or more (4R project)	8	8
Extends RSL by 10-14 years (3R Project)	6	
Extends RSL by 5-9 years (Preventative Maintenance)	4	
Extends RSL by 2-4 years (Preventative Maintenance)	2	
<b>Safety</b>	<b>7 points max</b>	
<b>a. Expected Crash Reduction - Based on MDOT approved Crash Reduction Factors</b>		
50% or greater	5	
40%-49.9%	4	4
30% - 39.9%	3	
20% - 29.9%	2	
10% - 19.9%	1	
Less than 10%	0	
<b>b. Addressing High Crash Locations.</b>		
Number of crashes is 20% higher than MPO median (4 or more)	2	
Number of crashes are within 20% of MPO median (2-3)	1	
Number of crashes is lower than 20% of the MPO median (0-1)	0	0
<b>Non-motorized Transportation / Complete Streets</b>	<b>6 points max</b>	
<b>a. Follows the Complete Streets Policy</b>	4	4
<b>b. Pedestrian and bicycle elements of the project connect to existing bicycle and pedestrian facilities or those that can reasonably expect to be completed between 2019 and 2023.</b>	2	2

Criteria	Points	
<b>Regional Connectivity</b>	<b>10 points max</b>	
<b>a. Average daily traffic (ADT) based on most recent traffic count</b>		
ADT is 10,000 or more	5	
ADT is 5,000 – 9,999	4	
ADT is 2,000 – 4,999	3	3
ADT is less than 2,000	0	
<b>b. Functional Classification of the Road</b>		
Principal Arterial	3	
Minor Arterial	2	
Major Collector	1	1
Minor Collector	0	
<b>c. Fixed route transit (TCATA Red or Blue line) uses the road</b>	2	
<b>Strategic Investment/ Project Planning</b>	<b>11 points max</b>	
a. Project is identified in an Asset Management or Capital Improvement Plan	3	3
b. Project is identified as a priority in another planning document such as a master plan or parks and recreation plan	1	1
c. Project crosses jurisdictional boundaries (i.e. city to township) and is arranged in such a way to be bid as a single project.	1	
d. Project continues resurfacing, reconstruction, or preventative maintenance on a segment of roadway adjacent to a project completed during the 2017-2020 TIP cycle or through Rural Task Force funding.	2	
<b>e. Additional Local Match</b>		
Agency will provide 40% or more local match	4	4
Agency will provide 30% to 39.9% local match	2	2
Note: An 18.15% local match is the minimum required		
Project Readiness (no points)	Yes	
Coordination with sewer or other infrastructure (no points)	Yes	
<b>Total Score (out of 52)</b>		40

**Twin Cities Area Transportation Study  
2020-2023 Transportation Improvement Program (TIP)  
Federal Surface Transportation Block Grant Funds  
Project Application**

Click "Enable Editing" to begin filling out this form. You may save this form at any time.

### Section 1. Applicant Information

Agency Name	City of St. Joseph		
Contact Name	Tim Zebell	Title	City Engineer
Phone Number	269-983-5541	Email	tzebell@sjcity.com

### Section 2. Project Information

Project Name/Road Name	Upton Drive Reconstruction Project		
Project Limits (e.g. Napier Ave. to Britain Ave.)	Virginia Court to City Limits (600 feet north of North Upton Drive)		
Project Length (nearest hundredth of a mile)	0.49	Proposed Year of Funding	2022
Primary Work Type	<input checked="" type="checkbox"/> Reconstruct <input type="checkbox"/> Restore & Rehabilitate <input type="checkbox"/> Roadside Facility <input type="checkbox"/> Resurface <input type="checkbox"/> Traffic Operations/Safety <input type="checkbox"/> Other		
Project Description (Please provide major work items including sidewalks, utility work, ADA upgrades etc.)	Full reconstruction of Upton Drive from Virginia Court north including most underground utilities (water main, sanitary sewer and storm sewer). Non-motorized facilities: either a non-motorized path or bike lanes will be added. Crosswalks, sidewalks, etc. will be designed to meet current ADA standards.		
Was this project awarded funding for the 2017-2020 TIP, but was either canceled or failed to be obligated	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, please explain:		

### Section 3. Project Funding

Federal Funding Requested	\$ 739,100
Local Match (18.15% minimum)	\$ 492,800
Total	\$ 2,181,500 (construction), 2,832,000 (total project)
Local Match Percentage (local match/total cost)	40%
Does your agency have the financial capacity to Advance Construct (AC) all or part of this project if necessary? If yes, what is the maximum dollar	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Maximum Dollar Amount you can AC? \$ 300,000

amount your agency is willing to Advance Construct (AC)?

#### Section 4. System Preservation

2018 PASER rating (available as an excel file)

4

Current state of drainage

- ☐ Adequate  
☐ Minor and tolerable drainage problems  
☐ Occasional drainage problems with some maintenance required  
☒ Inadequate drainage, frequent flooding, excessive maintenance required

Expected increase in Remaining Service life (RSL)

- ☐ 0-3 years ☐ 4-6 ☐ 7-9 ☐ 10-14 ☒ 15-20  
Use MDOT's [Guidelines for Geometrics on Local Projects](#)

What MDOT guidelines does the project conform to?

- ☒ Reconstruction (4R)  
☐ Resurfacing, restoration, and Rehabilitation (3R)  
☐ Preventative Maintenance (PM)

#### Section 5. Safety

Please list the number and severity of crashes within the proposed project limits over the last 5 yrs. (2013-2017) (see [Michigan Crash Facts](#) for crash data)

Total Crashes

3

Pedestrian & Bicycle Crashes

0

Fatalities

0

Serious Injuries

0

Using the attached Crash Reduction Factors sheet, please check each safety counter measure that will be included in the project

Describe any other safety improvements this project will provide

Roadway will be narrowed to add non-motorized path or bike lanes will be added. Parking will be reduced or eliminated to accommodate non-motorized facilities and improve sight distance.

#### Section 6. Complete Streets

Does this project meet the [TwinCATS Complete Streets Policy](#), approved in 2014?

☒ Yes ☐ No

If yes, Please explain what pedestrian and/or bicycle improvements are included

A non-motorized path or bike lanes will be added. The City will solicit public input of concepts prior to beginning the design process.

If No, please state the reason why this project should be exempt from the TwinCATS Complete Streets Policy.	
Does this project connect to an existing pedestrian/bicycle facility or one that is planned to be completed from 2020-2023?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, please provide a map of the connecting facilities
<b>Section 7. Regional Connectivity</b>	
What is the most current daily traffic count for the limits of this project?	<input type="checkbox"/> Less than 2000 <input checked="" type="checkbox"/> 2000-5000 <input type="checkbox"/> 5000-10,000 <input type="checkbox"/> Above 10,000 Year of count: 2013 Source: SWMPC
National Functional Classification (NFC) for this roadway ( <a href="#">Berrien County NFC Map</a> )	Major Collector
Does one of <u>TCATA fixed route transit lines</u> use the road? (Only indicate yes if it carries a current route, not a planned route).	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

<b>Section 8. Strategic Planning &amp; Investment</b>	
Is the project identified in a Asset Management Plan, or Capital Improvement Plan	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, please cite the plan and page number: Asset Management Plan: Appendix G, Page 5
Is the project identified in another planning documents such as a master plan or parks and recreation plan	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, please cite the plan and page number: Master Plan: Appendix G, Map 6 (attached)
Does the project cross jurisdictional boundaries?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If yes, will it be bid as a single project?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
Will this project coordinate with other infrastructure projects (i.e. utility, water, sewer, etc.)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, please indicate the project type and construction year: Sanitary sewer and older water mains will be replaced concurrently with the project.
How many water main breaks have you had at this location in the past five years?	0
Is there a completed a utilities assessment that included televising the sewers in the project area?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Will this project require environmental mitigation, purchase of Right of Way (ROW), or railroad permits?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not Sure If yes, which items are required:
Does this project perform Resurfacing, Reconstruction, or Preventative Maintenance on a segment adjacent to	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No What segment was the PREVIOUS project done on?



a segment where a federally-funded project was done during the <u>2017-2020 TwinCATS TIP</u> cycle or <u>RTF</u> cycle?	
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## Section 9. Existing and Proposed Roadway Design

	Existing			Proposed		
Number of Vehicle Lanes	Through Traffic Lanes	Center Turn Lane	On Street Parking	Through Traffic Lanes	Center Turn Lane	On Street Parking
	2	0	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2	0	<input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Shoulder Surface	<input type="checkbox"/> Paved <input type="checkbox"/> Unpaved		Width (ft.) NA	<input type="checkbox"/> Paved <input type="checkbox"/> Unpaved		Width (ft.) NA
Sidewalk/ path information	<b>Placement</b> <input type="checkbox"/> One Side <input checked="" type="checkbox"/> Both Sides <input type="checkbox"/> Intermittent <input type="checkbox"/> None		Width (ft.) 5 FT (both)	<b>Placement</b> <input type="checkbox"/> One Side <input checked="" type="checkbox"/> Both Sides <input type="checkbox"/> Intermittent <input type="checkbox"/> None		Width (ft.) 5 FT (1 side)* 10 FT (1 side)
On road bicycle facilities	<input type="checkbox"/> Bike Lane <input type="checkbox"/> Other (specify) <input type="checkbox"/> Sharrows <input type="checkbox"/> Wide Shoulders <input checked="" type="checkbox"/> None			<input type="checkbox"/> Bike Lane <input checked="" type="checkbox"/> Other (specify) <input type="checkbox"/> Sharrows <u>non-motorized path*</u> <input type="checkbox"/> Wide Shoulders <input type="checkbox"/> None		
Utilities, Sewer and Water	<input checked="" type="checkbox"/> Utilities Upgrades Needed <input checked="" type="checkbox"/> Sewer and water work needed			<input checked="" type="checkbox"/> Replaced Utilities <input checked="" type="checkbox"/> Relocating Utilities <input checked="" type="checkbox"/> Sewer and Water Line Work		
Please describe any improvements being made as part of this project to crosswalks, signage or signals, or streetscape elements not discussed in project description			* Either a non-motorized path or bike lanes will be added. The non-motorized option included on this TIP application for estimating purposes. Anticipate reducing or eliminating On Street parking (the degree to which will be determined after soliciting public input and available Right-of-Way).			
Does this project enhance connectivity of pedestrian or bicyclists to fixed route or Dial-A-Ride transit?			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, how? Connect the proposed non-motorized path to bike lanes proposed on Upton & Whitwam Drives with existing path in Harbor Village to new pedestrian bridge connecting the City of St. Joseph and the City of Benton Harbor that leads to Riverview Drive where both the Red and Blue Routes have stops at Michigan Works!.			

## Section 10. Estimated Project Schedule

Activity	Estimated Date
Resolution of Support for <input type="checkbox"/> Local Match Submitted to SWMPC	July 2020
Project Application Submitted to MOT	August 2021
Grade Inspection Package Submitted to MDOT	August 2021
Grade Inspection Meeting Scheduled	October 2021
Final Plan and Estimate to MDOT	December 2021

Right of Way (ROW) certified*	December 2021
Rail Road Permits*	N/A
Environmental Mitigation*	N/A
Project Obligated	December 2021
Project Letting	February 2022
Construction Start <input type="checkbox"/>	April 2022
Project Completion	October 2022

\*Enter NA if these items will not be required.

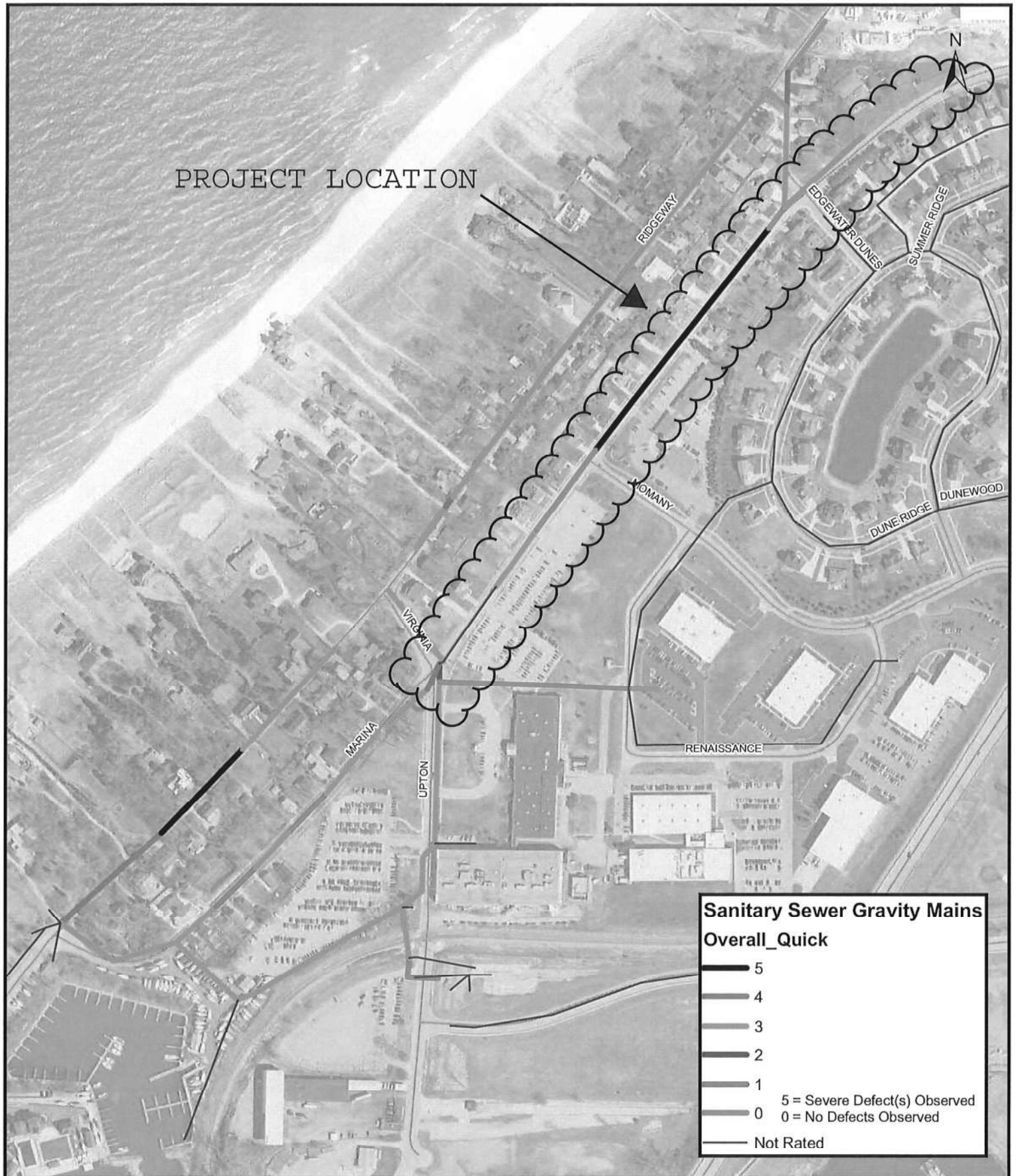
Proposed Improvement			% Reduction		Associated Crash Types	
SEGMENT CRASH REDUCTION FACTORS						
Geometric Safety Enhancements						
<input type="checkbox"/>	Center Left-Turn Lane - Construct		80%	Rear-End Left-Turn		
			50%	Head-On Left-Turn		
			20%	Head-On, Angle, Sideswipe*		
			15%	Non Left-Turn Rear-End, Other*		
<input type="checkbox"/>	Right-Turn Lane - Construct		65%	Rear-End Right-Turn		
			30%	Angle		
			15%	Rear-End		
			10%	Other*		
<input type="checkbox"/>	Horizontal Curve Flattening		30%	Lane Departure***		
<input type="checkbox"/>	Shoulders - Widen to Standard Width (add 1' each side)		5%	Lane Departure***		
<input type="checkbox"/>	Shoulders - Widen to Standard Width (add 2' each side)		10%	Lane Departure***		
<input type="checkbox"/>	Shoulders - Widen to Standard Width (add 3' each side)		15%	Lane Departure***		
<input type="checkbox"/>	Shoulders - Widen to Standard Width (add 4' each side)		20%	Lane Departure***		
<input type="checkbox"/>	Shoulders - Widen to Standard Width (add 5' each side)		25%	Lane Departure***		
<input type="checkbox"/>	Shoulders - Widen to Standard Width (add 6' each side)		30%	Lane Departure***		
<input type="checkbox"/>						
<input type="checkbox"/>	Shoulders - Widen to Standard Width (add 7' each side)		35%	Lane Departure***		
<input type="checkbox"/>	Vertical Curve Modification		20%	All Applicable Crash Types +++		
General Segment Enhancements						
<input type="checkbox"/>	Access Management - Improve		15%	Drive-way Related Applicable Crashes		
<input type="checkbox"/>	Centerline Rumble Strips - Install		44%	K and A injury Applicable Crashes		
			46%	Single Vehicle Run off Road Left Crashes		
			43%	Sideswipe Same Crashes		
			55%	Sideswipe Opposite Crashes		
<input type="checkbox"/>	High Friction Surface Treatment - Install		35%	Wet Crashes		
			20%	All Other Applicable Crashes		
<input checked="" type="checkbox"/>	Recessed Durable Pavement Markings		5%	All Applicable Crashes		
<input type="checkbox"/>	Pedestrian Refuge - Install		50%	Pedestrian Crashes (Review NCHRP Report 841)		
<input type="checkbox"/>	Road Diet (4-3 Lane Conversion) - Install		50%	Suburban - All Applicable Crashes		
<input type="checkbox"/>	Shoulder Rumble Strips		20%	Run-Off the Road Right Crashes		
<input checked="" type="checkbox"/>	Signing/Delineation on Horizontal Curves (Including Recessed Durable Pavement Markings) - Install		20%	Lane Departure***		
<input type="checkbox"/>	Safety Edge Improvement		13%	All non-intersection crashes (CMF Clearing House ID 8658)		

Roadside Enhancements			
<input type="checkbox"/>	Bicycle Lanes - Install per standards	50%	Bicycle Crashes
<input checked="" type="checkbox"/>	Shared Use Path - <i>Install</i>	33%	Bicycle and Pedestrian Related Crashes
<input type="checkbox"/>	Fixed Objects From Clearzone (Trees, Culverts, Etc.) - <i>Removal</i>	75%	Fixed-Object Applicable Crashes
<input type="checkbox"/>	Guardrail - <i>Install</i>	55%	Lane Departure ***Fatalities and "A" Injury Applicable Crashes
<input type="checkbox"/>	Sidewalk for Pedestrians - <i>Construct</i>	85%	Pedestrian Crashes
<input type="checkbox"/>	Slope Flattening	15%	Fixed-Object, Overtake Applicable Crashes
<input type="checkbox"/>	Living Snow Fence	20%	Crashes due to wintry surface conditions
<input type="checkbox"/>	Lighting - <i>install on segment</i>	20%	Dark Unlighted Crashes
INTERSECTION CRASH REDUCTION FACTORS			
Pedestrian / Bicycle Enhancements			
<input checked="" type="checkbox"/>	Bump Out / Curb Extension - <i>Remove Parking / Install</i>	30%	All Crashes
<input type="checkbox"/>	Bicycle Lanes - Install per standards	25%	Bicycle Crashes
<input type="checkbox"/>	Sidewalk for Pedestrians - <i>Construct</i>	85%	Pedestrian Crashes
<input type="checkbox"/>	Intersection Lighting - <i>install</i>	75%	Pedestrian Fatal - Dark Unlighted Crashes
		40%	Pedestrian A-Injury - Dark Unlighted Crashes
		30%	All Applicable Dark Unlighted Crashes
<input type="checkbox"/>	Rectangular Rapid Flashing Beacons	47%	Pedestrian Crashes
<input type="checkbox"/>	Ped. Countdown Signals - <i>install new Pedestrian signal</i>	30%	Pedestrian Crashes
<input type="checkbox"/>	Ped. Countdown Signals - <i>Upgrade from existing Pedestrian signal</i>	25%	Pedestrian Crashes
Signal Timing / Hardware Enhancements			
<input type="checkbox"/>	Multiple Low-Cost Improvements	3%	Rear-End
		12%	Right-Angle
		3%	Nighttime
<input type="checkbox"/>	Install ReflectORIZED Backplates	15%	All Applicable Crashes
<input type="checkbox"/>	Add All-Red Clearance Interval - <i>Add per ITE</i>	20%	Head-On Left-Turn, Angle
<input type="checkbox"/>	Yellow-Change Interval - <i>Increase</i>	10%	All Crash Types
<input type="checkbox"/>	Box Span Signal - <i>Upgrade from Stop Control</i>	65%	Angle
		-25%	Rear-End (Increases Crashes)
		20%	All Other Non Rear-End Crashes
<input type="checkbox"/>	Box Span Signal - <i>Upgrade from Diagonal Span</i>	10%	All Applicable Crashes+
<input type="checkbox"/>	Protected Left-Turn Signal Phase - <i>Add</i>	30%	Left-Turn
<input type="checkbox"/>	Signal Head Size - <i>Increase to 12 "</i>	10%	All Applicable Crashes +
<input type="checkbox"/>	Signal Optimization & Timing Updates	10%	All Applicable Crashes +
<input type="checkbox"/>	Removing Night Flash from Signal Timing	50%	Nighttime Flash mode Related Crashes



Intersection Geometric Enhancements		
<input type="checkbox"/>	Center Left-Turn Lane - Construct	80% Rear-End Left-Turn 50% Head-On Left-Turn 20% Head-On, Angle, Other 15% Non Left-Turn Rear-End 30% Angle 15% Rear-End 10% Head-On, Sideswipe, Pedestrian, Bicycle, Left-Turn Related
<input checked="" type="checkbox"/>	Intersection Improvements (Realignment, Sight-Distance Improvements, Radii Improvements, Etc.)	
<input type="checkbox"/>	Offset Left-Turn Lane - Construct	65% Angle-Turn, Head-On Left-Turn 20% Rear-End Left-Turn 65% Angle-Turn
<input type="checkbox"/>	Offset Right-Turn Lane - Construct	50% Other Applicable Crashes 20% Rear-End Right Turn
<input type="checkbox"/>	Right-Turn Lane - Construct	65% Rear-End Right-Turn 20% Applicable Rear-End Crashes, Sideswipe Same Direction
<input type="checkbox"/>	Roundabout	78% Fatal and A-Injury Reduction 57% Minor Crash Reduction
<input type="checkbox"/>	Lighting	See MDOT Interchange Warranted Lighting Guidance and overall MDOT Lighting Guidance
General Intersection Enhancements (Non-Signalized Intersections)		
<input type="checkbox"/>	All-Way Stop Control - New Installation	60% All Applicable Crashes
<input type="checkbox"/>	Ground Mounted Flashing Beacons (Red)- Install **	30% All Crashes On Install Approach
<input type="checkbox"/>	Ground Mounted Flashing Beacons(Amber) - Install **	20% All Crashes On Install Approach
<input checked="" type="checkbox"/>	Signing - Improve/Upgrade	30% Angle, Rear-End Crashes
<input checked="" type="checkbox"/>	Pavement Markings - Improve/Upgrade	30% Angle, Rear-End Crashes
<input checked="" type="checkbox"/>	Reflective Sheeting on Sign Posts (lollipop)	15% All Applicable Crashes





City of St. Joseph  
700 Broad Street  
St. Joseph, MI 49085

P: 269-983-5541  
F: 269-985-0346  
www.sjcity.com

## Upton Drive Sanitary Sewer Condition

1 inch = 400 feet

User Name: aaustin

Date: 11/28/2018



1.3

## TwinCATS 2020-2023 Road Project Prioritization System

Project Name: Broad StreetAgency: City of St. JosephProposed Year: 2022Total Points: 38

Criteria	Points	
<b>System Preservation</b>	<b>18 points max</b>	
<b>a. Most recent PASER rating</b>		
3-4	(10)	10
5-6	8	
1-2	5	
<b>b. Extension of Remaining Service Life (RSL) based on MDOT Geometric Guidelines</b>		
Extends RSL by 15 years or more (4R project)	8	
Extends RSL by 10-14 years (3R Project)	6	
Extends RSL by 5-9 years (Preventative Maintenance)	(4)	4
Extends RSL by 2-4 years (Preventative Maintenance)	2	
<b>Safety</b>	<b>7 points max</b>	
<b>a. Expected Crash Reduction - Based on MDOT approved Crash Reduction Factors</b>		
50% or greater	5	
40%-49.9%	4	
30% - 39.9%	3	
20% - 29.9%	(2)	2
10% - 19.9%	1	
Less than 10%	0	
<b>b. Addressing High Crash Locations.</b>		
Number of crashes is 20% higher than MPO median (4 or more)	(2)	2
Number of crashes are within 20% of MPO median (2-3)	1	
Number of crashes is lower than 20% of the MPO median (0-1)	0	
<b>Non-motorized Transportation / Complete Streets</b>	<b>6 points max</b>	
a. Follows the Complete Streets Policy	(4)	4
b. Pedestrian and bicycle elements of the project connect to existing bicycle and pedestrian facilities or those that can reasonably expect to be completed between 2019 and 2023.	(2)	2

Criteria	Points	
<b>Regional Connectivity</b>	<b>10 points max</b>	
<b>a. Average daily traffic (ADT) based on most recent traffic count</b>		
ADT is 10,000 or more	5	
ADT is 5,000 – 9,999	④	4
ADT is 2,000 – 4,999	3	
ADT is less than 2,000	0	
<b>b. Functional Classification of the Road</b>		
Principal Arterial	3	
Minor Arterial	②	2
Major Collector	1	
Minor Collector	0	
<b>c. Fixed route transit (TCATA Red or Blue line) uses the road</b>	②	2
<b>Strategic Investment/ Project Planning</b>	<b>11 points max</b>	
a. Project is identified in an Asset Management or Capital Improvement Plan	③	3
b. Project is identified as a priority in another planning document such as a master plan or parks and recreation plan	①	1
c. Project crosses jurisdictional boundaries (i.e. city to township) and is arranged in such a way to be bid as a single project.	1	
d. Project continues resurfacing, reconstruction, or preventative maintenance on a segment of roadway adjacent to a project completed during the 2017-2020 TIP cycle or through Rural Task Force funding.	2	
<b>e. Additional Local Match</b>		
Agency will provide 40% or more local match	4	
Agency will provide 30% to 39.9% local match	②	2
Note: An 18.15% local match is the minimum required		
Project Readiness (no points)	① Yes	
Coordination with sewer or other infrastructure (no points)	Yes	
<b>Total Score (out of 52)</b>		38



**Twin Cities Area Transportation Study  
2020-2023 Transportation Improvement Program (TIP)  
Federal Surface Transportation Block Grant Funds  
Project Application**

Click "Enable Editing" to begin filling out this form. You may save this form at any time.

**Section 1. Applicant Information**

Agency Name	City of St. Joseph		
Contact Name	Tim Zebell	Title	City Engineer
Phone Number	269-983-5541	Email	tzebell@sjcity.com

**Section 2. Project Information**

Project Name/Road Name	Broad Street Resurfacing Project		
Project Limits (e.g. Napier Ave. to Britain Ave.)	Main Street (BL94) to Pearl Street		
Project Length (nearest hundredth of a mile)	0.56	Proposed Year of Funding	2022
Primary Work Type	<input type="checkbox"/> Reconstruct <input type="checkbox"/> Restore & Rehabilitate <input type="checkbox"/> Roadside Facility <input checked="" type="checkbox"/> Resurface <input type="checkbox"/> Traffic Operations/Safety <input type="checkbox"/> Other		
Project Description (Please provide major work items including sidewalks, utility work, ADA upgrades etc.)	Mill & resurface Broad from Main Street (BL94) to Pearl Street. Includes minor utility improvements, sidewalk and ADA ramp replacement as needed to meet current ADA requirements.		
Was this project awarded funding for the 2017-2020 TIP, but was either canceled or failed to be obligated	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, please explain:		

**Section 3. Project Funding**

Federal Funding Requested	\$ 218,000
Local Match (18.15% minimum)	\$ 93,500
Total	\$ 532,000 (construction), 584,800 (total project)
Local Match Percentage (local match/total cost)	30%
Does your agency have the financial capacity to Advance Construct (AC) all or part of this project if necessary? If yes, what is the maximum dollar amount your agency is willing to Advance Construct (AC)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Maximum Dollar Amount you can AC? \$

## Section 4. System Preservation

2018 PASER rating (available as an excel file)	4
Current state of drainage	<input checked="" type="checkbox"/> Adequate <input type="checkbox"/> Minor and tolerable drainage problems <input type="checkbox"/> Occasional drainage problems with some maintenance required <input type="checkbox"/> Inadequate drainage, frequent flooding, excessive maintenance required
Expected increase in Remaining Service life (RSL)	<input type="checkbox"/> 0-3 years <input type="checkbox"/> 4-6 <input checked="" type="checkbox"/> 7-9 <input type="checkbox"/> 10-14 <input type="checkbox"/> 15-20 Use MDOT's <a href="#">Guidelines for Geometrics on Local Projects</a>
What MDOT guidelines does the project conform to?	<input type="checkbox"/> Reconstruction (4R) <input checked="" type="checkbox"/> Resurfacing, restoration, and Rehabilitation (3R) <input type="checkbox"/> Preventative Maintenance (PM)

## Section 5. Safety

Please list the number and severity of crashes within the proposed project limits over the last 5 yrs. (2013-2017) (see [Michigan Crash Facts](#) for crash data)

Total Crashes	21	Pedestrian & Bicycle Crashes	0
Fatalities	0	Serious Injuries	0

Using the attached Crash Reduction Factors sheet, please check each safety counter measure that will be included in the project

Describe any other safety improvements this project will provide	Replace/improve pavement markings, signage and analyze street lighting to improve safety to extent possible. The signal at Main & Broad belongs to MDOT, the City will request a timing analysis to determine if safety can be improved.
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## Section 6. Complete Streets

Does this project meet the <a href="#">TwinCATS Complete Streets Policy</a> , approved in 2014?	<input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If yes, Please explain what pedestrian and/or bicycle improvements are included	Marked Yes and No because sharrows will be added if it is possible to so and improve safety.
If No, please state the reason why this project should be exempt from the TwinCATS Complete Streets Policy.	Resurfacing projects are exempt - see note above.

Does this project connect to an existing pedestrian/bicycle facility or one that is planned to be completed from 2020-2023?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, please provide a map of the connecting facilities
<b>Section 7. Regional Connectivity</b>	
What is the most current daily traffic count for the limits of this project?	<input type="checkbox"/> Less than 2000 <input type="checkbox"/> 2000-5000 <input checked="" type="checkbox"/> 5000-10,000 <input type="checkbox"/> Above 10,000 Year of count: 2013    Source: TAMC
National Functional Classification (NFC) for this roadway (Berrien County NFC Map)	Minor Arterial
Does one of <u>TCATA fixed route transit lines</u> use the road? (Only indicate yes if it carries a current route, not a planned route).	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

<b>Section 8. Strategic Planning &amp; Investment</b>	
Is the project identified in a Asset Management Plan, or Capital Improvement Plan	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, please cite the plan and page number: Asset Management Plan: Appendix G, Page 6
Is the project identified in another planning documents such as a master plan or parks and recreation plan	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, please cite the plan and page number: Master Plan: Appendix G, Map 6
Does the project cross jurisdictional boundaries?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If yes, will it be bid as a single project?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
Will this project coordinate with other infrastructure projects (i.e. utility, water, sewer, etc.)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, please indicate the project type and construction year: The majority of the underground utilities in this area have been replaced as part of combined sewer overflow and water system improvement projects completed within the last 20 years.
How many water main breaks have you had at this location in the past five years?	1
Is there a completed a utilities assessment that included televising the sewers in the project area?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Will this project require environmental mitigation, purchase of Right of Way (ROW), or railroad permits?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not Sure If yes, which items are required:
Does this project perform Resurfacing, Reconstruction, or Preventative Maintenance on a segment adjacent to a segment where a federally-funded project was done during the <u>2017-2020 TwinCATS TIP</u> cycle or <u>RTF</u> cycle?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No What segment was the PREVIOUS project done on?



## Section 9. Existing and Proposed Roadway Design

	Existing			Proposed		
Number of Vehicle Lanes	Through Traffic Lanes	Center Turn Lane	On Street Parking	Through Traffic Lanes	Center Turn Lane	On Street Parking
	2	@ Main St	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2	@ Main St	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Shoulder Surface	<input type="checkbox"/> Paved <input type="checkbox"/> Unpaved		Width (ft.) NA	<input type="checkbox"/> Paved <input type="checkbox"/> Unpaved		Width (ft.) NA
Sidewalk/ path information	<b>Placement</b> <input type="checkbox"/> One Side <input checked="" type="checkbox"/> Both Sides <input type="checkbox"/> Intermittent <input type="checkbox"/> None		Width (ft.) 5 FT	<b>Placement</b> <input type="checkbox"/> One Side <input checked="" type="checkbox"/> Both Sides <input type="checkbox"/> Intermittent <input type="checkbox"/> None		Width (ft.) 5 FT
On road bicycle facilities	<input type="checkbox"/> Bike Lane <input type="checkbox"/> Other (specify) <input type="checkbox"/> Sharrows <input type="checkbox"/> Wide Shoulders <input checked="" type="checkbox"/> None			<input type="checkbox"/> Bike Lane <input checked="" type="checkbox"/> Other (specify) <input checked="" type="checkbox"/> Sharrows <u>if possible</u> <input type="checkbox"/> Wide Shoulders <input type="checkbox"/> None		
Utilities, Sewer and Water	<input type="checkbox"/> Utilities Upgrades Needed <input type="checkbox"/> Sewer and water work needed			<input type="checkbox"/> Replaced Utilities <input type="checkbox"/> Relocating Utilities <input type="checkbox"/> Sewer and Water Line Work		
Please describe any improvements being made as part of this project to crosswalks, signage or signals, or streetscape elements not discussed in project description			Improve signage and pavement markings. Lane configuration at Main & Broad, completed in 2005 with a safety grant, will remain the same.			
Does this project enhance connectivity of pedestrian or bicyclists to fixed route or Dial-A-Ride transit?			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, how? This project is located on the Red Route and connects the downtown, residential, light industrial and recreational areas to the bus stop at Spectrum Health Lakeland Hospital.			

## Section 10. Estimated Project Schedule

Activity	Estimated Date
Resolution of Support for <input type="checkbox"/> Local Match Submitted to SWMPC	July 2020
Project Application Submitted to MOT	August 2021
Grade Inspection Package Submitted to MDOT	August 2021
Grade Inspection Meeting Scheduled	October 2021
Final Plan and Estimate to MDOT	December 2021
Right of Way (ROW) certified*	December 2021
Rail Road Permits*	N/A
Environmental Mitigation*	N/A
Project Obligated	December 2021

Project Letting	February 2022
Construction Start <input type="checkbox"/>	April 2022
Project Completion	May 2022

\*Enter NA if these items will not be required.



Proposed Improvement		% Reduction	Associated Crash Types	
SEGMENT CRASH REDUCTION FACTORS				
Geometric Safety Enhancements				
<input type="checkbox"/>	Center Left-Turn Lane - Construct		80%	Rear-End Left-Turn
			50%	Head-On Left-Turn
			20%	Head-On, Angle, Sideswipe*
			15%	Non Left-Turn Rear-End, Other*
<input type="checkbox"/>	Right-Turn Lane - Construct		65%	Rear-End Right-Turn
			30%	Angle
			15%	Rear-End
			10%	Other*
<input type="checkbox"/>	Horizontal Curve Flattening		30%	Lane Departure***
			5%	Lane Departure***
<input type="checkbox"/>	Shoulders - Widen to Standard Width (add 1' each side)		10%	Lane Departure***
			15%	Lane Departure***
<input type="checkbox"/>	Shoulders - Widen to Standard Width (add 2' each side)		20%	Lane Departure***
			25%	Lane Departure***
<input type="checkbox"/>	Shoulders - Widen to Standard Width (add 3' each side)		30%	Lane Departure***
<input type="checkbox"/>	Shoulders - Widen to Standard Width (add 4' each side)			
<input type="checkbox"/>	Shoulders - Widen to Standard Width (add 5' each side)			
<input type="checkbox"/>	Shoulders - Widen to Standard Width (add 6' each side)			
<input type="checkbox"/>	Shoulders - Widen to Standard Width (add 7' each side)		35%	Lane Departure***
			20%	All Applicable Crash Types +++
General Segment Enhancements				
<input type="checkbox"/>	Access Management - Improve		15%	Drive-way Related Applicable Crashes
			44%	K and A injury Applicable Crashes
			46%	Single Vehicle Run off Road Left Crashes
			43%	Sideswipe Same Crashes
<input type="checkbox"/>	Centerline Rumble Strips - Install		55%	Sideswipe Opposite Crashes
			35%	Wet Crashes
			20%	All Other Applicable Crashes
			5%	All Applicable Crashes
<input type="checkbox"/>	High Friction Surface Treatment - Install		50%	Pedestrian Crashes (Review NCHRP Report 841)
			50%	Suburban - All Applicable Crashes
			20%	Run-Off the Road Right Crashes
			20%	Lane Departure***
<input type="checkbox"/>	Recessed Durable Pavement Markings			
<input type="checkbox"/>	Pedestrian Refuge - Install			
<input type="checkbox"/>	Road Diet (4-3 Lane Conversion) - Install			
<input type="checkbox"/>	Shoulder Rumble Strips			
<input type="checkbox"/>	Signing/Delineation on Horizontal Curves (Including Recessed Durable Pavement Markings) - Install			
<input type="checkbox"/>	Safety Edge Improvement		13%	All non-intersection crashes (CMF Clearing House ID 8658)

Roadside Enhancements			
<input type="checkbox"/>	Bicycle Lanes - Install per standards	50%	Bicycle Crashes
<input type="checkbox"/>	Shared Use Path - <i>Install</i>	33%	Bicycle and Pedestrian Related Crashes
<input type="checkbox"/>	Fixed Objects From Clearzone (Trees, Culverts, Etc.) - <i>Removal</i>	75%	Fixed-Object Applicable Crashes
<input type="checkbox"/>	Guardrail - <i>Install</i>	55%	Lane Departure ***Fatalities and "A" Injury Applicable Crashes
<input type="checkbox"/>	Sidewalk for Pedestrians - <i>Construct</i>	85%	Pedestrian Crashes
<input type="checkbox"/>	Slope Flattening	15%	Fixed-Object, Overtake Applicable Crashes
<input type="checkbox"/>	Living Snow Fence	20%	Crashes due to wintry surface conditions
<input type="checkbox"/>	Lighting - <i>install on segment</i>	20%	Dark Unlighted Crashes
INTERSECTION CRASH REDUCTION FACTORS			
Pedestrian / Bicycle Enhancements			
<input type="checkbox"/>	Bump Out / Curb Extension - <i>Remove Parking / Install</i>	30%	All Crashes
<input type="checkbox"/>	Bicycle Lanes - Install per standards	25%	Bicycle Crashes
<input type="checkbox"/>	Sidewalk for Pedestrians - <i>Construct</i>	85%	Pedestrian Crashes
<input type="checkbox"/>	Intersection Lighting - <i>install</i>	75%	Pedestrian Fatal - Dark Unlighted Crashes
		40%	Pedestrian A-Injury - Dark Unlighted Crashes
		30%	All Applicable Dark Unlighted Crashes
<input type="checkbox"/>	Rectangular Rapid Flashing Beacons	47%	Pedestrian Crashes
<input type="checkbox"/>	Ped. Countdown Signals - <i>Install new Pedestrian signal</i>	30%	Pedestrian Crashes
<input type="checkbox"/>	Ped. Countdown Signals - <i>Upgrade from existing Pedestrian signal</i>	25%	Pedestrian Crashes
Signal Timing / Hardware Enhancements			
<input type="checkbox"/>	Multiple Low-Cost Improvements	3%	Rear-End
		12%	Right-Angle
		3%	Nighttime
<input type="checkbox"/>	Install Reflectorized Backplates	15%	All Applicable Crashes
<input type="checkbox"/>	Add All-Red Clearance Interval - <i>Add per ITE</i>	20%	Head-On Left-Turn, Angle
<input type="checkbox"/>	Yellow-Change Interval - <i>Increase</i>	10%	All Crash Types
		65%	Angle
<input type="checkbox"/>	Box Span Signal - <i>Upgrade from Stop Control</i>	-25%	Rear-End (Increases Crashes)
		20%	All Other Non Rear-End Crashes
<input type="checkbox"/>	Box Span Signal - <i>Upgrade from Diagonal Span</i>	10%	All Applicable Crashes+
<input type="checkbox"/>	Protected Left-Turn Signal Phase - <i>Add</i>	30%	Left-Turn
<input type="checkbox"/>	Signal Head Size - <i>Increase to 12 "</i>	10%	All Applicable Crashes +
<input checked="" type="checkbox"/>	Signal Optimization & Timing Updates	10%	All Applicable Crashes +
<input type="checkbox"/>	Removing Night Flash from Signal Timing	50%	Nighttime Flash mode Related Crashes

Intersection Geometric Enhancements		
<input type="checkbox"/>	Center Left-Turn Lane - Construct	80% Rear-End Left-Turn 50% Head-On Left-Turn 20% Head-On, Angle, Other 15% Non Left-Turn Rear-End 30% Angle 15% Rear-End 10% Head-On, Sideswipe, Pedestrian, Bicycle, Left-Turn Related
<input type="checkbox"/>	Intersection Improvements (Realignment, Sight-Distance Improvements, Radii Improvements, Etc.)	
<input type="checkbox"/>	Offset Left-Turn Lane - Construct	65% Angle-Turn, Head-On Left-Turn 20% Rear-End Left-Turn 65% Angle-Turn
<input type="checkbox"/>	Offset Right-Turn Lane - Construct	50% Other Applicable Crashes 20% Rear-End Right Turn
<input type="checkbox"/>	Right-Turn Lane - Construct	65% Rear-End Right-Turn 20% Applicable Rear-End Crashes, Sideswipe Same Direction
<input type="checkbox"/>	Roundabout	78% Fatal and A-Injury Reduction 57% Minor Crash Reduction
<input type="checkbox"/>	Lighting	See MDOT Interchange Warranted Lighting Guidance and overall MDOT Lighting Guidance
General Intersection Enhancements (Non-Signalized Intersections)		
<input type="checkbox"/>	All-Way Stop Control - New Installation	60% All Applicable Crashes
<input type="checkbox"/>	Ground Mounted Flashing Beacons (Red)- Install **	30% All Crashes On Install Approach
<input type="checkbox"/>	Ground Mounted Flashing Beacons(Amber) - Install **	20% All Crashes On Install Approach
<input checked="" type="checkbox"/>	Signing - Improve/Upgrade	30% Angle, Rear-End Crashes
<input checked="" type="checkbox"/>	Pavement Markings - Improve/Upgrade	30% Angle, Rear-End Crashes
<input checked="" type="checkbox"/>	Reflective Sheeting on Sign Posts (lollipop)	15% All Applicable Crashes



1.4

# TwinCATS 2020-2023 Road Project Prioritization System

Project Name: Water Street

Agency: City of St. Joseph

Proposed Year: 2023

Total Points: 32

Criteria	Points	
<b>System Preservation</b>	<b>18 points max</b>	
<b>a. Most recent PASER rating</b>		
3-4	10	
5-6	8	
1-2	<u>5</u>	<u>5</u>
<b>b. Extension of Remaining Service Life (RSL) based on MDOT Geometric Guidelines</b>		
Extends RSL by 15 years or more (4R project)	<u>8</u>	<u>8</u>
Extends RSL by 10-14 years (3R Project)	6	
Extends RSL by 5-9 years (Preventative Maintenance)	4	
Extends RSL by 2-4 years (Preventative Maintenance)	2	
<b>Safety</b>	<b>7 points max</b>	
<b>a. Expected Crash Reduction - Based on MDOT approved Crash Reduction Factors</b>		
50% or greater	5	
40%-49.9%	4	
30% - 39.9%	3	
20% - 29.9%	2	
10% - 19.9%	<u>1</u>	<u>1</u>
Less than 10%	0	
<b>b. Addressing High Crash Locations.</b>		
Number of crashes is 20% higher than MPO median (4 or more)	<u>2</u>	<u>2</u>
Number of crashes are within 20% of MPO median (2-3)	1	
Number of crashes is lower than 20% of the MPO median (0-1)	0	
<b>Non-motorized Transportation / Complete Streets</b>	<b>6 points max</b>	
<b>a. Follows the Complete Streets Policy</b>	<u>4</u>	<u>4</u>
<b>b. Pedestrian and bicycle elements of the project connect to existing bicycle and pedestrian facilities or those that can reasonably expect to be completed between 2019 and 2023.</b>	<u>2</u>	<u>2</u>

Criteria	Points	
<b>Regional Connectivity</b>	<b>10 points max</b>	
<b>a. Average daily traffic (ADT) based on most recent traffic count</b>		
ADT is 10,000 or more	5	
ADT is 5,000 – 9,999	4	
ADT is 2,000 – 4,999	3	3
ADT is less than 2,000	0	
<b>b. Functional Classification of the Road</b>		
Principal Arterial	3	
Minor Arterial	2	
Major Collector	1	1
Minor Collector	0	
<b>c. Fixed route transit (TCATA Red or Blue line) uses the road</b>	2	
<b>Strategic Investment/ Project Planning</b>	<b>11 points max</b>	
a. Project is identified in an Asset Management or Capital Improvement Plan	3	3
b. Project is identified as a priority in another planning document such as a master plan or parks and recreation plan	1	1
c. Project crosses jurisdictional boundaries (i.e. city to township) and is arranged in such a way to be bid as a single project.	1	
d. Project continues resurfacing, reconstruction, or preventative maintenance on a segment of roadway adjacent to a project completed during the 2017-2020 TIP cycle or through Rural Task Force funding.	2	
<b>e. Additional Local Match</b>		
Agency will provide 40% or more local match	4	
Agency will provide 30% to 39.9% local match	2	2
Note: An 18.15% local match is the minimum required		
Project Readiness (no points)	Yes	
Coordination with sewer or other infrastructure (no points)	Yes	
<b>Total Score (out of 52)</b>	<b>32</b>	



**Twin Cities Area Transportation Study  
2020-2023 Transportation Improvement Program (TIP)  
Federal Surface Transportation Block Grant Funds  
Project Application**

Click "Enable Editing" to begin filling out this form. You may save this form at any time.

Section 1. Applicant Information			
Agency Name	City of St. Joseph		
Contact Name	Tim Zebell	Title	City Engineer
Phone Number	269-983-5541	Email	tzebell@sjcity.com

Section 2. Project Information			
Project Name/Road Name	Water Street Reconstruction Project		
Project Limits (e.g. Napier Ave. to Britain Ave.)	South State Street to Vine Street		
Project Length (nearest hundredth of a mile)	0.11	Proposed Year of Funding	2023
Primary Work Type	<input checked="" type="checkbox"/> Reconstruct <input type="checkbox"/> Restore & Rehabilitate <input type="checkbox"/> Roadside Facility <input type="checkbox"/> Resurface <input type="checkbox"/> Traffic Operations/Safety <input type="checkbox"/> Other		
Project Description (Please provide major work items including sidewalks, utility work, ADA upgrades etc.)	Full reconstruction of Water Street, replacement of underground utilities as needed and rehabilitation of the existing retaining wall. Crosswalks, sidewalks, etc. will be designed to meet current ADA standards.		
Was this project awarded funding for the 2017-2020 TIP, but was either canceled or failed to be obligated	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, please explain:		

Section 3. Project Funding	
Federal Funding Requested	\$ 339,000
Local Match (18.15% minimum)	\$ 145,300 (~\$495,000 with retaining wall rehab)
Total	\$ 998,000 (construction), 1,296,000 (total project)
Local Match Percentage (local match/total cost)	30%
Does your agency have the financial capacity to Advance Construct (AC) all or part of this project if necessary? If yes, what is the maximum dollar amount your agency is willing to Advance Construct (AC)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Maximum Dollar Amount you can AC? \$

## Section 4. System Preservation

2018 PASER rating (available as an excel file)	2
Current state of drainage	<input type="checkbox"/> Adequate <input type="checkbox"/> Minor and tolerable drainage problems <input type="checkbox"/> Occasional drainage problems with some maintenance required <input checked="" type="checkbox"/> Inadequate drainage, frequent flooding, excessive maintenance required
Expected increase in Remaining Service life (RSL)	<input type="checkbox"/> 0-3 years <input type="checkbox"/> 4-6 <input type="checkbox"/> 7-9 <input type="checkbox"/> 10-14 <input checked="" type="checkbox"/> 15-20 Use MDOT's <u>Guidelines for Geometrics on Local Projects</u>
What MDOT guidelines does the project conform to?	<input checked="" type="checkbox"/> Reconstruction (4R) <input type="checkbox"/> Resurfacing, restoration, and Rehabilitation (3R) <input type="checkbox"/> Preventative Maintenance (PM)

## Section 5. Safety

Please list the number and severity of crashes within the proposed project limits over the last 5 yrs. (2013-2017) (see Michigan Crash Facts for crash data)

Total Crashes	8	Pedestrian & Bicycle Crashes	1
Fatalities	0	Serious Injuries	0

Using the attached Crash Reduction Factors sheet, please check each safety counter measure that will be included in the project

Describe any other safety improvements this project will provide	Add center turn lane, improve horizontal and vertical alignments at intersections to the extent possible.
--	---

## Section 6. Complete Streets

Does this project meet the <u>TwinCATS Complete Streets Policy</u> , approved in 2014?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
If yes, Please explain what pedestrian and/or bicycle improvements are included	There is an existing non-motorized path next to the road.
If No, please state the reason why this project should be exempt from the TwinCATS Complete Streets Policy.	
Does this project connect to an existing pedestrian/bicycle facility or one that is planned to be completed from 2020-2023?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, please provide a map of the connecting facilities

Section 7. Regional Connectivity	
What is the most current daily traffic count for the limits of this project?	<input type="checkbox"/> Less than 2000 <input checked="" type="checkbox"/> 2000-5000 <input type="checkbox"/> 5000-10,000 <input type="checkbox"/> Above 10,000 Year of count: 2013    Source: TAMC
National Functional Classification (NFC) for this roadway (Berrien County NFC Map)	Major Collector
Does one of <u>TCATA fixed route transit lines</u> use the road? (Only indicate yes if it carries a current route, not a planned route).	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Section 8. Strategic Planning & Investment	
Is the project identified in a Asset Management Plan, or Capital Improvement Plan	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, please cite the plan and page number: Asset Management Plan: Appendix G, Page 5
Is the project identified in another planning documents such as a master plan or parks and recreation plan	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, please cite the plan and page number: Master Plan: Appendix G, Map 6 (existing non-motorized path - see attached)
Does the project cross jurisdictional boundaries?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If yes, will it be bid as a single project?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
Will this project coordinate with other infrastructure projects (i.e. utility, water, sewer, etc.)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, please indicate the project type and construction year: Water mains will be replaced as needed concurrently with the project.
How many water main breaks have you had at this location in the past five years?	0
Is there a completed a utilities assessment that included televising the sewers in the project area?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Will this project require environmental mitigation, purchase of Right of Way (ROW), or railroad permits?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not Sure If yes, which items are required:
Does this project perform Resurfacing, Reconstruction, or Preventative Maintenance on a segment adjacent to a segment where a federally-funded project was done during the <u>2017-2020 TwinCATS TIP</u> cycle or <u>RTF</u> cycle?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No What segment was the PREVIOUS project done on?

## Section 9. Existing and Proposed Roadway Design

	Existing			Proposed		
Number of Vehicle Lanes	Through Traffic Lanes	Center Turn Lane	On Street Parking	Through Traffic Lanes	Center Turn Lane	On Street Parking
	2	0	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	2	1	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Shoulder Surface	<input type="checkbox"/> Paved <input type="checkbox"/> Unpaved		Width (ft.) NA	<input type="checkbox"/> Paved <input type="checkbox"/> Unpaved		Width (ft.) NA
Sidewalk/ path information	<b>Placement</b> <input checked="" type="checkbox"/> One Side <input type="checkbox"/> Both Sides <input type="checkbox"/> Intermittent <input type="checkbox"/> None		Width (ft.) 10 FT	<b>Placement</b> <input checked="" type="checkbox"/> One Side <input type="checkbox"/> Both Sides <input type="checkbox"/> Intermittent <input type="checkbox"/> None		Width (ft.) 10 FT
On road bicycle facilities	<input type="checkbox"/> Bike Lane <input type="checkbox"/> Other (specify) <input type="checkbox"/> Sharrows <input type="checkbox"/> Wide Shoulders <input type="checkbox"/> None			<input type="checkbox"/> Bike Lane <input type="checkbox"/> Other (specify) <input type="checkbox"/> Sharrows <input type="checkbox"/> Wide Shoulders <input type="checkbox"/> None		
Utilities, Sewer and Water	<input checked="" type="checkbox"/> Utilities Upgrades Needed <input checked="" type="checkbox"/> Sewer and water work needed			<input checked="" type="checkbox"/> Replaced Utilities <input checked="" type="checkbox"/> Relocating Utilities <input checked="" type="checkbox"/> Sewer and Water Line Work		
Please describe any improvements being made as part of this project to crosswalks, signage or signals, or streetscape elements not discussed in project description			The City intends to rehabilitate Water Street Retaining Wall concurrently with this project.			
Does this project enhance connectivity of pedestrian or bicyclists to fixed route or Dial-A-Ride transit?			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, how? The existing non-motorized connects to the proposed non-motorized facilities on South State Street and Ship Street that lead to the Red Route stop at the Whitcomb Tower.			

## Section 10. Estimated Project Schedule

Activity	Estimated Date
Resolution of Support for <input type="checkbox"/> Local Match Submitted to SWMPC	July 2021
Project Application Submitted to MOT	August 2022
Grade Inspection Package Submitted to MDOT	August 2022
Grade Inspection Meeting Scheduled	October 2022
Final Plan and Estimate to MDOT	December 2022
Right of Way (ROW) certified*	December 2022
Rail Road Permits*	N/A
Environmental Mitigation*	N/A
Project Obligated	December 2022
Project Letting	February 2023

Construction Start <input type="checkbox"/>	April 2023
Project Completion	July 2023

\*Enter NA if these items will not be required.



Proposed Improvement		% Reduction	Associated Crash Types	
SEGMENT CRASH REDUCTION FACTORS				
Geometric Safety Enhancements				
<input checked="" type="checkbox"/>	Center Left-Turn Lane - Construct	80%	Rear-End Left-Turn	
		50%	Head-On Left-Turn	
		20%	Head-On, Angle, Sideswipe*	
		15%	Non Left-Turn Rear-End, Other*	
<input type="checkbox"/>	Right-Turn Lane - Construct	65%	Rear-End Right-Turn	
		30%	Angle	
		15%	Rear-End	
		10%	Other*	
<input type="checkbox"/>	Horizontal Curve Flattening	30%	Lane Departure***	
	Shoulders - Widen to Standard Width (add 1' each side)	5%	Lane Departure***	
	Shoulders - Widen to Standard Width (add 2' each side)	10%	Lane Departure***	
	Shoulders - Widen to Standard Width (add 3' each side)	15%	Lane Departure***	
	Shoulders - Widen to Standard Width (add 4' each side)	20%	Lane Departure***	
	Shoulders - Widen to Standard Width (add 5' each side)	25%	Lane Departure***	
	Shoulders - Widen to Standard Width (add 6' each side)	30%	Lane Departure***	
<input type="checkbox"/>	Shoulders - Widen to Standard Width (add 7' each side)	35%	Lane Departure***	
<input checked="" type="checkbox"/>	Vertical Curve Modification	20%	All Applicable Crash Types +++	
General Segment Enhancements				
<input type="checkbox"/>	Access Management - Improve	15%	Drive-way Related Applicable Crashes	
<input type="checkbox"/>	Centerline Rumble Strips - Install	44%	K and A injury Applicable Crashes	
		46%	Single Vehicle Run off Road Left Crashes	
		43%	Sideswipe Same Crashes	
		55%	Sideswipe Opposite Crashes	
<input type="checkbox"/>	High Friction Surface Treatment - Install	35%	Wet Crashes	
		20%	All Other Applicable Crashes	
<input checked="" type="checkbox"/>	Recessed Durable Pavement Markings	5%	All Applicable Crashes	
<input type="checkbox"/>	Pedestrian Refuge - Install	50%	Pedestrian Crashes (Review NCHRP Report 841)	
<input type="checkbox"/>	Road Diet (4-3 Lane Conversion) - Install	50%	Suburban - All Applicable Crashes	
<input type="checkbox"/>	Shoulder Rumble Strips	20%	Run-Off the Road Right Crashes	
<input type="checkbox"/>	Signing/Delineation on Horizontal Curves (Including Recessed Durable Pavement Markings) - Install	20%	Lane Departure***	
<input type="checkbox"/>	Safety Edge Improvement	13%	All non-intersection crashes (CMF Clearing House ID 8658)	



Roadside Enhancements			
<input type="checkbox"/>	Bicycle Lanes - Install per standards	50%	Bicycle Crashes
<input type="checkbox"/>	Shared Use Path - <i>Install</i>	33%	Bicycle and Pedestrian Related Crashes
<input type="checkbox"/>	Fixed Objects From Clearzone (Trees, Culverts, Etc.) - <i>Removal</i>	75%	Fixed-Object Applicable Crashes
<input type="checkbox"/>	Guardrail - <i>Install</i>	55%	Lane Departure ***Fatalities and "A" Injury Applicable Crashes
<input type="checkbox"/>	Sidewalk for Pedestrians - <i>Construct</i>	85%	Pedestrian Crashes
<input type="checkbox"/>	Slope Flattening	15%	Fixed-Object, Overtake Applicable Crashes
<input type="checkbox"/>	Living Snow Fence	20%	Crashes due to wintry surface conditions
<input type="checkbox"/>	Lighting - <i>install on segment</i>	20%	Dark Unlighted Crashes
INTERSECTION CRASH REDUCTION FACTORS			
Pedestrian / Bicycle Enhancements			
<input type="checkbox"/>	Bump Out / Curb Extension - <i>Remove Parking / Install</i>	30%	All Crashes
<input type="checkbox"/>	Bicycle Lanes - Install per standards	25%	Bicycle Crashes
<input type="checkbox"/>	Sidewalk for Pedestrians - <i>Construct</i>	85%	Pedestrian Crashes
<input type="checkbox"/>	Intersection Lighting - <i>install</i>	75%	Pedestrian Fatal - Dark Unlighted Crashes
		40%	Pedestrian A-Injury - Dark Unlighted Crashes
		30%	All Applicable Dark Unlighted Crashes
<input type="checkbox"/>	Rectangular Rapid Flashing Beacons	47%	Pedestrian Crashes
<input type="checkbox"/>	Ped. Countdown Signals - <i>Install new Pedestrian signal</i>	30%	Pedestrian Crashes
<input type="checkbox"/>	Ped. Countdown Signals - <i>Upgrade from existing Pedestrian signal</i>	25%	Pedestrian Crashes
Signal Timing / Hardware Enhancements			
<input type="checkbox"/>	Multiple Low-Cost Improvements	3%	Rear-End
		12%	Right-Angle
		3%	Nighttime
<input type="checkbox"/>	Install Reflectorized Backplates	15%	All Applicable Crashes
<input type="checkbox"/>	Add All-Red Clearance Interval - <i>Add per ITE</i>	20%	Head-On Left-Turn, Angle
<input type="checkbox"/>	Yellow-Change Interval - <i>Increase</i>	10%	All Crash Types
	Box Span Signal - <i>Upgrade from Stop Control</i>	65%	Angle
<input type="checkbox"/>		-25%	Rear-End (Increases Crashes)
		20%	All Other Non Rear-End Crashes
<input type="checkbox"/>	Box Span Signal - <i>Upgrade from Diagonal Span</i>	10%	All Applicable Crashes+
<input type="checkbox"/>	Protected Left-Turn Signal Phase - <i>Add</i>	30%	Left-Turn
<input type="checkbox"/>	Signal Head Size - <i>Increase to 12 "</i>	10%	All Applicable Crashes +
<input type="checkbox"/>	Signal Optimization & Timing Updates	10%	All Applicable Crashes +
<input type="checkbox"/>	Removing Night Flash from Signal Timing	50%	Nighttime Flash mode Related Crashes

Intersection Geometric Enhancements		
<input type="checkbox"/>	Center Left-Turn Lane - Construct	80% Rear-End Left-Turn 50% Head-On Left-Turn 20% Head-On, Angle, Other 15% Non Left-Turn Rear-End 30% Angle 15% Rear-End 10% Head-On, Sideswipe, Pedestrian, Bicycle, Left-Turn Related 65% Angle-Turn, Head-On Left-Turn 20% Rear-End Left-Turn 65% Angle-Turn 50% Other Applicable Crashes 20% Rear-End Right Turn 65% Rear-End Right-Turn 20% Applicable Rear-End Crashes, Sideswipe Same Direction 78% Fatal and A-Injury Reduction 57% Minor Crash Reduction - See MDOT Interchange Warranted Lighting Guidance and overall MDOT Lighting Guidance
<input checked="" type="checkbox"/>	Intersection Improvements (Realignment, Sight-Distance Improvements, Radii Improvements, Etc.)	
<input type="checkbox"/>	Offset Left-Turn Lane - Construct	
<input type="checkbox"/>	Offset Right-Turn Lane - Construct	
<input type="checkbox"/>	Right-Turn Lane - Construct	
<input type="checkbox"/>	Roundabout	
<input type="checkbox"/>	Lighting	
General Intersection Enhancements (Non-Signalized Intersections)		
<input type="checkbox"/>	All-Way Stop Control - New Installation	60% All Applicable Crashes
<input type="checkbox"/>	Ground Mounted Flashing Beacons (Red) - Install **	30% All Crashes On Install Approach
<input type="checkbox"/>	Ground Mounted Flashing Beacons(Amber) - Install **	20% All Crashes On Install Approach
<input checked="" type="checkbox"/>	Signing - Improve/Upgrade	30% Angle, Rear-End Crashes
<input checked="" type="checkbox"/>	Pavement Markings - Improve/Upgrade	30% Angle, Rear-End Crashes
<input checked="" type="checkbox"/>	Reflective Sheeting on Sign Posts (lollipop)	15% All Applicable Crashes

1.5

## TwinCATS 2020-2023 Road Project Prioritization System

Project Name: Botham Ave.Agency: City of St. JosephProposed Year: 2023Total Points: 35

Criteria	Points	
<b>System Preservation</b>	<b>18 points max</b>	
<b>a. Most recent PASER rating</b>		
3-4	<u>10</u>	<u>10</u>
5-6	8	
1-2	5	
<b>b. Extension of Remaining Service Life (RSL) based on MDOT Geometric Guidelines</b>		
Extends RSL by 15 years or more (4R project)	<u>8</u>	<u>8</u>
Extends RSL by 10-14 years (3R Project)	6	
Extends RSL by 5-9 years (Preventative Maintenance)	4	
Extends RSL by 2-4 years (Preventative Maintenance)	2	
<b>Safety</b>	<b>7 points max</b>	
<b>a. Expected Crash Reduction - Based on MDOT approved Crash Reduction Factors</b>		
50% or greater	5	
40%-49.9%	4	
30% - 39.9%	3	
20% - 29.9%	2	
10% - 19.9%	1	
Less than 10%	<u>0</u>	<u>0</u>
<b>b. Addressing High Crash Locations.</b>		
Number of crashes is 20% higher than MPO median (4 or more)	2	
Number of crashes are within 20% of MPO median (2-3)	1	
Number of crashes is lower than 20% of the MPO median (0-1)	<u>0</u>	<u>0</u>
<b>Non-motorized Transportation / Complete Streets</b>	<b>6 points max</b>	
a. Follows the Complete Streets Policy	<u>4</u>	<u>4</u>
b. Pedestrian and bicycle elements of the project connect to existing bicycle and pedestrian facilities or those that can reasonably expect to be completed between 2019 and 2023.	<u>2</u>	<u>2</u>

Criteria	Points	
<b>Regional Connectivity</b>	<b>10 points max</b>	
<b>a. Average daily traffic (ADT) based on most recent traffic count</b>		
ADT is 10,000 or more	5	
ADT is 5,000 – 9,999	4	4
ADT is 2,000 – 4,999	3	
ADT is less than 2,000	0	
<b>b. Functional Classification of the Road</b>		
Principal Arterial	3	
Minor Arterial	2	
Major Collector	1	1
Minor Collector	0	
<b>c. Fixed route transit (TCATA Red or Blue line) uses the road</b>	2	
<b>Strategic Investment/ Project Planning</b>	<b>11 points max</b>	
a. Project is identified in an Asset Management or Capital Improvement Plan	3	3
b. Project is identified as a priority in another planning document such as a master plan or parks and recreation plan	1	1
c. Project crosses jurisdictional boundaries (i.e. city to township) and is arranged in such a way to be bid as a single project.	1	
d. Project continues resurfacing, reconstruction, or preventative maintenance on a segment of roadway adjacent to a project completed during the 2017-2020 TIP cycle or through Rural Task Force funding.	2	
<b>e. Additional Local Match</b>		
Agency will provide 40% or more local match	4	
Agency will provide 30% to 39.9% local match	2	2
Note: An 18.15% local match is the minimum required		
Project Readiness (no points)	Yes	
Coordination with sewer or other infrastructure (no points)	Yes	
<b>Total Score (out of 52)</b>	<b>35</b>	

**Twin Cities Area Transportation Study  
2020-2023 Transportation Improvement Program (TIP)  
Federal Surface Transportation Block Grant Funds  
Project Application**

Click "Enable Editing" to begin filling out this form. You may save this form at any time.

**Section 1. Applicant Information**

Agency Name	City of St. Joseph		
Contact Name	Tim Zebell	Title	City Engineer
Phone Number	269-983-5541	Email	tzebell@sjcity.com

**Section 2. Project Information**

Project Name/Road Name	Botham Avenue Reconstruction Project		
Project Limits (e.g. Napier Ave. to Britain Ave.)	South State Street to Niles Avenue (M-63)		
Project Length (nearest hundredth of a mile)	0.13	Proposed Year of Funding	2023
Primary Work Type	<input checked="" type="checkbox"/> Reconstruct <input type="checkbox"/> Restore & Rehabilitate <input type="checkbox"/> Roadside Facility <input type="checkbox"/> Resurface <input type="checkbox"/> Traffic Operations/Safety <input type="checkbox"/> Other		
Project Description (Please provide major work items including sidewalks, utility work, ADA upgrades etc.)	Full reconstruction of Botham Avenue and all underground utilities (water main, sanitary sewer and storm sewer). Non-motorized facilities: likely in the form of bike lanes will be added. Crosswalks, sidewalks, etc. will be designed to meet current ADA standards.		
Was this project awarded funding for the 2017-2020 TIP, but was either canceled or failed to be obligated	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, please explain:		

**Section 3. Project Funding**

Federal Funding Requested	\$ 250,600
Local Match (18.15% minimum)	\$ 107,500
Total	\$ 903,000 (construction), 993,500 (total project)
Local Match Percentage (local match/total cost)	30%
Does your agency have the financial capacity to Advance Construct (AC) all or part of this project if necessary? If yes, what is the maximum dollar amount your agency is willing to Advance Construct (AC)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Maximum Dollar Amount you can AC? \$ 125,000

#### Section 4. System Preservation

2018 PASER rating (available as an excel file)	4
Current state of drainage	<input type="checkbox"/> Adequate <input type="checkbox"/> Minor and tolerable drainage problems <input type="checkbox"/> Occasional drainage problems with some maintenance required <input checked="" type="checkbox"/> Inadequate drainage, frequent flooding, excessive maintenance required
Expected increase in Remaining Service life (RSL)	<input type="checkbox"/> 0-3 years <input type="checkbox"/> 4-6 <input type="checkbox"/> 7-9 <input type="checkbox"/> 10-14 <input checked="" type="checkbox"/> 15-20 Use MDOT's <a href="#"><i>Guidelines for Geometrics on Local Projects</i></a>
What MDOT guidelines does the project conform to?	<input checked="" type="checkbox"/> Reconstruction (4R) <input type="checkbox"/> Resurfacing, restoration, and Rehabilitation (3R) <input type="checkbox"/> Preventative Maintenance (PM)

#### Section 5. Safety

Please list the number and severity of crashes within the proposed project limits over the last 5 yrs. (2013-2017) (see [Michigan Crash Facts](#) for crash data)

Total Crashes	1	Pedestrian & Bicycle Crashes	0
Fatalities	0	Serious Injuries	0
Using the attached Crash Reduction Factors sheet, please check each safety counter measure that will be included in the project			
Describe any other safety improvements this project will provide	Parking will be reduced or eliminated to accommodate non-motorized facilities and improve sight distance.		

#### Section 6. Complete Streets

Does this project meet the <a href="#"><u>TwinCATS Complete Streets Policy</u></a> , approved in 2014?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
If yes, Please explain what pedestrian and/or bicycle improvements are included	Bike lanes or a non-motorized path will be added. The City will solicit public input on several concepts prior to beginning the design process.
If No, please state the reason why this project should be exempt from the TwinCATS Complete Streets Policy.	



Does this project connect to an existing pedestrian/bicycle facility or one that is planned to be completed from 2020-2023?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, please provide a map of the connecting facilities
<b>Section 7. Regional Connectivity</b>	
What is the most current daily traffic count for the limits of this project?	<input type="checkbox"/> Less than 2000 <input type="checkbox"/> 2000-5000 <input checked="" type="checkbox"/> 5000-10,000 <input type="checkbox"/> Above 10,000 Year of count: 2013    Source: TAMC
National Functional Classification (NFC) for this roadway (Berrien County NFC Map)	Major Collector
Does one of <u>TCATA fixed route transit lines</u> use the road? (Only indicate yes if it carries a current route, not a planned route).	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

<b>Section 8. Strategic Planning &amp; Investment</b>	
Is the project identified in a Asset Management Plan, or Capital Improvement Plan	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, please cite the plan and page number: Asset Management Plan: Appendix G, Page 5 Water System Reliability Study: Page 22
Is the project identified in another planning documents such as a master plan or parks and recreation plan	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, please cite the plan and page number: Master Plan: Appendix G, Map 6 (attached)
Does the project cross jurisdictional boundaries?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If yes, will it be bid as a single project?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
Will this project coordinate with other infrastructure projects (i.e. utility, water, sewer, etc.)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, please indicate the project type and construction year: Sanitary sewer and water mains will be replaced concurrently with the project.
How many water main breaks have you had at this location in the past five years?	2
Is there a completed a utilities assessment that included televising the sewers in the project area?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Will this project require environmental mitigation, purchase of Right of Way (ROW), or railroad permits?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not Sure If yes, which items are required:
Does this project perform Resurfacing, Reconstruction, or Preventative Maintenance on a segment adjacent to a segment where a federally-funded project was done during the <u>2017-2020 TwinCATS TIP</u> cycle or <u>RTF</u> cycle?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No What segment was the PREVIOUS project done on?





## Section 9. Existing and Proposed Roadway Design

	Existing			Proposed		
Number of Vehicle Lanes	Through Traffic Lanes	Center Turn Lane	On Street Parking	Through Traffic Lanes	Center Turn Lane	On Street Parking
	2	0	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2	0	<input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Shoulder Surface	<input type="checkbox"/> Paved <input type="checkbox"/> Unpaved		Width (ft.) NA	<input type="checkbox"/> Paved <input type="checkbox"/> Unpaved		Width (ft.) NA
Sidewalk/ path information	<b>Placement</b> <input type="checkbox"/> One Side <input checked="" type="checkbox"/> Both Sides <input type="checkbox"/> Intermittent <input type="checkbox"/> None		Width (ft.) 5 FT	<b>Placement</b> <input type="checkbox"/> One Side <input checked="" type="checkbox"/> Both Sides <input type="checkbox"/> Intermittent <input type="checkbox"/> None		Width (ft.) 5 FT
On road bicycle facilities	<input type="checkbox"/> Bike Lane <input type="checkbox"/> Other (specify) _____ <input type="checkbox"/> Sharrows <input type="checkbox"/> Wide Shoulders <input checked="" type="checkbox"/> None			<input checked="" type="checkbox"/> Bike Lane <input type="checkbox"/> Other (specify) _____ <input type="checkbox"/> Sharrows <input type="checkbox"/> Wide Shoulders <input type="checkbox"/> None		
Utilities, Sewer and Water	<input checked="" type="checkbox"/> Utilities Upgrades Needed <input checked="" type="checkbox"/> Sewer and water work needed			<input checked="" type="checkbox"/> Replaced Utilities <input checked="" type="checkbox"/> Relocating Utilities <input checked="" type="checkbox"/> Sewer and Water Line Work		
Please describe any improvements being made as part of this project to crosswalks, signage or signals, or streetscape elements not discussed in project description			Bike Lanes or a non-motorized path will be added. Bike Lanes included on this TIP application for estimating purposes. Anticipate reducing or eliminating On Street parking (the degree to which will be determined in the conceptual design process after soliciting public input).			
Does this project enhance connectivity of pedestrian or bicyclists to fixed route or Dial-A-Ride transit?			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, how? Connect the proposed bike lanes to proposed bike facilities on South State Street and Botham Avenue east of Niles Avenue which leads to the Red Route stop at Spectrum Health Lakeland Hospital.			

## Section 10. Estimated Project Schedule

Activity	Estimated Date
Resolution of Support for <input type="checkbox"/> Local Match Submitted to SWMPC	July 2021
Project Application Submitted to MOT	August 2022
Grade Inspection Package Submitted to MDOT	August 2022
Grade Inspection Meeting Scheduled	October 2022
Final Plan and Estimate to MDOT	December 2022
Right of Way (ROW) certified*	December 2022

Rail Road Permits*	N/A
Environmental Mitigation*	N/A
Project Obligated	December 2022
Project Letting	February 2023
Construction Start <input type="checkbox"/>	June 2023
Project Completion	August 2023

\*Enter NA if these items will not be required.

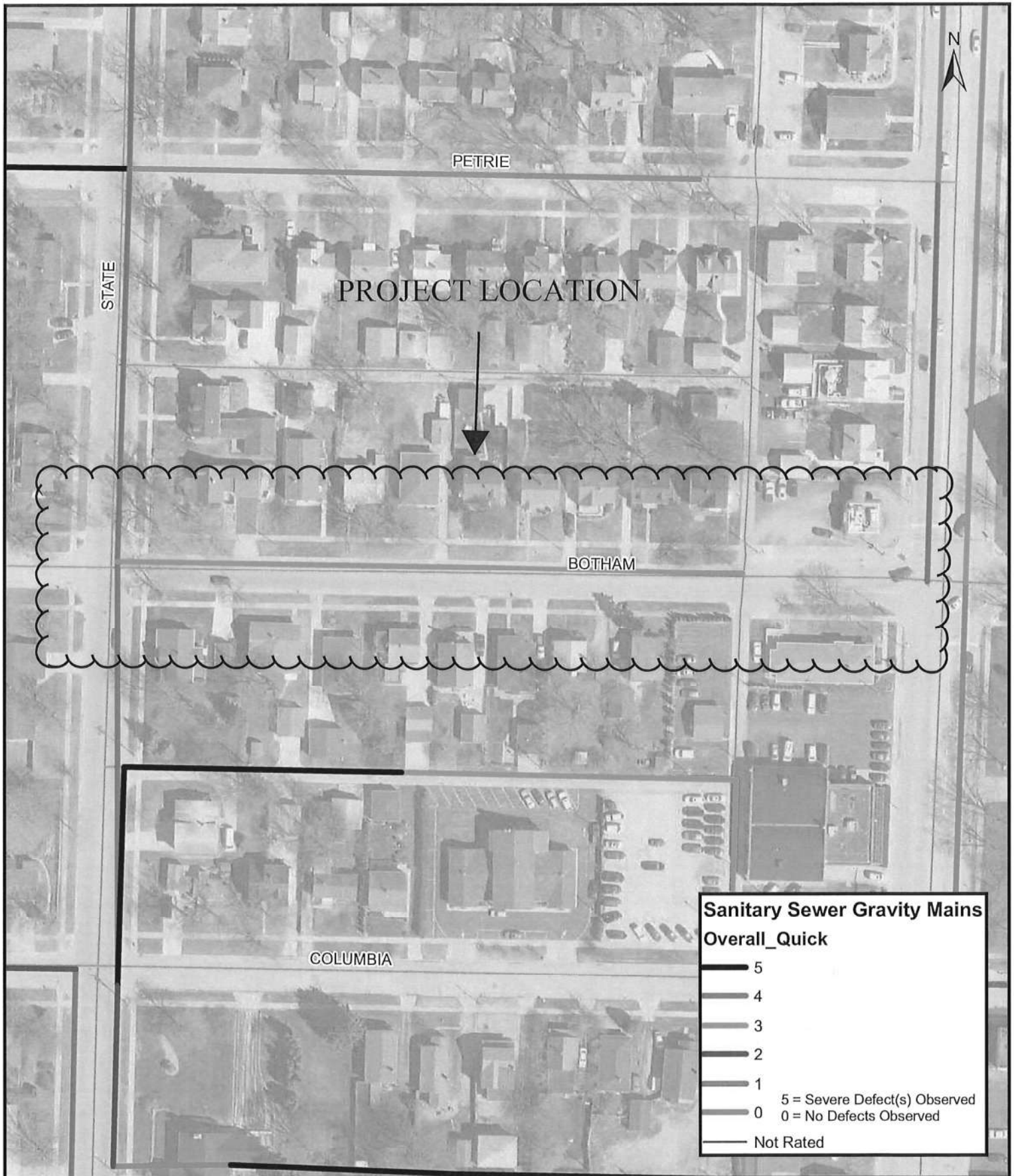
Proposed Improvement			% Reduction	Associated Crash Types	
SEGMENT CRASH REDUCTION FACTORS					
Geometric Safety Enhancements					
<input type="checkbox"/>	Center Left-Turn Lane - Construct		80%	Rear-End Left-Turn	
			50%	Head-On Left-Turn	
			20%	Head-On, Angle, Sideswipe*	
			15%	Non Left-Turn Rear-End, Other*	
<input type="checkbox"/>	Right-Turn Lane - Construct		65%	Rear-End Right-Turn	
			30%	Angle	
			15%	Rear-End	
			10%	Other*	
<input type="checkbox"/>	Horizontal Curve Flattening		30%	Lane Departure***	
			5%	Lane Departure***	
			10%	Lane Departure***	
			15%	Lane Departure***	
			20%	Lane Departure***	
			25%	Lane Departure***	
			30%	Lane Departure***	
<input type="checkbox"/>	Shoulders - Widen to Standard Width (add 1' each side)		35%	Lane Departure***	
<input type="checkbox"/>	Vertical Curve Modification		20%	All Applicable Crash Types + + +	
General Segment Enhancements					
<input type="checkbox"/>	Access Management - Improve		15%	Drive-way Related Applicable Crashes	
<input type="checkbox"/>	Centerline Rumble Strips - Install		44%	K and A injury Applicable Crashes	
			46%	Single Vehicle Run off Road Left Crashes	
			43%	Sideswipe Same Crashes	
			55%	Sideswipe Opposite Crashes	
<input type="checkbox"/>	High Friction Surface Treatment - Install		35%	Wet Crashes	
			20%	All Other Applicable Crashes	
<input checked="" type="checkbox"/>	Recessed Durable Pavement Markings		5%	All Applicable Crashes	
<input type="checkbox"/>	Pedestrian Refuge - Install		50%	Pedestrian Crashes (Review NCHRP Report 841)	
<input type="checkbox"/>	Road Diet (4-3 Lane Conversion) - Install		50%	Suburban - All Applicable Crashes	
<input type="checkbox"/>	Shoulder Rumble Strips		20%	Run-Off the Road Right Crashes	
<input type="checkbox"/>	Signing/Delineation on Horizontal Curves (Including Recessed Durable Pavement Markings) - Install		20%	Lane Departure***	
<input type="checkbox"/>	Safety Edge Improvement		13%	All non-intersection crashes (CMF Clearing House ID 8658)	

Roadside Enhancements			
<input checked="" type="checkbox"/>	Bicycle Lanes - Install per standards	50%	Bicycle Crashes
<input type="checkbox"/>	Shared Use Path - <i>Install</i>	33%	Bicycle and Pedestrian Related Crashes
<input type="checkbox"/>	Fixed Objects From Clearzone (Trees, Culverts, Etc.) - <i>Removal</i>	75%	Fixed-Object Applicable Crashes
<input type="checkbox"/>	Guardrail - <i>Install</i>	55%	Lane Departure ***Fatalities and "A" Injury Applicable Crashes
<input type="checkbox"/>	Sidewalk for Pedestrians - <i>Construct</i>	85%	Pedestrian Crashes
<input type="checkbox"/>	Slope Flattening	15%	Fixed-Object, Overturn Applicable Crashes
<input type="checkbox"/>	Living Snow Fence	20%	Crashes due to wintry surface conditions
<input type="checkbox"/>	Lighting - <i>install on segment</i>	20%	Dark Unlighted Crashes
INTERSECTION CRASH REDUCTION FACTORS			
Pedestrian / Bicycle Enhancements			
<input checked="" type="checkbox"/>	Bump Out / Curb Extension - <i>Remove Parking / Install</i>	30%	All Crashes
<input type="checkbox"/>	Bicycle Lanes - Install per standards	25%	Bicycle Crashes
<input type="checkbox"/>	Sidewalk for Pedestrians - <i>Construct</i>	85%	Pedestrian Crashes
<input type="checkbox"/>	Intersection Lighting - <i>install</i>	75%	Pedestrian Fatal - Dark Unlighted Crashes
		40%	Pedestrian A-Injury - Dark Unlighted Crashes
		30%	All Applicable Dark Unlighted Crashes
<input type="checkbox"/>	Rectangular Rapid Flashing Beacons	47%	Pedestrian Crashes
<input type="checkbox"/>	Ped. Countdown Signals - <i>Install new Pedestrian signal</i>	30%	Pedestrian Crashes
<input type="checkbox"/>	Ped. Countdown Signals - <i>Upgrade from existing Pedestrian signal</i>	25%	Pedestrian Crashes
Signal Timing / Hardware Enhancements			
<input type="checkbox"/>	Multiple Low-Cost Improvements	3%	Rear-End
		12%	Right-Angle
		3%	Nighttime
<input type="checkbox"/>	Install Reflectorized Backplates	15%	All Applicable Crashes
<input type="checkbox"/>	Add All-Red Clearance Interval - <i>Add per ITE</i>	20%	Head-On Left-Turn, Angle
<input type="checkbox"/>	Yellow-Change Interval - <i>Increase</i>	10%	All Crash Types
	Box Span Signal - <i>Upgrade from Stop Control</i>	65%	Angle
		-25%	Rear-End (Increases Crashes)
		20%	All Other Non Rear-End Crashes
<input type="checkbox"/>	Box Span Signal - <i>Upgrade from Diagonal Span</i>	10%	All Applicable Crashes+
<input type="checkbox"/>	Protected Left-Turn Signal Phase - <i>Add</i>	30%	Left-Turn
<input type="checkbox"/>	Signal Head Size - <i>Increase to 12 "</i>	10%	All Applicable Crashes +
<input type="checkbox"/>	Signal Optimization & Timing Updates	10%	All Applicable Crashes +
<input type="checkbox"/>	Removing Night Flash from Signal Timing	50%	Nighttime Flash mode Related Crashes

Intersection Geometric Enhancements		
<input type="checkbox"/>	Center Left-Turn Lane - Construct	80% Rear-End Left-Turn 50% Head-On Left-Turn 20% Head-On, Angle, Other 15% Non Left-Turn Rear-End 30% Angle 15% Rear-End 10% Head-On, Sideswipe, Pedestrian, Bicycle, Left-Turn Related 65% Angle-Turn, Head-On Left-Turn 20% Rear-End Left-Turn 65% Angle-Turn 50% Other Applicable Crashes 20% Rear-End Right Turn 65% Rear-End Right-Turn 20% Applicable Rear-End Crashes, Sideswipe Same Direction 78% Fatal and A-Injury Reduction 57% Minor Crash Reduction - See MDOT Interchange Warranted Lighting Guidance and overall MDOT Lighting Guidance
<input checked="" type="checkbox"/>	Intersection Improvements (Realignment, Sight-Distance Improvements, Radii Improvements, Etc.)	
<input type="checkbox"/>	Offset Left-Turn Lane - Construct	
<input type="checkbox"/>	Offset Right-Turn Lane - Construct	
<input type="checkbox"/>	Right-Turn Lane - Construct	
<input type="checkbox"/>	Roundabout	
<input type="checkbox"/>	Lighting	
General Intersection Enhancements (Non-Signalized Intersections)		
<input type="checkbox"/>	All-Way Stop Control - New Installation	60% All Applicable Crashes
<input type="checkbox"/>	Ground Mounted Flashing Beacons (Red) - Install **	30% All Crashes On Install Approach
<input type="checkbox"/>	Ground Mounted Flashing Beacons(Amber) - Install **	20% All Crashes On Install Approach
<input checked="" type="checkbox"/>	Signing - Improve/Upgrade	30% Angle, Rear-End Crashes
<input checked="" type="checkbox"/>	Pavement Markings - Improve/Upgrade	30% Angle, Rear-End Crashes
<input checked="" type="checkbox"/>	Reflective Sheeting on Sign Posts (lollipop)	15% All Applicable Crashes







City of St. Joseph  
 700 Broad Street  
 St. Joseph, MI 49085

P: 269-983-5541  
 F: 269-985-0346  
[www.sjcity.com](http://www.sjcity.com)

## Botham Avenue Sanitary Sewer Condition

1 inch = 106 feet

User Name: aaustin

Date: 11/28/2018



1.6

## TwinCATS 2020-2023 Road Project Prioritization System

Project Name: Lake Blvd

Agency: City of St. Joseph

Proposed Year: 2023

Total Points: 33

Criteria	Points	
<b>System Preservation</b>	<b>18 points max</b>	
<b>a. Most recent PASER rating</b>		
3-4	10	
5-6	8	8
1-2	5	
<b>b. Extension of Remaining Service Life (RSL) based on MDOT Geometric Guidelines</b>		
Extends RSL by 15 years or more (4R project)	8	
Extends RSL by 10-14 years (3R Project)	6	
Extends RSL by 5-9 years (Preventative Maintenance)	4	4
Extends RSL by 2-4 years (Preventative Maintenance)	2	
<b>Safety</b>	<b>7 points max</b>	
<b>a. Expected Crash Reduction - Based on MDOT approved Crash Reduction Factors</b>		
50% or greater	5	
40%-49.9%	4	
30% - 39.9%	3	
20% - 29.9%	2	
10% - 19.9%	1	1
Less than 10%	0	
<b>b. Addressing High Crash Locations.</b>		
Number of crashes is 20% higher than MPO median (4 or more)	2	2
Number of crashes are within 20% of MPO median (2-3)	1	
Number of crashes is lower than 20% of the MPO median (0-1)	0	
<b>Non-motorized Transportation / Complete Streets</b>	<b>6 points max</b>	
<b>a. Follows the Complete Streets Policy</b>	4	4
<b>b. Pedestrian and bicycle elements of the project connect to existing bicycle and pedestrian facilities or those that can reasonably expect to be completed between 2019 and 2023.</b>	2	

Criteria	Points	
<b>Regional Connectivity</b>	<b>10 points max</b>	
<b>a. Average daily traffic (ADT) based on most recent traffic count</b>		
ADT is 10,000 or more	5	
ADT is 5,000 – 9,999	4	4
ADT is 2,000 – 4,999	3	
ADT is less than 2,000	0	
<b>b. Functional Classification of the Road</b>		
Principal Arterial	3	
Minor Arterial	2	2
Major Collector	1	
Minor Collector	0	
<b>c. Fixed route transit (TCATA Red or Blue line) uses the road</b>	2	2
<b>Strategic Investment/ Project Planning</b>	<b>11 points max</b>	
a. Project is identified in an Asset Management or Capital Improvement Plan	3	3
b. Project is identified as a priority in another planning document such as a master plan or parks and recreation plan	1	1
c. Project crosses jurisdictional boundaries (i.e. city to township) and is arranged in such a way to be bid as a single project.	1	
d. Project continues resurfacing, reconstruction, or preventative maintenance on a segment of roadway adjacent to a project completed during the 2017-2020 TIP cycle or through Rural Task Force funding.	2	
<b>e. Additional Local Match</b>		
Agency will provide 40% or more local match	4	
Agency will provide 30% to 39.9% local match	2	2
Note: An 18.15% local match is the minimum required		
Project Readiness (no points)	Yes	
Coordination with sewer or other infrastructure (no points)	Yes	
<b>Total Score (out of 52)</b>	<b>33</b>	

**Twin Cities Area Transportation Study  
2020-2023 Transportation Improvement Program (TIP)  
Federal Surface Transportation Block Grant Funds  
Project Application**

Click "Enable Editing" to begin filling out this form. You may save this form at any time.

**Section 1. Applicant Information**

Agency Name	City of St. Joseph		
Contact Name	Tim Zebell	Title	City Engineer
Phone Number	269-983-5541	Email	tzebell@sjcity.com

**Section 2. Project Information**

Project Name/Road Name	Lake Boulevard Resurfacing Project		
Project Limits (e.g. Napier Ave. to Britain Ave.)	Ship Street to Sutherland Avenue		
Project Length (nearest hundredth of a mile)	0.65	Proposed Year of Funding	2023
Primary Work Type	<input type="checkbox"/> Reconstruct <input type="checkbox"/> Restore & Rehabilitate <input type="checkbox"/> Roadside Facility <input checked="" type="checkbox"/> Resurface <input type="checkbox"/> Traffic Operations/Safety <input type="checkbox"/> Other		
Project Description (Please provide major work items including sidewalks, utility work, ADA upgrades etc.)	Mill & resurface Lake Blvd from Ship St to Sutherland Ave. Includes minor utility improvements, sidewalk and ADA ramp replacement as needed to meet current ADA requirements.		
Was this project awarded funding for the 2017-2020 TIP, but was either canceled or failed to be obligated	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, please explain:		

**Section 3. Project Funding**

Federal Funding Requested	\$ 225,000
Local Match (18.15% minimum)	\$ 96,500
Total	\$ 484,000 (construction), 590,000 (total project)
Local Match Percentage (local match/total cost)	30%
Does your agency have the financial capacity to Advance Construct (AC) all or part of this project if necessary? If yes, what is the maximum dollar amount your agency is willing to Advance Construct (AC)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Maximum Dollar Amount you can AC? \$



## Section 4. System Preservation

2018 PASER rating (available as an excel file)	5 - 6 (depending upon segment)
Current state of drainage	<input checked="" type="checkbox"/> Adequate <input type="checkbox"/> Minor and tolerable drainage problems <input type="checkbox"/> Occasional drainage problems with some maintenance required <input type="checkbox"/> Inadequate drainage, frequent flooding, excessive maintenance required
Expected increase in Remaining Service life (RSL)	<input type="checkbox"/> 0-3 years <input type="checkbox"/> 4-6 <input checked="" type="checkbox"/> 7-9 <input type="checkbox"/> 10-14 <input type="checkbox"/> 15-20 Use MDOT's <u><a href="#">Guidelines for Geometrics on Local Projects</a></u>
What MDOT guidelines does the project conform to?	<input type="checkbox"/> Reconstruction (4R) <input checked="" type="checkbox"/> Resurfacing, restoration, and Rehabilitation (3R) <input type="checkbox"/> Preventative Maintenance (PM)

## Section 5. Safety

Please list the number and severity of crashes within the proposed project limits over the last 5 yrs. (2013-2017) (see <u><a href="#">Michigan Crash Facts</a></u> for crash data)			
Total Crashes	13	Pedestrian & Bicycle Crashes	10
Fatalities	0	Serious Injuries	0
Using the attached Crash Reduction Factors sheet, please check each safety counter measure that will be included in the project			
Describe any other safety improvements this project will provide	Replace/improve pavement markings, signage and analyze street lighting to improve safety to extent possible.		

## Section 6. Complete Streets

Does this project meet the <u><a href="#">TwinCATS Complete Streets Policy</a></u> , approved in 2014?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
If yes, Please explain what pedestrian and/or bicycle improvements are included	Southern portion of project has bike lanes, the north section has a non-motorized path.
If No, please state the reason why this project should be exempt from the TwinCATS Complete Streets Policy.	

Does this project connect to an existing pedestrian/bicycle facility or one that is planned to be completed from 2020-2023?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, please provide a map of the connecting facilities
---	--

## Section 7. Regional Connectivity

What is the most current daily traffic count for the limits of this project?	<input type="checkbox"/> Less than 2000 <input checked="" type="checkbox"/> 2000-5000 <input type="checkbox"/> 5000-10,000 <input type="checkbox"/> Above 10,000 Year of count: 2013 Source: TAMC
National Functional Classification (NFC) for this roadway (Berrien County NFC Map)	Minor Arterial
Does one of TCATA fixed route transit lines use the road? (Only indicate yes if it carries a current route, not a planned route).	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

## Section 8. Strategic Planning & Investment

Is the project identified in a Asset Management Plan, or Capital Improvement Plan	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, please cite the plan and page number: Asset Management Plan: Appendix G, Page 6
Is the project identified in another planning documents such as a master plan or parks and recreation plan	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, please cite the plan and page number: Master Plan: Appendix G, Map 6
Does the project cross jurisdictional boundaries?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If yes, will it be bid as a single project?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
Will this project coordinate with other infrastructure projects (i.e. utility, water, sewer, etc.)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, please indicate the project type and construction year: Almost all of the underground utilities in this area were replaced as part of 2006 Lake Blvd Reconstruction Project.
How many water main breaks have you had at this location in the past five years?	0
Is there a completed a utilities assessment that included televising the sewers in the project area?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Will this project require environmental mitigation, purchase of Right of Way (ROW), or railroad permits?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not Sure If yes, which items are required:
Does this project perform Resurfacing, Reconstruction, or Preventative Maintenance on a segment adjacent to a segment where a federally-funded project was done during the 2017-2020 TwinCATS TIP cycle or RTF cycle?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No What segment was the PREVIOUS project done on?

## Section 9. Existing and Proposed Roadway Design

	Existing			Proposed		
Number of Vehicle Lanes	Through Traffic Lanes	Center Turn Lane	On Street Parking	Through Traffic Lanes	Center Turn Lane	On Street Parking
	2		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Shoulder Surface	<input type="checkbox"/> Paved <input type="checkbox"/> Unpaved		Width (ft.) NA	<input type="checkbox"/> Paved <input type="checkbox"/> Unpaved		Width (ft.) NA
Sidewalk/ path information	<b>Placement</b> <input type="checkbox"/> One Side <input checked="" type="checkbox"/> Both Sides <input type="checkbox"/> Intermittent <input type="checkbox"/> None		Width (ft.) 5 FT	<b>Placement</b> <input type="checkbox"/> One Side <input checked="" type="checkbox"/> Both Sides <input type="checkbox"/> Intermittent <input type="checkbox"/> None		Width (ft.) 5 FT
On road bicycle facilities	<input checked="" type="checkbox"/> Bike Lane <input type="checkbox"/> Other (specify) _____ <input type="checkbox"/> Sharrows _____ <input type="checkbox"/> Wide Shoulders <input checked="" type="checkbox"/> None			<input checked="" type="checkbox"/> Bike Lane <input type="checkbox"/> Other (specify) _____ <input type="checkbox"/> Sharrows _____ <input type="checkbox"/> Wide Shoulders <input type="checkbox"/> None		
Utilities, Sewer and Water	<input type="checkbox"/> Utilities Upgrades Needed <input type="checkbox"/> Sewer and water work needed			<input type="checkbox"/> Replaced Utilities <input type="checkbox"/> Relocating Utilities <input type="checkbox"/> Sewer and Water Line Work		
Please describe any improvements being made as part of this project to crosswalks, signage or signals, or streetscape elements not discussed in project description			Signage and pavement markings will be replaced/improved (recessed markings were applicable).			
Does this project enhance connectivity of pedestrian or bicyclists to fixed route or Dial-A-Ride transit?			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, how? A portion of this project is located on the Red Route.			

## Section 10. Estimated Project Schedule

Activity	Estimated Date
Resolution of Support for <input type="checkbox"/> Local Match Submitted to SWMPC	July 2021
Project Application Submitted to MOT	August 2022
Grade Inspection Package Submitted to MDOT	August 2022
Grade Inspection Meeting Scheduled	October 2022
Final Plan and Estimate to MDOT	December 2022
Right of Way (ROW) certified*	December 2022
Rail Road Permits*	N/A
Environmental Mitigation*	N/A
Project Obligated	December 2022
Project Letting	February 2023
Construction Start <input type="checkbox"/>	April 2023
Project Completion	May 2023

\*Enter NA if these items will not be required.

Proposed Improvement		% Reduction		Associated Crash Types	
SEGMENT CRASH REDUCTION FACTORS					
Geometric Safety Enhancements					
<input type="checkbox"/>	Center Left-Turn Lane - Construct	80%	Rear-End Left-Turn		
		50%	Head-On Left-Turn		
		20%	Head-On, Angle, Sideswipe*		
		15%	Non Left-Turn Rear-End, Other*		
<input type="checkbox"/>	Right-Turn Lane - Construct	65%	Rear-End Right-Turn		
		30%	Angle		
		15%	Rear-End		
		10%	Other*		
<input type="checkbox"/>	Horizontal Curve Flattening	30%	Lane Departure***		
		5%	Lane Departure***		
		10%	Lane Departure***		
		15%	Lane Departure***		
		20%	Lane Departure***		
		25%	Lane Departure***		
		30%	Lane Departure***		
<input type="checkbox"/>	Shoulders - Widen to Standard Width (add 7' each side)	35%	Lane Departure***		
		20%	All Applicable Crash Types +++		
General Segment Enhancements					
<input type="checkbox"/>	Access Management - Improve	15%	Drive-way Related Applicable Crashes		
		44%	K and A injury Applicable Crashes		
		46%	Single Vehicle Run off Road Left Crashes		
		43%	Sideswipe Same Crashes		
<input type="checkbox"/>	Centerline Rumble Strips - Install	55%	Sideswipe Opposite Crashes		
		35%	Wet Crashes		
		20%	All Other Applicable Crashes		
		5%	All Applicable Crashes		
<input checked="" type="checkbox"/>	Recessed Durable Pavement Markings	50%	Pedestrian Crashes (Review NCHRP Report 841)		
<input type="checkbox"/>	Pedestrian Refuge - Install	50%	Suburban - All Applicable Crashes		
<input type="checkbox"/>	Road Diet (4-3 Lane Conversion) - Install	20%	Run-Off the Road Right Crashes		
<input type="checkbox"/>	Shoulder Rumble Strips	20%	Lane Departure***		
<input type="checkbox"/>	Signing/Delineation on Horizontal Curves (Including Recessed Durable Pavement Markings) - Install	13%	All non-intersection crashes (CMF Clearing House ID 8658)		
<input type="checkbox"/>	Safety Edge Improvement				

Roadside Enhancements			
<input type="checkbox"/>	Bicycle Lanes - Install per standards	50%	Bicycle Crashes
<input type="checkbox"/>	Shared Use Path - <i>Install</i>	33%	Bicycle and Pedestrian Related Crashes
<input type="checkbox"/>	Fixed Objects From Clearzone (Trees, Culverts, Etc.) - <i>Removal</i>	75%	Fixed-Object Applicable Crashes
<input type="checkbox"/>	Guardrail - <i>Install</i>	55%	Lane Departure ***Fatalities and "A" Injury Applicable Crashes
<input type="checkbox"/>	Sidewalk for Pedestrians - <i>Construct</i>	85%	Pedestrian Crashes
<input type="checkbox"/>	Slope Flattening	15%	Fixed-Object, Overturn Applicable Crashes
<input type="checkbox"/>	Living Snow Fence	20%	Crashes due to wintry surface conditions
<input type="checkbox"/>	Lighting - <i>install on segment</i>	20%	Dark Unlighted Crashes
INTERSECTION CRASH REDUCTION FACTORS			
Pedestrian / Bicycle Enhancements			
<input type="checkbox"/>	Bump Out / Curb Extension - <i>Remove Parking / Install</i>	30%	All Crashes
<input type="checkbox"/>	Bicycle Lanes - Install per standards	25%	Bicycle Crashes
<input type="checkbox"/>	Sidewalk for Pedestrians - <i>Construct</i>	85%	Pedestrian Crashes
<input type="checkbox"/>	Intersection Lighting - <i>install</i>	75%	Pedestrian Fatal - Dark Unlighted Crashes
		40%	Pedestrian A-Injury - Dark Unlighted Crashes
		30%	All Applicable Dark Unlighted Crashes
<input type="checkbox"/>	Rectangular Rapid Flashing Beacons	47%	Pedestrian Crashes
<input type="checkbox"/>	Ped. Countdown Signals - <i>Install new Pedestrian signal</i>	30%	Pedestrian Crashes
<input type="checkbox"/>	Ped. Countdown Signals - <i>Upgrade from existing Pedestrian signal</i>	25%	Pedestrian Crashes
Signal Timing / Hardware Enhancements			
<input type="checkbox"/>	Multiple Low-Cost Improvements	3%	Rear-End
		12%	Right-Angle
		3%	Nighttime
<input type="checkbox"/>	Install ReflectORIZED Backplates	15%	All Applicable Crashes
<input type="checkbox"/>	Add All-Red Clearance Interval - <i>Add per ITE</i>	20%	Head-On Left-Turn, Angle
<input type="checkbox"/>	Yellow-Change Interval - <i>Increase</i>	10%	All Crash Types
<input type="checkbox"/>	Box Span Signal - <i>Upgrade from Stop Control</i>	65%	Angle
		-25%	Rear-End (Increases Crashes)
		20%	All Other Non Rear-End Crashes
<input type="checkbox"/>	Box Span Signal - <i>Upgrade from Diagonal Span</i>	10%	All Applicable Crashes+
<input type="checkbox"/>	Protected Left-Turn Signal Phase - <i>Add</i>	30%	Left-Turn
<input type="checkbox"/>	Signal Head Size - <i>Increase to 12 "</i>	10%	All Applicable Crashes +
<input type="checkbox"/>	Signal Optimization & Timing Updates	10%	All Applicable Crashes +
<input type="checkbox"/>	Removing Night Flash from Signal Timing	50%	Nighttime Flash mode Related Crashes



Intersection Geometric Enhancements			
<input type="checkbox"/>	Center Left-Turn Lane - Construct	80% Rear-End Left-Turn	
		50% Head-On Left-Turn	
		20% Head-On, Angle, Other	
		15% Non Left-Turn Rear-End	
		30% Angle	
<input type="checkbox"/>	Intersection Improvements (Realignment, Sight-Distance Improvements, Radii Improvements, Etc.)	15% Rear-End	
		10% Head-On, Sideswipe, Pedestrian, Bicycle, Left-Turn Related	
		65% Angle-Turn, Head-On Left-Turn	
		20% Rear-End Left-Turn	
		65% Angle-Turn	
<input type="checkbox"/>	Offset Left-Turn Lane - Construct	50% Other Applicable Crashes	
		20% Rear-End Right Turn	
		65% Rear-End Right-Turn	
		20% Applicable Rear-End Crashes, Sideswipe Same Direction	
		78% Fatal and A-Injury Reduction	
<input type="checkbox"/>	Roundabout	57% Minor Crash Reduction	
		- See MDOT Interchange Warranted Lighting Guidance and overall MDOT Lighting Guidance	
		General Intersection Enhancements (Non-Signalized Intersections)	
		All-Way Stop Control - New Installation	60% All Applicable Crashes
		Ground Mounted Flashing Beacons (Red)- Install **	30% All Crashes On Install Approach
<input checked="" type="checkbox"/>	Signing - Improve/Upgrade	20% All Crashes On Install Approach	
		30% Angle, Rear-End Crashes	
		30% Angle, Rear-End Crashes	
		15% All Applicable Crashes	
		General Intersection Enhancements (Non-Signalized Intersections)	
<input checked="" type="checkbox"/>	Reflective Sheeting on Sign Posts (lollipops)	60% All Applicable Crashes	
		30% All Crashes On Install Approach	
		20% All Crashes On Install Approach	
		30% Angle, Rear-End Crashes	
		30% Angle, Rear-End Crashes	