### Congestion Mitigation and Air Quality Project Application Instructions

### How to apply

Please fill out both the CMAQ application (page 3) and the appropriate emissions form. Additional Information may be required based on the project type (See below).

### All applications are due on Monday December 12, 2018.

Please email the completed application, emissions form and any other required information to both Brandon Kovnat at <u>kovnatb@swmpc.org</u> AND Kim Gallagher at <u>gallagherk@swmpc.org</u>. Please include "CMAQ Application" in the subject line

### Additional Information is required for the following projects:

### **Carpool Lot Expansion**

- Indicate the number of spaces
- Indicated how many users you expect

#### **Dedicated Turn Lanes**

- Indicate the length of the lanes
- Indicate traffic counts,

### Intersection Improvements

• Include a diagram of the modification

### **Non-Motorized Paths**

Eligible if they are not exclusively recreational and if they reduce vehicle trips

- Please include maps detailing the location of the proposed path
- Detail the land uses that surround the path
- Explain how the path provides access to jobs, services, and centers of trade
- List all connections to other non-motorized paths, if applicable

### Signal Interconnection

- Include all locations in the Location Description
- Indicate the number of signals in the Work Description

### Traffic Operations Center (TOC)

• Please list specific activities to be funded

#### Transit

- Vehicle lease/purchase : how many will be leased or purchased
- Operating Assistance: specify which years are being requested (year 1, 2, 3 and/or 3)
- Equipment: type to be funded

### Carpooling/Vanpooling (RideShare)

• Specify if Marketing or Capital (or both)

### **Emissions forms to Use**

For the following projects use the appropriate FHWA Emission Toolkit which can befound at: <u>https://www.fhwa.dot.gov/environment/air\_quality/cmaq/toolkit/</u> or they can downloaded through the links below (opens as an excel file):

Project Category	FHWA Emissions Toolkit				
Dedicated Turn Lanes					
Signal Interconnects	Congestion Reduction and traffic Flow				
Signal Optimization or Actuation, not part of an	Improvements				
interconnect project					
Roundabouts					
Rideshare/vanpooling:	Carpooling and Vanpooling				
Operation of New Public Transit Services	Transit Bus and Fleet Expansion				
Rus Purchase or Replacements	Transit Bus Retrofits and Replacement				
	Transit Bus and Fleet Expansion*				
Diesel Retrofits / Truck Replacements	Advanced Diesel Truck/Engine Technologies				
Alternative Fuels and Vehicles Projects	Alternative Fuels and Vehicles				

\*use this toolkit for gasoline vehicles.

For the following projects use the appropriate MDOT Emissions Form which can be found on MDOT's CMAQ page at: <u>https://www.michigan.gov/mdot/0,4616,7-151-9621\_11041\_60661---</u>,00.html or you open them directly through the links below (Fillable pdf forms)

Note that the forms only work with Internet Explorer

Project Category	Emissions Form
Other Project (may need additional details)	MDOT Form 2608
Intelligent Transportation System (ITS)	MDOT Form 2612
Park and Ride Lots	MDOT Form 2613
Traffic Operations Centers Operations	MDOT Form 2616
Travel Demand Management Program	MDOT Form 2619
Non-Motorized Pathways	MDOT Form 2621

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

Section 1. Applica	ant Information		
Agency Name	City of Benton Harbor		
Contact Name	Darwin Watson	Title	City Manager
Phone Number	269-927-8400	Email	dwatson@cityofbentonharbormi.gov

Section 2. Project Informat	ion				
Project Name: Pipestone Street at Market Street Traffic Signal and Fiscal Year of Project: 2021					
Pipestone corridor interconnect					
City/Village/ Township: Benton I	Harbor		County: Berrier	า	
Project Location	Intersection of Pip	estone Street & Ma	rket Street and the	Pipestone Street	
(short description of where the project is located)	corridor from Wal	l Street to Empire Av	/enue		
Which Emissions form is being	FHIMA Emissions 7	Foolkit Congestion	Poduction and Tra	ffic Flow	
used? (list the form name not	Improvements	OURIL - CONgestion			
the MDOT form number)	Improvements				
Work Description	Replacement of th	ne traffic signal contr	oller and cabinet.	replacement of	
(Short description of work being	traffic signals with	LEDs and count-dov	wn pedestrian sign	als, addition of	
performed. Please provide enough	video detection ca	ameras, sidewalk ran	nps & pedestrian p	oush buttons to	
information for eligibility to be	meet ADA require	ments, and updated	pavement markin	gs at the	
determined)	Pipestone/Market	intersection. This is	s the last of 5 traffi	ic signals that	
	needed to be upg	raded on the Pipesto	one Street corridor	to allow for traffic	
	signal interconnec	tion and corridor pr	ogression.		
	Also, included is w	/ireless traffic signal	interconnect for 1	.2 miles of the	
	Pipestone Street C	Corridor from Wall St	reet to Empire Ave	enue including	
	radio interconnec	t, traffic signal maste	er controller, traffic	c signal cabinet	
	retrofits for interc	onnection hardware	, and corridor re-ti	iming.	
Sponsor					
(If different from Applicant)					
Project Cost	Federal - CMAQ	State	Local	Total	
Only include CMAQ eligible expenses	\$234,815	\$	\$58,700	\$293,515	

# Section 3. Performance measures

Besides emissions reductions what other performance measures will the project contribute to? <i>(select all that</i> <i>apply)</i> Safety Pavement Condition System Reliability Transit State of Good Repair	If you checked any of the Performance Measures please indicate how the project will improve them: The traffic signal controller and cabinet at Pipestone/Market is 20+ years old and is at the end of its reliable useful life.				
Question	15	Y/N	If Yes, Provide Brief Explanation of How the Application will meet these		
Will the project be ready for obliga 1 of the year in which it's program	tion by July ned?	Yes No	The project will follow MDOT's LAP project planning guide for fiscal year 2021		
Will this project use multiple funding sources/be combined with another project?	ng r Non-CMAQ	Yes 🛛 No			
Is the project being carried out by a agency, or is a private entity provic materials, or services in support of	a sponsored ling funding, this project?	∐Yes ⊠No			
Does the project require Right of W acquisition or an easement?	Vay (ROW)	∐Yes ⊠No	If yes, attach a signed letter from that agency granting permission to implement all or part of this project in their right-of-way.		

Section 5. Estimated Project Schedule	
Activity	Estimated Date
Resolution of Support for Local Match Submitted to SWMPC	May 2021
Project Application Submitted to MOT	July 2021
Grade Inspection Package Submitted to MDOT	August 2021
Grade Inspection Meeting Scheduled	September 2021
Final Plan and Estimate to MDOT	October 2021
Right of Way (ROW) certified	October 2021
Rail Road Permits	NA
Environmental Mitigation	NA
Project Obligated	November 2021
Project Letting	January 2022
Construction Start	April 2022
Project Completion	July 2022

CMAQ Emissions Calculator Toolkit	Traffic Signal Synchronization					
	This calculator w	ill estimate the emission reductions resulting	from synchronizing t	he traffic signals alon	g a previously unsyr	nchronized corridor.
Navigator			INPUT			
Intersection Improvements			Funda and Anna	2010	1	
			Evaluation Year Road Type	2018 Urban	1	
Traffic Signal Synchronization			Corridor Length	1.18		
Roundabouts		Number of S	ignalized Intersections	5		
Koundabouts		Number o	f Lanes (one direction)	1		
			Posted Speed Limit	25	miles per hour (1 - 7)	5 MPH)
			Truck Percentage	90	seconus	
		Annual Average Daily Traffic (A	ADT) (both directions)	5,100	veh/day	
		Peak-hour Vo	lume (both directions)	400	veh/hr	
		Existir	g Corridor Travel Time	3.9	minutes	
	Last Calculated:	12/11/2018 2:13:35 PM	INPUT			Calculate Output
	PERFORMANCE					
		Volume (both directions)	PEAK-HOUR	OFF-PEAK	vob/br	
		Existing Average Speed	18	1/5	miles per hour	
		Travel Time Savings	0	0	minutes	
		Proposed Average Speed	20	20	miles per hour	
	EMISSION REDUCT	ONS				
		Delluterat	Peak-hour	Off-Peak	Total	
	4	Pollutant	Kilograms/day	Kilograms/day	Kilograms/day	
		Carbon Monoxide (CO)	0.432	0.945	1.378	
		Carbon Monoxide (CO) Particulate Matter <2.5 μm (PM <sub>2.5</sub> )	0.432	0.945 0.015	1.378 0.022	
		Carbon Monoxide (CO) Particulate Matter <2.5 μm (PM <sub>2.5</sub> ) Particulate Matter <10 μm (PM <sub>10</sub> )	0.432 0.007 0.021	0.945 0.015 0.046	1.378 0.022 0.067	
		Carbon Monoxide (CO) Particulate Matter <2.5 µm (PM <sub>2.3</sub> ) Particulate Matter <10 µm (PM <sub>10</sub> ) Nitrogen Oxide (NOX) Violatilo Oregine Composite (NCC)	0.432 0.007 0.021 0.067 0.017	0.945 0.015 0.046 0.146 0.038	1.378 0.022 0.067 0.212 0.055	





# **Engineer's Estimate of Construction Costs**

Project Name:	Pipestone-Market Traffic Signal and Corridor Improvements
Description:	Traffic Signal Upgrades and Pipestone Corridor Interconnect
Project Stage:	Preliminary
Project Number:	18-0200
Date:	12/10/2018
Prepared By:	Daniel A. Dombos, PE and Samuel P. Jablonowski, PE

Misc	<u>ellaneous</u>						
Line	Item	Quantity	Unit	Un	it Cost	Item (	Cost
1	Mobilization Max \$17,500	1.00	LSum	\$	17,500.00	\$	17,500.00
2	Exploratory Investigation, Vertical	30.00	Ft	\$	30.00	\$	900.00
3	Erosion Control, Inlet Protection, Fabric Drop	10.00	Ea	\$	100.00	\$	1,000.00
Subt	otal: Miscellaneous					\$	19,400.00

Rem	<u>ovals</u>						
Line	Item	Quantity	Unit	Unit	Cost	Item	Cost
4	Dr Structure, Rem	2.00	Ea	\$	375.00	\$	750.00
5	Sewer, Rem, Less than 24 inch	45.00	Ft	\$	15.00	\$	675.00
6	Curb and Gutter, Rem	210.00	Ft	\$	10.00	\$	2,100.00
7	Pavt, Rem	95.00	Syd	\$	10.00	\$	950.00
8	Sidewalk, Rem	140.00	Syd	\$	10.00	\$	1,400.00
9	Excavation, Earth	50.00	Cyd	\$	10.00	\$	500.00
10	Hh, Rem	6.00	Ea	\$	225.00	\$	1,350.00
11	Rem Spec Mrkg	535.00	Sft	\$	3.00	\$	1,605.00
Subt	otal: Removals					\$	9,330.00

Prop	Proposed Improvements and Traffic Signal Work						
Line	Item	Quantity	Unit	Uni	t Cost	Item Cost	
12	Subbase, CIP	80.00	Cyd	\$	15.00	\$	1,200.00
13	Aggregate Base, 6 inch	165.00	Syd	\$	9.00	\$	1,485.00
14	Sewer, CI IV, 10 inch, Tr Det B	10.00	Ft	\$	50.00	\$	500.00
15	Sewer, Cl IV, 12 inch, Tr Det B	35.00	Ft	\$	60.00	\$	2,100.00
16	Dr Structure Cover, Type K	2.00	Ea	\$	750.00	\$	1,500.00
17	Dr Structure, 48 inch dia	2.00	Ea	\$	2,250.00	\$	4,500.00
18	Sewer Connect, 10 inch	1.00	Ea	\$	500.00	\$	500.00
19	Sewer Connect, 12 inch	4.00	Ea	\$	500.00	\$	2,000.00
20	Conc Pavt, Misc, Nonreinf, 8 inch	95.00	Syd	\$	55.00	\$	5,225.00
21	Curb and Gutter, Conc, Det C4	210.00	Ft	\$	22.50	\$	4,725.00
22	Curb Ramp Opening, Conc	80.00	Ft	\$	22.50	\$	1,800.00
23	Sidewalk Ramp, Conc, 6 inch	1470.00	Sft	\$	6.50	\$	9,555.00
24	Sidewalk, Conc, 4 inch	200.00	Sft	\$	4.00	\$	800.00
25	_Detectable Warning Surface	65.00	Ft	\$	75.00	\$	4,875.00
26	Sign, Type III, Rem	10.00	Ea	\$	25.00	\$	250.00
27	Sign, Type IIIA	10.00	Sft	\$	15.00	\$	150.00
28	Sign, Type IIIB	20.00	Sft	\$	15.00	\$	300.00
29	Cantilever Bracket System Support, Double Sided Sign	4.00	Ea	\$	100.00	\$	400.00
30	Pavt Mrkg, Ovly Cold Plastic, 12 inch, Crosswalk	360.00	Ft	\$	6.00	\$	2,160.00
31	Pavt Mrkg, Ovly Cold Plastic, 24 inch, Stop Bar	105.00	Ft	\$	12.00	\$	1,260.00
32	Pedestrian Type II Barricade, Temp	10.00	Ea	\$	150.00	\$	1,500.00
33	Lighted Arrow, Type C, Furn	2.00	Ea	\$	750.00	\$	1,500.00
34	Lighted Arrow, Type C, Oper	2.00	Ea	\$	50.00	\$	100.00
35	Minor Traf Devices	1.00	LSum	\$	7,500.00	\$	7,500.00
36	Plastic Drum, High Intensity, Furn	25.00	Ea	\$	25.00	\$	625.00
37	Plastic Drum, High Intensity, Oper	25.00	Ea	\$	5.00	\$	125.00
38	Sign, Type B, Temp, Prismatic, Furn	350.00	Sft	\$	7.50	\$	2,625.00
39	Sign, Type B, Temp, Prismatic, Oper	350.00	Sft	\$	1.50	\$	525.00
40	Traf Regulator Control	1.00	LSum	\$	3,500.00	\$	3,500.00
41	Slope Restoration, Type B	100.00	Syd	\$	8.00	\$	800.00
42	Conduit, DB, 1, 1 1/2 inch	75.00	Ft	\$	9.00	\$	675.00
43	Conduit, DB, 4, 3 inch	25.00	Ft	\$	25.00	\$	625.00



# **Engineer's Estimate of Construction Costs**

Project Name:	Pipestone-Market Traffic Signal and Corridor Improvements
Description:	Traffic Signal Upgrades and Pipestone Corridor Interconnect
Project Stage:	Preliminary
Project Number:	18-0200
Date:	12/10/2018
Prepared By:	Daniel A. Dombos, PE and Samuel P. Jablonowski, PE

44 ⊦	Hh, Polymer Conc	5.00	Ea	\$ 750.00	\$ 3,750.00
45 ⊦	Hh, Round, 3 foot Dia.	1.00	Ea	\$ 1,250.00	\$ 1,250.00
46 C	Controller and Cabinet, Rem	1.00	Ea	\$ 500.00	\$ 500.00
47 C	Controller and Cabinet, Digital Type, Master	1.00	Ea	\$ 30,000.00	\$ 30,000.00
48 C	Controller Fdn, Base Mount	1.00	Ea	\$ 1,000.00	\$ 1,000.00
49 F	Pedestal, Fdn	2.00	Ea	\$ 650.00	\$ 1,300.00
50 F	Pushbutton and Sign	4.00	Ea	\$ 700.00	\$ 2,800.00
51 F	Pushbutton, Rem	4.00	Ea	\$ 75.00	\$ 300.00
52 F	Pushbutton Pedestal, Alum	2.00	Ea	\$ 600.00	\$ 1,200.00
53 S	Serv Disconnect	1.00	Ea	\$ 1,000.00	\$ 1,000.00
54 T	ΓS, Mast Arm Mtd, Rem	8.00	Ea	\$ 125.00	\$ 1,000.00
55 T	ΓS, Pedestrian, Bracket Arm Mtd, Rem	4.00	Ea	\$ 100.00	\$ 400.00
56 T	S, Pedestrian, Two Way Bracket Arm Mtd (LED) Countdown	4.00	Ea	\$ 1,500.00	\$ 6,000.00
57 T	ΓS, One Way Mast Arm Mtd (LED)	8.00	Ea	\$ 1,100.00	\$ 8,800.00
58	_TS Uninterruptible Power System	1.00	Ea	\$ 9,000.00	\$ 9,000.00
59	Universal Camera Bracket and Extension	4.00	Ea	\$ 400.00	\$ 1,600.00
60	Video Traffic Detection Camera, Modified	4.00	Ea	\$ 3,750.00	\$ 15,000.00
61	Video Traffic Detection System, Modified	1.00	Ea	\$ 15,000.00	\$ 15,000.00
Subto	tal: Proposed Improvements and Traffic Signal Work				\$ 165,285.00

Inter	connect Work						
Line	Item	Quantity	Unit	Uni	t Cost	Item Co	ost
62	TS, Wireless Link, 4.9 Gigahertz, Master	2.00	Ea	\$	4,500.00	\$	9,000.00
63	TS, Wireless Link, 4.9 Gigahertz, Remote	6.00	Ea	\$	4,500.00	\$	27,000.00
64	TS, Managed Field Ethernet Switch, Layer 2, Copper	5.00	Ea	\$	2,000.00	\$	10,000.00
65	Universal Bracket and Extension	8.00	Ea	\$	400.00	\$	3,200.00
66	Traffic Signal Interconnection	1.00	Lsum	\$	12,000.00	\$	12,000.00
Subt	otal: Interconnect Work					\$	61,200.00

Summary		
Construction Subtotal:		\$ 255,215.00
Construction Contingency:	15%	\$ 38,300.00
Construction Total		\$ 293,515.00
Engineering and Professional Services	15%	\$ 38,282.25
Project Total: Pipestone-Market Traffic Signal and Corridor Improvements (Preliminary	y Estimate)	\$ 331,797.25

Section 1. Applicant Information				
Agency Name	Berrien County Public Transportation			
Contact Name	Evan Smith	Title	Transportation & Planning Coordinator	
Phone Number	269-983-7111 Ext. 8350	Email	esmith1@berriencounty.org	

Section 2. Project Informat	ion			
Project Name: Bus Replacement	Fiscal Year of P	roject: 2021		
City/Village/ Township: Countyv	vide		County: Berrier	า
Project Location     Rural transit       (short description of where the project is located)     Rural transit				
Which Emissions form is being       Transit Bus and Fleet Expansion         used? (list the form name not       the MDOT form number)				
Work Description (Short description of work being performed. Please provide enough information for eligibility to be determined)	Purchase 3 medium duty transit busses.			
Sponsor (If different from Applicant)				
Project Cost Only include CMAQ eligible expenses	Federal - CMAQ \$228000	State \$57000	Local \$	Total \$285000

Section 3. Performance measu	ures				
Besides emissions reductions	If you checked any of the Performance Measures please indicate how the				
what other performance	project will improve them:				
measures will the project contribute to? <i>(select all that apply)</i> Safety	Will reduce ratio of transit vehicles in service that have reached their usefull life.				
Pavement Condition System Reliability Transit State of Cood Panair					

Section 4. Additional Questions Question	Y/N	If Yes, Provide Brief Explanation of How the Application will meet these Criteria
Will the project be ready for obligation by July 1 of the year in which it's programmed?	∐Yes ⊠No	
Will this project use multiple funding sources/be combined with another Non-CMAQ project?	Yes 🛛 No	
Is the project being carried out by a sponsored agency, or is a private entity providing funding, materials, or services in support of this project?	∐Yes ⊠No	
Does the project require Right of Way (ROW) acquisition or an easement?	☐Yes ⊠No	If yes, attach a signed letter from that agency granting permission to implement all or part of this project in their right-of-way.

Section 5. Estimated Project Schedule	
Activity	Estimated Date
Resolution of Support for Local Match Submitted to SWMPC	N/A
Project Application Submitted to MOT	2/15/2020
Grade Inspection Package Submitted to MDOT	N/A
Grade Inspection Meeting Scheduled	N/A
Final Plan and Estimate to MDOT	N/A
Right of Way (ROW) certified	N/A
Rail Road Permits	N/A
Environmental Mitigation	N/A
Project Obligated	N/A
Project Letting	N/A
Construction Start	N/A
Project Completion	FY 2022

Enter NA for any activity that doesn't apply to the project.

Γ

CMAQ Emissions Calculator Tool Kit	Transit Bus Service and Fleet Expansion				
	This calculator will estimate the reduction in emroutes, new sched	nissions resulting from expanding transit bus ser ules, and new vehicles. Users are recommended	vice and fleets and associated mode shi to forecast activity by mode with an ex	ift from passenger vehicles, including project: kternal travel demand model.	s such as new
Navigator		IN	PUT		
Transit Bus Service and Fleet Expansion Model Year Distribution	<ul> <li>(1) What is your project evaluation year?</li> <li>(2a) Enter the estimated vehicle miles trave project is completed (users must fill in all for</li> </ul>	2021 Hed by transportation mode before and after the tra	nsit (2b) Select a time aggregatic	on and fill in default days operated by transporta stimates	tion
<u>ruerrype bistribution</u>		Before After	Time Aggregatio	Days Operated Per Year	
Road Type Distribution	Transit Bus Miles Traveled	335,000 335,000	Annual	235	
	Passenger Vehicle Miles Traveled	335,000 335,000	Annual	235	
	(3) If desired, <u>change the activity allocation</u> apply) Allocations of Model Years Allocations of Fuel Types	<u>s</u> of your transit bus fleet from national defaults befo	re and/or after project completion (edit an	ny or all that	
	(3) If desired, <u>change the activity allocation</u> apply) Allocations of Model Years Allocations of Fuel Types Allocations of Road Types	<u>s</u> of your transit bus fleet from national defaults befo	re and/or after project completion (edit an	ny or all that	
	(3) If desired, <u>change the activity allocation</u> apply) Allocations of Model Years Allocations of Fuel Types Allocations of Road Types	<u>s</u> of your transit bus fleet from national defaults before the second sec	re and/or after project completion (edit an	ny or all that	
	(3) If desired, <u>change the activity allocation</u> apply) Allocations of Model Years Allocations of Fuel Types Allocations of Road Types FLEET PERFORMANCE	s of your transit bus fleet from national defaults before the second sec	re and/or after project completion (edit an	y or all that	
	(3) If desired, <u>change the activity allocation</u> apply) Allocations of Model Years Allocations of Fuel Types Allocations of Road Types FLEET PERFORMANCE Activity for Transit Buses Activity for Transit Buses	s of your transit bus fleet from national defaults before the second sec	rre and/or after project completion (edit an <b>FPUT</b> ansit Bus Miles Traveled ussenger Vehicle Miles Traveled	y or all that	
	(3) If desired, <u>change the activity allocation</u> apply) Allocations of Model Years Allocations of Fuel Types Allocations of Road Types FLEET PERFORMANCE Activity for Transit Buses Activity for Transit Buses EMISSION REDUCTIONS	s of your transit bus fleet from national defaults before the second sec	re and/or after project completion (edit an <b>FPUT</b> ansit Bus Miles Traveled assenger Vehicle Miles Traveled	y or all that	
	(3) If desired, <u>change the activity allocation</u> apply) Allocations of Model Years Allocations of Fuel Types Allocations of Road Types FLEET PERFORMANCE Activity for Transit Buses Activity for Transit Buses Activity for Passenger Vehicles	s of your transit bus fleet from national defaults before OU 0 Change in Annual Tr 0 Change in Annual P Pollutant	IPUT ansit Bus Miles Traveled assenger Vehicle Miles Traveled Total	kg/day	
	(3) If desired, <u>change the activity allocation</u> apply) Allocations of Model Years Allocations of Fuel Types Allocations of Road Types FLEET PERFORMANCE Activity for Transit Buses Activity for Passenger Vehicles EMISSION REDUCTIONS	s of your transit bus fleet from national defaults before 0 0 Change in Annual Tr 0 Change in Annual P Pollutant Carbon I	rre and/or after project completion (edit an  FPUT  ansit Bus Miles Traveled  sssenger Vehicle Miles Traveled  Total  fonoxide (CQ) 0.590	kg/day	
	(3) If desired, <u>change the activity allocation</u> apply) Allocations of Model Years Allocations of Fuel Types Allocations of Road Types FLEET PERFORMANCE Activity for Transit Buses Activity for Transit Buses Activity for Passenger Vehicles EMISSION REDUCTIONS	s of your transit bus fleet from national defaults before 0 0 Change in Annual Transit 0 Change in Annual P Pollutant Carbon f Particulate Matter <	rre and/or after project completion (edit an  rPUT  ansit Bus Miles Traveled  sssenger Vehicle Miles Traveled  Total  Aonoxide (CO) 0.590 2.5 μm (PM <sub>2.5</sub> ) 0.002	kg/day	
	(3) If desired, <u>change the activity allocation</u> apply) Allocations of Model Years Allocations of Fuel Types Allocations of Road Types FLEET PERFORMANCE Activity for Transit Buses Activity for Transit Buses EMISSION REDUCTIONS	s of your transit bus fleet from national defaults before 0 0 Change in Annual Tr 0 Change in Annual P Change in Annual P Carbon I Particulate Matter Particulate Matter	rre and/or after project completion (edit an  rPUT  ansit Bus Miles Traveled  assenger Vehicle Miles Traveled  Total  Aonoxide (CO) 0.590 2.5 μm (PM <sub>2.5</sub> ) 0.002  <10 μm (PM <sub>10</sub> ) 0.002	kg/day	
	(3) If desired, <u>change the activity allocation</u> apply) Allocations of Model Years Allocations of Fuel Types Allocations of Road Types FLEET PERFORMANCE Activity for Transit Buses Activity for Passenger Vehicles EMISSION REDUCTIONS	s of your transit bus fleet from national defaults before 0 0 Change in Annual Tr 0 Change in Annual P Change in Annual P Carbon I Particulate Matter Particulate Matter Nitroge	re and/or after project completion (edit an  rPUT  ansit Bus Miles Traveled  sssenger Vehicle Miles Traveled  tonoxide (CO) 0.590 2.5 μm (PM <sub>2.5</sub> ) 0.002 c10 μm (PM <sub>10</sub> ) 0.002 n Oxide (NOx) 0.020	kg/day	

Section 1. Applicant Information				
Agency Name	Berrien County Public Transportation			
Contact Name	Evan Smith	Title	Transportation & Planning Coordinator	
Phone Number	269-983-7111 Ext. 8350	Email	esmith1@berriencounty.org	

Section 2. Project Informat	ion			
Project Name: Bus Replacement	Fiscal Year of Pr	roject: 2022		
City/Village/ Township: Countyv	vide		County: Berrier	۱
Project Location (short description of where the project is located)	Rural transit			
Which Emissions form is being used? (list the form name not the MDOT form number)	TBD			
Work Description (Short description of work being performed. Please provide enough information for eligibility to be determined)	Purchase 2 medium duty busses			
Sponsor (If different from Applicant)				
Project Cost Only include CMAQ eligible expenses	Federal - CMAQ \$152000	State \$38000	Local \$	Total \$190000

Section 3. Performance meas	ures
Besides emissions reductions what other performance measures will the project contribute to? <i>(select all that</i> <i>apply)</i> Safety Pavement Condition System Reliability Transit State of Good Repair	If you checked any of the Performance Measures please indicate how the project will improve them: Will reduce ratio of transit vehicles in service that have reached their usefull life.

Section 4. Additional Questions Question	Y/N	If Yes, Provide Brief Explanation of How the Application will meet these Criteria
Will the project be ready for obligation by July 1 of the year in which it's programmed?	☐Yes ⊠No	
Will this project use multiple funding sources/be combined with another Non-CMAQ project?	Yes 🛛 No	
Is the project being carried out by a sponsored agency, or is a private entity providing funding, materials, or services in support of this project?	∐Yes ⊠No	
Does the project require Right of Way (ROW) acquisition or an easement?	☐Yes ⊠No	If yes, attach a signed letter from that agency granting permission to implement all or part of this project in their right-of-way.

Section 5. Estimated Project Schedule	
Activity	Estimated Date
Resolution of Support for Local Match Submitted to SWMPC	N/A
Project Application Submitted to MOT	2/15/2021
Grade Inspection Package Submitted to MDOT	N/A
Grade Inspection Meeting Scheduled	N/A
Final Plan and Estimate to MDOT	N/A
Right of Way (ROW) certified	N/A
Rail Road Permits	N/A
Environmental Mitigation	N/A
Project Obligated	N/A
Project Letting	N/A
Construction Start	N/A
Project Completion	FY 2023

Enter NA for any activity that doesn't apply to the project.

Γ

Section 1. Applicant Information			
Agency Name	Berrien County Public Transportation		
Contact Name	Evan Smith	Title	Transportation & Planning Coordinator
Phone Number	269-983-7111 Ext. 8350	Email	esmith1@berriencounty.org

Section 2. Project Informat	ion			
Project Name: Bus Replacement			Fiscal Year of P	roject: 2023
City/Village/ Township: Countyv	vide		County: Berrier	۱
Project Location (short description of where the project is located)	Rural transit			
Which Emissions form is being used? (list the form name not the MDOT form number)	TBD			
Work Description (Short description of work being performed. Please provide enough information for eligibility to be determined)	Purchase 1 full size van.			
Sponsor (If different from Applicant)				
Project Cost Only include CMAQ eligible expenses	Federal - CMAQ \$56000	State \$14000	Local \$	Total \$70000

Section 3. Performance meas	ures
Besides emissions reductions what other performance measures will the project contribute to? <i>(select all that</i> <i>apply)</i> Safety Pavement Condition System Reliability Transit State of Good Repair	If you checked any of the Performance Measures please indicate how the project will improve them: Will reduce ratio of transit vehicles in service that have reached their usefull life.

Section 4. Additional Questions Question	Y/N	If Yes, Provide Brief Explanation of How the Application will meet these Criteria
Will the project be ready for obligation by July 1 of the year in which it's programmed?	☐Yes ⊠No	
Will this project use multiple funding sources/be combined with another Non-CMAQ project?	Yes 🛛 No	
Is the project being carried out by a sponsored agency, or is a private entity providing funding, materials, or services in support of this project?	∐Yes ⊠No	
Does the project require Right of Way (ROW) acquisition or an easement?	☐Yes ⊠No	If yes, attach a signed letter from that agency granting permission to implement all or part of this project in their right-of-way.

Section 5. Estimated Project Schedule	
Activity	Estimated Date
Resolution of Support for Local Match Submitted to SWMPC	N/A
Project Application Submitted to MOT	2/15/2022
Grade Inspection Package Submitted to MDOT	N/A
Grade Inspection Meeting Scheduled	N/A
Final Plan and Estimate to MDOT	N/A
Right of Way (ROW) certified	N/A
Rail Road Permits	N/A
Environmental Mitigation	N/A
Project Obligated	N/A
Project Letting	N/A
Construction Start	N/A
Project Completion	FY 2024

Enter NA for any activity that doesn't apply to the project.

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Section 1. Applicant Information			
Agency Name	Southwest Michigan Planning Commis	ssion	
Contact Name	Kristopher Martin	Title	Associate Planner
Phone Number	2699251137x1521	Email	martink@swmpc.org

Section 2. Project Informat	ion	
Project Name: Berrien County Southwest Michigan Rideshare		Fiscal Year of Project: 2021
Promotion Standard Program		
City/Village/ Township:		County: Berrien County
Project Location (short description of where the project is located)	This rideshare program is for residents a in and around Berrien County Michigan.	nd employees that live and work
Which Emissions form is being used? (list the form name not the MDOT form number)	FHWA CMAQ Toolkit Carpooling and Var	npooling Tool
Work Description (Short description of work being performed. Please provide enough information for eligibility to be determined)	This rideshare program offers a free ride everyone that lives, works, and commut the rideshare coordinator identifies and employers with the goal of conducting o rideshare and transportation options. Th presentations/trainings to employees or rideshare services and provides free edu promotes the MichiVan Commuter VanF resources on www.mywaythere.org. The available to businesses, employees, com organizations, employment agencies, lib The coordinator will attend local job fair the rideshare services. The coordinator will the rideshare services. The coordinator will the coordinator also partners with other state. The coordinator will help people s over the phone or by email. The coordin www.mywaythere.org website. This we rideshare and public transportation serv has information on free or reduced rides emergency medical information, information disabilities and so much more.	eshare matching service to es in the county. In this program proactively markets directly to on-site meetings to explain the coordinator also offers free in the sign up and use of the facational materials, it also Pool program and the online e presentations/trainings are smunity groups, nonprofits raries and anyone else interested. s or community events to promote will also promote the rideshare ings, carpool lots, and libraries. r rideshare agencies across the ign up for the rideshare service ator also manages the bsite is a great tool to learn what rices are available. On this site it s, rideshare, transit, non- ation for seniors and people with

Sponsor				
(If different from Applicant)				
Project Cost	Federal - CMAQ	State	Local	Total
Only include CMAQ eligible expenses	\$16,000	\$	\$	\$

# Section 3. Performance measures

Besides emissions reductions what other performance measures will the project	If you checked any of the Performance Measures please indicate how the project will improve them:
contribute to? (select all that	
apply)	
Safety	
Pavement Condition	
System Reliability	
Transit State of Good Repair	

Section 4. Additional Questions		
Question	Y/N	If Yes, Provide Brief Explanation of How the Application will meet these Criteria
Will the project be ready for obligation by July 1 of the year in which it's programmed?	∐Yes ⊠No	
Will this project use multiple funding sources/be combined with another Non-CMAQ project?	∐Yes ⊠No	
Is the project being carried out by a sponsored agency, or is a private entity providing funding, materials, or services in support of this project?	∐Yes ⊠No	
Does the project require Right of Way (ROW) acquisition or an easement?	□Yes ⊠No	If yes, attach a signed letter from that agency granting permission to implement all or part of this project in their right-of-way.

Section 5. Estimated Project Schedule	
Activity	Estimated Date
Resolution of Support for Local Match Submitted to SWMPC	
Project Application Submitted to MOT	
Grade Inspection Package Submitted to MDOT	
Grade Inspection Meeting Scheduled	

Final Plan and Estimate to MDOT	
Right of Way (ROW) certified	
Rail Road Permits	
Environmental Mitigation	
Project Obligated	
Project Letting	
Construction Start	
Project Completion	

Section 1. Applicant Information			
Agency Name Southwest Michigan Planning Commission			
Contact Name	Kristopher Martin	Title	Associate Planner
Phone Number	2699251137x1521	Email	martink@swmpc.org

Section 2. Project Informat	ion	
Project Name: Berrien County S	outhwest Michigan Rideshare	Fiscal Year of Project: 2022
Promotion Standard Program		
City/Village/ Township:		County: Berrien County
Project Location (short description of where the project is located)	This rideshare program is for residents a in and around Berrien County Michigan.	nd employees that live and work
Which Emissions form is being used? (list the form name not the MDOT form number)	FHWA CMAQ Toolkit Carpooling and Va	וpooling Tool
Work Description (Short description of work being performed. Please provide enough information for eligibility to be determined)	This rideshare program offers a free ride everyone that lives, works, and commut the rideshare coordinator identifies and employers with the goal of conducting o rideshare and transportation options. Th presentations/trainings to employees or rideshare services and provides free edu promotes the MichiVan Commuter VanF resources on www.mywaythere.org. The available to businesses, employees, com organizations, employment agencies, lib The coordinator will attend local job fair the rideshare services. The coordinator v services in the media, in municipal build The coordinator also partners with othe state. The coordinator will help people s over the phone or by email. The coordin www.mywaythere.org website. This we rideshare and public transportation serv has information on free or reduced rides emergency medical information, informa- disabilities and so much more.	eshare matching service to es in the county. In this program proactively markets directly to in-site meetings to explain ne coordinator also offers free in the sign up and use of the icational materials, it also Pool program and the online e presentations/trainings are imunity groups, nonprofits raries and anyone else interested. is or community events to promote will also promote the rideshare ings, carpool lots, and libraries. r rideshare agencies across the sign up for the rideshare service hator also manages the bsite is a great tool to learn what rices are available. On this site it s, rideshare, transit, non- ation for seniors and people with

Sponsor				
(If different from Applicant)				
Project Cost	Federal - CMAQ	State	Local	Total
Only include CMAQ eligible expenses	\$16,000	\$	\$	\$

# Section 3. Performance measures

Besides emissions reductions what other performance measures will the project	If you checked any of the Performance Measures please indicate how the project will improve them:
contribute to? (select all that	
apply)	
Safety	
Pavement Condition	
System Reliability	
Transit State of Good Repair	

Section 4. Additional Questions		
Question	Y/N	If Yes, Provide Brief Explanation of How the Application will meet these Criteria
Will the project be ready for obligation by July 1 of the year in which it's programmed?	∐Yes ⊠No	
Will this project use multiple funding sources/be combined with another Non-CMAQ project?	∐Yes ⊠No	
Is the project being carried out by a sponsored agency, or is a private entity providing funding, materials, or services in support of this project?	∐Yes ⊠No	
Does the project require Right of Way (ROW) acquisition or an easement?	□Yes ⊠No	If yes, attach a signed letter from that agency granting permission to implement all or part of this project in their right-of-way.

Section 5. Estimated Project Schedule	
Activity	Estimated Date
Resolution of Support for Local Match Submitted to SWMPC	
Project Application Submitted to MOT	
Grade Inspection Package Submitted to MDOT	
Grade Inspection Meeting Scheduled	

Final Plan and Estimate to MDOT	
Right of Way (ROW) certified	
Rail Road Permits	
Environmental Mitigation	
Project Obligated	
Project Letting	
Construction Start	
Project Completion	

Section 1. Applicant Information			
Agency Name Southwest Michigan Planning Commission			
Contact Name	Kristopher Martin	Title	Associate Planner
Phone Number	2699251137x1521	Email	martink@swmpc.org

Section 2. Project Informat	ion	
Project Name: Berrien County S	outhwest Michigan Rideshare	Fiscal Year of Project: 2023
Promotion Standard Program		
City/Village/ Township:	1	County: Berrien County
Project Location (short description of where the project is located)	This rideshare program is for residents a in and around Berrien County Michigan.	nd employees that live and work
Which Emissions form is being used? (list the form name not the MDOT form number)	FHWA CMAQ Toolkit Carpooling and Var	npooling Tool
Work Description (Short description of work being performed. Please provide enough information for eligibility to be determined)	This rideshare program offers a free ride everyone that lives, works, and commut the rideshare coordinator identifies and employers with the goal of conducting or rideshare and transportation options. The presentations/trainings to employees or rideshare services and provides free edu promotes the MichiVan Commuter Van resources on www.mywaythere.org. The available to businesses, employees, com- organizations, employment agencies, lib The coordinator will attend local job fair the rideshare services. The coordinator v services in the media, in municipal build The coordinator also partners with othe state. The coordinator will help people so over the phone or by email. The coordin www.mywaythere.org website. This we rideshare and public transportation serv has information on free or reduced rides emergency medical information, informa- disabilities and so much more.	eshare matching service to es in the county. In this program proactively markets directly to on-site meetings to explain ne coordinator also offers free in the sign up and use of the locational materials, it also Pool program and the online e presentations/trainings are imunity groups, nonprofits traries and anyone else interested. rs or community events to promote will also promote the rideshare ings, carpool lots, and libraries. r rideshare agencies across the sign up for the rideshare service lator also manages the ebsite is a great tool to learn what rices are available. On this site it s, rideshare, transit, non- ation for seniors and people with

Sponsor				
(If different from Applicant)				
Project Cost	Federal - CMAQ	State	Local	Total
Only include CMAQ eligible expenses	\$16,000	\$	\$	\$

# Section 3. Performance measures

Besides emissions reductions what other performance measures will the project	If you checked any of the Performance Measures please indicate how the project will improve them:
contribute to? (select all that	
apply)	
Safety	
Pavement Condition	
System Reliability	
Transit State of Good Repair	

Section 4. Additional Questions		
Question	Y/N	If Yes, Provide Brief Explanation of How the Application will meet these Criteria
Will the project be ready for obligation by July 1 of the year in which it's programmed?	∐Yes ⊠No	
Will this project use multiple funding sources/be combined with another Non-CMAQ project?	∐Yes ⊠No	
Is the project being carried out by a sponsored agency, or is a private entity providing funding, materials, or services in support of this project?	∐Yes ⊠No	
Does the project require Right of Way (ROW) acquisition or an easement?	□Yes ⊠No	If yes, attach a signed letter from that agency granting permission to implement all or part of this project in their right-of-way.

Section 5. Estimated Project Schedule	
Activity	Estimated Date
Resolution of Support for Local Match Submitted to SWMPC	
Project Application Submitted to MOT	
Grade Inspection Package Submitted to MDOT	
Grade Inspection Meeting Scheduled	

Final Plan and Estimate to MDOT	
Right of Way (ROW) certified	
Rail Road Permits	
Environmental Mitigation	
Project Obligated	
Project Letting	
Construction Start	
Project Completion	

### Congestion Mitigation and Air Quality Project Application Instructions

### How to apply

Please fill out both the CMAQ application (page 3) and the appropriate emissions form. Additional Information may be required based on the project type (See below).

### All applications are due on Monday December 12, 2018.

Please email the completed application, emissions form and any other required information to both Brandon Kovnat at <u>kovnatb@swmpc.org</u> AND Kim Gallagher at <u>gallagherk@swmpc.org</u>. Please include "CMAQ Application" in the subject line

### Additional Information is required for the following projects:

### **Carpool Lot Expansion**

- Indicate the number of spaces
- Indicated how many users you expect

#### Dedicated Turn Lanes

- Indicate the length of the lanes
- Indicate traffic counts,

#### Intersection Improvements

• Include a diagram of the modification

### **Non-Motorized Paths**

Eligible if they are not exclusively recreational and if they reduce vehicle trips

- Please include maps detailing the location of the proposed path
- Detail the land uses that surround the path
- Explain how the path provides access to jobs, services, and centers of trade
- List all connections to other non-motorized paths, if applicable

### Signal Interconnection

- Include all locations in the Location Description
- Indicate the number of signals in the Work Description

### Traffic Operations Center (TOC)

• Please list specific activities to be funded

#### Transit

- Vehicle lease/purchase : how many will be leased or purchased
- Operating Assistance: specify which years are being requested (year 1, 2, 3 and/or 3)
- Equipment: type to be funded

### Carpooling/Vanpooling (RideShare)

• Specify if Marketing or Capital (or both)

### **Emissions forms to Use**

For the following projects use the appropriate FHWA Emission Toolkit which can befound at: <u>https://www.fhwa.dot.gov/environment/air\_quality/cmaq/toolkit/</u> or they can downloaded through the links below (opens as an excel file):

Project Category	FHWA Emissions Toolkit		
Dedicated Turn Lanes			
Signal Interconnects	Congestion Reduction and traffic Flow		
Signal Optimization or Actuation, not part of an			
interconnect project			
Roundabouts			
Rideshare/vanpooling:	Carpooling and Vanpooling		
Operation of New Public Transit Services	Transit Bus and Fleet Expansion		
Bus Durchase or Replacements	Transit Bus Retrofits and Replacement		
	Transit Bus and Fleet Expansion*		
Diesel Retrofits / Truck Replacements	Advanced Diesel Truck/Engine Technologies		
Alternative Fuels and Vehicles Projects	Alternative Fuels and Vehicles		

\*use this toolkit for gasoline vehicles.

Note that the forms only work with Internet Explorer

Project Category	Emissions Form
Other Project (may need additional details)	MDOT Form 2608
Intelligent Transportation System (ITS)	MDOT Form 2612
Park and Ride Lots	MDOT Form 2613
Traffic Operations Centers Operations	MDOT Form 2616
Travel Demand Management Program	MDOT Form 2619
Non-Motorized Pathways	MDOT Form 2621

Section 1. Applicant Information			
Agency Name	City of Buchanan		
Contact Name	Bill Marx	Title	City Manager
Phone Number	269-695-3844 Ext. 10	Email	wmarx@cityofbuchanan.com

Section 2. Project Information					
Project Name: Front Street Signal Optimization Project			Fiscal Year of Pr	oject: 2022	
City/Village/ Township: City of B	luchanan		County: Berrien		
Project Location (short description of where the project is located)	Front Street at Oak Street				
Which Emissions form is being used? (list the form name not the MDOT form number)	Congestion Reduction Traffic Flow Improvements				
Work Description (Short description of work being performed. Please provide enough information for eligibility to be determined)	The project would optimize the traffic signal at Front Street and Oak Street with vehicular video detection equipment. This project includes replacing the curb as needed, sidewalk upgrades to meet ADA standards, HMA pavement, aggregate base, push buttons for pedestrians, countdown monitors, pavement markings, permanent signage and appurtenances.				
Sponsor (If different from Applicant)					
Project Cost Only include CMAQ eligible expenses	Federal - CMAQ         State         Local         Total           's         \$292,151         \$         \$73,038         \$365,189				

Section 3. Performance measu	ures
Besides emissions reductions what other performance	If you checked any of the Performance Measures please indicate how the project will improve them:
<ul> <li>measures will the project</li> <li>contribute to? <i>(select all that apply)</i></li> <li>Safety</li> <li>Pavement Condition</li> <li>System Reliability</li> <li>Transit State of Good Repair</li> </ul>	This project will improve safety for pedestrians crossing the road. Countdown monitors and push buttons will assist pedestrian crossings. As a part of this project the asphalt will be replace to improve the current PASER rating of 3-Poor. This signal is out dated and has experienced failure in service periodically. Updating and optimizing the signal will increase reliability and will reduce delay times.

Section 4 Additional Questions		
Question	Y/N	If Yes, Provide Brief Explanation of How the Application will meet these Criteria
Will the project be ready for obligation by July 1 of the year in which it's programmed?	⊠Yes	The project will be designed and submitted to ensure obligation by July 1 of the programmed year.
Will this project use multiple funding sources/be combined with another Non-CMAQ project?	□Yes ⊠No	However, the City has requested funds from the 2020-2023 STIP request for Front Street (Oak St to Red Bud Tr), which includes this signal work. Awarding this CMAQ request would reduce the TIP request for the Front Street project.
Is the project being carried out by a sponsored agency, or is a private entity providing funding, materials, or services in support of this project?	☐Yes ⊠No	
Does the project require Right of Way (ROW) acquisition or an easement?	Yes 🕅 No	If yes, attach a signed letter from that agency granting permission to implement all or part of this project in their right-of-way.

Section 5. Estimated Project Schedule	
Activity	Estimated Date
Resolution of Support for Local Match Submitted to SWMPC	02/11/2019
Project Application Submitted to MOT	07/02/2021
Grade Inspection Package Submitted to MDOT	07/16/2021
Grade Inspection Meeting Scheduled	08/16/2021
Final Plan and Estimate to MDOT	09/27/2021
Right of Way (ROW) certified	09/27/2021
Rail Road Permits	N/A
Environmental Mitigation	N/A
Project Obligated	10/15/2021
Project Letting	12/06/2021
Construction Start	04/07/2022
Project Completion	07/01/2022



PROJECT: Front Street Reconstruction Project

CLIENT: City of Buchanan

DATE: December 10, 2018

The project would optimize the traffic signal at Front Street and Oak Street with vehicular video detection equipment. This project includes replacing the curb as needed, sidewalk upgrades to meet ADA standards, HMA pavement, aggregate base, push buttons for pedestrians, countdown monitors, pavement markings, permanent signage and appurtenances.

1 L.S.	Mobilization, Max	@	45,000.00	45,000.00
200 FT	Curb and Gutter, Rem	@	10.00	2,000.00
5 CYD	Masonry and Conc Structure, Rem	@	100.00	500.00
30 SYD	Sidewalk, Rem	@	10.00	300.00
8 EA	Erosion Control, Inlet Protection, Fabric Drop	@	100.00	800.00
615 SYD	Aggregate Base 8"	@	8.00	4,920.00
210 CYD	Subbase, CIP	@	10.00	2,100.00
50 TON	Maintenance Gravel	@	15.00	750.00
2 EA	Dr Structure Cover, Adj, Case 1	@	500.00	1,000.00
2 EA	Dr Structure Cover, Type Q	@	500.00	1,000.00
1 EA	Dr Structure Cover, ADA Compliant	@	500.00	500.00
10 EA	Dr Structure, Tap, 6 inch	@	150.00	1,500.00
200 FT	Underdrain, Subbase, 6 inch	@	5.00	1,000.00
615 SYD	Cold Milling HMA Surface	@	3.00	1,845.00
615 SYD	HMA Surface, Rem	@	4.00	2,460.00
80 SYD	Pavt, Rem	@	10.00	800.00
50 CYD	Subgrade Undercutting, Type II	@	15.00	750.00
20 TON	Hand Patching	@	100.00	2,000.00
215 TON	HMA, 4E1	@	70.00	15,050.00
110 TON	HMA, 5E1	@	80.00	8,800.00
50 FT	Curb, Conc, Det E1	@	25.00	1,250.00
100 FT	Curb and Gutter, Conc, Det C4	@	25.00	2,500.00
45 FT	Detectable Warning Surface	@	35.00	1,575.00
160 FT	Curb Ramp Opening, Conc	@	25.00	4,000.00
440 SFT	Sidewalk Ramp, Conc, 6 inch	@	6.00	2,640.00
1,200 SFT	Sidewalk, Conc, 4 inch	@	5.00	6,000.00
100 FT	Conduit, DB, 3, 3 inch	@	18.00	1,800.00
4 EA	Hh, Round	@	1,250.00	5,000.00
45 FT	Cable, Sec, 600V, 1, 3/C#6	@	3.00	135.00
250 FT	Conduit, Directional Bore, 3, 3 inch	@	30.00	7,500.00
1 EA	Controller and Cabinet, Rem	@	350.00	350.00
1 EA	Controller and Cabinet, Digital Type	@	19,500.00	19,500.00
1 EA	Controller Fdn, Base Mount	@	2,000.00	2,000.00
1 EA	Fdn, Rem	@	400.00	400.00
3 EA	Pedestal, Alum	@	600.00	1,800.00
4 EA	Pedestal, Fdn	@	600.00	2,400.00
2,000 DLR	Power Co. (Est. Cost to Contractor)	@	1.00	2,000.00
8 EA	Pushbutton and Sign	@	350.00	2,800.00
1 EA	Pushbutton Pedestal, Alum	@	500.00	500.00

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# ENGINEER'S ESTIMATE

1 EA	Serv Disconnect	@	900.00	900.00
1 EA	Serv Disconnect, Rem	@	100.00	100.00
4 EA	Span Wire	@	600.00	2,400.00
2 EA	Span Wire, Rem	@	250.00	500.00
56 FT	Strain Pole Fdn, Cased	@	450.00	25,200.00
4 EA	Strain Pole, Steel, Anchor Base, 30 foot	@	3,000.00	12,000.00
2 EA	TS, Span Wire Mtd, Rem	@	200.00	400.00
8 EA	TS, One way Span wire Mtd (LED)	@ @	1,000.00	8,000.00
8 EA	TS, Pedestrian, One Way Bracket Arm Mtd (LED) Count	@ @	1,300.00	10,400.00
8 EA	TS, Pedestrian, One way Pedestal Mtd (LED) Countdow	@	1,300.00	10,400.00
4 EA 1 EA	Video Trof Detection System	e Ø	1,500.00	6,000.00
	Video Traf Detection System	e Ø	13,000.00	13,000.00
4 EA 0 EA		e Ø	4,000.00	10,000.00
	TS Face, Day	@	100.00	800.00
0 EA 1 EA	TS Face, Day, Nelli TS Uninterruntible Dower System	@	10 000 00	10 000 00
	Gate Box Adi Case 1	@ @	300.00	600.00
	Construction and Permanent Signage	@	5 000 00	5 000.00
300 FT	Pavt Mrkg, Ovly Cold Plastic, 6 inch, Crosswalk	@ @	5.00	1 500 00
80 FT	Pavt Mrkg, Ovly Cold Plastic, 0 mon, Orosswalk	@	8.00	640.00
150 FT	Pavt Mrkg, Waterborne 4 inch White	@	0.50	75.00
1 200 FT	Pavt Mrkg, Waterborne, 4 inch, Vellow	@	0.50	600.00
115	Minor Traf Devices	@	10 000 00	10 000 00
11.5	Traf Regulator Control	<u>@</u>	10,000,00	10,000,00
300 SYD	Slope Restoration. Type A	@	4.00	1.200.00
		-		,
	SUBTOTAL ESTIMATED CONSTRUCTION COST			\$ 303,740.00
	Construction Contingency		10%	30,460.00
	Design Engineering		8%	24,300.00
	Construction Engineering		12%	36,500.00
	TOTAL ESTIMATED PROJECT COST in 2019			\$ 395,000.00
	SUBTOTAL CONSTRUCTION COST			\$303 740 00
	Contingency		10%	30,460.00
	Contantgorioy		1070	001100100
	TOTAL ESTIMATED CONSTRUCTION COST in 2019			\$334,200.00
	Inflation @ 3% +/- per year		3%	<u>30,989.36</u>
	TOTAL ESTIMATED CONSTRUCTION COST in 2022			\$365,189.36
	Desian Engineering (Not Eligible)		8%	29.300.00
	Construction Engineering		12%	43,900.00
	TOTAL ESTIMATED PROJECT COST in 2022			\$438,389.36
	CMAO Funds (80% of Construction)		Q00/	\$202 151
	Local Match		0070	\$146,238

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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: Langley Avenue F	Reconstruction/Non	-Motorized Path	Fiscal Year of P	Fiscal Year of Project: 2021		
City/Village/ Township: City of S	t. Joseph		County: Berrier	۱		
Project Location (short description of where the project is located)	Langley Avenue from Pearl Street to Napier Avenue					
Which Emissions form is being used? (list the form name not the MDOT form number)	Construct Non-Motorized Pathway (MDOT Form 2621)					
Work Description (Short description of work being performed. Please provide enough information for eligibility to be determined)	Construct a non-motorized pathway on one side of Langley Avenue as part of the Langley Avenue Reconstruction Project. The southern limits end at Spectrum Health Lakeland Hospital, a Red Route transit stop. The path will connect to new non-motorized facilities (proposed construction 2020) on Kingsley, Morton and Orchard Avenues. Non-motorized methods of transporations will be facilitated between Spectrum Health Lakeland, the Howard Family Ice Arena, Lincoln School, Kiwanis Park, Vail Rubber and the surrounding residential neighborhood.					
Sponsor (If different from Applicant)	N/A					
Project Cost Only include CMAQ eligible expenses	Federal - CMAQ \$ 223,000	State \$0 Total Project:	Local \$ 55,900 CMAQ \$ 106,200	Total \$ 278,900 CMAQ \$ 329,800		

Section 3. Performance measures				
Besides emissions reductions what other performance	If you checked any of the Performance Measures please indicate how the project will improve them:			
measures will the project				
contribute to? (select all that				
apply)				

<ul> <li>Safety</li> <li>Pavement Condition</li> <li>System Reliability</li> <li>Transit State of Good Repair</li> </ul>	The TIP Application for the Langley Avenue Reconstruction Project describes the benefits/performance measures to be improved by the project. A copy of the application is attached.		
Section 4. Additional Question	IS	V/N	If Ves Provide Brief Explanation of
Question		.,	How the Application will meet these Criteria
Will the project be ready for obligation by July 1 of the year in which it's programmed?			The scheduled, listed below, meets this
		⊠Yes	requirement.
Will this project use multiple funding sources/be combined with another Non-CMAQ project?		⊠Yes ⊡No	A TIP Application has been submitted for reconstruction of Langley Avenue at the same time as the non-motorized path. City Sewer, Water and Street improvement funds were budgeted as part of the City's 2017 Asset Management Plan for the local match.
Is the project being carried out by a agency, or is a private entity provid materials, or services in support of	a sponsored ing funding, this project?	☐Yes ⊠No	
Does the project require Right of W acquisition or an easement?	/ay (ROW)	□Yes ⊠No	If yes, attach a signed letter from that agency granting permission to implement all or part of this project in their right-of-way.
Section 5. Estimated Project S	chedule		

Section 5. Estimated Project Schedule	
Activity	Estimated Date
Resolution of Support for 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	April 2021
Project Completion	October 2021
PROJECT NAME Langley Avenue Reconstruction & Non-Motorized Path SUBMITTER

City of St. Joseph

FISCAL YEAR

2021

Contact: If you should have any trouble with these worksheets please contact Matt Galbraith (517) 335-2938.

Line No.	Description of Data Item/Formula	voc	NOx	со	PM2.5
1	Length of pathway (mi)	0.85	0.85	0.85	0.85
2	Average Daily Traffic (ADT) along impacted roadways	6,795	6,795	6,795	6,795
3	VMT along primary parallel roadway=L1*L2 (mi/day)	5,775.75	5,775.75	5,775.75	5,775.75
4	Decimal percentage of pedestrian and bicycle travel	7%	7%	7%	7%
5	Total VMT diverted from automotive to pedestrian/ bicycle mode=L3*L4 (mi/day)	404.3025	404.3025	404.3025	404.3025
6	Average speed along impacted roadway(s) (mph)	33	33	33	33
7	Emission factor for speed on L6 (use passenger cars) (g/mi)	0.1176	0.2693	2.6097	0.0165
8	Annual VMT reduction=L5*180 bike/walking days (mi)	72,774.450	72,774.450	72,774.450	72,774.450
9	Annual emission reduction=(L11)*180days (Kg/yr)	-8.558	-19.598	-189.919	-1.201
10	For compairative purpose only: Conversion to Tons/ Year=(L9*.0011Kg)	-0.009	-0.022	-0.209	-0.001
11	Changes in Emissions=(L5*L7)(-1)/1000 (Kg/day)	-0.048	-0.109	-1.055	-0.007
12	Project design life in years (Yrs)	30	30	30	30
13	Total project cost for this application (CMAQ plus Match) (\$)	\$329,700.00	\$329,700.00	\$329,700.00	\$329,700.00
14	Emission reduction over the life of the project=L10*L12 (Tons/Life)	-0.282	-0.647	-6.267	-0.040
15	Emission reduction over the life of the project=(L9*L12) (Kg/Life)	-256.748	-587.945	-5,697.584	-36.023
16	Cost per Ton over the life of the project=(L13/L14) (\$/ Tons/Life)	\$1,167,397.84	\$509,788.26	\$52,606.03	\$8,320,336.75
17	Cost per Kilogram over the life of the project=(L13/ L15) (\$/Kg/Life)	\$1,284.14	\$560.77	\$57.87	\$9,152.40

COMMENTS

# 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	Pearl Street to Napier /	Avenue			
(e.g. Napier Ave. to Britain Ave.)		-			
Project Length (nearest hundredth of a mile)	0.85 Proposed Year of Funding 2021				
Primary Work Type	pe Reconstruct C Restore & Rehabilitate Roadside Facility Resurface Traffic Operations/Safety 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	Yes 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	<ul> <li>☑ Yes □ No</li> <li>Maximum Dollar Amount you can AC?</li> <li>\$ 650,000</li> </ul>

TwinCATS 2020-2023 Surface Transportation Block Grant Project Application

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

Section 4. System Preservation	
2018 PASER rating (availibe as an excel file)	2
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	0-3 years 4-6 7-9 10-14 X15-20
Service life (RSL)	Use MDOT's Guidelines for Geometrics on Local Projects
What MDOT guidelines does the	Reconstruction (4R)
project conform to?	Resurfacing, restoration, and Rehabilitation (3R)
	Preventative Maintenance (PM)

Section 5. Safety							
Please list the number and	Please list the number and severity of crashes within the proposed project limits over the last 5 yrs.						
(2013-2017) (see Michiga	an Crash	Facts for crash data	a)				
Total Crashes	21		Pedestrian & Bicycle	1			
	21		Crashes	1			
Fatalities	0		Serious Injuries	0			
Using the attached Crash F	Reductior	n Factors sheet, ple	ase check each safety coun	ter measure that will be			
included in the project							
Describe any other safety	Describe any other safety Roadway will be narrowed to add non-motorized path or bike lanes.						
improvements this project	improvements this project will Parking will be reduced or eliminated as needed to accommodate non-						
provide	provide 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 Comple</u> approved in 2014?	ete Streets Policy,	Yes No			
If yes, Please explain what pedestrian and/or bicycle improvements are included in the process of s		path or bike lanes will be added. The City is 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	Yes 🗌 No	
planned to be completed from 2020-2023?	If yes, please p	provide a map of the connecting facilities
Section 7. Regional Connectivity		
What is the most current daily traffic count f	or the limits	Less than 2000 2000-5000
of this project?		∑ 5000-10,000
		Year of count: 2015 Source: SWMPC
National Functional Classification (NFC) for the	his roadway	Minor Artorial
(Berrien County NFC Map)		
Does one of <u>TCATA fixed route transit lines</u> u	se the road?	
(Only indicate yes if it carries a current route	, not a	⊠Yes □No
planned route).		

Section 8. Strategic Planning & Investment	
Is the project identified in a Asset Management Plan, or Capital Improvement Plan	Yes 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	Yes No If yes, please cite the plan and page number: Master Plan: Appendix G, Map 6 (attached)
Does the project cross jurisdictional boundaries?	🗌 Yes 🔀 No
If yes, will it be bid as a single project?	Yes No 🛛 NA
Will this project coordinate with other infrastructure projects (i.e. utility, water, sewer, etc.)	Yes 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?	Yes No
Will this project require environmental mitigation, purchase of Right of Way (ROW), or railroad permits?	Yes No Not Sure If yes, which items are required:
Does this project perform Resurfacing, Reconstruction, or Preventative Maintenance on a segment adjacent to	Yes 🛛 No

TwinCATS 2020-2023 Surface Transportation Block Grant Project Application

a segment where a federally-funded project was done during the 2017-2020 TwinCATS TIP cycle or RTF cycle?	What segment was the PREVIOUS project done on? Answered No because Napier Avenue		
	resurfaced in 2012 with TIP funding.		

Section 9. Existing and Proposed Roadway Design								
	Existing			Proposed				
Number of Vehicle Lanes	Through Center Traffic Lanes Turn Lar		On Street ne Parking		Tł Tr	nrough affic Lanes	Center Turn Lane	On Street Parking
	2*	0*		🛛 Yes 🗆 No	2*		*0	🛛 Yes 🖾 No
Shoulder Surface	Paved		Width (ft.) NA			Paved Unpaved		Width (ft.) NA
Sidewalk/ path information	Placement One Side Both Sides Intermittent		Width (ft.) 5 FT (both)			Placement One Side Both Sides Intermittent None		Width (ft.) 5 FT (1 side)** 10 FT (1 side)
On road bicycle facilities	Bike Lane			Other (specify) Bike Lane Sharrows		Other (specify) <u>non-motorized path**</u> ulders None		
Utilities, Sewer and Water	ities, Sewer 🛛 Utilities Upgrades N Water Sewer and water w			eeded Replaced Utilities ork needed Sewer and Water I		Utilities Utilities Water Line V	ie 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			<ul> <li>* Most of Langley is 2 lane road, intersections with turn lanes will remain the same. Anticipate reducing On Street parking eliminating it altogether based upon early feedback during public input process.</li> <li>** Either a non-motorized path or bike lanes will be added. Non-motorizied option included on this TIP application for estimating purposes.</li> </ul>			th turn lanes reet parking or ack during I be added. cation for		
Does this project enhance connectivity of pedestrian or bicyclists to fixed route or Dial-A-Ride transit?			If y Pro Hea mo Kin	Yes  No es, how? oject is on Red Ro alth Lakeland Hos torized facilities o gsley Project slate	ute spita con: ed f	and connec al. Anticipat structed as p for 2020.	ts directly to te connecting part of the Ma	Spectrum to non- orton-Orchard-

Section 10. Estimated Project Schedule	
Activity	Estimated Date
Resolution of Support for $\Box$ 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

TwinCATS 2020-2023 Surface Transportation Block Grant Project Application

Page 5 of 4

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	April 2021
Project Completion	October 2021

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

	Proposed Improvement		Associated Crash Types			
	SEGMENT C		DN FACTORS			
	Geometric Safety Enhancements					
		80%	Rear-End Left-Turn			
	Conton Left Turn Long Construct	50%	Head-On Left-Turn			
	Center Lett-Turn Lane - Construct	20%	Head-On, Angle, Sideswipe*			
		15%	Non Left-Turn Rear-End, Other*			
		65%	Rear-End Right-Turn			
	Richt Turn Long Construct	30%	Angle			
	Right-Turn Lane - Construct	15%	Rear-End			
		10%	Other*			
$\boxtimes$	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***			
	Shoulders - Widen to Standard Width (add 7' each side)	35%	Lane Departure***			
	Vertical Curve Modification	20%	All Applicable Crash Types +++			
	General S	egment Enhance	ements			
	Access Management - Improve	15%	Drive-way Related Applicable Crashes			
		44%	K and A injury Applicable Crashes			
	Centerline Rumble Strins - Install	46%	Single Vehicle Run off Road Left Crashes			
		43%	Sideswipe Same Crashes			
		55%	Sideswipe Opposite Crashes			
	High Friction Surface Treatment - Install	35%	Wet Crashes			
		20%	All Other Applicable Crashes			
$\square$	Recessed Durable Pavement Markings	5%	All Applicable Crashes			
	Pedestrian Refuge - Install	50%	Pedestrian Crashes (Review NCHRP Report 841)			
	Road Diet (4-3 Lane Conversion) - Install	50%	Suburban - All Applicable Crashes			
	Shoulder Rumble Strips	20%	Run-Off the Road Right Crashes			
$\boxtimes$	Signing/Delineation on Horizontal Curves (Including Recessed Durable Pavement Markings) - Install	20%	Lane Departure***			
	Safety Edge Improvement	13%	All non-intersection crashes (CMF Clearing House ID 8658)			

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

	Intersection Geometric Enhancements				
		80%	Rear-End Left-Turn		
_		50%	Head-On Left-Turn		
	Center Lett-Turn Lane - Construct	20%	Head-On, Angle, Other		
		15%	Non Left-Turn Rear-End		
		30%	Angle		
$\boxtimes$	Intersection Improvements (Realignment, Sight-Distance Improvements,	15%	Rear-End		
	Radii Improvements, Etc.)	10%	Head-On, Sideswipe, Pedestrian, Bicycle, Left-Turn Related		
	Official laft Trans Lance Construct	65%	Angle-Turn, Head-On Left-Turn		
	Offset Left-Turn Lane - Construct	20%	Rear-End Left-Turn		
		65%	Angle-Turn		
Offset	Offset Right-Turn Lane - Construct	50%	Other Applicable Crashes		
		20%	Rear-End Right Turn		
	Richt Turn Long Construct	65%	Rear-End Right-Turn		
	Right-Turn Lane - Construct	20%	Applicable Rear-End Crashes, Sideswipe Same Direction		
	Deursdekeut	78%	Fatal and A-Injury Reduction		
	Roundabout	57%	Minor Crash Reduction		
	Lighting	_	See MDOT Interchange Warranted Lighting Guidance and overall		
			MDOT Lighting Guidance		
	General Intersection Enha	ncements (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		
	Ground Mounted Flashing Beacons(Amber) - Install **	20%	All Crashes On Install Approach		
$\square$	Signing - Improve/Upgrade	30%	Angle, Rear-End Crashes		
$\square$	Pavement Markings - Improve/Upgrade	30%	Angle, Rear-End Crashes		
$\boxtimes$	Reflective Sheeting on Sign Posts (lollipops)	15%	All Applicable Crashes		

# Map 6







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 Berrien County SWMPC Rideshare Program Project Evaluation Year 2021

CMAQ Emissions Calculator Toolkit	Carpooling				
	This	calculator will estimate the reduction in emissions resulting fr	om carpooling.		
Navigator		INPUT			
Carpooling					
Vanpooling	(1) What is your proje (2) Are the pick-up/di	ect evaluation year? rop-off locations centralized?	2021		
	(3a) What is the p (3b) What is the n (4) What share of con (5) On average, how r (6) What is the averag	45 es based on national averages Input as a percent 1 Driver not include 25.2 Enter as roundtrip	tage id o mileage		
	EMISSION REDUCTIONS				
	Pollutant Total (kg/day) kg/day				
		Carbon Monoxide (CO)	2.802		
		0.209			
		Particulate Matter <10 μm (PM <sub>10</sub> ) Particulate Matter <2.5 μm (PM <sub>1-</sub> )	0.006		
		Volatile Organic Compounds (VOC)	0.089		

Berrien County SWMPC Rideshare Program Project Evaluation Year 2022

CMAQ Emissions Calculator Toolkit	Carpooling				
	This	calculator will estimate the reduction in emissions resulting from	om carpooling.		
Navigator		INPUT			
Carpooling					
Vanpooling	(1) What is your proje (2) Are the pick-up/di	ect evaluation year? rop-off locations centralized?	2021		
	(3) What is the p (3b) What is the n (4) What share of con (5) On average, how r (6) What is the averag	45 es based on national averages Input as a percentag 1 Driver not included 25.2 Enter as roundtrip n	ie iileage		
	EMISSION REDUCTIONS				
	Pollutant Total (kg/day) kg/day				
	Carbon Monoxide (CO) 2.80				
		Nitrogen Oxide (NOx)	0.209		
		Particulate Matter <10 μm (PM <sub>10</sub> ) Particulate Matter <2.5 μm (PM <sub>10</sub> )	0.006		
		Volatile Organic Compounds (VOC)	0.089		

Berrien County SWMPC Rideshare Program Project Evaluation Year 2023

CMAQ Emissions Calculator Toolkit	Carpooling				
	This	calculator will estimate the reduction in emissions resulting from	om carpooling.		
Navigator		INPUT			
Carpooling					
Vanpooling	(1) What is your proje (2) Are the pick-up/di	ect evaluation year? rop-off locations centralized?	2021 <sup>IS</sup>		
	(3) Please choose one of the following questions to answer: (3a) What is the population of commuting workers? (3b) What is the number of vehicles participating in the carpool program? (4) What share of commuters participate in pool? (5) On average, how many passengers are there per carpool vehicle? (6) What is the average commute distance? <b>Dutput</b>				
	EMISSION REDUCTIONS				
	Pollutant Total (kg/day) kg/day				
	Carbon Monoxide (CO) 2.802				
		Nitrogen Oxide (NOx)	0.209		
		Particulate Matter <10 μm (PM <sub>10</sub> ) Particulate Matter <2.5 μm (PM <sub>10</sub> )	0.006		
		Volatile Organic Compounds (VOC)	0.089		

## Congestion Mitigation and Air Quality 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	Berrien County Road Commission			
Contact Name	Brian Berndt	Title	County Highway Engineer	
Phone Number	269-925-1196	Email	bberndt@bcroad.org	

Section 2. Project Informat	ion	
Project Name: South Roosevelt Non-Motorized Trail		Fiscal Year of Project: 2021
City/Village/ Township: Lincoln Charter Township		County: Berrien
<b>Project Location</b> (short description of where the project is located)	East side of South Roosevelt Road from Woods Road.	Hidden Pines Drive to Marquette
Which Emissions form is being used? (list the form name not the MDOT form number)	Non-Motorized Pathway	
Work Description (Short description of work being performed. Please provide enough information for eligibility to be determined)	Roosevelt Rd. connects to John Beers Rd Woods Rd. to the north, both Federal Ai to widened shoulders and sidewalks on Rd. from S. Roosevelt to St. Joseph Ave. existing CMAQ funded non-motorized pa completed in 2015, which connects to ex non-motorized pathways on John Beers pathways connect to the Township's ma intersection of Cleveland Ave. and John The proposed project will extend the exis pathway approximately 1,600 feet along north to Marquette Woods Rd. The exis crosses Hickory Creek is not wide enoug traffic, so the proposed project anticipat pedestrian bridge (approximately 60 ft) In addition to the bridge, approximately proposed. The balance of the pathway of	I. to the south and Marquette d roads. The project will connect both sides of Marquette Woods This extension will connect to an athway along Roosevelt Rd. xisting CMAQ funded Rd., completed in 2012. These in commercial district at the Beers Rd. sting 10 ft. wide non-motorized g the east side of Roosevelt Rd. ting bridge on Roosevelt Rd. that h to safely allow for pedestrian ces the need for a separate to be placed over Hickory Creek. 400 ft. of elevated boardwalk is will be HMA paved on grade.

Sponsor				
(If different from Applicant)				
Project Cost	Federal - CMAQ	State	Local	Total
Only include CMAQ eligible expenses	\$281,600	\$	\$115,400	\$397,000

Section 3. Performance measu	ures		
Section 3. Performance measu Besides emissions reductions what other performance measures will the project contribute to? (select all that apply) Safety Pavement Condition System Reliability Transit State of Good Repair	<ul> <li>Sures</li> <li>If you checked any of the Performance Measures please indicate how the project will improve them:</li> <li>This area closes a critical gap between two existing federally funded non-motorized facilities; the sidewalks and widened shoulders on Marquette Woods Ave. and the 10 ft. wide paved trail on S. Roosevelt Rd. Currently, walkers and cyclist are required to use the narrow or non-existent shoulders of S. Roosevelt Rd. They are also required to cross the existing bridge over Hickory Creek which has narrow shoulders and guardrails. A hilly vertical alignment limits site distance on the south end of this section, decreasing motorist's ability to react to</li> </ul>		
Section 4. Additional Question	observed.		
Question	5	Y/N	If Yes, Provide Brief Explanation of How the Application will meet these Criteria
Will the project be ready for obliga 1 of the year in which it's programm	tion by July ned?	Yes 🗌 No	Project to be advanced Constructed in 2019 starting with FY 2019 CMAQ grant
Will this project use multiple funding sources/be combined with another Non-CMAQ project?		Yes 🗌 No	Local Township matching funds
Is the project being carried out by a sponsored agency, or is a private entity providing funding, materials, or services in support of this project?		⊠Yes □No	Lincoln Charter Township is providing the engineering and matching funds for this project.
Does the project require Right of Way (ROW) acquisition or an easement?		Yes 🛛 No	If yes, attach a signed letter from that agency granting permission to implement all or part of this project in their right-of-way.

Section 5. Estimated Project Schedule						
Activity	Estimated Date					
Resolution of Support for Local Match Submitted to SWMPC	01/09/19					
Project Application Submitted to MOT	12/12/19					
Grade Inspection Package Submitted to MDOT	04/08/19					
Grade Inspection Meeting Scheduled	05/08/19					
Final Plan and Estimate to MDOT	06/21/19					
Right of Way (ROW) certified	06/21/19					
Rail Road Permits	NA					
Environmental Mitigation	NA					
Project Obligated	08/06/19					
Project Letting	09/06/19					
Construction Start	10/06/19					
Project Completion	05/30/20					

Enter NA for any activity that doesn't apply to the project.

Please remember to attach the emissions form/toolkit and any supplemental information when you submit the application

PROJECT NAME SOuth Roosevelt Non-Motorized Trail

SUBMITTER

Berrein County Road Commission

FISCAL YEAR 2021

Contact: If you should have any trouble with these worksheets please contact Edward Fowler (517) 241-0171

Line No.	Description of Data Item/Formula	VOC	NOx	со	PM2.5
1	Length of pathway (mi)	0.33	0.33	0.33	0.33
2	Average Daily Traffic (ADT) along impacted roadways	2,045	2,045	2,045	2,045
3	VMT along primary parallel roadway=L1*L2 (mi/day)	674.85	674.85	674.85	674.85
4	Decimal percentage of pedestrian and bicycle travel	35%	35%	35%	35%
5	Total VMT diverted from automotive to pedestrian/ bicycle mode=L3*L4 (mi/day)	236.1975	236.1975	236.1975	236.1975
6	Average speed along impacted roadway(s) (mph)	36	36	36	36
7	Emission factor for speed on L6 (use passenger cars) (g/mi)	0.0871	0.1958	2.2251	0.0147
8	Annual VMT reduction=L5*180 bike/walking days (mi)	42,515.550	42,515.550	42,515.550	42,515.550
9	Annual emission reduction=(L11)*180days (Kg/yr)	-3.703	-8.325	-94.601	-0.625
10	For compairative purpose only: Conversion to Tons/ Year=(L9*.0011Kg)	-0.004	-0.009	-0.104	-0.001
11	Changes in Emissions=(L5*L7)(-1)/1000 (Kg/day)	-0.021	-0.046	-0.526	-0.003
12	Project design life in years (Yrs)	30	30	30	30
13	Total project cost for this application (CMAQ plus Match) (\$)	\$397,000.00	\$397,000.00	\$397,000.00	\$397,000.00
14	Emission reduction over the life of the project=L10*L12 (Tons/Life)	-0.122	-0.275	-3.122	-0.021
15	Emission reduction over the life of the project=(L9*L12) (Kg/Life)	-111.093	-249.736	-2,838.041	-18.749
16	Cost per Ton over the life of the project=(L13/L14) (\$/ Tons/Life)	\$3,248,711.36	\$1,445,160.35	\$127,168.40	\$19,249,044.82
17	Cost per Kilogram over the life of the project=(L13/ L15) (\$/Kg/Life)	\$3,573.58	\$1,589.68	\$139.89	\$21,174.08

COMMENTS

# Table 1: Light Duty Vehicles - Michigan Emission FactorsAnnual Average Weekday Emission Factors - grams/mile\*(Provided by SEMCOG – to be used Statewide)

Rate Type	Light Duty Vehicles Combined, Average of Four Seasons					Seasons										
Service Life	1	-5 years (2	2015-2020)	1	6	-10 years (	2020-2025	$)^2$	11	-15 years	(2025-203	$(0)^{3}$	1	6-20 years (	(2030-2035	$\tilde{p}$
Speed (mph)	VOC	NOx	СО	PM2.5	VOC	NOx	СО	PM2.5	VOC	NOx	СО	PM2.5	VOC	NOx	СО	PM2.5
Off-Network*	0.5766	0.2825	7.0116	0.0098	0.5070	0.2447	6.6763	0.0092	0.4593	0.2222	6.4749	0.0087	0.4263	L 0.2056	6.3449	0.0084
Idling**	2.3058	1.5196	23.0742	0.2484	2.0931	1.3161	21.1765	0.2492	1.9385	1.1909	20.0439	0.2490	1.8352	2 1.1007	19.2697	0.2492
2.5	0.9223	0.6078	9.2297	0.0994	0.8372	0.5265	8.4706	0.0997	0.7754	0.4764	8.0175	0.0996	0.734	0.4403	7.7079	0.0997
5	0.4934	0.4527	5.9773	0.0573	0.4478	0.3910	5.5407	0.0572	0.4148	0.3531	5.2812	0.0570	0.392	8 0.3260	5.1040	0.0569
6	0.4506	0.4359	5.6531	0.0531	0.4088	0.3764	5.2488	0.0529	0.3788	0.3398	5.0086	0.0527	0.358	0.3137	4.8446	0.0526
7	0.4077	0.4192	5.3289	0.0489	0.3699	0.3618	4.9568	0.0487	0.3427	0.3265	4.7360	0.0485	0.324	5 0.3014	4.5852	0.0484
8	0.3648	0.4025	5.0047	0.0447	0.3309	0.3472	4.6648	0.0444	0.3067	0.3132	4.4633	0.0442	0.2904	4 0.2891	4.3258	0.0441
9	0.3219	0.3858	4.6806	0.0405	0.2920	0.3326	4.3729	0.0402	0.2706	0.3000	4.1907	0.0400	0.2563	3 0.2768	4.0664	0.0398
10	0.2790	0.3690	4.3564	0.0363	0.2530	0.3180	4.0809	0.0359	0.2346	0.2867	3.9181	0.0357	0.2222	0.2645	3.8070	0.0355
11	0.2647	0.3624	4.2493	0.0349	0.2400	0.3123	3.9845	0.0345	0.2226	0.2814	3.8281	0.0343	0.2108	3 0.2596	3.7214	0.0341
12	0.2504	0.3557	4.1422	0.0335	0.2271	0.3065	3.8881	0.0331	0.2105	0.2761	3.7381	0.0329	0.199	5 0.2547	3.6358	0.0327
13	0.2361	0.3491	4.0351	0.0321	0.2141	0.3007	3.7917	0.0317	0.1985	0.2709	3.6481	0.0314	0.188	0.2498	3.5502	0.0313
14	0.2219	0.3424	3.9280	0.0307	0.2011	0.2949	3.6953	0.0303	0.1865	0.2656	3.5581	0.0300	0.1/6	0.2450	3.4646	0.0299
15	0.2076	0.3338	3.8209	0.0293	0.1813	0.2891	3.5989	0.0289	0.1745	0.2603	3.4081	0.0280	0.165	0.2401	3.3790	0.0284
10	0.2001	0.3314	3.7369	0.0283	0.1813	0.2835	3.3229	0.0280	0.1610	0.2509	3 3 3 3 3 3	0.0278	0.159	0.2309	3.3090	0.0270
17	0.1920	0.3270	3.0309	0.0270	0.1743	0.2813	3.4409	0.0272	0.1019	0.2334	3 2508	0.0270	0.135	1 0.2330	3 1689	0.0208
10	0.1351	0.3227	3 4930	0.0208	0.1609	0.2778	3 2950	0.0204	0.1333	0.2499	3 1783	0.0201	0.1414	0.2304	3.0989	0.0255
20	0.1701	0.3139	3.4110	0.0251	0.1541	0.2700	3.2191	0.0247	0.1429	0.2430	3.1059	0.0245	0.1354	0.2240	3.0289	0.0243
21	0.1649	0.3104	3.3034	0.0243	0.1493	0.2669	3.1165	0.0240	0.1385	0.2402	3.0060	0.0237	0.1312	2 0.2214	2.9309	0.0236
22	0.1598	0.3068	3.1958	0.0235	0.1446	0.2638	3.0140	0.0232	0.1341	0.2374	2.9061	0.0230	0.1270	0.2187	2.8330	0.0228
23	0.1546	0.3033	3.0882	0.0228	0.1399	0.2607	2.9114	0.0224	0.1297	0.2345	2.8063	0.0223	0.1228	8 0.2161	2.7350	0.0221
24	0.1494	0.2998	2.9806	0.0220	0.1352	0.2576	2.8088	0.0217	0.1253	0.2317	2.7064	0.0215	0.118	0.2134	2.6370	0.0214
25	0.1442	0.2962	2.8730	0.0212	0.1304	0.2545	2.7063	0.0209	0.1209	0.2289	2.6066	0.0208	0.114	5 0.2108	2.5391	0.0207
26	0.1406	0.2912	2.8449	0.0205	0.1272	0.2505	2.6820	0.0203	0.1179	0.2254	2.5845	0.0201	0.111	6 0.2078	2.5186	0.0200
27	0.1370	0.2862	2.8168	0.0199	0.1239	0.2465	2.6578	0.0196	0.1149	0.2220	2.5625	0.0195	0.108	8 0.2048	2.4981	0.0194
28	0.1333	0.2812	2.7886	0.0192	0.1206	0.2425	2.6335	0.0190	0.1119	0.2186	2.5405	0.0188	0.106	0.2018	2.4776	0.0187
29	0.1297	0.2763	2.7605	0.0186	0.1174	0.2384	2.6093	0.0183	0.1089	0.2151	2.5185	0.0182	0.1032	0.1988	2.4571	0.0181
30	0.1261	0.2713	2.7324	0.0179	0.1141	0.2344	2.5850	0.0177	0.1059	0.2117	2.4965	0.0175	0.1004	4 0.1957	2.4366	0.0174
31	0.1233	0.2706	2.6915	0.0175	0.1115	0.2340	2.5466	0.0172	0.1035	0.2115	2.4597	0.0171	0.098	0.1957	2.4008	0.0170
32	0.1204	0.2699	2.6506	0.0170	0.1090	0.2336	2.5083	0.0167	0.1011	0.2113	2.4228	0.0166	0.0958	3 0.1956	2.3650	0.0165
33	0.1176	0.2693	2.6097	0.0165	0.1064	0.2333	2.4699	0.0162	0.0987	0.2111	2.3860	0.0161	0.093	0.1955	2.3291	0.0160
34	0.1148	0.2680	2.5088	0.0160	0.1038	0.2329	2.4315	0.0158	0.0963	0.2109	2.3492	0.0156	0.091	0.1955	2.2933	0.0155
35	0.1120	0.2679	2.3279	0.0151	0.1012	0.2323	2.3931	0.0133	0.0939	0.2107	2.5125	0.0131	0.087	0.1954	2.2374	0.0130
30	0.1076	0.2682	2.4560	0.0131	0.0973	0.2320	2.3370	0.0145	0.0920	0.2110	2.2463	0.0140	0.0854	1 0.1950	2.2231	0.0147
38	0.1055	0.2684	2.4200	0.0144	0.0953	0.2333	2.2906	0.0142	0.0883	0.2117	2.2133	0.0141	0.083	0.1962 5 0.1966	2.1605	0.0140
39	0.1033	0.2685	2.3841	0.0140	0.0933	0.2335	2.2565	0.0138	0.0864	0.2121	2.1802	0.0137	0.081	3 0.1970	2.1282	0.0136
40	0.1012	0.2687	2.3481	0.0137	0.0913	0.2338	2.2223	0.0135	0.0846	0.2124	2.1472	0.0133	0.0800	0.1974	2.0959	0.0132
41	0.0996	0.2692	2.3271	0.0134	0.0898	0.2344	2.2026	0.0132	0.0832	0.2130	2.1282	0.0131	0.078	3 0.1980	2.0774	0.0130
42	0.0980	0.2698	2.3061	0.0131	0.0884	0.2350	2.1828	0.0129	0.0819	0.2136	2.1093	0.0128	0.077	5 0.1986	2.0589	0.0127
43	0.0964	0.2703	2.2851	0.0129	0.0869	0.2355	2.1631	0.0127	0.0805	0.2142	2.0903	0.0125	0.0762	0.1993	2.0404	0.0124
44	0.0948	0.2709	2.2641	0.0126	0.0855	0.2361	2.1433	0.0124	0.0792	0.2148	2.0713	0.0123	0.0749	0.1999	2.0219	0.0122
45	0.0933	0.2714	2.2431	0.0123	0.0841	0.2367	2.1236	0.0121	0.0778	0.2154	2.0523	0.0120	0.073	5 0.2005	2.0034	0.0119
46	0.0922	0.2727	2.2379	0.0121	0.0831	0.2379	2.1192	0.0119	0.0769	0.2165	2.0484	0.0118	0.072	0.2016	1.9997	0.0117
47	0.0911	0.2740	2.2328	0.0119	0.0821	0.2391	2.1148	0.0117	0.0760	0.2177	2.0444	0.0116	0.0719	0.2027	1.9960	0.0115
48	0.0900	0.2753	2.2276	0.0117	0.0811	0.2403	2.1103	0.0115	0.0750	0.2188	2.0404	0.0114	0.0710	0.2038	1.9923	0.0113
49	0.0889	0.2765	2.2224	0.0115	0.0801	0.2414	2.1059	0.0114	0.0741	0.2199	2.0365	0.0112	0.070	0.2049	1.9886	0.0111
50	0.0879	0.2778	2.2172	0.0113	0.0791	0.2426	2.1015	0.0112	0.0732	0.2211	2.0325	0.0110	0.0692	2 0.2060	1.9849	0.0110
52	0.08/1	0.2793	2.2214	0.0112	0.0784	0.2440	2.1061	0.0110	0.0726	0.2224	2.0372	0.0109	0.068	0.2072	1.9898	0.0108
52	0.0804	0.2008	2.2233	0.0110	0.0778	0.2434	2.1100	0.0109	0.0720	0.2237	2.0420	0.0108	0.008	5 0.2007	1.9940	0.0107
54	0.0850	0.2838	2.2290	0.0109	0.0765	0.2407	2.1197	0.0107	0.0708	0.2250	2.0407	0.0106	0.007.	0.2097	2.0043	0.0105
55	0.0842	0.2853	2.2378	0.0109	0.0758	0.2495	2.1242	0.0106	0.0702	0.2205	2.0562	0.0105	0.0664	4 0.2112	2.0043	0.0103
56	0.0838	0.2870	2.2512	0.0107	0.0754	0.2511	2.1377	0.0106	0.0698	0.2291	2.0697	0.0104	0.066	0.2137	2.0226	0.0103
57	0.0834	0.2887	2.2646	0.0107	0.0751	0.2526	2.1512	0.0105	0.0695	0.2305	2.0832	0.0104	0.065	0.2151	2.0360	0.0103
58	0.0830	0.2904	2.2780	0.0107	0.0747	0.2542	2.1648	0.0105	0.0692	0.2320	2.0966	0.0103	0.0654	4 0.2165	2.0495	0.0103
59	0.0826	0.2921	2.2914	0.0106	0.0743	0.2558	2.1783	0.0104	0.0688	0.2335	2.1101	0.0103	0.065	0.2179	2.0629	0.0102
60	0.0822	0.2939	2.3048	0.0106	0.0740	0.2574	2.1918	0.0104	0.0685	0.2350	2.1236	0.0103	0.0648	0.2194	2.0764	0.0102
61	0.0822	0.2965	2.3295	0.0106	0.0740	0.2598	2.2163	0.0104	0.0685	0.2374	2.1480	0.0103	0.0648	3 0.2217	2.1006	0.0102
62	0.0822	0.2992	2.3542	0.0106	0.0740	0.2623	2.2409	0.0104	0.0686	0.2398	2.1724	0.0103	0.0649	0.2240	2.1249	0.0102
63	0.0822	0.3019	2.3789	0.0106	0.0740	0.2648	2.2654	0.0104	0.0686	0.2422	2.1968	0.0103	0.0650	0.2263	2.1492	0.0102
64	0.0822	0.3046	2.4036	0.0106	0.0741	0.2673	2.2899	0.0104	0.0687	0.2445	2.2212	0.0103	0.0650	0.2286	2.1735	0.0102
65	0.0822	0.3072	2.4283	0.0106	0.0741	0.2698	2.3144	0.0104	0.0687	0.2469	2.2456	0.0103	0.065	0.2309	2.1978	0.0102

### FY 2021 – CMAQ Application South Roosevelt Rd. Non-Motorized Trail Lincoln Charter Township

**FY2019 CMAQ GRANT**– A CMAQ Grant for FY 2019 has been awarded for this project. Since that application was submitted, detailed soil borings have been taken that identified the presence of organic and loose soils resulting in the need for a longer boardwalk section and the need for deeper and more frequent support members in order to meet the required loadings.

**SERVICE AREAS** - Approximately 230 existing residential properties adjacent to or connecting with Roosevelt Rd. and Marquette Woods Rd. will be directly served by the proposed improvements. As this is in the center of a larger residential area, many more residences have the potential to use this facility as well. This includes residences along both Roosevelt Rd. and Marquette Woods Rd. Currently, pedestrians on Roosevelt Rd. cannot safely get to the new sidewalks and widened shoulders on Marquette Woods Rd. that connect to the new Meijer facility. Likewise, pedestrians on Marquette Woods Rd. cannot safely access the Township offices or library on Roosevelt Rd. or the commercial district at the John Beers Rd. / Cleveland Avenue intersection. (see attached map).

**DESTINATION AREAS** - The proposed extension will allow access to jobs, services and retail businesses. The extension will connect the existing non-motorized pathway to Marquette Woods Rd., a federal aide road that was recently upgraded from Roosevelt Rd. west to St. Joseph Avenue to include widened paved shoulders and 6 ft. sidewalks on both sides of the road. This link will provide the residential units in the area with direct pedestrian access to the new Meijer store at the St. Joseph Street. and Marquette Woods Rd. intersection as well as the public facilities (library, Township Hall), restaurants, a large shopping center, post office, and several smaller commercial businesses located on John Beers Rd. and Cleveland Avenue intersection. Some of the businesses in this area include Martin's grocery, Walgreens, Ace Hardware, two banks, an exercise facility, a video rental store, post office, restaurants, office buildings and a convenience store/gas station. In addition, Lakeshore Public High School is located at this intersection.

**LAND USES** - The land uses surrounding the path are primarily residential, connecting to commercial areas on both the NW and SE side. (See attached map).

**CONNECTIONS TO OTHER NON-MOTORIZED PATHS** - As shown on the attached map, Roosevelt Rd. connects to John Beers Rd. to the south and Marquette Woods Rd. to the north, both Federal Aid roads. The project will connect to widened shoulders and sidewalks on both sides of Marquette Woods Rd. from S. Roosevelt Rd. to St. Joseph Ave. This extension will connect to an existing CMAQ funded non-motorized pathway along Roosevelt Road completed in 2015, which connects to existing CMAQ funded nonmotorized pathways on John Beers Rd., completed in 2012. These pathways connect to the Township's main commercial district at the intersection of Cleveland Ave. and John Beers Rd.



## Congestion Mitigation and Air Quality 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	Berrien County Road Commission							
Contact Name	Brian Berndt	Title	County Highway Enginee					
Phone Number	269-925-1196	Email	bberndt@bcroad.org					

Section 2. Project Informat	ion			
Project Name: W. John Beers W	roject: 2023			
City/Village/ Township: Lincoln	County: Berrier	า		
Project Location	North and south s	ides of W. John Beer	s Rd. from S. Roos	evelt Rd. to
(short description of where the	Demorrow Rd. in	Lincoln Township, Be	rrien County, MI.	
project is located)				
Which Emissions form is being	Non-Motorized Pa	athway		
used? (list the form name not				
the MDOT form number)				
Work Description	Extension of exist	ing walkways that w	ere placed on bot	h the north and
performed. Please provide enough	south sides of W.	John Beers Rd. in 201	L2 using CMAQ gra	ant. Work
information for eligibility to be	walls drainage in	on of 6 ft. wide concr	ete paths, A.D.A. I	ct to ovisting
determined)	sidewalks at Dem	orrow Rd at the bor	ler with the Villag	e of Stevensville
	Total length of the	e project is approxim	ately 2.560 feet (!	5.120 feet of
	walkway)			
Sponsor				
(If different from Applicant)				
Project Cost	Federal - CMAQ	State	Local	Total
Only include CMAQ eligible expenses	\$400,000	\$	\$400,000	\$800,000

Section 3. Performance measu Besides emissions reductions what other performance measures will the project contribute to? (select all that apply) Safety Pavement Condition System Reliability Transit State of Good Repair	If you checked any of the Performance Measures please indicate how the project will improve them: The proposed project closes a critical 2,500 ft. gap between the existing sidewalks in the Village of Stevensville west of S. Roosevelt Rd. and the existing federally funded non-motorized facilities on John Beers Rd. and S. Roosevelt Rd. Currently, pedestrians and cyclist must share the 4 ft. widened shoulders which are not wide enough for safe travel by both types of users onthis route, posted at 40 mph. This is particularly of concern in the winter months, when the full width of the shoulders may not be available due to snowfall.					
Section 4. Additional Question Question	15	Y/N	If Yes, Provide Brief Explanation of How the Application will meet these Criteria			
Will the project be ready for obliga 1 of the year in which it's program	tion by July ned?	Yes 🗌 No	Project wil be designed well in advance of the grant fiscal year.			
Will this project use multiple fundi sources/be combined with another project?	ng <sup>r</sup> Non-CMAQ	Yes No	Local Township matching funds			
Is the project being carried out by a agency, or is a private entity provid materials, or services in support of	a sponsored ling funding, this project?	Yes 🗌 No	Lincoln Charter Township is providing the engineering and matching funds for this project.			
Does the project require Right of W acquisition or an easement?	/ay (ROW)	☐Yes ⊠No	If yes, attach a signed letter from that agency granting permission to implement all or part of this project in their right-of-way.			

Section 5. Estimated Project Schedule						
Activity	Estimated Date					
Resolution of Support for Local Match Submitted to SWMPC	September 2022					
Project Application Submitted to MOT	October 2022					
Grade Inspection Package Submitted to MDOT	November 2022					
Grade Inspection Meeting Scheduled	December 2022					
Final Plan and Estimate to MDOT	January 2023					
Right of Way (ROW) certified	January 2023					

Rail Road Permits	NA
Environmental Mitigation	NA
Project Obligated	March 2023
Project Letting	April 2023
Construction Start	May 2023
Project Completion	July 2023

Enter NA for any activity that doesn't apply to the project.

Please remember to attach the emissions form/toolkit and any supplemental information when you submit the application

#### PROJECT NAME

W. John Beers Road Non-Motorized 6 ft. Pathway - Roosevelt Rd. to Demorrow Rd. SUBMITTER

#### FISCAL YEAR

2023

 $\textbf{Contact:} \ \ \text{If you should have any trouble with these worksheets please contact Edward Fowler (517) 241-0171}$ 

Line No.	Description of Data Item/Formula	voc	NOx	со	PM2.5
1	Length of pathway (mi)	0.47	0.47	0.47	0.47
2	Average Daily Traffic (ADT) along impacted roadways	7,480	7,480	7,480	7,480
3	VMT along primary parallel roadway=L1*L2 (mi/day)	3,515.6	3,515.6	3,515.6	3,515.6
4	Decimal percentage of pedestrian and bicycle travel	35%	35%	35%	35%
5	Total VMT diverted from automotive to pedestrian/ bicycle mode=L3*L4 (mi/day)	1,230.46	1,230.46	1,230.46	1,230.46
6	Average speed along impacted roadway(s) (mph)	40	40	40	40
7	Emission factor for speed on L6 (use passenger cars) (g/mi)	0.0871	0.1958	2.2251	0.0147
8	Annual VMT reduction=L5*180 bike/walking days (mi)	221,482.800	221,482.800	221,482.800	221,482.800
9	Annual emission reduction=(L11)*180days (Kg/yr)	-19.291	-43.366	-492.821	-3.256
10	For compairative purpose only: Conversion to Tons/ Year=(L9*.0011Kg)	-0.021	-0.048	-0.542	-0.004
11	Changes in Emissions=(L5*L7)(-1)/1000 (Kg/day)	-0.107	-0.241	-2.738	-0.018
12	Project design life in years (Yrs)	30	30	30	30
13	Total project cost for this application (CMAQ plus Match) (\$)	\$800,000.00	\$800,000.00	\$800,000.00	\$800,000.00
14	Emission reduction over the life of the project=L10*L12 (Tons/Life)	-0.637	-1.431	-16.263	-0.107
15	Emission reduction over the life of the project=(L9*L12) (Kg/Life)	-578.735	-1,300.990	-14,784.641	-97.674
16	Cost per Ton over the life of the project=(L13/L14) (\$/ Tons/Life)	\$1,256,660.10	\$559,014.81	\$49,191.10	\$7,445,919.36
17	Cost per Kilogram over the life of the project=(L13/ L15) (\$/Kg/Life)	\$1,382.33	\$614.92	\$54.11	\$8,190.52

COMMENTS

# Table 1: Light Duty Vehicles - Michigan Emission FactorsAnnual Average Weekday Emission Factors - grams/mile\*(Provided by SEMCOG – to be used Statewide)

Rate Type	Light Duty Vehicles Combined, Average of Four Seasons					Seasons										
Service Life	1	-5 years (2	2015-2020)	1	6	-10 years (	2020-2025	$)^2$	11	-15 years	(2025-203	$(0)^{3}$	1	6-20 years (	(2030-2035	$\tilde{p}$
Speed (mph)	VOC	NOx	СО	PM2.5	VOC	NOx	СО	PM2.5	VOC	NOx	СО	PM2.5	VOC	NOx	СО	PM2.5
Off-Network*	0.5766	0.2825	7.0116	0.0098	0.5070	0.2447	6.6763	0.0092	0.4593	0.2222	6.4749	0.0087	0.4263	L 0.2056	6.3449	0.0084
Idling**	2.3058	1.5196	23.0742	0.2484	2.0931	1.3161	21.1765	0.2492	1.9385	1.1909	20.0439	0.2490	1.8352	2 1.1007	19.2697	0.2492
2.5	0.9223	0.6078	9.2297	0.0994	0.8372	0.5265	8.4706	0.0997	0.7754	0.4764	8.0175	0.0996	0.734	0.4403	7.7079	0.0997
5	0.4934	0.4527	5.9773	0.0573	0.4478	0.3910	5.5407	0.0572	0.4148	0.3531	5.2812	0.0570	0.392	8 0.3260	5.1040	0.0569
6	0.4506	0.4359	5.6531	0.0531	0.4088	0.3764	5.2488	0.0529	0.3788	0.3398	5.0086	0.0527	0.358	0.3137	4.8446	0.0526
7	0.4077	0.4192	5.3289	0.0489	0.3699	0.3618	4.9568	0.0487	0.3427	0.3265	4.7360	0.0485	0.324	5 0.3014	4.5852	0.0484
8	0.3648	0.4025	5.0047	0.0447	0.3309	0.3472	4.6648	0.0444	0.3067	0.3132	4.4633	0.0442	0.2904	4 0.2891	4.3258	0.0441
9	0.3219	0.3858	4.6806	0.0405	0.2920	0.3326	4.3729	0.0402	0.2706	0.3000	4.1907	0.0400	0.2563	3 0.2768	4.0664	0.0398
10	0.2790	0.3690	4.3564	0.0363	0.2530	0.3180	4.0809	0.0359	0.2346	0.2867	3.9181	0.0357	0.2222	0.2645	3.8070	0.0355
11	0.2647	0.3624	4.2493	0.0349	0.2400	0.3123	3.9845	0.0345	0.2226	0.2814	3.8281	0.0343	0.2108	3 0.2596	3.7214	0.0341
12	0.2504	0.3557	4.1422	0.0335	0.2271	0.3065	3.8881	0.0331	0.2105	0.2761	3.7381	0.0329	0.199	5 0.2547	3.6358	0.0327
13	0.2361	0.3491	4.0351	0.0321	0.2141	0.3007	3.7917	0.0317	0.1985	0.2709	3.6481	0.0314	0.188	0.2498	3.5502	0.0313
14	0.2219	0.3424	3.9280	0.0307	0.2011	0.2949	3.6953	0.0303	0.1865	0.2656	3.5581	0.0300	0.1/6	0.2450	3.4646	0.0299
15	0.2076	0.3338	3.8209	0.0293	0.1813	0.2891	3.5989	0.0289	0.1745	0.2603	3.4081	0.0280	0.165	0.2401	3.3790	0.0284
10	0.2001	0.3314	3.7369	0.0283	0.1813	0.2835	3.3229	0.0280	0.1610	0.2509	3 3 3 3 3 3	0.0278	0.159	0.2309	3.3090	0.0270
17	0.1920	0.3270	3.0309	0.0270	0.1743	0.2813	3.4409	0.0272	0.1019	0.2334	3 2508	0.0270	0.135	1 0.2330	3 1689	0.0208
10	0.1351	0.3227	3 4930	0.0208	0.1609	0.2778	3 2950	0.0204	0.1333	0.2499	3 1783	0.0201	0.1414	0.2304	3.0989	0.0255
20	0.1701	0.3139	3.4110	0.0251	0.1541	0.2700	3.2191	0.0247	0.1429	0.2430	3.1059	0.0245	0.1354	0.2240	3.0289	0.0243
21	0.1649	0.3104	3.3034	0.0243	0.1493	0.2669	3.1165	0.0240	0.1385	0.2402	3.0060	0.0237	0.1312	2 0.2214	2.9309	0.0236
22	0.1598	0.3068	3.1958	0.0235	0.1446	0.2638	3.0140	0.0232	0.1341	0.2374	2.9061	0.0230	0.1270	0.2187	2.8330	0.0228
23	0.1546	0.3033	3.0882	0.0228	0.1399	0.2607	2.9114	0.0224	0.1297	0.2345	2.8063	0.0223	0.1228	8 0.2161	2.7350	0.0221
24	0.1494	0.2998	2.9806	0.0220	0.1352	0.2576	2.8088	0.0217	0.1253	0.2317	2.7064	0.0215	0.118	0.2134	2.6370	0.0214
25	0.1442	0.2962	2.8730	0.0212	0.1304	0.2545	2.7063	0.0209	0.1209	0.2289	2.6066	0.0208	0.114	5 0.2108	2.5391	0.0207
26	0.1406	0.2912	2.8449	0.0205	0.1272	0.2505	2.6820	0.0203	0.1179	0.2254	2.5845	0.0201	0.111	6 0.2078	2.5186	0.0200
27	0.1370	0.2862	2.8168	0.0199	0.1239	0.2465	2.6578	0.0196	0.1149	0.2220	2.5625	0.0195	0.108	8 0.2048	2.4981	0.0194
28	0.1333	0.2812	2.7886	0.0192	0.1206	0.2425	2.6335	0.0190	0.1119	0.2186	2.5405	0.0188	0.106	0.2018	2.4776	0.0187
29	0.1297	0.2763	2.7605	0.0186	0.1174	0.2384	2.6093	0.0183	0.1089	0.2151	2.5185	0.0182	0.1032	0.1988	2.4571	0.0181
30	0.1261	0.2713	2.7324	0.0179	0.1141	0.2344	2.5850	0.0177	0.1059	0.2117	2.4965	0.0175	0.1004	4 0.1957	2.4366	0.0174
31	0.1233	0.2706	2.6915	0.0175	0.1115	0.2340	2.5466	0.0172	0.1035	0.2115	2.4597	0.0171	0.098	0.1957	2.4008	0.0170
32	0.1204	0.2699	2.6506	0.0170	0.1090	0.2336	2.5083	0.0167	0.1011	0.2113	2.4228	0.0166	0.0958	3 0.1956	2.3650	0.0165
33	0.1176	0.2693	2.6097	0.0165	0.1064	0.2333	2.4699	0.0162	0.0987	0.2111	2.3860	0.0161	0.093	0.1955	2.3291	0.0160
34	0.1148	0.2680	2.5088	0.0160	0.1038	0.2329	2.4315	0.0158	0.0963	0.2109	2.3492	0.0156	0.091	0.1955	2.2933	0.0155
35	0.1120	0.2679	2.3279	0.0151	0.1012	0.2323	2.3931	0.0133	0.0939	0.2107	2.5125	0.0131	0.087	0.1954	2.2374	0.0130
30	0.1076	0.2682	2.4560	0.0131	0.0973	0.2320	2.3370	0.0145	0.0920	0.2110	2.2463	0.0140	0.0854	1 0.1950	2.2231	0.0147
38	0.1055	0.2684	2.4200	0.0144	0.0953	0.2333	2.2906	0.0142	0.0883	0.2117	2.2133	0.0141	0.083	0.1962 5 0.1966	2.1605	0.0140
39	0.1033	0.2685	2.3841	0.0140	0.0933	0.2335	2.2565	0.0138	0.0864	0.2121	2.1802	0.0137	0.081	3 0.1970	2.1282	0.0136
40	0.1012	0.2687	2.3481	0.0137	0.0913	0.2338	2.2223	0.0135	0.0846	0.2124	2.1472	0.0133	0.0800	0.1974	2.0959	0.0132
41	0.0996	0.2692	2.3271	0.0134	0.0898	0.2344	2.2026	0.0132	0.0832	0.2130	2.1282	0.0131	0.078	3 0.1980	2.0774	0.0130
42	0.0980	0.2698	2.3061	0.0131	0.0884	0.2350	2.1828	0.0129	0.0819	0.2136	2.1093	0.0128	0.077	5 0.1986	2.0589	0.0127
43	0.0964	0.2703	2.2851	0.0129	0.0869	0.2355	2.1631	0.0127	0.0805	0.2142	2.0903	0.0125	0.0762	0.1993	2.0404	0.0124
44	0.0948	0.2709	2.2641	0.0126	0.0855	0.2361	2.1433	0.0124	0.0792	0.2148	2.0713	0.0123	0.0749	0.1999	2.0219	0.0122
45	0.0933	0.2714	2.2431	0.0123	0.0841	0.2367	2.1236	0.0121	0.0778	0.2154	2.0523	0.0120	0.073	5 0.2005	2.0034	0.0119
46	0.0922	0.2727	2.2379	0.0121	0.0831	0.2379	2.1192	0.0119	0.0769	0.2165	2.0484	0.0118	0.072	0.2016	1.9997	0.0117
47	0.0911	0.2740	2.2328	0.0119	0.0821	0.2391	2.1148	0.0117	0.0760	0.2177	2.0444	0.0116	0.0719	0.2027	1.9960	0.0115
48	0.0900	0.2753	2.2276	0.0117	0.0811	0.2403	2.1103	0.0115	0.0750	0.2188	2.0404	0.0114	0.0710	0.2038	1.9923	0.0113
49	0.0889	0.2765	2.2224	0.0115	0.0801	0.2414	2.1059	0.0114	0.0741	0.2199	2.0365	0.0112	0.070	0.2049	1.9886	0.0111
50	0.0879	0.2778	2.2172	0.0113	0.0791	0.2426	2.1015	0.0112	0.0732	0.2211	2.0325	0.0110	0.0692	2 0.2060	1.9849	0.0110
52	0.08/1	0.2793	2.2214	0.0112	0.0784	0.2440	2.1061	0.0110	0.0726	0.2224	2.0372	0.0109	0.068	0.2072	1.9898	0.0108
52	0.0804	0.2008	2.2233	0.0110	0.0778	0.2434	2.1100	0.0109	0.0720	0.2237	2.0420	0.0108	0.008	5 0.2007	1.9940	0.0107
54	0.0850	0.2838	2.2290	0.0109	0.0765	0.2407	2.1197	0.0107	0.0708	0.2250	2.0407	0.0106	0.007.	0.2097	2.0043	0.0105
55	0.0842	0.2853	2.2378	0.0109	0.0758	0.2495	2.1242	0.0106	0.0702	0.2205	2.0562	0.0105	0.0664	4 0.2112	2.0043	0.0103
56	0.0838	0.2870	2.2512	0.0107	0.0754	0.2511	2.1377	0.0106	0.0698	0.2291	2.0697	0.0104	0.066	0.2137	2.0226	0.0103
57	0.0834	0.2887	2.2646	0.0107	0.0751	0.2526	2.1512	0.0105	0.0695	0.2305	2.0832	0.0104	0.065	0.2151	2.0360	0.0103
58	0.0830	0.2904	2.2780	0.0107	0.0747	0.2542	2.1648	0.0105	0.0692	0.2320	2.0966	0.0103	0.0654	4 0.2165	2.0495	0.0103
59	0.0826	0.2921	2.2914	0.0106	0.0743	0.2558	2.1783	0.0104	0.0688	0.2335	2.1101	0.0103	0.065	0.2179	2.0629	0.0102
60	0.0822	0.2939	2.3048	0.0106	0.0740	0.2574	2.1918	0.0104	0.0685	0.2350	2.1236	0.0103	0.0648	0.2194	2.0764	0.0102
61	0.0822	0.2965	2.3295	0.0106	0.0740	0.2598	2.2163	0.0104	0.0685	0.2374	2.1480	0.0103	0.0648	3 0.2217	2.1006	0.0102
62	0.0822	0.2992	2.3542	0.0106	0.0740	0.2623	2.2409	0.0104	0.0686	0.2398	2.1724	0.0103	0.0649	0.2240	2.1249	0.0102
63	0.0822	0.3019	2.3789	0.0106	0.0740	0.2648	2.2654	0.0104	0.0686	0.2422	2.1968	0.0103	0.0650	0.2263	2.1492	0.0102
64	0.0822	0.3046	2.4036	0.0106	0.0741	0.2673	2.2899	0.0104	0.0687	0.2445	2.2212	0.0103	0.0650	0.2286	2.1735	0.0102
65	0.0822	0.3072	2.4283	0.0106	0.0741	0.2698	2.3144	0.0104	0.0687	0.2469	2.2456	0.0103	0.065	0.2309	2.1978	0.0102

### FY 2023 – CMAQ Application W. John Beers Rd. – Nonmotorized pathways – S. Roosevelt Rd. to Demorrow Rd. Lincoln Charter Township

### Additional information which may contribute to assessment:

**SERVICE AREAS** - Approximately 700 existing residential properties are adjacent to or connect with the proposed walkways on John Beers Rd. between S. Roosevelt Rd. and Demorrow Rd. As this is will connect to existing walkways to the east and west, many more residences have the potential to use this facility as well. (see attached map)

**DESTINATION AREAS** - The proposed extension will allow access to jobs, services and retail businesses. The extension will connect the existing non-motorized pathways on S. Roosevelt Rd. and John Beers Rd. to the commercial and public facilities within the Village of Stevensville. Likewise this link will provide residents from the Village and east of Demorrow Rd. with direct pedestrian access to the public facilities (library, Township Hall), restaurants, a large shopping center, post office, and several smaller commercial businesses located on John Beers Rd. and Cleveland Avenue intersection. Some of the businesses in this area include Martins grocery, Walgreens, Ace Hardware, two banks, an exercise facility, a video rental store, post office, restaurants, office buildings and a convenience store/gas station. In addition, Lakeshore Public High School is located at this intersection.

**LAND USES** - The land uses surrounding the path are primarily residential, connecting to commercial area on both the NW and SE side. (See attached map).

**CONNECTIONS TO OTHER NON-MOTORIZED PATHS -** As shown on the attached map, this link will connect to the existing 2012 CMAQ funded non-motorized pathways on John Beers Rd. In addition, it will connect with the existing non-motorized pathways on S. Roosevelt Road that include a 2015 CMAQ funded pathway and the planned 2019 CMAQ extension that connects to Marquette Woods Rd. Roosevelt Rd. connects to John Beers Rd. to the south and Marquette Woods Rd. to the north, both Federal Aid roads.

**ESTIMATED COST** - The estimated cost for this project is \$730,000 including engineering. This includes a 6 ft. wide concrete pathway, approximately 2,800 sq. ft. of retaining wall, 16 A.D.A. ramps, two large culvert extensions ,numerous tree removals, relocation of existing hydrants, phone junction boxes, driveway aprons, placement of leech basins, and allowances for restoration.



## Congestion Mitigation and Air Quality 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	Berrien County Road Department							
Contact Name	Brian Berndt	Title	County Highway Engineer					
Phone Number	269 925 1196 ext 4407	Email	bberndt@bcroad.org					

Section 2. Project Information					
Project Name: Napier Avenue Non-Motorized Path - Miami to Colfax Fiscal Year of Project					
City/Village/ Township: St. Joser	bh Charter Township	County: Berrien			
Project Location (short description of where the project is located)	Napier Avenue between Miami Road and Colfax Avenue, approximately 3,850 feet in length				
Which Emissions form is being used? (list the form name not the MDOT form number)	MDOT Form 2621				
Work Description (Short description of work being performed. Please provide enough information for eligibility to be determined)	Installation of 6' wide non-motorized par and south sides of Napier Avenue betwe Avenue. The project connects to existing recommedations of the "near term proje improvements contained in the "Napier Final Report" (Final Report). The BCRD is recommendations to implement a Road of its funded/planned 2019 mill and resu further enhance the reductions on vehic attached Final Report which includes ass location of the proposed paths, details th demonstrates how this segment is critica services, and centers of trade, and outlin existing and proposed/future non-motor this application's very real reductions to proximity to the medical, residential, bus vicinity.	thways and crossings on the north en Miami Road and Colfax g paths and is in concert with the ect" and highest priority Avenue Pedestrian & Bicycle Plan, s also considering the Final Report Diet in this road segment as part urfacing project, which would even le trips and emissions. See sociated maps detailing the he surrounding land uses, al to providing access to jobs, nes other interconnection to both rized paths, all of which solidify vehicle trips and emissions given siness and educational uses in the			
Sponsor (If different from Applicant)					

Project Cost	Federal - CMAQ	State	Local	Total
Only include CMAQ eligible expenses	\$400,000	\$0	\$100,000	\$500,000

	ILAC		
Besides emissions reductions what other performance measures will the project contribute to? <i>(select all that</i> <i>apply)</i> Safety Pavement Condition System Reliability Transit State of Good Repair	If you checked any of the Performance Measures please indicate how the project will improve them: Existing tree lawn wear patterns clearly indicate pedestrians already walk this route (in the complete absence of safe infrastructure) among the various destinations, whether the hospital, adjacent residential areas, or Colfax district businesses. By providing a solid, well-designated/defined, and marked pathway with crosswalks, both existing and additional pedestrians/users will be more clearly guarded against and recognized by vehicular traffic, thereby minimizing incidents and increasing safety.		
Section 4. Additional Question	าร		
Oursetten			
Question		Y/N	If Yes, Provide Brief Explanation of How the Application will meet these Criteria
Will the project be ready for obliga 1 of the year in which it's program	ition by July med?	Y/N ⊠Yes □No	If Yes, Provide Brief Explanation of How the Application will meet these Criteria Once funded, more than sufficient time is available to design the project and obtain needed approvals/acquisitions
Will the project be ready for obliga 1 of the year in which it's program Will this project use multiple fundi sources/be combined with another project?	ntion by July med? ng r Non-CMAQ	Y/N ⊠Yes □No	If Yes, Provide Brief Explanation of How the Application will meet these Criteria Once funded, more than sufficient time is available to design the project and obtain needed approvals/acquisitions St. Joseph Charter Township funds for non- motorized pathway improvements and coupled with BCRD LAP/TIP funds for mill and resurfacing in the same roadway segment

Yes No

If yes, attach a signed letter from that agency granting permission to implement all or part of this project in their right-of-way.

Section 5. Estimated Project Schedule	
Activity	Estimated Date
Resolution of Support for Local Match Submitted to SWMPC	December 12, 2018
Project Application Submitted to MOT	March, 2019
Grade Inspection Package Submitted to MDOT	October, 2019
Grade Inspection Meeting Scheduled	December 2019
Final Plan and Estimate to MDOT	March, 2020
Right of Way (ROW) certified	September, 2020
Rail Road Permits	NA
Environmental Mitigation	September, 2020
Project Obligated	November, 2020
Project Letting	January, 2021
Construction Start	April, 2021
Project Completion	July, 2021

Enter NA for any activity that doesn't apply to the project.

Please remember to attach the emissions form/toolkit and any supplemental information when you submit the application

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#### December 12, 2018

## Twin Cities Area Transportation Authority (269) 927-2268 • Fax (269) 927-2310

275 East Wall Street, P.O. Box 837, Benton Harbor, MI 49023

Brandon Kovnat TWINCATS 376 W. Main ST., Suite 130 Benton Harbor, MI 49022-3651

Dear Sir:

Re: Transmittal of CMAQ Application(s)

Enclosed please find TCATA's CMAQ application(s) consisting of two parts, the Bus Replacement(s) and a non-recreational last mile alternative vehicle program consisting of bicycles, E-scooters, and Rideshare vehicles which will be strategically placed where the need and potential for use is most apparent, providing a connector to our bus routes.

This alternative vehicle project has the potential to save considerably on the discharge of pollutants into the atmosphere that would be normally be generated through people riding automobiles and some even if the total trips were by bus. These vehicles are non-recreational in nature and will become an important part of our overall transportation program. This initial request is for Fiscal Year 2021 and TCATA expects to pursue similar funding for FY 21, FY 22, and FY 23 but with the experience of the first year and hopefully participation from others, the requirements may be less.

The Bus replacement program entails replacing four (4) in FY 2021, one (1) in FY 22, and two (2) in fiscal year 23. These will replace existing gasoline buses as they reach the end of their useful lives, except for one in 2021 that is already nearing the end of its useful life.

Your cooperation is greatly appreciated.

Sincerely, TWIN CITIES AREA TRANSPORTATION AUTHORITY

Lecan Alexandre Little,

Executive Director

Attachments:

## Congestion Mitigation and Air Quality Project Application

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

Section 1. Applic	ant Information		
Agency Name	TWIN CITIES AREA TRANSPO	ORTATION AUTHORITY	
Contact Name	Alexandre Little	Title	Executive Director
Phone Number	(269) 927-2268	Email	Tcata.alex@comcast.net

Section 2. Project Information				
Project Name: Transit Improvements-Last Mile Non-Recreational		Fiscal Year of Project: FY 21		
Vehicle Rental Program				
City/Village/ Township: Benton Harbor-St. Joseph-Fairplain UZA		County: Berrien		
Project Location	Benton Harbor - TCATA Operations - 275	E. Wall ST., Benton Harbor, MI		
project is located)	(TCATA Offices, in Hotels Complex in Benton Township, Silver Beach, ne Whirlpool North American Headquarters, Meijers at Stevensville, and possibly Harbor Shores.			
	These vehicles will act as connectors to c route and other services and will greatly general.	our bus lines that provide fixed improve transportation in		
Which Emissions form is being	Construct Non-Motorized Pathway - Emis	ssions Form		
used? (list the form name not	By the complete absence of any discharg	es of particulate matters typically		
the MDOT form number/	discharged by internal combustion engines, each mile traveled by these alternative vehicles will be a gain as to carbon monoxide, lead, nitrogen dioxide, ozone, particle pollution (PM2.5 and PM10), and sulfur dioxide.			
Work Description (Short description of work being performed. Please provide enough information for eligibility to be determined)	The work to be performed is the establish (rental) program available in several key associated with TCATA's bus services, but travel options through a choice of bicycle	hment of a combination bikeshare locations connected to and t offering considerable additional e, scooter, or rideshare services.		
	This program will significantly lower emis utilizing bicycles and these electric vehicle quality in our non-attainment area as des Standards (NAAQS). This project will con- source emissions.	sions discharge per miles traveled es, which will improve the air cribed by the National Air Quality tribute to the reduction of mobile		
	The options of a GPS-enabled smart lock docking stations, a similar electric scooter	bicycle rental program with r share option, and a 100%		

	electric 4-6 passenger vehicle for short trips connecting to either fixed			
	route buses or to TCATA base for connection to demand response buses.			
	This project will also generate twelve (12) to fifteen (15) full time jobs,			
	including maintenance personnel, drivers for the Ride Share vehicles,			
	cleaners, and others.			
Sponsor	Applicant - TCATA			
(If different from Applicant)				
Project Cost	Federal - CMAQ	State	Local	Total
Only include CMAQ eligible expenses	\$156,000	\$39,000	\$	\$195,000.00

Section 3. Performance measures				
Besides emissions reductions what other performance measures will the project contribute to? <i>(select all that</i> <i>apply)</i> Safety Pavement Condition System Reliability Transit State of Good Repair	If you checked any of the Performance Measures please indicate how the project will improve them: This project is an eligible non-recreational last mile alternative program that will aid in passenger convenience particularly the last mile connections with our buses, while positively and greatly eliminating emissions associated with travel by automobile or bus covering these same distances traveled, whch furthers the goal of reduction of lead, carbon monoxide, nitrogen dioxide, ozone, sulfur dioxide and other particulate matter, positively impacting air quality in support of the National Ambient Air Quality Standards in our non-attainment zone.			
Section 4. Additional Questions				
Question		Y/N	If Yes, Provide Brief Explanation of How the Application will meet these Criteria	
Will the project be ready for obligation by July 1 of the year in which it's programmed?		⊠Yes □No	TCATA will negotiate a contract and place the orders for these components utilizing its pre-award ability before July 1 of 2021 with delivery before the end of the fiscal year. Our goal would be to setup and be operational by the beginning of Spring	
Will this project use multiple funding sources/be combined with another Non-CMAQ project?	Yes No	It could utilize some 5307and 5339 funding available to the transit agency. TCATA will also seek funding support from local Private Corporate entities for the ongoing program once implemented.		
--	----------	--		
Is the project being carried out by a sponsored agency, or is a private entity providing funding, materials, or services in support of this project?	Yes 🛛 No	Not initially, but such corporate and businees support is anticipated for continuance of this program beyond the first year.		
Does the project require Right of Way (ROW) acquisition or an easement?	☐Yes ⊠No	If yes, attach a signed letter from that agency granting permission to implement all or part of this project in their right-of-way.		

Section 5. Estimated Project Schedule	
Activity	Estimated Date
Resolution of Support for Local Match Submitted to SWMPC	
Project Application Submitted to MOT	
Grade Inspection Package Submitted to MDOT	
Grade Inspection Meeting Scheduled	
Final Plan and Estimate to MDOT	
Right of Way (ROW) certified	
Rail Road Permits	
Environmental Mitigation	
Project Obligated	October 2019
Project Letting	
Construction Start	
Project Completion	September 2020

Enter NA for any activity that doesn't apply to the project.

Please remember to attach the emissions form/toolkit and any supplemental information when you submit the application

### CONSTRUCT NON-MOTORIZED PATHWAY

### PROJECT NAME

Transit Improvement - Last Mile Alternative Non-Recreational Vehicle Program

#### SUBMITTER

Twin Cities Area Transportation Authority

FISCAL YEAR

2021 FY-21

Contact: If you should have any trouble with these worksheets please contact Matt Galbraith (517) 335-2938.

Line No.	Description of Data Item/Formula	voc	NOx	со	PM2.5
1	Length of pathway (mi) (257, Miles)	12	12	12	12
2	Average Daily Traffic (ADT) along impacted roadways	500	500	500	500
3	VMT along primary parallel roadway=L1*L2 (mi/day)	6,000	6,000	6,000	6,000
4	Decimal percentage of pedestrian and bicycle travel	10%	10%	10%	10%
5	Total VMT diverted from automotive to pedestrian/ bicycle mode=L3*L4 (mi/day)	600	600	600	600
6	Average speed along impacted roadway(s) (mph)	30	30	30	30
7	Emission factor for speed on L6 (use passenger cars) (g/mi)	0.1356	0.4593	2.7373	0.0284
8	Annual VMT reduction=L5*180 bike/walking days (mi)	108,000.000	108,000.000	108,000.000	108,000.000
9	Annual emission reduction=(L11)*180days (Kg/yr)	-14.645	-49.604	-295.628	-3.067
10	For compairative purpose only: Conversion to Tons/ Year=(L9*.0011Kg)	-0.016	-0.055	-0.325	-0.003
11	Changes in Emissions=(L5*L7)(-1)/1000 (Kg/day)	-0.081	-0.276	-1.642	-0.017
12	Project design life in years (Yrs)	10	10	10	10
13	Total project cost for this application (CMAQ plus Match) (\$)	\$195,000.00	\$195,000.00	\$195,000.00	\$195,000.00
14	Emission reduction over the life of the project=L10*L12 (Tons/Life)	-0.161	-0.546	-3.252	-0.034
15	Emission reduction over the life of the project=(L9*L12) (Kg/Life)	-146.448	-496.044	-2,956.284	-30.672
16	Cost per Ton over the life of the project=(L13/L14) (\$/ Tons/Life)	\$1,210,482.41	\$357,372.99	\$59,964.71	\$5,779,627.26
17	Cost per Kilogram over the life of the project=(L13/ L15) (\$/Kg/Life)	\$1,331.53	\$393.11	\$65.96	\$6,357.59

COMMENTS

## **ORGANIZATION:**

 Our integrated smart lock encourages users to end rides at designated hub locations. This means bikes live in safe and predictable areas.

## FLEXIBILITY:

 The integrated lock is compatible with most standard bike racks, allowing our partners to utilize Gotcha's custom station equipment or reallocate existing infrastructure.

### EQUITY:

 Bike share should be for everyone - we can implement customized pricing programs based on the student's specific needs.

### **IDENTITY:**

 Every university and city is unique. Shouldn't your bike share system be as well? Our program is tailor fitted to your campus.



# **KEY FEATURES**

Carbon Fiber B 5-Speed Intern Safety Bell & L	Carbon Fiber Belt   5-Speed Internal @ Safety Bell & Light:	<b>GPS-ENABLED SMART LOCK</b>	<b>PUNCTURE RESISTANT TIRES</b>	ELECTRIC ASSIST
Fiber B Intern Bell & Li	FIBER BELT   Internal @ Bell & light?	SAFETY	5-SPEED	CARBON
	IGHT:	BELL & LI	INTERN	FIBER B

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# **RIDE SHARE OVERVIEW**

- Gotcha provides a fixed route or ondemand service based on the needs of the university.
- Our app and the ability to hail a vehicle provide the ultimate flexibility for a user to access the program.
- The app allows drivers to organize their scheduled pickups to ensure efficiency and maintain maximum occupancy.
- Riders can hail a vehicle when seen traveling in their area to add an extra level of convenience.
- With Gotcha's new ride model, the system is fully funded by ridership fees. No sponsorship is needed to sustain the program.



# **KEY FEATURES**

DOORS & ROLL-UP WINDOWS	STREET LEGAL	100% ELECTRIC
<b>100 MILES PER CHARGE</b>	<b>REBALANCING CAPABLE</b>	4-6 PASSENGER

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# **SCOOTER SHARE OVERVIEW**

# SCOOTERS ARE FUN AND AN IDEAL MICRO-TRANSIT SOLUTION DUE TO THEIR FLEXIBILITY.

## **ORGANIZATION:**

 Similar to bikes, e-scooters should be returned to geo-fenced hub locations. This ensures that e-scooters live in predictable areas.

## FLEXIBILITY:

• E-scooters provide students unprecedented access to all areas of campus. That previously tough hill to climb on campus? No longer a problem!

### SAFETY:

 Gotcha's top priority and commitment is to safety. Gotcha works closely with the university and city to adhere to the local laws and regulations. Each e-scooter is equipped with a custom decal describing how to scoot safely. Additionally, each user must agree to the safety rules in the app before starting their ride.



# **KEY FEATURES**

FRONT AND REAR LIGHTS	RUST RESISTANT FRAME	250 - 350 WATT MOTOR
WEATHERPROOF BATTERY	<b>18-20 MILES PER CHARGE</b>	<b>15 MPH MAXIMUM SPEED</b>

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# THE FREEDOM OF CHOICE

- 00.
- Gotcha provides choice and convenience through multiple mobility assets operated through one app.
- Mobility as a Service (MaaS) is a combination of transportation services within a given territory that provides holistic and optimal travel options.



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# **HOW IT WORKS**











### For bike

RIDE

Ride safely and obey all rules of the road. Safety information is

available on each asset.

For bikes and scooters, make sure you return the asset to a designated hub. The area will be marked with signage.

## **USING THE APP**

Gotcha's app allows users to conveniently choose which shared mobility service they'd like to use through a single app.

# SMART MANAGEMENT

of real-time data for the University. Our partner experience team will generate and share detailed reports with University staff members upon request. Gotcha has invested in developing proprietary software. This allows us to provide customized dashboards and reports

Gotcha partners receive a login to their system to see real time data about:

- -Bike locations on a map, including detailed information about each bike
- N Comprehensive trip data in graphic and table format, including a heat map
- ω Detailed and summary information that can be filtered by date and other relevant attributes

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### Congestion Mitigation and Air Quality Project Application

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

Section 1. Applica	ant Information		
Agency Name	TWIN CITIES AREA TRANSPOR	TATION AUTHORIT	γ
Contact Name	Alexandre Little	Title	Executive Director
Phone Number	(269) 927-2268	Email	Tcata.alex@comcast.net

Section 2. Project Information				
Project Name: Transit Improvements-Bus Replacement Fiscal Year of Project: FY 21				
City/Village/ Township: Benton	Harbor-St. Joseph-F	airplain UZa	County: Berrier	ו
Project Location (short description of where the project is located)	Benton Harbor - T	CATA Operations - 2	275 E. Wall ST., Ben	ton Harbor, MI
Which Emissions form is being used? (list the form name not the MDOT form number)	MDOT 2618			
Work Description (Short description of work being performed. Please provide enough information for eligibility to be determined)	The work to be performed is the replacement of three gasoline fueled buses with a LP Gas bus with significantly lower emissions which will improve the air quality in our non-attainment area as described by the NAAQS. One (1) additional bus to be replaced is an older LP gas vehicle that is approaching it end of its useful life with a newer, later technology, and more fuel efficient LP Gas bus. This project will contribute to the reduction of mobile source emissions, including carbon monoxide, sulfur dioxide, ozone, lead, and nitrogen dioxide, improving air qualify in our non attainment area. The replacement of these four (4) buses will significantly lower our carbon footprint.			
Sponsor (If different from Applicant)	Applicant - TCATA			
Project Cost	Federal - CMAO	State	local	Total
Only include CMAQ eligible expenses	\$304000	\$76000	\$	\$380000.00

Section 3. Performance measu	Ires
Besides emissions reductions	If you checked any of the Performance Measures please indicate how the
what other performance	project will improve them:
measures will the project	

contribute to? (select all that apply)   □ Safety   □ Pavement Condition   ⊠ System Reliability   ⊠ Transit State of Good Repair	This project were pair by represented is charges of delays that T scheduled to buses at far I. The bus bein route service very short performed the other the buses that has these new CI and the outprother particular gas buses with discharges, pron-attainmed the service of the	will aid in syste lacing a bus th cost and dow f particulate m CATA experient arrive months higher mileage g scheduled fo e on the red lineriod. ree (3) buses so ave met and w MAQ sponored but of lead, ozo late matter wi th the latest to positively impace ent area.	em reliability and our transit state of good at will be rapidly reaching a stage where in time will increase significantly while atter will increase. Because of the extended ored in receiving buses in late 2018 that were searlier, TCATA ran its system on 17 & 18 that it normally would have with 25 buses. or replacement, one of which was put in fixed e. This significantly increase its mileage in a cheduled for replacement are older gasoline ill have exceeded their useful lives before 4 LP Gases arrive. The cost of maintenance one, carbon monoxide, nitrogen oxide, and 11 increase. These new alternative fueled LP echnology will significantly lower these cting our air quality in the Berrien County
Section 4. Additional Question	S	X/N	If Yes, Provide Priof Explanation of
question		T/N	How the Application will meet these Criteria
Will the project be ready for obligation by July 1 of the year in which it's programmed?		Yes 🗌 No	TCATA will order these buses utilizing its pre-award ability before July 1 of 2021 with delivery before the end of the fiscal year.
Will this project use multiple funding sources/be combined with another Non-CMAQ project?		∐Yes ⊠No	
Is the project being carried out by a sponsored agency, or is a private entity providing funding, materials, or services in support of this project?		□Yes ⊠No	
Does the project require Right of W acquisition or an easement?	ay (ROW)	☐Yes ⊠No	If yes, attach a signed letter from that agency granting permission to implement all or part of this project in their right-of-way.

### Section 5. Estimated Project Schedule

Activity	Estimated Date
Resolution of Support for Local Match Submitted to SWMPC	N/A
Project Application Submitted to MOT	N/A
Grade Inspection Package Submitted to MDOT	N/A
Grade Inspection Meeting Scheduled	N/A
Final Plan and Estimate to MDOT	N/A
Right of Way (ROW) certified	N/A
Rail Road Permits	N/A
Environmental Mitigation	N/A
Project Obligated	October 2020
Project Letting	September 2020
Construction Start	N/A
Project Completion	June 2021

Enter NA for any activity that doesn't apply to the project.

Please remember to attach the emissions form/toolkit and any supplemental information when you submit the application

field data, models, or the emission factors tables provided (Grayed in cells will auto calculate). (3) Attach the completed worksheet to the required application form along with any diagrams or additional worksheets used. (4) The project name and the values shown in the brown boxes should match values on the required application. (5) If old buses are from different model years, check Table 1 to see if they have different emission factors. If so, you must fill out separate worksheets for each model with different factors and can all be included on one worksheet. Model year 1993 has different factors and must be entered on a separate worksheet). Complete all worksheets, then sum ALL the daily emission reductions (Kg/day) and enter these on worksheet "W00\_cost" for multiple worksheets. This total is used to calculate "Cost per Kilogram over the life of the project". Emissions on the application should be the total emission reductions from all applicables.

NOTE: This is not an application form, this is only a tool used to calculate emissions that are needed for the CMAQ application. You must fill in all the required/highlighted fields.

#### Contact: If you have any questions regarding this worksheet, please contact Pete Porciello 517-335-2603).

	EMISSION CALCULATIONS				
Line No.	Description of Data Item/Formula	VOC	NOx	PM2.5	CO
1	Number of old buses	4	4	4	4
2	Old vehicle model year (Note: If more than one model year is involved, you may need	2,010	2,010	2,010	2,010
2	to use separate worksheets for each year.		1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1		
3	Annual vehicle miles/bus	25,000	25.000	25,000	25,000
4	Old emission factor - See Table 1 (grams/mile from Mobile6)	0.279	4.466	0.031	0.350
5	Before emissions from old buses = (L1*L3*L4) (g/year)	27,900	446,600	3,100	35,000
6	Number of new buses	4	4	4	4
7	Annual vehicle miles/bus	25,000	25,000	25,000	25,000
8	New emission factor (Mobile6 emission factors for 2007 urban bus - grams/mile)	0,080	0.020	0.010	2.100
9	After emissions from new buses = (L6*L7*L8) [g/year]	8,000	2,000	1,000	210,000
10	Annual emissions reduction in Kg = ((L5-L9)/1000g)	19.90	444.60	2.10	-175.00
11	Annual emissions reduction in TONS = (L10*.0011)	0.02	0.49	0.00	-0.19
12	Average daily emissions reduction in Kg =(L10/365)	0.05	1.22	0.01	-0.48

13	Project design life in years (Yrs)	7	7	7	7
14	Total project cost for this application (CMAQ plus Match) (\$)	\$380,000	\$380,000	\$380,000	\$380,000
15	Emission reduction over the life of the project=(L10*L13) (Kg/Life)	139	3,112	15	-1,225
16	Emission reduction over the life of the project=L11*L13 (Tons/Life)	0.15	3.42	0.02	-1.35
17	Cost per Ton over the life of the project=(L14/L16) (\$/Tons/Life)	\$2,479,932	\$111,000	##########	-\$282,004
18	Cost per Kilogram over the life of the project=(L14/L15) (\$/Kg/Life)	\$2,728	\$122	\$25,850	-\$310

0	120	120	110
5	130	/ 20	10

5	76858		
6	113544	3/2/14	CMAQ
7		10/1/18	
8		10/1/18	
9	125531	3/19/13 *	
10	121889	3/2/14	CMAQ
11	130959	3/2/14	CMAQ
12	113335	5/21/13 *	
15	141431	3/19/13 *	
16		3/19/13 *	
17		10/1/18	
19		10/1/18	
20		10/1/18	
21	75028	1/27/15	CMAQ
22	anna ann a' a tha tha tha tha an tar ann a	5/21/13 *	
23	72104	1/27/15	CMAQ
24		10/1/18	
25		10/1/18	
26	68093	3/29/16	
27	73615	1/27/15	CMAQ
28	166468	5/22/13 *	
29	128332	9/2/15 *	
30	99054	3/29/16	CMAQ
31		10/1/18	
32	23875	9/21/17	
33		10/1/18	

Twin Cities Area Transportaton Authority 275 East Wall Benton Harbor, MI 49022 Phone 269-927-2268 Fax269-927-2310 e-mail tcata1@comcast.net

### **Proposal for CMAQ Funds in 2021**

The Twin Cities Area Transportation Authority (TCATA) is located in Benton Harbor and provide public transportation service to Benton Harbor/St Joseph Urbanized area.

This proposal is requesting total CMAQ funds of \$380,000.00 for fiscal year 2021. The federal share is **\$304,000.00**, which will fund the purchase of four (4) replacement vehicles.

Project Name:	Replace one buse that have met their usefull life requirement v	rith four cleaner air buses.
Submitter:	Twin Cities Area Transportation	
Fiscal Year:		2022
Directione: (1) (	Copy this file to your bard drive and rename it with the project name	(2) Fill in vellow highlighted cells with the appropriate measurements obtained from your

Directions: (1) Copy this file to your hard drive and rename it with the project name. (2) Fill in yellow highlighted cells with the appropriate measurements obtained from your field data, models, or the emissions factors tables provided (Grayed in cells will auto calculate). (3) Attach the completed worksheet to the required application form along with any diagrams or additional worksheets used. (4) The project name and the values shown in the brown boxes should match values on the required application. (5) If old buses are from different model years, check Table 1 to see if they have different emission factors. If so, you must fill out separate worksheets for each model with different factors. (i.e. model years 1994 - 2006 have the same emission factors and can all be included on one worksheet. Model year 1993 has different factors and must be entered on a separate worksheet). Complete all worksheets, then sum ALL the daily emission reductions (Kg/day) and enter these on worksheet "WO0\_cost for multiple worksheets."

NOTE: This is not an application form, this is only a tool used to calculate emissions that are needed for the CMAQ application. You must fill in all the required/highlighted fields.

### Contact: If you have any questions regarding this worksheet, please contact Pete Porciello 517-335-2603).

	EMISSION CALCULATIONS				
Line No.	Description of Data Item/Formula	VOC	NOx	PM2.5	CO
1	Number of old buses	1	1	1	1
2	Old vehicle model year (Note: If more than one model year is involved, you may need	2,013	2,013	2,013	2,013
2	to use separate worksheets for each year.				
3	Annual vehicle miles/bus	25,000	25,000	25,000	25,000
4	Old emission factor - See Table 1 (grams/mile from Mobile6)	0.279	4.466	0.031	0.350
5	Before emissions from old buses = (L1*L3*L4) (g/year)	6,975	111,650	775	8,750
6	Number of new buses	1	1	1	Contraction of Provident
7	Annual vehicle miles/bus	25.000	25.000	25,000	25,000
8	New emission factor (Mobile6 emission factors for 2007 urban bus - grams/mile)	0.080	0.020	0.010	2.100
9	After emissions from new buses = (L6*L7*L8) [g/year]	2,000	500	250	52,500
10	Annual emissions reduction in Kg = ((L5-L9)/1000g)	4.98	111.15	0.53	-43.75
11	Annual emissions reduction in TONS = (L10*.0011)	0.01	0.12	0.00	-0.05
12	Average daily emissions reduction in Kg =(L10/365)	0.01	0.30	0.00	-0.12

13	Project design life in years (Yrs)	7	7	7	7
14	Total project cost for this application (CMAQ plus Match) (\$)	\$100,000	\$100,000	\$100,000	\$100,000
15	Emission reduction over the life of the project=(L10*L13) (Kg/Life)	35	778	4	-306
16	Emission reduction over the life of the project=L11*L13 (Tons/Life)	0.04	0.86	0.00	-0.34
17	Cost per Ton over the life of the project=(L14/L16) (\$/Tons/Life)	\$2,610,455	\$116,842	###########	-\$296,846
18	Cost per Kilogram over the life of the project=(L14/L15) (\$/Kg/Life)	\$2,872	\$129	\$27,211	-\$327

Twin Cities Area Transportaton Authority 275 East Wall Benton Harbor,MI 49022 Phone 269-927-2268 Fax269-927-2310 e-mail tcata1@comcast.net

### Proposal for CMAQ Funds in 2022

The Twin Cities Area Transportation Authority (TCATA) is located in Benton Harbor and provide public transportation service to Benton Harbor/St Joseph Urbanized area.

This proposal is requesting total CMAQ funds of \$100,000.00 for fiscal year 2022. The federal share is **\$80,000.00**, which will fund the purchase of one (1) replacement vehicles.

Project Name:	Replace two buses that have met their usefull life requirement with two cleaner air buses.
Submitter:	Twin Cities Area Transportation
Fiscal Year:	2023
D: // ///	

Directions: (1) Copy this file to your hard drive and rename it with the project name. (2) Fill in yellow highlighted cells with the appropriate measurements obtained from your field data, models, or the emissions factors tables provided (Grayed in cells will auto calculate). (3) Attach the completed worksheet to the required application form along with any diagrams or additional worksheets used. (4) The project name and the values shown in the brown boxes should match values on the required application. (5) If old buses are from different model years, check Table 1 to see if they have different emission factors. If so, you must fill out separate worksheets for each model with different factors. (i.e. model years 1994 - 2006 have the same emission factors and can all be included on one worksheet. Model year 1993 has different factors and must be entered on a separate worksheet). Complete all worksheets, then sum ALL the daily emission reductions (Kg/day) and enter these on worksheet "WO0\_cost for multiple worksheets. This total is used to calculate "Cost per Kilogram over the life of the project". Emissions on the application should be the total emission reductions from all appliable worksheets.

NOTE: This is not an application form, this is only a tool used to calculate emissions that are needed for the CMAQ application. You must fill in all the required/highlighted fields.

#### Contact: If you have any questions regarding this worksheet, please contact Pete Porciello 517-335-2603).

	EMISSION CALCULATIONS				
Line No.	Description of Data Item/Formula	VOC	NOx	PM2.5	CO
1	Number of old buses	2	2	2	2
2	Old vehicle model year (Note: If more than one model year is involved, you may need to use separate worksheets for each year.	2,010	2,010	2,010	2,010
3	Annual vehicle miles/bus	25,000	25.000	25.000	25,000
4	Old emission factor - See Table 1 (grams/mile from Mobile6)	0.279	4.466	0.031	0.350
5	Before emissions from old buses = (L1*L3*L4) (g/year)	13,950	223,300	1,550	17,500
6	Number of new buses	2	2	2	4
7	Annual vehicle miles/bus	25,000	25,000	25,000	25,000
8	New emission factor (Mobile6 emission factors for 2007 urban bus - grams/mile)	0.080	0.020	0.010	2.100
9	After emissions from new buses = (L6*L7*L8) [g/vear]	4,000	1,000	500	210,000
10	Annual emissions reduction in Kg = ((L5-L9)/1000g)	9.95	222.30	1.05	-192.50
11	Annual emissions reduction in TONS = (L10*.0011)	0.01	0.24	0.00	-0.21
12	Average daily emissions reduction in Kg =(L10/365)	0.03	0.61	0.00	-0.53

13	Project design life in years (Yrs)	7	7	7	7
14	Total project cost for this application (CMAQ plus Match) (\$)	\$210,000	\$210,000	\$210,000	\$210,000
15	Emission reduction over the life of the project=(L10*L13) (Kg/Life)	70	1,556	7	-1,348
16	Emission reduction over the life of the project=L11*L13 (Tons/Life)	0.08	1.71	0.01	-1.48
17	Cost per Ton over the life of the project=(L14/L16) (\$/Tons/Life)	\$2,740,978	\$122,684	############	-\$141,677
18	Cost per Kilogram over the life of the project=(L14/L15) (\$/Kg/Life)	\$3,015	\$135	\$28,571	-\$156

Twin Cities Area Transportaton Authority 275 East Wall Benton Harbor,MI 49022 Phone 269-927-2268 Fax269-927-2310 e-mail tcata1@comcast.net

### **Proposal for CMAQ Funds in 2023**

The Twin Cities Area Transportation Authority (TCATA) is located in Benton Harbor and provide public transportation service to Benton Harbor/St Joseph Urbanized area.

This proposal is requesting total CMAQ funds of \$210,000.00 for fiscal year 2023. The federal share is **\$168,000.00**, which will fund the purchase of two (2) replacement vehicles.