



PROJECT APPLICATION IOWA CLEAN AIR ATTAINMENT PROGRAM (ICAAP)

General Information:

Applicant Agency: City of Epworth E-mail: epworth@yousq.net
Public Agency (required)
 Contact Person (Name and Title): Janet Berger, City Clerk
191 Jacoby Drive E.; PO Box 266
 Complete Mailing Address:
Epworth IA 52045 563-876-3320
City State ZIP Code Daytime Phone

If more than one agency or organization is involved in this project, please state the name, contact person, mailing address, and telephone number of the second agency. (Attach an additional page if more than two agencies are involved.)

Co-Applicant Agency: _____ E-mail: _____
Public Agency, Non-Profit Organization¹, For-Profit Organization¹, or Individual¹
 Contact Person (Name and Title): _____
Street Address and/or Box Number
 Complete Mailing Address: _____
City State ZIP Code Daytime Phone

Project Information:

Project Title²: Center Avenue & Jacoby Drive Roundabout

Project Description (including length, if applicable):
Construction of a single-lane roundabout at the existing two-way stop controlled intersection of Center Avenue & Jacoby Drive. Project will include cross-walk improvements to aid in improving safety of pedestrians and cyclists crossing Center Avenue.

*Project priority (1 = highest priority): 1 (a sponsor submitting multiple applications in this funding cycle must assign a numerical rank or priority to each application.)³

*Assign the proposed project to one or more of the following categories (check one or more):

- Transportation-Related Project in the State Implementation Plan (SIP)
- Transportation Control Measure (TCM)
- Traffic Flow Improvement (Intersection, Signalization, Other)
- Planning and Project Development
- Travel Demand Management (TDM)
- Transit-Related Improvement
- Shared-Ride
- Bicycle or Pedestrian Facility or Program (select one)
- Intermodal Freight
- Passenger
- Alternative Fuels
- Vehicle Inspection and Maintenance Program
- Outreach Activity (Education, Advertising, or Technical Assistance)

*Is the project consistent with the State Implementation Plan for air quality for non-attainment areas? Yes No Not Applicable

*Is the project consistent with the MPO's local congestion management plan? Yes No Not Applicable

*Is the project consistent with the MPO RPA Statewide Long-Range Transportation Plan? Yes No Not Applicable

Notes: ¹Requires public agency as co-sponsor of application.
²The term "project" means any ICAAP infrastructure or program proposal.
³The Iowa Department of Transportation will use the priority ratings to reflect the sponsor.

Project Costs (an itemized breakdown must be included on an attached sheet):

Total Cost: \$1,352,528.00
 Iowa Clean Air Attainment Program Fund Request: \$852,528.00
 Applicant Match \$500,000.00

Projects with a private for-profit co-applicant require a minimum 50 percent applicant match; all other projects require a minimum 20 percent applicant match.

	List All Applicant Match Sources	Amount	Assured or Anticipated (Date Anticipated)
1.	TSIP Site-Specific Project Grant	\$500,000.00	January 31, 2025
2.			
3.			

Are any state funds involved in this project? Yes No

If Yes, please explain the source and conditions:

City has submitted at site specific TSIP application on 8/15/2024 for the roundabout at this location; waiting to hear back on whether funding will be approved in early 2025.

Are any other federal funds involved in this project? Yes No

If Yes, please explain the source and conditions:

Estimated Project Development Schedule:

Design: Start Date: March 01, 2025 Completion Date: September 01, 2025
 Land Acquisition: Start Date: _____ Completion Date: _____
 Construction: Start Date: April 01, 2026 Completion Date: July 01, 2026

Has any part of this project been started? Yes No

If Yes, please explain:

How do you plan to measure the success of this project?

Updated traffic counts with LOS calculations at the intersection and pedestrian counts on walkway.

Required Documentation and Narrative Information

The following documents and narratives must be submitted with this application. In the upper right corner of each document or narrative write the corresponding letter shown below.

- A. A NARRATIVE assessing existing congestions/air quality conditions, outlining the concept of the proposed project, and providing adequate project justification. How will this project reduce congestion, reduce travel or single occupant vehicle usage, and/or improve air quality? Which transportation-related pollutant(s) are being addressed: carbon monoxide, ozone, or particulate matter (PM)?
- B. A DETAILED MAP identifying the location of the project and clearly differentiating the subject project from any past or future project phases.
- C. An ITEMIZED BREAKDOWN of the total project costs. This documentation does not need to be a detailed, line-item type of estimate. However, it must accomplish two objectives: First, it must show the method by which the cost estimate was prepared; and second, it must enable a reviewer to determine if the cost estimate is reasonable. The manner in which these objectives are achieved may vary widely depending on the type, scope, and complexity of the project. Absent a fully itemized list of costs, some general guidelines for possible methods of estimating each type of project cost are provided on Attachment A.
- D. A TIME SCHEDULE for the total project development.
- E. An OFFICIAL CERTIFICATION from the applicant's governing body (authority) that it shall:
 - (1) commit the necessary local matching funding for project implementation and
 - (2) upon project completion, be responsible for adequately maintaining and operating the project for public use during the project's useful life.
- F. An ADOPTED FORMAL RESOLUTION from the appropriate MPO or RPA declaring the sponsor's proposed project or program conforms to the MPO's or RPA's regional transportation planning process. (For MPOs, the project or program must be identified in the fiscally constrained transportation plan and, if applicable, the congestion management plan in TMAs.)
- G. CALCULATIONS for vehicle emission reductions and total project cost-effectiveness for the targeted pollutants. Project applicant must show through a quantitative analysis how many kilograms of pollutant will be reduced (CO, VOC, NOx, and, if applicable, PM). Project sponsor must calculate the cost-effectiveness of the project by: Dividing the total annualized project cost by the number of kilograms per year of pollutant reduced (\$ per kg). Applicant must also show all assumptions and source of data used to calculate the estimates. The applicant must use the most current vehicle emission factors developed by the Iowa DNR and consistent with the U.S. EPA's MOBILE 6.2 air quality model. These emission factors are periodically updated and may be obtained from the Iowa DOT's ICAAP website at: https://iowadot.gov/systems_planning/Grant-Programs/Iowa-Clean-Air-Attainment-Program-ICAAP.
- H. Completed MINORITY IMPACT STATEMENT attached to application.

The award of ICAAP funds; any subsequent funding or letting of contracts for design, construction, reconstruction, improvement, or maintenance; and the furnishing of materials for this project shall not involve direct or indirect interest of any state, county, or city official, elective or appointive. All of the above are prohibited by Iowa Code 314.2, 362.5, or 331.342. Any award of funding or any letting of a contract in violation of the foregoing provisions shall invalidate the award of ICAAP funding and authorize a complete recovery of any funds previously disbursed.

Certification

To the best of my knowledge and belief, all information included in this application is true and accurate, including the commitment of all physical and financial resources. This application has been duly authorized by the participating local authority. I understand the attached **official endorsement(s)** binds the participating local governments to assume responsibility for adequate maintenance of any new or improved facilities.

If ICAAP funding assistance is approved for the project described in this application, I understand that an executed contract between the applicant and the Iowa DOT is required before such funding assistance can be authorized for use in implementing the project.

Representing the City of Epworth

 (Name of Applicant's Governing Authority)

_____ Signature	_____ Date
_____ Typed Name and Title (Governing Authority Official)	_____ Date

Minority Impact Statement

Pursuant to 2008 Iowa Acts, HF 2393, Iowa Code 8.11, all grant applications submitted to the State of Iowa that are due beginning Jan. 1, 2009, shall include a Minority Impact Statement. This is the state's mechanism for requiring grant applications to consider the potential impact of the grant project's proposed programs or policies on minority groups.

Please choose the statement(s) that pertains to this grant application. Complete all the information requested for the chosen statement(s). Submit additional pages as necessary.

- The proposed grant project programs or policies could have a disproportionate or unique **positive** impact on minority persons.

Describe the positive impact expected from this project.

The cross-walk and transition areas of the sidewalks/multi-use trail will be enhanced to promote safety in crossing Center Avenue.

Indicate which groups are impacted.

- Women Persons with a disability Blacks Latinos Asians
 Pacific Islanders American Indians Alaskan Native Americans Other _____

- The proposed grant project programs or policies could have a disproportionate or unique **negative** impact on minority persons.

Describe the negative impact expected from this project.

Present the rationale for the existence of the proposed program or policy.

Provide evidence of consultation with representatives of the minority groups impacted.

Indicate which groups are impacted.

- Women Persons with a disability Blacks Latinos Asians
- Pacific Islanders American Indians Alaskan Native Americans Other _____

The proposed grant project programs or policies are **not expected to have** a disproportionate or unique impact on minority persons.

Present the rationale for determining no impact.

I hereby certify that the information on this form is complete and accurate, to the best of my knowledge.

Name _____

Title _____

Definitions

"Minority Persons," as defined in Iowa Code 8.11, means individuals who are women, persons with a disability, Blacks, Latinos, Asians or Pacific Islanders, American Indians, and Alaskan Native Americans.

"Disability," as defined in Iowa Code 15.102, subsection 7, paragraph "b," subparagraph (1):

b. As used in this subsection:

(1) "*Disability*" means, with respect to an individual, a physical or mental impairment that substantially limits one or more of the major life activities of the individual, a record of physical or mental impairment that substantially limits one or more of the major life activities of the individual, or being regarded as an individual with a physical or mental impairment that substantially limits one or more of the major life activities of the individual.

"*Disability*" does not include any of the following:

- (a) Homosexuality or bisexuality.
- (b) Transvestism, transsexualism, pedophilia, exhibitionism, voyeurism, gender identity disorders not resulting from physical impairments or other sexual behavior disorders.
- (c) Compulsive gambling, kleptomania, or pyromania.
- (d) Psychoactive substance abuse disorders resulting from current illegal use of drugs.

"State Agency," as defined in Iowa Code 8.11, means a department, board, bureau, commission, or other agency or authority of the State of Iowa.

REQUEST FOR IOWA'S CLEAN AIR ATTAINMENT PROGRAM (ICAAP)

ATTACHMENT A

Itemized breakdown of total project costs guidelines.

Construction costs

These may be based on historical averages for entire projects of similar size and scope. Examples include:

- Typical cost per mile of trail (e.g., \$200,000 per mile for moderate terrain and limited number of structures).
- Typical cost per square foot of bridge deck.
- Typical cost per square foot of fiber optic traffic signal interconnect cable (i.e., \$178,000 per mile).
- Typical cost per traffic signal upgrade (i.e., \$163,000 per lump sum signal bid item).

Design/Inspection costs

These may be estimated based on the following typical percentages of construction costs, such as:

- 8 to 10 percent for preliminary up through final design and letting activities.
- 12 to 15 percent for construction inspection activities.

Right of way acquisition costs

These may be estimated based on:

- Impact and description of impact.
- Typical cost per square foot for permanent right of way.
- Typical cost per square foot for temporary easements.

Utility and railroad costs

These may be estimated based on:

- Impact and description of impact.
- Typical cost per linear foot of relocated or reconstructed facility (i.e., track, pipe, electrical lines).
- Typical cost per installation (i.e., railroad switches, utility poles, transformers, control boxes).

Indirect costs

If indirect costs are involved (e.g., wages):

- Estimated hours.
- Estimated hourly rate, salary.
- Estimated fringe, direct.
- Other direct cost estimate.
- Other indirect cost estimate.

Resolution # 22-2024

A RESOLUTION AFFIRMING SUPPORT FOR THE
EPWORTH

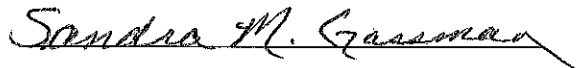
Roundabout Project at Jacoby Drive & Center Avenue

Whereas, the City of Epworth intends to submit an application to the Iowa Clean Air Attainment Program;

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF EPWORTH, IOWA, as follows:

1. The City of Epworth shall commit funds in a minimum of 20% of the total project costs of the Roundabout Project at Jacoby Drive & Center Avenue.
2. The City of Epworth shall upon completion, assume responsibility for adequate maintenance and operation of the project for public use during the project's useful life.

Passed and approved this 11 day of September, 2024



Sandra Gassman, Mayor

Attest:



Janet Berger, City Clerk

ICAAP Application

City of Epworth – Center Avenue & Jacoby Drive Roundabout

Narrative

The City of Epworth has expressed concerns about safety and congestion at the intersection of South Center Avenue and Jacoby Drive with regards to pedestrian safety and congestion during morning and afternoon peak hours of school traffic and is looking for alternatives to address the concerns. The City of Epworth had a TEAP Traffic and Safety Study completed in December of 2023. A copy of this study can be found at the following link:

<https://burringtongroup.sharefile.com/d-s20f168a50fed40d785c35f49b18f8a62>

The intersection of Center Avenue and Jacoby Drive is a two-way stop controlled, four-legged intersection located approximately 230' north of the westbound exit ramp from US-20/52. South Center Avenue (through legs) has a posted speed limit of 25 mph with a two-lane rural cross section with approximately 24-foot wide northbound lane and a 12-foot wide southbound lane. Jacoby Drive (stop controlled legs) has a posted speed limit of 35 mph with a two-lane rural cross section with approximately 11-foot lanes with shared through/left-turn/right-turn movements at each approach. The stop controlled legs of Jacoby drive are at approximately a 75-degree angle to Center Avenue. There is a striped pedestrian crossing across South Center Avenue on the north side of the Jacoby Drive intersection which is part of the existing shared-use path system within the City.

At the time of this application, there is a Casey's gas station/convenience store under construction to be located at the SE corner of Placid Road (Center Avenue) and US-20/52 which is tentatively scheduled to open in November of 2024. The addition of this commercial use south of US-20/52 will likely have an impact of increasing the number of vehicles travelling through this intersection.

The City's desired improvement to address the safety concerns is to install a single lane roundabout at this intersection. As indicated in the TEAP study, the roundabouts help improve traffic flow by allowing the continuous movement traffic while forcing the vehicles entering the intersection to slow down. The single lane roundabout was chosen due the anticipated traffic counts and its ability to operate at an anticipated LOS A while having available space to queue the 95th percentile queues for the peak hours. The implementation of the roundabout would help smooth vehicle operations along Center Avenue between US-20/52 and Jacoby Drive. This would in turn reduce the delay time and emissions from vehicles at the Jacoby drive stop controlled intersections. The improvements would be targeting reduction in travel time (specifically idle time), carbon monoxide and ozone. The targeted improvement would also have the effect of enhancing the pedestrian crossing of Center Avenue which would in-turn promote bicycle and or walking trips instead of vehicle trips.

Anticipated Project Schedule

Roundabout

- Design – Spring 2025
- Bidding – February 2026
- Construction – Spring/Summer 2026

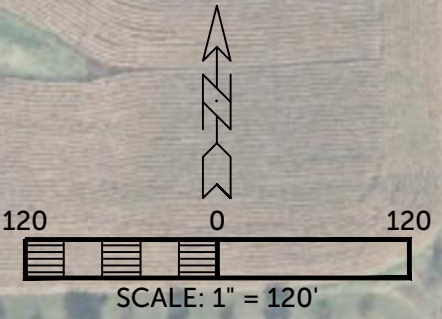
Shared-Use Trail (Approved TAP Funded Project)

- Design – November 2024
- Bidding – June 2025 (earliest likely)
- Construction – Summer/Fall 2025



DIVINE WORD SEMINARY

EPWORTH ELEMENTARY SCHOOL



EXISTING R.O.W. LINE (TYP)

EXISTING MULTI-USE TRAIL

CITY HALL/FIRE STATION

S. CENTER AVENUE

JACOBY DR. WEST

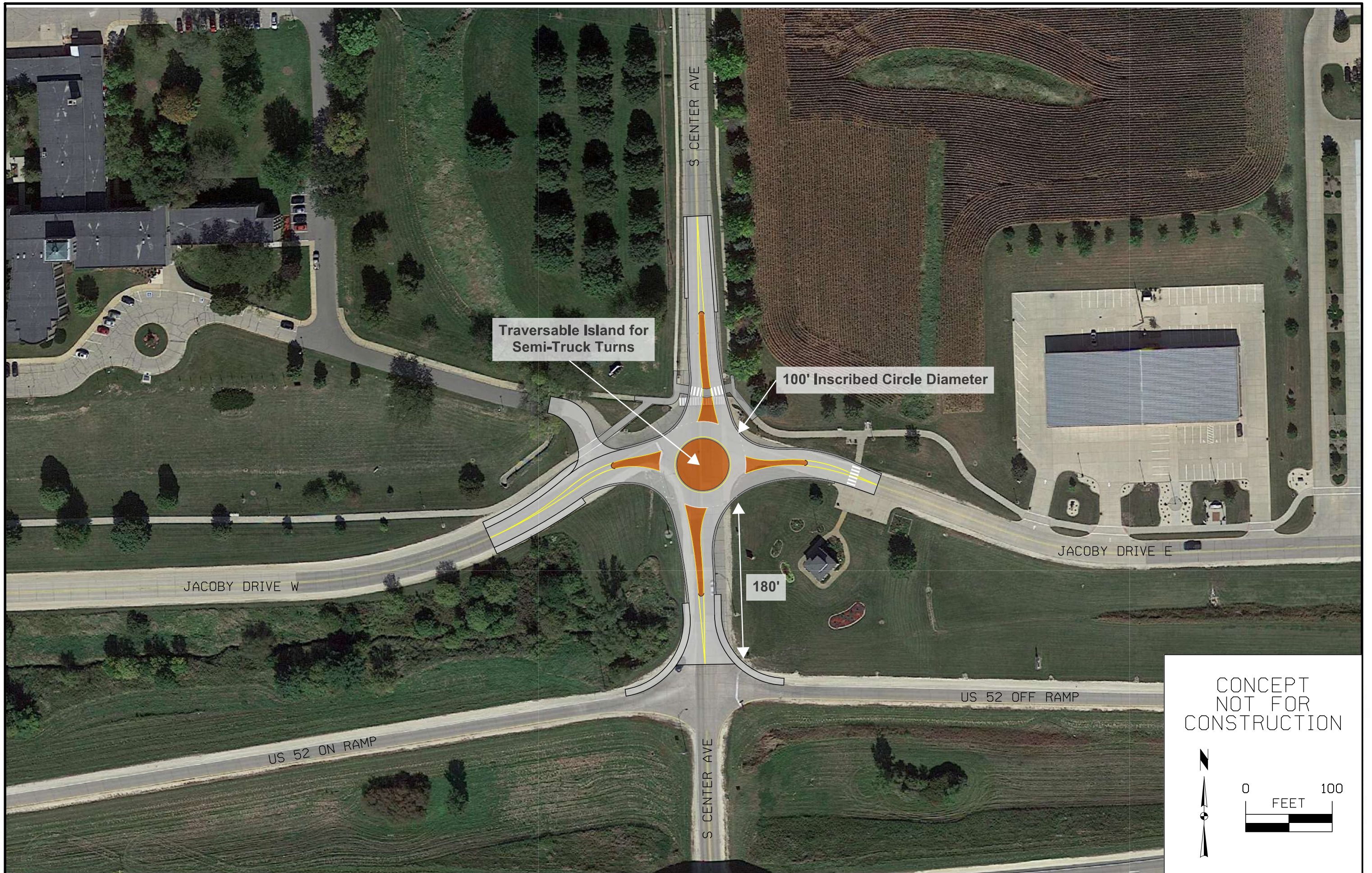
JACOBY DR. EAST

US-20/52 (WEST ON-RAMP)

US-20/52 (WEST EXIT RAMP)

US-20/52 (WESTBOUND)

US-20/52 (EASTBOUND)





PRELIMINARY COST ESTIMATE
Center Avenue Jacoby Drive Roundabout Improvements Project
EPWORTH, IOWA

ITEM NO.	DESCRIPTION	QUANTITY	UNITS	UNIT COST	TOTAL
1	Excavation, CL 10 (waste)	2000	C.Y.	14.00	\$ 28,000
2	PCC Pavement Removal	4100	S.Y.	10.00	\$ 41,000
3	PCC Driveway Removal	200	S.Y.	10.00	\$ 2,000
4	PCC Sidewalk Removal	300	S.Y.	8.00	\$ 2,400
5	8" PCC Concrete Pavement	3680	S.Y.	90.00	\$ 331,200
6	8" PCC Concrete Truck Pavement (colored)	820	S.Y.	110.00	\$ 90,200
7	4" PCC Sidewalk	90	S.Y.	55.00	\$ 4,950
8	5" PCC Sidewalk	200	S.Y.	60.00	\$ 12,000
9	8" PCC Sidewalk	15	S.Y.	100.00	\$ 1,500
10	Detectable Warnings	40	S.F.	80.00	\$ 3,200
11	PCC Driveway Replacement (8")	265	S.Y.	85.00	\$ 22,525
12	Special Backfill (6")	2300	Ton	30.00	\$ 69,000
13	3" Breaker (12" Thick)	3200	Ton	25.00	\$ 80,000
14	Erosion Stone	15	Ton	50.00	\$ 750
15	Granular Shoulders, Type A	6	STA	300.00	\$ 1,800
16	Geogrid	4500	S.Y.	6.00	\$ 27,000
17	Subdrain, 6", Case B, Type 1	1500	L.F.	15.00	\$ 22,500
18	Intake Removal	4	Each	1,000.00	\$ 4,000
19	Storm Sewer Removal	320	L.F.	15.00	\$ 4,800
20	SW-507 Intake	6	Each	5,500.00	\$ 33,000
21	SW-509 Intake	2	Each	7,500.00	\$ 15,000
22	SW-511 Intake	1	Each	4,000.00	\$ 4,000
23	15" RCP Storm Sewer	60	L.F.	80.00	\$ 4,800
24	18" RCP Storm Sewer	140	L.F.	100.00	\$ 14,000
25	24" RCP Storm Sewer	220	L.F.	120.00	\$ 26,400
26	18" RCP Apron	1	Each	3,000.00	\$ 3,000
27	24" RCP Apron	1	Each	3,500.00	\$ 3,500
28	Sanitary MH Adjustment - Major	2	Each	4,500.00	\$ 9,000
29	Removal of Sign	6	Each	200.00	\$ 1,200
30	Type A Sign	12	Each	500.00	\$ 6,000
31	Striping	1	L.S.	15,000.00	\$ 15,000
34	Soil Erosion Control	1	L.S.	20,000.00	\$ 20,000
35	Traffic Control	1	L.S.	12,000.00	\$ 12,000
36	Topsoil Import & Spreading	350	C.Y.	50.00	\$ 17,500
37	Permanent Seeding, Fertilizing and Mulching, Type	0.8	Acre	8,500.00	\$ 6,800
38	Mobilization	1	L.S.	50,000.00	\$ 50,000
	<i>Subtotal Center Avenue/Jacoby Roundabout</i>				\$ 990,025



PRELIMINARY COST ESTIMATE
Center Avenue Jacoby Drive Roundabout Improvements Project
EPWORTH, IOWA

ITEM NO.	DESCRIPTION	QUANTITY	UNITS	UNIT COST	TOTAL
				<i>Contingency (15%)</i>	\$ 148,500
				Total Preliminary Construction Cost	\$ 1,138,525
	OTHER PROJECT COSTS				
	Lighting	1	L.S.	30,000.00	30,000
	Engineering Design				\$ 85,000
	Construction Engineering	10.0%			99,003
					-
				Total Other Project Costs	\$ 214,003
				PHASE 1 - TOTAL PROJECT COSTS	\$ 1,352,528
	Anticipated Funding Source Breakdown:				
	ICAAP Grant (submitting application 9/2024)	\$ 852,528.00			
	TSIP Site-Specific Project Grant	\$ 500,000.00			

ICAAP Application
 Center Avenue Jacoby Drive Roundabout
 Epworth, IA

Pollutant Reduction Calculation

Pollutant	Idle Composite		20 mph		Delta		\$/kg reduction
	g/mi		g/mi		(g)	(kg)	
CO	41.195	4736395.125	13.441	1545379	3191016	3191.016	\$ 17.27
VOC	13.374	1537675.65	1.993	229145.2	1308530	1308.53	\$ 42.11
Nox	3.001	345039.975	1.883	216497.9	128542.1	128.5421	\$ 428.66

Note: Pollutant numbers taken from Iowa DOT emission factors taken from Mobile 6.2

Improvements/Traffic Summary at Stop Control Leg

Length of Improvements 0.2 mile
 AADT Jacoby 1575 vpd 365 574875 114975 mi/day

*note, AADT is 50% of traffic which would be stopped at stop sign assuming equal distribution of traffic from 2023 traffic counts

Annualized Cost Calculations

Service life of Roundabout 25 Years

Total Cost \$ 1,352,528.00

Annualized Cost (25 years) \$ 54,101.12 Construction
 \$ 1,000.00 Annual Maintenance (plowing, salting, striping, etc)
 \$ 55,101.12

2008 Emission factors @ 2.5mph on arterial roadways

Vehicle Type: GVWR:	LDGV	LDGT12 <6000	LDGT34 >6000	LDGT (All)	HDGV	LDDV	LDDT	HDDV	MC	All Veh
VMT Distribution:	0.3571	0.3697	0.1268	17.3	0.0414	0.0012	0.0019	0.0957	0.0063	1.0000
Fuel Economy (mpg):	24.0	18.6	14.3	17.3	9.6	31.8	20.0	7.2	50.0	16.3

Composite Emission Factors (g/mi):

Composite VOC :	20.028	12.135	17.230	13.436	15.578	1.639	2.570	1.358	8.99	14.660
Composite CO :	49.67	39.68	58.08	44.38	60.42	4.675	5.234	10.109	97.80	43.862
Composite NOX :	2.154	2.036	2.686	2.202	2.235	2.163	2.610	13.382	1.04	3.249
Composite CO2 :	369.9	475.8	619.2	512.4	927.8	320.2	510.0	1419.7	177.4	563.19

Vehicle Type: GVWR:	LDGV	LDGT12 <6000	LDGT34 >6000	LDGT (All)	HDGV	LDDV	LDDT	HDDV	MC	All Veh
VMT Distribution:	0.3571	0.3697	0.1268		0.0414	0.0012	0.0019	0.0957	0.0063	1.0000

Composite Emission Factors (g/mi):

Lead:	0.0000	0.0000	0.0000	0.0000	0.0000				0.0000	0.0000
GASPM:	0.0038	0.0039	0.0051	0.0042	0.0446				0.0142	0.0054
ECARBON:						0.0862	0.0768	0.1297		0.0127
OCARBON:						0.0243	0.1105	0.0633		0.0063
SO4:	0.0005	0.0006	0.0007	0.0006	0.0011	0.0002	0.0002	0.0009	0.0002	0.0006
Total Exhaust PM:	0.0043	0.0046	0.0058	0.0049	0.0457	0.1106	0.1875	0.1939	0.0144	0.0250
Brake:	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053
Tire:	0.0020	0.0020	0.0020	0.0020	0.0022	0.0020	0.0020	0.0020	0.0065	0.0024
Total PM:	0.0117	0.0119	0.0131	0.0122	0.0533	0.1180	0.1948	0.2058	0.0207	0.0328
SO2:	0.0068	0.0087	0.0114	0.0094	0.0170	0.0030	0.0048	0.0132	0.0033	0.0091
NH3:	0.1017	0.1010	0.0970	0.1000	0.0451	0.0068	0.0068	0.0270	0.0113	0.0905

2009 Emission factors @ 2.5mph on arterial roadways

Vehicle Type: GVWR:	LDGV	LDGT12 <6000	LDGT34 >6000	LDGT (All)	HDGV	LDDV	LDDT	HDDV	MC	All Veh
VMT Distribution:	0.3443	0.3790	0.1300	17.3	0.0414	0.0011	0.0020	0.0959	0.0062	1.0000
Fuel Economy (mpg):	24.0	18.6	14.3	17.3	9.6	32.9	20.0	7.2	50.0	16.2

Composite Emission Factors (g/mi):

Composite VOC :	18.422	10.960	16.390	12.346	13.567	1.628	2.512	1.273	8.98	13.374
Composite CO :	47.77	37.58	54.75	41.96	46.50	4.660	5.173	8.760	97.80	41.195
Composite NOX :	2.033	1.893	2.525	2.054	1.997	2.115	2.525	12.085	1.04	3.001
Composite CO2 :	369.2	476.4	619.8	513.0	926.1	309.4	510.0	1417.8	177.4	565.07

Vehicle Type: GVWR:	LDGV	LDGT12 <6000	LDGT34 >6000	LDGT (All)	HDGV	LDDV	LDDT	HDDV	MC	All Veh
VMT Distribution:	0.3443	0.3790	0.1300		0.0414	0.0011	0.0020	0.0959	0.0062	1.0000

Composite Emission Factors (g/mi):

Lead:	0.0000	0.0000	0.0000	0.0000	0.0000				0.0000	0.0000
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						Idle.txt				
	GASPM:	0.0037	0.0038	0.0049	0.0041	0.0392				
	ECARBON:	-----	-----	-----	-----	-----	0.0821	0.0748	0.1105	-----
	OCARBON:	-----	-----	-----	-----	-----	0.0232	0.1076	0.0537	-----
	SO4:	0.0005	0.0006	0.0006	0.0006	0.0011	0.0002	0.0002	0.0009	0.0002
Total Exhaust	PM:	0.0043	0.0044	0.0055	0.0047	0.0403	0.1054	0.1827	0.1651	0.0144
	Brake:	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053
	Tire:	0.0020	0.0020	0.0020	0.0020	0.0022	0.0020	0.0020	0.0065	0.0010
	Total PM:	0.0116	0.0118	0.0129	0.0121	0.0479	0.1127	0.1900	0.1769	0.0207
	SO2:	0.0067	0.0087	0.0114	0.0094	0.0170	0.0029	0.0048	0.0132	0.0033
	NH3:	0.1017	0.1012	0.0979	0.1003	0.0451	0.0068	0.0068	0.0270	0.0113
										0.0051
										0.0108
										0.0054
										0.0006
										0.0220
										0.0053
										0.0024
										0.0297
										0.0091
										0.0907

Areawide_3-40mph_2008.txt

20mph

Vehicle Type: GVWR:	LDGV	LDGT12 <6000	LDGT34 >6000	LDGT (All)	HDGV	LDDV	LDDT	HDDV	MC	All Veh
VTM Distribution:	0.3571	0.3697	0.1268		0.0414	0.0012	0.0019	0.0957	0.0063	1.0000
Fuel Economy (mpg):	24.0	18.6	14.3	17.3	9.6	31.8	20.0	7.2	50.0	16.3

Composite Emission Factors (g/mi):										
Composite VOC :	2.410	1.697	2.610	1.930	2.280	0.912	1.491	0.607	2.86	1.993
Composite CO :	13.93	13.51	18.79	14.86	16.69	2.044	2.442	3.076	15.60	13.441
Composite NOX :	1.102	1.115	1.484	1.209	2.665	1.266	1.537	8.030	0.99	1.883
Composite CO2 :	369.9	475.8	619.2	512.4	927.8	320.2	510.0	1419.7	177.4	563.19

Vehicle Type: GVWR:	LDGV	LDGT12 <6000	LDGT34 >6000	LDGT (All)	HDGV	LDDV	LDDT	HDDV	MC	All Veh
VTM Distribution:	0.3571	0.3697	0.1268		0.0414	0.0012	0.0019	0.0957	0.0063	1.0000

Composite Emission Factors (g/mi):										
Lead:	0.0000	0.0000	0.0000	0.0000	0.0000	-----	-----	-----	0.0000	0.0000
GASPM:	0.0038	0.0040	0.0051	0.0043	0.0446	-----	-----	-----	0.0142	0.0054
ECARBON:	-----	-----	-----	-----	-----	0.0862	0.0768	0.1297	-----	0.0127
OCARBON:	-----	-----	-----	-----	-----	0.0243	0.1105	0.0633	-----	0.0063
SO4:	0.0005	0.0006	0.0006	0.0006	0.0011	0.0002	0.0002	0.0009	0.0002	0.0006
Total Exhaust PM:	0.0043	0.0045	0.0058	0.0049	0.0458	0.1106	0.1875	0.1939	0.0143	0.0250
Brake:	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053
Tire:	0.0020	0.0020	0.0020	0.0020	0.0022	0.0020	0.0020	0.0065	0.0010	0.0024
Total PM:	0.0116	0.0119	0.0131	0.0122	0.0533	0.1180	0.1948	0.2058	0.0207	0.0328
SO2:	0.0068	0.0087	0.0114	0.0094	0.0170	0.0030	0.0048	0.0132	0.0033	0.0091
NH3:	0.1017	0.1010	0.0970	0.1000	0.0451	0.0068	0.0068	0.0270	0.0113	0.0905

21mph

Vehicle Type: GVWR:	LDGV	LDGT12 <6000	LDGT34 >6000	LDGT (All)	HDGV	LDDV	LDDT	HDDV	MC	All Veh
VTM Distribution:	0.3571	0.3697	0.1268		0.0414	0.0012	0.0019	0.0957	0.0063	1.0000
Fuel Economy (mpg):	24.0	18.6	14.3	17.3	9.6	31.8	20.0	7.2	50.0	16.3

Composite Emission Factors (g/mi):										
Composite VOC :	2.363	1.667	2.567	1.897	2.208	0.889	1.456	0.583	2.81	1.954
Composite CO :	13.81	13.42	18.67	14.76	15.83	1.987	2.380	2.921	14.98	13.293
Composite NOX :	1.092	1.106	1.473	1.200	2.693	1.244	1.511	7.895	1.01	1.863
Composite CO2 :	369.9	475.8	619.2	512.4	927.8	320.2	510.0	1419.7	177.4	563.19

Vehicle Type: GVWR:	LDGV	LDGT12 <6000	LDGT34 >6000	LDGT (All)	HDGV	LDDV	LDDT	HDDV	MC	All Veh
VTM Distribution:	0.3571	0.3697	0.1268		0.0414	0.0012	0.0019	0.0957	0.0063	1.0000

Composite Emission Factors (g/mi):										
Lead:	0.0000	0.0000	0.0000	0.0000	0.0000	-----	-----	-----	0.0000	0.0000
GASPM:	0.0038	0.0040	0.0051	0.0043	0.0446	-----	-----	-----	0.0142	0.0054
ECARBON:	-----	-----	-----	-----	-----	0.0862	0.0768	0.1297	-----	0.0127
OCARBON:	-----	-----	-----	-----	-----	0.0243	0.1105	0.0633	-----	0.0063
SO4:	0.0005	0.0006	0.0006	0.0006	0.0012	0.0002	0.0002	0.0009	0.0002	0.0006
Total Exhaust PM:	0.0043	0.0045	0.0058	0.0049	0.0458	0.1106	0.1875	0.1939	0.0143	0.0250
Brake:	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053
Tire:	0.0020	0.0020	0.0020	0.0020	0.0022	0.0020	0.0020	0.0065	0.0010	0.0024

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Total PM:	0.0116	0.0119	0.0131	0.0122	0.0533	0.1180	0.1948	0.2058	0.0207	0.0327
SO2:	0.0068	0.0087	0.0114	0.0094	0.0170	0.0030	0.0048	0.0132	0.0033	0.0091
NH3:	0.1017	0.1010	0.0970	0.1000	0.0451	0.0068	0.0068	0.0270	0.0113	0.0905

22mph

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:	<6000	>6000	(All)							
VMT Distribution:	0.3571	0.3697	0.1268		0.0414	0.0012	0.0019	0.0957	0.0063	1.0000
Fuel Economy (mpg):	24.0	18.6	14.3	17.3	9.6	31.8	20.0	7.2	50.0	16.3

Composite Emission Factors (g/mi):

Composite VOC :	2.319	1.640	2.527	1.867	2.142	0.867	1.424	0.561	2.76	1.918
Composite CO :	13.70	13.34	18.56	14.67	15.07	1.934	2.325	2.781	14.40	13.160
Composite NOX :	1.082	1.099	1.463	1.192	2.723	1.226	1.489	7.781	1.02	1.846
Composite CO2 :	369.9	475.8	619.2	512.4	927.8	320.2	510.0	1419.7	177.4	563.19

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:	<6000	>6000	(All)							
VMT Distribution:	0.3571	0.3697	0.1268		0.0414	0.0012	0.0019	0.0957	0.0063	1.0000

Composite Emission Factors (g/mi):

Lead:	0.0000	0.0000	0.0000	0.0000	0.0000	-----	-----	-----	0.0000	0.0000
GASPM:	0.0038	0.0040	0.0051	0.0043	0.0446	-----	-----	-----	0.0142	0.0054
ECARBON:	-----	-----	-----	-----	-----	0.0862	0.0768	0.1297	-----	0.0127
OCARBON:	-----	-----	-----	-----	-----	0.0243	0.1105	0.0633	-----	0.0063
SO4:	0.0005	0.0006	0.0006	0.0006	0.0012	0.0002	0.0002	0.0009	0.0001	0.0006
Total Exhaust PM:	0.0043	0.0045	0.0058	0.0049	0.0458	0.1106	0.1875	0.1939	0.0143	0.0250
Brake:	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053	0.0053
Tire:	0.0020	0.0020	0.0020	0.0020	0.0022	0.0020	0.0020	0.0065	0.0010	0.0024
Total PM:	0.0116	0.0119	0.0131	0.0122	0.0533	0.1180	0.1948	0.2058	0.0207	0.0327
SO2:	0.0068	0.0087	0.0114	0.0094	0.0170	0.0030	0.0048	0.0132	0.0033	0.0091
NH3:	0.1017	0.1010	0.0970	0.1000	0.0451	0.0068	0.0068	0.0270	0.0113	0.0905

23mph

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:	<6000	>6000	(All)							
VMT Distribution:	0.3571	0.3697	0.1268		0.0414	0.0012	0.0019	0.0957	0.0063	1.0000
Fuel Economy (mpg):	24.0	18.6	14.3	17.3	9.6	31.8	20.0	7.2	50.0	16.3

Composite Emission Factors (g/mi):

Composite VOC :	2.279	1.615	2.491	1.839	2.082	0.847	1.395	0.541	2.72	1.885
Composite CO :	13.60	13.26	18.45	14.59	14.38	1.887	2.274	2.654	13.87	13.039
Composite NOX :	1.073	1.091	1.453	1.184	2.750	1.209	1.469	7.677	1.04	1.830
Composite CO2 :	369.9	475.8	619.2	512.4	927.8	320.2	510.0	1419.7	177.4	563.19

Vehicle Type:	LDGV	LDGT12	LDGT34	LDGT	HDGV	LDDV	LDDT	HDDV	MC	All Veh
GVWR:	<6000	>6000	(All)							
VMT Distribution:	0.3571	0.3697	0.1268		0.0414	0.0012	0.0019	0.0957	0.0063	1.0000

Composite Emission Factors (g/mi):

Lead:	0.0000	0.0000	0.0000	0.0000	0.0000	-----	-----	-----	0.0000	0.0000
GASPM:	0.0038	0.0040	0.0052	0.0043	0.0446	-----	-----	-----	0.0142	0.0054
ECARBON:	-----	-----	-----	-----	-----	0.0862	0.0768	0.1297	-----	0.0127
OCARBON:	-----	-----	-----	-----	-----	0.0243	0.1105	0.0633	-----	0.0063
SO4:	0.0004	0.0006	0.0006	0.0006	0.0012	0.0002	0.0002	0.0009	0.0001	0.0006