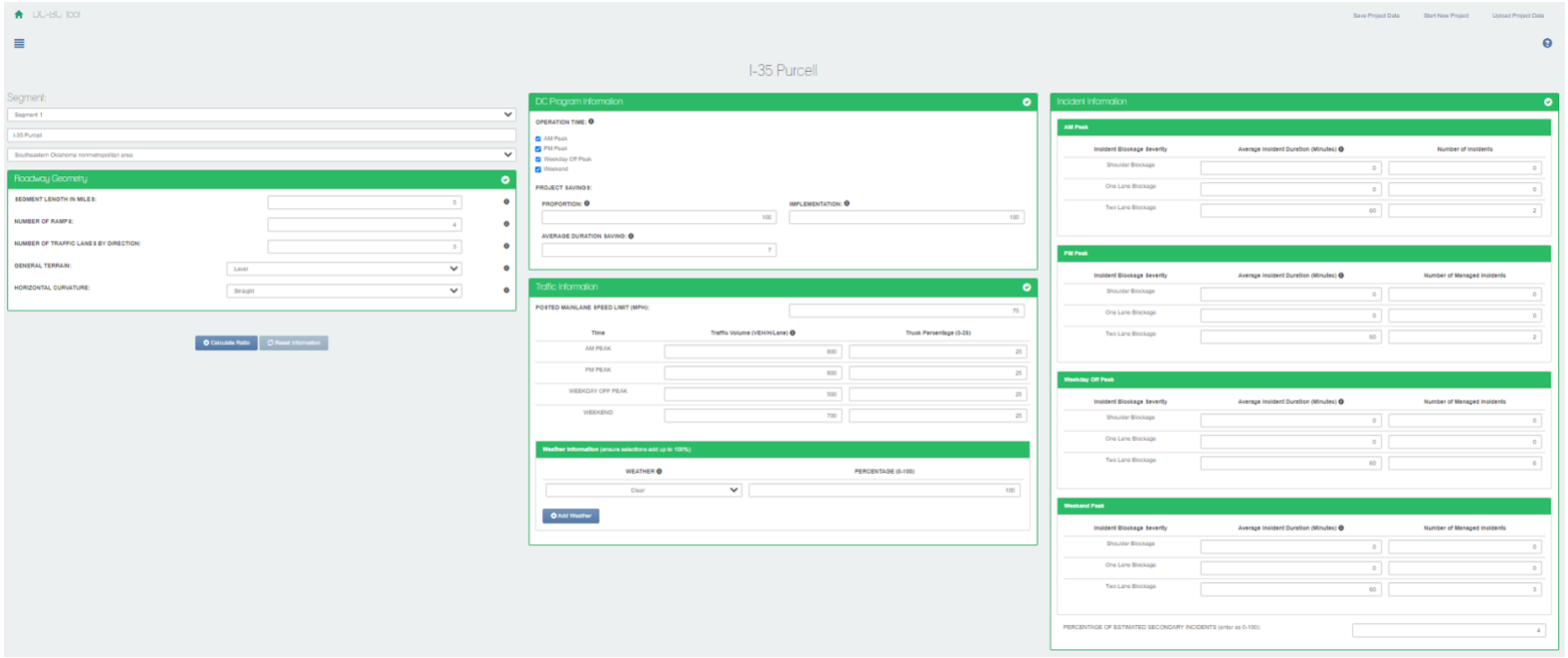
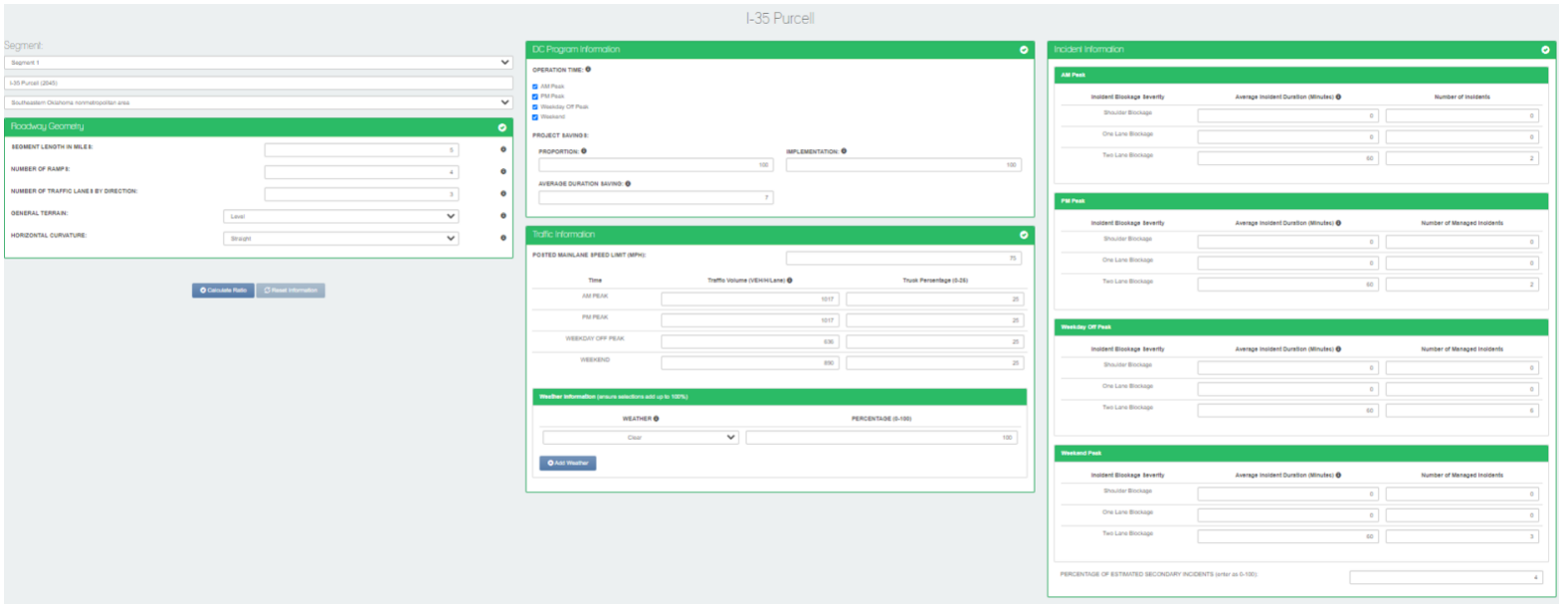
2025


I-35 Purcell
Segment:
Segment 1
I-35 Purcell
Southeastern Oklahoma nonmetropolitan area
Roadway Geometry
SEGMENT LENGTH IN MILES:
NUMBER OF RAMPS:
NUMBER OF TRAFFIC LANES BY DIRECTION:
GENERAL TERRAIN:
Level
HORIZONTAL CURVATURE:
Straight
Calculate Ratio
Reset Information
DC Program Information
OPERATION TIME:
AM Peak
PM Peak
Weekday Off Peak
Weekend
PROJECT SAVINGS:
PROPORTION:
IMPLEMENTATION:
AVERAGE DURATION SAVING:
Traffic Information
POSTED MAINLANE SPEED LIMIT (MPH):
Time
Traffic Volume (VEH/HrLane)
Truck Percentage (0-25)
AM PEAK
PM PEAK
WEEKDAY OFF PEAK
WEEKEND
Weather Information (ensure selections add up to 100%)
WEATHER
PERCENTAGE (0-100)
Clear
Add Weather
Incident Information
AM Peak
Incident Blockage Severity
Average Incident Duration (Minutes)
Number of Incidents
Shoulder Blockage
One Lane Blockage
Two Lane Blockage
PM Peak
Number of Managed Incidents
Weekday Off Peak
Weekend Peak
PERCENTAGE OF ESTIMATED SECONDARY INCIDENTS (enter as 0-100):

2045


I-35 Purcell
Segment:
Segment 1
I-35 Purcell (2045)
Southeastern Oklahoma nonmetropolitan area
Roadway Geometry
SEGMENT LENGTH IN MILES:
NUMBER OF RAMPS:
NUMBER OF TRAFFIC LANES BY DIRECTION:
GENERAL TERRAIN:
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Calculate Ratio
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OPERATION TIME:
AM Peak
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Weekday Off Peak
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Weather Information (ensure selections add up to 100%)
WEATHER
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AM Peak
Incident Blockage Severity
Average Incident Duration (Minutes)
Number of Incidents
Shoulder Blockage
One Lane Blockage
Two Lane Blockage
PM Peak
Number of Managed Incidents
Weekday Off Peak
Weekend Peak
PERCENTAGE OF ESTIMATED SECONDARY INCIDENTS (enter as 0-100):

Dispatch Colocation Benefit/Cost Estimations Tool Output

Project Name: I-35 Purcell

Date: 8/26/2022

Total Program Savings

A program summary is provided below.

Program Summary	
State	Oklahoma
Number of Segments	1
Study Period Duration (Months)	12
Number of Annual Incidents on Program Roadway	13
Annual Total Program Cost	$ 20000

The first of the two below tables contains delay reduction, fuel savings, and reduction in secondary incidents. The B/C ratio for the program can be found at the bottom of the table.

Total Program Savings	
Travel Delay of Passenger Vehicles	404.23 Vehicle Hours
Travel Delay of Trucks	170.48 Vehicle Hours
Fuel Consumption of Passenger Vehicles	104.34 Gallons
Secondary Incidents	0.03
Benefit Cost Ratio	0.93

*This B/C ratio calculation does not include emissions. They are calculated separately below. Please see Part III for a more in-depth explanation of factors not included in the B/C ratio calculation, but that would nonetheless increase its value if considered.

The table below calculates emissions reductions based on the reduction in fuel consumption above.

Emissions Reductions	
Hydrocarbon (HC)	0.0065 Metric Tons
Carbon Monoxide (CO)	0.0482 Metric Tons
Nitrogen Oxide (Nox)	0.0032 Metric Tons
Carbon Dioxide (CO2)	1.04 Metric Tons
Sulfur Oxide (SOx)	0.0167 Grams

Results for Segment 1

Segment Summary	
Name	I-35 Purcell
Region	Southeastern Oklahoma nonmetropolitan area
Length	5

The first of the two below tables contains delay reduction, fuel savings, and reduction in secondary incidents.

Total Segment Savings	
Travel Delay of Passenger Vehicles	404.23 Vehicle Hours
Travel Delay of Trucks	170.48 Vehicle Hours
Fuel Consumption of Passenger Vehicles	104.34 Gallons
Secondary Incidents	0.0261

The table below calculates emissions reductions based on the reduction in fuel consumption above.

Emissions Reductions	
Hydrocarbon (HC)	0.0065 Metric Tons
Carbon Monxide (CO)	0.0482 Metric Tons
Nitrogen Oxide (Nox)	0.0032 Metric Tons
Carbon Dioxide (CO2)	1.04 Metric Tons
Sulfur Oxide (SOx)	0.0167 Grams

The table below lists the monetary equivalents and data sources.

Monetary Equivalents			
Time (car)	$ 16.57 per Hour	2015	Standard Occupational Classification (http://www.bls.gov/soc/home.htm)
Time (truck)	$ 100 per Hour	2014	An Analysis of the Operational Costs of Trucking: 2014 Update
Fuel	$ 3.41 per Gallon	2015	Gasoline and Diesel Fuel Update, U.S. Energy Information Administration (http://www.eia.gov/petroleum/gasdiesel/)
Secondary Incidents	$ 4736 per Unit	2015	The Economic and Societal Impact of Motor Vehicle Crashes: 2010 (Revised), NHTSA

Additional Benefits

Several important benefits that can be derived from an DC program are accounted for in the B/C ratio developed by the DC-BC Tool. The tool was purposefully developed to provide conservative, defensible estimates. This section outlines numerous additional benefits that have not been included in the B/C ratio, but that would increase its value if considered.

Emissions

The B/C ratio calculation does not include emissions, however the DC-BC Tool does estimate reductions in HC, CO, NOx, and CO2 in metric tons and SOx in Grams based on the reduction in fuel consumption under "Total Program Savings" above. If monetary equivalents are available, the monetary equivalent of emissions savings can be added to the total benefits in dollars. By dividing this savings by the total costs, a new B/C estimate can be obtained that includes the value of emissions reductions.

Several of the emissions considered by the tool are greenhouse gases (GHGs). GHGs are measured qualitatively through the intensity of their effect on the earth's atmosphere. This intensity is determined by the GHG's global warming potential (GWP). CO2 is the globally accepted reference gas with a GWP of 1, and GWP is typically measured for 1, 20, 50, and 100-year time periods. In addition to being a measure of a GHG's effect on the atmosphere, GWPs are used to convert GHGs into carbon dioxide equivalents (CO2e). This allows for the use of an easy and standard unit for reporting quantities of GHGs being measured. With this in mind, one option might be to use carbon dioxide equivalents. The price of carbon on the carbon market can provide a potential source of monetary value.

Secondary Incidents

The B/C ratio calculation only considers the monetary value of property damage that might be prevented in the event of a secondary incident due to the existence of an DC program. The B/C ratio would be expected to rise very significantly if the value of even one fatal or near-fatal incident were included. Additionally, the savings derived from avoiding congestion resulting from secondary incidents due to the DC program have not been included in estimating the savings from secondary incidents.

Administrative

The B/C ratio calculation does not include the monetary costs and time incurred by the DC for investigating and documenting incidents. Savings related to insurance claims, disability, rehabilitation, attorney fees, and court costs associated with litigation resulting from secondary incidents that did not arise are additional sources of savings that have not been included in the B/C calculation.

Public Safety and Economic Effects

With the assistance of the DC program, law enforcement personnel have additional time to spend on more urgent tasks. Through improvements in safety, as well as the knowledge that help is nearby, the public will have a greater sense of security and a feeling of political good will. Reduced congestion can also aid in the flow of goods across the nation's freeways, affecting the price of the goods and the economy more generally.

Dispatch Colocation Benefit/Cost Estimations Tool Output

Project Name: I-35 Purcell

Date: 8/26/2022

Total Program Savings

A program summary is provided below.

Program Summary	
State	Oklahoma
Number of Segments	1
Study Period Duration (Months)	12
Number of Annual Incidents on Program Roadway	13
Annual Total Program Cost	$ 20000

The first of the two below tables contains delay reduction, fuel savings, and reduction in secondary incidents. The B/C ratio for the program can be found at the bottom of the table.

Total Program Savings	
Travel Delay of Passenger Vehicles	1037.76 Vehicle Hours
Travel Delay of Trucks	295.74 Vehicle Hours
Fuel Consumption of Passenger Vehicles	186.73 Gallons
Secondary Incidents	0.03
Benefit Cost Ratio	1.89

*This B/C ratio calculation does not include emissions. They are calculated separately below. Please see Part III for a more in-depth explanation of factors not included in the B/C ratio calculation, but that would nonetheless increase its value if considered.

The table below calculates emissions reductions based on the reduction in fuel consumption above.

Emissions Reductions	
Hydrocarbon (HC)	0.0116 Metric Tons
Carbon Monoxide (CO)	0.0863 Metric Tons
Nitrogen Oxide (Nox)	0.0057 Metric Tons
Carbon Dioxide (CO2)	1.8612 Metric Tons
Sulfur Oxide (SOx)	0.0299 Grams

Results for Segment 1

Segment Summary	
Name	I-35 Purcell (2045)
Region	Southeastern Oklahoma nonmetropolitan area
Length	5

The first of the two below tables contains delay reduction, fuel savings, and reduction in secondary incidents.

Total Segment Savings	
Travel Delay of Passenger Vehicles	1037.76 Vehicle Hours
Travel Delay of Trucks	295.74 Vehicle Hours
Fuel Consumption of Passenger Vehicles	186.73 Gallons
Secondary Incidents	0.0268

The table below calculates emissions reductions based on the reduction in fuel consumption above.

Emissions Reductions	
Hydrocarbon (HC)	0.0116 Metric Tons
Carbon Monxide (CO)	0.0863 Metric Tons
Nitrogen Oxide (Nox)	0.0057 Metric Tons
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