Appendix B. FHWA ICE Model

Figure descriptions for the images in this appendix have been provided as alternative text usable by accessibility software. If needed, additional figure interpretation for this appendix is available from the ODOT Senior Environmental Project Manager at (503) 731-4804.

Figure B-1. FHWA Infrastructure Carbon Estimator Tool No-Build Results

Results Summary Project Inputs Mitigation Inputs Impacts on Vehicle Operation Upstream Energy Materials 1,592 1,592 1,592 1,592 1,592 1,592 Direct Energy Construction Equipment 206 206 206 206 206 206 Routine Maintenance 307 307 1,798 1,798 2,105 1,798 1,798 2,105

Note: To convert mmBTU to the equivalent gallons of US conventional diesel, use the conversion factor of 7.785 gallons of diesel / mmBTU. Please keep in mind that this conversion represents the equivalent amount of energy required, which can be useful for informational purposes, but it does not necessarily represent actual gallons of diesel required.

	Annual GHG emissions (MT CO2e), per year over 30 years											
	Unmitigated				ozej, per year	Mitigated						
	Roadway - new construction	Roadway- rehabilitation	Roadway -	Bridges	Rail, bus, bicycle, ped.	Total	Roadway - new construction	Roadway- rehabilitation	Roadway - total	Bridges	Rail, bus, bicycle, ped.	Total
Upstream Emissions												
Materials	-	97	97	-		97	-	97	97	-		97
Direct Emissions												
Construction Equipment	-	15	15			15	-	15	15	-		15
Routine Maintenance						22						22
Total	-	112	112	-	-	134		112	112	-		134

Figure B-2. FHWA Infrastructure Carbon Estimator Tool Build Results

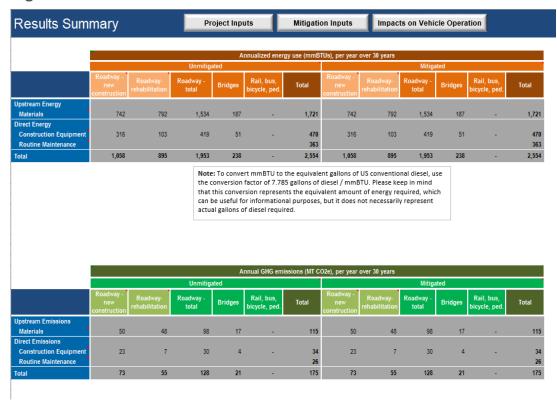


Figure B-3. FHWA Infrastructure Carbon Estimator Tool Inputs

ICE Inputs

I-5 Rose Quarter Improvement Project

Parameter	Notes	Build	No Build
Roadway System and Infrastructure			
Average daily traffic per lane mile	Based on Traffic Demand Modeling. Only links that will be modified.	2,281	2,440
Total Existing (Centerline Miles)	Only modified sections	4.31	4.31
Total Existing (Lane Miles)	Only modified lanes	12.6	12.6
Total Existing Bicycle Lanes (Lane Miles)	Not included in analysis	0	0
Roadway Projects	-		•
New Freeway (Lane Miles)	New lanes only, not modified	0	0
New Surface Street (Lane Miles)	New lanes only, not modified	0.64	0
Additional Constructed Freeway Lane (Lane Miles)	New lanes only, not modified	4.30	0
Additional Surface Street Lane (LaneMiles)	New lanes only, not modified	0	0
Re-alignment Freeway (Lane Miles)	Construction - change to	0	0
Re-alignment Surface Street (Lane Miles)	horizontal/vertertical alignment of an existing roadway	0	0
Lane-widening Freeway (Lane Miles)	Reconstruction with lanes wider than the	0	0
Lane-widening Surface Street (Lane Miles)	replaced section of roadway	0	0
Shoulder Improvement Freeway (Centerline Miles)	Construction - widening of shoulders or	1.93	0
Shoulder Improvement Surface Street (Centerline Miles)	complete reconstruction of shoulders	0	0
Reconstruct Pavement Freeway (Lane Miles)	Complete reconstruction of pavement	0	0
Reconstruct Pavement Surface Street (Lane Miles)	layer without adding or widening lanes	0	0
Resurface Pavement Freeway (Lane Miles)	Application of overlay of paving material to	9.94	19.9
Resurface Pavement Surface Street (Lane Miles)	existing pavement	3.32	6.64
Bridges			
Construct New Bridge - Number of Bridges	LIDS	3	0
Construct New Bridge - Average Number of Spans per Bridge	1 Span each	1	0
Construct New Bridge - Average Number of Lanes per Bridge	Width - 40 (do not count shoulder) / 12 (width of a lane)	7	0
Construction Delay			
Total Project-Days of Lane Closure	Total number of project-days that travelers will experience delays (3 sites that close a lane for 5 days, enter 15 project-days)	3,618	0
ADT per Directional Segment for Lane Closure	System-wide ADT across all Traffic Segments in Project Area	28,781	0
Percentage of lanes closed during construction	Average Percentage of lanes expected to be closed for construction.	50%	0%

Note: Distances measured in Google Earth from data in I-% Rose Quarter Improvement Project API Figure dated 6/21/2017