

## **Appendix C2**

# **I-205 Toll Project Truck Toll Multiplier Sensitivity Analysis – Transportation Effects**

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# I-205 Toll Project

## I-205 Toll Project Truck Toll Multiplier Sensitivity Analysis – Transportation Effects Memorandum

<b>Date</b>	February 2023
<b>To</b>	Carol Snead (ODOT)
<b>From</b>	Chris Wellander (WSP)
<b>CC</b>	Mandy Putney (ODOT), Heather Wills (WSP), Nicole McDermott (WSP)
<b>Subject</b>	I-205 Toll Project Truck Toll Multiplier Sensitivity Analysis – Transportation Effects

The traffic analysis in the *I-205 Toll Project Transportation Technical Report* assumes that all vehicles (i.e., passenger vehicles and trucks) would be charged the same toll rates. This memorandum outlines the traffic effects of applying a truck toll multiplier to medium and heavy trucks. The analysis is used to determine the sensitivity of overall traffic volumes and trip characteristics if medium and heavy trucks pay a higher toll rate than passenger vehicles and light trucks.

Table 1 and Table 2 identify the AM and PM peak hour volumes for 2045 for the Build Alternative on I-205 with and without the truck toll multiplier. As shown in Table 1 and Table 2, Build Alternative traffic volumes in the peak hours would be similar on I-205 with and without the truck toll multiplier, with changes of 2% or less.

**Table 1. 2045 AM Peak Period Traffic Volumes with/without Truck Toll Multiplier**

Locations	Total Volume			Change (average per hour)	
	Total 2-hour AM Peak Period (7 a.m. – 9 a.m.)			Build with TTM - Build with no TTM	
	No Build	Build	Build with TTM		
I-205 (Abernethy Bridge)	18,331	17,307	17,723	208	2%
I-205 (Stafford Road)	14,854	12,679	12,507	(86)	-1%

TTM = truck toll multiplier

**Table 2. 2045 PM Peak Period Traffic Volumes with/without Truck Toll Multiplier**

Locations	Total Volume			Change (average per hour)	
	Total 2-hour PM Peak Period (4 p.m. – 6 p.m.)			Build with TTM - Build with no TTM	
	No Build	Build	Build with TTM		
I-205 (Abernethy Bridge)	18,133	19,280	19,405	63	1%
I-205 (Stafford Road)	13,672	14,187	14,206	10	0%

TTM = truck toll multiplier

Table 3 identifies changes in vehicles miles traveled (VMT), vehicle hours traveled (VHT), average speed, and the number of trucks as a percentage of total average weekday traffic (AWDT) on the tolled portion of I-205 in 2027 and 2045 for the Build Alternative with and without the truck toll multiplier. As shown in

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Table 3, VMT, VHT, and average speed would be similar under the Build Alternative in 2027 and 2045 with and without the truck toll multiplier. However, trucks as a percentage of total weekday daily traffic is projected to decrease from 9.7% to 5.5% in 2027, and from 15.1% to 8.3% in 2045 with the truck toll multiplier applied to the Build Alternative. These average weekday changes in truck percentages are reflected in the *I-205 Toll Project Air Quality Technical Report* and *I-205 Toll Project Economics Technical Report* because both reports rely on daily vehicle count information. It is standard practice to obtain these daily results directly from the regional demand model.

**Table 3. 2027 and 2045 Average Weekday Traffic Effects on I-205 with/without Truck Toll Multiplier**

I-205		VMT	VHT	Avg Speed	% Truck	% Difference for Build with TTM Compared to No TTM		
						VMT	VHT	Avg Speed
Build Alternative (with no TTM)	2027	1,557,849	30,798	50.6	9.7%	N/A		
	2045	1,868,947	39,223	47.6	15.1%			
Build Alternative (with TTM)	2027	1,544,190	30,329	50.9	5.5%	-0.9%	-1.5%	0.7%
	2045	1,855,650	38,280	48.5	8.3%	-0.7%	-2.4%	1.7%

N/A = not applicable  
 TTM = truck toll multiplier  
 VMT = vehicle miles traveled  
 VHT = vehicle hours traveled

For the traffic analysis presented in the I-205 Toll Project Transportation Technical Report, analyses were conducted for the peak hours for specific locations; therefore, traffic volumes and vehicle mix factors were derived from actual counts at those specific locations for the peak hours analyzed. This is standard practice for traffic analysis. Because of this, the transportation analysis did not rely on the AWDT vehicle mix from the RTDM to determine peak hour truck volumes. Peak hour truck volume forecasts were based on actual peak hour vehicle mix count information which were factored to reflect the change in total peak hour vehicles reflected in the Dynamic Traffic Assessment (“DTA”) peak hour model. Because the total vehicle volumes in the peak periods did not change by a notable degree, the peak hour traffic analysis conducted for the Build Alternative which had no truck toll multipliers resulted in similar results and conclusions as the analysis conducted for the alternative with truck multipliers.