Appendix F – Comparative Analysis Background Data

Purpose	The purpose of this appendix is to document the assumptions, cost rates, inflation
Overview	The inputs below were used to calculate and compare costs. The following pages break down how each number was documented or calculated.
Comparative Analysis Data	
Annual freight-truck miles (>10,000 lb)	3,449,000,000
Annual freight-truck ton-miles	103,025,863,250
10 percent annual freight-truck ton-miles	10,302,586,325
Annual freight-rail ton-miles	4,630,375,876
Projected freight-rail ton-miles (2045)	8,165,713,691

Appendix F – Comparative Analysis Background Data

Annual Oregon Truck Ton-Mile Calculation

Annual truck ton-miles were estimated using truck mileage by weight class reported in the *2025-2027 Oregon Highway Cost Allocation Study.* The 1- to 10,000-pound weight class was excluded because the lighter vehicles are not representative of the heavier trucks used to transport freight.

Declared weight range in pounds *(provided in 2025-2027 Highway Cost Allocation Study)*	**Midpoint weight in pounds** *(midpoint of each declared weight range)*	**Miles** *(provided in 2025-2027 Highway Cost Allocation Study)*	**Midpoint weight in tons** *(midpoint weight in declared pounds divided by 2,000)*	**Annual ton-miles** *(miles multiplied by tons)*
1 to 10,000	5,000.5	33,605,000,000	2.500	84,020,901,250
10,001 to 26,000	18,000.5	1,031,000,000	9.000	9,279,257,750
26,001 to 78,000	52,000.5	531,000,000	26.000	13,806,132,750
78,001 to 80,000	79,000.5	1,358,000,000	39.500	53,641,339,500
80,001 to 104,000	92,000.5	221,000,000	46.000	10,166,055,250
104,001 to 105,500	104,750.5	304,000,000	52.375	15,922,076,000
105,501 and up	105,501.0	4,000,000	52.751	211,002,000
All weight classes (reference)		**37,054,000,000**		**187,046,764,500**
Freight truck totals (>10,000 lb)		**3,449,000,000**		**103,025,863,250**

Result	
10 percent of all truck ton-miles	10,302,586,325

Source: 2025–2027 Oregon Highway Cost Allocation Study, State of Oregon, May 2025, Exhibit 4-1.

Appendix F – Comparative Analysis Background Data

2026 Public-Cost Rates per Ton-Mile

Basic public-cost rates were obtained from *Pricing Freight Transport to Account for External Costs* , published by the Confressional Budget Office. The base-year public-cost rates were converted to 2026 dollars using the Personal Consumption Expenditures Chain-type Price Index

Inflation input	Value
2014 PCEPI	97.1200000000
2026 PCEPI	131.3920000000
2014–2026 inflation multiplier	1.3528830313

Mode	Cost category	2014 Base-year median *(cents divided by ton-mile)*	2014-2026 Inflation multiplier	2026 cents/ton-mile *(base-year median cents/ton-mile multiplied by inflation multiplier)*	2014 Base-year dollars/ton-mile *(2014 base-year median/ton-mile divided by 100)*	2026 dollars/ton-mile *(2026 cents/ton-mile divided by 100)*
Truck	Pavement damage	0.850	1.3528830313	1.1499505766	0.00850	0.0114995058
Truck	CO2 emissions	0.220	1.3528830313	0.2976342669	0.00220	0.0029763427
Truck	Roadway congestion	0.660	1.3528830313	0.8929028007	0.00660	0.0089290280
Truck	Public safety	1.565	1.3528830313	2.1172619440	0.01565	0.0211726194
Rail	Pavement damage	0.055	1.3528830313	0.0744085667	0.00055	0.0007440857
Rail	CO2 emissions	0.050	1.3528830313	0.0676441516	0.00050	0.0006764415
Rail	Roadway congestion	0.015	1.3528830313	0.0202932455	0.00015	0.0002029325
Rail	Public safety	0.180	1.3528830313	0.2435189456	0.00180	0.0024351895

Source: "Pricing Freight Transport to Account for External Costs," Congressional Budget Office, March 2015, Table 1. Inflation adjustment uses the Personal
Presentation note: Chapter 3 rounds the 2026 dollar-per-ton-mile rates for display. Calculations should use the full-precision values in column G.

Appendix F – Comparative Analysis Background Data

Annual Public Costs of 10 Percent of Oregon Truck Ton-Miles

Input	Value
Estimated annual truck ton-miles	103,025,863,250
10 percent ton-miles	10,302,586,325

Cost category	Truck 2026 rate	Truck public cost	Rail 2026 rate	Rail public cost	Annual savings
CO2 emissions	$0.0029763427	$30,664,027	$0.0006764415	$6,969,097	$23,694,930
Pavement damage	$0.0114995058	$118,474,651	$0.0007440857	$7,666,007	$110,808,644
Roadway congestion	$0.0089290280	$91,992,082	$0.0002029325	$2,090,729	$89,901,353
Public safety	$0.0211726194	$218,132,740	$0.0024351895	$25,088,750	$193,043,990
Total		**$459,263,499**		**$41,814,583**	**$417,448,917**

Appendix F – Comparative Analysis Background Data

Projected Rail Freight Growth Public-Cost Comparison

Input	Value
Rail ton-mile baseline	4,630,375,876
Projected 2045 rail ton-miles	8,165,713,691
Growth difference	3,535,337,815

Cost category	Truck rate	Truck cost if growth carried by truck	Rail rate	Rail cost if growth carried by rail	Public-cost difference
CO2 emissions	$0.002976342669	$10,522,377	$0.000676441516	$2,391,449	$8,130,928
Pavement damage	$0.011499505766	$40,654,638	$0.000744085667	$2,630,594	$38,024,043
Roadway congestion	$0.008929028007	$31,567,130	$0.000202932455	$717,435	$30,849,696
Public safety	$0.021172619440	$74,852,362	$0.002435189456	$8,609,217	$66,243,145
Total		**$157,596,507**		**$14,348,696**	**$143,247,811**

Appendix F – Comparative Analysis Background Data

Source Notes

Topic	Source / original workbook note	Use	URL
Highway travel and weight classes	2025–2027 Oregon Highway Cost Allocation Study, State of Oregon, May 2025, Exhibit 4-1	Truck miles and ton-mile calculation	https://www.oregon.gov/das/oea/Documents/ECONW-HCAS-Cost-Allocation-Study-2025-27-Corrected.pdf
External/public cost rates	Congressional Budget Office, Pricing Freight Transport to Account for External Costs, March 2015, Table 1	Truck and rail cost rates	https://www.cbo.gov/publication/50049
Inflation	Personal Consumption Expenditures: Chain-type Price Index (PCEPI), Federal Reserve Economic Data	2014-to-2026 multiplier	https://fred.stlouisfed.org/series/PCEPI
Freight mode growth	OSRP Waybill analysis in original workbook	2026 and 2045 rail ton-miles and growth difference	