

Climate and Air Quality Resources

Comparison of 2035 Air Quality Impacts Criteria Pollutants by Alternative (in tons per day)

Alternative	Particulate Matter Less Than 2.5 Microns (PM2.5)	Sulfur Dioxide (SO2)	Nitrogen Dioxide (NOX)	Carbon Monoxide (CO)	Nitrogen Content of Emissions	Ammonia (NH3)	Re-entrained Road Dust
Year 2000	3.99	4.26	16.45	113.79	16.45	NA	49.54
Year 2035 Baseline	0.14	0.11	4.28	76.03	4.28	0.99	104.61
No Action	0.13	0.09	3.87	69.51	3.75	0.88	92.83
Minimal Action	0.13	0.09	3.84	68.98	3.72	0.88	91.90
Rail with Intermountain Connection	0.12	0.09	3.63	65.21	2.26	0.82	87.00
Advanced Guideway System	0.12	0.09	3.54	63.56	2.19	0.79	84.74
Dual-Mode Bus in Guideway	0.12	0.09	3.56	64.00	1.99	0.81	85.56
Diesel Bus in Guideway	0.11	0.09	3.61	64.82	2.26	0.82	86.64
Six-Lane Highway 55 mph	0.14	0.11	4.25	76.07	2.68	0.99	102.76
Six-Lane Highway 65 mph	0.13	0.11	4.25	76.07	2.68	0.99	102.76
Reversible/High Occupancy Vehicle/High Occupancy Toll Lanes	0.14	0.11	4.29	76.67	2.69	0.99	103.56
Six-Lane Highway with Rail and Intermountain Connection	0.14	0.10	4.12	73.82	2.59	0.95	99.45
Six-Lane Highway with Advanced Guideway System	0.13	0.10	4.06	72.88	2.50	0.92	97.73
Six-Lane Highway with Dual-Mode Bus in Guideway	0.14	0.10	4.09	73.15	2.58	0.94	99.12
Six-Lane Highway with Diesel Bus in Guideway	0.14	0.10	4.12	73.61	2.61	0.96	99.85
Preferred Alternative	0.12 to 0.13	0.09 to 0.10	3.68 to 4.06	66.00 to 72.88	2.29 to 2.50	0.83 to 0.92	88.20 to 97.73

In all tables, values for the Preferred Alternative are presented as a range because the adaptive management component of the Preferred Alternative allows it to be implemented based on future needs and associated triggers for further action. See Wall #9 for a description of the triggers included in the Preferred Alternative.

How does transportation contribute to climate change?

The transportation sector is the second largest contributor to total greenhouse gas emissions in the United States and the greatest sources of carbon dioxide emissions, the predominant greenhouse gas. Consumption of petroleum products such as gasoline and diesel fuel account for almost all (98 percent) of transportation-sector emissions. While the issue of climate change is a global issue and Corridor emissions are small in comparison to global trends, incremental differences in emission levels between alternatives have some effect. Estimated emissions are directly correlated to vehicle miles traveled.

Comparison of Projected Daily Vehicle Miles Traveled (VMT) in the I-70 Mountain Corridor by Alternative (Year 2035)

Alternative	Automobile VMT	Heavy-duty Vehicle VMT (Truck, Bus, and Rail)	Total VMT	Percent Increase from Current
Year 2008 Current (estimated from CDOT traffic database)	6,085,077	752,088	6,837,166	0
Year 2035 Baseline	9,310,168	1,150,695	10,460,863	53
No Action	8,261,907	1,021,135	9,283,042	36
Minimal Action	7,541,878	932,142	8,474,021	24
Rail with Intermountain Connection	7,743,354	957,044	8,700,398	27
Advanced Guideway System	7,541,878	932,142	8,474,021	24
Dual-Mode Bus in Guideway	7,614,435	941,110	8,555,545	25
Diesel Bus in Guideway	7,710,822	953,023	8,663,845	27
Six-Lane Highway (55 and 65 mph)	9,145,262	1,130,313	10,275,576	50
Reversible/High Occupancy Vehicle/High Occupancy Toll Lanes	9,217,222	1,139,207	10,356,429	51
Six-Lane Highway with Rail and Intermountain Connection	8,851,222	1,093,971	9,945,194	45
Six-Lane Highway with Advanced Guideway System	8,698,266	1,075,067	9,773,333	43
Six-Lane Highway with Dual-Mode Bus in Guideway	8,821,329	1,090,277	9,911,605	45
Six-Lane Highway with Diesel Bus in Guideway	8,886,333	1,098,311	9,984,644	46
Preferred Alternative	7,849,800 to 8,698,266	970,200 to 1,075,067	8,820,000 to 9,773,333	29 to 43

Comparison of Corridor Carbon Dioxide Production by Alternative (Year 2035)

Alternative	CO2 Produced (tons per day)	Difference from Baseline per Day	Percent Difference	Greater than Baseline
Year 2008 Current	436,506	--	--	--
Year 2035 Baseline	671,144	--	--	--
No Action	587,594	(83,550)	(14)	No
Minimal Action	602,407	(68,737)	(11)	No
Rail with Intermountain Connection (IMC)	588,828	(82,316)	(14)	No
Advanced Guideway System	585,125	(86,019)	(15)	No
Dual-Mode Bus in Guideway	596,235	(74,909)	(13)	No
Diesel Bus in Guideway	645,613	(25,532)	(4)	No
Six-Lane Highway (55 and 65 mph)	659,191	(11,953)	(2)	No
Reversible/HOV/HOT Lanes	659,191	(11,953)	(2)	No
Six-Lane Highway with Rail and IMC	632,034	(39,111)	(6)	No
Six-Lane with Advanced Guideway System	625,861	(45,283)	(7)	No
Six-Lane with Dual Mode Bus in Guideway	629,565	(41,579)	(7)	No
Six-Lane Highway with Diesel Bus in Guideway	688,818	17,674	3	Yes
Preferred Alternative	623,393 to 625,861	(47,752) to (45,283)	(8) to (7)	No