

APPENDIX H

Alternate Grid Mix Case Criteria Pollutant and Health Results

Appendix H

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H.1 Nationwide Criteria Pollutant Emissions

Table H.1-1-A1. Nationwide Criteria Pollutant Emissions from U.S. Passenger Cars and Light Trucks (tons/year) by Alternative, Analysis A1, Alternate Grid Mix

Pollutant and Year	Alternative 1	Alternative 2	Alternative 3	Alternative 4
	No Action	2%/year Cars and Trucks	Preferred	7%/year Cars and Trucks
Carbon monoxide (CO)				
2021	14,972,060	14,989,973	14,996,750	14,975,725
2025	15,007,703	15,051,058	15,071,915	14,794,025
2040	18,044,198	18,212,977	18,238,947	16,331,466
2060	24,165,763	24,544,218	24,645,616	21,831,628
Nitrogen oxides (NO_x)				
2021	1,255,071	1,249,611	1,247,810	1,244,511
2025	1,070,992	1,059,191	1,053,658	1,058,389
2040	962,666	935,838	919,874	930,351
2060	1,276,882	1,246,545	1,227,336	1,245,762
Particulate matter (PM_{2.5})				
2021	54,066	53,414	53,191	52,214
2025	57,203	55,763	55,053	52,865
2040	77,381	73,910	71,698	63,886
2060	104,027	99,760	96,884	85,202
Sulfur dioxide (SO₂)				
2021	141,115	137,273	135,747	132,025
2025	144,261	136,116	131,982	139,062
2040	174,770	155,199	147,467	200,880
2060	232,869	206,630	196,659	275,166
Volatile organic compounds (VOCs)				
2021	1,289,875	1,280,304	1,277,077	1,262,161
2025	1,137,618	1,116,361	1,105,916	1,070,273
2040	910,141	858,295	824,389	690,342
2060	1,184,747	1,118,866	1,073,511	876,451

Table H.1-1-A2. Nationwide Criteria Pollutant Emissions from U.S. Passenger Cars and Light Trucks (tons/year) by Alternative, Analysis A2, Alternate Grid Mix

Pollutant and Year	Alternative 1	Alternative 2	Alternative 3	Alternative 4
	No Action	2%/year Cars and Trucks	Preferred	7%/year Cars and Trucks
Carbon monoxide (CO)				
2021	14,657,379	14,676,940	14,683,524	14,661,207
2025	14,620,666	14,669,107	14,689,136	14,465,516
2040	16,607,689	16,787,797	16,881,196	15,411,950
2060	20,788,692	21,142,724	21,339,820	19,313,177
Nitrogen oxides (NO_x)				
2021	1,238,977	1,233,639	1,231,607	1,229,335
2025	1,052,632	1,041,508	1,035,771	1,040,162
2040	891,751	868,585	855,944	867,511
2060	1,105,683	1,081,294	1,068,574	1,088,371
Particulate matter (PM_{2.5})				
2021	52,563	51,929	51,682	50,849
2025	55,420	54,072	53,297	51,404
2040	71,183	68,171	66,064	59,354
2060	89,551	86,084	83,549	74,128
Sulfur dioxide (SO₂)				
2021	136,436	132,409	130,844	127,762
2025	138,791	130,316	125,542	129,929
2040	157,960	138,607	125,660	163,361
2060	197,276	172,830	156,166	208,568
Volatile organic compounds (VOCs)				
2021	1,273,510	1,264,282	1,260,729	1,247,979
2025	1,118,000	1,098,346	1,087,091	1,056,628
2040	840,559	796,355	765,179	651,537
2060	1,020,744	968,174	929,651	772,344

Table H.1-1-B1. Nationwide Criteria Pollutant Emissions from U.S. Passenger Cars and Light Trucks (tons/year) by Alternative, Analysis B1, Alternate Grid Mix

Pollutant and Year	Alternative 1	Alternative 2	Alternative 3	Alternative 4
	No Action	2%/year Cars and Trucks	Preferred	7%/year Cars and Trucks
Carbon monoxide (CO)				
2021	14,990,838	15,001,492	15,007,890	14,974,056
2025	15,039,906	15,066,239	15,079,604	14,807,644
2040	18,216,992	18,279,402	18,215,914	16,533,612
2060	24,939,695	24,911,471	24,820,275	22,282,759
Nitrogen oxides (NO_x)				
2021	1,251,323	1,248,339	1,246,312	1,244,824
2025	1,065,079	1,058,227	1,052,657	1,060,162
2040	937,645	927,192	910,816	930,942
2060	1,216,567	1,215,256	1,199,073	1,230,801
Particulate matter (PM_{2.5})				
2021	53,609	53,256	53,002	52,082
2025	56,481	55,644	54,904	52,805
2040	74,289	72,910	70,584	63,308
2060	96,002	95,795	93,326	82,563
Sulfur dioxide (SO₂)				
2021	138,116	135,985	134,434	131,953
2025	139,474	134,808	131,372	138,155
2040	153,582	146,672	144,507	187,049
2060	172,459	174,259	174,807	235,646
Volatile organic compounds (VOCs)				
2021	1,283,306	1,278,106	1,274,381	1,259,744
2025	1,127,181	1,114,805	1,103,751	1,068,851
2040	864,842	844,131	807,139	685,810
2060	1,063,870	1,059,963	1,019,863	848,329

Table H.1-1-B2. Nationwide Criteria Pollutant Emissions from U.S. Passenger Cars and Light Trucks (tons/year) by Alternative, Analysis B2, Alternate Grid Mix

Pollutant and Year	Alternative 1	Alternative 2	Alternative 3	Alternative 4
	No Action	2%/year Cars and Trucks	Preferred	7%/year Cars and Trucks
Carbon monoxide (CO)				
2021	14,671,611	14,682,872	14,684,957	14,660,456
2025	14,647,877	14,676,970	14,687,979	14,469,691
2040	16,767,342	16,844,564	16,873,099	15,422,611
2060	21,464,659	21,465,339	21,514,186	19,469,405
Nitrogen oxides (NO_x)				
2021	1,235,910	1,232,856	1,231,293	1,229,877
2025	1,047,281	1,040,428	1,035,541	1,042,234
2040	868,739	859,395	847,698	876,222
2060	1,053,671	1,053,005	1,045,335	1,088,716
Particulate matter (PM_{2.5})				
2021	52,196	51,845	51,575	50,778
2025	54,780	53,971	53,160	51,336
2040	68,369	67,152	64,961	58,454
2060	82,687	82,567	80,436	71,298
Sulfur dioxide (SO₂)				
2021	134,041	131,809	130,208	127,639
2025	134,574	129,565	125,090	129,612
2040	138,836	131,595	122,557	156,310
2060	146,004	146,555	139,170	183,831
Volatile organic compounds (VOCs)				
2021	1,268,195	1,263,105	1,259,153	1,246,636
2025	1,108,714	1,096,929	1,085,079	1,054,993
2040	799,459	781,481	748,851	637,053
2060	917,523	915,239	883,113	733,307

Table H.1-1-C1. Nationwide Criteria Pollutant Emissions from U.S. Passenger Cars and Light Trucks (tons/year) by Alternative, Analysis C1, Alternate Grid Mix

Pollutant and Year	Alternative 1	Alternative 2	Alternative 3	Alternative 4
	No Action	2%/year Cars and Trucks	Preferred	7%/year Cars and Trucks
Carbon monoxide (CO)				
2021	14,972,060	15,001,492	15,007,890	14,974,056
2025	15,007,703	15,066,239	15,079,604	14,807,644
2040	18,044,198	18,279,402	18,215,914	16,533,612
2060	24,165,763	24,911,471	24,820,275	22,282,759
Nitrogen oxides (NO_x)				
2021	1,255,071	1,248,339	1,246,312	1,244,824
2025	1,070,992	1,058,227	1,052,657	1,060,162
2040	962,666	927,192	910,816	930,942
2060	1,276,882	1,215,256	1,199,073	1,230,801
Particulate matter (PM_{2.5})				
2021	54,066	53,256	53,002	52,082
2025	57,203	55,644	54,904	52,805
2040	77,381	72,910	70,584	63,308
2060	104,027	95,795	93,326	82,563
Sulfur dioxide (SO₂)				
2021	141,115	135,985	134,434	131,953
2025	144,261	134,808	131,372	138,155
2040	174,770	146,672	144,507	187,049
2060	232,869	174,259	174,807	235,646
Volatile organic compounds (VOCs)				
2021	1,289,875	1,278,106	1,274,381	1,259,744
2025	1,137,618	1,114,805	1,103,751	1,068,851
2040	910,141	844,131	807,139	685,810
2060	1,184,747	1,059,963	1,019,863	848,329

Table H.1-1-C2. Nationwide Criteria Pollutant Emissions from U.S. Passenger Cars and Light Trucks (tons/year) by Alternative, Analysis C2, Alternate Grid Mix

Pollutant and Year	Alternative 1	Alternative 2	Alternative 3	Alternative 4
	No Action	2%/year Cars and Trucks	Preferred	7%/year Cars and Trucks
Carbon monoxide (CO)				
2021	14,657,379	14,682,872	14,684,957	14,660,456
2025	14,620,666	14,676,970	14,687,979	14,469,691
2040	16,607,689	16,844,564	16,873,099	15,422,611
2060	20,788,692	21,465,339	21,514,186	19,469,405
Nitrogen oxides (NO_x)				
2021	1,238,977	1,232,856	1,231,293	1,229,877
2025	1,052,632	1,040,428	1,035,541	1,042,234
2040	891,751	859,395	847,698	876,222
2060	1,105,683	1,053,005	1,045,335	1,088,716
Particulate matter (PM_{2.5})				
2021	52,563	51,845	51,575	50,778
2025	55,420	53,971	53,160	51,336
2040	71,183	67,152	64,961	58,454
2060	89,551	82,567	80,436	71,298
Sulfur dioxide (SO₂)				
2021	136,436	131,809	130,208	127,639
2025	138,791	129,565	125,090	129,612
2040	157,960	131,595	122,557	156,310
2060	197,276	146,555	139,170	183,831
Volatile organic compounds (VOCs)				
2021	1,273,510	1,263,105	1,259,153	1,246,636
2025	1,118,000	1,096,929	1,085,079	1,054,993
2040	840,559	781,481	748,851	637,053
2060	1,020,744	915,239	883,113	733,307

H.2 Nationwide Changes in Health Outcomes

Table H.2-1-A1. Nationwide Changes in Health Outcomes from Criteria Pollutant Emissions from U.S. Passenger Cars and Light Trucks (cases/year) by Alternative, Analysis A1,^a Alternate Grid Mix

Outcome and Year	Alternative 1 ^b	Alternative 2	Alternative 3	Alternative 4
	No Action	2%/year Cars and Trucks	Preferred	7%/year Cars and Trucks
Mortality (ages 30 and older), Pope et al. (2002)				
2021	0	-35	-48	-92
2025	0	-81	-120	-170
2040	0	-230	-360	-460
2060	0	-290	-450	-610
Mortality (ages 30 and older), Laden et al. (2006)				
2021	0	-91	-120	-240
2025	0	-210	-310	-430
2040	0	-590	-922	-1,200
2060	0	-740	-1,200	-1,600
Chronic bronchitis				
2021	0	-24	-33	-63
2025	0	-55	-82	-110
2040	0	-150	-230	-300
2060	0	-180	-290	-390
Emergency room visits for asthma				
2021	0	-34	-46	-87
2025	0	-76	-110	-150
2040	0	-210	-320	-370
2060	0	-260	-400	-490
Work-loss days				
2021	0	-4,500	-6,200	-11,800
2025	0	-10,000	-15,000	-21,000
2040	0	-25,000	-40,000	-51,000
2060	0	-32,000	-50,000	-68,000

a. Negative changes indicate fewer health impacts; positive changes indicate additional health impacts. Values have been rounded

b. Changes for the No Action Alternative are shown as zero because the No Action Alternative is the baseline to which the other alternatives are compared.

Table H.2-1-A2. Nationwide Changes in Health Outcomes from Criteria Pollutant Emissions from U.S. Passenger Cars and Light Trucks (cases/year) by Alternative, Analysis A2,^a Alternate Grid Mix

Outcome and Year	Alternative 1 ^b	Alternative 2	Alternative 3	Alternative 4
	No Action	2%/year Cars and Trucks	Preferred	7%/year Cars and Trucks
Mortality (ages 30 and older), Pope et al. (2002)				
2021	0	-35	-49	-86
2025	0	-79	-120	-170
2040	0	-210	-360	-470
2060	0	-250	-420	-590
Mortality (ages 30 and older), Laden et al. (2006)				
2021	0	-91	-130	-220
2025	0	-200	-320	-430
2040	0	-540	-910	-1,200
2060	0	-630	-1,100	-1,500
Chronic bronchitis				
2021	0	-24	-34	-59
2025	0	-53	-83	-110
2040	0	-130	-230	-300
2060	0	-160	-270	-380
Emergency room visits for asthma				
2021	0	-34	-47	-82
2025	0	-74	-120	-150
2040	0	-190	-310	-390
2060	0	-220	-380	-480
Work-loss days				
2021	0	-4,500	-6,300	-11,000
2025	0	-9,700	-15,000	-21,000
2040	0	-23,000	-39,000	-52,000
2060	0	-27,000	-46,000	-65,000

a. Negative changes indicate fewer health impacts; positive changes indicate additional health impacts. Values have been rounded

b. Changes for the No Action Alternative are shown as zero because the No Action Alternative is the baseline to which the other alternatives are compared.

Table H.2-1-B1. Nationwide Changes in Health Outcomes from Criteria Pollutant Emissions from U.S. Passenger Cars and Light Trucks (cases/year) by Alternative, Analysis B1, ^a Alternate Grid Mix

Outcome and Year	Alternative 1 ^b	Alternative 2	Alternative 3	Alternative 4
	No Action	2%/year Cars and Trucks	Preferred	7%/year Cars and Trucks
Mortality (ages 30 and older), Pope et al. (2002)				
2021	0	-19	-33	-70
2025	0	-47	-86	-130
2040	0	-88	-200	-310
2060	0	-1	-100	-290
Mortality (ages 30 and older), Laden et al. (2006)				
2021	0	-50	-85	-181
2025	0	-120	-220	-330
2040	0	-230	-510	-800
2060	0	-3	-270	-740
Chronic bronchitis				
2021	0	-13	-23	-48
2025	0	-31	-58	-86
2040	0	-56	-130	-200
2060	0	-1	-67	-190
Emergency room visits for asthma				
2021	0	-18	-32	-67
2025	0	-44	-80	-120
2040	0	-78	-170	-240
2060	0	-1	-90	-200
Work-loss days				
2021	0	-2,500	-4,300	-9,000
2025	0	-5,800	-11,000	-16,000
2040	0	-9,700	-22,000	-35,000
2060	0	-140	-12,000	-33,000

a. Negative changes indicate fewer health impacts; positive changes indicate additional health impacts. Values have been rounded

b. Changes for the No Action Alternative are shown as zero because the No Action Alternative is the baseline to which the other alternatives are compared.

Table H.2-1-B2. Nationwide Changes in Health Outcomes from Criteria Pollutant Emissions from U.S. Passenger Cars and Light Trucks (cases/year) by Alternative, Analysis B2,^a Alternate Grid Mix

Outcome and Year	Alternative 1 ^b	Alternative 2	Alternative 3	Alternative 4
	No Action	2%/year Cars and Trucks	Preferred	7%/year Cars and Trucks
Mortality (ages 30 and older), Pope et al. (2002)				
2021	0	-20	-34	-68
2025	0	-47	-92	-130
2040	0	-83	-210	-330
2060	0	-2	-120	-290
Mortality (ages 30 and older), Laden et al. (2006)				
2021	0	-50	-87	-170
2025	0	-120	-240	-340
2040	0	-210	-550	-840
2060	0	-6	-310	-750
Chronic bronchitis				
2021	0	-13	-23	-46
2025	0	-32	-62	-89
2040	0	-53	-140	-210
2060	0	-1	-76	-190
Emergency room visits for asthma				
2021	0	-19	-32	-64
2025	0	-44	-85	-120
2040	0	-73	-190	-260
2060	0	-2	-110	-220
Work-loss days				
2021	0	-2,500	-4,400	-8,700
2025	0	-5,800	-11,000	-16,000
2040	0	-9,100	-23,000	-36,000
2060	0	-260	-13,000	-33,000

a. Negative changes indicate fewer health impacts; positive changes indicate additional health impacts. Values have been rounded

b. Changes for the No Action Alternative are shown as zero because the No Action Alternative is the baseline to which the other alternatives are compared.

Table H.2-1-C1. Nationwide Changes in Health Outcomes from Criteria Pollutant Emissions from U.S. Passenger Cars and Light Trucks (cases/year) by Alternative, Analysis C1,^a Alternate Grid Mix

Outcome and Year	Alternative 1 ^b	Alternative 2	Alternative 3	Alternative 4
	No Action	2%/year Cars and Trucks	Preferred	7%/year Cars and Trucks
Mortality (ages 30 and older), Pope et al. (2002)				
2021	0	-45	-59	-96
2025	0	-90	-130	-170
2040	0	-310	-420	-540
2060	0	-600	-700	-880
Mortality (ages 30 and older), Laden et al. (2006)				
2021	0	-120	-151	-250
2025	0	-230	-330	-440
2040	0	-800	-1,100	-1,400
2060	0	-1,500	-1,800	-2,300
Chronic bronchitis				
2021	0	-31	-40	-66
2025	0	-60	-87	-110
2040	0	-200	-270	-350
2060	0	-380	-440	-570
Emergency room visits for asthma				
2021	0	-43	-56	-91
2025	0	-84	-120	-160
2040	0	-280	-370	-440
2060	0	-530	-620	-730
Work-loss days				
2021	0	-5,800	-7,500	-12,000
2025	0	-11,000	-16,000	-21,000
2040	0	-34,000	-46,000	-60,000
2060	0	-65,000	-77,000	-98,000

a. Negative changes indicate fewer health impacts; positive changes indicate additional health impacts. Values have been rounded

b. Changes for the No Action Alternative are shown as zero because the No Action Alternative is the baseline to which the other alternatives are compared.

Table H.2-1-C2. Nationwide Changes in Health Outcomes from Criteria Pollutant Emissions from U.S. Passenger Cars and Light Trucks (cases/year) by Alternative, Analysis C2,^a Alternate Grid Mix

Outcome and Year	Alternative 1 ^b	Alternative 2	Alternative 3	Alternative 4
	No Action	2%/year Cars and Trucks	Preferred	7%/year Cars and Trucks
Mortality (ages 30 and older), Pope et al. (2002)				
2021	0	-40	-55	-88
2025	0	-85	-130	-170
2040	0	-290	-420	-530
2060	0	-510	-630	-800
Mortality (ages 30 and older), Laden et al. (2006)				
2021	0	-100	-140	-230
2025	0	-220	-330	-440
2040	0	-730	-1,100	-1,400
2060	0	-1,300	-1,600	-2,000
Chronic bronchitis				
2021	0	-28	-37	-60
2025	0	-57	-87	-120
2040	0	-180	-270	-340
2060	0	-320	-400	-510
Emergency room visits for asthma				
2021	0	-38	-52	-84
2025	0	-80	-120	-160
2040	0	-250	-370	-440
2060	0	-460	-560	-670
Work-loss days				
2021	0	-5,200	-7,000	-11,000
2025	0	-11,000	-16,000	-21,000
2040	0	-31,000	-46,000	-59,000
2060	0	-56,000	-69,000	-88,000

a. Negative changes indicate fewer health impacts; positive changes indicate additional health impacts. Values have been rounded

b. Changes for the No Action Alternative are shown as zero because the No Action Alternative is the baseline to which the other alternatives are compared.

H.3 Nationwide Monetized Health Benefits

Table H.3-1-A1. Nationwide Monetized Health Benefits (U.S. million dollars/year, in 2011 dollars) from Criteria Pollutant Emissions from U.S. Passenger Cars and Light Trucks by Alternative, Analysis A1,^a Alternate Grid Mix

Rate and Year	Alternative 1 ^b	Alternative 2	Alternative 3	Alternative 4
	No Action	2%/year Cars and Trucks	Preferred	7%/year Cars and Trucks
3-Percent discount rate				
Benefits-per-ton assuming premature mortality based on Pope et al. (2002)				
2021	0	\$260	\$360	\$680
2025	0	\$610	\$910	\$1,200
2040	0	\$1,800	\$2,800	\$3,600
2060	0	\$2,300	\$3,600	\$4,800
Benefits-per-ton assuming premature mortality based on Laden et al. (2006)				
2021	0	\$640	\$870	\$1,700
2025	0	\$1,500	\$2,200	\$3,000
2040	0	\$4,500	\$6,900	\$8,900
2060	0	\$5,600	\$8,700	\$12,000
7-Percent discount rate				
Benefits-per-ton assuming premature mortality based on Pope et al. (2002)				
2021	0	\$230	\$320	\$610
2025	0	\$540	\$810	\$1,100
2040	0	\$1,700	\$2,600	\$3,300
2060	0	\$2,100	\$3,200	\$4,400
Benefits-per-ton assuming premature mortality based on Laden et al. (2006)				
2021	0	\$570	\$780	\$1,500
2025	0	\$1,300	\$2,000	\$2,700
2040	0	\$4,100	\$6,300	\$8,100
2060	0	\$5,100	\$7,900	\$11,000

a. Positive changes indicate greater benefits and fewer health impacts; negative changes indicate fewer benefits and additional health impacts. Values have been rounded

b. Changes for the No Action Alternative are shown as zero because the No Action Alternative is the baseline to which the other alternatives are compared.

Table H.3-1-A2. Nationwide Monetized Health Benefits (U.S. million dollars/year, in 2011 dollars) from Criteria Pollutant Emissions from U.S. Passenger Cars and Light Trucks by Alternative, Analysis A2,^a Alternate Grid Mix

Rate and Year	Alternative 1 ^b	Alternative 2	Alternative 3	Alternative 4
	No Action	2%/year Cars and Trucks	Preferred	7%/year Cars and Trucks
3-Percent discount rate				
Benefits-per-ton assuming premature mortality based on Pope et al. (2002)				
2021	0	\$260	\$360	\$640
2025	0	\$590	\$920	\$1,300
2040	0	\$1,700	\$2,800	\$3,700
2060	0	\$1,900	\$3,300	\$4,600
Benefits-per-ton assuming premature mortality based on Laden et al. (2006)				
2021	0	\$640	\$890	\$1,600
2025	0	\$1,400	\$2,300	\$3,100
2040	0	\$4,100	\$6,800	\$9,100
2060	0	\$4,800	\$8,100	\$11,000
7-Percent discount rate				
Benefits-per-ton assuming premature mortality based on Pope et al. (2002)				
2021	0	\$230	\$320	\$570
2025	0	\$530	\$830	\$1,100
2040	0	\$1,500	\$2,500	\$3,400
2060	0	\$1,800	\$3,000	\$4,200
Benefits-per-ton assuming premature mortality based on Laden et al. (2006)				
2021	0	\$570	\$800	\$1,400
2025	0	\$1,300	\$2,000	\$2,800
2040	0	\$3,700	\$6,200	\$8,300
2060	0	\$4,300	\$7,400	\$10,000

a. Positive changes indicate greater benefits and fewer health impacts; negative changes indicate fewer benefits and additional health impacts. Values have been rounded

b. Changes for the No Action Alternative are shown as zero because the No Action Alternative is the baseline to which the other alternatives are compared.

Table H.3-1-B1. Nationwide Monetized Health Benefits (U.S. million dollars/year, in 2011 dollars) from Criteria Pollutant Emissions from U.S. Passenger Cars and Light Trucks by Alternative, Analysis B1,^a Alternate Grid Mix

Rate and Year	Alternative 1 ^b	Alternative 2	Alternative 3	Alternative 4
	No Action	2%/year Cars and Trucks	Preferred	7%/year Cars and Trucks
3-Percent Discount Rate				
Benefits-per-ton assuming premature mortality based on Pope et al. (2002)				
2021	0	\$140	\$250	\$520
2025	0	\$350	\$640	\$950
2040	0	\$690	\$1,600	\$2,500
2060	0	\$10	\$830	\$2,300
Benefits-per-ton assuming premature mortality based on Laden et al. (2006)				
2021	0	\$350	\$600	\$1,300
2025	0	\$860	\$1,600	\$2,300
2040	0	\$1,700	\$3,800	\$6,100
2060	0	\$25	\$2,000	\$5,600
7-Percent discount rate				
Benefits-per-ton assuming premature mortality based on Pope et al. (2002)				
2021	0	\$130	\$220	\$470
2025	0	\$310	\$570	\$850
2040	0	\$630	\$1,400	\$2,300
2060	0	\$9	\$760	
Benefits-per-ton assuming premature mortality based on Laden et al. (2006)				
2021	0	\$310	\$540	\$1,100
2025	0	\$770	\$1,400	\$2,100
2040	0	\$1,500	\$3,500	\$5,500
2060	0	\$23	\$1,800	\$5,100

a. Positive changes indicate greater benefits and fewer health impacts; negative changes indicate fewer benefits and additional health impacts. Values have been rounded

b. Changes for the No Action Alternative are shown as zero because the No Action Alternative is the baseline to which the other alternatives are compared.

Table H.3-1-B2. Nationwide Monetized Health Benefits (U.S. million dollars/year, in 2011 dollars) from Criteria Pollutant Emissions from U.S. Passenger Cars and Light Trucks by Alternative, Analysis B2,^a Alternate Grid Mix

Rate and Year	Alternative 1 ^b	Alternative 2	Alternative 3	Alternative 4
	No Action	2%/year Cars and Trucks	Preferred	7%/year Cars and Trucks
3-Percent discount rate				
Benefits-per-ton assuming premature mortality based on Pope et al. (2002)				
2021	0	\$150	\$250	\$500
2025	0	\$350	\$690	\$990
2040	0	\$650	\$1,700	\$2,600
2060	0	\$19	\$950	\$2,300
Benefits-per-ton assuming premature mortality based on Laden et al. (2006)				
2021	0	\$360	\$620	\$1,200
2025	0	\$860	\$1,700	\$2,400
2040	0	\$1,600	\$4,100	\$6,300
2060	0	\$47	\$2,300	\$5,700
7-Percent discount rate				
Benefits-per-ton assuming premature mortality based on Pope et al. (2002)				
2021	0	\$130	\$220	\$450
2025	0	\$320	\$610	\$880
2040	0	\$590	\$1,500	\$2,300
2060	0	\$17	\$860	\$2,100
Benefits-per-ton assuming premature mortality based on Laden et al. (2006)				
2021	0	\$320	\$550	\$1,100
2025	0	\$770	\$1,500	\$2,200
2040	0	\$1,400	\$3,700	\$5,800
2060	0	\$42	\$2,100	\$5,200

a. Positive changes indicate greater benefits and fewer health impacts; negative changes indicate fewer benefits and additional health impacts. Values have been rounded

b. Changes for the No Action Alternative are shown as zero because the No Action Alternative is the baseline to which the other alternatives are compared.

Table H.3-1-C1. Nationwide Monetized Health Benefits (U.S. million dollars/year, in 2011 dollars) from Criteria Pollutant Emissions from U.S. Passenger Cars and Light Trucks by Alternative, Analysis C1,^a Alternate Grid Mix

Rate and Year	Alternative 1 ^b	Alternative 2	Alternative 3	Alternative 4
	No Action	2%/year Cars and Trucks	Preferred	7%/year Cars and Trucks
3-Percent discount rate				
Benefits-per-ton assuming premature mortality based on Pope et al. (2002)				
2021	0	\$330	\$440	\$710
2025	0	\$670	\$960	\$1,300
2040	0	\$2,500	\$3,300	\$4,200
2060	0	\$4,700	\$5,500	\$7,000
Benefits-per-ton assuming premature mortality based on Laden et al. (2006)				
2021	0	\$820	\$1,100	\$1,700
2025	0	\$1,600	\$2,400	\$3,100
2040	0	\$6,000	\$8,100	\$10,000
2060	0	\$11,000	\$13,000	\$17,000
7-Percent discount rate				
Benefits-per-ton assuming premature mortality based on Pope et al. (2002)				
2021	0	\$300	\$390	\$640
2025	0	\$600	\$860	\$1,100
2040	0	\$2,200	\$3,000	\$3,900
2060	0	\$4,200	\$5,000	\$6,300
Benefits-per-ton assuming premature mortality based on Laden et al. (2006)				
2021	0	\$730	\$950	\$1,600
2025	0	\$1,500	\$2,100	\$2,800
2040	0	\$5,500	\$7,400	\$9,400
2060	0	\$10,000	\$12,000	\$15,000

a. Positive changes indicate greater benefits and fewer health impacts; negative changes indicate fewer benefits and additional health impacts. Values have been rounded

b. Changes for the No Action Alternative are shown as zero because the No Action Alternative is the baseline to which the other alternatives are compared.

Table H.3-1-C2. Nationwide Monetized Health Benefits (U.S. million dollars/year, in 2011 dollars) from Criteria Pollutant Emissions from U.S. Passenger Cars and Light Trucks by Alternative, Analysis C2,^a Alternate Grid Mix

Rate and Year	Alternative 1 ^b	Alternative 2	Alternative 3	Alternative 4
	No Action	2%/year Cars and Trucks	Preferred	7%/year Cars and Trucks
3-Percent discount rate				
Benefits-per-ton assuming premature mortality based on Pope et al. (2002)				
2021	0	\$300	\$410	\$650
2025	0	\$640	\$970	\$1,300
2040	0	\$2,200	\$3,300	\$4,200
2060	0	\$4,000	\$4,900	\$6,300
Benefits-per-ton assuming premature mortality based on Laden et al. (2006)				
2021	0	\$730	\$990	\$1,600
2025	0	\$1,600	\$2,400	\$3,100
2040	0	\$5,500	\$8,000	\$10,000
2060	0	\$9,800	\$12,000	\$15,000
7-Percent discount rate				
Benefits-per-ton assuming premature mortality based on Pope et al. (2002)				
2021	0	\$270	\$360	\$580
2025	0	\$570	\$870	\$1,100
2040	0	\$2,000	\$3,000	\$3,800
2060	0	\$3,600	\$4,500	\$5,700
Benefits-per-ton assuming premature mortality based on Laden et al. (2006)				
2021	0	\$650	\$890	\$1,400
2025	0	\$1,400	\$2,100	\$2,800
2040	0	\$5,000	\$7,300	\$9,300
2060	0	\$8,900	\$11,000	\$14,000

a. Positive changes indicate greater benefits and fewer health impacts; negative changes indicate fewer benefits and additional health impacts. Values have been rounded

b. Changes for the No Action Alternative are shown as zero because the No Action Alternative is the baseline to which the other alternatives are compared.