

**Refined Economic Impact Analysis for the Greenhouse Gas Emissions Reduction Act 2012 Plan
– Appendices A through B**

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Appendix A—Detailed Impacts

A.1 Energy

Figure 1: Regional Greenhouse Gas Initiative Status Quo—Investment Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	6.1	1.9	8.0
2011	6.3	2.2	8.6
2012	6.4	2.3	8.7
2013	6.1	2.2	8.3
2014	6.4	2.0	8.4
2015	5.9	1.9	7.8
2016	6.1	1.7	7.8
2017	6.4	2.2	8.6
2018	6.6	2.3	8.9
2019	5.9	1.8	7.7
2020	6.2	1.9	8.0
Average	6.2	2.0	8.3

Sources: RESI, REMI PI+

Figure 2: Regional Greenhouse Gas Initiative Status Quo—Investment Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$483,305	\$157,564	\$640,869
2011	\$506,319	\$165,067	\$671,387
2012	\$506,319	\$165,067	\$671,387
2013	\$483,305	\$157,564	\$640,869
2014	\$529,334	\$172,570	\$701,904
2015	\$460,290	\$150,061	\$610,352
2016	\$506,319	\$165,067	\$671,387
2017	\$506,319	\$165,067	\$671,387
2018	\$552,348	\$180,073	\$732,422
2019	\$552,348	\$180,073	\$732,422
2020	\$552,348	\$180,073	\$732,422
Average	\$512,596	\$167,114	\$679,710

Source: RESI, REMI PI+

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Figure 3: Regional Greenhouse Gas Initiative Status Quo—Investment Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$241,652	\$78,782	\$320,435
2011	\$241,652	\$78,782	\$320,435
2012	\$264,667	\$86,285	\$350,952
2013	\$276,174	\$90,037	\$366,211
2014	\$276,174	\$90,037	\$366,211
2015	\$299,189	\$97,540	\$396,729
2016	\$310,696	\$101,291	\$411,987
2017	\$345,218	\$112,546	\$457,764
2018	\$379,740	\$123,801	\$503,540
2019	\$333,710	\$108,794	\$442,505
2020	\$356,725	\$116,297	\$473,022
Average	\$302,327	\$98,563	\$400,890

Source: RESI, REMI PI+

Figure 4: Regional Greenhouse Gas Initiative Enhanced—Investment Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	6.1	1.9	8.0
2011	6.3	2.2	8.6
2012	6.4	2.3	8.7
2013	6.1	2.2	8.3
2014	6.4	2.0	8.4
2015	5.9	1.9	7.8
2016	6.1	1.7	7.8
2017	6.4	2.2	8.6
2018	6.6	2.3	8.9
2019	5.9	1.8	7.7
2020	6.2	1.9	8.0
Average	6.2	2.0	8.3

Source: RESI, REMI PI+

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Figure 5: Regional Greenhouse Gas Initiative Enhanced—Investment Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$483,305	\$157,564	\$640,869
2011	\$506,319	\$165,067	\$671,387
2012	\$506,319	\$165,067	\$671,387
2013	\$483,305	\$157,564	\$640,869
2014	\$529,334	\$172,570	\$701,904
2015	\$460,290	\$150,061	\$610,352
2016	\$506,319	\$165,067	\$671,387
2017	\$506,319	\$165,067	\$671,387
2018	\$552,348	\$180,073	\$732,422
2019	\$552,348	\$180,073	\$732,422
2020	\$552,348	\$180,073	\$732,422
Average	\$512,596	\$167,114	\$679,710

Sources: RESI, REMI PI+

Figure 6: Regional Greenhouse Gas Initiative Enhanced—Investment Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$241,652	\$78,782	\$320,435
2011	\$241,652	\$78,782	\$320,435
2012	\$264,667	\$86,285	\$350,952
2013	\$276,174	\$90,037	\$366,211
2014	\$276,174	\$90,037	\$366,211
2015	\$299,189	\$97,540	\$396,729
2016	\$310,696	\$101,291	\$411,987
2017	\$345,218	\$112,546	\$457,764
2018	\$379,740	\$123,801	\$503,540
2019	\$333,710	\$108,794	\$442,505
2020	\$356,725	\$116,297	\$473,022
Average	\$302,327	\$98,563	\$400,890

Sources: RESI, REMI PI+

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Figure 7: Regional Greenhouse Initiative Status Quo—Operation Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	228.6	69.8	298.4
2011	211.5	54.7	266.1
2012	192.7	37.7	230.4
2013	174.8	21.8	196.7
2014	158.9	8.9	167.8
2015	145.1	-2.0	143.0
2016	133.6	-10.5	123.1
2017	125.2	-16.9	108.3
2018	118.2	-21.5	96.7
2019	114.4	-24.3	90.1
2020	113.1	-25.4	87.7
Average	156.0	8.4	164.4

Sources: RESI, REMI PI+

Figure 8: Regional Greenhouse Initiative Status Quo—Operation Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$19,808,280	\$1,065,743	\$20,874,023
2011	\$16,333,143	\$878,771	\$17,211,914
2012	\$12,973,844	\$698,031	\$13,671,875
2013	\$9,904,140	\$532,872	\$10,437,012
2014	\$7,558,423	\$406,665	\$7,965,088
2015	\$5,502,300	\$296,040	\$5,798,340
2016	\$3,938,488	\$211,902	\$4,150,391
2017	\$2,780,109	\$149,578	\$2,929,688
2018	\$1,853,406	\$99,719	\$1,953,125
2019	\$1,332,136	\$71,673	\$1,403,809
2020	\$1,042,541	\$56,092	\$1,098,633
Average	\$7,547,892	\$406,099	\$7,953,991

Sources: RESI, REMI PI+

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Figure 9: Regional Greenhouse Initiative Status Quo—Operation Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$10,686,046	\$574,941	\$11,260,986
2011	\$10,671,566	\$574,161	\$11,245,728
2012	\$10,454,370	\$562,476	\$11,016,846
2013	\$10,063,417	\$541,441	\$10,604,858
2014	\$9,802,782	\$527,418	\$10,330,200
2015	\$9,585,586	\$515,733	\$10,101,318
2016	\$9,310,471	\$500,931	\$9,811,401
2017	\$9,223,592	\$496,256	\$9,719,849
2018	\$9,165,673	\$493,140	\$9,658,813
2019	\$9,194,633	\$494,698	\$9,689,331
2020	\$9,368,390	\$504,047	\$9,872,437
Average	\$9,775,139	\$525,931	\$10,301,070

Sources: RESI, REMI PI+

Figure 10: Regional Greenhouse Initiative Enhanced—Operation Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	228.6	69.8	298.4
2011	211.5	54.7	266.1
2012	192.7	37.7	230.4
2013	174.8	21.8	196.7
2014	1,498.6	84.3	1,583.0
2015	1,410.1	-19.5	1,390.6
2016	1,339.3	-105.3	1,234.0
2017	1,314.0	-177.0	1,137.1
2018	1,275.8	-231.6	1,044.1
2019	1,276.0	-271.3	1,004.7
2020	1,298.9	-292.0	1,006.8
Average	929.1	-75.3	853.8

Sources: RESI, REMI PI+

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Figure 11: Regional Greenhouse Initiative Enhanced—Operation Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$19,808,280	\$1,065,743	\$20,874,023
2011	\$16,333,143	\$878,771	\$17,211,914
2012	\$12,973,844	\$698,031	\$13,671,875
2013	\$9,904,140	\$532,872	\$10,437,012
2014	\$71,283,567	\$3,835,265	\$75,118,832
2015	\$53,491,941	\$2,878,023	\$56,369,964
2016	\$39,471,728	\$2,123,694	\$41,595,422
2017	\$29,175,748	\$1,569,741	\$30,745,488
2018	\$20,010,524	\$1,076,625	\$21,087,148
2019	\$14,857,137	\$799,357	\$15,656,495
2020	\$11,973,125	\$644,189	\$12,617,314
Average	\$27,207,562	\$1,463,846	\$28,671,408

Sources: RESI, REMI PI+

Figure 12: Regional Greenhouse Initiative Enhanced—Operation Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$10,686,046	\$574,941	\$11,260,986
2011	\$10,671,566	\$574,161	\$11,245,728
2012	\$10,454,370	\$562,476	\$11,016,846
2013	\$10,063,417	\$541,441	\$10,604,858
2014	\$92,450,143	\$4,974,088	\$97,424,232
2015	\$93,188,592	\$5,013,819	\$98,202,411
2016	\$93,310,004	\$5,020,351	\$98,330,355
2017	\$96,796,621	\$5,207,942	\$102,004,563
2018	\$98,958,293	\$5,324,246	\$104,282,539
2019	\$102,546,545	\$5,517,304	\$108,063,850
2020	\$107,591,834	\$5,788,756	\$113,380,590
Average	\$66,065,221	\$3,554,502	\$69,619,723

Sources: RESI, REMI PI+

Figure 13: GHG Reductions from Imported Power—Investment Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	0.0	0.0	0.0
2011	0.0	0.0	0.0
2012	0.1	0.0	0.1
2013	-0.2	-0.3	-0.5
2014	0.1	0.1	0.1
2015	-0.2	-0.1	-0.3
2016	0.0	0.0	0.0
2017	0.0	-0.1	0.0
2018	0.0	-0.1	-0.1
2019	-0.2	-0.3	-0.5
2020	-0.5	-0.5	-1.0
Average	-0.1	-0.1	-0.2

Sources: RESI, REMI PI+

Figure 14: GHG Reductions from Imported Power—Investment Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$0	\$0	\$0
2013	-\$11,813	-\$18,704	-\$30,518
2014	\$23,627	\$37,409	\$61,035
2015	\$0	\$0	\$0
2016	\$0	\$0	\$0
2017	\$0	\$0	\$0
2018	-\$23,627	-\$37,409	-\$61,035
2019	\$0	\$0	\$0
2020	-\$23,627	-\$37,409	-\$61,035
Average	-\$3,222	-\$5,101	-\$8,323

Sources: RESI, REMI PI+

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Figure 15: GHG Reductions from Imported Power—Investment Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	-\$5,907	-\$9,352	-\$15,259
2012	\$0	\$0	\$0
2013	\$0	\$0	\$0
2014	\$5,907	\$9,352	\$15,259
2015	\$5,907	\$9,352	\$15,259
2016	\$0	\$0	\$0
2017	\$11,813	\$18,704	\$30,518
2018	\$0	\$0	\$0
2019	\$0	\$0	\$0
2020	-\$5,907	-\$9,352	-\$15,259
Average	\$1,074	\$1,700	\$2,774

Sources: RESI, REMI PI+

Figure 16: GHG Reductions from Imported Power—Operation Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	2.1	1.7	3.8
2011	3.7	3.2	6.9
2012	4.9	4.3	9.1
2013	5.9	5.4	11.3
2014	6.7	5.6	12.3
2015	6.5	5.7	12.2
2016	7.2	6.3	13.5
2017	8.1	6.9	15.0
2018	8.3	7.3	15.6
2019	8.2	7.1	15.3
2020	7.4	6.3	13.7
Average	6.3	5.4	11.7

Sources: RESI, REMI PI+

Figure 17: GHG Reductions from Imported Power—Operation Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$245,803	\$211,961	\$457,764
2011	\$393,285	\$339,137	\$732,422
2012	\$507,993	\$438,052	\$946,045
2013	\$622,701	\$536,967	\$1,159,668
2014	\$737,409	\$635,882	\$1,373,291
2015	\$721,023	\$621,751	\$1,342,773
2016	\$786,570	\$678,274	\$1,464,844
2017	\$884,891	\$763,058	\$1,647,949
2018	\$884,891	\$763,058	\$1,647,949
2019	\$950,439	\$819,581	\$1,770,020
2020	\$884,891	\$763,058	\$1,647,949
Average	\$692,718	\$597,343	\$1,290,061

Sources: RESI, REMI PI+

Figure 18: GHG Reductions from Imported Power—Operation Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$57,354	\$49,457	\$106,812
2011	\$98,321	\$84,784	\$183,105
2012	\$147,482	\$127,176	\$274,658
2013	\$188,449	\$162,503	\$350,952
2014	\$213,029	\$183,699	\$396,729
2015	\$229,416	\$197,830	\$427,246
2016	\$262,190	\$226,091	\$488,281
2017	\$294,964	\$254,353	\$549,316
2018	\$327,738	\$282,614	\$610,352
2019	\$335,931	\$289,679	\$625,610
2020	\$319,544	\$275,549	\$595,093
Average	\$224,947	\$193,976	\$418,923

Sources: RESI, REMI PI+

Figure 19: Federal New Source Performance Standard—Investment Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	0.0	0.0	0.0
2011	0.0	0.0	0.0
2012	0.0	0.0	0.0
2013	12.9	5.2	18.2
2014	13.1	4.8	17.9
2015	12.5	4.7	17.2
2016	12.3	4.5	16.8
2017	12.1	4.3	16.4
2018	11.8	4.1	15.9
2019	11.5	4.1	15.6
2020	11.0	3.4	14.4
Average	8.8	3.2	12.0

Sources: RESI, REMI PI+

Figure 20: Federal New Source Performance Standard—Investment Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$0	\$0	\$0
2013	\$1,031,574	\$372,234	\$1,403,809
2014	\$1,054,000	\$380,326	\$1,434,326
2015	\$1,031,574	\$372,234	\$1,403,809
2016	\$986,723	\$356,050	\$1,342,773
2017	\$986,723	\$356,050	\$1,342,773
2018	\$986,723	\$356,050	\$1,342,773
2019	\$986,723	\$356,050	\$1,342,773
2020	\$941,872	\$339,866	\$1,281,738
Average	\$727,810	\$262,624	\$990,434

Sources: RESI, REMI PI+

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Figure 21: Federal New Source Performance Standard—Investment Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$0	\$0	\$0
2013	\$515,787	\$186,117	\$701,904
2014	\$538,213	\$194,209	\$732,422
2015	\$594,277	\$214,439	\$808,716
2016	\$627,915	\$226,577	\$854,492
2017	\$650,340	\$234,669	\$885,010
2018	\$683,979	\$246,807	\$930,786
2019	\$706,404	\$254,900	\$961,304
2020	\$661,553	\$238,715	\$900,269
Average	\$452,588	\$163,312	\$615,900

Sources: RESI, REMI PI+

Figure 22: Federal New Source Performance Standard—Operation Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	0.0	0.0	0.0
2011	4.0	3.4	7.4
2012	6.3	5.5	11.9
2013	8.5	7.7	16.2
2014	10.1	8.6	18.8
2015	11.0	9.6	20.6
2016	12.5	10.9	23.4
2017	13.3	11.4	24.7
2018	14.1	12.2	26.3
2019	14.1	12.2	26.3
2020	13.9	12.0	25.9
Average	9.8	8.5	18.3

Sources: RESI, REMI PI+

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Figure 23: Federal New Source Performance Standard—Operation Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$441,510	\$382,465	\$823,975
2012	\$703,145	\$609,111	\$1,312,256
2013	\$932,076	\$807,426	\$1,739,502
2014	\$1,111,950	\$963,245	\$2,075,195
2015	\$1,210,064	\$1,048,237	\$2,258,301
2016	\$1,373,586	\$1,189,891	\$2,563,477
2017	\$1,471,699	\$1,274,883	\$2,746,582
2018	\$1,537,108	\$1,331,544	\$2,868,652
2019	\$1,569,812	\$1,359,875	\$2,929,688
2020	\$1,569,812	\$1,359,875	\$2,929,688
Average	\$1,083,706	\$938,777	\$2,022,483

Sources: RESI, REMI PI+

Figure 24: Federal New Source Performance Standard—Operation Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$98,113	\$84,992	\$183,105
2012	\$188,050	\$162,902	\$350,952
2013	\$261,635	\$226,646	\$488,281
2014	\$310,692	\$269,142	\$579,834
2015	\$367,925	\$318,721	\$686,646
2016	\$425,158	\$368,299	\$793,457
2017	\$490,566	\$424,961	\$915,527
2018	\$539,623	\$467,457	\$1,007,080
2019	\$547,799	\$474,540	\$1,022,339
2020	\$555,975	\$481,622	\$1,037,598
Average	\$344,140	\$298,117	\$642,256

Sources: RESI, REMI PI+

Figure 25: MACT—Investment Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	0.0	0.0	0.0
2011	0.0	0.0	0.0
2012	1.0	0.4	1.5
2013	0.8	0.4	1.3
2014	0.8	0.2	1.0
2015	0.8	0.3	1.0
2016	1.0	0.5	1.5
2017	0.8	0.2	1.0
2018	1.0	0.5	1.5
2019	0.5	0.1	0.6
2020	0.5	0.0	0.5
Average	0.7	0.2	0.9

Sources: RESI, REMI PI+

Figure 26: MACT—Investment Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$88,984	\$33,086	\$122,070
2013	\$66,738	\$24,815	\$91,553
2014	\$88,984	\$33,086	\$122,070
2015	\$44,492	\$16,543	\$61,035
2016	\$88,984	\$33,086	\$122,070
2017	\$88,984	\$33,086	\$122,070
2018	\$44,492	\$16,543	\$61,035
2019	\$88,984	\$33,086	\$122,070
2020	\$44,492	\$16,543	\$61,035
Average	\$58,649	\$21,807	\$80,455

Sources: RESI, REMI PI+

Figure 27: MACT—Investment Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$44,492	\$16,543	\$61,035
2013	\$33,369	\$12,407	\$45,776
2014	\$33,369	\$12,407	\$45,776
2015	\$33,369	\$12,407	\$45,776
2016	\$55,615	\$20,679	\$76,294
2017	\$44,492	\$16,543	\$61,035
2018	\$44,492	\$16,543	\$61,035
2019	\$44,492	\$16,543	\$61,035
2020	\$33,369	\$12,407	\$45,776
Average	\$33,369	\$12,407	\$45,776

Sources: RESI, REMI PI+

Figure 28: MACT—Operation Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	0.0	0.0	0.0
2011	0.0	0.0	0.0
2012	196.4	60.4	256.7
2013	180.3	46.7	227.0
2014	163.8	32.9	196.7
2015	148.0	20.1	168.1
2016	134.2	9.1	143.3
2017	123.2	0.2	123.4
2018	113.4	-7.1	106.3
2019	107.1	-12.5	94.6
2020	103.9	-15.4	88.6
Average	115.5	12.2	127.7

Sources: RESI, REMI PI+

Figure 29: MACT—Operation Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$16,420,106	\$1,737,853	\$18,157,959
2013	\$13,384,456	\$1,416,570	\$14,801,025
2014	\$10,817,952	\$1,144,939	\$11,962,891
2015	\$8,444,626	\$893,753	\$9,338,379
2016	\$6,402,461	\$677,617	\$7,080,078
2017	\$4,912,233	\$519,896	\$5,432,129
2018	\$3,532,392	\$373,858	\$3,906,250
2019	\$2,649,294	\$280,393	\$2,929,688
2020	\$2,042,164	\$216,136	\$2,258,301
Average	\$6,236,880	\$660,092	\$6,896,973

Sources: RESI, REMI PI+

Figure 30: MACT—Operation Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$9,231,135	\$976,995	\$10,208,130
2013	\$9,203,538	\$974,074	\$10,177,612
2014	\$9,079,353	\$960,931	\$10,040,283
2015	\$8,886,175	\$940,485	\$9,826,660
2016	\$8,624,005	\$912,738	\$9,536,743
2017	\$8,417,029	\$890,832	\$9,307,861
2018	\$8,223,851	\$870,387	\$9,094,238
2019	\$8,085,867	\$855,783	\$8,941,650
2020	\$8,085,867	\$855,783	\$8,941,650
Average	\$7,076,075	\$748,910	\$7,824,984

Sources: RESI, REMI PI+

Figure 31: Energy Efficiency in the Residential Sector Status Quo—Investment Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	3,483.3	3,035.6	6,518.9
2011	1,854.8	1,657.3	3,512.2
2012	2,071.4	1,916.0	3,987.3
2013	1,889.8	1,752.0	3,641.8
2014	1,799.8	1,667.1	3,466.9
2015	1,561.6	1,445.4	3,007.0
2016	190.3	173.2	363.5
2017	32.2	27.8	60.0
2018	-38.7	-36.5	-75.2
2019	-52.4	-48.3	-100.7
2020	-37.6	-34.1	-71.7
Average	1,159.5	1,050.5	2,210.0

Sources: RESI, REMI PI+

Figure 32: Energy Efficiency in the Residential Sector Status Quo—Investment Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$220,251,963	\$199,547,842	\$419,799,805
2011	\$116,098,210	\$105,184,749	\$221,282,959
2012	\$129,515,711	\$117,340,978	\$246,856,689
2013	\$115,810,006	\$104,923,636	\$220,733,643
2014	\$108,829,063	\$98,598,915	\$207,427,979
2015	\$92,161,260	\$83,497,919	\$175,659,180
2016	\$2,177,542	\$1,972,849	\$4,150,391
2017	-\$8,421,964	-\$7,630,282	-\$16,052,246
2018	-\$13,033,229	-\$11,808,080	-\$24,841,309
2019	-\$13,609,637	-\$12,330,304	-\$25,939,941
2020	-\$12,232,662	-\$11,082,768	-\$23,315,430
Average	\$67,049,660	\$60,746,859	\$127,796,520

Sources: RESI, REMI PI+

Figure 33: Energy Efficiency in the Residential Sector Status Quo—Investment Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$79,624,383	\$72,139,533	\$151,763,916
2011	\$47,265,469	\$42,822,421	\$90,087,891
2012	\$54,182,367	\$49,089,117	\$103,271,484
2013	\$51,892,746	\$47,014,725	\$98,907,471
2014	\$52,084,882	\$47,188,800	\$99,273,682
2015	\$47,889,911	\$43,388,165	\$91,278,076
2016	\$10,879,704	\$9,856,990	\$20,736,694
2017	\$3,882,749	\$3,517,763	\$7,400,513
2018	-\$424,300	-\$384,415	-\$808,716
2019	-\$2,569,820	-\$2,328,252	-\$4,898,071
2020	-\$3,258,307	-\$2,952,020	-\$6,210,327
Average	\$31,040,889	\$28,122,984	\$59,163,874

Sources: RESI, REMI PI+

Figure 34: Energy Efficiency in the Residential Sector Enhanced—Investment Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	3,483.3	3,035.6	6,518.9
2011	1,854.8	1,657.3	3,512.2
2012	2,071.4	1,916.0	3,987.3
2013	1,889.8	1,752.0	3,641.8
2014	1,799.8	1,667.1	3,466.9
2015	1,563.4	1,447.1	3,010.6
2016	190.5	173.4	363.9
2017	32.3	27.8	60.1
2018	-38.8	-36.6	-75.3
2019	-52.4	-48.4	-100.8
2020	-37.6	-34.2	-71.8
Average	1,159.7	1,050.7	2,210.3

Sources: RESI, REMI PI+

Figure 35: Energy Efficiency in the Residential Sector Enhanced—Investment Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$220,251,963	\$199,547,842	\$419,799,805
2011	\$116,098,210	\$105,184,749	\$221,282,959
2012	\$129,515,711	\$117,340,978	\$246,856,689
2013	\$115,810,006	\$104,923,636	\$220,733,643
2014	\$108,829,063	\$98,598,915	\$207,427,979
2015	\$92,270,966	\$83,597,313	\$175,868,279
2016	\$2,180,134	\$1,975,197	\$4,155,331
2017	-\$8,431,989	-\$7,639,365	-\$16,071,354
2018	-\$13,048,743	-\$11,822,136	-\$24,870,879
2019	-\$13,625,838	-\$12,344,982	-\$25,970,819
2020	-\$12,247,223	-\$11,095,960	-\$23,343,184
Average	\$67,054,751	\$60,751,472	\$127,806,223

Sources: RESI, REMI PI+

Figure 36: Energy Efficiency in the Residential Sector Enhanced—Investment Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$79,624,383	\$72,139,533	\$151,763,916
2011	\$47,265,469	\$42,822,421	\$90,087,891
2012	\$54,182,367	\$49,089,117	\$103,271,484
2013	\$51,892,746	\$47,014,725	\$98,907,471
2014	\$52,084,882	\$47,188,800	\$99,273,682
2015	\$47,946,918	\$43,439,813	\$91,386,731
2016	\$10,892,655	\$9,868,724	\$20,761,379
2017	\$3,887,371	\$3,521,951	\$7,409,322
2018	-\$424,806	-\$384,873	-\$809,678
2019	-\$2,572,879	-\$2,331,023	-\$4,903,902
2020	-\$3,262,186	-\$2,955,534	-\$6,217,720
Average	\$31,046,993	\$28,128,514	\$59,175,507

Sources: RESI, REMI PI+

Figure 37: Energy Efficiency in the Residential Sector Status Quo—Operation Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	66.3	67.9	134.2
2011	55.8	57.9	113.7
2012	48.3	50.6	98.9
2013	42.7	45.4	88.1
2014	40.3	42.8	83.1
2015	38.6	41.2	79.8
2016	37.4	40.1	77.5
2017	37.5	39.7	77.2
2018	36.7	39.0	75.7
2019	35.8	38.2	74.1
2020	37.3	39.3	76.6
Average	43.3	45.6	89.0

Sources: RESI, REMI PI+

Figure 38: Energy Efficiency in the Residential Sector Status Quo—Operation Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	-\$1,203,874	-\$1,268,050	-\$2,471,924
2011	-\$1,768,654	-\$1,862,938	-\$3,631,592
2012	-\$2,169,945	-\$2,285,621	-\$4,455,566
2013	-\$2,452,335	-\$2,583,065	-\$5,035,400
2014	-\$2,556,374	-\$2,692,650	-\$5,249,023
2015	-\$2,615,824	-\$2,755,270	-\$5,371,094
2016	-\$2,645,549	-\$2,786,580	-\$5,432,129
2017	-\$2,645,549	-\$2,786,580	-\$5,432,129
2018	-\$2,675,275	-\$2,817,889	-\$5,493,164
2019	-\$2,645,549	-\$2,786,580	-\$5,432,129
2020	-\$2,586,099	-\$2,723,960	-\$5,310,059
Average	-\$2,360,457	-\$2,486,289	-\$4,846,746

Sources: RESI, REMI PI+

Figure 39: Energy Efficiency in the Residential Sector Status Quo—Operation Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$601,937	\$634,025	\$1,235,962
2011	\$468,173	\$493,131	\$961,304
2012	\$364,135	\$383,546	\$747,681
2013	\$274,959	\$289,616	\$564,575
2014	\$222,940	\$234,824	\$457,764
2015	\$215,508	\$226,997	\$442,505
2016	\$185,783	\$195,687	\$381,470
2017	\$215,508	\$226,997	\$442,505
2018	\$193,214	\$203,514	\$396,729
2019	\$200,646	\$211,342	\$411,987
2020	\$260,096	\$273,961	\$534,058
Average	\$291,173	\$306,695	\$597,867

Sources: RESI, REMI PI+

Figure 40: Energy Efficiency in the Residential Sector Enhanced—Operation Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	66.3	67.9	134.2
2011	55.8	57.9	113.7
2012	48.3	50.6	98.9
2013	42.7	45.4	88.1
2014	40.3	42.8	83.1
2015	38.6	41.2	79.8
2016	37.4	40.2	77.6
2017	37.5	39.7	77.2
2018	36.7	39.0	75.8
2019	35.9	38.3	74.2
2020	37.3	39.3	76.7
Average	43.4	45.7	89.0

Sources: RESI, REMI PI+

Figure 41: Energy Efficiency in the Residential Sector Enhanced—Operation Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	-\$1,203,874	-\$1,268,050	-\$2,471,924
2011	-\$1,768,654	-\$1,862,938	-\$3,631,592
2012	-\$2,169,945	-\$2,285,621	-\$4,455,566
2013	-\$2,452,335	-\$2,583,065	-\$5,035,400
2014	-\$2,556,374	-\$2,692,650	-\$5,249,023
2015	-\$2,618,938	-\$2,758,549	-\$5,377,487
2016	-\$2,648,699	-\$2,789,897	-\$5,438,595
2017	-\$2,648,699	-\$2,789,897	-\$5,438,595
2018	-\$2,678,459	-\$2,821,244	-\$5,499,703
2019	-\$2,648,699	-\$2,789,897	-\$5,438,595
2020	-\$2,589,177	-\$2,727,202	-\$5,316,380
Average	-\$2,362,168	-\$2,488,092	-\$4,850,260

Sources: RESI, REMI PI+

Figure 42: Energy Efficiency in the Residential Sector Enhanced—Operation Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$601,937	\$634,025	\$1,235,962
2011	\$468,173	\$493,131	\$961,304
2012	\$364,135	\$383,546	\$747,681
2013	\$274,959	\$289,616	\$564,575
2014	\$222,940	\$234,824	\$457,764
2015	\$215,765	\$227,267	\$443,032
2016	\$186,004	\$195,920	\$381,924
2017	\$215,765	\$227,267	\$443,032
2018	\$193,444	\$203,756	\$397,201
2019	\$200,884	\$211,593	\$412,478
2020	\$260,406	\$274,288	\$534,693
Average	\$291,310	\$306,839	\$598,149

Sources: RESI, REMI PI+

Figure 43: Energy Efficiency in the Commercial and Industrial Sectors Status Quo—Investment Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	2,362.8	892.4	3,255.3
2011	1,666.3	652.0	2,318.3
2012	2,099.2	817.0	2,916.2
2013	2,107.1	822.5	2,929.6
2014	2,248.7	879.1	3,127.8
2015	2,277.2	896.2	3,173.4
2016	4,058.1	1,608.0	5,666.1
2017	4,097.4	1,658.4	5,755.8
2018	4,107.6	1,681.7	5,789.3
2019	4,106.2	1,682.4	5,788.6
2020	4,117.3	1,690.3	5,807.6
Average	3,022.5	1,207.3	4,229.8

Sources: RESI, REMI PI+

Figure 44: Energy Efficiency in the Commercial and Industrial Sectors Status Quo—Investment Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$178,819,309	\$71,424,832	\$250,244,141
2011	\$125,675,082	\$50,197,720	\$175,872,803
2012	\$158,255,088	\$63,210,976	\$221,466,064
2013	\$157,557,257	\$62,932,245	\$220,489,502
2014	\$169,267,741	\$67,609,701	\$236,877,441
2015	\$172,102,681	\$68,742,045	\$240,844,727
2016	\$316,161,261	\$126,282,587	\$442,443,848
2017	\$320,784,394	\$128,129,180	\$448,913,574
2018	\$324,229,937	\$129,505,415	\$453,735,352
2019	\$324,229,937	\$129,505,415	\$453,735,352
2020	\$325,494,756	\$130,010,615	\$455,505,371
Average	\$233,870,677	\$93,413,703	\$327,284,379

Sources: RESI, REMI PI+

Figure 45: Energy Efficiency in the Commercial and Industrial Sectors Status Quo—Investment Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$82,256,882	\$32,855,423	\$115,112,305
2011	\$61,921,637	\$24,733,026	\$86,654,663
2012	\$79,901,701	\$31,914,705	\$111,816,406
2013	\$82,344,111	\$32,890,264	\$115,234,375
2014	\$91,110,619	\$36,391,823	\$127,502,441
2015	\$95,515,680	\$38,151,313	\$133,666,992
2016	\$175,013,947	\$69,904,877	\$244,918,823
2017	\$185,176,117	\$73,963,898	\$259,140,015
2018	\$193,833,589	\$77,421,905	\$271,255,493
2019	\$198,663,891	\$79,351,246	\$278,015,137
2020	\$203,156,181	\$81,145,577	\$284,301,758
Average	\$131,717,668	\$52,611,278	\$184,328,946

Sources: RESI, REMI PI+

Figure 46: Energy Efficiency in the Commercial and Industrial Sectors Enhanced—Investment Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	2,362.8	892.4	3,255.3
2011	1,666.3	652.0	2,318.3
2012	2,099.2	817.0	2,916.2
2013	2,107.1	822.5	2,929.6
2014	2,248.7	879.1	3,127.8
2015	2,303.6	906.5	3,210.1
2016	4,105.1	1,626.6	5,731.7
2017	4,144.8	1,677.6	5,822.4
2018	4,155.2	1,701.2	5,856.3
2019	4,153.7	1,701.8	5,855.5
2020	4,164.9	1,709.9	5,874.8
Average	3,046.5	1,217.0	4,263.5

Sources: RESI, REMI PI+

Figure 47: Energy Efficiency in the Commercial and Industrial Sectors Enhanced—Investment Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$178,819,309	\$71,424,832	\$250,244,141
2011	\$125,675,082	\$50,197,720	\$175,872,803
2012	\$158,255,088	\$63,210,976	\$221,466,064
2013	\$157,557,257	\$62,932,245	\$220,489,502
2014	\$169,267,741	\$67,609,701	\$236,877,441
2015	\$174,093,734	\$69,537,321	\$243,631,055
2016	\$319,818,925	\$127,743,548	\$447,562,472
2017	\$324,495,543	\$129,611,504	\$454,107,047
2018	\$327,980,947	\$131,003,660	\$458,984,607
2019	\$327,980,947	\$131,003,660	\$458,984,607
2020	\$329,260,399	\$131,514,705	\$460,775,104
Average	\$235,745,906	\$94,162,716	\$329,908,622

Sources: RESI, REMI PI+

Figure 48: Energy Efficiency in the Commercial and Industrial Sectors Enhanced—Investment Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$82,256,882	\$32,855,423	\$115,112,305
2011	\$61,921,637	\$24,733,026	\$86,654,663
2012	\$79,901,701	\$31,914,705	\$111,816,406
2013	\$82,344,111	\$32,890,264	\$115,234,375
2014	\$91,110,619	\$36,391,823	\$127,502,441
2015	\$96,620,699	\$38,592,684	\$135,213,383
2016	\$177,038,680	\$70,713,605	\$247,752,285
2017	\$187,318,416	\$74,819,584	\$262,138,001
2018	\$196,076,046	\$78,317,597	\$274,393,643
2019	\$200,962,229	\$80,269,259	\$281,231,489
2020	\$205,506,491	\$82,084,349	\$287,590,840
Average	\$132,823,410	\$53,052,938	\$185,876,348

Sources: RESI, REMI PI+

Figure 49: Energy Efficiency in the Commercial and Industrial Sectors Status Quo—Operation Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	164.4	146.7	311.1
2011	399.4	356.4	755.8
2012	703.3	627.4	1,330.7
2013	1,080.7	963.3	2,043.9
2014	1,547.3	1,371.6	2,918.9
2015	2,069.8	1,825.0	3,894.8
2016	2,346.7	2,052.1	4,398.8
2017	2,533.1	2,197.0	4,730.0
2018	2,639.2	2,268.3	4,907.5
2019	2,663.4	2,270.1	4,933.5
2020	2,645.3	2,234.7	4,880.0
Average	1,708.4	1,483.0	3,191.4

Sources: RESI, REMI PI+

Figure 50: Energy Efficiency in the Commercial and Industrial Sectors Status Quo—Operation Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$12,856,996	\$11,160,338	\$24,017,334
2011	\$32,575,413	\$28,276,638	\$60,852,051
2012	\$59,514,658	\$51,660,879	\$111,175,537
2013	\$94,965,333	\$82,433,349	\$177,398,682
2014	\$141,328,934	\$122,678,634	\$264,007,568
2015	\$195,811,883	\$169,971,808	\$365,783,691
2016	\$233,680,392	\$202,843,046	\$436,523,438
2017	\$264,524,113	\$229,616,512	\$494,140,625
2018	\$290,172,757	\$251,880,465	\$542,053,223
2019	\$308,143,145	\$267,479,413	\$575,622,559
2020	\$322,094,701	\$279,589,869	\$601,684,570
Average	\$177,788,030	\$154,326,450	\$332,114,480

Sources: RESI, REMI PI+

Figure 51: Energy Efficiency in the Commercial and Industrial Sectors Status Quo—Operation Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$3,201,996	\$2,779,449	\$5,981,445
2011	\$8,168,358	\$7,090,431	\$15,258,789
2012	\$15,054,284	\$13,067,664	\$28,121,948
2013	\$23,908,785	\$20,753,691	\$44,662,476
2014	\$35,989,786	\$31,240,438	\$67,230,225
2015	\$50,529,464	\$43,861,405	\$94,390,869
2016	\$60,388,672	\$52,419,555	\$112,808,228
2017	\$68,181,286	\$59,183,826	\$127,365,112
2018	\$74,234,039	\$64,437,836	\$138,671,875
2019	\$76,913,261	\$66,763,497	\$143,676,758
2020	\$77,958,811	\$67,671,072	\$145,629,883
Average	\$44,957,158	\$39,024,442	\$83,981,601

Sources: RESI, REMI PI+

Figure 52: Energy Efficiency in the Commercial and Industrial Sectors Enhanced—Operation Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	164.4	146.7	311.1
2011	399.4	356.4	755.8
2012	703.3	627.4	1,330.7
2013	1,080.7	963.3	2,043.9
2014	1,547.3	1,371.6	2,918.9
2015	2,093.8	1,846.1	3,939.9
2016	2,373.9	2,075.9	4,449.7
2017	2,562.4	2,222.4	4,784.8
2018	2,669.8	2,294.5	4,964.3
2019	2,694.2	2,296.4	4,990.6
2020	2,675.9	2,260.6	4,936.4
Average	1,724.1	1,496.5	3,220.6

Sources: RESI, REMI PI+

Figure 53: Energy Efficiency in the Commercial and Industrial Sectors Enhanced—Operation Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$12,856,996	\$11,160,338	\$24,017,334
2011	\$32,575,413	\$28,276,638	\$60,852,051
2012	\$59,514,658	\$51,660,879	\$111,175,537
2013	\$94,965,333	\$82,433,349	\$177,398,682
2014	\$141,328,934	\$122,678,634	\$264,007,568
2015	\$198,077,227	\$171,938,209	\$370,015,436
2016	\$236,383,836	\$205,189,733	\$441,573,569
2017	\$267,584,387	\$232,272,942	\$499,857,329
2018	\$293,529,761	\$254,794,466	\$548,324,226
2019	\$311,708,048	\$270,573,878	\$582,281,925
2020	\$325,821,009	\$282,824,439	\$608,645,448
Average	\$179,485,964	\$155,800,319	\$335,286,282

Sources: RESI, REMI PI+

Figure 54: Energy Efficiency in the Commercial and Industrial Sectors Enhanced—Operation Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$3,201,996	\$2,779,449	\$5,981,445
2011	\$8,168,358	\$7,090,431	\$15,258,789
2012	\$15,054,284	\$13,067,664	\$28,121,948
2013	\$23,908,785	\$20,753,691	\$44,662,476
2014	\$35,989,786	\$31,240,438	\$67,230,225
2015	\$51,114,038	\$44,368,837	\$95,482,875
2016	\$61,087,308	\$53,025,996	\$114,113,304
2017	\$68,970,074	\$59,868,523	\$128,838,597
2018	\$75,092,852	\$65,183,316	\$140,276,167
2019	\$77,803,069	\$67,535,882	\$145,338,952
2020	\$78,860,715	\$68,453,957	\$147,314,672
Average	\$45,386,479	\$39,397,108	\$84,783,586

Sources: RESI, REMI PI+

Figure 55: Energy Efficiency – Appliances and Other Products—Investment Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	0.0	0.0	0.0
2011	-13.2	-12.2	-25.4
2012	-31.6	-29.3	-60.9
2013	-49.1	-45.4	-94.6
2014	-64.7	-60.2	-124.9
2015	-82.1	-76.2	-158.3
2016	-96.3	-89.2	-185.5
2017	-95.2	-88.3	-183.4
2018	-86.0	-79.7	-165.7
2019	-72.9	-67.4	-140.2
2020	-59.4	-55.0	-114.3
Average	-59.1	-54.8	-113.9

Sources: RESI, REMI PI+

Figure 56: Energy Efficiency – Appliances and Other Products—Investment Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	-\$855,257	-\$792,692	-\$1,647,949
2012	-\$2,011,438	-\$1,864,294	-\$3,875,732
2013	-\$3,088,429	-\$2,862,499	-\$5,950,928
2014	-\$4,054,553	-\$3,757,947	-\$7,812,500
2015	-\$5,131,543	-\$4,756,152	-\$9,887,695
2016	-\$5,986,801	-\$5,548,844	-\$11,535,645
2017	-\$5,828,420	-\$5,402,049	-\$11,230,469
2018	-\$5,226,572	-\$4,844,229	-\$10,070,801
2019	-\$4,339,639	-\$4,022,178	-\$8,361,816
2020	-\$3,484,381	-\$3,229,486	-\$6,713,867
Average	-\$3,637,003	-\$3,370,943	-\$7,007,946

Sources: RESI, REMI PI+

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Figure 57: Energy Efficiency – Appliances and Other Products—Investment Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	-\$308,843	-\$286,250	-\$595,093
2012	-\$760,229	-\$704,615	-\$1,464,844
2013	-\$1,235,372	-\$1,145,000	-\$2,380,371
2014	-\$1,750,110	-\$1,622,083	-\$3,372,192
2015	-\$2,328,200	-\$2,157,884	-\$4,486,084
2016	-\$2,898,372	-\$2,686,345	-\$5,584,717
2017	-\$3,048,834	-\$2,825,800	-\$5,874,634
2018	-\$2,961,724	-\$2,745,063	-\$5,706,787
2019	-\$2,644,962	-\$2,451,473	-\$5,096,436
2020	-\$2,256,929	-\$2,091,826	-\$4,348,755
Average	-\$1,835,779	-\$1,701,485	-\$3,537,265

Sources: RESI, REMI PI+

Figure 58: Energy Efficiency – Appliances and Other Products—Operation Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	25.8	26.4	52.1
2011	22.2	22.8	45.0
2012	19.0	19.8	38.7
2013	17.0	18.0	35.0
2014	15.6	16.5	32.1
2015	14.5	15.4	29.8
2016	14.4	15.3	29.7
2017	14.3	15.2	29.5
2018	14.2	15.1	29.3
2019	14.3	15.3	29.5
2020	14.3	15.0	29.4
Average	16.9	17.7	34.6

Sources: RESI, REMI PI+

Figure 59: Energy Efficiency – Appliances and Other Products—Operation Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	-\$461,593	-\$484,452	-\$946,045
2011	-\$670,054	-\$703,237	-\$1,373,291
2012	-\$848,735	-\$890,767	-\$1,739,502
2013	-\$938,076	-\$984,532	-\$1,922,607
2014	-\$1,012,526	-\$1,062,669	-\$2,075,195
2015	-\$1,072,086	-\$1,125,179	-\$2,197,266
2016	-\$1,042,306	-\$1,093,924	-\$2,136,230
2017	-\$1,042,306	-\$1,093,924	-\$2,136,230
2018	-\$1,042,306	-\$1,093,924	-\$2,136,230
2019	-\$982,746	-\$1,031,414	-\$2,014,160
2020	-\$1,012,526	-\$1,062,669	-\$2,075,195
Average	-\$920,478	-\$966,063	-\$1,886,541

Sources: RESI, REMI PI+

Figure 60: Energy Efficiency – Appliances and Other Products—Operation Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$238,241	\$250,040	\$488,281
2011	\$193,571	\$203,157	\$396,729
2012	\$148,901	\$156,275	\$305,176
2013	\$119,121	\$125,020	\$244,141
2014	\$81,895	\$85,951	\$167,847
2015	\$67,005	\$70,324	\$137,329
2016	\$81,895	\$85,951	\$167,847
2017	\$96,786	\$101,579	\$198,364
2018	\$96,786	\$101,579	\$198,364
2019	\$104,231	\$109,392	\$213,623
2020	\$119,121	\$125,020	\$244,141
Average	\$122,505	\$128,572	\$251,076

Sources: RESI, REMI PI+

Figure 61: Energy Efficiency in the Power Sector – General Status Quo—Investment Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	-606.5	-512.9	-1,119.4
2011	-780.2	-668.3	-1,448.5
2012	-1,090.6	-941.9	-2,032.4
2013	-1,340.2	-1,164.3	-2,504.6
2014	-1,668.9	-1,447.7	-3,116.7
2015	-1,813.4	-1,572.1	-3,385.5
2016	-1,909.2	-1,652.8	-3,562.0
2017	-1,979.0	-1,711.0	-3,690.0
2018	-2,020.8	-1,742.9	-3,763.7
2019	-2,023.2	-1,742.1	-3,765.3
2020	-2,014.9	-1,732.2	-3,747.1
Average	-1,567.9	-1,353.5	-2,921.4

Sources: RESI, REMI PI+

Figure 62: Energy Efficiency in the Power Sector – General Status Quo—Investment Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	-\$69,315,368	-\$59,835,023	-\$129,150,391
2011	-\$85,858,024	-\$74,115,120	-\$159,973,145
2012	-\$118,845,064	-\$102,590,483	-\$221,435,547
2013	-\$144,658,159	-\$124,873,091	-\$269,531,250
2014	-\$181,789,052	-\$156,925,547	-\$338,714,600
2015	-\$196,841,232	-\$169,919,022	-\$366,760,254
2016	-\$207,520,253	-\$179,137,461	-\$386,657,715
2017	-\$216,004,507	-\$186,461,313	-\$402,465,820
2018	-\$222,687,085	-\$192,229,907	-\$414,916,992
2019	-\$225,831,828	-\$194,944,540	-\$420,776,367
2020	-\$228,026,596	-\$196,839,127	-\$424,865,723
Average	-\$172,488,833	-\$148,897,330	-\$321,386,164

Sources: RESI, REMI PI+

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Figure 63: Energy Efficiency in the Power Sector – General Status Quo—Investment Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	-\$16,559,035	-\$14,294,236	-\$30,853,271
2011	-\$21,898,546	-\$18,903,456	-\$40,802,002
2012	-\$31,496,563	-\$27,188,740	-\$58,685,303
2013	-\$39,776,080	-\$34,335,858	-\$74,111,938
2014	-\$51,904,632	-\$44,805,573	-\$96,710,205
2015	-\$59,013,060	-\$50,941,774	-\$109,954,834
2016	-\$64,974,968	-\$56,088,264	-\$121,063,232
2017	-\$70,191,637	-\$60,591,444	-\$130,783,081
2018	-\$74,818,668	-\$64,585,629	-\$139,404,297
2019	-\$77,046,194	-\$66,508,494	-\$143,554,688
2020	-\$78,512,102	-\$67,773,909	-\$146,286,011
Average	-\$53,290,135	-\$46,001,580	-\$99,291,715

Sources: RESI, REMI PI+

Figure 64: Energy Efficiency in the Power Sector – General Enhanced—Investment Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	-606.5	-512.9	-1,119.4
2011	-780.2	-668.3	-1,448.5
2012	-1,090.6	-941.9	-2,032.4
2013	-1,340.2	-1,164.3	-2,504.6
2014	-1,668.9	-1,447.7	-3,116.7
2015	-1,818.1	-1,576.2	-3,394.3
2016	-1,914.2	-1,657.0	-3,571.2
2017	-1,984.1	-1,715.4	-3,699.5
2018	-2,026.1	-1,747.4	-3,773.5
2019	-2,028.4	-1,746.7	-3,775.1
2020	-2,020.1	-1,736.7	-3,756.8
Average	-1,570.7	-1,355.9	-2,926.5

Sources: RESI, REMI PI+

Figure 65: Energy Efficiency in the Power Sector – General Enhanced—Investment Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	-\$69,315,368	-\$59,835,023	-\$129,150,391
2011	-\$85,858,024	-\$74,115,120	-\$159,973,145
2012	-\$118,845,064	-\$102,590,483	-\$221,435,547
2013	-\$144,658,159	-\$124,873,091	-\$269,531,250
2014	-\$181,789,052	-\$156,925,547	-\$338,714,600
2015	-\$197,351,498	-\$170,359,499	-\$367,710,997
2016	-\$208,058,203	-\$179,601,835	-\$387,660,037
2017	-\$216,564,450	-\$186,944,672	-\$403,509,122
2018	-\$223,264,351	-\$192,728,220	-\$415,992,571
2019	-\$226,417,245	-\$195,449,889	-\$421,867,135
2020	-\$228,617,703	-\$197,349,388	-\$425,967,091
Average	-\$172,794,465	-\$149,161,161	-\$321,955,626

Sources: RESI, REMI PI+

Figure 66: Energy Efficiency in the Power Sector – General Enhanced—Investment Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	-\$16,559,035	-\$14,294,236	-\$30,853,271
2011	-\$21,898,546	-\$18,903,456	-\$40,802,002
2012	-\$31,496,563	-\$27,188,740	-\$58,685,303
2013	-\$39,776,080	-\$34,335,858	-\$74,111,938
2014	-\$51,904,632	-\$44,805,573	-\$96,710,205
2015	-\$59,166,038	-\$51,073,829	-\$110,239,867
2016	-\$65,143,401	-\$56,233,660	-\$121,377,061
2017	-\$70,373,593	-\$60,748,513	-\$131,122,107
2018	-\$75,012,618	-\$64,753,053	-\$139,765,671
2019	-\$77,245,918	-\$66,680,902	-\$143,926,821
2020	-\$78,715,627	-\$67,949,597	-\$146,665,224
Average	-\$53,390,187	-\$46,087,947	-\$99,478,134

Sources: RESI, REMI PI+

Figure 67: Energy Efficiency in the Power Sector – General Status Quo—Operation Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	43.5	36.8	80.3
2011	76.8	65.6	142.3
2012	117.4	101.4	218.8
2013	182.0	158.2	340.2
2014	273.7	237.2	510.8
2015	387.5	335.7	723.2
2016	381.1	330.7	711.8
2017	387.6	335.7	723.4
2018	386.8	334.1	720.9
2019	378.9	326.8	705.7
2020	371.3	319.2	690.5
Average	271.5	234.7	506.2

Sources: RESI, REMI PI+

Figure 68: Energy Efficiency in the Power Sector – General Status Quo—Operation Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$4,959,962	\$4,286,864	\$9,246,826
2011	\$8,528,515	\$7,371,143	\$15,899,658
2012	\$12,833,697	\$11,092,085	\$23,925,781
2013	\$19,954,434	\$17,246,494	\$37,200,928
2014	\$30,234,487	\$26,131,480	\$56,365,967
2015	\$42,986,336	\$37,152,824	\$80,139,160
2016	\$41,316,646	\$35,709,721	\$77,026,367
2017	\$42,135,121	\$36,417,125	\$78,552,246
2018	\$42,495,251	\$36,728,382	\$79,223,633
2019	\$42,364,294	\$36,615,198	\$78,979,492
2020	\$42,102,382	\$36,388,829	\$78,491,211
Average	\$29,991,920	\$25,921,831	\$55,913,752

Sources: RESI, REMI PI+

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Figure 69: Energy Efficiency in the Power Sector – General Status Quo—Operation Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$1,178,605	\$1,018,661	\$2,197,266
2011	\$2,128,036	\$1,839,249	\$3,967,285
2012	\$3,380,304	\$2,921,576	\$6,301,880
2013	\$5,385,569	\$4,654,714	\$10,040,283
2014	\$8,454,852	\$7,307,477	\$15,762,329
2015	\$12,539,045	\$10,837,419	\$23,376,465
2016	\$12,940,098	\$11,184,047	\$24,124,146
2017	\$13,807,683	\$11,933,895	\$25,741,577
2018	\$14,454,278	\$12,492,743	\$26,947,021
2019	\$14,601,604	\$12,620,076	\$27,221,680
2020	\$14,658,897	\$12,669,594	\$27,328,491
Average	\$9,411,725	\$8,134,496	\$17,546,220

Sources: RESI, REMI PI+

Figure 70: Energy Efficiency in the Power Sector – General Enhanced—Operation Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	43.5	36.8	80.3
2011	76.8	65.6	142.3
2012	117.4	101.4	218.8
2013	182.0	158.2	340.2
2014	273.7	237.2	510.8
2015	388.5	336.5	725.1
2016	382.1	331.5	713.6
2017	388.6	336.6	725.2
2018	387.8	334.9	722.7
2019	379.9	327.7	707.5
2020	372.3	320.0	692.3
Average	272.0	235.1	507.2

Sources: RESI, REMI PI+

Figure 71: Energy Efficiency in the Power Sector – General Enhanced—Operation Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$4,959,962	\$4,286,864	\$9,246,826
2011	\$8,528,515	\$7,371,143	\$15,899,658
2012	\$12,833,697	\$11,092,085	\$23,925,781
2013	\$19,954,434	\$17,246,494	\$37,200,928
2014	\$30,234,487	\$26,131,480	\$56,365,967
2015	\$43,097,768	\$37,249,135	\$80,346,903
2016	\$41,423,750	\$35,802,291	\$77,226,041
2017	\$42,244,347	\$36,511,528	\$78,755,875
2018	\$42,605,410	\$36,823,592	\$79,429,002
2019	\$42,474,114	\$36,710,114	\$79,184,229
2020	\$42,211,523	\$36,483,158	\$78,694,682
Average	\$30,051,637	\$25,973,444	\$56,025,081

Sources: RESI, REMI PI+

Figure 72: Energy Efficiency in the Power Sector – General Enhanced—Operation Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$1,178,605	\$1,018,661	\$2,197,266
2011	\$2,128,036	\$1,839,249	\$3,967,285
2012	\$3,380,304	\$2,921,576	\$6,301,880
2013	\$5,385,569	\$4,654,714	\$10,040,283
2014	\$8,454,852	\$7,307,477	\$15,762,329
2015	\$12,571,550	\$10,865,513	\$23,437,063
2016	\$12,973,643	\$11,213,039	\$24,186,682
2017	\$13,843,476	\$11,964,831	\$25,808,306
2018	\$14,491,748	\$12,525,128	\$27,016,876
2019	\$14,639,455	\$12,652,791	\$27,292,246
2020	\$14,696,897	\$12,702,437	\$27,399,334
Average	\$9,431,285	\$8,151,401	\$17,582,686

Sources: RESI, REMI PI+

Figure 73: Maryland Renewable Energy Portfolio Standard Program Status Quo—Investment Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	239.4	247.6	487.1
2011	3,563.5	3,685.7	7,249.2
2012	1,329.9	1,368.5	2,698.3
2013	3,160.6	3,280.4	6,441.0
2014	1,848.7	1,920.4	3,769.0
2015	5,333.8	5,553.6	10,887.4
2016	3,565.3	3,717.6	7,282.8
2017	19,821.4	20,641.3	40,462.6
2018	18,972.4	20,952.2	39,924.7
2019	8,713.6	9,055.9	17,769.5
2020	3,108.6	3,318.6	6,427.2
Average	6,332.5	6,703.8	13,036.3

Sources: RESI, REMI PI+

Figure 74: Maryland Renewable Energy Portfolio Standard Program Status Quo—Investment Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$13,623,408	\$14,422,246	\$28,045,654
2011	\$203,031,768	\$214,936,982	\$417,968,750
2012	\$74,876,859	\$79,267,428	\$154,144,287
2013	\$177,652,797	\$188,069,859	\$365,722,656
2014	\$102,449,806	\$108,457,176	\$210,906,982
2015	\$299,299,898	\$316,850,005	\$616,149,902
2016	\$197,368,937	\$208,942,098	\$406,311,035
2017	\$1,117,178,746	\$1,182,686,977	\$2,299,865,723
2018	\$1,070,304,735	\$1,133,064,405	\$2,203,369,141
2019	\$484,957,744	\$513,394,307	\$998,352,051
2020	\$157,610,526	\$166,852,365	\$324,462,891
Average	\$354,395,929	\$375,176,714	\$729,572,643

Sources: RESI, REMI PI+

Figure 75: Maryland Renewable Energy Portfolio Standard Program Status Quo—Investment Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$5,292,227	\$5,602,548	\$10,894,775
2011	\$81,191,953	\$85,952,822	\$167,144,775
2012	\$35,837,420	\$37,938,825	\$73,776,245
2013	\$81,006,651	\$85,756,654	\$166,763,306
2014	\$54,360,214	\$57,547,745	\$111,907,959
2015	\$148,345,422	\$157,043,982	\$305,389,404
2016	\$111,485,135	\$118,022,311	\$229,507,446
2017	\$584,583,547	\$618,861,888	\$1,203,445,435
2018	\$626,313,572	\$663,038,845	\$1,289,352,417
2019	\$331,527,633	\$350,967,484	\$682,495,117
2020	\$153,304,106	\$162,293,429	\$315,597,534
Average	\$201,204,353	\$213,002,412	\$414,206,765

Sources: RESI, REMI PI+

Figure 76: Maryland Renewable Energy Portfolio Standard Program Enhanced—Investment Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	239.4	247.6	487.1
2011	3,563.5	3,685.7	7,249.2
2012	1,329.9	1,368.5	2,698.3
2013	3,160.6	3,280.4	6,441.0
2014	1,848.7	1,920.4	3,769.0
2015	5,485.9	5,712.0	11,197.9
2016	3,666.9	3,823.6	7,490.5
2017	20,386.6	21,229.9	41,616.5
2018	19,513.5	21,549.7	41,063.2
2019	8,962.1	9,314.1	18,276.2
2020	3,197.3	3,413.2	6,610.5
Average	6,486.8	6,867.7	13,354.5

Sources: RESI, REMI PI+

Figure 77: Maryland Renewable Energy Portfolio Standard Program Enhanced—Investment Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$13,623,408	\$14,422,246	\$28,045,654
2011	\$203,031,768	\$214,936,982	\$417,968,750
2012	\$74,876,859	\$79,267,428	\$154,144,287
2013	\$177,652,797	\$188,069,859	\$365,722,656
2014	\$102,449,806	\$108,457,176	\$210,906,982
2015	\$307,835,183	\$325,885,775	\$633,720,958
2016	\$202,997,406	\$214,900,605	\$417,898,010
2017	\$1,149,037,892	\$1,216,414,254	\$2,365,452,146
2018	\$1,100,827,152	\$1,165,376,571	\$2,266,203,722
2019	\$498,787,527	\$528,035,030	\$1,026,822,556
2020	\$162,105,184	\$171,610,578	\$333,715,761
Average	\$363,020,453	\$384,306,955	\$747,327,408

Sources: RESI, REMI PI+

Figure 78: Maryland Renewable Energy Portfolio Standard Program Enhanced—Investment Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$5,292,227	\$5,602,548	\$10,894,775
2011	\$81,191,953	\$85,952,822	\$167,144,775
2012	\$35,837,420	\$37,938,825	\$73,776,245
2013	\$81,006,651	\$85,756,654	\$166,763,306
2014	\$54,360,214	\$57,547,745	\$111,907,959
2015	\$152,575,863	\$161,522,484	\$314,098,347
2016	\$114,664,413	\$121,388,012	\$236,052,425
2017	\$601,254,409	\$636,510,282	\$1,237,764,691
2018	\$644,174,470	\$681,947,056	\$1,326,121,526
2019	\$340,981,973	\$360,976,200	\$701,958,172
2020	\$157,675,956	\$166,921,632	\$324,597,587
Average	\$206,274,141	\$218,369,478	\$424,643,619

Sources: RESI, REMI PI+

Figure 79: Maryland Renewable Energy Portfolio Standard Program Status Quo—Operation Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	-186.6	-159.9	-346.5
2011	-334.9	-290.7	-625.6
2012	-451.3	-394.6	-845.9
2013	-546.3	-479.4	-1,025.7
2014	-604.9	-529.6	-1,134.5
2015	-638.0	-555.0	-1,193.0
2016	-683.3	-592.5	-1,275.8
2017	-972.7	-847.3	-1,819.9
2018	-1,309.0	-1,142.1	-2,451.1
2019	-1,536.6	-1,341.2	-2,877.8
2020	-1,685.3	-1,469.3	-3,154.6
Average	-813.5	-709.2	-1,522.8

Sources: RESI, REMI PI+

Figure 80: Maryland Renewable Energy Portfolio Standard Program Status Quo—Operation Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	-\$20,037,125	-\$17,468,978	-\$37,506,104
2011	-\$34,433,205	-\$30,019,920	-\$64,453,125
2012	-\$45,796,815	-\$39,927,062	-\$85,723,877
2013	-\$55,285,510	-\$48,199,597	-\$103,485,107
2014	-\$62,149,326	-\$54,183,682	-\$116,333,008
2015	-\$67,757,765	-\$59,073,290	-\$126,831,055
2016	-\$73,333,596	-\$63,934,470	-\$137,268,066
2017	-\$102,973,542	-\$89,775,481	-\$192,749,023
2018	-\$137,471,962	-\$119,852,257	-\$257,324,219
2019	-\$162,253,435	-\$141,457,503	-\$303,710,938
2020	-\$180,317,824	-\$157,206,590	-\$337,524,414
Average	-\$85,619,100	-\$74,645,348	-\$160,264,449

Sources: RESI, REMI PI+

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Figure 81: Maryland Renewable Energy Portfolio Standard Program Status Quo—Operation Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	-\$2,527,058	-\$2,203,166	-\$4,730,225
2011	-\$6,611,110	-\$5,763,768	-\$12,374,878
2012	-\$10,010,411	-\$8,727,382	-\$18,737,793
2013	-\$13,091,791	-\$11,413,824	-\$24,505,615
2014	-\$15,651,457	-\$13,645,418	-\$29,296,875
2015	-\$14,518,356	-\$12,657,547	-\$27,175,903
2016	-\$16,727,494	-\$14,583,541	-\$31,311,035
2017	-\$26,982,459	-\$23,524,133	-\$50,506,592
2018	-\$39,740,027	-\$34,646,570	-\$74,386,597
2019	-\$49,481,428	-\$43,139,421	-\$92,620,850
2020	-\$56,744,682	-\$49,471,748	-\$106,216,431
Average	-\$22,916,934	-\$19,979,683	-\$42,896,618

Sources: RESI, REMI PI+

Figure 82: Maryland Renewable Energy Portfolio Standard Program Enhanced—Operation Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	-186.6	-159.9	-346.5
2011	-334.9	-290.7	-625.6
2012	-451.3	-394.6	-845.9
2013	-546.3	-479.4	-1,025.7
2014	-604.9	-529.6	-1,134.5
2015	-656.2	-570.8	-1,227.0
2016	-702.8	-609.4	-1,312.2
2017	-1,000.4	-871.4	-1,871.8
2018	-1,346.3	-1,174.7	-2,521.0
2019	-1,580.4	-1,379.5	-2,959.9
2020	-1,733.4	-1,511.2	-3,244.6
Average	-831.2	-724.7	-1,555.9

Sources: RESI, REMI PI+

Figure 83: Maryland Renewable Energy Portfolio Standard Program Enhanced—Operation Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	-\$20,037,125	-\$17,468,978	-\$37,506,104
2011	-\$34,433,205	-\$30,019,920	-\$64,453,125
2012	-\$45,796,815	-\$39,927,062	-\$85,723,877
2013	-\$55,285,510	-\$48,199,597	-\$103,485,107
2014	-\$62,149,326	-\$54,183,682	-\$116,333,008
2015	-\$69,690,047	-\$60,757,913	-\$130,447,959
2016	-\$75,424,887	-\$65,757,722	-\$141,182,609
2017	-\$105,910,090	-\$92,335,653	-\$198,245,744
2018	-\$141,392,318	-\$123,270,144	-\$264,662,462
2019	-\$166,880,497	-\$145,491,517	-\$312,372,014
2020	-\$185,460,038	-\$161,689,729	-\$347,149,767
Average	-\$87,496,351	-\$76,281,992	-\$163,778,343

Sources: RESI, REMI PI+

Figure 84: Maryland Renewable Energy Portfolio Standard Program Enhanced—Operation Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	-\$2,527,058	-\$2,203,166	-\$4,730,225
2011	-\$6,611,110	-\$5,763,768	-\$12,374,878
2012	-\$10,010,411	-\$8,727,382	-\$18,737,793
2013	-\$13,091,791	-\$11,413,824	-\$24,505,615
2014	-\$15,651,457	-\$13,645,418	-\$29,296,875
2015	-\$14,932,384	-\$13,018,508	-\$27,950,892
2016	-\$17,204,521	-\$14,999,427	-\$32,203,948
2017	-\$27,751,932	-\$24,194,982	-\$51,946,914
2018	-\$40,873,313	-\$35,634,603	-\$76,507,917
2019	-\$50,892,515	-\$44,369,650	-\$95,262,165
2020	-\$58,362,899	-\$50,882,559	-\$109,245,458
Average	-\$23,446,308	-\$20,441,208	-\$43,887,516

Sources: RESI, REMI PI+

Figure 85: Incentives and Grant Programs to Support Renewable Energy—Investment Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	176.1	65.3	241.4
2011	262.4	61.4	323.8
2012	68.5	-63.3	5.1
2013	-77.6	-176.6	-254.2
2014	-112.2	-207.7	-320.0
2015	-114.8	-215.4	-330.3
2016	-144.4	-211.1	-355.5
2017	-108.2	-176.8	-285.0
2018	-94.7	-150.1	-244.8
2019	-56.4	-114.3	-170.7
2020	-23.3	-83.7	-107.0
Average	-20.4	-115.7	-136.1

Sources: RESI, REMI PI+

Figure 86: Incentives and Grant Programs to Support Renewable Energy—Investment Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$2,532,324	\$16,083,399	\$18,615,723
2011	\$3,632,431	\$23,070,450	\$26,702,881
2012	\$631,005	\$4,007,667	\$4,638,672
2013	-\$1,693,751	-\$10,757,421	-\$12,451,172
2014	-\$2,208,518	-\$14,026,833	-\$16,235,352
2015	-\$2,194,968	-\$13,940,774	-\$16,135,742
2016	-\$2,522,443	-\$16,020,647	-\$18,543,091
2017	-\$1,849,792	-\$11,748,475	-\$13,598,267
2018	-\$1,531,167	-\$9,724,814	-\$11,255,981
2019	-\$849,665	-\$5,396,429	-\$6,246,094
2020	-\$274,371	-\$1,742,597	-\$2,016,968
Average	-\$575,356	-\$3,654,225	-\$4,229,581

Sources: RESI, REMI PI+

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Figure 87: Incentives and Grant Programs to Support Renewable Energy—Investment Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$1,181,059	\$7,501,192	\$8,682,251
2011	\$1,922,075	\$12,207,564	\$14,129,639
2012	\$763,848	\$4,851,386	\$5,615,234
2013	-\$199,265	-\$1,265,579	-\$1,464,844
2014	-\$514,767	-\$3,269,412	-\$3,784,180
2015	-\$606,271	-\$3,850,577	-\$4,456,848
2016	-\$958,086	-\$6,085,035	-\$7,043,121
2017	-\$763,371	-\$4,848,354	-\$5,611,725
2018	-\$734,606	-\$4,665,662	-\$5,400,269
2019	-\$433,683	-\$2,754,427	-\$3,188,110
2020	-\$146,036	-\$927,511	-\$1,073,547
Average	-\$44,464	-\$282,401	-\$326,865

Sources: RESI, REMI PI+

Figure 88: Incentives and Grant Programs to Support Renewable Energy—Operation Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	-54.2	30.5	-23.7
2011	-28.5	53.5	25.0
2012	-7.9	72.0	64.0
2013	7.6	85.7	93.3
2014	19.9	94.9	114.8
2015	25.7	93.5	119.2
2016	31.4	96.9	128.3
2017	34.7	98.3	133.0
2018	34.8	97.2	132.0
2019	31.8	93.7	125.5
2020	28.2	89.4	117.6
Average	11.2	82.3	93.5

Sources: RESI, REMI PI+

Figure 89: Incentives and Grant Programs to Support Renewable Energy—Operation Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	-\$796,737	-\$5,520,402	-\$6,317,139
2011	-\$254,032	-\$1,760,128	-\$2,014,160
2012	\$215,542	\$1,493,442	\$1,708,984
2013	\$615,835	\$4,266,977	\$4,882,813
2014	\$954,544	\$6,613,815	\$7,568,359
2015	\$1,136,000	\$7,871,080	\$9,007,080
2016	\$1,351,696	\$9,365,589	\$10,717,285
2017	\$1,531,443	\$10,611,013	\$12,142,456
2018	\$1,660,861	\$11,507,718	\$13,168,579
2019	\$1,739,950	\$12,055,705	\$13,795,654
2020	\$1,790,279	\$12,404,424	\$14,194,702
Average	\$904,126	\$6,264,476	\$7,168,601

Sources: RESI, REMI PI+

Figure 90: Incentives and Grant Programs to Support Renewable Energy—Operation Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	-\$531,158	-\$3,680,268	-\$4,211,426
2011	-\$444,556	-\$3,080,224	-\$3,524,780
2012	-\$361,803	-\$2,506,849	-\$2,868,652
2013	-\$292,522	-\$2,026,814	-\$2,319,336
2014	-\$240,561	-\$1,666,788	-\$1,907,349
2015	-\$209,253	-\$1,449,866	-\$1,659,119
2016	-\$172,326	-\$1,194,007	-\$1,366,333
2017	-\$147,708	-\$1,023,435	-\$1,171,143
2018	-\$143,605	-\$995,006	-\$1,138,611
2019	-\$164,120	-\$1,137,149	-\$1,301,270
2020	-\$198,996	-\$1,378,794	-\$1,577,789
Average	-\$264,237	-\$1,830,836	-\$2,095,073

Sources: RESI, REMI PI+

Figure 91: Offshore Wind Initiatives to Support Renewable Energy—Investment Phase, Employment Impacts¹

Fiscal Year	Direct	Spinoff	Total
2010	0.0	0.0	0.0
2011	0.0	0.0	0.0
2012	0.0	0.0	0.0
2013	0.0	0.0	0.0
2014	0.0	0.0	0.0
2015	0.0	0.0	0.0
2016	0.0	0.0	0.0
2017	751.8	1,416.1	2,167.9
2018	14.0	11.9	25.9
2019	-3.6	-4.1	-7.7
2020	-12.6	-12.6	-25.1
Average	187.4	352.8	540.2

Sources: RESI, REMI PI+

Figure 92: Offshore Wind Initiatives to Support Renewable Energy—Investment Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$0	\$0	\$0
2013	\$0	\$0	\$0
2014	\$0	\$0	\$0
2015	\$0	\$0	\$0
2016	\$0	\$0	\$0
2017	\$30,574,595	\$57,560,171	\$88,134,766
2018	\$402,297	\$757,371	\$1,159,668
2019	-\$359,950	-\$677,647	-\$1,037,598
2020	-\$783,421	-\$1,474,880	-\$2,258,301
Average	\$7,458,380	\$14,041,254	\$21,499,634

Sources: RESI, REMI PI+

¹ Offshore Wind according to MEA data is scheduled for the first investment in 2017. This program is therefore defined as having a lifespan from 2017-2020. Averages are done over this period of time.

Figure 93: Offshore Wind Initiatives to Support Renewable Energy Status Quo—Investment Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$0	\$0	\$0
2013	\$0	\$0	\$0
2014	\$0	\$0	\$0
2015	\$0	\$0	\$0
2016	\$0	\$0	\$0
2017	\$19,490,246	\$36,692,616	\$56,182,861
2018	\$1,042,797	\$1,963,184	\$3,005,981
2019	\$381,124	\$717,509	\$1,098,633
2020	-\$47,640	-\$89,689	-\$137,329
Average	\$5,216,631	\$9,820,905	\$15,037,537

Sources: RESI, REMI PI+

Figure 94: Offshore Wind Initiatives to Support Renewable Energy—Operation Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	0.0	0.0	0.0
2011	0.0	0.0	0.0
2012	0.0	0.0	0.0
2013	0.0	0.0	0.0
2014	0.0	0.0	0.0
2015	0.0	0.0	0.0
2016	0.0	0.0	0.0
2017	0.0	0.0	0.0
2018	146.1	135.7	281.8
2019	150.8	140.3	291.2
2020	150.6	139.6	290.2
Average	149.2	138.5	287.7

Sources: RESI, REMI PI+

Figure 95: Offshore Wind Initiatives to Support Renewable Energy—Operation Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$0	\$0	\$0
2013	\$0	\$0	\$0
2014	\$0	\$0	\$0
2015	\$0	\$0	\$0
2016	\$0	\$0	\$0
2017	\$0	\$0	\$0
2018	\$8,639,369	\$8,023,229	\$16,662,598
2019	\$8,987,476	\$8,346,509	\$17,333,984
2020	\$8,987,476	\$8,346,509	\$17,333,984
Average	\$8,871,440	\$8,238,749	\$17,110,189

Sources: RESI, REMI PI+

Figure 96: Offshore Wind Initiatives to Support Renewable Energy Status Quo—Operation Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$0	\$0	\$0
2013	\$0	\$0	\$0
2014	\$0	\$0	\$0
2015	\$0	\$0	\$0
2016	\$0	\$0	\$0
2017	\$0	\$0	\$0
2018	\$19,652,191	\$18,250,641	\$37,902,832
2019	\$20,546,192	\$19,080,883	\$39,627,075
2020	\$21,210,759	\$19,698,055	\$40,908,813
Average	\$20,469,714	\$19,009,860	\$39,479,574

Sources: RESI, REMI PI+

Figure 97: Title V Permits for GHG Sources—Investment Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	0.0	0.0	0.0
2011	0.0	0.0	0.0
2012	1.0	0.4	1.5
2013	0.8	0.4	1.3
2014	0.8	0.2	1.0
2015	0.8	0.3	1.0
2016	1.0	0.5	1.5
2017	0.8	0.2	1.0
2018	1.0	0.5	1.5
2019	0.5	0.1	0.6
2020	0.5	0.0	0.5
Average	0.7	0.2	0.9

Sources: RESI, REMI PI+

Figure 98: Title V Permits for GHG Sources—Investment Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$88,984	\$33,086	\$122,070
2013	\$66,738	\$24,815	\$91,553
2014	\$88,984	\$33,086	\$122,070
2015	\$44,492	\$16,543	\$61,035
2016	\$88,984	\$33,086	\$122,070
2017	\$88,984	\$33,086	\$122,070
2018	\$44,492	\$16,543	\$61,035
2019	\$88,984	\$33,086	\$122,070
2020	\$44,492	\$16,543	\$61,035
Average	\$58,649	\$21,807	\$80,455

Sources: RESI, REMI PI+

Figure 99: Title V Permits for GHG Sources—Investment Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$44,492	\$16,543	\$61,035
2013	\$33,369	\$12,407	\$45,776
2014	\$33,369	\$12,407	\$45,776
2015	\$33,369	\$12,407	\$45,776
2016	\$55,615	\$20,679	\$76,294
2017	\$44,492	\$16,543	\$61,035
2018	\$44,492	\$16,543	\$61,035
2019	\$44,492	\$16,543	\$61,035
2020	\$33,369	\$12,407	\$45,776
Average	\$33,369	\$12,407	\$45,776

Sources: RESI, REMI PI+

Figure 100: Title V Permits for GHG Sources—Operation Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	0.0	0.0	0.0
2011	6.2	2.0	8.2
2012	5.5	1.6	7.1
2013	4.9	1.3	6.2
2014	4.7	0.7	5.4
2015	3.6	-0.2	3.4
2016	3.4	-0.2	3.2
2017	3.3	-0.3	3.0
2018	3.2	-0.3	2.9
2019	2.7	-0.5	2.1
2020	2.7	-0.7	2.0
Average	3.7	0.3	4.0

Sources: RESI, REMI PI+

Figure 101: Title V Permits for GHG Sources—Operation Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$507,891	\$41,425	\$549,316
2012	\$423,243	\$34,521	\$457,764
2013	\$310,378	\$25,315	\$335,693
2014	\$310,378	\$25,315	\$335,693
2015	\$112,865	\$9,206	\$122,070
2016	\$112,865	\$9,206	\$122,070
2017	\$112,865	\$9,206	\$122,070
2018	\$112,865	\$9,206	\$122,070
2019	\$112,865	\$9,206	\$122,070
2020	\$56,432	\$4,603	\$61,035
Average	\$197,513	\$16,110	\$213,623

Sources: RESI, REMI PI+

Figure 102: Title V Permits for GHG Sources—Operation Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$268,054	\$21,863	\$289,917
2012	\$282,162	\$23,014	\$305,176
2013	\$282,162	\$23,014	\$305,176
2014	\$268,054	\$21,863	\$289,917
2015	\$239,838	\$19,562	\$259,399
2016	\$225,729	\$18,411	\$244,141
2017	\$253,946	\$20,713	\$274,658
2018	\$253,946	\$20,713	\$274,658
2019	\$211,621	\$17,260	\$228,882
2020	\$239,838	\$19,562	\$259,399
Average	\$229,577	\$18,725	\$248,302

Sources: RESI, REMI PI+

Figure 103: BeSMART Status Quo—Investment Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	0.0	0.0	0.0
2011	499.6	467.2	966.9
2012	1,298.8	1,216.3	2,515.1
2013	1,181.9	1,106.5	2,288.5
2014	1,419.6	1,330.4	2,750.0
2015	3,722.3	3,500.2	7,222.5
2016	1,707.1	1,599.2	3,306.3
2017	1,653.0	1,549.1	3,202.0
2018	470.0	432.5	902.5
2019	-144.8	-146.6	-291.4
2020	357.8	331.1	689.0
Average	1,105.9	1,035.1	2,141.0

Sources: RESI, REMI PI+

Figure 104: BeSMART Status Quo—Investment Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$25,647,660	\$24,004,440	\$49,652,100
2012	\$67,169,440	\$62,865,960	\$130,035,400
2013	\$62,125,032	\$58,144,743	\$120,269,775
2014	\$75,004,035	\$70,198,601	\$145,202,637
2015	\$196,605,786	\$184,009,448	\$380,615,234
2016	\$92,060,439	\$86,162,218	\$178,222,656
2017	\$88,623,936	\$82,945,888	\$171,569,824
2018	\$24,339,267	\$22,779,874	\$47,119,141
2019	-\$10,404,091	-\$9,737,511	-\$20,141,602
2020	\$16,236,687	\$15,196,419	\$31,433,105
Average	\$57,946,199	\$54,233,644	\$112,179,843

Sources: RESI, REMI PI+

Figure 105: BeSMART Status Quo—Investment Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$10,634,636	\$9,953,285	\$20,587,921
2012	\$29,038,842	\$27,178,352	\$56,217,194
2013	\$28,904,850	\$27,052,945	\$55,957,794
2014	\$36,282,296	\$33,957,725	\$70,240,021
2015	\$94,143,227	\$88,111,564	\$182,254,791
2016	\$51,190,885	\$47,911,136	\$99,102,020
2017	\$50,796,790	\$47,542,290	\$98,339,081
2018	\$19,878,119	\$18,604,547	\$38,482,666
2019	\$614,787	\$575,398	\$1,190,186
2020	\$12,120,372	\$11,343,831	\$23,464,203
Average	\$30,327,709	\$28,384,643	\$58,712,352

Sources: RESI, REMI PI+

Figure 106: BeSMART Enhanced—Investment Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	0.0	0.0	0.0
2011	499.6	467.2	966.9
2012	1,298.8	1,216.3	2,515.1
2013	1,181.9	1,106.5	2,288.5
2014	2,534.7	2,379.4	4,914.2
2015	6,717.4	6,320.2	13,037.6
2016	3,113.3	2,918.7	6,032.0
2017	3,023.7	2,835.9	5,859.6
2018	895.9	827.2	1,723.1
2019	-215.7	-220.1	-435.8
2020	684.9	635.5	1,320.4
Average	1,794.0	1,680.6	3,474.7

Sources: RESI, REMI PI+

Figure 107: BeSMART Enhanced—Investment Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$25,636,390	\$24,015,709	\$49,652,100
2012	\$67,139,926	\$62,895,474	\$130,035,400
2013	\$62,097,735	\$58,172,041	\$120,269,775
2014	\$133,082,332	\$124,669,133	\$257,751,465
2015	\$354,560,576	\$332,145,967	\$686,706,543
2016	\$168,062,532	\$157,437,956	\$325,500,488
2017	\$162,610,663	\$152,330,743	\$314,941,406
2018	\$47,049,946	\$44,075,543	\$91,125,488
2019	-\$15,693,820	-\$14,701,688	-\$30,395,508
2020	\$31,986,400	\$29,964,284	\$61,950,684
Average	\$94,230,244	\$88,273,197	\$182,503,440

Sources: RESI, REMI PI+

Figure 108: BeSMART Enhanced—Investment Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$10,629,963	\$9,957,958	\$20,587,921
2012	\$29,026,082	\$27,191,111	\$56,217,194
2013	\$28,892,149	\$27,065,645	\$55,957,794
2014	\$62,304,543	\$58,365,775	\$120,670,319
2015	\$168,285,098	\$157,646,451	\$325,931,549
2016	\$92,301,641	\$86,466,517	\$178,768,158
2017	\$92,398,152	\$86,556,926	\$178,955,078
2018	\$37,266,913	\$34,910,974	\$72,177,887
2019	\$2,792,901	\$2,616,340	\$5,409,241
2020	\$23,619,514	\$22,126,336	\$45,745,850
Average	\$49,774,269	\$46,627,639	\$96,401,908

Sources: RESI, REMI PI+

Figure 109: BeSMART Status Quo—Operation Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	0.0	0.0	0.0
2011	0.0	0.1	0.1
2012	0.0	-0.1	-0.1
2013	0.2	0.2	0.5
2014	0.3	0.2	0.5
2015	0.3	0.2	0.5
2016	0.3	0.3	0.6
2017	0.2	0.2	0.5
2018	0.8	0.5	1.3
2019	1.0	0.8	1.8
2020	0.6	0.6	1.2
Average	0.3	0.3	0.6

Sources: RESI, REMI PI+

Figure 110: BeSMART Status Quo—Operation Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$0	\$0	\$0
2013	\$16,809	\$13,709	\$30,518
2014	\$33,618	\$27,418	\$61,035
2015	\$0	\$0	\$0
2016	\$0	\$0	\$0
2017	\$0	\$0	\$0
2018	\$67,235	\$54,835	\$122,070
2019	\$33,618	\$27,418	\$61,035
2020	\$33,618	\$27,418	\$61,035
Average	\$16,809	\$13,709	\$30,518

Sources: RESI, REMI PI+

Figure 111: BeSMART Status Quo—Operation Phase, Wages Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	-\$2,101	-\$1,714	-\$3,815
2012	\$0	\$0	\$0
2013	\$4,202	\$3,427	\$7,629
2014	\$0	\$0	\$0
2015	\$10,505	\$8,568	\$19,073
2016	\$10,505	\$8,568	\$19,073
2017	\$8,404	\$6,854	\$15,259
2018	\$18,910	\$15,422	\$34,332
2019	\$27,314	\$22,277	\$49,591
2020	\$14,708	\$11,995	\$26,703
Average	\$8,404	\$6,854	\$15,259

Sources: RESI, REMI PI+

Figure 112: BeSMART Enhanced—Operation Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	0.0	0.0	0.0
2011	0.0	0.1	0.1
2012	0.0	0.0	0.0
2013	0.5	0.4	0.9
2014	0.5	0.4	1.0
2015	0.5	0.2	0.7
2016	0.5	0.6	1.2
2017	0.5	0.5	1.0
2018	1.1	1.0	2.1
2019	1.3	1.1	2.4
2020	1.1	1.0	2.1
Average	0.6	0.5	1.0

Sources: RESI, REMI PI+

Figure 113: BeSMART Enhanced—Operation Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$0	\$0	\$0
2013	\$16,298	\$14,220	\$30,518
2014	\$32,596	\$28,440	\$61,035
2015	\$0	\$0	\$0
2016	\$32,596	\$28,440	\$61,035
2017	\$32,596	\$28,440	\$61,035
2018	\$97,787	\$85,319	\$183,105
2019	\$65,191	\$56,879	\$122,070
2020	\$65,191	\$56,879	\$122,070
Average	\$31,114	\$27,147	\$58,261

Sources: RESI, REMI PI+

Figure 114: BeSMART Enhanced—Operation Phase, Wages Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	-\$2,037	-\$1,777	-\$3,815
2012	\$0	\$0	\$0
2013	\$8,149	\$7,110	\$15,259
2014	\$8,149	\$7,110	\$15,259
2015	\$10,186	\$8,887	\$19,073
2016	\$16,298	\$14,220	\$30,518
2017	\$16,298	\$14,220	\$30,518
2018	\$28,521	\$24,885	\$53,406
2019	\$36,670	\$31,995	\$68,665
2020	\$30,558	\$26,662	\$57,220
Average	\$13,890	\$12,119	\$26,009

Sources: RESI, REMI PI+

**Figure 115: Weatherization and Energy Efficiency for Low-Income Houses Status Quo—
Investment Phase, Employment Impacts**

Fiscal Year	Direct	Spinoff	Total
2010	348.3	337.1	685.4
2011	814.8	787.4	1,602.1
2012	911.7	878.9	1,790.5
2013	428.3	409.0	837.2
2014	754.2	725.1	1,479.3
2015	912.1	877.6	1,789.6
2016	916.0	880.6	1,796.6
2017	635.0	607.1	1,242.1
2018	110.5	98.1	208.6
2019	83.3	73.8	157.1
2020	72.9	64.7	137.6
Average	544.3	521.7	1,066.0

Sources: RESI, REMI PI+

**Figure 116: Weatherization and Energy Efficiency for Low-Income Houses Status Quo—
Investment Phase, Output Impacts**

Fiscal Year	Direct	Spinoff	Total
2010	\$7,665,990	\$7,348,658	\$15,014,648
2011	\$18,510,562	\$17,744,321	\$36,254,883
2012	\$21,642,400	\$20,746,516	\$42,388,916
2013	\$11,015,966	\$10,559,962	\$21,575,928
2014	\$18,198,936	\$17,445,595	\$35,644,531
2015	\$22,156,582	\$21,239,414	\$43,395,996
2016	\$22,624,020	\$21,687,503	\$44,311,523
2017	\$15,768,257	\$15,115,533	\$30,883,789
2018	\$1,994,404	\$1,911,846	\$3,906,250
2019	\$93,488	\$89,618	\$183,105
2020	-\$654,414	-\$627,324	-\$1,281,738
Average	\$12,637,836	\$12,114,695	\$24,752,530

Sources: RESI, REMI PI+

**Figure 117: Weatherization and Energy Efficiency for Low-Income Houses Status Quo—
Investment Phase, Wage Impacts**

Fiscal Year	Direct	Spinoff	Total
2010	\$4,074,505	\$3,905,842	\$7,980,347
2011	\$10,046,031	\$9,630,177	\$19,676,208
2012	\$12,340,375	\$11,829,547	\$24,169,922
2013	\$7,239,453	\$6,939,777	\$14,179,230
2014	\$11,202,941	\$10,739,198	\$21,942,139
2015	\$13,787,486	\$13,216,756	\$27,004,242
2016	\$14,527,597	\$13,926,230	\$28,453,827
2017	\$10,903,002	\$10,451,674	\$21,354,675
2018	\$2,678,033	\$2,567,176	\$5,245,209
2019	\$880,342	\$843,901	\$1,724,243
2020	-\$185,028	-\$177,369	-\$362,396
Average	\$7,954,067	\$7,624,810	\$15,578,877

Sources: RESI, REMI PI+

**Figure 118: Weatherization and Energy Efficiency for Low-Income Houses Enhanced—
Investment Phase, Employment Impacts**

Fiscal Year	Direct	Spinoff	Total
2010	348.3	337.1	685.4
2011	814.8	787.4	1,602.1
2012	911.7	878.9	1,790.5
2013	428.3	409.0	837.2
2014	1,483.2	1,432.0	2,915.2
2015	1,821.4	1,756.9	3,578.4
2016	1,837.5	1,769.8	3,607.3
2017	1,276.2	1,222.5	2,498.8
2018	222.2	200.0	422.2
2019	163.9	147.0	310.9
2020	137.8	124.1	261.9
Average	858.7	824.0	1,682.7

Sources: RESI, REMI PI+

**Figure 119: Weatherization and Energy Efficiency for Low-Income Houses Enhanced—
Investment Phase, Output Impacts**

Fiscal Year	Direct	Spinoff	Total
2010	\$7,661,781	\$7,352,868	\$15,014,648
2011	\$18,500,397	\$17,754,486	\$36,254,883
2012	\$21,630,515	\$20,758,401	\$42,388,916
2013	\$11,009,917	\$10,566,011	\$21,575,928
2014	\$35,443,522	\$34,014,486	\$69,458,008
2015	\$44,911,739	\$43,100,957	\$88,012,695
2016	\$46,469,011	\$44,595,442	\$91,064,453
2017	\$32,858,450	\$31,533,640	\$64,392,090
2018	\$5,045,563	\$4,842,132	\$9,887,695
2019	\$1,027,800	\$986,360	\$2,014,160
2020	-\$809,782	-\$777,132	-\$1,586,914
Average	\$20,340,810	\$19,520,695	\$39,861,506

Sources: RESI, REMI PI+

**Figure 120: Weatherization and Energy Efficiency for Low-Income Houses Enhanced—
Investment Phase, Wage Impacts**

Fiscal Year	Direct	Spinoff	Total
2010	\$4,072,268	\$3,908,079	\$7,980,347
2011	\$10,040,514	\$9,635,694	\$19,676,208
2012	\$12,333,598	\$11,836,324	\$24,169,922
2013	\$7,235,477	\$6,943,752	\$14,179,230
2014	\$20,657,220	\$19,824,348	\$40,481,567
2015	\$27,121,847	\$26,028,330	\$53,150,177
2016	\$29,356,533	\$28,172,916	\$57,529,449
2017	\$22,551,252	\$21,642,015	\$44,193,268
2018	\$6,266,075	\$6,013,435	\$12,279,510
2019	\$2,705,761	\$2,596,668	\$5,302,429
2020	\$537,259	\$515,597	\$1,052,856
Average	\$12,988,891	\$12,465,196	\$25,454,088

Sources: RESI, REMI PI+

**Figure 121: Weatherization and Energy Efficiency for Low-Income Houses Status Quo—
Operation Phase, Employment Impacts**

Fiscal Year	Direct	Spinoff	Total
2010	1.7	1.9	3.6
2011	2.0	2.0	3.9
2012	1.4	1.4	2.8
2013	2.2	2.1	4.2
2014	1.7	1.6	3.3
2015	1.5	1.5	3.0
2016	1.1	1.2	2.3
2017	1.5	1.4	2.9
2018	1.8	1.8	3.6
2019	2.4	2.4	4.8
2020	1.8	1.9	3.7
Average	1.7	1.7	3.5

Sources: RESI, REMI PI+

**Figure 122: Weatherization and Energy Efficiency for Low-Income Houses Status Quo—
Operation Phase, Output Impacts**

Fiscal Year	Direct	Spinoff	Total
2010	\$15,236	\$15,282	\$30,518
2011	\$15,236	\$15,282	\$30,518
2012	-\$15,236	-\$15,282	-\$30,518
2013	\$15,236	\$15,282	\$30,518
2014	\$0	\$0	\$0
2015	-\$30,472	-\$30,564	-\$61,035
2016	-\$30,472	-\$30,564	-\$61,035
2017	-\$30,472	-\$30,564	-\$61,035
2018	\$30,472	\$30,564	\$61,035
2019	\$0	\$0	\$0
2020	\$0	\$0	\$0
Average	-\$2,770	-\$2,779	-\$5,549

Sources: RESI, REMI PI+

**Figure 123: Weatherization and Energy Efficiency for Low-Income Houses Status Quo—
Operation Phase, Wage Impacts**

Fiscal Year	Direct	Spinoff	Total
2010	\$24,758	\$24,833	\$49,591
2011	\$26,663	\$26,743	\$53,406
2012	\$19,045	\$19,102	\$38,147
2013	\$30,472	\$30,564	\$61,035
2014	\$24,758	\$24,833	\$49,591
2015	\$24,758	\$24,833	\$49,591
2016	\$28,567	\$28,653	\$57,220
2017	\$24,758	\$24,833	\$49,591
2018	\$36,185	\$36,294	\$72,479
2019	\$47,612	\$47,755	\$95,367
2020	\$36,185	\$36,294	\$72,479
Average	\$29,433	\$29,522	\$58,954

Sources: RESI, REMI PI+

**Figure 124: Weatherization and Energy Efficiency for Low-Income Houses Enhanced—
Operation Phase, Employment Impacts**

Fiscal Year	Direct	Spinoff	Total
2010	1.7	1.9	3.6
2011	2.0	2.0	3.9
2012	1.4	1.4	2.8
2013	2.2	2.1	4.2
2014	3.5	3.5	7.1
2015	3.2	3.1	6.2
2016	2.5	2.6	5.1
2017	2.9	2.7	5.6
2018	3.0	2.8	5.7
2019	3.1	3.1	6.2
2020	3.1	2.8	5.9
Average	2.6	2.5	5.1

Sources: RESI, REMI PI+

**Figure 125: Weatherization and Energy Efficiency for Low-Income Houses Enhanced—
Operation Phase, Output Impacts**

Fiscal Year	Direct	Spinoff	Total
2010	\$15,391	\$15,127	\$30,518
2011	\$15,391	\$15,127	\$30,518
2012	-\$15,391	-\$15,127	-\$30,518
2013	\$15,391	\$15,127	\$30,518
2014	\$0	\$0	\$0
2015	-\$30,782	-\$30,253	-\$61,035
2016	-\$61,564	-\$60,506	-\$122,070
2017	-\$61,564	-\$60,506	-\$122,070
2018	-\$30,782	-\$30,253	-\$61,035
2019	-\$61,564	-\$60,506	-\$122,070
2020	-\$61,564	-\$60,506	-\$122,070
Average	-\$25,185	-\$24,753	-\$49,938

Sources: RESI, REMI PI+

**Figure 126: Weatherization and Energy Efficiency for Low-Income Houses Enhanced—
Operation Phase, Wage Impacts**

Fiscal Year	Direct	Spinoff	Total
2010	\$25,010	\$24,581	\$49,591
2011	\$26,934	\$26,471	\$53,406
2012	\$19,239	\$18,908	\$38,147
2013	\$30,782	\$30,253	\$61,035
2014	\$59,640	\$58,615	\$118,256
2015	\$50,021	\$49,161	\$99,182
2016	\$42,325	\$41,598	\$83,923
2017	\$46,173	\$45,380	\$91,553
2018	\$50,021	\$49,161	\$99,182
2019	\$55,793	\$54,834	\$110,626
2020	\$53,869	\$52,943	\$106,812
Average	\$41,801	\$41,082	\$82,883

Sources: RESI, REMI PI+

Figure 127: GHG Prevention of Significant Deterioration Permitting Program—Investment Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	0.0	0.0	0.0
2011	0.0	0.0	0.0
2012	1.0	0.4	1.5
2013	0.8	0.4	1.3
2014	0.8	0.2	1.0
2015	0.8	0.3	1.0
2016	1.0	0.5	1.5
2017	0.8	0.2	1.0
2018	1.0	0.5	1.5
2019	0.5	0.1	0.6
2020	0.5	0.0	0.5
Average	0.7	0.2	0.9

Sources: RESI, REMI PI+

Figure 128: GHG Prevention of Significant Deterioration Permitting Program—Investment Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$88,984	\$33,086	\$122,070
2013	\$66,738	\$24,815	\$91,553
2014	\$88,984	\$33,086	\$122,070
2015	\$44,492	\$16,543	\$61,035
2016	\$88,984	\$33,086	\$122,070
2017	\$88,984	\$33,086	\$122,070
2018	\$44,492	\$16,543	\$61,035
2019	\$88,984	\$33,086	\$122,070
2020	\$44,492	\$16,543	\$61,035
Average	\$58,649	\$21,807	\$80,455

Sources: RESI, REMI PI+

Figure 129: GHG Prevention of Significant Deterioration Permitting Program—Investment Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$44,492	\$16,543	\$61,035
2013	\$33,369	\$12,407	\$45,776
2014	\$33,369	\$12,407	\$45,776
2015	\$33,369	\$12,407	\$45,776
2016	\$55,615	\$20,679	\$76,294
2017	\$44,492	\$16,543	\$61,035
2018	\$44,492	\$16,543	\$61,035
2019	\$44,492	\$16,543	\$61,035
2020	\$33,369	\$12,407	\$45,776
Average	\$33,369	\$12,407	\$45,776

Sources: RESI, REMI PI+

Figure 130: GHG Prevention of Significant Deterioration Permitting Program—Operation Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	0.0	0.0	0.0
2011	0.0	0.0	0.0
2012	2.0	0.7	2.7
2013	1.7	0.7	2.4
2014	1.7	0.4	2.1
2015	0.9	-0.3	0.6
2016	0.8	-0.4	0.5
2017	0.9	-0.5	0.4
2018	0.8	-0.3	0.5
2019	0.5	-0.5	0.0
2020	0.5	-0.6	-0.1
Average	0.9	-0.1	0.8

Sources: RESI, REMI PI+

Figure 131: GHG Prevention of Significant Deterioration Permitting Program—Operation Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$196,503	-\$13,398	\$183,105
2013	\$163,753	-\$11,165	\$152,588
2014	\$163,753	-\$11,165	\$152,588
2015	\$0	\$0	\$0
2016	\$0	\$0	\$0
2017	\$0	\$0	\$0
2018	\$0	\$0	\$0
2019	\$65,501	-\$4,466	\$61,035
2020	\$0	\$0	\$0
Average	\$53,592	-\$3,654	\$49,938

Sources: RESI, REMI PI+

Figure 132: GHG Prevention of Significant Deterioration Permitting Program—Operation Phase, Wages Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$114,627	-\$7,815	\$106,812
2013	\$114,627	-\$7,815	\$106,812
2014	\$81,876	-\$5,582	\$76,294
2015	\$81,876	-\$5,582	\$76,294
2016	\$81,876	-\$5,582	\$76,294
2017	\$65,501	-\$4,466	\$61,035
2018	\$81,876	-\$5,582	\$76,294
2019	\$81,876	-\$5,582	\$76,294
2020	\$65,501	-\$4,466	\$61,035
Average	\$69,967	-\$4,770	\$65,197

Sources: RESI, REMI PI+

A.2 Transportation

Figure 133: Transportation Technology Initiatives, Status Quo—Investment Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	247.3	270.3	517.6
2011	245.4	302.6	548.0
2012	240.2	315.2	555.4
2013	235.1	312.6	547.7
2014	230.0	302.7	532.7
2015	362.2	375.4	737.6
2016	355.4	371.9	727.3
2017	349.1	362.6	711.7
2018	343.2	349.3	692.5
2019	336.8	337.0	673.8
2020	330.2	325.0	655.2
Average	297.7	329.5	627.2

Sources: RESI, REMI PI+

Figure 134: Transportation Technology Initiatives, Status Quo—Investment Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$33,861,075	\$31,984,775	\$65,845,850
2011	\$33,869,600	\$36,265,900	\$70,135,500
2012	\$33,870,800	\$38,437,900	\$72,308,700
2013	\$33,868,450	\$38,619,300	\$72,487,750
2014	\$33,868,600	\$37,779,775	\$71,648,375
2015	\$48,810,475	\$48,331,950	\$97,142,425
2016	\$48,811,675	\$48,358,400	\$97,170,075
2017	\$48,813,900	\$47,493,075	\$96,306,975
2018	\$48,817,350	\$45,980,150	\$94,797,500
2019	\$48,816,250	\$44,617,375	\$93,433,625
2020	\$48,815,625	\$43,313,675	\$92,129,300
Average	\$42,020,346	\$41,925,661	\$83,946,007

Sources: RESI, REMI PI+

Figure 135: Transportation Technology Initiatives, Status Quo—Investment Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$15,278,276	\$10,018,324	\$25,296,600
2011	\$15,816,456	\$12,989,119	\$28,805,575
2012	\$16,146,135	\$15,071,190	\$31,217,325
2013	\$16,457,136	\$16,177,789	\$32,634,925
2014	\$16,745,708	\$16,607,167	\$33,352,875
2015	\$24,780,045	\$19,577,605	\$44,357,650
2016	\$25,280,921	\$20,778,354	\$46,059,275
2017	\$25,814,223	\$21,284,927	\$47,099,150
2018	\$26,392,854	\$21,238,821	\$47,631,675
2019	\$26,932,728	\$21,086,597	\$48,019,325
2020	\$27,447,197	\$20,808,453	\$48,255,650
Average	\$21,553,789	\$17,785,304	\$39,339,093

Sources: RESI, REMI PI+

Figure 136: Transportation Technology Initiatives, Enhanced—Investment Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	272.0	297.4	569.4
2011	269.9	332.8	602.8
2012	264.2	346.7	610.9
2013	258.6	343.9	602.5
2014	253.0	333.0	586.0
2015	398.4	413.0	811.3
2016	390.9	409.1	800.0
2017	384.0	398.9	782.8
2018	377.5	384.2	761.7
2019	370.5	370.7	741.1
2020	363.2	357.5	720.7
Average	327.5	362.5	689.9

Sources: RESI, REMI PI+

Figure 137: Transportation Technology Initiatives, Enhanced—Investment Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$37,247,183	\$35,183,253	\$72,430,435
2011	\$37,256,560	\$39,892,490	\$77,149,050
2012	\$37,257,880	\$42,281,690	\$79,539,570
2013	\$37,255,295	\$42,481,230	\$79,736,525
2014	\$37,255,460	\$41,557,753	\$78,813,213
2015	\$53,691,523	\$53,165,145	\$106,856,668
2016	\$53,692,843	\$53,194,240	\$106,887,083
2017	\$53,695,290	\$52,242,383	\$105,937,673
2018	\$53,699,085	\$50,578,165	\$104,277,250
2019	\$53,697,875	\$49,079,113	\$102,776,988
2020	\$53,697,188	\$47,645,043	\$101,342,230
Average	\$46,222,380	\$46,118,228	\$92,340,608

Sources: RESI, REMI PI+

Figure 138: Transportation Technology Initiatives, Enhanced—Investment Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$16,806,103	\$11,020,157	\$27,826,260
2011	\$17,398,102	\$14,288,031	\$31,686,133
2012	\$17,760,748	\$16,578,309	\$34,339,058
2013	\$18,102,850	\$17,795,568	\$35,898,418
2014	\$18,420,279	\$18,267,883	\$36,688,163
2015	\$27,258,050	\$21,535,365	\$48,793,415
2016	\$27,809,013	\$22,856,190	\$50,665,203
2017	\$28,395,645	\$23,413,420	\$51,809,065
2018	\$29,032,139	\$23,362,704	\$52,394,843
2019	\$29,626,001	\$23,195,257	\$52,821,258
2020	\$30,191,916	\$22,889,299	\$53,081,215
Average	\$23,709,168	\$19,563,835	\$43,273,003

Sources: RESI, REMI PI+

Figure 139: Transportation Technology Initiatives, Status Quo—Operation Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	0.0	0.0	0.0
2011	0.0	0.0	0.0
2012	236.2	221.0	457.2
2013	243.4	227.5	470.9
2014	236.9	221.4	458.3
2015	224.3	211.0	434.9
2016	212.8	200.9	413.6
2017	203.0	191.5	394.6
2018	200.9	189.7	390.2
2019	197.6	186.8	384.8
2020	193.3	182.5	375.8
Average	177.1	166.6	343.7

Sources: RESI, REMI PI+

Figure 140: Transportation Technology Initiatives, Status Quo—Operation Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$12,399,804	\$11,660,256	\$24,060,060
2013	\$12,682,904	\$11,926,472	\$24,609,377
2014	\$12,229,942	\$11,500,524	\$23,730,469
2015	\$11,437,261	\$10,755,122	\$22,192,384
2016	\$10,644,581	\$10,009,717	\$20,654,298
2017	\$9,965,138	\$9,370,800	\$19,335,938
2018	\$9,851,900	\$9,264,312	\$19,116,212
2019	\$9,398,938	\$8,838,367	\$18,237,305
2020	\$8,945,978	\$8,412,422	\$17,358,397
Average	\$8,868,768	\$8,339,818	\$17,208,585

Sources: RESI, REMI PI+

Figure 141: Transportation Technology Initiatives, Status Quo—Operation Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$5,336,446	\$5,018,170	\$10,354,615
2013	\$5,952,190	\$5,597,190	\$11,549,376
2014	\$6,235,290	\$5,863,403	\$12,098,693
2015	\$6,298,988	\$5,923,303	\$12,222,292
2016	\$6,298,988	\$5,923,303	\$12,222,292
2017	\$6,277,756	\$5,903,338	\$12,181,090
2018	\$6,383,916	\$6,003,169	\$12,387,085
2019	\$6,490,080	\$6,102,997	\$12,593,077
2020	\$6,553,778	\$6,162,898	\$12,716,676
Average	\$5,075,221	\$4,772,525	\$9,847,745

Sources: RESI, REMI PI+

Figure 142: Transportation Technology Initiatives, Enhanced—Operation Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	0.0	0.0	0.0
2011	0.0	0.0	0.0
2012	259.8	243.1	502.9
2013	267.7	250.3	518.0
2014	260.6	243.5	504.1
2015	246.7	232.1	478.4
2016	234.0	221.0	455.0
2017	223.3	210.7	434.0
2018	221.0	208.7	429.3
2019	217.4	205.5	423.3
2020	212.7	200.8	413.4
Average	238.1	224.0	462.0

Sources: RESI, REMI PI+

Figure 143: Transportation Technology Initiatives, Enhanced—Operation Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$13,639,784	\$12,826,282	\$26,466,066
2013	\$13,951,195	\$13,119,120	\$27,070,314
2014	\$13,452,936	\$12,650,576	\$26,103,516
2015	\$12,580,987	\$11,830,635	\$24,411,622
2016	\$11,709,039	\$11,010,689	\$22,719,728
2017	\$10,961,652	\$10,307,880	\$21,269,532
2018	\$10,837,090	\$10,190,743	\$21,027,834
2019	\$10,338,831	\$9,722,204	\$20,061,035
2020	\$9,840,576	\$9,253,665	\$19,094,237
Average	\$11,923,566	\$11,212,421	\$23,135,987

Sources: RESI, REMI PI+

Figure 144: Transportation Technology Initiatives, Enhanced—Operation Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$5,870,090	\$5,519,987	\$11,390,077
2013	\$6,547,409	\$6,156,909	\$12,704,314
2014	\$6,858,819	\$6,449,743	\$13,308,562
2015	\$6,928,887	\$6,515,634	\$13,444,521
2016	\$6,928,887	\$6,515,634	\$13,444,521
2017	\$6,905,531	\$6,493,671	\$13,399,199
2018	\$7,022,308	\$6,603,486	\$13,625,794
2019	\$7,139,088	\$6,713,297	\$13,852,385
2020	\$7,209,156	\$6,779,187	\$13,988,344
Average	\$6,823,353	\$6,416,394	\$13,239,746

Sources: RESI, REMI PI+

Figure 145: Public Transportation Initiatives, Status Quo—Investment Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	533.2	335.5	868.7
2011	529.5	374.1	903.6
2012	518.8	386.7	905.5
2013	508.3	379.4	887.6
2014	497.8	363.2	861.0
2015	459.7	356.9	816.6
2016	451.2	338.6	789.8
2017	443.3	321.3	764.6
2018	435.9	305.2	741.1
2019	427.9	292.9	720.8
2020	419.6	282.6	702.2
Average	475.0	339.7	814.7

Sources: RESI, REMI PI+

Figure 146: Public Transportation Initiatives, Status Quo—Investment Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$63,794,900	\$41,749,550	\$105,544,450
2011	\$63,797,325	\$46,893,175	\$110,690,500
2012	\$63,797,550	\$49,211,350	\$113,008,900
2013	\$63,796,275	\$48,909,675	\$112,705,950
2014	\$63,794,950	\$47,369,175	\$111,164,125
2015	\$59,418,525	\$46,744,875	\$106,163,400
2016	\$59,416,700	\$44,675,425	\$104,092,125
2017	\$59,414,850	\$42,625,600	\$102,040,450
2018	\$59,413,100	\$40,631,975	\$100,045,075
2019	\$59,410,375	\$39,210,475	\$98,620,850
2020	\$59,407,850	\$38,070,500	\$97,478,350
Average	\$61,405,673	\$44,190,161	\$105,595,834

Sources: RESI, REMI PI+

Figure 147: Public Transportation Initiatives, Status Quo—Investment Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$28,565,873	\$11,368,277	\$39,934,150
2011	\$29,685,166	\$15,567,484	\$45,252,650
2012	\$30,422,021	\$18,600,379	\$49,022,400
2013	\$31,127,513	\$20,256,712	\$51,384,225
2014	\$31,788,852	\$20,958,623	\$52,747,475
2015	\$30,265,224	\$21,627,101	\$51,892,325
2016	\$30,900,947	\$21,267,028	\$52,167,975
2017	\$31,576,198	\$20,697,052	\$52,273,250
2018	\$32,306,848	\$19,969,152	\$52,276,000
2019	\$32,993,083	\$19,443,167	\$52,436,250
2020	\$33,648,448	\$18,994,152	\$52,642,600
Average	\$31,207,288	\$18,977,193	\$50,184,482

Sources: RESI, REMI PI+

Figure 148: Public Transportation Initiatives, Enhanced—Investment Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	1,066.4	671.1	1,737.5
2011	1,059.0	748.2	1,807.2
2012	1,037.7	773.3	1,811.0
2013	1,016.6	758.7	1,775.3
2014	995.5	726.5	1,722.0
2015	919.4	713.8	1,633.2
2016	902.4	677.2	1,579.6
2017	886.6	642.7	1,529.2
2018	871.8	610.3	1,482.1
2019	855.8	585.9	1,441.7
2020	839.2	565.3	1,404.5
Average	950.0	679.4	1,629.4

Sources: RESI, REMI PI+

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Figure 149: Public Transportation Initiatives, Enhanced—Investment Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$127,589,800	\$83,499,100	\$211,088,900
2011	\$127,594,650	\$93,786,350	\$221,381,000
2012	\$127,595,100	\$98,422,700	\$226,017,800
2013	\$127,592,550	\$97,819,350	\$225,411,900
2014	\$127,589,900	\$94,738,350	\$222,328,250
2015	\$118,837,050	\$93,489,750	\$212,326,800
2016	\$118,833,400	\$89,350,850	\$208,184,250
2017	\$118,829,700	\$85,251,200	\$204,080,900
2018	\$118,826,200	\$81,263,950	\$200,090,150
2019	\$118,820,750	\$78,420,950	\$197,241,700
2020	\$118,815,700	\$76,141,000	\$194,956,700
Average	\$118,827,133	\$83,986,283	\$211,191,668

Sources: RESI, REMI PI+

Figure 150: Public Transportation Initiatives, Enhanced—Investment Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$57,131,746	\$22,736,554	\$79,868,300
2011	\$59,370,332	\$31,134,968	\$90,505,300
2012	\$60,844,041	\$37,200,759	\$98,044,800
2013	\$62,255,026	\$40,513,424	\$102,768,450
2014	\$63,577,703	\$41,917,247	\$105,494,950
2015	\$60,530,447	\$43,254,203	\$103,784,650
2016	\$61,801,894	\$42,534,056	\$104,335,950
2017	\$63,152,397	\$41,394,103	\$104,546,500
2018	\$64,613,695	\$39,938,305	\$104,552,000
2019	\$65,986,166	\$38,886,334	\$104,872,500
2020	\$67,296,897	\$37,988,303	\$105,285,200
Average	\$63,896,916	\$40,665,884	\$100,368,964

Sources: RESI, REMI PI+

Figure 151: Public Transportation Initiatives, Status Quo—Operation Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	0.0	0.0	0.0
2011	0.0	0.0	0.0
2012	0.0	0.0	0.0
2013	0.0	0.0	0.0
2014	0.0	0.0	0.0
2015	0.0	0.0	0.0
2016	0.0	0.0	0.0
2017	26.7	26.1	52.9
2018	56.8	55.2	112.3
2019	85.5	83.0	168.5
2020	113.9	110.7	224.7
Average	56.6	55.0	139.6

Sources: RESI, REMI PI+

Figure 152: Public Transportation Initiatives, Status Quo—Operation Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$0	\$0	\$0
2013	\$0	\$0	\$0
2014	\$0	\$0	\$0
2015	\$0	\$0	\$0
2016	\$0	\$0	\$0
2017	\$489,599	\$477,198	\$966,796
2018	\$1,101,599	\$1,073,695	\$2,175,293
2019	\$1,713,599	\$1,670,191	\$3,383,788
2020	\$2,203,197	\$2,147,387	\$4,350,587
Average	\$1,101,599	\$1,073,694	\$2,179,116

Sources: RESI, REMI PI+

Figure 153: Public Transportation Initiatives, Status Quo—Operation Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$0	\$0	\$0
2013	\$0	\$0	\$0
2014	\$0	\$0	\$0
2015	\$0	\$0	\$0
2016	\$0	\$0	\$0
2017	\$309,824	\$301,976	\$611,800
2018	\$734,400	\$715,796	\$1,450,196
2019	\$1,197,225	\$1,166,897	\$2,364,120
2020	\$1,705,948	\$1,662,735	\$3,368,683
Average	\$789,479	\$769,481	\$1,948,700

Sources: RESI, REMI PI+

Figure 154: Public Transportation Initiatives, Enhanced—Operation Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	0.0	0.0	0.0
2011	0.0	0.0	0.0
2012	0.0	0.0	0.0
2013	0.0	0.0	0.0
2014	0.0	0.0	0.0
2015	0.0	0.0	0.0
2016	0.0	0.0	0.0
2017	53.5	52.3	105.7
2018	113.7	110.5	224.5
2019	171.1	165.9	337.0
2020	227.7	221.4	449.5
Average	113.2	110.0	279.2

Sources: RESI, REMI PI+

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Figure 155: Public Transportation Initiatives, Enhanced—Operation Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$0	\$0	\$0
2013	\$0	\$0	\$0
2014	\$0	\$0	\$0
2015	\$0	\$0	\$0
2016	\$0	\$0	\$0
2017	\$979,197	\$954,396	\$1,933,593
2018	\$2,203,197	\$2,147,389	\$4,350,587
2019	\$3,427,198	\$3,340,383	\$6,767,577
2020	\$4,406,395	\$4,294,774	\$8,701,173
Average	\$2,203,197	\$2,147,388	\$5,438,232

Sources: RESI, REMI PI+

Figure 156: Public Transportation Initiatives, Enhanced—Operation Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$0	\$0	\$0
2013	\$0	\$0	\$0
2014	\$0	\$0	\$0
2015	\$0	\$0	\$0
2016	\$0	\$0	\$0
2017	\$619,649	\$603,951	\$1,223,600
2018	\$1,468,800	\$1,431,591	\$2,900,391
2019	\$2,394,450	\$2,333,794	\$4,728,240
2020	\$3,411,896	\$3,325,469	\$6,737,366
Average	\$1,578,959	\$1,538,961	\$3,897,399

Sources: RESI, REMI PI+

Figure 157: Intercity Transportation Initiatives Status Quo—Investment Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	76.9	48.3	125.2
2011	76.4	53.8	130.2
2012	74.9	55.6	130.5
2013	73.3	54.6	127.9
2014	71.8	52.2	124.1
2015	73.2	53.0	126.2
2016	71.8	50.5	122.3
2017	70.5	48.0	118.6
2018	69.4	45.7	115.0
2019	68.1	43.8	111.9
2020	57.4	34.0	91.4
Average	71.2	49.0	120.3

Sources: RESI, REMI PI+

Figure 158: Intercity Transportation Initiatives Status Quo—Investment Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$9,184,500	\$6,006,750	\$15,191,250
2011	\$9,184,750	\$6,748,250	\$15,933,000
2012	\$9,184,750	\$7,083,000	\$16,267,750
2013	\$9,184,750	\$7,039,250	\$16,224,000
2014	\$9,184,500	\$6,816,750	\$16,001,250
2015	\$9,968,500	\$6,916,750	\$16,885,250
2016	\$9,968,750	\$6,641,000	\$16,609,750
2017	\$9,969,750	\$6,347,250	\$16,317,000
2018	\$9,970,500	\$6,052,750	\$16,023,250
2019	\$9,970,250	\$5,835,500	\$15,805,750
2020	\$8,047,000	\$4,549,250	\$12,596,250
Average	\$9,438,000	\$6,366,955	\$15,804,955

Sources: RESI, REMI PI+

Figure 159: Intercity Transportation Initiatives Status Quo—Investment Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$4,112,060	\$1,632,440	\$5,744,500
2011	\$4,273,508	\$2,236,742	\$6,510,250
2012	\$4,379,894	\$2,673,356	\$7,053,250
2013	\$4,481,803	\$2,911,447	\$7,393,250
2014	\$4,577,343	\$3,011,907	\$7,589,250
2015	\$5,056,758	\$3,221,242	\$8,278,000
2016	\$5,158,044	\$3,236,956	\$8,395,000
2017	\$5,265,911	\$3,206,089	\$8,472,000
2018	\$5,383,036	\$3,140,464	\$8,523,500
2019	\$5,492,137	\$3,097,113	\$8,589,250
2020	\$4,565,525	\$2,515,225	\$7,080,750
Average	\$4,795,093	\$2,807,544	\$7,602,636

Sources: RESI, REMI PI+

Figure 160: Intercity Transportation Initiatives Enhancement—Investment Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	96.2	60.3	156.5
2011	95.5	67.3	162.8
2012	93.6	69.5	163.1
2013	91.7	68.2	159.9
2014	89.8	65.3	155.1
2015	91.5	66.2	157.7
2016	89.8	63.1	152.9
2017	88.2	60.0	148.2
2018	86.7	57.1	143.8
2019	85.1	54.8	139.8
2020	71.7	42.5	114.2
Average	89.1	61.3	150.4

Sources: RESI, REMI PI+

Figure 161: Intercity Transportation Initiatives Enhancement—Investment Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$11,480,625	\$7,508,438	\$18,989,063
2011	\$11,480,938	\$8,435,313	\$19,916,250
2012	\$11,480,938	\$8,853,750	\$20,334,688
2013	\$11,480,938	\$8,799,063	\$20,280,000
2014	\$11,480,625	\$8,520,938	\$20,001,563
2015	\$12,460,625	\$8,645,938	\$21,106,563
2016	\$12,460,938	\$8,301,250	\$20,762,188
2017	\$12,462,188	\$7,934,063	\$20,396,250
2018	\$12,463,125	\$7,565,938	\$20,029,063
2019	\$12,462,813	\$7,294,375	\$19,757,188
2020	\$10,058,750	\$5,686,563	\$15,745,313
Average	\$11,797,500	\$7,958,693	\$19,756,193

Sources: RESI, REMI PI+

Figure 162: Intercity Transportation Initiatives Enhancement —Investment Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$5,140,075	\$2,040,550	\$7,180,625
2011	\$5,341,885	\$2,795,928	\$8,137,813
2012	\$5,474,868	\$3,341,695	\$8,816,563
2013	\$5,602,254	\$3,639,309	\$9,241,563
2014	\$5,721,679	\$3,764,883	\$9,486,563
2015	\$6,320,947	\$4,026,553	\$10,347,500
2016	\$6,447,554	\$4,046,196	\$10,493,750
2017	\$6,582,389	\$4,007,611	\$10,590,000
2018	\$6,728,795	\$3,925,580	\$10,654,375
2019	\$6,865,172	\$3,871,391	\$10,736,563
2020	\$5,706,907	\$3,144,031	\$8,850,938
Average	\$5,993,866	\$3,509,430	\$9,503,295

Sources: RESI, REMI PI+

Figure 163: Intercity Transportation Initiatives Status Quo—Operation Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	0.0	0.0	0.0
2011	0.0	0.0	0.0
2012	4.1	3.8	7.9
2013	4.9	4.5	9.4
2014	4.1	4.0	8.1
2015	4.5	4.3	8.8
2016	4.1	4.1	8.3
2017	4.9	4.9	9.7
2018	5.0	5.0	10.1
2019	5.4	5.2	10.6
2020	5.2	4.9	10.1
Average	4.7	4.5	9.2

Sources: RESI, REMI PI+

Figure 164: Intercity Transportation Initiatives Status Quo—Operation Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$56,059	\$53,804	\$109,863
2013	\$84,089	\$80,707	\$164,795
2014	\$56,059	\$53,804	\$109,863
2015	\$56,059	\$53,804	\$109,863
2016	\$56,059	\$53,804	\$109,863
2017	\$112,117	\$107,609	\$219,726
2018	\$168,176	\$161,413	\$329,589
2019	\$112,117	\$107,609	\$219,726
2020	\$112,117	\$107,609	\$219,726
Average	\$90,317	\$86,685	\$177,002

Sources: RESI, REMI PI+

Figure 165: Intercity Transportation Initiatives Status Quo—Operation Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$49,052	\$47,079	\$96,131
2013	\$66,569	\$63,893	\$130,462
2014	\$66,569	\$63,893	\$130,462
2015	\$80,584	\$77,344	\$157,928
2016	\$84,089	\$80,707	\$164,795
2017	\$94,599	\$90,796	\$185,395
2018	\$115,621	\$110,972	\$226,593
2019	\$126,131	\$121,061	\$247,192
2020	\$105,109	\$100,883	\$205,994
Average	\$87,592	\$84,070	\$171,661

Sources: RESI, REMI PI+

Figure 166: Intercity Transportation Initiatives Enhanced—Operation Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	0.0	0.0	0.0
2011	0.0	0.0	0.0
2012	5.2	4.7	9.9
2013	6.1	5.6	11.7
2014	5.2	5.0	10.1
2015	5.6	5.4	11.0
2016	5.2	5.2	10.4
2017	6.1	6.1	12.2
2018	6.3	6.3	12.6
2019	6.8	6.5	13.3
2020	6.5	6.1	12.6
Average	5.9	5.7	11.5

Sources: RESI, REMI PI+

Figure 167: Intercity Transportation Initiatives Enhanced —Operation Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$70,074	\$67,255	\$137,329
2013	\$105,111	\$100,883	\$205,994
2014	\$70,074	\$67,255	\$137,329
2015	\$70,074	\$67,255	\$137,329
2016	\$70,074	\$67,255	\$137,329
2017	\$140,146	\$134,512	\$274,658
2018	\$210,220	\$201,767	\$411,986
2019	\$140,146	\$134,512	\$274,658
2020	\$140,146	\$134,512	\$274,658
Average	\$112,896	\$108,356	\$221,252

Sources: RESI, REMI PI+

Figure 168: Intercity Transportation Initiatives Enhancement—Operation Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$61,315	\$58,849	\$120,164
2013	\$83,212	\$79,866	\$163,078
2014	\$83,212	\$79,866	\$163,078
2015	\$100,730	\$96,680	\$197,411
2016	\$105,111	\$100,883	\$205,994
2017	\$118,249	\$113,495	\$231,743
2018	\$144,527	\$138,715	\$283,241
2019	\$157,664	\$151,326	\$308,990
2020	\$131,387	\$126,104	\$257,492
Average	\$109,490	\$105,087	\$214,577

Sources: RESI, REMI PI+

Figure 169: Pricing Initiatives Status Quo—Investment Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	0.0	0.0	0.0
2011	0.0	0.0	0.0
2012	0.0	0.0	0.0
2013	0.0	0.0	0.0
2014	0.0	0.0	0.0
2015	0.0	0.0	0.0
2016	0.0	0.0	0.0
2017	0.0	0.0	0.0
2018	0.0	0.0	0.0
2019	0.0	0.0	0.0
2020	0.0	0.0	0.0
Average	0.0	0.0	0.0

Sources: RESI, REMI PI+

Figure 170: Pricing Initiatives Status Quo —Investment Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$0	\$0	\$0
2013	\$0	\$0	\$0
2014	\$0	\$0	\$0
2015	\$0	\$0	\$0
2016	\$0	\$0	\$0
2017	\$0	\$0	\$0
2018	\$0	\$0	\$0
2019	\$0	\$0	\$0
2020	\$0	\$0	\$0
Average	\$0	\$0	\$0

Sources: RESI, REMI PI+

Figure 171: Pricing Initiatives Status Quo —Investment Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$0	\$0	\$0
2013	\$0	\$0	\$0
2014	\$0	\$0	\$0
2015	\$0	\$0	\$0
2016	\$0	\$0	\$0
2017	\$0	\$0	\$0
2018	\$0	\$0	\$0
2019	\$0	\$0	\$0
2020	\$0	\$0	\$0
Average	\$0	\$0	\$0

Sources: RESI, REMI PI+

Figure 172: Pricing Initiatives Enhancement—Investment Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	1,080.7	793.9	1,874.6
2011	1,073.2	886.4	1,959.6
2012	1,051.6	918.3	1,969.9
2013	1,030.2	904.1	1,934.3
2014	1,008.8	868.7	1,877.5
2015	79.6	171.7	251.4
2016	78.2	51.3	129.5
2017	76.8	-16.4	60.4
2018	75.5	-43.3	32.2
2019	74.1	-48.9	25.3
2020	72.7	-41.2	31.5
Average	518.3	404.1	922.4

Sources: RESI, REMI PI+

Figure 173: Pricing Initiatives Enhancement—Investment Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$129,229,750	\$97,631,250	\$226,861,000
2011	\$129,234,250	\$109,969,250	\$239,203,500
2012	\$129,234,250	\$115,762,500	\$244,996,750
2013	\$129,231,250	\$115,448,250	\$244,679,500
2014	\$129,228,250	\$112,182,500	\$241,410,750
2015	\$10,224,750	\$20,217,250	\$30,442,000
2016	\$10,224,250	\$3,404,250	\$13,628,500
2017	\$10,223,750	-\$6,357,500	\$3,866,250
2018	\$10,223,750	-\$10,483,250	-\$259,500
2019	\$10,223,250	-\$11,493,500	-\$1,270,250
2020	\$10,222,750	-\$10,523,750	-\$301,000
Average	\$64,318,205	\$48,705,205	\$113,023,409

Sources: RESI, REMI PI+

Figure 174: Pricing Initiatives Enhancement—Investment Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$57,863,600	\$27,404,650	\$85,268,250
2011	\$60,131,294	\$36,831,456	\$96,962,750
2012	\$61,624,275	\$43,523,475	\$105,147,750
2013	\$63,053,719	\$47,069,531	\$110,123,250
2014	\$64,393,657	\$48,449,343	\$112,843,000
2015	\$5,210,620	\$21,714,630	\$26,925,250
2016	\$5,320,765	\$9,653,985	\$14,974,750
2017	\$5,437,748	\$1,368,252	\$6,806,000
2018	\$5,564,267	-\$3,702,767	\$1,861,500
2019	\$5,683,229	-\$6,607,729	-\$924,500
2020	\$5,796,890	-\$7,859,890	-\$2,063,000
Average	\$30,916,370	\$19,804,085	\$50,720,455

Sources: RESI, REMI PI+

Figure 175: Pricing Initiatives Status Quo—Operation Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	0.0	0.0	0.0
2011	0.0	0.0	0.0
2012	0.0	0.0	0.0
2013	0.0	0.0	0.0
2014	0.0	0.0	0.0
2015	0.0	0.0	0.0
2016	0.0	0.0	0.0
2017	0.0	0.0	0.0
2018	0.0	0.0	0.0
2019	0.0	0.0	0.0
2020	0.0	0.0	0.0
Average	0.0	0.0	0.0

Sources: RESI, REMI PI+

Figure 176: Pricing Initiatives Status Quo—Operation Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$0	\$0	\$0
2013	\$0	\$0	\$0
2014	\$0	\$0	\$0
2015	\$0	\$0	\$0
2016	\$0	\$0	\$0
2017	\$0	\$0	\$0
2018	\$0	\$0	\$0
2019	\$0	\$0	\$0
2020	\$0	\$0	\$0
Average	\$0	\$0	\$0

Sources: RESI, REMI PI+

Figure 177: Pricing Initiatives Status Quo—Operation Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$0	\$0	\$0
2013	\$0	\$0	\$0
2014	\$0	\$0	\$0
2015	\$0	\$0	\$0
2016	\$0	\$0	\$0
2017	\$0	\$0	\$0
2018	\$0	\$0	\$0
2019	\$0	\$0	\$0
2020	\$0	\$0	\$0
Average	\$0	\$0	\$0

Sources: RESI, REMI PI+

Figure 178: Pricing Initiatives Enhancement—Operation Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	0.0	0.0	0.0
2011	0.0	0.0	0.0
2012	190.3	185.3	375.6
2013	194.0	188.7	382.7
2014	195.4	189.9	385.4
2015	194.9	189.5	384.4
2016	193.1	187.9	381.1
2017	192.4	187.0	379.4
2018	191.4	186.3	377.7
2019	190.2	185.1	375.3
2020	189.3	184.3	373.5
Average	157.4	153.1	379.4

Sources: RESI, REMI PI+

Figure 179: Pricing Initiatives Enhancement—Operation Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$3,675,466	\$3,575,510	\$7,250,977
2013	\$3,849,494	\$3,744,805	\$7,594,299
2014	\$3,884,300	\$3,778,664	\$7,662,964
2015	\$3,772,922	\$3,670,316	\$7,443,237
2016	\$3,591,933	\$3,494,249	\$7,086,182
2017	\$3,452,711	\$3,358,813	\$6,811,524
2018	\$3,327,411	\$3,236,920	\$6,564,331
2019	\$3,146,422	\$3,060,854	\$6,207,275
2020	\$3,021,122	\$2,938,961	\$5,960,083
Average	\$3,524,642	\$3,428,788	\$6,953,430

Sources: RESI, REMI PI+

Figure 180: Pricing Initiatives Enhancement—Operation Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$2,253,659	\$2,192,370	\$4,446,030
2013	\$2,675,677	\$2,602,911	\$5,278,587
2014	\$2,987,186	\$2,905,949	\$5,893,135
2015	\$3,196,020	\$3,109,103	\$6,305,122
2016	\$3,332,632	\$3,241,999	\$6,574,631
2017	\$3,447,490	\$3,353,734	\$6,801,224
2018	\$3,531,893	\$3,435,842	\$6,967,735
2019	\$3,601,504	\$3,503,560	\$7,105,064
2020	\$3,672,856	\$3,572,971	\$7,245,827
Average	\$2,608,993	\$2,538,040	\$6,290,817

Sources: RESI, REMI PI+

Figure 181: Bike and Pedestrian Initiatives Status Quo—Investment Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	181.5	166.2	347.4
2011	296.2	272.8	568.9
2012	967.4	902.7	1,870.4
2013	680.2	637.2	1,317.2
2014	634.5	594.7	1,229.2
2015	609.1	572.0	1,181.2
2016	584.3	549.5	1,133.8
2017	568.4	534.8	1,103.2
2018	556.2	523.8	1,079.8
2019	544.0	512.6	1,056.6
2020	535.9	505.3	1,041.1
Average	559.8	524.7	1,084.4

Sources: RESI, REMI PI+

Figure 182: Bike and Pedestrian Initiatives Status Quo—Investment Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$31,260,263	\$29,303,180	\$60,563,443
2011	\$47,156,603	\$44,204,308	\$91,360,906
2012	\$146,793,941	\$137,603,729	\$284,397,672
2013	\$99,941,572	\$93,684,614	\$193,626,186
2014	\$35,611,830	\$33,382,310	\$68,994,140
2015	\$33,853,921	\$31,734,457	\$65,588,378
2016	\$32,209,427	\$30,192,917	\$62,402,344
2017	\$31,018,585	\$29,076,629	\$60,095,214
2018	\$30,111,277	\$28,226,126	\$58,337,402
2019	\$29,203,969	\$27,375,620	\$56,579,589
2020	\$28,636,902	\$26,844,055	\$55,480,957
Average	\$49,618,026	\$46,511,632	\$96,129,658

Sources: RESI, REMI PI+

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Figure 183: Bike and Pedestrian Initiatives Status Quo—Investment Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$5,170,552	\$4,846,844	\$10,017,395
2011	\$7,649,783	\$7,170,860	\$14,820,645
2012	\$23,867,179	\$22,372,946	\$46,240,126
2013	\$17,895,813	\$16,775,424	\$34,671,237
2014	\$17,589,721	\$16,488,495	\$34,078,217
2015	\$17,685,414	\$16,578,198	\$34,263,610
2016	\$17,685,414	\$16,578,198	\$34,263,610
2017	\$17,777,561	\$16,664,576	\$34,442,138
2018	\$17,880,343	\$16,760,923	\$34,641,266
2019	\$18,004,388	\$16,877,203	\$34,881,592
2020	\$18,234,760	\$17,093,151	\$35,327,911
Average	\$16,312,812	\$15,291,529	\$31,604,341

Sources: RESI, REMI PI+

Figure 184: Bike and Pedestrian Initiatives Enhancement—Investment Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	181.5	166.2	347.4
2011	296.2	272.8	568.9
2012	967.4	902.7	1,870.4
2013	680.2	637.2	1,317.2
2014	654.7	613.6	1,268.3
2015	1,616.7	1,518.3	3,135.0
2016	1,554.9	1,462.5	3,017.4
2017	1,509.6	1,420.5	2,930.1
2018	1,472.4	1,386.9	2,859.3
2019	1,437.9	1,355.7	2,793.6
2020	1,413.9	1,334.1	2,747.7
Average	1,071.4	1,006.4	2,077.8

Sources: RESI, REMI PI+

Economic Impact Analysis for the GGRA 2012 Plan—Appendices A and B
RESI of Towson University

Figure 185: Bike and Pedestrian Initiatives Enhancement—Investment Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$31,260,263	\$29,303,180	\$60,563,443
2011	\$47,156,603	\$44,204,308	\$91,360,906
2012	\$146,793,941	\$137,603,729	\$284,397,672
2013	\$99,941,572	\$93,684,614	\$193,626,186
2014	\$95,530,149	\$89,549,374	\$185,079,518
2015	\$233,683,164	\$219,063,421	\$452,746,585
2016	\$222,625,603	\$208,697,642	\$431,323,246
2017	\$213,779,553	\$200,405,018	\$414,184,571
2018	\$206,899,290	\$193,955,206	\$400,854,496
2019	\$200,510,474	\$187,966,085	\$388,476,566
2020	\$196,333,176	\$184,050,126	\$380,383,302
Average	\$154,046,708	\$144,407,519	\$298,454,226

Sources: RESI, REMI PI+

Figure 186: Bike and Pedestrian Initiatives Enhancement—Investment Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$5,170,552	\$4,846,844	\$10,017,395
2011	\$7,649,783	\$7,170,860	\$14,820,645
2012	\$23,867,179	\$22,372,946	\$46,240,126
2013	\$17,895,813	\$16,775,424	\$34,671,237
2014	\$18,148,125	\$17,011,940	\$35,160,065
2015	\$46,953,294	\$44,015,790	\$90,969,087
2016	\$47,035,989	\$44,093,313	\$91,129,302
2017	\$47,130,498	\$44,181,909	\$91,312,407
2018	\$47,331,330	\$44,370,177	\$91,701,507
2019	\$47,579,418	\$44,602,743	\$92,182,158
2020	\$48,116,937	\$45,106,635	\$93,223,572
Average	\$32,443,538	\$30,413,507	\$62,857,046

Sources: RESI, REMI PI+

Figure 187: Bike and Pedestrian Initiatives Status Quo—Operation Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	0.0	0.0	0.0
2011	0.0	0.0	0.0
2012	0.0	0.0	0.0
2013	0.6	0.3	0.9
2014	0.0	0.0	0.2
2015	0.0	0.0	0.0
2016	-0.5	0.0	-0.5
2017	0.4	0.2	0.5
2018	0.0	0.0	0.0
2019	0.4	0.2	0.7
2020	-0.4	-0.5	-0.9
Average	0.0	0.0	0.0

Sources: RESI, REMI PI+

Figure 188: Bike and Pedestrian Initiatives Status Quo—Operation Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$0	\$0	\$0
2013	\$0	\$0	\$0
2014	\$0	\$0	\$0
2015	\$0	\$0	\$0
2016	\$0	\$0	\$0
2017	\$0	\$0	\$0
2018	\$0	\$0	\$0
2019	\$0	\$0	\$0
2020	\$0	\$0	\$0
Average	\$0	\$0	\$0

Sources: RESI, REMI PI+

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RESI of Towson University

Figure 189: Bike and Pedestrian Initiatives Status Quo—Operation Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$0	\$0	\$0
2013	\$0	\$0	\$0
2014	\$0	\$0	\$0
2015	\$0	\$0	\$0
2016	-\$5,816	-\$1,049	-\$6,867
2017	\$23,265	\$4,201	\$27,466
2018	-\$5,816	-\$1,049	-\$6,867
2019	\$23,265	\$4,201	\$27,466
2020	-\$23,265	-\$4,201	-\$27,466
Average	\$2,327	\$420	\$2,746

Sources: RESI, REMI PI+

Figure 190: Bike and Pedestrian Initiatives Enhancement—Operation Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	0.0	0.0	0.0
2011	0.0	0.0	0.0
2012	0.0	0.0	0.0
2013	0.6	0.3	0.9
2014	0.0	0.0	0.3
2015	1.2	0.4	1.6
2016	-1.2	0.0	-1.2
2017	0.0	0.0	0.0
2018	0.0	0.0	0.0
2019	0.8	0.4	1.2
2020	0.0	0.0	0.0
Average	0.1	0.1	0.3

Sources: RESI, REMI PI+

Economic Impact Analysis for the GGRA 2012 Plan—Appendices A and B
RESI of Towson University

Figure 191: Bike and Pedestrian Initiatives Enhancement—Operation Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$0	\$0	\$0
2013	\$0	\$0	\$0
2014	\$0	\$0	\$0
2015	\$0	\$0	\$0
2016	\$0	\$0	\$0
2017	\$0	\$0	\$0
2018	\$0	\$0	\$0
2019	\$0	\$0	\$0
2020	\$0	\$0	\$0
Average	\$0	\$0	\$0

Sources: RESI, REMI PI+

Figure 192: Bike and Pedestrian Initiatives Enhancement—Operation Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$0	\$0	\$0
2013	\$0	\$0	\$0
2014	\$0	\$0	\$0
2015	\$12,848	\$2,408	\$15,260
2016	-\$12,848	-\$2,408	-\$15,260
2017	\$0	\$0	\$0
2018	-\$12,848	-\$2,408	-\$15,260
2019	\$25,700	\$4,820	\$30,516
2020	\$0	\$0	\$0
Average	\$1,168	\$219	\$1,387

Sources: RESI, REMI PI+

A.3 Agriculture and Forestry

**Figure 193: Creating Ecosystem Markets to Encourage GHG Emissions Reductions—
Investment Phase, Employment Impacts**

Fiscal Year	Direct	Spinoff	Total
2010	1.2	0.4	1.6
2011	1.5	0.6	2.1
2012	1.2	0.5	1.7
2013	1.2	0.6	1.8
2014	1.2	0.4	1.6
2015	1.2	0.4	1.6
2016	1.1	0.4	1.6
2017	1.2	0.3	1.5
2018	1.1	0.5	1.6
2019	0.9	0.4	1.3
2020	0.6	0.0	0.6
Average	1.1	0.4	1.5

Sources: RESI, REMI PI+

**Figure 194: Creating Ecosystem Markets to Encourage GHG Emissions Reductions—
Investment Phase, Output Impacts**

Fiscal Year	Direct	Spinoff	Total
2010	\$88,819	\$33,252	\$122,070
2011	\$88,819	\$33,252	\$122,070
2012	\$88,819	\$33,252	\$122,070
2013	\$88,819	\$33,252	\$122,070
2014	\$133,228	\$49,877	\$183,105
2015	\$88,819	\$33,252	\$122,070
2016	\$88,819	\$33,252	\$122,070
2017	\$88,819	\$33,252	\$122,070
2018	\$88,819	\$33,252	\$122,070
2019	\$88,819	\$33,252	\$122,070
2020	\$44,409	\$16,626	\$61,035
Average	\$88,819	\$33,252	\$122,070

Sources: RESI, REMI PI+

Figure 195: Creating Ecosystem Markets to Encourage GHG Emissions Reductions—
Investment Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$44,409	\$16,626	\$61,035
2011	\$33,307	\$12,469	\$45,776
2012	\$55,512	\$20,782	\$76,294
2013	\$66,614	\$24,939	\$91,553
2014	\$55,512	\$20,782	\$76,294
2015	\$55,512	\$20,782	\$76,294
2016	\$55,512	\$20,782	\$76,294
2017	\$88,819	\$33,252	\$122,070
2018	\$66,614	\$24,939	\$91,553
2019	\$55,512	\$20,782	\$76,294
2020	\$55,512	\$20,782	\$76,294
Average	\$57,530	\$21,538	\$79,068

Sources: RESI, REMI PI+

Figure 196: Creating Ecosystem Markets to Encourage GHG Emissions Reductions—Operation
Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	0.0	0.0	0.0
2011	0.0	0.0	0.0
2012	0.0	0.0	0.0
2013	534.1	-113.5	420.6
2014	175.1	-459.7	-284.6
2015	-99.4	-722.7	-822.1
2016	-312.5	-925.3	-1,237.8
2017	-442.5	-1,047.4	-1,489.9
2018	-491.2	-1,090.0	-1,581.2
2019	-547.8	-1,143.8	-1,691.6
2020	-581.1	-1,177.0	-1,758.1
Average	-160.5	-607.2	-1,055.6

Sources: RESI, REMI PI+

Figure 197: Creating Ecosystem Markets to Encourage GHG Emissions Reductions—Operation Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$0	\$0	\$0
2013	\$17,899,855	\$67,732,469	\$85,632,324
2014	\$14,359,434	\$54,335,634	\$68,695,068
2015	\$11,673,818	\$44,173,350	\$55,847,168
2016	\$9,683,528	\$36,642,156	\$46,325,684
2017	\$8,726,658	\$33,021,389	\$41,748,047
2018	\$8,803,207	\$33,311,051	\$42,114,258
2019	\$8,548,042	\$32,345,513	\$40,893,555
2020	\$8,535,284	\$32,297,236	\$40,832,520
Average	\$8,020,893	\$30,350,800	\$52,761,078

Sources: RESI, REMI PI+

Figure 198: Creating Ecosystem Markets to Encourage GHG Emissions Reductions—Operation Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$0	\$0	\$0
2013	\$10,436,266	\$39,490,492	\$49,926,758
2014	\$10,251,271	\$38,790,477	\$49,041,748
2015	\$9,833,438	\$37,209,409	\$47,042,847
2016	\$9,300,780	\$35,193,849	\$44,494,629
2017	\$8,905,273	\$33,697,266	\$42,602,539
2018	\$8,790,449	\$33,262,774	\$42,053,223
2019	\$8,611,833	\$32,586,897	\$41,198,730
2020	\$8,557,611	\$32,381,720	\$40,939,331
Average	\$6,789,720	\$25,692,080	\$44,662,476

Sources: RESI, REMI PI+

Figure 199: Nutrient Trading for GHG Benefits Status Quo—Investment Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	1.3	1.1	2.5
2011	1.6	1.3	2.9
2012	1.7	1.4	3.1
2013	2.9	2.3	5.1
2014	0.1	0.1	0.1
2015	0.0	-0.1	-0.2
2016	-0.2	0.0	-0.2
2017	-0.3	-0.1	-0.4
2018	0.3	0.1	0.4
2019	0.2	0.0	0.2
2020	0.1	0.0	0.1
Average	0.7	0.6	1.2

Sources: RESI, REMI PI+

Figure 200: Nutrient Trading for GHG Benefits Status Quo—Investment Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$101,507	\$81,599	\$183,105
2011	\$118,424	\$95,199	\$213,623
2012	\$118,424	\$95,199	\$213,623
2013	\$169,178	\$135,998	\$305,176
2014	\$0	\$0	\$0
2015	\$0	\$0	\$0
2016	\$0	\$0	\$0
2017	-\$33,836	-\$27,200	-\$61,035
2018	\$33,836	\$27,200	\$61,035
2019	\$0	\$0	\$0
2020	\$0	\$0	\$0
Average	\$46,139	\$37,090	\$83,230

Sources: RESI, REMI PI+

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Figure 201: Nutrient Trading for GHG Benefits Status Quo—Investment Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$44,409	\$35,700	\$80,109
2011	\$52,868	\$42,499	\$95,367
2012	\$50,753	\$40,799	\$91,553
2013	\$86,704	\$69,699	\$156,403
2014	\$2,115	\$1,700	\$3,815
2015	\$0	\$0	\$0
2016	\$0	\$0	\$0
2017	-\$12,688	-\$10,200	-\$22,888
2018	\$0	\$0	\$0
2019	\$0	\$0	\$0
2020	\$2,115	\$1,700	\$3,815
Average	\$20,570	\$16,536	\$37,107

Sources: RESI, REMI PI+

Figure 202: Nutrient Trading for GHG Benefits Enhancement—Investment Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	8.3	7.2	15.6
2011	10.0	8.3	18.3
2012	11.0	8.9	19.9
2013	18.2	14.3	32.5
2014	0.4	0.5	0.9
2015	-0.2	-0.8	-1.0
2016	-1.5	0.0	-1.5
2017	-1.9	-0.7	-2.6
2018	1.7	0.8	2.5
2019	1.5	-0.2	1.4
2020	0.4	0.1	0.5
Average	4.4	3.5	7.9

Sources: RESI, REMI PI+

Figure 203: Nutrient Trading for GHG Benefits Enhancement—Investment Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$642,841	\$516,766	\$1,159,607
2011	\$749,981	\$602,894	\$1,352,875
2012	\$749,981	\$602,894	\$1,352,875
2013	\$1,071,402	\$861,277	\$1,932,678
2014	\$0	\$0	\$0
2015	\$0	\$0	\$0
2016	\$0	\$0	\$0
2017	-\$214,280	-\$172,255	-\$386,536
2018	\$214,280	\$172,255	\$386,536
2019	\$0	\$0	\$0
2020	\$0	\$0	\$0
Average	\$292,200	\$234,894	\$527,094

Sources: RESI, REMI PI+

Figure 204: Nutrient Trading for GHG Benefits Enhancement—Investment Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$281,243	\$226,085	\$507,328
2011	\$334,813	\$269,149	\$603,962
2012	\$321,420	\$258,383	\$579,803
2013	\$549,093	\$441,404	\$990,498
2014	\$13,393	\$10,766	\$24,158
2015	\$0	\$0	\$0
2016	\$0	\$0	\$0
2017	-\$80,355	-\$64,596	-\$144,951
2018	\$0	\$0	\$0
2019	\$0	\$0	\$0
2020	\$13,393	\$10,766	\$24,158
Average	\$130,273	\$104,723	\$234,996

Sources: RESI, REMI PI+

Figure 205: Nutrient Trading for GHG Benefits Status Quo—Operation Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	0.0	0.0	0.0
2011	0.0	0.0	0.0
2012	0.0	0.0	0.0
2013	0.0	0.0	0.0
2014	0.0	0.0	0.0
2015	0.0	0.0	0.0
2016	0.0	0.0	0.0
2017	0.0	0.0	0.0
2018	0.0	0.0	0.0
2019	0.0	0.0	0.0
2020	0.0	0.0	0.0
Average	0.0	0.0	0.0

Sources: RESI, REMI PI+

Figure 206: Nutrient Trading for GHG Benefits Status Quo—Operation Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$0	\$0	\$0
2013	\$0	\$0	\$0
2014	\$0	\$0	\$0
2015	\$0	\$0	\$0
2016	\$0	\$0	\$0
2017	\$0	\$0	\$0
2018	\$0	\$0	\$0
2019	\$0	\$0	\$0
2020	\$0	\$0	\$0
Average	\$0	\$0	\$0

Sources: RESI, REMI PI+

Figure 207: Nutrient Trading for GHG Benefits Status Quo—Operation Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$0	\$0	\$0
2013	\$0	\$0	\$0
2014	\$0	\$0	\$0
2015	\$0	\$0	\$0
2016	\$0	\$0	\$0
2017	\$0	\$0	\$0
2018	\$0	\$0	\$0
2019	\$0	\$0	\$0
2020	\$0	\$0	\$0
Average	\$0	\$0	\$0

Sources: RESI, REMI PI+

Figure 208: Nutrient Trading for GHG Benefits Enhancement—Operation Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	0.0	0.0	0.0
2011	0.0	0.0	0.0
2012	0.0	0.0	0.0
2013	0.0	0.0	0.0
2014	0.0	0.0	0.0
2015	0.0	0.0	0.0
2016	0.0	0.0	0.0
2017	0.0	0.0	0.0
2018	0.0	0.0	0.0
2019	0.0	0.0	0.0
2020	0.0	0.0	0.0
Average	0.0	0.0	0.0

Sources: RESI, REMI PI+

Figure 209: Nutrient Trading for GHG Benefits Enhancement—Operation Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$0	\$0	\$0
2013	\$0	\$0	\$0
2014	\$0	\$0	\$0
2015	\$0	\$0	\$0
2016	\$0	\$0	\$0
2017	\$0	\$0	\$0
2018	\$0	\$0	\$0
2019	\$0	\$0	\$0
2020	\$0	\$0	\$0
Average	\$0	\$0	\$0

Sources: RESI, REMI PI+

Figure 210: Nutrient Trading for GHG Benefits Enhancement—Operation Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$0	\$0	\$0
2013	\$0	\$0	\$0
2014	\$0	\$0	\$0
2015	\$0	\$0	\$0
2016	\$0	\$0	\$0
2017	\$0	\$0	\$0
2018	\$0	\$0	\$0
2019	\$0	\$0	\$0
2020	\$0	\$0	\$0
Average	\$0	\$0	\$0

Sources: RESI, REMI PI+

Figure 211: Managing Forests to Capture Carbon—Investment Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	96.1	291.7	387.8
2011	95.3	288.0	383.4
2012	93.4	284.1	377.5
2013	91.1	280.3	371.4
2014	88.3	274.4	362.7
2015	84.7	268.7	353.4
2016	82.4	263.9	346.3
2017	80.0	259.4	339.5
2018	77.8	254.1	331.9
2019	76.0	252.1	328.1
2020	74.9	249.4	324.3
Average	85.5	269.6	355.1

Sources: RESI, REMI PI+

Figure 212: Managing Forests to Capture Carbon—Investment Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$536,144	\$1,691,639	\$2,227,783
2011	\$543,488	\$1,714,812	\$2,258,301
2012	\$514,111	\$1,622,120	\$2,136,230
2013	\$470,044	\$1,483,081	\$1,953,125
2014	\$418,633	\$1,320,869	\$1,739,502
2015	\$352,533	\$1,112,311	\$1,464,844
2016	\$293,778	\$926,926	\$1,220,703
2017	\$264,400	\$834,233	\$1,098,633
2018	\$235,022	\$741,540	\$976,563
2019	\$220,333	\$695,194	\$915,527
2020	\$176,267	\$556,155	\$732,422
Average	\$365,887	\$1,154,444	\$1,520,330

Sources: RESI, REMI PI+

Figure 213: Managing Forests to Capture Carbon—Investment Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$389,255	\$1,228,176	\$1,617,432
2011	\$455,355	\$1,436,735	\$1,892,090
2012	\$495,750	\$1,564,187	\$2,059,937
2013	\$525,127	\$1,656,879	\$2,182,007
2014	\$536,144	\$1,691,639	\$2,227,783
2015	\$543,488	\$1,714,812	\$2,258,301
2016	\$554,505	\$1,749,572	\$2,304,077
2017	\$547,161	\$1,726,399	\$2,273,560
2018	\$558,177	\$1,761,159	\$2,319,336
2019	\$543,488	\$1,714,812	\$2,258,301
2020	\$532,472	\$1,680,053	\$2,212,524
Average	\$516,448	\$1,629,493	\$2,145,941

Sources: RESI, REMI PI+

Figure 214: Managing Forests to Capture Carbon—Operation Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	0.0	0.0	0.0
2011	0.0	0.0	0.0
2012	24.2	23.6	47.8
2013	24.7	24.0	48.7
2014	24.6	23.9	48.5
2015	24.2	23.4	47.6
2016	23.8	23.2	47.0
2017	23.9	23.0	46.9
2018	23.3	22.8	46.1
2019	22.9	22.2	45.0
2020	22.3	21.6	43.9
Average	23.8	23.1	46.8

Sources: RESI, REMI PI+

Figure 215: Managing Forests to Capture Carbon—Operation Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$712,505	\$691,304	\$1,403,809
2013	\$712,505	\$691,304	\$1,403,809
2014	\$743,484	\$721,360	\$1,464,844
2015	\$681,527	\$661,247	\$1,342,773
2016	\$650,548	\$631,190	\$1,281,738
2017	\$650,548	\$631,190	\$1,281,738
2018	\$619,570	\$601,134	\$1,220,703
2019	\$650,548	\$631,190	\$1,281,738
2020	\$588,591	\$571,077	\$1,159,668
Average	\$667,758	\$647,888	\$1,315,647

Sources: RESI, REMI PI+

Figure 216: Managing Forests to Capture Carbon—Operation Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$178,126	\$172,826	\$350,952
2013	\$216,849	\$210,397	\$427,246
2014	\$232,339	\$225,425	\$457,764
2015	\$263,317	\$255,482	\$518,799
2016	\$271,062	\$262,996	\$534,058
2017	\$286,551	\$278,024	\$564,575
2018	\$286,551	\$278,024	\$564,575
2019	\$294,296	\$285,538	\$579,834
2020	\$271,062	\$262,996	\$534,058
Average	\$255,572	\$247,968	\$503,540

Sources: RESI, REMI PI+

Figure 217: Increasing Urban Trees to Capture Carbon—Investment Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	1.8	3.7	5.5
2011	1.8	3.8	5.6
2012	1.5	3.7	5.3
2013	1.8	3.8	5.7
2014	1.8	3.6	5.4
2015	1.5	3.1	4.7
2016	1.5	3.4	4.9
2017	1.3	3.1	4.4
2018	1.7	3.4	5.1
2019	1.6	3.3	4.8
2020	1.0	2.8	3.8
Average	1.6	3.4	5.0

Sources: RESI, REMI PI+

Figure 218: Increasing Urban Trees to Capture Carbon—Investment Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$28,874	\$62,679	\$91,553
2011	\$28,874	\$62,679	\$91,553
2012	\$28,874	\$62,679	\$91,553
2013	\$38,498	\$83,572	\$122,070
2014	\$48,123	\$104,465	\$152,588
2015	\$19,249	\$41,786	\$61,035
2016	\$38,498	\$83,572	\$122,070
2017	\$19,249	\$41,786	\$61,035
2018	\$19,249	\$41,786	\$61,035
2019	\$38,498	\$83,572	\$122,070
2020	\$19,249	\$41,786	\$61,035
Average	\$29,749	\$64,578	\$94,327

Sources: RESI, REMI PI+

Figure 219: Increasing Urban Trees to Capture Carbon—Investment Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$19,249	\$41,786	\$61,035
2011	\$14,437	\$31,340	\$45,776
2012	\$14,437	\$31,340	\$45,776
2013	\$24,061	\$52,233	\$76,294
2014	\$24,061	\$52,233	\$76,294
2015	\$14,437	\$31,340	\$45,776
2016	\$14,437	\$31,340	\$45,776
2017	\$19,249	\$41,786	\$61,035
2018	\$19,249	\$41,786	\$61,035
2019	\$19,249	\$41,786	\$61,035
2020	\$19,249	\$41,786	\$61,035
Average	\$18,374	\$39,887	\$58,261

Sources: RESI, REMI PI+

Figure 220: Increasing Urban Trees to Capture Carbon—Operation Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	121.0	113.2	234.2
2011	151.8	140.4	292.2
2012	175.0	161.0	336.0
2013	189.8	173.9	363.7
2014	199.9	181.3	381.2
2015	205.2	185.3	390.5
2016	209.3	187.6	396.9
2017	210.0	186.9	396.9
2018	208.9	185.1	394.1
2019	203.9	179.3	383.2
2020	198.2	173.3	371.5
Average	188.4	169.8	358.2

Sources: RESI, REMI PI+

Figure 221: Increasing Urban Trees to Capture Carbon—Operation Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$5,474,632	\$4,931,862	\$10,406,494
2011	\$8,203,921	\$7,390,561	\$15,594,482
2012	\$10,451,571	\$9,415,373	\$19,866,943
2013	\$12,169,417	\$10,962,907	\$23,132,324
2014	\$13,694,608	\$12,336,886	\$26,031,494
2015	\$14,866,597	\$13,392,681	\$28,259,277
2016	\$15,926,203	\$14,347,234	\$30,273,438
2017	\$16,728,935	\$15,070,381	\$31,799,316
2018	\$17,467,449	\$15,735,676	\$33,203,125
2019	\$17,884,869	\$16,111,713	\$33,996,582
2020	\$18,173,853	\$16,372,046	\$34,545,898
Average	\$13,731,096	\$12,369,756	\$26,100,852

Sources: RESI, REMI PI+

Figure 222: Increasing Urban Trees to Capture Carbon—Operation Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$2,006,830	\$1,807,867	\$3,814,697
2011	\$2,785,480	\$2,509,320	\$5,294,800
2012	\$3,451,748	\$3,109,532	\$6,561,279
2013	\$3,933,387	\$3,543,420	\$7,476,807
2014	\$4,390,944	\$3,955,614	\$8,346,558
2015	\$4,800,337	\$4,324,418	\$9,124,756
2016	\$5,105,376	\$4,599,214	\$9,704,590
2017	\$5,370,277	\$4,837,853	\$10,208,130
2018	\$5,587,015	\$5,033,102	\$10,620,117
2019	\$5,595,042	\$5,040,334	\$10,635,376
2020	\$5,570,960	\$5,018,639	\$10,589,600
Average	\$4,417,945	\$3,979,938	\$8,397,883

Sources: RESI, REMI PI+

**Figure 223: Creating and Protecting Wetlands and Waterway Borders to Capture Carbon—
Investment Phase, Employment Impacts**

Fiscal Year	Direct	Spinoff	Total
2010	0.5	1.6	2.1
2011	0.6	1.6	2.1
2012	0.5	1.6	2.2
2013	3.8	14.4	18.2
2014	4.0	14.3	18.3
2015	3.7	14.4	18.1
2016	3.9	14.8	18.7
2017	4.0	14.8	18.9
2018	3.9	15.0	18.9
2019	4.0	14.9	18.9
2020	3.5	14.3	17.7
Average	3.0	11.1	14.0

Sources: RESI, REMI PI+

**Figure 224: Creating and Protecting Wetlands and Waterway Borders to Capture Carbon—
Investment Phase, Output Impacts**

Fiscal Year	Direct	Spinoff	Total
2010	\$12,868	\$48,167	\$61,035
2011	\$12,868	\$48,167	\$61,035
2012	\$6,434	\$24,084	\$30,518
2013	\$83,643	\$313,086	\$396,729
2014	\$96,511	\$361,253	\$457,764
2015	\$77,209	\$289,002	\$366,211
2016	\$77,209	\$289,002	\$366,211
2017	\$90,077	\$337,169	\$427,246
2018	\$77,209	\$289,002	\$366,211
2019	\$90,077	\$337,169	\$427,246
2020	\$77,209	\$289,002	\$366,211
Average	\$63,756	\$238,646	\$302,401

Sources: RESI, REMI PI+

**Figure 225: Creating and Protecting Wetlands and Waterway Borders to Capture Carbon—
Investment Phase, Wage Impacts**

Fiscal Year	Direct	Spinoff	Total
2010	\$3,217	\$12,042	\$15,259
2011	\$3,217	\$12,042	\$15,259
2012	\$3,217	\$12,042	\$15,259
2013	\$38,604	\$144,501	\$183,105
2014	\$38,604	\$144,501	\$183,105
2015	\$45,038	\$168,585	\$213,623
2016	\$45,038	\$168,585	\$213,623
2017	\$54,689	\$204,710	\$259,399
2018	\$51,472	\$192,668	\$244,141
2019	\$54,689	\$204,710	\$259,399
2020	\$48,255	\$180,626	\$228,882
Average	\$35,095	\$131,365	\$166,460

Sources: RESI, REMI PI+

**Figure 226: Creating and Protecting Wetlands and Waterway Borders to Capture Carbon—
Operation Phase, Employment Impacts**

Fiscal Year	Direct	Spinoff	Total
2010	58.2	94.7	152.9
2011	57.9	93.9	151.8
2012	57.0	92.8	149.8
2013	76.1	124.7	200.9
2014	19.7	32.5	52.2
2015	17.3	30.3	47.6
2016	16.0	29.1	45.1
2017	16.0	28.9	44.9
2018	15.7	28.6	44.3
2019	16.0	28.7	44.7
2020	16.1	28.4	44.4
Average	33.3	55.7	89.0

Sources: RESI, REMI PI+

**Figure 227: Creating and Protecting Wetlands and Waterway Borders to Capture Carbon—
Operation Phase, Output Impacts**

Fiscal Year	Direct	Spinoff	Total
2010	\$1,540,927	\$2,578,946	\$4,119,873
2011	\$1,552,341	\$2,598,049	\$4,150,391
2012	\$1,540,927	\$2,578,946	\$4,119,873
2013	\$2,043,155	\$3,419,491	\$5,462,646
2014	\$513,642	\$859,649	\$1,373,291
2015	\$410,914	\$687,719	\$1,098,633
2016	\$342,428	\$573,099	\$915,527
2017	\$365,257	\$611,306	\$976,563
2018	\$365,257	\$611,306	\$976,563
2019	\$410,914	\$687,719	\$1,098,633
2020	\$410,914	\$687,719	\$1,098,633
Average	\$863,334	\$1,444,904	\$2,308,239

Sources: RESI, REMI PI+

**Figure 228: Creating and Protecting Wetlands and Waterway Borders to Capture Carbon—
Operation Phase, Wage Impacts**

Fiscal Year	Direct	Spinoff	Total
2010	\$610,664	\$1,022,027	\$1,632,690
2011	\$662,028	\$1,107,992	\$1,770,020
2012	\$719,099	\$1,203,508	\$1,922,607
2013	\$970,213	\$1,623,781	\$2,593,994
2014	\$365,257	\$611,306	\$976,563
2015	\$308,185	\$515,789	\$823,975
2016	\$262,528	\$439,376	\$701,904
2017	\$268,235	\$448,928	\$717,163
2018	\$256,821	\$429,824	\$686,646
2019	\$262,528	\$439,376	\$701,904
2020	\$256,821	\$429,824	\$686,646
Average	\$449,307	\$751,976	\$1,201,283

Sources: RESI, REMI PI+

Figure 229: Geological Opportunities to Store Carbon—Investment Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	0.2	0.1	0.4
2011	0.3	0.1	0.4
2012	0.0	0.0	0.0
2013	0.0	0.1	0.1
2014	0.3	0.1	0.4
2015	0.0	0.0	0.0
2016	0.2	0.3	0.5
2017	0.1	0.0	0.0
2018	0.2	0.3	0.5
2019	0.3	0.2	0.5
2020	0.3	0.2	0.5
Average	0.2	0.1	0.3

Sources: RESI, REMI PI+

Figure 230: Geological Opportunities to Store Carbon—Investment Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$17,386	\$13,131	\$30,518
2011	\$0	\$0	\$0
2012	\$0	\$0	\$0
2013	\$0	\$0	\$0
2014	\$34,772	\$26,263	\$61,035
2015	\$0	\$0	\$0
2016	\$0	\$0	\$0
2017	\$34,772	\$26,263	\$61,035
2018	\$0	\$0	\$0
2019	\$34,772	\$26,263	\$61,035
2020	\$34,772	\$26,263	\$61,035
Average	\$14,225	\$10,744	\$24,969

Sources: RESI, REMI PI+

Figure 231: Geological Opportunities to Store Carbon—Investment Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	-\$8,693	-\$6,566	-\$15,259
2012	\$0	\$0	\$0
2013	\$8,693	\$6,566	\$15,259
2014	\$0	\$0	\$0
2015	\$0	\$0	\$0
2016	\$8,693	\$6,566	\$15,259
2017	\$8,693	\$6,566	\$15,259
2018	\$0	\$0	\$0
2019	\$17,386	\$13,131	\$30,518
2020	\$8,693	\$6,566	\$15,259
Average	\$3,951	\$2,984	\$6,936

Sources: RESI, REMI PI+

Figure 232: Geological Opportunities to Store Carbon—Operation Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	73.7	64.9	138.6
2011	103.2	90.3	193.4
2012	121.0	105.5	226.6
2013	130.1	113.0	243.0
2014	134.9	115.5	250.4
2015	135.8	115.1	251.0
2016	134.9	113.3	248.2
2017	133.7	110.9	244.6
2018	129.8	106.2	236.0
2019	124.8	101.0	225.7
2020	120.8	96.5	217.2
Average	122.1	102.9	225.0

Sources: RESI, REMI PI+

Figure 233: Geological Opportunities to Store Carbon—Operation Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$6,639,031	\$5,598,518	\$12,237,549
2011	\$10,049,605	\$8,474,565	\$18,524,170
2012	\$12,549,590	\$10,582,735	\$23,132,324
2013	\$14,321,102	\$12,076,603	\$26,397,705
2014	\$15,695,265	\$13,235,399	\$28,930,664
2015	\$16,721,749	\$14,101,005	\$30,822,754
2016	\$17,516,446	\$14,771,152	\$32,287,598
2017	\$18,244,918	\$15,385,453	\$33,630,371
2018	\$18,774,716	\$15,832,218	\$34,606,934
2019	\$19,138,952	\$16,139,368	\$35,278,320
2020	\$19,470,076	\$16,418,596	\$35,888,672
Average	\$15,374,677	\$12,965,056	\$28,339,733

Sources: RESI, REMI PI+

Figure 234: Geological Opportunities to Store Carbon—Operation Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$1,498,335	\$1,263,506	\$2,761,841
2011	\$2,218,529	\$1,870,826	\$4,089,355
2012	\$2,756,605	\$2,324,572	\$5,081,177
2013	\$3,071,173	\$2,589,838	\$5,661,011
2014	\$3,294,681	\$2,778,317	\$6,072,998
2015	\$3,460,243	\$2,917,931	\$6,378,174
2016	\$3,518,190	\$2,966,796	\$6,484,985
2017	\$3,584,414	\$3,022,641	\$6,607,056
2018	\$3,551,302	\$2,994,718	\$6,546,021
2019	\$3,443,687	\$2,903,969	\$6,347,656
2020	\$3,302,959	\$2,785,298	\$6,088,257
Average	\$3,063,647	\$2,583,492	\$5,647,139

Sources: RESI, REMI PI+

Figure 235: Planting Forests in Maryland—Investment Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	0.0	0.0	0.0
2011	96.0	94.4	190.3
2012	95.9	94.4	190.3
2013	50.3	49.5	99.8
2014	54.4	53.4	107.8
2015	52.1	51.2	103.4
2016	50.8	49.9	100.7
2017	49.1	48.1	97.2
2018	48.0	47.3	95.4
2019	47.1	46.6	93.7
2020	46.4	45.5	91.9
Average	53.6	52.8	106.4

Sources: RESI, REMI PI+

Figure 236: Planting Forests in Maryland—Investment Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$1,138,546	\$1,119,755	\$2,258,301
2012	\$1,200,089	\$1,180,282	\$2,380,371
2013	\$600,044	\$590,141	\$1,190,186
2014	\$600,044	\$590,141	\$1,190,186
2015	\$461,573	\$453,955	\$915,527
2016	\$400,030	\$393,427	\$793,457
2017	\$338,487	\$332,900	\$671,387
2018	\$307,715	\$302,636	\$610,352
2019	\$307,715	\$302,636	\$610,352
2020	\$246,172	\$242,109	\$488,281
Average	\$509,129	\$500,726	\$1,009,854

Sources: RESI, REMI PI+

Figure 237: Planting Forests in Maryland—Investment Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$823,138	\$809,553	\$1,632,690
2012	\$1,000,074	\$983,569	\$1,983,643
2013	\$692,359	\$680,932	\$1,373,291
2014	\$715,438	\$703,630	\$1,419,067
2015	\$715,438	\$703,630	\$1,419,067
2016	\$715,438	\$703,630	\$1,419,067
2017	\$700,052	\$688,498	\$1,388,550
2018	\$715,438	\$703,630	\$1,419,067
2019	\$692,359	\$680,932	\$1,373,291
2020	\$684,666	\$673,366	\$1,358,032
Average	\$677,673	\$666,488	\$1,344,161

Sources: RESI, REMI PI+

Figure 238: Planting Forests in Maryland—Operation Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	0.0	0.0	0.0
2011	0.5	0.3	0.8
2012	0.5	0.4	0.9
2013	0.0	0.2	0.3
2014	0.2	0.1	0.3
2015	0.0	0.0	0.0
2016	0.5	0.3	0.7
2017	0.2	0.2	0.5
2018	0.2	0.2	0.4
2019	0.0	0.0	0.0
2020	0.0	0.0	0.0
Average	0.2	0.2	0.4

Sources: RESI, REMI PI+

Figure 239: Planting Forests in Maryland—Operation Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$0	\$0	\$0
2013	-\$16,613	-\$13,904	-\$30,518
2014	\$0	\$0	\$0
2015	\$0	\$0	\$0
2016	\$0	\$0	\$0
2017	\$0	\$0	\$0
2018	\$0	\$0	\$0
2019	\$0	\$0	\$0
2020	\$0	\$0	\$0
Average	-\$1,510	-\$1,264	-\$2,774

Sources: RESI, REMI PI+

Figure 240: Planting Forests in Maryland—Operation Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$8,307	\$6,952	\$15,259
2013	\$0	\$0	\$0
2014	\$0	\$0	\$0
2015	\$0	\$0	\$0
2016	\$8,307	\$6,952	\$15,259
2017	\$16,613	\$13,904	\$30,518
2018	\$0	\$0	\$0
2019	\$8,307	\$6,952	\$15,259
2020	\$0	\$0	\$0
Average	\$3,776	\$3,160	\$6,936

Sources: RESI, REMI PI+

Figure 241: Biomass for Energy Production—Investment Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	0.0	0.0	0.0
2011	0.0	0.0	0.0
2012	0.0	0.0	0.0
2013	13.4	24.7	38.1
2014	20.2	36.8	57.0
2015	19.7	36.6	56.3
2016	12.8	24.3	37.1
2017	12.5	23.7	36.1
2018	12.3	23.7	36.0
2019	12.4	23.8	36.2
2020	12.4	23.5	35.8
Average	10.5	19.7	30.3

Sources: RESI, REMI PI+

Figure 242: Biomass for Energy Production—Investment Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$0	\$0	\$0
2013	\$594,315	\$1,114,669	\$1,708,984
2014	\$870,247	\$1,632,194	\$2,502,441
2015	\$827,796	\$1,552,575	\$2,380,371
2016	\$509,413	\$955,431	\$1,464,844
2017	\$488,187	\$915,621	\$1,403,809
2018	\$466,962	\$875,812	\$1,342,773
2019	\$488,187	\$915,621	\$1,403,809
2020	\$466,962	\$875,812	\$1,342,773
Average	\$428,370	\$803,430	\$1,231,800

Sources: RESI, REMI PI+

Figure 243: Biomass for Energy Production—Investment Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$0	\$0	\$0
2013	\$302,464	\$567,287	\$869,751
2014	\$472,268	\$885,764	\$1,358,032
2015	\$504,107	\$945,478	\$1,449,585
2016	\$355,528	\$666,811	\$1,022,339
2017	\$360,834	\$676,763	\$1,037,598
2018	\$366,141	\$686,716	\$1,052,856
2019	\$382,060	\$716,573	\$1,098,633
2020	\$382,060	\$716,573	\$1,098,633
Average	\$284,133	\$532,906	\$817,039

Sources: RESI, REMI PI+

Figure 244: Biomass for Energy Production—Operation Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	0.0	0.0	0.0
2011	0.0	0.0	0.0
2012	0.0	0.0	0.0
2013	2.9	2.5	5.3
2014	4.8	4.1	8.9
2015	5.9	5.2	11.1
2016	6.9	6.1	13.0
2017	8.2	7.1	15.2
2018	8.6	7.6	16.2
2019	8.7	7.5	16.3
2020	8.4	7.1	15.6
Average	4.9	4.3	9.2

Sources: RESI, REMI PI+

Figure 245: Biomass for Energy Production—Operation Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$0	\$0	\$0
2013	\$310,231	\$269,603	\$579,834
2014	\$522,494	\$454,069	\$976,563
2015	\$620,462	\$539,206	\$1,159,668
2016	\$751,085	\$652,724	\$1,403,809
2017	\$881,708	\$766,241	\$1,647,949
2018	\$947,020	\$822,999	\$1,770,020
2019	\$1,012,332	\$879,758	\$1,892,090
2020	\$1,012,332	\$879,758	\$1,892,090
Average	\$550,697	\$478,578	\$1,029,275

Sources: RESI, REMI PI+

Figure 246: Biomass for Energy Production—Operation Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$0	\$0	\$0
2013	\$81,640	\$70,948	\$152,588
2014	\$138,787	\$120,612	\$259,399
2015	\$204,099	\$177,371	\$381,470
2016	\$253,083	\$219,939	\$473,022
2017	\$302,067	\$262,508	\$564,575
2018	\$326,559	\$283,793	\$610,352
2019	\$359,215	\$312,172	\$671,387
2020	\$351,051	\$305,077	\$656,128
Average	\$183,318	\$159,311	\$342,629

Sources: RESI, REMI PI+

Figure 247: Conservation of Agricultural Land for GHG Benefits—Investment Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	23.0	21.5	44.5
2011	23.4	22.0	45.5
2012	22.1	20.7	42.8
2013	16.8	15.9	32.7
2014	16.2	15.2	31.4
2015	15.2	14.3	29.5
2016	14.1	13.3	27.4
2017	13.2	12.4	25.6
2018	13.2	12.5	25.7
2019	12.3	11.7	24.1
2020	12.2	11.5	23.7
Average	16.5	15.6	32.1

Sources: RESI, REMI PI+

Figure 248: Conservation of Agricultural Land for GHG Benefits—Investment Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$1,209,852	\$1,140,002	\$2,349,854
2011	\$1,241,276	\$1,169,612	\$2,410,889
2012	\$1,178,427	\$1,110,391	\$2,288,818
2013	\$879,892	\$829,092	\$1,708,984
2014	\$848,467	\$799,482	\$1,647,949
2015	\$785,618	\$740,261	\$1,525,879
2016	\$722,769	\$681,040	\$1,403,809
2017	\$659,919	\$621,819	\$1,281,738
2018	\$691,344	\$651,430	\$1,342,773
2019	\$597,070	\$562,598	\$1,159,668
2020	\$597,070	\$562,598	\$1,159,668
Average	\$855,609	\$806,211	\$1,661,821

Sources: RESI, REMI PI+

Figure 249: Conservation of Agricultural Land for GHG Benefits—Investment Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$437,982	\$412,695	\$850,677
2011	\$469,407	\$442,306	\$911,713
2012	\$469,407	\$442,306	\$911,713
2013	\$384,953	\$362,728	\$747,681
2014	\$386,917	\$364,578	\$751,495
2015	\$373,169	\$351,624	\$724,792
2016	\$359,420	\$338,669	\$698,090
2017	\$343,708	\$323,864	\$667,572
2018	\$345,672	\$325,715	\$671,387
2019	\$331,924	\$312,760	\$644,684
2020	\$337,816	\$318,312	\$656,128
Average	\$385,488	\$363,233	\$748,721

Sources: RESI, REMI PI+

Figure 250: Conservation of Agricultural Land for GHG Benefits—Operation Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	0.0	0.0	0.0
2011	327.8	272.5	600.3
2012	332.6	276.6	609.2
2013	326.2	270.9	597.1
2014	238.6	196.2	434.8
2015	214.0	173.9	387.9
2016	193.1	155.2	348.3
2017	178.5	141.9	320.4
2018	167.1	131.6	298.6
2019	158.3	123.6	281.9
2020	151.2	117.7	269.0
Average	207.9	169.1	377.0

Sources: RESI, REMI PI+

Figure 251: Conservation of Agricultural Land for GHG Benefits—Operation Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$67,721,576	\$55,081,158	\$122,802,734
2012	\$68,175,971	\$55,450,738	\$123,626,709
2013	\$67,738,406	\$55,094,846	\$122,833,252
2014	\$50,690,206	\$41,228,740	\$91,918,945
2015	\$48,939,946	\$39,805,171	\$88,745,117
2016	\$47,425,299	\$38,573,236	\$85,998,535
2017	\$46,348,216	\$37,697,194	\$84,045,410
2018	\$45,506,745	\$37,012,786	\$82,519,531
2019	\$44,799,910	\$36,437,883	\$81,237,793
2020	\$44,295,027	\$36,027,239	\$80,322,266
Average	\$48,331,027	\$39,309,908	\$87,640,936

Sources: RESI, REMI PI+

Figure 252: Conservation of Agricultural Land for GHG Benefits—Operation Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$8,747,090	\$7,114,421	\$15,861,511
2012	\$10,585,704	\$8,609,853	\$19,195,557
2013	\$11,675,408	\$9,496,161	\$21,171,570
2014	\$10,042,955	\$8,168,410	\$18,211,365
2015	\$9,514,932	\$7,738,944	\$17,253,876
2016	\$8,972,183	\$7,297,501	\$16,269,684
2017	\$8,471,508	\$6,890,278	\$15,361,786
2018	\$8,010,803	\$6,515,564	\$14,526,367
2019	\$7,640,556	\$6,214,425	\$13,854,980
2020	\$7,327,108	\$5,959,483	\$13,286,591
Average	\$8,271,659	\$6,727,731	\$14,999,390

Sources: RESI, REMI PI+

A.4 Zero Waste

Figure 253: Recycling and Source Reduction Status Quo—Investment Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	457.2	416.2	873.3
2011	466.2	425.3	891.6
2012	465.9	425.7	891.6
2013	460.7	421.9	882.6
2014	452.7	414.9	867.6
2015	441.9	405.7	847.6
2016	430.7	396.2	826.9
2017	422.0	388.3	810.3
2018	414.2	381.4	795.6
2019	407.2	375.6	782.8
2020	402.0	371.1	773.1
Average	438.3	402.0	840.3

Sources: RESI, REMI PI+

Figure 254: Recycling and Source Reduction Status Quo—Investment Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$35,192,272	\$32,282,093	\$67,474,365
2011	\$35,637,945	\$32,690,912	\$68,328,857
2012	\$35,717,530	\$32,763,915	\$68,481,445
2013	\$35,478,776	\$32,544,905	\$68,023,682
2014	\$35,017,186	\$32,121,486	\$67,138,672
2015	\$34,348,676	\$31,508,257	\$65,856,934
2016	\$33,712,000	\$30,924,230	\$64,636,230
2017	\$33,138,992	\$30,398,606	\$63,537,598
2018	\$32,661,485	\$29,960,586	\$62,622,070
2019	\$32,215,811	\$29,551,767	\$61,767,578
2020	\$31,929,307	\$29,288,955	\$61,218,262
Average	\$34,095,453	\$31,275,974	\$65,371,427

Sources: RESI, REMI PI+

Figure 255: Recycling and Source Reduction Status Quo—Investment Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$11,287,074	\$10,353,704	\$21,640,778
2011	\$12,182,399	\$11,174,992	\$23,357,391
2012	\$12,916,567	\$11,848,448	\$24,765,015
2013	\$13,489,575	\$12,374,072	\$25,863,647
2014	\$13,925,300	\$12,773,766	\$26,699,066
2015	\$14,227,722	\$13,051,179	\$27,278,900
2016	\$14,472,444	\$13,275,664	\$27,748,108
2017	\$14,695,281	\$13,480,073	\$28,175,354
2018	\$14,916,128	\$13,682,658	\$28,598,785
2019	\$15,174,777	\$13,919,919	\$29,094,696
2020	\$15,473,219	\$14,193,681	\$29,666,901
Average	\$13,887,317	\$12,738,923	\$26,626,240

Sources: RESI, REMI PI+

Figure 256: Recycling and Source Reduction Enhancement—Investment Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	457.2	416.2	873.3
2011	466.2	425.3	891.6
2012	465.9	425.7	891.6
2013	460.7	421.9	882.6
2014	452.7	414.9	867.6
2015	757.5	695.5	1,452.9
2016	738.3	679.1	1,417.5
2017	723.4	665.6	1,389.1
2018	710.1	653.8	1,364.0
2019	698.1	643.8	1,341.9
2020	689.2	636.1	1,325.3
Average	601.8	552.5	1,154.3

Sources: RESI, REMI PI+

Figure 257: Recycling and Source Reduction Enhancement—Investment Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$35,192,272	\$32,282,093	\$67,474,365
2011	\$35,637,945	\$32,690,912	\$68,328,857
2012	\$35,717,530	\$32,763,915	\$68,481,445
2013	\$35,478,776	\$32,544,905	\$68,023,682
2014	\$35,017,186	\$32,121,486	\$67,138,672
2015	\$58,883,445	\$54,014,155	\$112,897,600
2016	\$57,792,000	\$53,012,966	\$110,804,966
2017	\$56,809,700	\$52,111,896	\$108,921,595
2018	\$55,991,116	\$51,361,004	\$107,352,120
2019	\$55,227,105	\$50,660,171	\$105,887,276
2020	\$54,735,954	\$50,209,636	\$104,945,591
Average	\$46,953,003	\$43,070,285	\$90,023,288

Sources: RESI, REMI PI+

Figure 258: Recycling and Source Reduction Enhancement—Investment Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$11,287,074	\$10,353,704	\$21,640,778
2011	\$12,182,399	\$11,174,992	\$23,357,391
2012	\$12,916,567	\$11,848,448	\$24,765,015
2013	\$13,489,575	\$12,374,072	\$25,863,647
2014	\$13,925,300	\$12,773,766	\$26,699,066
2015	\$24,390,380	\$22,373,449	\$46,763,828
2016	\$24,809,904	\$22,758,281	\$47,568,185
2017	\$25,191,909	\$23,108,697	\$48,300,606
2018	\$25,570,504	\$23,455,985	\$49,026,489
2019	\$26,013,904	\$23,862,718	\$49,876,621
2020	\$26,525,518	\$24,332,025	\$50,857,544
Average	\$19,663,912	\$18,037,831	\$37,701,743

Sources: RESI, REMI PI+

Figure 259: Recycling and Source Reduction Status Quo—Operation Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	-270.1	-245.7	-515.8
2011	-275.5	-251.5	-527.0
2012	-274.6	-251.0	-525.6
2013	-267.6	-245.0	-512.6
2014	-259.5	-238.1	-497.7
2015	-252.8	-232.2	-485.1
2016	-247.4	-227.4	-474.8
2017	-240.8	-221.9	-462.7
2018	-236.1	-217.6	-453.7
2019	-233.6	-215.4	-449.0
2020	-232.7	-214.9	-447.6
Average	-253.7	-232.8	-486.5

Sources: RESI, REMI PI+

Figure 260: Recycling and Source Reduction Status Quo—Operation Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	-\$20,736,625	-\$19,027,779	-\$39,764,404
2011	-\$21,039,001	-\$19,305,237	-\$40,344,238
2012	-\$20,991,257	-\$19,261,428	-\$40,252,686
2013	-\$20,609,309	-\$18,910,955	-\$39,520,264
2014	-\$20,115,958	-\$18,458,260	-\$38,574,219
2015	-\$19,670,352	-\$18,049,375	-\$37,719,727
2016	-\$19,288,403	-\$17,698,901	-\$36,987,305
2017	-\$18,874,626	-\$17,319,222	-\$36,193,848
2018	-\$18,524,506	-\$16,997,955	-\$35,522,461
2019	-\$18,429,019	-\$16,910,337	-\$35,339,355
2020	-\$18,397,190	-\$16,881,130	-\$35,278,320
Average	-\$19,697,840	-\$18,074,598	-\$37,772,439

Sources: RESI, REMI PI+

Figure 261: Recycling and Source Reduction Status Quo—Operation Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	-\$6,664,207	-\$6,115,029	-\$12,779,236
2011	-\$7,203,311	-\$6,609,707	-\$13,813,019
2012	-\$7,605,153	-\$6,978,434	-\$14,583,588
2013	-\$7,855,807	-\$7,208,433	-\$15,064,240
2014	-\$8,016,942	-\$7,356,288	-\$15,373,230
2015	-\$8,152,215	-\$7,480,414	-\$15,632,629
2016	-\$8,303,403	-\$7,619,143	-\$15,922,546
2017	-\$8,384,965	-\$7,693,984	-\$16,078,949
2018	-\$8,498,356	-\$7,798,031	-\$16,296,387
2019	-\$8,669,437	-\$7,955,014	-\$16,624,451
2020	-\$8,904,176	-\$8,170,409	-\$17,074,585
Average	-\$8,023,452	-\$7,362,262	-\$15,385,714

Sources: RESI, REMI PI+

Figure 262: Recycling and Source Reduction Enhancement—Operation Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	-270.1	-245.7	-515.8
2011	-275.5	-251.5	-527.0
2012	-274.6	-251.0	-525.6
2013	-267.6	-245.0	-512.6
2014	-259.5	-238.1	-497.7
2015	-433.4	-398.1	-831.5
2016	-424.1	-389.8	-813.9
2017	-412.9	-380.4	-793.2
2018	-404.8	-373.1	-777.8
2019	-400.4	-369.3	-769.7
2020	-399.0	-368.3	-767.3
Average	-347.4	-319.1	-666.6

Sources: RESI, REMI PI+

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Figure 263: Recycling and Source Reduction Enhancement—Operation Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	-\$20,736,625	-\$19,027,779	-\$39,764,404
2011	-\$21,039,001	-\$19,305,237	-\$40,344,238
2012	-\$20,991,257	-\$19,261,428	-\$40,252,686
2013	-\$20,609,309	-\$18,910,955	-\$39,520,264
2014	-\$20,115,958	-\$18,458,260	-\$38,574,219
2015	-\$33,720,603	-\$30,941,785	-\$64,662,388
2016	-\$33,065,834	-\$30,340,974	-\$63,406,808
2017	-\$32,356,501	-\$29,690,095	-\$62,046,595
2018	-\$31,756,296	-\$29,139,351	-\$60,895,647
2019	-\$31,592,604	-\$28,989,148	-\$60,581,752
2020	-\$31,538,039	-\$28,939,081	-\$60,477,120
Average	-\$27,047,457	-\$24,818,554	-\$51,866,011

Sources: RESI, REMI PI+

Figure 264: Recycling and Source Reduction Enhancement—Operation Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	-\$6,664,207	-\$6,115,029	-\$12,779,236
2011	-\$7,203,311	-\$6,609,707	-\$13,813,019
2012	-\$7,605,153	-\$6,978,434	-\$14,583,588
2013	-\$7,855,807	-\$7,208,433	-\$15,064,240
2014	-\$8,016,942	-\$7,356,288	-\$15,373,230
2015	-\$13,975,226	-\$12,823,567	-\$26,798,793
2016	-\$14,234,405	-\$13,061,389	-\$27,295,794
2017	-\$14,374,225	-\$13,189,687	-\$27,563,912
2018	-\$14,568,610	-\$13,368,053	-\$27,936,663
2019	-\$14,861,892	-\$13,637,166	-\$28,499,058
2020	-\$15,264,302	-\$14,006,415	-\$29,270,717
Average	-\$11,329,462	-\$10,395,834	-\$21,725,295

Sources: RESI, REMI PI+

A.5 Buildings

Figure 265: Building Codes—Investment Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	14.1	5.4	19.5
2011	16.5	6.6	23.1
2012	15.6	6.1	21.7
2013	15.3	6.1	21.4
2014	14.9	5.6	20.5
2015	14.0	4.9	18.9
2016	14.2	5.1	19.3
2017	14.0	4.9	18.8
2018	14.0	5.2	19.2
2019	13.7	4.6	18.3
2020	13.8	4.8	18.6
Average	14.6	5.4	19.9

Sources: RESI, REMI PI+

Figure 266: Building Codes—Investment Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$1,092,207	\$403,154	\$1,495,361
2011	\$1,270,526	\$468,976	\$1,739,502
2012	\$1,203,657	\$444,293	\$1,647,949
2013	\$1,181,367	\$436,065	\$1,617,432
2014	\$1,203,657	\$444,293	\$1,647,949
2015	\$1,114,497	\$411,382	\$1,525,879
2016	\$1,114,497	\$411,382	\$1,525,879
2017	\$1,114,497	\$411,382	\$1,525,879
2018	\$1,114,497	\$411,382	\$1,525,879
2019	\$1,159,077	\$427,837	\$1,586,914
2020	\$1,114,497	\$411,382	\$1,525,879
Average	\$1,152,998	\$425,593	\$1,578,591

Sources: RESI, REMI PI+

Figure 267: Building Codes—Investment Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$490,379	\$181,008	\$671,387
2011	\$612,973	\$226,260	\$839,233
2012	\$635,263	\$234,488	\$869,751
2013	\$668,698	\$246,829	\$915,527
2014	\$668,698	\$246,829	\$915,527
2015	\$679,843	\$250,943	\$930,786
2016	\$713,278	\$263,284	\$976,563
2017	\$713,278	\$263,284	\$976,563
2018	\$769,003	\$283,854	\$1,052,856
2019	\$780,148	\$287,967	\$1,068,115
2020	\$780,148	\$287,967	\$1,068,115
Average	\$682,883	\$252,065	\$934,948

Sources: RESI, REMI PI+

Figure 268: Building Codes—Operation Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	16.0	14.8	30.8
2011	47.6	43.7	91.3
2012	87.2	80.4	167.7
2013	137.7	127.3	265.0
2014	186.4	172.8	359.1
2015	231.4	214.9	446.4
2016	272.3	253.3	525.6
2017	304.1	283.2	587.3
2018	330.5	308.0	638.6
2019	350.6	327.1	677.7
2020	366.3	341.9	708.2
Average	211.8	197.0	408.9

Sources: RESI, REMI PI+

Figure 269: Building Codes—Operation Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$1,264,841	\$1,176,565	\$2,441,406
2011	\$3,573,175	\$3,323,797	\$6,896,973
2012	\$6,498,120	\$6,044,605	\$12,542,725
2013	\$10,229,400	\$9,515,473	\$19,744,873
2014	\$13,850,007	\$12,883,391	\$26,733,398
2015	\$17,296,698	\$16,089,532	\$33,386,230
2016	\$20,458,800	\$19,030,946	\$39,489,746
2017	\$22,956,861	\$21,354,663	\$44,311,523
2018	\$25,107,090	\$23,354,824	\$48,461,914
2019	\$26,751,383	\$24,884,359	\$51,635,742
2020	\$28,079,466	\$26,119,753	\$54,199,219
Average	\$16,005,986	\$14,888,901	\$30,894,886

Sources: RESI, REMI PI+

Figure 270: Building Codes—Operation Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	-\$964,441	-\$897,131	-\$1,861,572
2011	-\$1,298,438	-\$1,207,818	-\$2,506,256
2012	-\$1,092,902	-\$1,016,626	-\$2,109,528
2013	-\$569,178	-\$529,454	-\$1,098,633
2014	\$565,226	\$525,778	\$1,091,003
2015	\$1,875,522	\$1,744,626	\$3,620,148
2016	\$3,302,420	\$3,071,939	\$6,374,359
2017	\$4,699,674	\$4,371,676	\$9,071,350
2018	\$6,051,473	\$5,629,130	\$11,680,603
2019	\$7,300,503	\$6,790,989	\$14,091,492
2020	\$8,462,576	\$7,871,958	\$16,334,534
Average	\$2,575,676	\$2,395,915	\$4,971,591

Sources: RESI, REMI PI+

A.6 Land Use

Figure 271: Reducing GHG Emissions from the Transportation Sector through Land Use and Location Efficiency Status Quo—Investment Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	1,020.5	1,383.3	2,403.9
2011	1,016.3	1,718.6	2,734.9
2012	998.7	1,855.4	2,854.1
2013	981.2	1,870.6	2,851.8
2014	963.7	1,824.5	2,788.2
2015	947.8	1,748.6	2,696.3
2016	933.0	1,666.0	2,598.9
2017	919.3	1,585.9	2,505.2
2018	906.7	1,511.5	2,418.2
2019	892.8	1,449.0	2,341.7
2020	854.7	1,406.2	2,261.0
Average	948.6	1,638.1	2,586.7

Sources: RESI, REMI PI+

Figure 272: Reducing GHG Emissions from the Transportation Sector through Land Use and Location Efficiency Status Quo—Investment Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$149,267,643	\$230,490,757	\$379,758,400
2011	\$149,267,840	\$290,022,655	\$439,290,496
2012	\$149,267,262	\$319,771,285	\$469,038,548
2013	\$149,265,389	\$328,885,369	\$478,150,758
2014	\$149,262,135	\$327,194,090	\$476,456,226
2015	\$149,257,749	\$319,531,602	\$468,789,351
2016	\$149,252,520	\$309,942,609	\$459,195,129
2017	\$149,246,716	\$300,154,067	\$449,400,783
2018	\$149,240,593	\$290,938,405	\$440,178,997
2019	\$149,234,578	\$284,107,332	\$433,341,910
2020	\$141,775,706	\$273,146,725	\$414,922,431
Average	\$148,576,194	\$297,653,172	\$446,229,366

Sources: RESI, REMI PI+

Figure 273: Reducing GHG Emissions from the Transportation Sector through Land Use and Location Efficiency Status Quo—Investment Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$83,839,247	\$64,073,567	\$147,912,815
2011	\$86,706,609	\$95,172,590	\$181,879,199
2012	\$89,558,957	\$115,074,419	\$204,633,376
2013	\$92,887,918	\$125,983,740	\$218,871,658
2014	\$96,485,099	\$130,753,734	\$227,238,833
2015	\$100,229,721	\$131,367,967	\$231,597,688
2016	\$104,223,874	\$129,793,131	\$234,017,005
2017	\$108,458,792	\$126,982,304	\$235,441,095
2018	\$112,935,974	\$123,476,233	\$236,412,207
2019	\$117,515,291	\$120,330,118	\$237,845,409
2020	\$118,392,655	\$106,879,712	\$225,272,367
Average	\$101,021,285	\$115,444,319	\$216,465,605

Sources: RESI, REMI PI+

Figure 274: Reducing GHG Emissions from the Transportation Sector through Land Use and Location Efficiency Enhancement—Investment Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	1,200.6	1,627.5	2,828.1
2011	1,195.6	2,021.9	3,217.6
2012	1,174.9	2,182.8	3,357.7
2013	1,154.4	2,200.7	3,355.1
2014	1,133.8	2,146.5	3,280.2
2015	1,115.0	2,057.1	3,172.1
2016	1,097.6	1,960.0	3,057.6
2017	1,081.5	1,865.7	2,947.3
2018	1,066.7	1,778.2	2,844.9
2019	1,050.3	1,704.7	2,755.0
2020	1,005.6	1,654.4	2,659.9
Average	1,116.0	1,927.2	3,043.2

Sources: RESI, REMI PI+

Figure 275: Reducing GHG Emissions from the Transportation Sector through Land Use and Location Efficiency Enhancement—Investment Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$175,608,992	\$271,165,596	\$446,774,588
2011	\$175,609,224	\$341,203,124	\$516,812,348
2012	\$175,608,544	\$376,201,512	\$551,810,056
2013	\$175,606,340	\$386,923,964	\$562,530,304
2014	\$175,602,512	\$384,934,224	\$560,536,736
2015	\$175,597,352	\$375,919,532	\$551,516,884
2016	\$175,591,200	\$364,638,364	\$540,229,564
2017	\$175,584,372	\$353,122,432	\$528,706,804
2018	\$175,577,168	\$342,280,476	\$517,857,644
2019	\$175,570,092	\$334,243,920	\$509,814,012
2020	\$166,794,949	\$321,349,088	\$488,144,037
Average	\$174,795,522	\$350,180,203	\$524,975,725

Sources: RESI, REMI PI+

Figure 276: Reducing GHG Emissions from the Transportation Sector through Land Use and Location Efficiency Enhancement—Investment Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$98,634,409	\$75,380,667	\$174,015,076
2011	\$102,007,775	\$111,967,753	\$213,975,528
2012	\$105,363,479	\$135,381,669	\$240,745,148
2013	\$109,279,904	\$148,216,164	\$257,496,068
2014	\$113,511,881	\$153,827,923	\$267,339,804
2015	\$117,917,319	\$154,550,549	\$272,467,868
2016	\$122,616,323	\$152,697,801	\$275,314,124
2017	\$127,598,579	\$149,390,945	\$276,989,524
2018	\$132,865,851	\$145,266,157	\$278,132,008
2019	\$138,253,283	\$141,564,845	\$279,818,128
2020	\$139,285,476	\$125,740,838	\$265,026,315
Average	\$118,848,571	\$135,816,846	\$254,665,417

Sources: RESI, REMI PI+

Figure 277: Reducing GHG Emissions from the Transportation Sector through Land Use and Location Efficiency Status Quo—Operation Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	0.0	733.1	733.1
2011	0.0	824.8	824.8
2012	0.0	867.0	867.0
2013	0.0	870.3	870.3
2014	0.0	852.6	852.6
2015	0.0	825.7	825.7
2016	0.0	798.3	798.3
2017	0.0	772.3	772.3
2018	0.0	747.8	747.8
2019	0.0	727.3	727.3
2020	0.0	710.8	710.8
Average	0.0	793.6	793.6

Sources: RESI, REMI PI+

Figure 278: Reducing GHG Emissions from the Transportation Sector through Land Use and Location Efficiency Status Quo—Operation Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$139,545,931	\$139,545,931
2011	\$0	\$160,052,214	\$160,052,214
2012	\$0	\$171,800,520	\$171,800,520
2013	\$0	\$174,957,962	\$174,957,962
2014	\$0	\$173,351,448	\$173,351,448
2015	\$0	\$169,266,828	\$169,266,828
2016	\$0	\$164,610,222	\$164,610,222
2017	\$0	\$159,923,499	\$159,923,499
2018	\$0	\$155,360,603	\$155,360,603
2019	\$0	\$151,908,068	\$151,908,068
2020	\$0	\$149,479,231	\$149,479,231
Average	\$0	\$160,932,412	\$160,932,412

Sources: RESI, REMI PI+

Figure 279: Reducing GHG Emissions from the Transportation Sector through Land Use and Location Efficiency Status Quo—Operation Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$42,727,625	\$42,727,625
2011	\$0	\$49,769,910	\$49,769,910
2012	\$0	\$53,594,770	\$53,594,770
2013	\$0	\$54,288,564	\$54,288,564
2014	\$0	\$53,037,899	\$53,037,899
2015	\$0	\$50,646,357	\$50,646,357
2016	\$0	\$47,898,859	\$47,898,859
2017	\$0	\$45,087,497	\$45,087,497
2018	\$0	\$42,370,042	\$42,370,042
2019	\$0	\$40,056,723	\$40,056,723
2020	\$0	\$38,228,325	\$38,228,325
Average	\$0	\$47,064,234	\$47,064,234

Sources: RESI, REMI PI+

Figure 280: Reducing GHG Emissions from the Transportation Sector through Land Use and Location Efficiency Enhancement—Operation Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	0.0	1,127.8	1,127.8
2011	0.0	1,268.9	1,268.9
2012	0.0	1,333.8	1,333.8
2013	0.0	1,338.9	1,338.9
2014	0.0	1,311.6	1,311.6
2015	0.0	1,270.4	1,270.4
2016	0.0	1,228.2	1,228.2
2017	0.0	1,188.1	1,188.1
2018	0.0	1,150.4	1,150.4
2019	0.0	1,118.9	1,118.9
2020	0.0	1,093.5	1,093.5
Average	0.0	1,221.0	1,221.0

Sources: RESI, REMI PI+

Figure 281: Reducing GHG Emissions from the Transportation Sector through Land Use and Location Efficiency Enhancement—Operation Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$187,850,292	\$187,850,292
2011	\$0	\$215,454,904	\$215,454,904
2012	\$0	\$231,269,931	\$231,269,931
2013	\$0	\$235,520,334	\$235,520,334
2014	\$0	\$233,357,719	\$233,357,719
2015	\$0	\$227,859,191	\$227,859,191
2016	\$0	\$221,590,684	\$221,590,684
2017	\$0	\$215,281,633	\$215,281,633
2018	\$0	\$209,139,273	\$209,139,273
2019	\$0	\$204,491,630	\$204,491,630
2020	\$0	\$201,222,042	\$201,222,042
Average	\$0	\$216,639,785	\$216,639,785

Sources: RESI, REMI PI+

Figure 282: Reducing GHG Emissions from the Transportation Sector through Land Use and Location Efficiency Enhancement—Operation Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$82,168,510	\$82,168,510
2011	\$0	\$95,711,365	\$95,711,365
2012	\$0	\$103,066,865	\$103,066,865
2013	\$0	\$104,401,085	\$104,401,085
2014	\$0	\$101,995,960	\$101,995,960
2015	\$0	\$97,396,840	\$97,396,840
2016	\$0	\$92,113,190	\$92,113,190
2017	\$0	\$86,706,725	\$86,706,725
2018	\$0	\$81,480,850	\$81,480,850
2019	\$0	\$77,032,160	\$77,032,160
2020	\$0	\$73,516,010	\$73,516,010
Average	\$0	\$90,508,142	\$90,508,142

Sources: RESI, REMI PI+

Figure 283: Priority Funding Area (Growth Boundary) Related Benefits (Transportation Sector through Smart Growth) Status Quo—Investment Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	1,200.6	1,627.5	2,828.1
2011	1,195.6	2,021.9	3,217.6
2012	1,174.9	2,182.8	3,357.7
2013	1,154.4	2,200.7	3,355.1
2014	1,133.8	2,146.5	3,280.2
2015	1,115.0	2,057.1	3,172.1
2016	1,097.6	1,960.0	3,057.6
2017	1,081.5	1,865.7	2,947.3
2018	1,066.7	1,778.2	2,844.9
2019	1,050.3	1,704.7	2,755.0
2020	1,005.6	1,654.4	2,659.9
Average	1,116.0	1,927.2	3,043.2

Sources: RESI, REMI PI+

Figure 284: Priority Funding Area (Growth Boundary) Related Benefits (Transportation Sector through Smart Growth) Status Quo—Investment Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$148,170,087	\$228,795,972	\$376,966,059
2011	\$148,170,283	\$287,890,136	\$436,060,419
2012	\$148,169,709	\$317,420,026	\$465,589,735
2013	\$148,167,849	\$326,467,095	\$474,634,944
2014	\$148,164,620	\$324,788,252	\$472,952,871
2015	\$148,160,266	\$317,182,105	\$465,342,371
2016	\$148,155,075	\$307,663,620	\$455,818,695
2017	\$148,149,314	\$297,947,052	\$446,096,366
2018	\$148,143,236	\$288,799,152	\$436,942,387
2019	\$148,137,265	\$282,018,308	\$430,155,573
2020	\$140,733,238	\$271,138,293	\$411,871,531
Average	\$147,483,722	\$295,464,546	\$442,948,268

Sources: RESI, REMI PI+

Figure 285: Priority Funding Area (Growth Boundary) Related Benefits (Transportation Sector through Smart Growth) Status Quo—Investment Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$83,222,782	\$63,602,438	\$146,825,220
2011	\$86,069,061	\$94,472,791	\$180,541,852
2012	\$88,900,435	\$114,228,283	\$203,128,719
2013	\$92,204,919	\$125,057,389	\$217,262,307
2014	\$95,775,650	\$129,792,310	\$225,567,960
2015	\$99,492,738	\$130,402,026	\$229,894,764
2016	\$103,457,522	\$128,838,770	\$232,296,292
2017	\$107,661,301	\$126,048,610	\$233,709,911
2018	\$112,105,562	\$122,568,320	\$234,673,882
2019	\$116,651,208	\$119,445,338	\$236,096,546
2020	\$117,522,121	\$106,093,832	\$223,615,953
Average	\$100,278,482	\$114,595,464	\$214,873,946

Sources: RESI, REMI PI+

Figure 286: Priority Funding Area (Growth Boundary) Related Benefits (Transportation Sector through Smart Growth) Enhancement—Investment Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	1,350.7	1,830.9	3,181.6
2011	1,345.1	2,274.7	3,619.8
2012	1,321.8	2,455.6	3,777.4
2013	1,298.7	2,475.8	3,774.5
2014	1,275.5	2,414.8	3,690.3
2015	1,254.4	2,314.3	3,568.6
2016	1,234.8	2,205.0	3,439.8
2017	1,216.7	2,098.9	3,315.7
2018	1,200.0	2,000.5	3,200.5
2019	1,181.6	1,917.7	3,099.4
2020	1,131.3	1,861.2	2,992.4
Average	1,255.5	2,168.1	3,423.6

Sources: RESI, REMI PI+

Figure 287: Priority Funding Area (Growth Boundary) Related Benefits (Transportation Sector through Smart Growth) Enhancement—Investment Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$285,364,612	\$440,644,094	\$726,008,706
2011	\$285,364,989	\$554,455,077	\$839,820,066
2012	\$285,363,884	\$611,327,457	\$896,691,341
2013	\$285,360,303	\$628,751,442	\$914,111,744
2014	\$285,354,082	\$625,518,114	\$910,872,196
2015	\$285,345,697	\$610,869,240	\$896,214,937
2016	\$285,335,700	\$592,537,342	\$877,873,042
2017	\$285,324,605	\$573,823,952	\$859,148,557
2018	\$285,312,898	\$556,205,774	\$841,518,672
2019	\$285,301,400	\$543,146,370	\$828,447,770
2020	\$271,041,791	\$522,192,268	\$793,234,059
Average	\$284,042,724	\$569,042,830	\$853,085,553

Sources: RESI, REMI PI+

Figure 288: Priority Funding Area (Growth Boundary) Related Benefits (Transportation Sector through Smart Growth) Enhancement—Investment Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$184,939,516	\$141,338,751	\$326,278,268
2011	\$191,264,579	\$209,939,536	\$401,204,115
2012	\$197,556,523	\$253,840,629	\$451,397,153
2013	\$204,899,819	\$277,905,308	\$482,805,128
2014	\$212,834,777	\$288,427,355	\$501,262,133
2015	\$221,094,973	\$289,782,279	\$510,877,253
2016	\$229,905,605	\$286,308,377	\$516,213,983
2017	\$239,247,335	\$280,108,023	\$519,355,358
2018	\$249,123,472	\$272,374,043	\$521,497,515
2019	\$259,224,906	\$265,434,084	\$524,658,990
2020	\$261,160,268	\$235,764,072	\$496,924,340
Average	\$222,841,070	\$254,656,587	\$477,497,657

Sources: RESI, REMI PI+

Figure 289: Priority Funding Area (Growth Boundary) Related Benefits (Transportation Sector through Smart Growth) Status Quo—Operation Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	0.0	1,151.4	1,151.4
2011	0.0	1,295.5	1,295.5
2012	0.0	1,361.8	1,361.8
2013	0.0	1,367.0	1,367.0
2014	0.0	1,339.1	1,339.1
2015	0.0	1,296.9	1,296.9
2016	0.0	1,253.9	1,253.9
2017	0.0	1,213.0	1,213.0
2018	0.0	1,174.5	1,174.5
2019	0.0	1,142.4	1,142.4
2020	0.0	1,116.4	1,116.4
Average	0.0	1,246.5	1,246.5

Sources: RESI, REMI PI+

Figure 290: Priority Funding Area (Growth Boundary) Related Benefits (Transportation Sector through Smart Growth) Status Quo—Operation Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$292,241,383	\$292,241,383
2011	\$0	\$335,186,272	\$335,186,272
2012	\$0	\$359,789,935	\$359,789,935
2013	\$0	\$366,402,348	\$366,402,348
2014	\$0	\$363,037,937	\$363,037,937
2015	\$0	\$354,483,799	\$354,483,799
2016	\$0	\$344,731,793	\$344,731,793
2017	\$0	\$334,916,712	\$334,916,712
2018	\$0	\$325,360,955	\$325,360,955
2019	\$0	\$318,130,550	\$318,130,550
2020	\$0	\$313,044,005	\$313,044,005
Average	\$0	\$337,029,608	\$337,029,608

Sources: RESI, REMI PI+

Figure 291: Priority Funding Area (Growth Boundary) Related Benefits (Transportation Sector through Smart Growth) Status Quo—Operation Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$89,481,507	\$89,481,507
2011	\$0	\$104,229,676	\$104,229,676
2012	\$0	\$112,239,816	\$112,239,816
2013	\$0	\$113,692,782	\$113,692,782
2014	\$0	\$111,073,600	\$111,073,600
2015	\$0	\$106,065,159	\$106,065,159
2016	\$0	\$100,311,264	\$100,311,264
2017	\$0	\$94,423,624	\$94,423,624
2018	\$0	\$88,732,646	\$88,732,646
2019	\$0	\$83,888,022	\$83,888,022
2020	\$0	\$80,058,935	\$80,058,935
Average	\$0	\$98,563,366	\$98,563,366

Sources: RESI, REMI PI+

Figure 292: Priority Funding Area (Growth Boundary) Related Benefits (Transportation Sector through Smart Growth) Enhancement—Operation Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	0.0	1,832.7	1,832.7
2011	0.0	2,062.0	2,062.0
2012	0.0	2,167.5	2,167.5
2013	0.0	2,175.8	2,175.8
2014	0.0	2,131.4	2,131.4
2015	0.0	2,064.3	2,064.3
2016	0.0	1,995.8	1,995.8
2017	0.0	1,930.7	1,930.7
2018	0.0	1,869.4	1,869.4
2019	0.0	1,818.3	1,818.3
2020	0.0	1,777.0	1,777.0
Average	0.0	1,984.1	1,984.1

Sources: RESI, REMI PI+

Figure 293: Priority Funding Area (Growth Boundary) Related Benefits (Transportation Sector through Smart Growth) Enhancement—Operation Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$348,864,828	\$348,864,828
2011	\$0	\$400,130,536	\$400,130,536
2012	\$0	\$429,501,300	\$429,501,300
2013	\$0	\$437,394,906	\$437,394,906
2014	\$0	\$433,378,621	\$433,378,621
2015	\$0	\$423,167,069	\$423,167,069
2016	\$0	\$411,525,556	\$411,525,556
2017	\$0	\$399,808,747	\$399,808,747
2018	\$0	\$388,401,507	\$388,401,507
2019	\$0	\$379,770,170	\$379,770,170
2020	\$0	\$373,698,078	\$373,698,078
Average	\$0	\$402,331,029	\$402,331,029

Sources: RESI, REMI PI+

Figure 294: Priority Funding Area (Growth Boundary) Related Benefits (Transportation Sector through Smart Growth) Enhancement—Operation Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$123,252,765	\$123,252,765
2011	\$0	\$143,567,048	\$143,567,048
2012	\$0	\$154,600,298	\$154,600,298
2013	\$0	\$156,601,628	\$156,601,628
2014	\$0	\$152,993,940	\$152,993,940
2015	\$0	\$146,095,260	\$146,095,260
2016	\$0	\$138,169,785	\$138,169,785
2017	\$0	\$130,060,088	\$130,060,088
2018	\$0	\$122,221,275	\$122,221,275
2019	\$0	\$115,548,240	\$115,548,240
2020	\$0	\$110,274,015	\$110,274,015
Average	\$0	\$135,762,213	\$135,762,213

Sources: RESI, REMI PI+

A.7 Innovative Initiatives

Figure 295: Buy Local for GHG Benefits—Investment Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	42.2	41.7	83.9
2011	42.4	41.4	83.8
2012	40.6	39.7	80.3
2013	15.0	14.6	29.7
2014	13.8	13.2	27.0
2015	13.2	12.8	26.1
2016	12.6	12.2	24.8
2017	12.1	11.8	24.0
2018	12.5	12.3	24.8
2019	12.1	11.6	23.6
2020	11.6	11.2	22.8
Average	20.7	20.2	41.0

Sources: RESI, REMI PI+

Figure 296: Buy Local for GHG Benefits—Investment Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$540,594	\$527,521	\$1,068,115
2011	\$556,039	\$542,593	\$1,098,633
2012	\$525,148	\$512,449	\$1,037,598
2013	\$200,792	\$195,937	\$396,729
2014	\$123,564	\$120,576	\$244,141
2015	\$123,564	\$120,576	\$244,141
2016	\$92,673	\$90,432	\$183,105
2017	\$61,782	\$60,288	\$122,070
2018	\$154,455	\$150,720	\$305,176
2019	\$61,782	\$60,288	\$122,070
2020	\$61,782	\$60,288	\$122,070
Average	\$227,471	\$221,970	\$449,441

Sources: RESI, REMI PI+

Economic Impact Analysis for the GGRA 2012 Plan—Appendices A and B
RESI of Towson University

Figure 297: Buy Local for GHG Benefits—Investment Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$417,030	\$406,945	\$823,975
2011	\$482,673	\$471,001	\$953,674
2012	\$509,703	\$497,377	\$1,007,080
2013	\$274,158	\$267,529	\$541,687
2014	\$231,683	\$226,081	\$457,764
2015	\$220,099	\$214,777	\$434,875
2016	\$195,000	\$190,285	\$385,284
2017	\$177,624	\$173,328	\$350,952
2018	\$181,485	\$177,096	\$358,582
2019	\$171,832	\$167,676	\$339,508
2020	\$158,317	\$154,488	\$312,805
Average	\$274,509	\$267,871	\$542,381

Sources: RESI, REMI PI+

Figure 298: Buy Local for GHG Benefits—Operation Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	3.2	2.8	6.0
2011	4.1	3.5	7.5
2012	3.2	2.8	6.0
2013	3.5	2.9	6.4
2014	3.5	2.9	6.4
2015	3.2	2.5	5.7
2016	2.3	1.9	4.2
2017	2.4	2.0	4.4
2018	3.2	2.7	5.9
2019	2.9	2.3	5.2
2020	2.6	2.1	4.6
Average	3.1	2.6	5.7

Sources: RESI, REMI PI+

Figure 299: Buy Local for GHG Benefits—Operation Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$648,928	\$541,257	\$1,190,186
2011	\$698,846	\$582,892	\$1,281,738
2012	\$665,567	\$555,136	\$1,220,703
2013	\$648,928	\$541,257	\$1,190,186
2014	\$632,289	\$527,379	\$1,159,668
2015	\$599,011	\$499,622	\$1,098,633
2016	\$565,732	\$471,865	\$1,037,598
2017	\$565,732	\$471,865	\$1,037,598
2018	\$632,289	\$527,379	\$1,159,668
2019	\$565,732	\$471,865	\$1,037,598
2020	\$565,732	\$471,865	\$1,037,598
Average	\$617,163	\$514,762	\$1,131,925

Sources: RESI, REMI PI+

Figure 300: Buy Local for GHG Benefits—Operation Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$83,196	\$69,392	\$152,588
2011	\$114,394	\$95,414	\$209,808
2012	\$108,155	\$90,210	\$198,364
2013	\$122,714	\$102,353	\$225,067
2014	\$131,034	\$109,292	\$240,326
2015	\$120,634	\$100,618	\$221,252
2016	\$112,315	\$93,679	\$205,994
2017	\$110,235	\$91,944	\$202,179
2018	\$131,034	\$109,292	\$240,326
2019	\$112,315	\$93,679	\$205,994
2020	\$108,155	\$90,210	\$198,364
Average	\$114,016	\$95,099	\$209,115

Sources: RESI, REMI PI+

Economic Impact Analysis for the GGRA 2012 Plan—Appendices A and B
RESI of Towson University

Figure 301: Voluntary Stationary Source Reductions—Investment Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	0.5	0.3	0.8
2011	0.5	0.3	0.7
2012	0.2	0.1	0.4
2013	0.2	0.0	0.3
2014	0.5	0.2	0.6
2015	0.2	0.1	0.3
2016	0.7	0.3	1.0
2017	0.5	0.0	0.4
2018	0.2	-0.2	0.0
2019	0.5	0.2	0.7
2020	-0.1	-0.2	-0.3
Average	0.4	0.1	0.4

Sources: RESI, REMI PI+

Figure 302: Voluntary Stationary Source Reductions—Investment Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$48,375	\$12,661	\$61,035
2011	\$24,187	\$6,330	\$30,518
2012	\$24,187	\$6,330	\$30,518
2013	\$24,187	\$6,330	\$30,518
2014	\$48,375	\$12,661	\$61,035
2015	\$0	\$0	\$0
2016	\$48,375	\$12,661	\$61,035
2017	\$0	\$0	\$0
2018	\$0	\$0	\$0
2019	\$48,375	\$12,661	\$61,035
2020	\$0	\$0	\$0
Average	\$24,187	\$6,330	\$30,518

Sources: RESI, REMI PI+

Figure 303: Voluntary Stationary Source Reductions—Investment Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$12,094	\$3,165	\$15,259
2011	\$12,094	\$3,165	\$15,259
2012	\$0	\$0	\$0
2013	\$12,094	\$3,165	\$15,259
2014	\$12,094	\$3,165	\$15,259
2015	\$12,094	\$3,165	\$15,259
2016	\$24,187	\$6,330	\$30,518
2017	\$24,187	\$6,330	\$30,518
2018	\$12,094	\$3,165	\$15,259
2019	\$24,187	\$6,330	\$30,518
2020	\$24,187	\$6,330	\$30,518
Average	\$15,392	\$4,028	\$19,420

Sources: RESI, REMI PI+

Figure 304: Voluntary Stationary Source Reductions—Operation Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	0.0	0.0	0.0
2011	1.2	0.8	2.0
2012	1.4	1.3	2.7
2013	1.7	1.7	3.4
2014	2.7	2.1	4.9
2015	2.3	1.9	4.2
2016	3.0	2.4	5.4
2017	2.9	2.4	5.2
2018	2.8	2.5	5.3
2019	2.8	2.6	5.4
2020	2.3	1.9	4.3
Average	2.1	1.8	3.9

Sources: RESI, REMI PI+

Figure 305: Voluntary Stationary Source Reductions—Operation Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$99,292	\$83,814	\$183,105
2012	\$165,486	\$139,690	\$305,176
2013	\$198,583	\$167,628	\$366,211
2014	\$281,326	\$237,473	\$518,799
2015	\$264,777	\$223,504	\$488,281
2016	\$297,875	\$251,442	\$549,316
2017	\$297,875	\$251,442	\$549,316
2018	\$330,972	\$279,380	\$610,352
2019	\$364,069	\$307,318	\$671,387
2020	\$297,875	\$251,442	\$549,316
Average	\$236,194	\$199,376	\$435,569

Sources: RESI, REMI PI+

Figure 306: Voluntary Stationary Source Reductions—Operation Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$24,823	\$20,953	\$45,776
2012	\$41,371	\$34,922	\$76,294
2013	\$66,194	\$55,876	\$122,070
2014	\$74,469	\$62,860	\$137,329
2015	\$82,743	\$69,845	\$152,588
2016	\$99,292	\$83,814	\$183,105
2017	\$115,840	\$97,783	\$213,623
2018	\$99,292	\$83,814	\$183,105
2019	\$124,114	\$104,767	\$228,882
2020	\$124,114	\$104,767	\$228,882
Average	\$77,477	\$65,400	\$142,878

Sources: RESI, REMI PI+

Figure 307: PAYD Insurance in Maryland—Investment Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	0.0	0.0	0.0
2011	0.0	0.0	0.0
2012	0.0	0.0	0.0
2013	0.0	0.0	0.0
2014	0.0	0.0	0.0
2015	0.0	0.0	0.0
2016	0.0	0.0	0.0
2017	0.0	0.0	0.0
2018	0.0	0.0	0.0
2019	0.0	0.0	0.0
2020	0.0	0.0	0.0
Average	0.0	0.0	0.0

Sources: RESI, REMI PI+

Figure 308: PAYD Insurance in Maryland—Investment Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$0	\$0	\$0
2013	\$0	\$0	\$0
2014	\$0	\$0	\$0
2015	\$0	\$0	\$0
2016	\$0	\$0	\$0
2017	\$0	\$0	\$0
2018	\$0	\$0	\$0
2019	\$0	\$0	\$0
2020	\$0	\$0	\$0
Average	\$0	\$0	\$0

Sources: RESI, REMI PI+

Figure 309: PAYD Insurance in Maryland—Investment Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$0	\$0	\$0
2013	\$0	\$0	\$0
2014	\$0	\$0	\$0
2015	\$0	\$0	\$0
2016	\$0	\$0	\$0
2017	\$0	\$0	\$0
2018	\$0	\$0	\$0
2019	\$0	\$0	\$0
2020	\$0	\$0	\$0
Average	\$0	\$0	\$0

Sources: RESI, REMI PI+

Figure 310: PAYD Insurance in Maryland—Operation Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	-0.2	-0.2	-0.5
2011	0.0	-0.1	-0.1
2012	-0.2	-0.3	-0.5
2013	-0.5	-0.3	-0.7
2014	0.2	0.1	0.3
2015	0.0	-0.1	-0.1
2016	0.2	0.3	0.6
2017	0.0	-0.2	-0.2
2018	0.0	0.0	0.0
2019	0.0	0.1	0.1
2020	0.3	0.3	0.6
Average	0.0	0.0	0.0

Sources: RESI, REMI PI+

Figure 311: PAYD Insurance in Maryland—Operation Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	-\$27,271	-\$3,247	-\$30,518
2011	-\$27,271	-\$3,247	-\$30,518
2012	-\$54,542	-\$6,493	-\$61,035
2013	-\$54,542	-\$6,493	-\$61,035
2014	\$0	\$0	\$0
2015	-\$54,542	-\$6,493	-\$61,035
2016	\$0	\$0	\$0
2017	\$0	\$0	\$0
2018	\$0	\$0	\$0
2019	\$54,542	\$6,493	\$61,035
2020	\$54,542	\$6,493	\$61,035
Average	-\$9,917	-\$1,181	-\$11,097

Sources: RESI, REMI PI+

Figure 312: PAYD Insurance in Maryland—Operation Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	-\$13,636	-\$1,623	-\$15,259
2011	-\$13,636	-\$1,623	-\$15,259
2012	-\$13,636	-\$1,623	-\$15,259
2013	\$0	\$0	\$0
2014	\$13,636	\$1,623	\$15,259
2015	\$0	\$0	\$0
2016	\$13,636	\$1,623	\$15,259
2017	\$13,636	\$1,623	\$15,259
2018	\$0	\$0	\$0
2019	\$13,636	\$1,623	\$15,259
2020	\$13,636	\$1,623	\$15,259
Average	\$2,479	\$295	\$2,774

Sources: RESI, REMI PI+

Figure 313: Leadership-by-Example-Local Government—Investment Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	123.3	45.3	168.6
2011	125.5	47.0	172.5
2012	124.3	46.1	170.4
2013	122.6	44.7	167.2
2014	120.0	42.4	162.4
2015	116.9	40.3	157.2
2016	114.6	38.9	153.6
2017	113.1	37.9	151.0
2018	111.2	37.1	148.4
2019	109.8	35.9	145.7
2020	109.2	35.3	144.5
Average	117.3	41.0	158.3

Sources: RESI, REMI PI+

Figure 314: Leadership-by-Example-Local Government—Investment Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$9,656,407	\$3,374,599	\$13,031,006
2011	\$9,814,709	\$3,429,920	\$13,244,629
2012	\$9,746,865	\$3,406,211	\$13,153,076
2013	\$9,565,949	\$3,342,986	\$12,908,936
2014	\$9,430,262	\$3,295,568	\$12,725,830
2015	\$9,271,960	\$3,240,247	\$12,512,207
2016	\$9,136,273	\$3,192,829	\$12,329,102
2017	\$9,091,044	\$3,177,023	\$12,268,066
2018	\$9,045,815	\$3,161,216	\$12,207,031
2019	\$9,045,815	\$3,161,216	\$12,207,031
2020	\$9,045,815	\$3,161,216	\$12,207,031
Average	\$9,350,083	\$3,267,548	\$12,617,631

Sources: RESI, REMI PI+

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Figure 315: Leadership-by-Example-Local Government—Investment Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$4,500,293	\$1,572,705	\$6,072,998
2011	\$4,918,662	\$1,718,911	\$6,637,573
2012	\$5,178,729	\$1,809,796	\$6,988,525
2013	\$5,348,338	\$1,869,069	\$7,217,407
2014	\$5,551,869	\$1,940,197	\$7,492,065
2015	\$5,721,478	\$1,999,469	\$7,720,947
2016	\$5,879,780	\$2,054,791	\$7,934,570
2017	\$6,038,081	\$2,110,112	\$8,148,193
2018	\$6,207,690	\$2,169,385	\$8,377,075
2019	\$6,332,070	\$2,212,851	\$8,544,922
2020	\$6,433,836	\$2,248,415	\$8,682,251
Average	\$5,646,439	\$1,973,246	\$7,619,684

Sources: RESI, REMI PI+

Figure 316: Leadership-by-Example-Local Government—Operation Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	0.0	0.0	0.0
2011	0.0	0.0	0.0
2012	0.0	0.0	0.0
2013	0.0	0.0	0.0
2014	0.0	0.0	0.0
2015	0.0	0.0	0.0
2016	0.0	0.0	0.0
2017	0.0	0.0	0.0
2018	0.0	0.0	0.0
2019	0.0	0.0	0.0
2020	1,484.9	352.5	1,837.4
Average	1,484.9	352.5	1,837.4

Sources: RESI, REMI PI+

Figure 317: Leadership-by-Example-Local Government—Operation Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$0	\$0	\$0
2013	\$0	\$0	\$0
2014	\$0	\$0	\$0
2015	\$0	\$0	\$0
2016	\$0	\$0	\$0
2017	\$0	\$0	\$0
2018	\$0	\$0	\$0
2019	\$0	\$0	\$0
2020	\$79,885,067	\$29,428,898	\$109,313,965
Average	\$79,885,067	\$29,428,898	\$109,313,965

Sources: RESI, REMI PI+

Figure 318: Leadership-by-Example-Local Government—Operation Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$0	\$0	\$0
2013	\$0	\$0	\$0
2014	\$0	\$0	\$0
2015	\$0	\$0	\$0
2016	\$0	\$0	\$0
2017	\$0	\$0	\$0
2018	\$0	\$0	\$0
2019	\$0	\$0	\$0
2020	\$75,413,555	\$27,781,635	\$103,195,190
Average	\$75,413,555	\$27,781,635	\$103,195,190

Sources: RESI, REMI PI+

Figure 319: Leadership-by-Example-Federal Government—Investment Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	77.3	28.6	105.9
2011	78.5	29.4	108.0
2012	77.9	28.8	106.8
2013	77.0	28.2	105.2
2014	75.4	27.0	102.5
2015	73.0	25.2	98.2
2016	72.0	24.6	96.6
2017	70.6	23.5	94.1
2018	69.1	22.8	91.9
2019	68.1	22.2	90.3
2020	67.3	21.2	88.5
Average	73.3	25.6	98.9

Sources: RESI, REMI PI+

Figure 320: Leadership-by-Example-Federal Government—Investment Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$6,061,465	\$2,117,246	\$8,178,711
2011	\$6,151,935	\$2,148,846	\$8,300,781
2012	\$6,106,700	\$2,133,046	\$8,239,746
2013	\$6,016,230	\$2,101,445	\$8,117,676
2014	\$5,970,996	\$2,085,645	\$8,056,641
2015	\$5,790,056	\$2,022,444	\$7,812,500
2016	\$5,744,822	\$2,006,643	\$7,751,465
2017	\$5,699,587	\$1,990,843	\$7,690,430
2018	\$5,654,352	\$1,975,043	\$7,629,395
2019	\$5,654,352	\$1,975,043	\$7,629,395
2020	\$5,563,882	\$1,943,442	\$7,507,324
Average	\$5,855,852	\$2,045,426	\$7,901,278

Sources: RESI, REMI PI+

Figure 321: Leadership-by-Example-Federal Government—Investment Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$2,827,176	\$987,521	\$3,814,697
2011	\$3,064,659	\$1,070,473	\$4,135,132
2012	\$3,256,907	\$1,137,625	\$4,394,531
2013	\$3,369,994	\$1,177,125	\$4,547,119
2014	\$3,517,007	\$1,228,476	\$4,745,483
2015	\$3,584,859	\$1,252,177	\$4,837,036
2016	\$3,697,946	\$1,291,678	\$4,989,624
2017	\$3,811,033	\$1,331,179	\$5,142,212
2018	\$3,912,812	\$1,366,729	\$5,279,541
2019	\$3,969,355	\$1,386,480	\$5,355,835
2020	\$4,014,590	\$1,402,280	\$5,416,870
Average	\$3,547,849	\$1,239,249	\$4,787,098

Sources: RESI, REMI PI+

Figure 322: Leadership-by-Example-Federal Government—Operation Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	0.0	0.0	0.0
2011	0.0	0.0	0.0
2012	0.0	0.0	0.0
2013	0.0	0.0	0.0
2014	0.0	0.0	0.0
2015	0.0	0.0	0.0
2016	0.0	0.0	0.0
2017	0.0	0.0	0.0
2018	0.0	0.0	0.0
2019	0.0	0.0	0.0
2020	977.8	280.6	1,258.4
Average	977.8	280.6	1,258.4

Sources: RESI, REMI PI+

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Figure 323: Leadership-by-Example-Federal Government—Operation Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$0	\$0	\$0
2013	\$0	\$0	\$0
2014	\$0	\$0	\$0
2015	\$0	\$0	\$0
2016	\$0	\$0	\$0
2017	\$0	\$0	\$0
2018	\$0	\$0	\$0
2019	\$0	\$0	\$0
2020	\$64,437,579	\$27,664,472	\$92,102,051
Average	\$64,437,579	\$27,664,472	\$92,102,051

Sources: RESI, REMI PI+

Figure 324: Leadership-by-Example-Federal Government—Operation Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$0	\$0	\$0
2013	\$0	\$0	\$0
2014	\$0	\$0	\$0
2015	\$0	\$0	\$0
2016	\$0	\$0	\$0
2017	\$0	\$0	\$0
2018	\$0	\$0	\$0
2019	\$0	\$0	\$0
2020	\$48,114,673	\$20,656,689	\$68,771,362
Average	\$48,114,673	\$20,656,689	\$68,771,362

Sources: RESI, REMI PI+

Figure 325: State of Maryland Initiative to Lead by Example Status Quo—Investment Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	44.9	42.2	87.1
2011	15.7	14.6	30.3
2012	24.7	23.0	47.8
2013	88.9	83.6	172.5
2014	88.1	83.0	171.1
2015	86.3	81.2	167.5
2016	84.0	79.2	163.2
2017	81.8	77.1	158.9
2018	85.9	81.0	166.9
2019	12.6	11.7	24.3
2020	10.3	9.6	19.9
Average	56.7	53.3	110.0

Sources: RESI, REMI PI+

Figure 326: State of Maryland Initiative to Lead by Example Status Quo—Investment Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$2,532,427	\$2,380,903	\$4,913,330
2011	\$865,115	\$813,352	\$1,678,467
2012	\$1,368,454	\$1,286,575	\$2,655,029
2013	\$5,017,666	\$4,717,441	\$9,735,107
2014	\$4,844,643	\$4,554,771	\$9,399,414
2015	\$4,781,726	\$4,495,618	\$9,277,344
2016	\$4,655,891	\$4,377,312	\$9,033,203
2017	\$4,467,138	\$4,199,854	\$8,666,992
2018	\$4,718,808	\$4,436,465	\$9,155,273
2019	\$220,211	\$207,035	\$427,246
2020	\$62,917	\$59,153	\$122,070
Average	\$3,048,636	\$2,866,225	\$5,914,862

Sources: RESI, REMI PI+

Figure 327: State of Maryland Initiative to Lead by Example Status Quo—Investment Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$1,034,205	\$972,325	\$2,006,531
2011	\$414,862	\$390,039	\$804,901
2012	\$639,005	\$600,771	\$1,239,777
2013	\$2,229,637	\$2,096,230	\$4,325,867
2014	\$2,373,167	\$2,231,172	\$4,604,340
2015	\$2,483,273	\$2,334,690	\$4,817,963
2016	\$2,552,089	\$2,399,388	\$4,951,477
2017	\$2,577,649	\$2,423,419	\$5,001,068
2018	\$2,778,198	\$2,611,969	\$5,390,167
2019	\$652,768	\$613,711	\$1,266,479
2020	\$462,050	\$434,404	\$896,454
Average	\$1,654,264	\$1,555,284	\$3,209,548

Sources: RESI, REMI PI+

Figure 328: State of Maryland Initiative to Lead by Example Enhancement—Investment Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	44.9	42.2	87.1
2011	15.7	14.6	30.3
2012	24.7	23.0	47.8
2013	88.9	83.6	172.5
2014	88.1	83.0	171.1
2015	117.7	110.7	228.4
2016	114.6	108.0	222.6
2017	111.6	105.1	216.7
2018	117.2	110.4	227.6
2019	17.2	15.9	33.1
2020	14.1	13.0	27.1
Average	68.6	64.5	133.1

Sources: RESI, REMI PI+

Figure 329: State of Maryland Initiative to Lead by Example Enhancement—Investment Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$2,532,427	\$2,380,903	\$4,913,330
2011	\$865,115	\$813,352	\$1,678,467
2012	\$1,368,454	\$1,286,575	\$2,655,029
2013	\$5,017,666	\$4,717,441	\$9,735,107
2014	\$4,844,643	\$4,554,771	\$9,399,414
2015	\$6,520,535	\$6,130,388	\$12,650,924
2016	\$6,348,942	\$5,969,062	\$12,318,005
2017	\$6,091,553	\$5,727,073	\$11,818,626
2018	\$6,434,739	\$6,049,725	\$12,484,464
2019	\$300,288	\$282,321	\$582,608
2020	\$85,797	\$80,663	\$166,460
Average	\$3,673,651	\$3,453,843	\$7,127,494

Sources: RESI, REMI PI+

Figure 330: State of Maryland Initiative to Lead by Example Enhancement—Investment Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$1,034,205	\$972,325	\$2,006,531
2011	\$414,862	\$390,039	\$804,901
2012	\$639,005	\$600,771	\$1,239,777
2013	\$2,229,637	\$2,096,230	\$4,325,867
2014	\$2,373,167	\$2,231,172	\$4,604,340
2015	\$3,386,281	\$3,183,668	\$6,569,949
2016	\$3,480,121	\$3,271,893	\$6,752,014
2017	\$3,514,976	\$3,304,663	\$6,819,639
2018	\$3,788,452	\$3,561,776	\$7,350,228
2019	\$890,139	\$836,879	\$1,727,018
2020	\$630,068	\$592,369	\$1,222,437
Average	\$2,034,629	\$1,912,890	\$3,947,518

Sources: RESI, REMI PI+

Figure 331: State of Maryland Initiative to Lead by Example Status Quo—Operation Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	0.2	0.5	0.7
2011	0.0	0.0	0.0
2012	0.0	0.1	0.1
2013	0.4	0.5	0.9
2014	1.4	1.4	2.8
2015	0.6	0.5	1.1
2016	-0.1	0.1	0.0
2017	0.4	0.4	0.8
2018	0.7	0.7	1.4
2019	-0.1	-0.1	-0.2
2020	0.0	0.1	0.1
Average	0.3	0.4	0.7

Sources: RESI, REMI PI+

Figure 332: State of Maryland Initiative to Lead by Example Status Quo—Operation Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	-\$13,603	-\$16,914	-\$30,518
2012	\$0	\$0	\$0
2013	-\$27,207	-\$33,828	-\$61,035
2014	-\$81,621	-\$101,484	-\$183,105
2015	-\$81,621	-\$101,484	-\$183,105
2016	-\$81,621	-\$101,484	-\$183,105
2017	-\$81,621	-\$101,484	-\$183,105
2018	-\$54,414	-\$67,656	-\$122,070
2019	-\$81,621	-\$101,484	-\$183,105
2020	-\$54,414	-\$67,656	-\$122,070
Average	-\$50,704	-\$63,043	-\$113,747

Sources: RESI, REMI PI+

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Figure 333: State of Maryland Initiative to Lead by Example Status Quo—Operation Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$3,401	\$4,229	\$7,629
2011	-\$1,700	-\$2,114	-\$3,815
2012	\$0	\$0	\$0
2013	-\$1,700	-\$2,114	-\$3,815
2014	\$5,101	\$6,343	\$11,444
2015	-\$8,502	-\$10,571	-\$19,073
2016	-\$6,802	-\$8,457	-\$15,259
2017	-\$1,700	-\$2,114	-\$3,815
2018	\$0	\$0	\$0
2019	-\$8,502	-\$10,571	-\$19,073
2020	-\$3,401	-\$4,229	-\$7,629
Average	-\$2,164	-\$2,691	-\$4,855

Sources: RESI, REMI PI+

Figure 334: State of Maryland Initiative to Lead by Example Enhancement—Operation Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	0.2	0.5	0.7
2011	0.0	0.0	0.0
2012	0.0	0.1	0.1
2013	0.4	0.5	0.9
2014	1.4	1.4	2.8
2015	0.8	0.7	1.6
2016	-0.1	0.1	0.0
2017	0.5	0.6	1.1
2018	0.9	1.0	1.9
2019	-0.2	-0.1	-0.3
2020	0.0	0.1	0.1
Average	0.4	0.4	0.8

Sources: RESI, REMI PI+

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RESI of Towson University

Figure 335: State of Maryland Initiative to Lead by Example Enhancement—Operation Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	-\$13,603	-\$16,914	-\$30,518
2012	\$0	\$0	\$0
2013	-\$27,207	-\$33,828	-\$61,035
2014	-\$81,621	-\$101,484	-\$183,105
2015	-\$111,301	-\$138,388	-\$249,689
2016	-\$111,301	-\$138,388	-\$249,689
2017	-\$111,301	-\$138,388	-\$249,689
2018	-\$74,201	-\$92,259	-\$166,460
2019	-\$111,301	-\$138,388	-\$249,689
2020	-\$74,201	-\$92,259	-\$166,460
Average	-\$65,094	-\$80,936	-\$146,030

Sources: RESI, REMI PI+

Figure 336: State of Maryland Initiative to Lead by Example Enhancement—Operation Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$3,401	\$4,229	\$7,629
2011	-\$1,700	-\$2,114	-\$3,815
2012	\$0	\$0	\$0
2013	-\$1,700	-\$2,114	-\$3,815
2014	\$5,101	\$6,343	\$11,444
2015	-\$11,594	-\$14,415	-\$26,009
2016	-\$9,275	-\$11,532	-\$20,807
2017	-\$2,319	-\$2,883	-\$5,202
2018	\$0	\$0	\$0
2019	-\$11,594	-\$14,415	-\$26,009
2020	-\$4,638	-\$5,766	-\$10,404
Average	-\$3,120	-\$3,879	-\$6,999

Sources: RESI, REMI PI+

Figure 337: Leadership-by-Example-Maryland Colleges and Universities—Investment Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	74.4	27.5	101.9
2011	75.7	28.6	104.3
2012	75.0	27.8	102.9
2013	74.4	27.5	101.9
2014	72.9	26.2	99.1
2015	70.5	24.6	95.0
2016	69.2	23.8	93.0
2017	68.1	22.8	91.0
2018	67.1	22.4	89.4
2019	65.4	21.1	86.5
2020	65.2	20.6	85.8
Average	70.7	24.8	95.5

Sources: RESI, REMI PI+

Figure 338: Leadership-by-Example-Maryland Colleges and Universities—Investment Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$5,806,837	\$2,036,180	\$7,843,018
2011	\$5,942,405	\$2,083,718	\$8,026,123
2012	\$5,874,621	\$2,059,949	\$7,934,570
2013	\$5,806,837	\$2,036,180	\$7,843,018
2014	\$5,761,648	\$2,020,335	\$7,781,982
2015	\$5,603,485	\$1,964,874	\$7,568,359
2016	\$5,513,106	\$1,933,183	\$7,446,289
2017	\$5,467,917	\$1,917,337	\$7,385,254
2018	\$5,467,917	\$1,917,337	\$7,385,254
2019	\$5,422,727	\$1,901,491	\$7,324,219
2020	\$5,377,538	\$1,885,646	\$7,263,184
Average	\$5,640,458	\$1,977,839	\$7,618,297

Sources: RESI, REMI PI+

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Figure 339: Leadership-by-Example-Maryland Colleges and Universities—Investment Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$2,722,661	\$954,707	\$3,677,368
2011	\$2,937,311	\$1,029,974	\$3,967,285
2012	\$3,129,366	\$1,097,319	\$4,226,685
2013	\$3,264,934	\$1,144,856	\$4,409,790
2014	\$3,377,907	\$1,184,471	\$4,562,378
2015	\$3,468,286	\$1,216,162	\$4,684,448
2016	\$3,547,367	\$1,243,892	\$4,791,260
2017	\$3,660,341	\$1,283,507	\$4,943,848
2018	\$3,773,314	\$1,323,121	\$5,096,436
2019	\$3,818,504	\$1,338,967	\$5,157,471
2020	\$3,886,288	\$1,362,735	\$5,249,023
Average	\$3,416,934	\$1,198,156	\$4,615,090

Sources: RESI, REMI PI+

Figure 340: Leadership-by-Example-Maryland Colleges and Universities—Operation Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	0.0	0.0	0.0
2011	0.0	0.0	0.0
2012	0.0	0.0	0.0
2013	0.0	0.0	0.0
2014	0.0	0.0	0.0
2015	0.0	0.0	0.0
2016	0.0	0.0	0.0
2017	0.0	0.0	0.0
2018	0.0	0.0	0.0
2019	0.0	0.0	0.0
2020	78.0	18.1	96.0
Average	78.0	18.1	96.0

Sources: RESI, REMI PI+

Figure 341: Leadership-by-Example-Maryland Colleges and Universities—Operation Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$0	\$0	\$0
2013	\$0	\$0	\$0
2014	\$0	\$0	\$0
2015	\$0	\$0	\$0
2016	\$0	\$0	\$0
2017	\$0	\$0	\$0
2018	\$0	\$0	\$0
2019	\$0	\$0	\$0
2020	\$4,123,262	\$1,491,972	\$5,615,234
Average	\$4,123,262	\$1,491,972	\$5,615,234

Sources: RESI, REMI PI+

Figure 342: Leadership-by-Example-Maryland Colleges and Universities—Operation Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$0	\$0	\$0
2013	\$0	\$0	\$0
2014	\$0	\$0	\$0
2015	\$0	\$0	\$0
2016	\$0	\$0	\$0
2017	\$0	\$0	\$0
2018	\$0	\$0	\$0
2019	\$0	\$0	\$0
2020	\$3,955,194	\$1,431,158	\$5,386,353
Average	\$3,955,194	\$1,431,158	\$5,386,353

Sources: RESI, REMI PI+

Figure 343: Transportation Climate Initiative—Investment Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	0.0	0.0	0.0
2011	0.0	0.0	0.0
2012	0.0	0.0	0.0
2013	0.0	0.0	0.0
2014	0.0	0.0	0.0
2015	0.0	0.0	0.0
2016	0.0	0.0	0.0
2017	0.0	0.0	0.0
2018	0.0	0.0	0.0
2019	0.0	0.0	0.0
2020	0.0	0.0	0.0
Average	0.0	0.0	0.0

Sources: RESI, REMI PI+

Figure 344: Transportation Climate Initiative—Investment Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$0	\$0	\$0
2013	\$0	\$0	\$0
2014	\$0	\$0	\$0
2015	\$0	\$0	\$0
2016	\$0	\$0	\$0
2017	\$0	\$0	\$0
2018	\$0	\$0	\$0
2019	\$0	\$0	\$0
2020	\$0	\$0	\$0
Average	\$0	\$0	\$0

Sources: RESI, REMI PI+

Figure 345: Transportation Climate Initiative—Investment Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$0	\$0	\$0
2013	\$0	\$0	\$0
2014	\$0	\$0	\$0
2015	\$0	\$0	\$0
2016	\$0	\$0	\$0
2017	\$0	\$0	\$0
2018	\$0	\$0	\$0
2019	\$0	\$0	\$0
2020	\$0	\$0	\$0
Average	\$0	\$0	\$0

Sources: RESI, REMI PI+

Figure 346: Transportation Climate Initiative—Operation Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	0.0	0.0	0.0
2011	0.0	0.0	0.0
2012	0.0	0.0	0.0
2013	0.6	0.6	1.4
2014	1.4	0.3	1.7
2015	0.6	0.3	0.9
2016	2.0	0.9	2.6
2017	1.4	0.6	1.7
2018	0.6	0.0	0.6
2019	0.6	0.0	0.9
2020	0.6	0.0	0.6
Average	1.0	0.3	1.3

Sources: RESI, REMI PI+

Figure 347: Transportation Climate Initiative—Operation Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$0	\$0	\$0
2013	\$63,960	\$23,231	\$87,194
2014	\$127,920	\$46,466	\$174,386
2015	\$0	\$0	\$0
2016	\$127,920	\$46,466	\$174,386
2017	\$127,920	\$46,466	\$174,386
2018	\$0	\$0	\$0
2019	\$127,920	\$46,466	\$174,386
2020	\$0	\$0	\$0
Average	\$18,316	\$6,653	\$98,092

Sources: RESI, REMI PI+

Figure 348: Transportation Climate Initiative—Operation Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$0	\$0	\$0
2013	\$63,960	\$23,231	\$87,194
2014	\$31,980	\$11,617	\$43,597
2015	\$31,980	\$11,617	\$43,597
2016	\$95,940	\$34,849	\$130,789
2017	\$127,920	\$46,466	\$174,386
2018	\$31,980	\$11,617	\$43,597
2019	\$63,960	\$23,231	\$87,194
2020	\$63,960	\$23,231	\$87,194
Average	\$46,516	\$16,896	\$87,194

Sources: RESI, REMI PI+

Figure 349: Greenhouse Gas Emissions Inventory Development—Investment Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	16.1	6.1	22.2
2011	16.6	6.5	23.2
2012	16.5	6.5	23.0
2013	16.2	6.3	22.5
2014	16.1	6.0	22.2
2015	15.5	5.4	20.9
2016	15.0	5.3	20.4
2017	14.9	5.1	20.0
2018	15.1	5.4	20.6
2019	14.7	5.2	20.0
2020	14.4	4.9	19.3
Average	15.6	5.7	21.3

Sources: RESI, REMI PI+

Figure 350: Greenhouse Gas Emissions Inventory Development —Investment Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$1,250,023	\$458,961	\$1,708,984
2011	\$1,272,345	\$467,157	\$1,739,502
2012	\$1,316,988	\$483,549	\$1,800,537
2013	\$1,272,345	\$467,157	\$1,739,502
2014	\$1,294,667	\$475,353	\$1,770,020
2015	\$1,205,379	\$442,570	\$1,647,949
2016	\$1,205,379	\$442,570	\$1,647,949
2017	\$1,205,379	\$442,570	\$1,647,949
2018	\$1,205,379	\$442,570	\$1,647,949
2019	\$1,250,023	\$458,961	\$1,708,984
2020	\$1,205,379	\$442,570	\$1,647,949
Average	\$1,243,935	\$456,726	\$1,700,661

Sources: RESI, REMI PI+

Figure 351: Greenhouse Gas Emissions Inventory Development —Investment Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$580,368	\$213,089	\$793,457
2011	\$625,011	\$229,481	\$854,492
2012	\$691,977	\$254,068	\$946,045
2013	\$714,299	\$262,264	\$976,563
2014	\$725,460	\$266,362	\$991,821
2015	\$747,782	\$274,557	\$1,022,339
2016	\$758,942	\$278,655	\$1,037,598
2017	\$792,425	\$290,949	\$1,083,374
2018	\$825,908	\$303,242	\$1,129,150
2019	\$837,069	\$307,340	\$1,144,409
2020	\$825,908	\$303,242	\$1,129,150
Average	\$738,650	\$271,205	\$1,009,854

Sources: RESI, REMI PI+

Figure 352: Greenhouse Gas Emissions Inventory Development —Operation Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	0.0	0.0	0.0
2011	0.0	0.0	0.0
2012	0.0	0.0	0.0
2013	0.0	0.0	0.0
2014	0.0	0.0	0.0
2015	0.0	0.0	0.0
2016	0.0	0.0	0.0
2017	0.0	0.0	0.0
2018	0.0	0.0	0.0
2019	0.0	0.0	0.0
2020	0.0	0.0	0.0
Average	0.0	0.0	0.0

Sources: RESI, REMI PI+

Figure 353: Greenhouse Gas Emissions Inventory Development —Operation Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$0	\$0	\$0
2013	\$0	\$0	\$0
2014	\$0	\$0	\$0
2015	\$0	\$0	\$0
2016	\$0	\$0	\$0
2017	\$0	\$0	\$0
2018	\$0	\$0	\$0
2019	\$0	\$0	\$0
2020	\$0	\$0	\$0
Average	\$0	\$0	\$0

Sources: RESI, REMI PI+

Figure 354: Greenhouse Gas Emissions Inventory Development —Operation Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$0	\$0	\$0
2013	\$0	\$0	\$0
2014	\$0	\$0	\$0
2015	\$0	\$0	\$0
2016	\$0	\$0	\$0
2017	\$0	\$0	\$0
2018	\$0	\$0	\$0
2019	\$0	\$0	\$0
2020	\$0	\$0	\$0
Average	\$0	\$0	\$0

Sources: RESI, REMI PI+

A.8 Outreach

Figure 355: Outreach and Public Education—Investment Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	0.0	0.0	0.0
2011	0.0	0.0	0.0
2012	0.0	0.0	0.0
2013	0.0	0.0	0.0
2014	0.0	0.0	0.0
2015	0.0	0.0	0.0
2016	0.0	0.0	0.0
2017	0.0	0.0	0.0
2018	0.0	0.0	0.0
2019	0.0	0.0	0.0
2020	0.0	0.0	0.0
Average	0.0	0.0	0.0

Sources: RESI, REMI PI+

Figure 356: Outreach and Public Education—Investment Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$0	\$0	\$0
2013	\$0	\$0	\$0
2014	\$0	\$0	\$0
2015	\$0	\$0	\$0
2016	\$0	\$0	\$0
2017	\$0	\$0	\$0
2018	\$0	\$0	\$0
2019	\$0	\$0	\$0
2020	\$0	\$0	\$0
Average	\$0	\$0	\$0

Sources: RESI, REMI PI+

Figure 357: Outreach and Public Education—Investment Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$0	\$0	\$0
2013	\$0	\$0	\$0
2014	\$0	\$0	\$0
2015	\$0	\$0	\$0
2016	\$0	\$0	\$0
2017	\$0	\$0	\$0
2018	\$0	\$0	\$0
2019	\$0	\$0	\$0
2020	\$0	\$0	\$0
Average	\$0	\$0	\$0

Sources: RESI, REMI PI+

Figure 358: Outreach and Public Education—Operation Phase, Employment Impacts

Fiscal Year	Direct	Spinoff	Total
2010	0.0	0.0	0.0
2011	0.0	0.0	0.0
2012	0.1	0.0	0.1
2013	0.0	0.0	0.0
2014	0.0	0.0	0.0
2015	0.0	0.0	0.0
2016	0.0	-0.1	-0.1
2017	0.3	0.1	0.4
2018	0.3	0.1	0.4
2019	0.0	0.2	0.3
2020	0.1	0.0	0.1
Average	0.1	0.0	0.1

Sources: RESI, REMI PI+

Figure 359: Outreach and Public Education—Operation Phase, Output Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$0	\$0	\$0
2013	\$0	\$0	\$0
2014	\$23,703	\$6,815	\$30,518
2015	\$0	\$0	\$0
2016	\$0	\$0	\$0
2017	\$0	\$0	\$0
2018	\$0	\$0	\$0
2019	\$47,406	\$13,629	\$61,035
2020	\$47,406	\$13,629	\$61,035
Average	\$10,774	\$3,098	\$13,872

Sources: RESI, REMI PI+

Figure 360: Outreach and Public Education—Operation Phase, Wage Impacts

Fiscal Year	Direct	Spinoff	Total
2010	\$0	\$0	\$0
2011	\$0	\$0	\$0
2012	\$0	\$0	\$0
2013	\$0	\$0	\$0
2014	\$0	\$0	\$0
2015	\$0	\$0	\$0
2016	\$0	\$0	\$0
2017	\$11,851	\$3,407	\$15,259
2018	\$0	\$0	\$0
2019	\$23,703	\$6,815	\$30,518
2020	\$11,851	\$3,407	\$15,259
Average	\$4,310	\$1,239	\$5,549

Sources: RESI, REMI PI+

Appendix B—Methodology

B.1 General Overview

Several Maryland state agencies have several strategies and subprograms in place to aid The State in meeting its greenhouse gas emissions reduction goals. In some cases, state government agencies associated with these subject areas are developing enhancements to their strategies and subprograms to bridge the gap between achieved emissions reductions and emissions reduction targets.

Greenhouse gas emission reductions are calculated for each strategy/subprogram, but data is supplied by each state agency that is responsible for the given strategy. As such, RESI, in coordination with MDE, developed a methodology to analyze the reported data. Through this coordinated effort, RESI and MDE determined two phases to be modeled for each strategy and subprogram: an investment phase and an operation phase. For each phase, where applicable, RESI disseminated the data related to a “status quo,” meeting the current baseline reductions, and an “enhanced,” a scenario where Maryland may be able to achieve higher reductions.

Investment Phase

The investment phase refers to the entire period during which a strategy and its subprograms are being developed, invested in, and enacted. In other words, it is the period during which the implementing entity or entities, whether it be state government agency or agencies, a business entity or entities required to comply, and/or some other individual or group(s), will invest funds and effort into the appropriate sector(s) of the economy to achieve the requirements outlined for the strategy and subprograms.

In all cases, the investment values were discussed with state agencies and data was provided that could best describe that period of time. In addition, it should be noted that “investment” is not necessarily modeled as a positive inflow of capital for all industry sectors identified in Section B.3. In some cases, “investment” is the outflow of capital for those industries for which strategy compliance is mandated. This causes an inflow of capital for all industry sectors experiencing a positive change due to other industries’ mandated compliance. In some cases, investment originates in the private sector. This may lead to increases or decreases in employment, output, or wages during the investment phase. Interactions among agencies and their ability to impact Maryland’s economy will determine the level of change to these economic indicators.

In other words, some industry sectors are more responsive to variations in the economy, which determines the degree to which employment, output, and wages are impacted. If a more sensitive sector experiences a negative change (or an outflow of capital), the associated negative impacts outweigh the positive change experienced by a less sensitive, benefitting sector (one experiencing an inflow of capital).

Operation Phase

The operation phase refers to the period during which a strategy and its subprograms have already been implemented and the “end user” cost savings (or other monetary benefits) are being realized. In other words, it is the period during which the goals of the strategy and subprograms have been achieved and individuals and/or business entities are realizing cost savings, increased income, etc.

In most cases, this phase is modeled based on the level of savings, increased earnings, or some other measure as calculated from data included in the strategy write-ups supplied by MDE, the implementing agencies, and external research. Therefore, the economic impacts represented are the total actual annual economic impacts unless otherwise specified.

An example of the steps undertaken by RESI and their results for one strategy with all of its subprograms for both phases can be found in Section B.2.

B.2 REMI PI+ Model

Overview

To achieve the most concise analysis of program interaction and other factors, RESI will use the Regional Economic Models, Inc. (REMI) PI+ model version 1.6 to analyze data for the 2014 report. The REMI model is a dynamic modeling tool used by various government agencies and state departments in economic policy analysis. REMI will help RESI to build from its base model in the previous report to create a sophisticated model that is calibrated to the specific demographic features of Maryland.

The REMI model features the ability to capture price effects, wage changes, and behavioral effects through time. The model will also allow RESI to capture the effects occurring between industries and minimize the potential for double counting in employment, output, and wages. The ability to capture effects across time will give MDE a detailed representation of the GGRA programs and their effects on Maryland in the longer term.

The model details the impacts based on two categories: direct and spinoff effects. The spinoff effects are defined as intermediate effects plus induced effects. REMI defines the intermediate effects as the purchase of intermediate goods associated with production. For example, a company may be hired to manufacture blue recycling bins that will be used in office buildings associated with the *Recycling and Source Reduction* policy. The purchase of the bins would be considered a direct effect, but the purchase of the materials to produce the bins is considered an intermediate effect.

REMI defines the induced effects as the economic effects that occur from the spending of wages. For example, an employee hired under the *Voluntary Stationary Source Reductions* policy earns a wage, and with this new wage may go out to dinner once a week. The spending of the employee’s wage on dinner is considered an induced effect.

Using the REMI model, RESI will create a dynamic impact analysis detailing the levels of employment, output, and wages associated with each policy for each year from 2008 to 2025.

Reading the Results

REMI uses a regional control based on historical Bureau of Economic Analysis data to forecast values for employment, wages, and output. When economic values are decreased or increased based on parameters from the user in the regional simulation, the forecast is then altered to reflect the changes made by the user.

REMI reports cumulative and non-cumulative results based on the different economic factors being reviewed. In REMI, the results that would be reported as non-cumulative would be population and employment. All other results are viewed as cumulative.

For example, for a policy that increases government spending in 2010 and 2011, the results report an increase of 100 jobs in 2010 and 120 jobs in 2011. These new jobs are the difference from the baseline for that year, not the subsequent year. Therefore, the 100 jobs in 2010 are 100 new jobs for 2010, and the 120 jobs in 2011 are 120 new jobs in 2011. The difference, 20 jobs, would be the estimated increase between the years in the simulation. The 100 jobs would be considered retained employment.

Wages and output are cumulative and build from one year to the next in the REMI model. If the previously mentioned policy notes that the wages in 2010 were \$250,000 and then grew to \$500,000 in 2011, this would be an increase of \$500,000 from the previous year. The model has taken into account the change in the wages from the previous year, and the new number reported would be the increase on an annual basis. When reading this result you would say, “Wages in 2011 increased by \$500,000.”

Figure 361: Sampling of REMI PI+ Users

<p>Academic Institutions</p> <p>Arizona State University Ball State University Costal Rivers Water Planning and Policy Center Florida State University Georgia State University Massachusetts Institute of Technology Michigan Small Business & Technology Development Center Michigan Technological University Pennsylvania State University Southwestern Oklahoma State University University of Southern Maine University New Hampshire University of Arkansas at Little Rock University of California, Davis University of Connecticut University of Nevada, Las Vegas University of Pittsburgh University of South Dakota University of Western Florida University South Florida York College of Pennsylvania</p> <p>Federal Government</p> <p>U.S. Army Corps of Engineers U.S. Environmental Protection Agency</p> <p>State Government</p> <p>Arizona Department of Commerce Arizona Department of Planning Arizona Joint Legislative Budget Committee</p>	<p>State Government</p> <p>Connecticut Department of Economic and Community Development District of Columbia Empire State Development Corporation Florida Agency for Workforce Innovation Florida Legislature Hawaii Department of Business, Economic Development & Tourism Illinois Department of Commerce and Economic Opportunity Illinois Department of Revenue Indiana Department of Transportation Iowa Department of Revenue</p> <p>Private Consulting Firms</p> <p>Alliance Transportation Group Bechtel SAIC Company, LLC. Cambridge Systematics, Inc. CSA Planning Economic & Policy Resources Economic Development Research Group Economic Research Associates ERG Ernst & Young HR&A Advisors, Inc. ICF International Kavet, Rockler & Associates, Inc. NERA Economic Consulting Northern Economics REMI-Northwest RKG Associates, Inc. Stratus Consulting Wilbur Smith Associates</p>
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Source: REMI

B.3 REMI PI+ Industry Sectors

RESI determined the industry sectors which would be affected by strategy implementation for both the investment phase and the operation phase for each strategy and subprogram. A complete list of these sectors can be found in Figures 356 and 357.

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Figure 362: REMI PI+ Industry Codes—Investment Phase

Strategy	Subprogram	Code	Description
Energy			
3.1.1	Regional Greenhouse Gas Initiative	63	State Government Spending
3.1.2	Greenhouse Gas Reductions from Imported Power	X7809	Production costs, Electrical power distribution, transmission, and generation
3.1.3	Greenhouse Gas New Source Performance Standard	63	State Government Spending
3.1.4	Maximum Achievable Control Technology (MACT)	63	State Government Spending
3.1.5	EmPOWER Maryland Energy Efficiency in the Residential Sector	98	Investment Spending (Residential)
		63	State Government Spending (Transfer of funds from SEIF)
3.1.6	EmPOWER Energy Efficiency in the Commercial and Industrial Sectors	63	State Government Spending
		98	Investment Spending (Non-residential)
3.1.7	Energy Efficiency Appliances and Other Products	605	Consumer Spending on Household Appliances
3.1.8	Energy Efficiency in the Power Sector – General	X7809	Production costs, Electrical power distribution, transmission, and generation
3.1.9	Maryland Renewable Energy Portfolio Standard	EQP 13	Producer’s Durable Equipment Investment, Electric distribution, transmission, and generation
		X7809	Production costs, Electrical power distribution,

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Strategy	Subprogram	Code	Description
			transmission, and generation
3.1.10	Incentives and Grant Subprograms to Support Renewable Energy	98	Investment Spending (Residential)
		99	Investment Spending (Non-residential)
		63	State Government Spending
3.1.11	Offshore Wind Initiatives to Support Renewable Energy	EQP 13	Producer’s Durable Equipment Investment, Electric distribution, transmission, and generation
3.1.12	Title V Permits	63	State Government Spending
3.1.13	BeSMART	63	State Government Spending
		98	Investment Spending (Residential)
3.1.14	Weatherization and Energy Efficiency for Low-Income Houses	63	State Government Spending
		98	Investment Spending (Residential)
3.1.15	GHG Prevention of Significant Deterioration Permitting Program	63	State Government Spending
Transportation			
3.2.1	Transportation Technology Initiatives	X3317	Architectural, engineering, and related services
		X3212	Construction
		34	Household disposable income
3.2.2	Public Transportation Initiatives	X3317	Architectural, engineering, and related services
		X3212	Construction

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Strategy	Subprogram	Code	Description
		34	Household disposable income
3.2.3	Intercity Transportation Initiatives	X3317	Architectural, engineering, and related services
		X3212	Construction
		34	Household disposable income
3.2.4	Pricing Initiatives	-	<i>No Investment Spending Specified</i>
3.2.5	Bike and Pedestrian Initiatives	X3317	Architectural, engineering, and related services
		X3212	Construction
		34	Household disposable income
Agriculture			
3.3.1	Creating Ecosystem Markets to Encourage GHG Emissions Reductions	X6532	Exogenous Final Demand (Other professional, scientific, and technical services)
3.3.2	Nutrient Trading for GHG Benefits	X6532	Exogenous Final Demand (Other professional, scientific, and technical services)
3.3.3	Managing Forests to Capture Carbon	X6412	Exogenous Final Demand (Construction)
		X6526	Exogenous Final Demand (Architectural, engineering, and related services)
		X3203	Exogenous Final Demand (Support activities for agriculture)
3.3.4	Increasing Urban Trees to Capture Carbon	X6412	Exogenous Final Demand (Construction)

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Strategy	Subprogram	Code	Description
		X6526	Exogenous Final Demand (Architectural, engineering, and related services)
		X3203	Exogenous Final Demand (Support activities for agriculture)
3.3.5	Creating and Protecting Wetlands and Waterway Borders to Capture Carbon	63	State Government Spending
3.3.6	Geological Opportunities to Store Carbon	X6530	Exogenous Final Demand (Scientific and professional services)
3.3.7	Planting Forests in Maryland	X3203	Industry Sales, Support activities for agriculture
3.3.8	Biomass for Energy Production	99	Investment Spending (Non-residential)
3.3.9	Conservation of Agricultural Land for GHG Benefits	X3203	Industry Sales, Support activities for agriculture
Recycling			
3.4.1	Recycling and Source Reduction	99	Investment Spending (Non-residential)
Buildings			
3.5.1	Building and Trade Codes in Maryland	X4012	Industry Employment (Construction)
Land Use			
3.6.1	Reducing Emissions through Smart Growth and Land Use/Location Efficiency	X6412 DIND15	Exogenous Final Demand (Construction) Detailed Industry Sales (Water,

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Strategy	Subprogram	Code	Description
	(Include Land Use Planning and Growth Boundary GHG Benefits)	99	sewage, and other systems) Investment Spending (Non-residential)
3.6.2	Priority Funding Area (Growth Boundary) Related Benefits (Transportation Sector through Smart Growth)	X6412	Exogenous Final Demand (Construction)
		DIND15	Detailed Industry Sales (Water, sewage, and other systems)
		98	Investment Spending (Residential)
Innovative Initiatives			
3.7.1	Buy Local for GHG Benefits	63	State Government Spending
		X3203	Industry Sales, Support activities for agriculture
3.7.2	Voluntary Stationary Source Reductions	63	State Government Spending
3.7.3	PAYD Insurance in Maryland	-	<i>No Investment Spending Specified</i>
3.7.4	Leadership-by-Example – Local Government	65	Local Government Spending
3.7.5	Leadership-by-Example – Federal Government	68	Government Spending including Non-Pecuniary (Amenity) Aspects
3.7.6	Lead-by-Example: State of Maryland Initiatives and Carbon Footprint	63	State Government Spending
3.7.7	Leadership-by-Example – Maryland University Lead-by-	X5212	Firm Sales (Construction)

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Strategy	Subprogram	Code	Description
	Example Initiatives		
3.7.8	Transportation and Climate Initiative	-	<i>No investment costs specified</i>
3.7.9	Greenhouse Gas Emissions Inventory Development	X6532	Exogenous Final Demand (Other professional, scientific, and technical services)
Outreach			
3.8.1	Outreach and Public Education	-	<i>No investment costs specified</i>

Sources: REMI PI+, RESI

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Figure 363: REMI PI+ Industry Codes—Operation Phase

Strategy	Subprogram	Code	Description
Energy			
3.1.1	Regional Greenhouse Gas Initiative	X7809	Production costs, Electrical power distribution, transmission, and generation
3.1.2	Greenhouse Gas Reductions from Imported Power	63	State Government Spending
3.1.3	Greenhouse Gas New Source Performance Standard	X7809	Production costs, Electrical power distribution, transmission, and generation
3.1.4	Maximum Achievable Control Technology (MACT)	EQP 13	Producer's Durable Equipment Investment, Electric distribution, transmission, and generation
3.1.5	EmPOWER Maryland Energy Efficiency in the Residential Sector	78	Consumer spending reallocation
		638	Consumer spending electricity
3.1.6	EmPOWER Energy Efficiency in the Commercial and Industrial Sectors	80	Electricity Costs (Industrial Sectors)
		82	Electricity Costs (Commercial Sectors)
3.1.7	Energy Efficiency Appliances and Other Products	78	Consumer spending reallocation
		638	Consumer spending electricity
3.1.8	Energy Efficiency in the Power Sector – General	X7809	Production costs, Electrical power distribution, transmission, and generation
3.1.9	Maryland Renewable Energy Portfolio Standard	X7809	Production costs, Electrical power distribution,

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Strategy	Subprogram	Code	Description
		63	transmission, and generation State Government Spending
3.1.10	Incentives and Grant Subprograms to Support Renewable Energy	80	Electricity Costs (Industrial Sectors)
		82	Electricity Costs (Commercial Sectors)
		78	Consumer spending reallocation
		638	Consumer spending electricity
3.1.11	Offshore Wind Initiatives to Support Renewable Energy	X7809	Production costs, Electrical power distribution, transmission, and generation
3.1.12	Title V Permits	63	State Government Spending
3.1.13	BeSMART	78	Consumer spending reallocation
		638	Consumer spending electricity
3.1.14	Weatherization and Energy Efficiency for Low-Income Houses	78	Consumer spending reallocation
		638	Consumer spending electricity
3.1.15	GHG Prevention of Significant Deterioration Permitting Program	63	State Government Spending
Transportation			
3.2.1	Transportation Technology Initiatives	623	Consumer Spending—Gasoline and oil
		X6495	Transit and ground passenger transportation
		78	Consumption reallocation

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Strategy	Subprogram	Code	Description
3.2.2	Public Transportation Initiatives	623	Consumer Spending—Gasoline and oil
		X6495	Transit and ground passenger transportation
		78	Consumption reallocation
3.2.3	Intercity Transportation Initiatives	623	Consumer Spending—Gasoline and oil
		X6495	Transit and ground passenger transportation
		78	Consumption reallocation
3.2.4	Pricing Initiatives	-	<i>No Operation Spending Specified</i>
3.2.5	Bike and Pedestrian Initiatives	623	Consumer Spending—Gasoline and oil
		78	Consumption reallocation
Agriculture			
3.3.1	Creating Ecosystem Markets to Encourage GHG Emissions Reductions	88	Production costs (Industrial sectors)
		90	Production costs (Commercial sectors)
3.3.2	Nutrient Trading for GHG Benefits	X7801	Production costs (Forestry; fishing; hunting; and trapping)
3.3.3	Managing Forests to Capture Carbon	X3203	Support activities for agriculture
3.3.4	Increasing Urban Trees to Capture Carbon	X3203	Support activities for agriculture
3.3.5	Creating and Protecting Wetlands and Waterway	X3203	Support activities for agriculture

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Strategy	Subprogram	Code	Description
	Borders to Capture Carbon		
3.3.6	Geological Opportunities to Store Carbon	X3203	Support activities for agriculture
3.3.7	Planting Forests in Maryland	X3203	Support activities for agriculture
3.3.8	Biomass for Energy Production	X3203	Support activities for agriculture
3.3.9	Conservation of Agricultural Land for GHG Benefits	X3203	Support activities for agriculture
Recycling			
3.4.1	Recycling and Source Reduction	99	Investment Spending (Non-residential)
Buildings			
3.5.1	Building and Trade Codes in Maryland	X4012	Industry Employment (Construction)
Land Use			
3.6.1	Reducing Emissions through Smart Growth and Land Use/Location Efficiency (Include Land Use Planning and Growth Boundary GHG Benefits)	45	Investment spending (residential capital)
		623	Consumer spending—Gasoline and oil
		78	Consumption reallocation
3.6.2	Priority Funding Area (Growth Boundary) Related Benefits (Transportation Sector through Smart Growth)	45	Investment spending (residential capital)
		623	Consumer spending—Gasoline and oil
		78	Consumption reallocation

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Strategy	Subprogram	Code	Description
Innovative Initiatives			
3.7.1	Buy Local for GHG Benefits	617	Consumer spending—Food and nonalcoholic beverages purchased for off-premises consumption
		78	Consumption reallocation
3.7.2	Voluntary Stationary Source Reductions	63	State Government Spending
3.7.3	PAYD Insurance in Maryland	617	Consumer spending—Food and nonalcoholic beverages purchased for off-premises consumption
		78	Consumption reallocation
3.7.4	Leadership-by-Example – Local Government	X6409	Industry demand-Electric power generation, transmission, and distribution
		65	Local Government Spending
3.7.5	Leadership-by-Example – Federal Government	68	Government Spending including Non-Pecuniary (Amenity) Aspects
		X6409	Industry demand-Electric power generation, transmission, and distribution
3.7.6	Lead-by-Example: State of Maryland Initiatives and Carbon Footprint	X6409	Industry demand-Electric power generation, transmission, and distribution
		63	State Government Spending
3.7.7	Leadership-by-Example –	X6409	Industry demand-Electric

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Strategy	Subprogram	Code	Description
	Maryland University Lead-by-Example Initiatives	63	power generation, transmission, and distribution State Government Spending
3.7.8	Transportation and Climate Initiative	63	State Government Spending
3.7.9	Greenhouse Gas Emissions Inventory Development	-	<i>No operation costs specified</i>
Outreach			
3.8.1	Outreach and Public Education	63	State Government Spending

Source: REMI PI+, RESI

B.4 Modeling Example

Overview

For the purpose of providing a transparent and accessible analysis, an example of the steps undertaken by RESI (the modeling assumptions) and their results for one strategy and its subprograms are presented below. First, RESI determined the REMI industry codes which would be affected by the strategy and its subprograms. Next, RESI determined the dollar values to be applied for the investment phase as well as the operation phase. The strategy modeled as an example is “Intercity Transportation Initiatives,” under Transportation.

According to the data provided by MDOT, three subprograms have been designed for this strategy: MARC Station Parking Enhancements, Refurbishing MARC and Other Rail Vehicles, and Update on Maryland High Speed Rail.

Modeling Steps Based on Data Provided

Investment Phase

1. Determine relevant REMI sectors for each program under the policy.
 - a. **Intercity Transportation Initiatives**
 - i. X3317—Architectural, engineering, and related services
 - ii. X3212—Construction
 - iii. 34—Household disposable income
2. Assign data costs per agency provided data to inputs for each program under the policy.
 - a. **Intercity Transportation Initiatives (2010-2014)**
 - i. X3317— \$21,323,000 total from 2010 to 2014
 - ii. X3212— \$267,381,000 total from 2010 to 2014
 - iii. 34— \$1,694,000 total from 2010 to 2014
 - b. **Intercity Transportation Initiatives (2015-2020)**
 - i. X3317— \$92,328,000 total from 2015 to 2020
 - ii. X3212— \$298,480,000 total from 2015 to 2020
 - iii. 34— \$1,100,000 total from 2015 to 2020
3. Input investment by sector into REMI model by year and run impacts.
4. Export impacts and analyze.

Operation Phase

1. Determine relevant REMI sectors.
 - a. **Intercity Transportation Initiatives**
 - i. 623—Consumer Spending—Gasoline and oil
 - ii. X6495—Transit and ground passenger transportation
 - iii. 78—Consumption reallocation
2. Determine part of program to be affected by savings (from strategy write-up).
 - a. **Intercity Transportation Initiatives**
 - i. 623—Reduce fuel spending
 - ii. X6495—Increase public ridership

- iii. 78—Consumption reallocation of spending not used for transit
3. Estimate total annual increase in savings/revenue for each program and then calculate for complete study period (2011-2020)
 - a. **Intercity Transportation Initiatives**
 - i. 623—\$422,730 per year savings
 - ii. X6495—\$211,365 per year spending on public transit
 - iii. 78—\$211,365 per year reallocation
4. Input savings by sector into REMI model and run impacts.
5. Export impacts and analyze.