

State of California
CalRecycle

Proposed Regulations for the Plastic Pollution Prevention and Packaging Producer Responsibility Act

Standardized Regulatory Impact Assessment (SRIA) Addendum

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Executive Summary

This addendum is submitted along with the Standardized Regulatory Impact Assessment (SRIA) for [SB 54 \(Allen, Chapter 75, Statutes of 2022\)](#), the Plastic Pollution Prevention and Packaging Producer Responsibility Act (the Act), to assist the Department of Finance and stakeholders in identifying the economic impacts that have changed since the SRIA was reviewed and approved by the Department of Finance in 2024 based on the previous version of the regulations.

The addendum presents changes to the economic impacts of the Act and Proposed Regulations in two main sections: first, an explanation of the updates to the SRIA report sections and their corresponding data tables; and second, a discussion of how updates to the regulatory language have affected economic impacts, section-by-section.

CalRecycle largely utilized the same assumptions, modeling, and underlying calculation methods for the economic impacts as were used in the 2024 SRIA. The revised economic impacts and benefits conclusions are due primarily to an update in the data constituting the baseline for the analysis and the changed regulatory provisions that are quantifiable in economic terms. Importantly, most of the costs in the original SRIA were based in statutory requirements that have not changed, including costs for source reduction, material switching, and infrastructure. While the revised regulations cannot and do not amend these statutory-based requirements, their impacts have been reevaluated with the new data as explained in this addendum.

The section on “Impacts of Regulatory Changes” catalogues the revisions, and associated economic impacts, of the proposed regulations compared to the regulatory text that was the basis of the prior SRIA. Where the impact of the revisions cannot be quantified, it is described qualitatively.

CalRecycle’s updated estimates for the overall economic impacts, compared to the previous estimates, are:

- Total implementation costs: \$21.0 billion (\$15.3 billion decrease)
- Total benefits: \$53.3 billion (\$13.0 billion increase)

Due to the decrease in total implementation costs, CalRecycle’s average annual cost estimates for businesses and households have also decreased from the previous estimates, as described below:

- Large producer average annual cost: \$406,504 (\$384,224 decrease)
- Small producer average annual cost: \$155 (\$154 decrease)
- Non-regulated business average annual cost: \$4,806 (\$3,505 decrease)
- Household average annual cost: \$190 (\$139 decrease)

Introduction

CalRecycle submitted a Standardized Regulatory Impact Assessment (SRIA)¹ to the Department of Finance in connection with formal rulemaking for [SB 54 \(Allen, Chapter 75, Statutes of 2022\)](#) initiated in 2024. That rulemaking was not completed and informal rulemaking was reinitiated in May 2025 with revised proposed regulatory text (Proposed Regulations). Accordingly, a new SRIA has been drafted. The purpose of this addendum is to assist the Department of Finance and stakeholders in identifying how and why the SRIA economic impact analysis has been updated since review and approval of the 2024 SRIA.

CalRecycle identified several areas from the previous analysis that need to be updated to incorporate newly available data. Due to this, revisions to the economic impact analysis resulted in the following calculation changes:

- Benefits Costs
- Program Administration Costs
- Manufacturing and Production Costs
- Recycling/Composting Infrastructure Costs
- Macroeconomic Impacts
- Alternative 1: Less Stringent Classification of Plastic Covered Materials
- Alternative 2: Higher Frequency of Required Producer Reporting

Extended Producer Responsibility (EPR) laws are inherently performance-based, focusing on achieving environmental outcomes rather than prescribing specific methods of compliance. As a result, they typically allow producers flexibility in how to meet statutory or regulatory targets, which limits the degree to which regulations themselves generate specific costs. In the case of the Act, the primary cost drivers are rooted in statutory mandates, with the regulations serving mainly to operationalize those mandates without imposing substantial new burdens. Therefore, most of the costs identified in CalRecycle's economic impact analyses are linked to statutory requirements.

The costs from the "Costs for Manufacturing and Production" and "Costs for Infrastructure" sections, which reflect statutory source reduction and recycling rate requirements, are not affected by revisions in the regulatory requirements as the regulations continue to simply implement the statutory mandates. While these statutory costs are not impacted by the revisions in the Proposed Regulations, they have been recalculated to reflect new data establishing the baseline for covered material produced in the State.

Where revisions in the Proposed Regulations created economic impacts significant enough to be captured in the SRIA, that impact is quantitatively incorporated into the

SRIA and described in the “2025 Economic Impact Analysis” Section. CalRecycle identified four areas where regulatory requirements led to changed costs that were quantifiable and could thus be incorporated into the economic impact analysis: small producer exemptions, compliance records, covered material records, and producer registration requirements.

Many revisions to the Proposed Regulations have resulted in cost changes that, while minor compared to the economic impacts analyzed in the SRIA, nevertheless constitute adjustments meaningful to stakeholders. CalRecycle has captured these adjustments with section-by-section qualitative descriptions in the “Impacts of Regulatory Changes” section of the Addendum.

2025 Economic Impact Analysis

This section presents the updates to the SRIA report sections and their corresponding data tables. While some content repeats what is already included in the SRIA itself, this discussion is included in the Addendum to help reviewers, particularly the Department of Finance, more easily identify what has changed between the 2024 and 2025 versions and understand how the analysis has been updated.

The most impactful changes to the figures presented in the 2025 SRIA are a result of using updated input data regarding the amount of plastic covered material that constitutes the Baseline. CalRecycle published a Source Reduction Baseline (SRB) study in 2024,² which provides more precisely estimated values for total plastic covered material and total plastic components. As a result, calculations that are dependent on these values have been updated in the Direct Impacts Model (DIM),³ which informs the SRIA. These updates impacted both the direct costs and total benefits calculations.

CalRecycle incorporated the plastic weight and component data from the SRB into the DIM. The SRB plastic weight estimate is considerably lower than CalRecycle’s previous plastic weight estimate, which was based on data from the 2021 Waste Characterization Study (WCS)⁴ and the Recycling and Disposal Reporting System (RDRS).⁵ Cost estimates for source reduction of plastic material, switching hard to recycle plastics to more recyclable materials, and collection, sortation, and processing infrastructure are all calculated based on the amount of plastic covered material and have decreased from previous estimates reported in the 2024 SRIA as a result of the new SRB data. CalRecycle also utilized a more accurate method for estimating benefits, calculating the accumulated amount of plastic avoided from plastic source reduction and increased recycling. Benefits from the proposed regulations are higher than the previous estimate reported in the 2024 SRIA (See Benefits section below for additional information).

Additionally, CalRecycle added estimates of compliance reporting and registration for producers and increased the number of hours for producer annual data reporting. Other

costs, including PRO operations and the Circular Economy Fund, did not change from the values reported in the 2024 SRIA.

Economic Impacts

The 2024 SRIA utilized the 2021 WCS⁶ and 2021 RDRS⁷ data for plastic. Applying more current and accurate data from the SRB⁸ impacted the total implementation cost and total benefits in the addendum, as both were modeled with the amount of estimated plastic covered materials.

Direct costs associated with source reduction and recycling rate goals are included as part of the total implementation cost in the DIM.⁹ When the model was recalculated using the new SRB data, the total direct costs decreased from \$36.3 billion to \$21.0 billion, a reduction of \$15.3 billion.

The total benefits from implementing the Act come primarily from avoiding the environmental and human health impacts associated with virgin plastic production by recycling plastic instead. Changing the source data generated a new calculated total benefit of \$53.3 billion compared to the previous model calculation of \$40.3 billion. This resulted in a net difference of \$13 billion.

Table 1 summarizes the differences between the 2024 and 2025 economic impact analyses.

Table 1: Comparison of Direct Costs, Benefits, and Net Impact from 2024 and 2025 Economic Impact Assessments*

Impact Category	2024 Analysis	2025 Analysis	Difference
Direct Cost	\$36.3 billion	\$21.0 billion	(\$15.3 billion)
Benefits	\$40.3 billion	\$53.3 billion	\$13 billion
Net Impact	\$4 billion	\$32.2 billion	\$28.2 billion

Table 2 summarizes the direct cost for each fiscal year during the Act's implementation period.

Table 2: Direct Cost per Year Summary

Fiscal Year	Direct Cost
2022-2023	\$9,317,168
2023-2024	\$2,375,706,171

* Parentheses represent a negative value

Fiscal Year	Direct Cost
2024-2025	\$2,385,207,100
2025-2026	\$2,383,008,090
2026-2027	\$2,705,561,736
2027-2028	\$2,305,498,653
2028-2029	\$2,299,004,868
2029-2030	\$3,279,581,499
2030-2031	\$3,269,535,673
2031-2032	\$7,538,123
Total	\$21,012,420,957

Benefits

CalRecycle quantified the benefit that the recycling and source reduction of covered material would have on negative environmental and human health impacts using the methods developed by the Oregon Department of Environmental Quality in their Waste Impact Calculator.¹⁰ CalRecycle's previous benefits estimate relied upon the difference between the 2021 and 2031 covered material weight estimates to calculate the impacts of recycling and source reducing covered material. This methodology underestimates the avoided costs of environmental and human health impacts from plastic source reduction and increased recycling of covered material. Using the difference between the baseline scenario and the 2031 estimated covered material weight only estimates the impacts for the final year of implementation and does not capture the avoided negative impacts resulting from incremental source reduction and recycling rate increases throughout the implementation period.

For this addendum, CalRecycle calculated the total amount of plastic avoided by source reduction and the increase in the weight of covered material recycled for each year from 2023-2031. CalRecycle compared the total amount of covered material disposed and recycled expected for each year after source reduction and recycling rate increases and subtracted those values from the baseline value, which is the amount of covered material that would be expected to be disposed and recycled in the absence of the Act and the Proposed Regulations. The yearly differences were summed up to find the total impact of source reduction and increased recycling over the implementation period. Total benefits (avoided costs) are estimated to be \$53.3 billion over the implementation period. The updated avoided cost estimates are described in Table 3.

Table 3: Avoided Costs Through Implementation of the Act

Impact Category	Quantity Reduced (Units)	Damage Cost per Impact Unit (Average)	Benefits Through Implementation (Avoided Cost)
Per- and Polyfluorinated substances	1,274,221 kg	\$19,943	\$25,412,377,447
Litter Cleanup	381 days	\$1,172,603	\$447,022,222
Double Handling Material	107,850 tons per year	\$56	\$6,058,363
Carbon Dioxide (CO2 equivalents)	13,127,904 metric tons	\$251	\$3,295,103,991
Non-Carcinogenic Effects from Toxics	4,463 cases	\$3,565,489	\$15,914,388,431
Respiratory Effects from Particulates (Particulate Matter 2.5 equivalents)	7,656 metric tons	\$607,000	\$4,646,935,012
Carcinogenic Effects from Toxics	623 cases	\$5,181,435	\$3,225,550,387
Ground Level Smog Formation (ozone equivalents)	726,915 metric tons	\$245	\$177,730,769
Waterways Eutrophication (nitrogen equivalents)	6,094 metric tons	\$24,963	\$152,113,613
Aquatic Ecosystems Toxicity (comparative toxicity units)	6,508,487,833 units	\$0.01	\$32,542,439
Acidification (sulfur dioxide equivalents)	68,610 metric tons	\$412	\$28,233,207
Ozone Layer Depletion (Chlorofluorocarbons equivalents)	0.19 metric tons	\$56,880	\$10,731
Total	N/A	N/A	\$53,338,066,613

Table 4 shows a summary of the estimated avoided costs (benefits) per year over the implementation period.

Table 4: Annual Avoided Cost

Year	Total Avoided Cost
2024	\$1,482,851,497
2025	\$2,943,483,273
2026	\$4,381,895,327
2027	\$5,798,087,661
2028	\$7,172,402,715
2029	\$8,527,249,992
2030	\$10,531,949,407
2031	\$12,500,146,741

Direct Costs

Costs to Businesses and Individuals

Estimated average annual costs for large producers, small producers, non-regulated businesses, and households have all decreased from their previous estimates as a result of the decrease in the total direct cost of implementation. These annual costs to businesses and individuals are described in Table 5, along with a comparison to those same costs from the 2024 SRIA.

Table 5: Businesses and Individuals Average Annual Cost Differences[†]

Entity Type	Average Annual Cost 2024	Average Annual Cost 2025	Difference
Large Producer	\$790,728	\$406,504	(\$384,224)
Small Producer	\$309	\$155	(\$154)
Non-Regulated Business	\$8,311	\$4,806	(\$3,505)
Household	\$329	\$190	(\$139)

To determine the maximum impact that consumers could expect to experience due to the Act and the Proposed Regulations, CalRecycle assumed that producers would pass on 100 percent of their implementation costs. Rising prices typically result in decreased demand for goods, so businesses may not be able to pass on the entire cost of EPR

[†] Parentheses represent a negative value

programs to their consumers.¹¹ The amount that a particular business will likely pass on to their customers will vary based on many factors, including price elasticity for the particular product they are selling. Identifying and calculating these price elasticities for all product categories is outside the scope of this analysis; however, a recent study suggests that food and beverage producers may be able to pass on a maximum of 30 percent of EPR compliance costs in the form of increased prices.¹² If all producers of covered material pass on 30 percent of the cost of the Act and the Proposed Regulations, rather than 100 percent, to consumers, the average annual cost to non-regulated businesses (business customers) would decrease from \$4,806 to \$1,442 (a decrease of \$3,364), and the cost to households would decrease from \$190 to \$57 (a decrease of \$133). Due to unavailability of the price elasticity data needed to calculate new pass through allocation, CalRecycle is conservatively using 100 percent in this report.

Costs for Large Producer Reporting

CalRecycle revised large producer annual reporting costs to include data reporting, registration, and compliance costs specified in the Act and the Proposed Regulations. These changes are primarily as result of new requirements related to registering, maintaining contact and business address information, and business status information. There are also additional costs associated with various packaging material recyclability reporting changes. The updated costs include providing data and records related to demonstrating compliance with the Act and the Proposed Regulations to the PRO or CalRecycle. As a result of incorporating these changes in the Proposed Regulations, large producer annual reporting costs increased from \$1,523 to \$2,478.

Costs for Manufacturing and Production

The Act requires that a minimum of 10 percent of the source reduction requirement must be met by either switching to a reusable or refillable system or through elimination of a plastic component.¹³ The costs associated with converting to a reuse or refill system vary according to the number of packages that need to be converted. Since the estimate of the total number of plastic packages has decreased due to the new data in the SRB, there are fewer packages that need to be converted and therefore reduced overall costs. The estimates of the total cost of the reuse and refill system are projected across three scenarios and four packaging industry sectors as described in Table 6. A detailed description of the reuse and refill system modeling methods, including descriptions of the “fragmented effort,” “collaborative approach,” and “system change” scenarios and the packaging industry sectors is available in the 2024 SRIA.¹⁴

Table 6: Total Costs by Scenario and Packaging Industry Sector (Million Dollars)

Packaging Industry Sector	Number of Packages to Be Converted (in Millions)	Fragmented Effort (in Millions)	Collaborative Approach (in Millions)	System Change (in Millions)
Non-Exempt Beverages	1,953	\$273	\$180	\$131
Personal Care	1,709	\$222	\$152	\$124
Fresh Food	1,953	\$191	\$135	\$110
Food Cupboard	469	\$53	\$36	\$28
Total	6,083	\$739	\$504	\$392

Table 7 describes the total implementation costs, in millions of dollars, based on the anticipated primary scenario for reuse or refill infrastructure across the implementation period.

Table 7: Cumulative Implementation Costs for Reuse or Refill Infrastructure (Million Dollars)

Reuse/Refill	2024	2025	2026	2027	2028	2029	2030	2031	Total
Cost	\$99 [‡]	\$99 [‡]	\$99 [‡]	\$67 [§]	\$67 [§]	\$67 [§]	\$39 ^{**}	\$39 ^{**}	\$575

The Act requires that the remainder of the 25 percent plastic weight source reduction goal be achieved through other source reduction options, which include concentration, right-sizing, lightweighting, shifting to bulk or large format packaging, or from shifting plastic covered material to non-plastic covered material.¹⁵ Additionally, the Act requires a 25 percent reduction in the number of plastic components for covered material.¹⁶ CalRecycle's cost estimates for source reduction by weight and number of plastic components have decreased as a result of the decrease in plastic baseline weight and number of components. The costs for source reduction of plastic covered materials are summarized in Table 8.

[‡] Fragmented Effort

[§] Collaborative Approach

^{**} System Change

Table 8: Plastic Covered Material Source Reduction Summary

Category	2023 Baseline (Total)	15% Source Reduction by Weight	10% Reuse or Refill by Weight	25% Source Reduction (Number of Plastic Components)
Plastic Covered Material (Tons)	2.9 million	0.43 million	0.29 million	0.24 million
Plastic Components (Count)	171.4 billion	N/A	N/A	42.9 billion
Plastic Packages (Count)	60.8 billion	9.1 billion	6.1 billion	N/A
Cost (US Dollars)	N/A	\$3.11 billion	\$0.575 billion	\$1.67 billion

In order to meet the plastic recycling rate requirements in the Act,¹⁷ producers will need to switch covered materials that are hard to recycle to more recyclable forms. Material switching cost estimates decreased from CalRecycle's previous estimate as a result of the decrease in the plastic baseline weight. The material switching costs, along with changes in the amounts of plastic covered material and number of packages switched, are described in Table 9.

Table 9: Summary of Recycling Rate Targets and Material Switching Costs

Implementation Date	Plastic CM Recycling Rate	Plastic CM Switched (Tons)	Plastic CM Packages Switched (Count; Running Total)	Switching Cost (Running Total)
Jan 1, 2028	30%	0.559 million	11.9 billion	\$4.1 billion
Jan 1, 2030	40%	0.802 million	17.0 billion	\$5.8 billion
Jan 1, 2032	65%	1.41 million	30.0 billion	\$10.2 billion

Costs for Infrastructure

To meet the Act's recycling rate targets,¹⁸ California will need to develop infrastructure to optimize its recycling and disposal waste streams. CalRecycle has estimated that an additional 1.5 million tons of plastic covered material will need to be recycled to meet

the 65 percent recycling rate target in 2032. The total cost to expand infrastructure is estimated to be \$2.6 billion, which is roughly half of the previous estimate due to the decrease in the plastic baseline weight estimate.

The Act requires local jurisdictions and recycling service providers to collect all covered material categories in their collection and recycling programs.¹⁹ Recycling stream collection costs are estimated to be \$154.8 million; however, there will be savings of \$201.2 million in the reduced disposal stream collection. The net savings associated with changes to collection infrastructure for both the recycling and disposal streams are estimated to be \$46.4 million. The decrease in the plastic baseline weight estimate resulted in lower estimates for the infrastructure needed to accommodate recycled covered material. Table 10 describes the cumulative implementation costs for collection infrastructure by recycling and disposal stream.

Table 10: Cumulative Implementation Costs for Collection Infrastructure by Recycling and Disposal Stream (Million Dollars) ††

Collection	2024	2025	2026	2027	2028	2029	2030	2031	Total
Recycling	\$18	\$18	\$18	\$18	\$17	\$17	\$25	\$24	\$155
Disposal	(\$24)	(\$24)	(\$23)	(\$23)	(\$22)	(\$22)	(\$32)	(\$32)	(\$201)

Expanded sortation infrastructure will be needed to sort and recover the increased tonnages of covered material due to statutory requirements. The total infrastructure cost to meet the new sortation requirements is estimated to be \$938.4 million, nearly 50 percent lower than the previous estimate of \$1.8 billion. By 2032, new construction of eight large, four medium, and two small Material Recovery Facilities (MRFs) and a 53,000 tons per year (TPY) expansion of existing facilities are expected to come online to recover the additional plastic, paper, metal, and glass covered material. Tables 11 and 12 show the regional distribution and accommodation of expansion and capacity needs through various MRF and composting facilities.

Table 11: Estimated Number of MRFs to be Constructed and Expanded by 2032

Region	2032 Capacity Needs (Tons)	Number of Large Facilities (160,000 TPY)	Number of Medium Facilities (72,000 TPY)	Number of Small Facilities (20,000 TPY)	Expansion of Existing Facilities (Tons Needed)
Bay Area	318,434	1	2	0	14,434
Coastal	78,279	0	1	0	6,279
Mountain	22,672	0	0	1	2,672

†† Parentheses represent a negative value

Region	2032 Capacity Needs (Tons)	Number of Large Facilities (160,000 TPY)	Number of Medium Facilities (72,000 TPY)	Number of Small Facilities (20,000 TPY)	Expansion of Existing Facilities (Tons Needed)
Southern	910,918	5	1	1	18,918
Valley	330,858	2	0	0	10,858
Total	1,661,160	8	4	2	53,160

Table 12: Estimated Capacity Needs for Compostable Infrastructure in 2032

Region	2032 Capacity Needs (Tons)
Bay Area	8,412
Coastal	2,289
Mountain	404
Southern	23,545
Valley	10,962
Total	45,612

Table 13 shows the implementation costs, in millions of dollars of sortation and composting infrastructure needed to process increased tonnage.

Table 13: Cumulative Implementation Costs for Sortation and Composting Infrastructure (Million Dollars)

Facility Type	2024	2025	2026	2027	2028	2029	2030	2031	Total
Material Recovery	\$111	\$110	\$108	\$106	\$103	\$102	\$150	\$148	\$938
Compost	\$1.3	\$1.2	\$1.2	\$1.2	\$1.2	\$1.1	\$1.7	\$1.7	\$11
Total	\$112.6	\$110.9	\$109.2	\$107.5	\$104.3	\$102.9	\$152.2	\$149.4	\$949

Costs for processing of covered materials, necessary to accommodate increased volumes of recyclable and compostable materials to meet statutory recycling rate goals, have decreased as a result of the decrease in the plastic baseline weight estimate. The total cost for processing infrastructure is estimated to be \$1.5 billion, a decrease of \$1.4 billion from the previous estimate. The implementation costs for processing infrastructure across implementation years are shown in Table 14.

Table 14: Cumulative Implementation Costs for Processing Infrastructure (Million Dollars)

Cost	2024	2025	2026	2027	2028	2029	2030	2031	Total
Processing	\$178	\$176	\$173	\$170	\$165	\$163	\$241	\$237	\$1,503

Table 15 displays the cost breakdown of processing infrastructure by material type.

Table 15: Cost and Volume for Processing Infrastructure by Material Types

Material Type	Anticipated Increased Volume (Tons)	Commodity Value (\$/Ton)	Conversion Cost (\$/Ton)	Total Processing Cost (\$/Ton)
Plastic	1,325,163	\$294	\$720	\$1,014
Paper	57,265	\$99	\$803	\$902
Metal	50,570	\$711	\$735	\$1,446
Glass	228,163	\$22	\$128	\$150

Fiscal Impacts

Currently, California receives over \$8.3 million in revenue each year from disposal tipping fees.²⁰ CalRecycle expects that this tipping fee revenue will decrease as a result of the Act and the Proposed Regulations. In the 2024 SRIA, CalRecycle estimated this revenue to be approximately \$4.3 million (a loss of around \$4 million in tipping fee revenue due to decreased disposal of covered materials).²¹ CalRecycle revised the tipping fee calculation to include the data in the SRB and estimates tipping fees to be \$6.3 million per year (a loss of around \$2 million) by the end of the implementation period. This reduced impact on tipping fee revenue is a result of the improved data in the SRB.

As discussed in the "Impacts on Individuals in California" subsection of the SRIA Addendum, CalRecycle anticipates growth in personal income for Californians over the Act's implementation period, attributing it to macroeconomic influences. This rise in personal income is expected to contribute to an upswing in state income tax revenue. According to the data related to increased personal income outlined in Table 22, CalRecycle estimated state income tax revenue to increase by almost \$575 million through the implementation period. This increase in state income tax revenue is \$191 million lower than the previous estimate. The expected impact on state income tax revenue for each year of the analysis is provided in Table 16.

Table 16: Estimated Change in Personal Income and State Income Tax Revenue

Year	Change in Personal Income	State Income Tax Revenue
2024	\$155 million	\$6.2 million
2025	\$351 million	\$14.0 million
2026	\$608 million	\$24.3 million
2027	\$1,861 million	\$74.4 million
2028	\$2,112 million	\$84.5 million
2029	\$2,580 million	\$103.2 million
2030	\$3,083 million	\$123.3 million
2031	\$3,617 million	\$144.7 million
Total	N/A	\$574.7 million

Macroeconomic Impacts

This section provides an overview of the anticipated overall impact of the Act and the Proposed Regulations on California's economy, which is expected to result in incremental compliance costs for businesses. These costs will directly affect expenditure in the economy as these costs are passed on to other businesses and individual end-users. These shifts in spending patterns among end-users will have indirect repercussions on employment, economic output, and investments within the sectors that furnish goods and services to the impacted businesses. A summary of these outcomes can be found in the Summary and Interpretation of the Assessment Results section.

Beyond the direct consequences of the Act and the Proposed Regulations, there will be additional indirect and induced effects, including changes in personal income that will impact consumer spending across various expenditure categories. The total incremental economic impacts of the Act and the Proposed Regulations are assessed relative to a baseline, utilizing cost data detailed in the Direct Costs section of the SRIA Addendum.^{‡‡} CalRecycle used Regional Economic Models, Inc. (REMI) Policy Insight Plus Version 2.5.0 to estimate the macroeconomic impacts of the Act and the Proposed Regulations on California's economy. This analysis emphasizes the incremental changes in significant macroeconomic indicators spanning from 2024 to 2034 such as employment, economic output growth, and Gross State Product (GSP). Although implementation of the Act and the Proposed Regulations will be complete at the close of 2031, this analysis extends another 36 months beyond full implementation to identify residual economic effects.

^{‡‡} Refer to the Macroeconomic Appendix for a full list of REMI inputs for this analysis

Inputs and Assumptions of the Assessment

The direct expenses associated with the Act and the Proposed Regulations, elaborated upon in the Direct Costs section, encompass production costs that are essential to meet the source reduction and recycling rates requirements. These production costs are incurred directly by manufacturers, wholesalers, retailers, and food service establishments. These direct production costs are projected to be borne by entities from both California and out-of-state. To isolate the effects specific to California, CalRecycle calculated the portion of production cost that can be attributed to California-based businesses. This calculation is based on California's proportionate share of the total number of entities within each affected industry compared to the national industry total. These production cost values are lower than the values in the previous estimate, as a result of the lower total implementation cost in the current analysis. The estimated direct production costs are illustrated below in Table 17.

Table 17: Direct Production Costs Attributed to California

Industry	US Total Entities	CA Total Entities	Factor	US Total Estimated Production Cost	CA Total Estimated Production Cost
Food Manufacturing	54,406	10,383	0.19	\$389.7 million	\$74.4 million
Converted Paper Product Manufacturing	11,148	1,230	0.11	\$46.2 million	\$5.1 million
Plastics Product Manufacturing	13,336	1425	0.11	\$53.5 million	\$5.7 million
Glass and Glass Product Manufacturing	3,832	532	0.14	\$20.0 million	\$2.8 million
Other Fabricated Metal Product Manufacturing	75,330	8,723	0.12	\$327.4 million	\$37.9 million
Wholesale Trade	914,139	115,416	0.13	\$4.3 billion	\$546.9 million
Retail Trade	2,601,569	314,906	0.12	\$11.8 billion	\$1.4 billion
Food Service Establishments	834,022	107,269	0.13	\$4.0 billion	\$517.8 million

California Employment Impacts

The Act and the Proposed Regulations are anticipated to yield a favorable employment impact starting in 2024 and continuing through 2034. These findings indicate that the estimated positive employment impact stems primarily from increased demand in the paper, glass, aluminum, steel, other metal, and recyclable plastic product manufacturing sectors. The positive impact on employment was also influenced by the costs avoided as detailed in the Benefits section. The total employment impacts of the Act and the Proposed Regulations are similar to those estimated in the previous analysis, with slight differences from year to year. There is no indication that there will be a net elimination of jobs within California. Importantly, these shifts in employment do not surpass 0.15 percent of the baseline employment figures for California throughout the entire regulatory timeline.

The total net employment impacts are shown in Table 18.

Table 18: Total California Employment Impacts

Year	California Employment	Percent Change	Change in Total Jobs
2024	25,179,690	0.01%	2,167
2026	25,471,879	0.03%	7,473
2028	25,723,179	0.09%	24,204
2030	26,111,652	0.12%	31,916
2032	26,507,957	0.09%	22,759
2034	26,852,837	0.07%	19,975

As the requirements of the Act and the Proposed Regulations take effect, the heightened demand within paper, glass, aluminum, steel, other metal, and recyclable plastic product manufacturing sectors will result in increased employment opportunities, similar to the outcomes from the previous analysis. The increased expenditures within these categories play a significant role in shaping the employment impact, as evidenced by the figures for the year 2030.

Table 19 provides a breakdown of employment shifts in industries directly affected by the Act and the Proposed Regulations.

Table 19: Employment Impacts by Primary and Secondary Industries^{ss}

Industry	2024	2026	2028	2030	2032	2034
Food Manufacturing (% Change)	0.00%	0.02%	0.07%	0.10%	0.10%	0.09%
Food Manufacturing (Change in Jobs)	7	32	129	180	185	170
Converted Paper Product Manufacturing (% Change)	0.63%	1.87%	3.08%	4.49%	0.02%	0.03%
Converted Paper Product Manufacturing (Change in Jobs)	133	390	634	915	4	6
Construction (% Change)	0.03%	0.11%	0.32%	0.40%	0.25%	0.14%
Construction (Change in Jobs)	378	1,380	4,046	5,174	3,292	1,843
Glass Product Manufacturing (% Change)	1.98%	5.70%	9.07%	13.06%	(0.07%)	(0.02%)
Glass Product Manufacturing (Change in Jobs)	144	413	648	924	(5)	(1)
Plastics Product Manufacturing (% Change)	0.22%	0.67%	1.11%	1.54%	0.04%	0.04%
Plastics Product Manufacturing (Change in Jobs)	90	267	440	611	14	14
Steel Product Manufacturing (% Change)	0.92%	2.40%	2.91%	3.78%	(0.03%)	(0.01%)
Steel Product Manufacturing (Change in Jobs)	21	56	67	87	(1)	0
Aluminum Production and Processing (% Change)	0.58%	1.63%	3.26%	4.11%	(0.02%)	(0.01%)
Aluminum Production and Processing (Change in Jobs)	19	54	106	132	(1)	0
Other Fabricated Metal Product Manufacturing (% Change)	0.24%	0.74%	1.24%	1.88%	(0.03%)	(0.01%)

^{ss} Parentheses represent a negative value

Industry	2024	2026	2028	2030	2032	2034
Other Fabricated Metal Product Manufacturing (Change in Jobs)	42	131	215	322	(5)	(2)
Wholesale Trade (% Change)	0.01%	0.02%	0.06%	0.08%	0.05%	0.05%
Wholesale Trade (Change in Jobs)	52	165	487	634	383	356
Retail Trade (% Change)	0.00%	0.01%	0.06%	0.07%	0.07%	0.06%
Retail Trade (Change in Jobs)	76	287	1,203	1,549	1,391	1,308
Food Service Establishments (\$ Change)	0.00%	0.02%	0.08%	0.12%	0.14%	0.12%
Food Service Establishments (Change in Jobs)	59	359	1,243	1,963	2,284	1,950

California Business Impacts

Under the Act and the Proposed Regulations, CalRecycle anticipates an increase in production costs, which is counterbalanced by avoided costs along with increased demand for the recyclable plastic, paper, metal, and glass product industries. The increase in production costs will result in increased economic output (sales) for several industries, specifically the “management of companies” and the construction industries. This will provide additional support in mitigating the effects of the expected rise in production costs, ultimately resulting in an overall boost in output. Specifically, there will be an output increase of \$589 million in 2024 and an additional rise of \$8.3 billion in 2030, as demonstrated in Table 20. These increases in output are lower than previous estimates, due to the lower total implementation cost in the current analysis.

Table 20: Changes in California Output Growth by Industry^{*}**

Industry	2024	2026	2028	2030	2032	2034
California Economy (Output, Current M\$)	5,978,413	6,221,033	6,478,259	6,803,946	7,147,930	7,481,750
California Economy (% Change)	0.01%	0.03%	0.09%	0.12%	0.08%	0.06%
California Economy (Change, Current M\$)	589	2,004	6,054	8,258	5,372	4,787
Food Manufacturing (% Change)	0.00%	0.02%	0.07%	0.10%	0.09%	0.08%
Food Manufacturing (Change, Current M\$)	3	14	56	80	83	77
Construction (% Change)	0.03%	0.11%	0.32%	0.40%	0.26%	0.15%
Construction (Change, Current M\$)	72	269	821	1,085	726	428
Glass and Glass Product Manufacturing (% Change)	1.93%	5.55%	8.86%	12.74%	0.05%	0.06%
Glass and Glass Product Manufacturing (Change, Current M\$)	49	142	227	331	1	1
Steel Product Manufacturing (% Change)	0.93%	2.45%	2.99%	3.89%	0.02%	0.02%
Steel Product Manufacturing (Change in Jobs)	11	29	36	49	0	0
Aluminum Production and Processing (% Change)	0.60%	1.67%	3.34%	4.24%	0.03%	0.03%
Aluminum Production and Processing (Change in Jobs)	11	32	65	84	1	1
Other Fabricated Metal Product Manufacturing (% Change)	0.24%	0.75%	1.25%	1.90%	(0.01%)	0.00%
Other Fabricated Metal Product Manufacturing (Change, Current M\$)	14	44	74	116	(1)	0
Converted Paper Product Manufacturing (% Change)	0.65%	1.94%	3.22%	4.76%	0.07%	0.07%

*** Parentheses represent a negative value

Industry	2024	2026	2028	2030	2032	2034
Converted Paper Product Manufacturing (Change, Current M\$)	81	241	404	603	9	9
Plastics Product Manufacturing (% Change)	0.22%	0.67%	1.12%	1.59%	0.06%	0.05%
Plastics Product Manufacturing (Change, Current M\$)	35	106	180	259	9	8
Wholesale Trade (% Change)	0.01%	0.02%	0.06%	0.08%	0.05%	0.04%
Wholesale Trade (Change, Current M\$)	22	74	233	317	200	192
Retail Trade (% Change)	0.00%	0.01%	0.06%	0.07%	0.06%	0.06%
Retail Trade (Change, Current M\$)	11	45	201	273	258	255
Management of Companies and Enterprises (% Change)	0.01%	0.03%	0.06%	0.08%	0.05%	0.05%
Management of Companies and Enterprises (Change, Current M\$)	12	36	70	100	62	66
Waste Management and Remediation Services (% Change)	0.00%	0.01%	0.09%	0.11%	0.09%	0.07%
Waste Management and Remediation Services (Change, Current M\$)	0	2	15	19	16	13
Food Service Establishments (% Change)	0.00%	0.02%	0.08%	0.12%	0.14%	0.11%
Food Service Establishments (Change, Current M\$)	5	31	107	173	206	178
State and Local Government (% Change)	0.01%	0.05%	0.27%	0.34%	0.31%	0.26%
State and Local Government (Change, Current M\$)	57	263	1,449	1,843	1,757	1,500

Impacts on Investments in California

The relative changes in private investment growth attributable to the Act and the Proposed Regulations are detailed in Table 21. The data indicate an initial rise in private investment of approximately \$49 million in 2024, followed by a positive trajectory, peaking at an increase of \$952 million in 2030. These increases in private investment are lower than those in the previous estimate, as a result of the lower total implementation cost. It is noteworthy that these shifts in investment do not surpass 0.15 percent of the baseline investment figures throughout the entire regulatory timeline. There is no indication that there will be a net decrease in private investment in the state as a result of the Act or the Proposed Regulations.

Table 21: Changes in Gross Domestic Investment Growth

Impact Category	2024	2026	2028	2030	2032	2034
Private Investment (Current M\$)	488,889	553,368	597,085	631,447	662,325	690,269
% Change	0.01%	0.04%	0.12%	0.15%	0.12%	0.06%
Change (Current M\$)	49	216	710	952	769	420

Impacts on Individuals in California

As depicted in the model, the Act and the Proposed Regulations do not directly impose any cost on individuals in California. However, the expenses incurred by affected entities, coupled with the projected changes in demand, output, employment, and state government spending have a cascading effect throughout the economy, thus impacting individuals.

While the Act and the Proposed Regulations are expected to lead to increased production cost, these cost effects are offset by those factors identified previously in this section: heightened industry demands, increased output, avoided costs, and state government spending. Consequently, this leads to net gains in employment, which naturally results in an increase in real personal income, as illustrated in Table 22.

The Act and the Proposed Regulations are anticipated to yield an increase in personal income across all assessment years, with the most significant impact occurring in 2030, amounting to an increase of approximately \$3.1 billion. These increases in personal income are lower than previous estimates, due to the lower total implementation cost in the current analysis.

Table 22: Impacts on Individuals in California

Impact Category	2024	2026	2028	2030	2032	2034
Personal Income (Current M\$)	2,912,594	3,025,898	3,171,049	3,337,242	3,507,831	3,675,580
Personal Income (% Change)	0.01%	0.02%	0.07%	0.09%	0.08%	0.07%
Personal Income (Change, Current M\$)	155	608	2,112	3,083	2,838	2,557
Personal Income per Capita	73,648	75,581	78,418	81,493	84,635	87,624

Impacts on Gross State Product

A measure of economic performance, GSP represents the total market value of all goods and services produced in California and stands as a key indicator of economic growth. It is calculated by summing the dollar value of consumption, investment, net exports, and government spending.

Under the Act and the Proposed Regulations, there is an estimated increase in GSP growth, amounting to approximately \$294 million in 2024, peaking in 2030 at \$4.5 billion, and culminating in a \$2.8 billion increase in 2034, as illustrated in Table 23. This metric serves as a comprehensive summary of the impacts discussed earlier, encompassing consumer spending, investment, and government expenditure. The rise in consumer and government spending along with avoided costs in California outweighs the increase in production cost stemming from the Act and the Proposed Regulations thus resulting in a positive trend. Importantly, these changes do not exceed 0.15 percent of the baseline GSP. These increases in GSP are lower than previous estimates, as a result of the lower total implementation cost in the current analysis.

Table 23: Changes in Gross State Product

Impact Category	2024	2026	2028	2030	2032	2034
GSP (Current M\$)	3,503,438	3,689,962	3,852,255	4,029,506	4,205,054	4,371,661
% Change	0.01%	0.03%	0.09%	0.11%	0.08%	0.06%
Change (Current M\$)	294	1,033	3,339	4,517	3,168	2,820

Summary and Interpretation of the Assessment Results

According to CalRecycle's assessment, it appears that the Act and the Proposed Regulations are unlikely to exert a substantial impact on the California economy. In summary, the projected changes in job growth, GSP, and output are expected to remain below a 0.15 percent deviation from the baseline, similar to what was expected from the previous analysis. A summary of the macroeconomic impacts of the Act and the Proposed Regulations is shown in Table 24.

Table 24: Summary of Economic Impacts of the Act and the Proposed Regulations

Indicator	2024	2026	2028	2030	2032	2034
GSP (% Change)	0.01%	0.03%	0.09%	0.11%	0.08%	0.06%
GSP (Change, Current M\$)	294	1,033	3,339	4,517	3,168	2,820
Personal Income (% Change)	0.01%	0.02%	0.07%	0.09%	0.08%	0.07%
Personal Income (Change, Current M\$)	155	608	2,112	3,083	2,838	2,557
Employment (% Change)	0.01%	0.03%	0.09%	0.12%	0.09%	0.07%
Employment (Change in Jobs)	2,167	7,473	24,204	31,196	22,759	19,975
Output (% Change)	0.01%	0.03%	0.09%	0.12%	0.08%	0.06%
Output (Change, Current M\$)	589	2,004	6,054	8,258	5,372	4,787
Private Investment (% Change)	0.01%	0.04%	0.12%	0.15%	0.12%	0.06%
Private Investment (Change, Current M\$)	49	216	710	952	769	420

Alternative 1: Less Stringent Classification of Plastic Covered Materials

Cost

The total direct cost of Alternative 1 is approximately \$516 million lower than the cost of the Proposed Regulations. The total direct cost relies on the plastic baseline weight estimate. Due to the decrease in the baseline, the direct cost difference between Alternative 1 and the Proposed Regulations is considerably lower than the previous estimate. Unlike the Proposed Regulations, Alternative 1 would allow covered materials composed mostly of paper to contain less than 20 percent plastic by weight without being categorized as plastic covered material. As identified in the DIM, the cost differences between Alternative 1 and the Proposed Regulations for the major expense categories are shown below in Table 25.

Table 25: Cost Differences Between the Proposed Regulations and Alternative 1^{†††}

Category	Cost Difference from Proposed Regulations
Program Administration	\$0
Manufacturing and Production	(\$421,542,379)
Infrastructure	(\$94,523,799)
Fees, Surcharges, Assessments	\$0
Environmental Mitigation	\$0
Total	(\$516,066,178)

Based on the scenario for Alternative 1, fewer materials will be classified as plastic covered materials. This results in reduced costs for source reduction and material switching, as calculated in the manufacturing and production category. Table 26 shows the reduction in costs to source reduce plastic and meet the plastic recycling rate from 2024 to 2031.

Table 26: Reduction in Manufacturing and Production Costs Under Alternative 1^{†††}

Year	Source Reduction	Recycling Rate
2024	(\$259,407)	(\$48,470,163)
2025	(\$259,407)	(\$48,470,163)

^{†††} Parentheses represent a negative value

^{†††} Parentheses represent a negative value

Year	Source Reduction	Recycling Rate
2026	(\$259,407)	(\$48,470,163)
2027	(\$191,877)	(\$48,470,163)
2028	(\$191,877)	(\$32,313,442)
2029	(\$191,877)	(\$32,313,442)
2030	(\$56,891)	(\$80,783,605)
2031	(\$56,891)	(\$80,783,605)
Total	(\$1,467,635)	(\$420,074,744)

Under Alternative 1, infrastructure cost is also reduced compared to the Proposed Regulations. The reduction in infrastructure costs for collection, sortation, and processing are shown in Table 27.

Table 27: Reduction in Infrastructure Costs Under Alternative 1^{\$\$\$}

Year	Collection	Sortation	Processing
2024	(\$628,721)	(\$3,881,504)	(\$6,711,719)
2025	(\$619,221)	(\$3,822,856)	(\$6,610,381)
2026	(\$609,721)	(\$3,764,209)	(\$6,509,044)
2027	(\$600,221)	(\$3,705,561)	(\$6,407,707)
2028	(\$581,934)	(\$3,592,687)	(\$6,213,022)
2029	(\$573,634)	(\$3,541,448)	(\$6,124,463)
2030	(\$848,823)	(\$5,240,386)	(\$9,062,507)
2031	(\$833,261)	(\$5,144,311)	(\$8,896,459)
Total	(\$5,295,535)	(\$32,692,963)	(\$56,535,302)

Benefits

CalRecycle calculated the monetary benefits of Alternative 1 using the same methodology as the benefits calculations for the Proposed Regulations. The total avoided cost for Alternative 1 is approximately \$2.5 billion less than the avoided cost for the Proposed Regulations; however, the total benefits for Alternative 1 are still greater than the total direct cost.

Macroeconomic Impacts

Due to the decrease in plastic covered material in Alternative 1, compliance costs and industry demand are lower than in the Proposed Regulations. The reduction in production cost, industry demand, and industry output relative to the Proposed

^{\$\$\$} Parentheses represent a negative value

Regulations results in a comparatively lower overall impact on the California economy. However, Alternative 1 reduces greenhouse gas (GHG) emissions less than the Proposed Regulations. The input variables for the REMI analysis are the same variables that were used for the Proposed Regulations as described under “Macroeconomic Impacts.” The data for the Alternative 1 analysis changed due to the decrease in spending on source reduction and materials switching, and the subsequent decrease in infrastructure improvement cost.

The macroeconomic impact analysis results shown in Table 28 indicate that Alternative 1 would result in similar economic impacts as the Proposed Regulations. However, Alternative 1 would result in less positive impacts on GSP, personal income, employment, and output when compared to the Proposed Regulations due to its less stringent requirements.

Table 28: Summary of Macroeconomic Impacts for Alternative 1

Impact Category	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Employment (% Change)	0.01%	0.02%	0.03%	0.08%	0.09%	0.10%	0.12%	0.13%	0.08%	0.08%	0.07%
Employment (Change in Jobs)	2,005	4,336	6,952	20,410	23,301	26,739	30,570	34,430	22,156	21,247	19,564
Output (% Change)	0.01%	0.02%	0.03%	0.08%	0.09%	0.10%	0.12%	0.13%	0.07%	0.07%	0.06%
Output (Change, Current M\$)	550	1,178	1,877	5,005	5,831	6,791	7,919	9,065	5,229	5,052	4,690
Personal Income (% Change)	0.00%	0.01%	0.02%	0.06%	0.06%	0.08%	0.09%	0.10%	0.08%	0.08%	0.07%
Personal Income (Change, Current M\$)	141	323	562	1,795	2,026	2,471	2,945	3,445	2,751	2,737	2,488
GSP (% Change)	0.01%	0.02%	0.03%	0.07%	0.08%	0.10%	0.11%	0.12%	0.07%	0.07%	0.06%
GSP (Change, Current M\$)	273	596	965	2,778	3,218	3,739	4,332	4,924	3,084	2,976	2,762

Cost-Effectiveness

While Alternative 1 projects reduced implementation costs, it is important to note that the cost per ton for reducing GHG emissions and diverting material is higher compared to the Proposed Regulations. This is due to the reclassification of materials as non-plastic. A summary of these results, along with their respective cost-effectiveness, is provided in Table 29.

Table 29: Summary of Cost-Effectiveness for Alternative 1****

Scenario	Recycled Plastic (Cost/Ton)	GHG Reduction (Cost/Ton)	Material Diverted from Landfill (Cost/Ton)
Alternative 1	\$13,603	\$9,633	\$14,694
Proposed Regulations	\$14,036	\$9,594	\$14,283
Difference	(\$432)	\$39	\$411

Alternative 2: Higher Frequency of Required Producer Reporting

Cost

The total direct cost of Alternative 2 is approximately \$218 million more than the cost of the Proposed Regulations. The difference between Alternative 2 and the Proposed Regulations is the frequency of producer reporting. Alternative 2 requires producers to submit quarterly reports to the PRO while the Proposed Regulations requires producers to submit annual reports. Alternative 2 does not include a change in the amount of material categorized as plastic covered material. It also does not include any change in the source reduction or recycling rate requirements. Due to these conditions, the change in the plastic baseline weight estimate did not impact the cost differences between Alternative 2 and the Proposed Regulations. The cost differences between the Proposed Regulations and Alternative 2 for the major expense categories are shown below in Table 30.

Table 30: Cost Differences Between the Proposed Regulations and Alternative 2

Category	Cost Difference from Proposed Regulations
Program Administration	\$218,265,875
Manufacturing and Production	\$0
Infrastructure	\$0
Fees, Surcharges, Assessments	\$0

**** Parentheses represent a negative value

Category	Cost Difference from Proposed Regulations
Environmental Mitigation	\$0
Total	\$218,265,875

Alternative 2 shows a higher cost for producer reporting under the Program Administration category due to the increased number of reports producers would be required to make on their operations. Table 31 shows the difference in large producer reporting costs between the Proposed Regulations and Alternative 2.

Table 31: Increase in Program Administration Cost Under Alternative 2

Year	Large Producer Reporting
Annual	\$31,180,839
Total	\$218,265,875

Benefits

Alternative 2 would have approximately the same benefits as the Proposed Regulations. The amount of plastic covered material required to be source reduced and recycled in Alternative 2 is the same as in the Proposed Regulations. For this reason, CalRecycle expects that Alternative 2 will result in the same reductions in both plastic pollution and GHG emissions.

Macroeconomic Impacts

Due to the higher reporting frequency for large producers in Alternative 2, compliance costs are higher than in the Proposed Regulations. Output within the “management of companies” industry is expected to be higher in order to manage the increased frequency of reporting. Stricter reporting measures will cause an increase in production costs. This will decrease the positive impacts on GSP, personal income, employment, and output in comparison to the Proposed Regulations. The input variables for the REMI analysis are the same variables that were used for the Proposed Regulations as described under “Macroeconomic Impacts.” The adjustments in the Alternative 2 analysis are attributed to the increased production cost, as well as a modification of the output for the “management of companies” industry to account for the additional expenses expected to manage the heightened reporting requirements.

The macroeconomic impact analysis results are shown in Table 32. Alternative 2 would have similar economic effects to the Proposed Regulations. However, these effects are smaller in magnitude due to the increase in reporting costs. Specifically, Alternative 2 is expected to yield slightly less favorable results concerning GSP, personal income, employment, and output in comparison to the Proposed Regulations.

Table 32: Summary of Macroeconomic Impacts for Alternative 2

Impact Category	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Employment (% Change)	0.01%	0.02%	0.03%	0.08%	0.09%	0.11%	0.12%	0.13%	0.08%	0.08%	0.07%
Employment (Change in Jobs)	2,106	4,525	7,223	20,754	23,709	27,209	31,129	35,072	22,354	21,485	19,787
Output (% Change)	0.01%	0.02%	0.03%	0.08%	0.09%	0.10%	0.12%	0.13%	0.07%	0.07%	0.06%
Output (Change, Current M\$)	577	1,229	1,952	5,102	5,949	6,929	8,068	9,260	5,291	5,124	4,758
Personal Income (% Change)	0.01%	0.01%	0.02%	0.06%	0.06%	0.08%	0.09%	0.10%	0.08%	0.08%	0.07%
Personal Income (Change, Current M\$)	148	334	577	1,814	2,049	2,498	2,978	3,484	2,769	2,767	2,515
GSP (% Change)	0.01%	0.02%	0.03%	0.08%	0.09%	0.10%	0.11%	0.12%	0.07%	0.07%	0.06%
GSP (Change, Current M\$)	287	624	1,006	2,831	3,282	3,814	4,423	5,029	3,120	3,019	2,802

Cost-Effectiveness

Alternative 2 shows a cost increase compared to the Proposed Regulations. In terms of the quantity of plastic covered material recycled, the amount of GHG reduction, and the amount of material diverted from the landfill, Alternative 2 and the Proposed Regulations achieve the same results. Alternative 2 requires producers to provide updates to the PRO more frequently, which increases their administrative cost. It also increases the overall cost per ton basis for the cost-effectiveness metrics previously mentioned in the Alternative 1 section. A summary of these results, along with their respective cost-effectiveness, is provided in Table 33.

Table 33: Summary of Cost-Effectiveness for Alternative 2

Scenario	Recycled Plastic (Cost/Ton)	GHG Reduction (Cost/Ton)	Material Diverted from Landfill (Cost/Ton)
Alternative 2	\$14,182	\$9,694	\$14,431
Proposed Regulations	\$14,036	\$9,594	\$14,283
Difference	\$146	\$100	\$148

Impacts of Regulatory Changes

This section presents the regulatory revisions made between the December 2024 Proposed Regulations and the May 2025 Proposed Regulations and describes the economic impacts associated with the changes. The analysis includes a summary of the regulatory revision with associated economic impacts, a description of any quantitative impacts, and identification of minor, moderate, or major economic impacts.

Chapter 11.1. Plastic Pollution Prevention and Packaging Producer Responsibility

Article 1: Definitions

§18980.1. Definitions

CalRecycle amended the definition of “component” to further clarify the distinction between “detachable component” and “non-detachable component.” CalRecycle did not identify any quantitative impacts resulting from this revision. The DIM utilizes the number of plastic components identified in CalRecycle’s SRB study.

CalRecycle removed the terms “sufficiently durable” and “washable.” This revision results in a moderately lower economic impact due to reduced reporting obligations of meeting the reuse and refill exclusion criteria, decreasing the administrative burden for producers of reusable and refillable packaging or food service ware. CalRecycle was

unable to incorporate this impact into the DIM to quantify these impacts due to the unavailability of the required data.

CalRecycle revised the definition of “producer” to further clarify several related terms. This revision results in a moderately lower economic impact due to the reduced deliberations to make producer determinations as part of a simplified producer identification process, decreasing the administrative burden and need for legal counsel for producers. CalRecycle was unable to incorporate this impact into the DIM to quantify these impacts due to the unavailability of the required data.

§18980.1.1. Producer Identification

CalRecycle revised this section to make phrasing and flow improvements and clarify how the producer will be identified in the case of multiple brands or trademarks. These revisions are expected to improve administrative efficiency for regulated businesses and the PRO by making producer identification more straightforward and clear. CalRecycle was unable to incorporate this impact into the DIM to quantify these impacts due to the unavailability of the required data.

Article 2: Covered Material and Covered Material Categories

§18980.2. Categorically Excluded Materials

CalRecycle revised this section to clarify the types of packaging and other items that are not covered material. In particular, CalRecycle clarified the scope of some categorical exclusions from statute, such as packaging or packaging components used for agricultural commodities that cannot comply with the Act because of conflicts with federal law, and packaging for certain medical products defined as “Drugs” under federal law. While CalRecycle did not identify quantifiable economic impacts from these changes, the clarifications are expected to reduce administrative burden and legal costs for regulated businesses and the PRO by making it easier to determine which materials are subject to the Act.

§18980.2.1. Exclusion of Reusable and Refillable Packaging and Food Service Ware

CalRecycle removed prescriptive language specifying detailed reuse and refill criteria, instead allowing producers more flexibility in identifying when packaging and food service ware qualifies as reusable or refillable, and providing more opportunity for innovation. These changes also reduce the record-keeping and reporting requirements for businesses and the PRO because of the simplified criteria. These changes should result in reduced costs due to improved flexibility of compliance pathways, and decreased administrative burden for reporting. CalRecycle was unable to incorporate this impact into the DIM to quantify these impacts due to the unavailability of the required data.

§18980.2.2. Exclusion of Certain Types of Packaging

CalRecycle provided a pathway for de minimis exclusion requests by the PRO or Independent Producers to be submitted for CalRecycle's approval outside of a stewardship plan or plan amendment. This revision results in a minor decrease in costs due to reduced barriers in submitting de minimis exclusion requests, and provides the PRO with more certainty on de minimis components while preparing its plan, leading to additional administrative efficiencies. CalRecycle was unable to incorporate this impact into the DIM to quantify these impacts due to the unavailability of the required data.

§18980.2.3. Exemptions for Specific Material with Demonstrated Recycling Rates

CalRecycle is not proposing any changes to this section.

§18980.2.4. Exemptions for Certain Covered Materials

CalRecycle extended the duration for exemptions granted for covered materials with unique challenges from one year to two years and specified such exemptions may be valid for up to five years. This revision results in a minor reduction in economic impacts due to reduced exemption application preparation time, decreasing administrative burden for producers. CalRecycle was unable to incorporate this impact into the DIM to quantify these impacts due to the unavailability of the required data.

§18980.2.5. Covered Material Category List Updates

CalRecycle revised this section to make phrasing improvements and to remove certain requirements. CalRecycle did not identify economic impacts associated with these revisions.

§18980.2.6. Covered Material Category List Recommendations

CalRecycle is not proposing any changes to this section.

§18980.2.7. Scope of Exemptions

CalRecycle is not proposing any changes to this section.

Article 3: Evaluations of Covered Material and Covered Material Categories

§18980.3. Recyclability

CalRecycle is not proposing any changes to this section.

§18980.3.1. Recyclability of Certain Covered Material Categories Identified by the Department

CalRecycle revised this section to clarify that both statewide recycling and alternative collection programs will be considered in recyclability determinations for covered material categories. CalRecycle did not identify economic impacts associated with these revisions.

§18980.3.2. Methodology for Recycling Rate Determination

CalRecycle revised this section to clarify the recycling rate calculation method. CalRecycle did not identify economic impacts associated with these revisions.

§18980.3.3. Eligibility for Being Labeled “Compostable”

CalRecycle removed the specific requirement for fiber based covered materials to demonstrate that they do not incorporate plastics or polymers through laboratory testing. This revision results in a moderately lower economic impact due to reduced testing and demonstration requirements, decreasing administrative burden on producers. CalRecycle was unable to incorporate this impact into the DIM to quantify these impacts due to the unavailability of the required data.

§18980.3.4. Independent Third-Party Validation for Postconsumer Recycled Content

CalRecycle is not proposing any substantive changes to this section.

§18980.3.5. Disposal of Covered Material

CalRecycle revised this section to clarify that any disposed covered material is not considered recycled and to generalize the definition of disposal. CalRecycle did not identify economic impacts associated with these revisions.

§18980.3.6. Review of Certain Technologies

CalRecycle moved the requirements to Section 18980.4.1 with revisions. Economic impacts associated with this revision are discussed under section 18980.4.1.

Article 4: Responsible End Markets

§18980.4. Responsible End Market Criteria

CalRecycle adjusted responsible end market criteria for covered materials that are comprised of fiber or paper without plastic or are wholly derived from other renewable resources and materials. This revision results in a moderately lower economic impact due to improved compliance flexibility in meeting the responsible end market criteria, reducing administrative burden and labor costs for local jurisdictions and recycling service providers. CalRecycle was unable to incorporate this impact into the DIM to quantify these impacts due to the unavailability of the required data.

§18980.4.1. End Market Identification

CalRecycle revised this section to simplify the evaluation process for determining whether certain recycling technologies meet the criteria for being considered recycling under the Act and Proposed Regulations. Costs associated with the development or operation of non-mechanical recycling technologies that meet the standards described in the Act and Proposed Regulations are impossible to calculate as these technologies either do not yet exist or have not yet been proven. There is no way to estimate or anticipate whether the ongoing operational costs for these new technologies will be greater or less than those estimated in this SRIA. CalRecycle was unable to incorporate

this impact into the DIM to quantify these impacts due to the unavailability of the required data.

§18980.4.2. End Market Compliance Audits and Verification

CalRecycle deleted the requirement for the PRO and Independent Producers to perform randomized material tracking. This revision results in a minor decrease in annual reporting costs associated with end market compliance audits and verification.

CalRecycle modeled compliance reporting costs as a single item in the DIM rather than modeling each compliance requirement separately. The description of the reporting costs and related estimated impacts can be found in the Large Producer Reporting Costs section. CalRecycle was unable to incorporate this impact into the DIM separately from the rest of the compliance reporting costs to quantify these impacts due to the unavailability of the required data.

§18980.4.3. End Market Development

CalRecycle is not proposing any substantive changes to this section.

Article 5: Requirements for Producers

§18980.5. Producer Compliance

CalRecycle revised this section to include timeline specifications for producers to register with CalRecycle's reporting system and with the PRO. These changes were necessary to ensure timely implementation, given delays in the rulemaking process. CalRecycle did not identify economic impacts associated with these revisions.

§18980.5.1. Application for Independent Producer Compliance

CalRecycle is not proposing any changes to this section.

§18980.5.2. Exemptions for Small Producers

CalRecycle extended the duration of the small producer exemption from one year to two years, resulting in quantitative economic impacts of reduced time required to apply for exemptions. This revision results in a reduction of costs to comply for small producers from \$309 per small producer per year to an average of \$155 per year. The SRIA analysis has been updated to reflect this reporting requirement from annual to biennial. CalRecycle has calculated these impacts to result in a cumulative \$9.7 million decrease in costs to small producers over the implementation period. This calculation is incorporated into the SRIA.

Article 6: Requirements for the Producer Responsibility Organization

§18980.6. Producer Participation General Requirements

CalRecycle is not proposing any changes to this section.

§18980.6.1. Producer Responsibility Plan Submission

CalRecycle revised this section to extend the deadline for the initial PRO Plan submission. This change was necessary to ensure timely implementation given delays in the rulemaking process. CalRecycle did not identify economic impacts associated with this revision. Additionally, CalRecycle revised this section to only require a summary of comments and responses in the PRO Plan. This revision results in cost savings for the PRO by reducing their administrative burden. CalRecycle was unable to incorporate this impact into the DIM to quantify these impacts due to the unavailability of the required data.

§18980.6.2. Producer Responsibility Plan Approval

CalRecycle revised this section to specify their review of the PRO's plan shall consider the summary of comments from the Advisory Board and members of the public submitted by the PRO. CalRecycle did not identify economic impacts associated with these revisions.

§18980.6.3. Review of Updated Producer Responsibility Plan

CalRecycle revised this section to align the review of updated PRO Plan with section 18980.6.2.

§18980.6.4. Producer Responsibility Plan Amendments

CalRecycle revised this section to align PRO Plan amendments with section 18980.6.2.

§18980.6.5. Annual Reports

CalRecycle revised this section to modify the PRO annual report timeline and submittal process to the Department. These revisions are responsive to requests from the PRO to have sufficient time after annual data from participant producers is available to prepare a robust and accurate annual budget. CalRecycle did not identify economic impacts associated with these revisions.

§18980.6.6. Document Submittals

CalRecycle is not proposing any changes to this section.

§18980.6.7. Eco-modulated Fee and Fee Schedule

CalRecycle revised this section to allow the PRO to implement the eco-modulation fee two years after the PRO Plan is adopted. This change is expected to reduce administrative burden and labor costs for the PRO by deferring complex fee calculations until more robust producer reporting data is available. CalRecycle was unable to incorporate this impact into the DIM to quantify these impacts due to the unavailability of the required data.

§18980.6.8. Recordkeeping and Reporting Requirements

CalRecycle is not proposing any substantive changes to this section.

Article 7: Requirements for Independent Producers

§18980.7. Independent Producer Plan Submission

CalRecycle revised this section to only require a summary of comments and responses in an Independent Producer's Plan. This revision results in cost savings for the Independent Producer by reducing their administrative burden. CalRecycle was unable to incorporate this impact into the DIM to quantify these impacts due to the unavailability of the required data

§18980.7.1. Independent Producer Plan Approval

CalRecycle revised this section to specify their review of an Independent Producer's plan shall consider the summary of comments from the Advisory Board and members of the public submitted by the Independent Producer. CalRecycle did not identify economic impacts associated with these revisions.

§18980.7.2. Review of Updated Independent Producer Plan

CalRecycle revised this section to align the review of updated Independent Producer Plan with section 18980.7.1.

§18980.7.3. Independent Producer Plan Amendments

CalRecycle revised this section to align the review of updated PRO Plan with section 18980.7.1.

§18980.7.4. Independent Producer Annual Reports

CalRecycle revised the deadline for annual reporting for Independent Producers from July 1 to October 1 of each year. This revision comports with 18980.6.5, by providing Independent Producers sufficient time after annual data are available for preparing a robust and accurate annual report and annual budget. CalRecycle did not identify economic impacts associated with these revisions.

§18980.7.5. Independent Producer Document Submittals

CalRecycle is not proposing any changes to this section.

§18980.7.6. Independent Producer Environmental Mitigation Surcharge

CalRecycle corrected the language that mistakenly required the surcharge to be calculated based on all covered material, clarifying that such calculations should be based on only plastic covered material. CalRecycle did not identify quantitative impacts resulting from this correction, as the DIM already utilizes the correct information to calculate the environmental mitigation surcharge.

§18980.7.7. Independent Producer Recordkeeping and Reporting Requirements

CalRecycle is not proposing any substantive changes to this section.

Article 8: Producer Responsibility Plan Requirements

§18980.8. Producer Responsibility Plan

CalRecycle revised the term “reimbursement” to “covered costs” to clarify that the PRO has the flexibility for costs to be funded through a variety of mechanisms in addition to reimbursement. This revision results in a moderately lower economic impact due to increased cost funding flexibility which affects administrative cost structures for the PRO and producers by influencing how they allocate and manage funds. CalRecycle was unable to incorporate this impact into the DIM to quantify these impacts due to the unavailability of the required data.

§18980.8.1. Plan Requirements Specific to a PRO

CalRecycle is not proposing any changes to this section.

§18980.8.2. Closure and Transfer Plan Requirements

CalRecycle included language to clarify that funding for the environmental mitigation surcharge is not required to be maintained as part of the Closure Fund. This revision results in a moderately lower economic impact from reduced funds required to be maintained in the Closure Fund, increasing available funds and decreasing the initial fundraising burden for the PRO and Independent Producers. CalRecycle was unable to incorporate this impact into the DIM to quantify these impacts due to the unavailability of the required data.

§18980.8.3. Source Reduction Adjustments

CalRecycle deleted the section on source reduction adjustments. CalRecycle did not identify economic impacts associated with this revision.

Article 9: Source Reduction Baseline Report and Annual Reports

§18980.9. Source Reduction Baseline Report

CalRecycle revised this section to specify the timeline for reporting entities to submit their source reduction baseline report. This revision is necessary due to the delays in the regulatory process and provides the PRO with reliable information timely for preparing its initial plan. CalRecycle did not identify economic impacts associated with these revisions.

§18980.9.1. Annual Reports

CalRecycle revised this section to align annual reports with section 18980.6.5. CalRecycle did not identify additional economic impacts associated with these revisions.

Article 10: Registration and Data Reporting Requirements

§18980.10. Registration and Maintaining Address on File

CalRecycle amended the language to allow identification numbers for Importers of Record that do not have a Federal Employer Identification Number. This revision

provides increased flexibility in meeting registration requirements, particularly benefiting small businesses, resulting in a minor decrease in economic impacts of reduced administrative burden. CalRecycle was unable to incorporate this impact into the DIM to quantify these impacts due to the unavailability of the required data.

§18980.10.1. Data Reporting Submission

CalRecycle revised the reporting timeline to align with the changes in section 18980.6.1. This revision results in a minor decrease in economic impact due to the extended reporting deadlines, reducing the administrative burden for the PRO and producers. CalRecycle was unable to incorporate this impact into the DIM to quantify these impacts due to the unavailability of the required data.

§18980.10.2. Data Report Contents

CalRecycle revised the reporting increments from monthly to annual increments and deleted the requirement to submit derivative material data. CalRecycle modeled data reporting costs as a single item in the DIM rather than modeling each data reporting requirement separately. See the Large Producer Reporting Costs section above for a description of the reporting costs and their estimated impacts. This revision results in a minor decrease in cost of data reporting and a decreased administrative burden for producers and the PRO.

Article 11: Requirements, Exemptions, and Extensions for Local Jurisdictions and Recycling Service Providers

§18980.11. Requirements for Local Jurisdictions and Recycling Service Providers

CalRecycle clarified that local jurisdictions and recycling service providers do not have the burden of establishing responsible end markets. The proposed regulations now state that the absence of responsible end markets can constitute impracticability, thereby justifying exemptions from that section. This revision results in a moderately lower economic impact from reduced operational and administrative burden, providing regulatory relief for local jurisdictions and recycling service providers. CalRecycle was unable to incorporate this impact into the DIM to quantify these impacts due to the unavailability of the required data.

§18980.11.1. Extensions or Exemptions for Local Jurisdictions and Recycling Service Providers

CalRecycle revised this section to clarify the application processes for extensions and exemptions and to reduce the frequency of required renewals from one year to two years. This revision results in a minor decrease in cost from easing the extension or exemption application preparation process, reducing the administrative burden and labor for local jurisdictions and recycling service providers. CalRecycle was unable to incorporate this impact into the DIM to quantify these impacts due to the unavailability of the required data.

§18980.11.2. Exemption for Rural Counties and Rural Jurisdictions

CalRecycle is not proposing any changes to this section.

Article 12: Requirements for the Advisory Board

§18980.12. Membership Terms and Appointments

CalRecycle is not proposing any changes to this section.

Article 13: Enforcement Oversight by the Department and Administrative Civil Penalties

§18980.13. Compliance Evaluation and Determination

CalRecycle has clarified that jurisdictions will not be subject to penalties during the pendency of any application for an exemption or extension. CalRecycle has determined that this change will reduce costs for local jurisdictions by providing time needed to negotiate the most cost-effective contracts. This revision results in a moderately lower economic impact by protecting jurisdictions from penalties while CalRecycle assesses applications and allowing for more deliberate compliance planning and service provider negotiations. CalRecycle was unable to incorporate this impact into the DIM to quantify these impacts due to the unavailability of the required data.

§18980.13.1. Corrective Action Plan

CalRecycle revised this section to clarify the Department's authority to approve corrective action plan submissions and to specify the required elements of those plans. CalRecycle clarified the conditions under which penalty accrual may be paused and introduced a provision to prohibit resubmission of a corrective action plan application within 90 days of a denial. This revision results in a minor decrease in cost due to clarified submission criteria, reducing administrative burden and labor in CAP preparation for the producers. CalRecycle was unable to incorporate this impact into the DIM to quantify these impacts due to the unavailability of the required data.

§18980.13.2. Administrative Civil Penalties

CalRecycle is not proposing any changes to this section.

§18980.13.3. Notices

CalRecycle revised this section to clarify how physical and electronic mailing addresses are to be utilized for persons to receive notices. CalRecycle did not identify economic impacts associated with these revisions.

§18980.13.4. Procedure for a Hearing

CalRecycle is not proposing any changes to this section.

§18980.13.5. Disciplinary Actions

CalRecycle is not proposing any changes to this section.

Article 14: Public Records

§18980.14. Designation of Trade Secrets and other Non-Disclosable Information

CalRecycle is not proposing any substantive changes to this section.

Article 15: Additional Producer Responsibility Organizations

§18980.15. Approval of Additional Producer Responsibility Organizations

CalRecycle deleted Article 15 from the proposed regulations. CalRecycle did not identify economic impacts associated with this revision.

Chapter 11.5. Environmental Marketing and Labeling

Article 1: Approval of Certification Entities

§18981. Third Party Certification Entity Criteria and Approval Process

CalRecycle made minor revisions in Chapter 11.5 to correct drafting errors and ensure alignment with the language in PRC section 18980.3.4 with no associated economic impacts.

Abbreviations and Acronyms

The Act – Senate Bill 54 (Allen, Chapter 75, Statutes of 2022): Plastic Pollution Prevention and Packaging Producer Responsibility Act
CalRecycle – California Department of Resources, Recycling, and Recovery
DIM – Direct Impacts Model
GHG – Greenhouse Gas
GSP – Gross State Product
MRF – Materials Recovery Facility
PRC – Public Resources Code
PRO – Producer Responsibility Organization
RDRS – CalRecycle’s Recycling and Disposal Reporting System
REMI – The Regional Economic Models, Inc. Policy Insight Plus Version 2.5.0 model
SRB – Source Reduction Baseline study
SRIA – Standardized Regulatory Impact Assessment
TPY – Tons Per Year

Glossary of Terms

Covered Material – Covered material means both single-use packaging that is usually discarded after its contents have been unpackaged and plastic single-use food service ware, such as trays, plates, bowls, clamshells, lids, cups, utensils, straws, wrappers, and bags. The definition of covered material is contained in PRC section 42041(e)(1).

Direct Impacts Model – CalRecycle created the Direct Impacts Model to calculate the estimated impacts of the Act and the Proposed Regulations and both of the alternative scenarios. The DIM contains over 100 individual sheets with data inputs and separate sub-models for each impact category.

Economic Output – Economic output refers to the total value of goods and services produced within an industry. In this document, CalRecycle has reported economic output estimates for California as a whole and primary and secondary industries that are expected to experience the most impact from the Act and the Proposed Regulations.

Standardized Regulatory Impact Assessment – State agencies are required to conduct a SRIA when they estimate that a proposed regulation has an economic impact exceeding \$50 million. The primary purpose of a SRIA is to inform the public, policymakers, and interested parties of economic and fiscal impacts of a new regulation and the tradeoffs the agency promulgating the major regulation is making.

Appendix A

Public Outreach Appendix

Public Workshops and Meetings

Appendix Table 1: Topics of CalRecycle Public Sessions and Workshops on the Act

Date	Informational Sessions	Non-Rulemaking Workshops	Informal Rulemaking Workshops
Jan. 31, 2023	Overview of Statutory Requirements, Rulemaking in California, Materials Characterization Studies		
Feb. 28, 2023	Advisory Board, Needs Assessment		
March 29, 2023	PRO, PRO Plan		PRO Plan, Document Submittals, Annual Report
April 25, 2023	Covered Materials	Producer Reporting Systems	Covered Materials
May 31, 2023	Source Reduction, Responsible End Markets	Source Reduction Baseline	Source Reduction, Responsible End Markets
June 28, 2023	Covered Material Category (CMC) List, Recyclability, Compostability	CMC List	CMC List, Recyclability, Compostability
June 29, 2023	Local Jurisdiction Impacts; Independent Producers; SRIA Data Requests		Local Jurisdiction Impacts; Independent Producers; Exemptions for Small Producers, Small Retailers,

Date	Informational Sessions	Non-Rulemaking Workshops	Informal Rulemaking Workshops
			and Small Wholesalers
July 24, 2023	Recycling Rate, Compostable Materials, Reusable/Refillable, Producers, PRO and Independent Producer Plan, Data Reporting		Recycling Rate, Compostable Materials, Reusable/Refillable, Producers, PRO and Independent Producer Responsibility Plan, Data Reporting
July 25, 2023	Needs Assessment, Ecomodulation, Advisory Board, Enforcement		Ecomodulation, Advisory Board, Enforcement
September 27, 2023	CMC List, Material Characterization Study, Needs Assessment	CMC List, Needs Assessment	
October 12, 2023	PRO Application		
December 14, 2023	Needs Assessment		
February 1, 2024	Proposed Regulations Text Questions and Answers Session		
May 1, 2024	Needs Assessment and CMC updates		
November 19, 2024	Draft Program Environmental Impact Report		
February 3, 2025	CMC List, Source Reduction Baseline		
May 27, 2025	SRIA		Draft Proposed Regulations

Appendix B

Macroeconomic Appendix

Appendix Table 3: Macroeconomic Modeling Inputs^{†††}

REMI Policy Variable	REMI Industry/ Spending Category	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Production Cost	Food Manufacturing	N/A	N/A	2,067	4,104	6,109	8,084	10,000	11,889	14,684	17,428	N/A	N/A	N/A
Production Cost	Converted Paper Product Manufacturing	N/A	N/A	142	281	418	554	685	814	1,006	1,194	N/A	N/A	N/A
Production Cost	Plastics Product Manufacturing	N/A	N/A	159	315	469	621	768	914	1,128	1,339	N/A	N/A	N/A
Production Cost	Glass and Glass Product Manufacturing	N/A	N/A	77	153	228	301	373	443	547	650	N/A	N/A	N/A
Production Cost	Other Fabricated Metal Product Manufacturing	N/A	N/A	1,054	2,092	3,114	4,121	5,098	6,061	7,485	8,884	N/A	N/A	N/A
Production Cost	Wholesale Trade	N/A	N/A	15,204	30,180	44,929	59,449	73,540	87,432	107,986	128,167	N/A	N/A	N/A
Production Cost	Retail Trade	N/A	N/A	39,771	78,946	117,525	155,508	192,368	228,705	282,472	335,261	N/A	N/A	N/A
Production Cost	Food Service Establishments	N/A	N/A	14,395	28,574	42,538	56,285	69,627	82,779	102,240	121,346	N/A	N/A	N/A
Exogenous Final Demand	Plastics Product Manufacturing	N/A	N/A	(62,285)	(123,637)	(184,055)	(243,540)	(301,266)	(358,175)	(442,379)	(525,050)	N/A	N/A	N/A

^{†††} Parentheses represent a negative value

REMI Policy Variable	REMI Industry/ Spending Category	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Exogenous Final Demand	Plastics Product Manufacturing	N/A	N/A	137,358	272,657	405,899	537,082	664,386	789,886	975,583	1,157,899	N/A	N/A	N/A
Exogenous Final Demand	Converted Paper Product Manufacturing	N/A	N/A	197,776	392,588	584,437	773,322	956,622	1,137,325	1,404,703	1,667,212	N/A	N/A	N/A
Exogenous Final Demand	Glass and Glass Product Manufacturing	N/A	N/A	98,256	195,039	290,350	384,189	475,253	565,027	697,861	828,277	N/A	N/A	N/A
Exogenous Final Demand	Other Fabricated Metal Product Manufacturing	N/A	N/A	92,776	184,161	274,156	362,761	448,746	533,513	658,938	782,079	N/A	N/A	N/A
Output	Management of Companies and Enterprises	N/A	N/A	8,148	16,174	24,078	31,860	39,411	46,856	57,872	68,687	41,869	41,869	41,869
Output	Waste Management and Remediation Services	N/A	N/A	4,303	8,541	12,715	16,825	20,813	24,744	30,561	36,272	22,111	22,111	22,111
Output	Waste Management and Remediation Services	N/A	N/A	(5,594)	(11,103)	(16,529)	(21,871)	(27,055)	(32,166)	(39,728)	(47,152)	(28,743)	(28,743)	(28,743)
Output	Construction	N/A	N/A	26,384	52,373	77,966	103,164	127,617	151,724	187,393	222,413	N/A	N/A	N/A
State & Local Government Spending	Include Amenity: State Government	N/A	N/A	N/A	N/A	N/A	500,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000
State & Local Government Spending	State Government	N/A	N/A	(57)	(114)	(169)	(224)	(277)	(329)	(407)	(483)	(294)	(294)	(294)

REMI Policy Variable	REMI Industry/ Spending Category	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
State & Local Government Employment	State Government	34	23	N/A	N/A	1	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Non-Pecuniary (Amenity) Aspects	Total	N/A	N/A	1,482,851	2,943,483	4,381,895	5,798,088	7,172,403	8,527,250	10,531,949	12,500,147	N/A	N/A	N/A

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