STATE OF CALIFORNIA — DEPARTMENT OF FINANCE

ECONOMIC AND FISCAL IMPACT STATEMENT
(REGULATIONS AND ORDERS)

STD. 399 (Rev. 10/2019)

Instructions and Code Citations:
SAM Section 6601-6616

ECONOMIC IMPACT STATEMENT

DEPARTMENT NAME	CONTACT PERSON	EMAIL ADDRESS	TELEPHONE NUMBER
CalRecycle	Craig Castleton	craig.castleton@calrecycle.ca.gc	916-322-1238

DESCRIPTIVE TITLE FROM NOTICE REGISTER OR FORM 400	NOTICE FILE NUMBER
Recycling and Disposal Reporting System (RDRS) Permanent Rulemaking	Z

A. ESTIMATED PRIVATE SECTOR COST IMPACTS *Include calculations and assumptions in the rulemaking record.*

1. Check the appropriate box(es) below to indicate whether this regulation:

- [x] a. Impacts business and/or employees
- [x] b. Impacts small businesses
- [x] c. Impacts jobs or occupations
- [ ] d. Impacts California competitiveness
- [x] e. Imposes reporting requirements
- [ ] f. Imposes prescriptive instead of performance
- [ ] g. Impacts individuals
- [ ] h. None of the above (Explain below):

If any box in Items 1 a through g is checked, complete this Economic Impact Statement.
If box in Item 1.h. is checked, complete the Fiscal Impact Statement as appropriate.

2. The CalRecycle (Agency/Department) estimates that the economic impact of this regulation (which includes the fiscal impact) is:

- [x] Below $10 million
- [ ] Between $10 and $25 million
- [ ] Between $25 and $50 million
- [ ] Over $50 million *[If the economic impact is over $50 million, agencies are required to submit a Standardized Regulatory Impact Assessment as specified in Government Code Section 11346.3(c)]*

3. Enter the total number of businesses impacted: ~2300

Describe the types of businesses (Include nonprofits): Businesses in the waste and recycling collection and processing industries

Enter the number or percentage of total businesses impacted that are small businesses: ~33%

4. Enter the number of businesses that will be created: 0 eliminated: 0

Explain: Regulations impose new reporting in RDRS, which is unlikely to generate new or eliminate existing businesses.

5. Indicate the geographic extent of impacts:
- [x] Statewide
- [ ] Local or regional (List areas):

6. Enter the number of jobs created: 70 and eliminated: 0

Describe the types of jobs or occupations impacted: Facility gate attendants, bookkeepers, accountants, and auditing clerks at waste, recycling, composting, hauling, transportation, and disposal operations.

7. Will the regulation affect the ability of California businesses to compete with other states by making it more costly to produce goods or services here? [ ] YES [x] NO

If YES, explain briefly:

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ECONOMIC IMPACT STATEMENT (CONTINUED)

B. ESTIMATED COSTS *Include calculations and assumptions in the rulemaking record.*

1. What are the total statewide dollar costs that businesses and individuals may incur to comply with this regulation over its lifetime? $ 84,686,870

   a. Initial costs for a small business: $ 120 Annual ongoing costs: $ 3,772 Years: 10

   b. Initial costs for a typical business: $ 120 Annual ongoing costs: $ 3,772 Years: 10

   c. Initial costs for an individual: $ N/A Annual ongoing costs: $ N/A Years: N/A

   d. Describe other economic costs that may occur:
   expand to hire additional staff as noted in "A. ESTIMATED PRIVATE SECTOR COST IMPACTS, Question 6."

2. If multiple industries are impacted, enter the share of total costs for each industry: Only recycling and waste material management industries

3. If the regulation imposes reporting requirements, enter the annual costs a typical business may incur to comply with these requirements. *Include the dollar costs to do programming, record keeping, reporting, and other paperwork, whether or not the paperwork must be submitted.* $ 3,772

4. Will this regulation directly impact housing costs? [x] YES [x] NO
   If YES, enter the annual dollar cost per housing unit: $ ~2300
   Number of units: Businesses in the waste an

5. Are there comparable Federal regulations? [ ] YES [x] NO
   Explain the need for State regulation given the existence or absence of Federal regulations: These regulatory updates are needed to implement the public to evaluate product recyclability, jurisdictions to appropriately track disposal and progress towards waste

   Enter any additional costs to businesses and/or individuals that may be due to State - Federal differences: $ ~33%

C. ESTIMATED BENEFITS *Estimation of the dollar value of benefits is not specifically required by rulemaking law, but encouraged.*

1. Briefly summarize the benefits of the regulation, which may include among others, the health and welfare of California residents, worker safety and the State's environment: Data collected under the updated regulations will help
   for each of the three groups of proposed changes. See Appendix A, Section D for a specific discussion of the alternative.

2. Are the benefits the result of: [x] specific statutory requirements, or [ ] goals developed by the agency based on broad statutory authority?
   Explain: 0

3. What are the total statewide benefits from this regulation over its lifetime? $ Unknown

4. Briefly describe any expansion of businesses currently doing business within the State of California that would result from this regulation: Businesses may
   reduction mandates, and CalRecycle to produce strategies to reduce waste and create a circular economy.

D. ALTERNATIVES TO THE REGULATION *Include calculations and assumptions in the rulemaking record. Estimation of the dollar value of benefits is not specifically required by rulemaking law, but encouraged.*

1. List alternatives considered and describe them below. If no alternatives were considered, explain why not: Alternative 1 is the least-cost alternative
   recycling, composting, hauling, transportation, and disposal operations.

ECONOMIC IMPACT STATEMENT (CONTINUED)

2. Summarize the total statewide costs and benefits from this regulation and each alternative considered:

Regulation: Benefit: $ aste material ma Cost: $ 10

Alternative 1: Benefit: $ 10 Cost: $ 3,772

Alternative 2: Benefit: $ N/A Cost: $ 3,772

3. Briefly discuss any quantification issues that are relevant to a comparison of estimated costs and benefits for this regulation or alternatives: N/A

4. Rulemaking law requires agencies to consider performance standards as an alternative, if a regulation mandates the use of specific technologies or equipment, or prescribes specific actions or procedures. Were performance standards considered to lower compliance costs? ☐ YES ☒ NO

Explain: ~2300

E. MAJOR REGULATIONS *Include calculations and assumptions in the rulemaking record.*

California Environmental Protection Agency (Cal/EPA) boards, offices and departments are required to submit the following (per Health and Safety Code section 57005). Otherwise, skip to E4.

1. Will the estimated costs of this regulation to California business enterprises **exceed $10 million**? ☒ YES ☒ NO

If YES, complete E2. and E3
If NO, skip to E4

2. Briefly describe each alternative, or combination of alternatives, for which a cost-effectiveness analysis was performed:

Alternative 1: Data collected under the updated regulations will help

Alternative 2: These regulatory updates are needed to implement

(Attach additional pages for other alternatives)

3. For the regulation, and each alternative just described, enter the estimated total cost and overall cost-effectiveness ratio:

Regulation: Total Cost $ Businesses may Cost-effectiveness ratio: $ Unknown

Alternative 1: Total Cost $ 3,772 Cost-effectiveness ratio: $ 84,686,870

Alternative 2: Total Cost $ tive 1 is the least-cost alte Cost-effectiveness ratio: $ 120

4. Will the regulation subject to OAL review have an estimated economic impact to business enterprises and individuals located in or doing business in California exceeding $50 million in any 12-month period between the date the major regulation is estimated to be filed with the Secretary of State through12 months after the major regulation is estimated to be fully implemented?

☐ YES ☒ NO

If YES, agencies are required to submit a Standardized Regulatory Impact Assessment (SRIA) as specified in Government Code Section 11346.3(c) and to include the SRIA in the Initial Statement of Reasons.

5. Briefly describe the following:

The increase or decrease of investment in the State: N/A

recycling, composting, hauling, transportation, and disposal operations.

The incentive for innovation in products, materials or processes: 120

The benefits of the regulations, including, but not limited to, benefits to the health, safety, and welfare of California residents, worker safety, and the state's environment and quality of life, among any other benefits identified by the agency:

reduction mandates, and CalRecycle to produce strategies to reduce waste and create a circular economy.

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FISCAL IMPACT STATEMENT

A. FISCAL EFFECT ON LOCAL GOVERNMENT *Indicate appropriate boxes 1 through 6 and attach calculations and assumptions of fiscal impact for the current year and two subsequent Fiscal Years.*

☐ 1. Additional expenditures in the current State Fiscal Year which are reimbursable by the State. (Approximate)
(Pursuant to Section 6 of Article XIII B of the California Constitution and Sections 17500 et seq. of the Government Code).

$ ~33%

☒ a. Funding provided in 0

Budget Act of ~2300 or Chapter _____, Statutes of 0

☒ b. Funding will be requested in the Governor's Budget Act of _____

Fiscal Year: Businesses in the

☐ 2. Additional expenditures in the current State Fiscal Year which are NOT reimbursable by the State. (Approximate)
(Pursuant to Section 6 of Article XIII B of the California Constitution and Sections 17500 et seq. of the Government Code).

$ _____

Check reason(s) this regulation is not reimbursable and provide the appropriate information:

☒ a. Implements the Federal mandate contained in 0

☐ b. Implements the court mandate set forth by the Regulations impose new reporting in RDRS, which is Court.

Case of: Facility gate attendants, bookkeepers, acc vs. These regulatory updates are needed to im

☒ c. Implements a mandate of the people of this State expressed in their approval of Proposition No. CalRecycle

Date of Election: _____

☐ d. Issued only in response to a specific request from affected local entity(s).

Local entity(s) affected: _____

70

☐ e. Will be fully financed from the fees, revenue, etc. from: To increase understanding of the infrastructure and flows of disposed a

Authorized by Section: CalRecycle has a vested int of the N/A Code;

☐ f. Provides for savings to each affected unit of local government which will, at a minimum, offset any additional costs to each;

☒ g. Creates, eliminates, or changes the penalty for a new crime or infraction contained in _____

☐ 3. Annual Savings. (approximate)

$ _____

☐ 4. No additional costs or savings. This regulation makes only technical, non-substantive or clarifying changes to current law regulations.

☐ 5. No fiscal impact exists. This regulation does not affect any local entity or program.

☒ 6. Other. Explain _____

Instructions and Code Citations:
SAM Section 6601-6616

FISCAL IMPACT STATEMENT (CONTINUED)

B. FISCAL EFFECT ON STATE GOVERNMENT *Indicate appropriate boxes 1 through 4 and attach calculations and assumptions of fiscal impact for the current year and two subsequent Fiscal Years.*

☒ 1. Additional expenditures in the current State Fiscal Year. (Approximate)

$ _____

It is anticipated that State agencies will:

☐ a. Absorb these additional costs within their existing budgets and resources.

☐ b. Increase the currently authorized budget level for the _____ Fiscal Year

☐ 2. Savings in the current State Fiscal Year. (Approximate)

$ _____

☐ 3. No fiscal impact exists. This regulation does not affect any State agency or program.

☐ 4. Other. Explain _____

_____

C. FISCAL EFFECT ON FEDERAL FUNDING OF STATE PROGRAMS *Indicate appropriate boxes 1 through 4 and attach calculations and assumptions of fiscal impact for the current year and two subsequent Fiscal Years.*

☐ 1. Additional expenditures in the current State Fiscal Year. (Approximate)

$ _____

☐ 2. Savings in the current State Fiscal Year. (Approximate)

$ _____

☒ 3. No fiscal impact exists. This regulation does not affect any federally funded State agency or program.

☐ 4. Other. Explain _____

_____

FISCAL OFFICER SIGNATURE	DATE
Brandy Hunt Digitally signed by Brandy Hunt Date: 2022.12.02 11:36:04 -08'00'	

The signature attests that the agency has completed the STD. 399 according to the instructions in SAM sections 6601-6616, and understands the impacts of the proposed rulemaking. State boards, offices, or departments not under an Agency Secretary must have the form signed by the highest ranking official in the organization.

AGENCY SECRETARY	DATE
Eric Jarvis (Jan 9, 2023 14:02 PST)	

Finance approval and signature is required when SAM sections 6601-6616 require completion of Fiscal Impact Statement in the STD. 399.

DEPARTMENT OF FINANCE PROGRAM BUDGET MANAGER	DATE

Economic and Fiscal Impact Statement - Appendix A

Recycling and Disposal Reporting System Regulatory Update

Contents

Background

The formal rulemaking process requires the submission of STD 399, the Economic and Fiscal Impact Statement. In this appendix, the Department of Resources Recycling and Recovery (CalRecycle) provides the calculations that gave rise to individual answers. Where individual answers require more thorough explanations, please see Appendix B.

As mentioned in the Initial Statement of Reasons, the Recycling and Disposal Reporting System (RDRS) is created by California Code of Regulations, Title 14, Sections 18815.1 through 18815.13. Updates to the RDRS regulations involve three groups of changes: 1) updates due to Senate Bill (SB) 343 (Allen, Chapter 507, Statutes of 2021); 2) updates due to Assembly Bill (AB) 881 (Gonzalez. Chapter 501, Statutes of 2021); and 3) other changes to improve existing regulations based on AB 901 (Gordon, Chapter 746, Statutes of 2015).

SB 343 regulates the use of the chasing arrows symbol and other similar recycling labeling. The statute requires RDRS to gather information on what material types and forms are actively recovered by facilities and how that material was collected. Collection of this information is not fully captured by existing RDRS regulations, which necessitated the proposed regulatory changes.

AB 881 classifies the export of mixed plastic materials as disposal, where mixed plastic refers to mixtures of materials containing polyvinyl chloride (resin code #3), low-density polyethylene (LDPE, #4), polystyrene (PS, #6), and other plastic (#7). AB 881 requires CalRecycle to collect jurisdiction of origin information for mixed plastic waste that is exported. RDRS regulations do not currently capture that reporting. Thus, the regulations needed to be updated.

AB 901 empowered CalRecycle to collect granular information about the operations of disposal, recycling, compost, and transfer/processor facilities, as well as exporters, brokers, and transporters of waste and recyclables. To do so, AB 901 regulations created RDRS. Reporting in RDRS began in the third calendar quarter of 2019. After a few years of this reporting, CalRecycle has determined several instances where existing regulations could be amended to either clarify regulations or improve the quality of the collected data.

Note that in this Appendix A, CalRecycle does not provide costs separately for the changes due to AB 881, SB 343, and general updates. Rather, costs are summarized across all three groups. In Appendix B, costs are provided separately for the three groups. Wages and costs always refer to US dollars ($). Wages are always per hour.

Economic Impact Statement

A. Estimated Private Sector Cost Impacts

A.1. Areas of Impact

The proposed regulations will impact businesses in the waste and recycling collection and processing industries. Specifically, the regulations will require altered reporting behavior by entities within RDRS. The regulations will also require sharing of information among reporting entities. These entities contain businesses, small businesses, and government-operated facilities. Consequently, the updated regulations will impact businesses, small businesses, and jobs. They will also impose reporting requirements.

Note that while the updated regulations do impose additional costs on Californian entities, these costs are unlikely to reduce the businesses' competitiveness relative to facilities outside of California. The costs imposed will be a relatively small portion of a facility's operational costs. Further, many of the facilities within California must operate in California (for example, transfer/processors and landfills that need to be close to the source of waste materials).

A.2. Total Economic Cost

To estimate total economic cost, CalRecycle calculated the cost of the regulations for each group of regulatory changes, for each affected entity type in the RDRS regulations (i.e., self-haulers, contract haulers, transfer/processors, disposal facilities, recycler/composters, and broker/transporters). CalRecycle then summed these costs. Costs included three components: gathering data and potentially transferring it to other entities, reporting information in RDRS, and training. To calculate each cost, this basic equation was used: (wages per hour) *multiplied by* (hours to satisfy new regulatory requirements per entity) *multiplied by* (number affected entities) *multiplied by* (number of quarters until regulations have been fully effective for one year). Wage estimates came from the California Employment Development Department (EDD). CalRecycle estimated hours to satisfy new regulatory requirements using a survey of affected stakeholders. Number of affected entities came from the number of reporting entities in RDRS and the number of non-reporting, but still affected, entities estimated in the original RDRS rulemaking for AB 901. CalRecycle determined the number of quarters based on implementation dates in the regulations. Putting all these numbers together, CalRecycle estimated a total cost of $8,605,141. Table 1 shows the total cost for gathering/transferring data, reporting in RDRS, and training.

Table 1: *The total cost for the new regulations for each of three cost components.*

Cost Group	Cost{$)
Gathering(rransferring	8,058,030
Reporting	395,496
Training	151,615
Total	**8,605,141**

For further information on how these specific costs were calculated, such as the hours used for each new regulatory requirement and the wages estimated for each activity type, please see Appendix B. Note that the total cost of the regulatory changes likely over-estimates the true value. For example, the analysis assumes that the updated regulatory requirements related to recycler/composters and jurisdiction of origin (i.e., that recycler/composters can pass along origins for materials sent to other facilities) are required, rather than optional. CalRecycle could have assumed that no entity would implement an optional regulation, but instead CalRecycle assumed that all entities would implement all optional regulations.

A.3. Businesses Impacted

Total Businesses

The RDRS regulations will impact businesses - within industries related to waste and recyclable material management {Table 2) - by requiring that those facilities either report in RDRS or pass along information to other entities. To assess the former, CalRecycle used RDRS Public Report 0, finding that there were 1,272 operations required to report in RDRS as of 23 September 2022. This number excludes facilities that are inactive, exempt from RDRS reporting, or provisional (created by other reporting entities in RDRS). Cal Recycle excluded inactive and exempt entities because these entities do not bear reporting or data transfer costs. CalRecycle excluded provisional facilities because it cannot be evaluated whether these facilities should be reporting in RDRS or if they are instead registered incorrectly (e.g., a provisional "reporting entity" might actually refer to an end user, who would thus be exempt from the RDRS regulatory requirements). These approximately 1,300 entities will be subject to data transfer requirements in addition to reporting in RDRS. However, the RDRS regulations will affect more than 1,300 entities because of contract haulers, many of whom do not report in RDRS but do have data transfer requirements. In the AB 901 2018 Rulemaking, CalRecycle estimated that approximately 1,000 contract haulers would be subject to the RDRS regulations (please see the attached 2018 STD 399). Because the regulatory updates have not changed who is subject to the regulations, CalRecycle elected to use the 1,000 number here. Thus, in total, it is estimated that the regulatory updates will affect approximately 2,300 operations, including both facilities run privately and those operated by a government agency. Note that this number is not the same as the number of entities that is used in Appendix B when

calculating costs because not all regulatory changes apply to all entities.

Table 2: *The industries that the RDRS regulations will affect, grouped by the North American Industry Classification System (NAICS).*

NAICS Industry Name	NAICS Code
Solid Waste Collection	562111
Solid Waste Landfill	562212
Solid Waste Combustors and Incinerators	562213
Other Nonhazardous Waste Treatment and Disposal	**562219**
Other Waste Collection	562119
Materials Recovery Facilities	**562920**
Recyclable Material Merchant Wholesalers	423930
Sewage Treatment Facilities	**221320**

Small Businesses

According to Government Code 11346.3(b)(4)(B), for the purposes of the Economic Impact Statement, small businesses 1) are independently owned and operated, 2) are not dominant in their field, and 3) have fewer than 100 employees. Thus, to estimate the number of small businesses, CalRecycle would need information about each of these criteria. Dominance in a field is difficult to define, especially for waste and recyclable materials collection services, which may operate monopolies on local scales. Further, CalRecycle does not have access to any readily available and current sources that would allow for determining whether a business is "independently owned and operated." CalRecycle therefore relied on the determination in the original AB 901 RDRS rulemaking, which estimated that 33% of businesses were "small" (please see the attached 2018 STD 399).

A.4. Businesses Created and Eliminated

The proposed regulations will neither create nor eliminate businesses. CalRecycle contends that the regulations will not create businesses because the regulations increase existing reporting requirements for operations within the waste and recycling industries. Increased reporting in RDRS should not motivate individuals to create new businesses. For different reasons, the altered regulations should also not eliminate businesses. In the Estimated Costs section of this Appendix A (Section B., below), CalRecycle estimates the average costs to individual businesses. These costs vary by RDRS activity type (e.g., broker/transporter versus disposal), but the annual costs to businesses are all estimated to be less than $8,000. And the weighted average of annual costs per business is less than $4,000. It seems unlikely that an annual increase in expenditures of less than $8,000 will be the single or primary reason that any business ceases operations.

A.5. Geographic Extent of Impacts

Facilities within the waste and recycling industries operate throughout California. The proposed regulations will therefore affect entities statewide.

A.6. Jobs Created

To estimate the number of jobs that the updated regulations may create, CalRecycle divided the estimated annual, *ongoing* cost of the regulations (see Subsection Annual Ongoing Costs within Section B.1. of this Appendix A) by wages per hour and hours per year. CalRecycle assumed that a year contained 2,080 hours (52, 40-hourweeks). This method assumes that none of the additional work will be accomplished with existing staff resources. According to Table 3, the updated regulations may produce up to 70 new full-time annual positions.

Table 3: *For each RDRS activity type, the total estimated number of full-time equivalent positions created by the regulatory updates: Cost/ Wage/ Year Hours = Positions.*

Activity	Cost ($)	Wage ($)	Year Hours	Positions
Broker/Transporter	209,220	55	2,080	2
Contract Hauler	1,408,836	52	2,080	13
Disposal	1,060,508	65	2,080	8
Food Waste Self Hauler	416	52	2,080	0
Recycler/Composter	3,329,136	61	2,080	26
Transfer/Processor	2,445,410	55	2,080	21
Total				70

A.7. California Competitiveness

While the updated RDRS regulations do impose costs on operations within California, these costs will likely not reduce competitiveness of California facilities for several reasons. First, transporting waste and recyclables is expensive. These regulations and their corresponding costs will likely not increase costs so much as to make disposing trash at out of state landfills or selling recyclables to out of state recovery facilities cost-effective. Second, material generated in California must, by definition, be handled by an entity in California to move out of California. This California handler, even if replaced by a corporation based out of another state, would have to report in RDRS. Thus, the updated reporting requirements for haulers and broker/transporters will not reduce the competitiveness of California-based operations relative to out of state facilities because the out of state facilities, if they operated in California, would bear the same reporting burdens as the facilities headquartered in California.

B. Estimated Costs

B.1. Initial, Annual, and Lifetime Costs

The STD 399 requires estimates for initial, annual, and lifetime costs of the regulations for individuals, small businesses, and typical businesses. The regulatory updates do not impose costs on individuals, so CalRecycle does not provide estimates for that field. When estimating costs for businesses, CalRecycle does not provide separate costs for small and typical businesses. The regulatory updates impose costs through data collection, transfer, and reporting requirements. Small businesses may therefore incur different costs than other businesses if small businesses require more or less time to satisfy the proposed regulatory changes, or if small businesses have different wages than other businesses. However, CalRecycle does not have estimates of time and wages specific to small and other businesses. Nor does CalRecycle have any reason to assume that small businesses would have significantly different values for time and wages than other businesses. Consequently, it is assumed that small businesses would incur similar costs as other businesses.

Initial Costs

When estimating initial costs, CalRecycle included only the cost of training to comply with the regulatory updates. The regulatory updates will not require entities to invest in new equipment or any one-time costs besides training. CalRecycle assumed that the only determining factors for training cost would be hours and wages. CalRecycle saw no reason to assume that small businesses would have different hourly training requirements or labor wages than other businesses. Thus, for each activity type, the total training cost was the product of the number of entities, hours to train per entity, and wages per hour. From these total costs, Cal Recycle calculated the training cost per entity per activity type (Table 4), which was Cost divided by Number Entities within each activity type. CalRecycle used the Cost Per Entity values to calculate an average cost per *operation* (across all RDRS activity types) by weighting the Cost Per Entity values according to each RDRS activity's proportion. For example, Broker/Transporters are 3.47% of all entities. CalRecycle therefore multiplied the Cost Per Entity value by this percentage. This operation was repeated for all activity types and the total was summed, producing a weighted average initial cost per affected operation of $120. Details on how CalRecycle calculated training costs for each RDRS activity based on number of entities, hours to train, and wages per hour are provided in Appendix B.

Table 4: For each RDRS activity, the total and per-entity estimated cost of a one-time training.

Activity	Number Entities	Cost ($)	Cost Per Entity ($)
Broker/Transporter	44	5,060	115
Contract Hauler	31	3,224	104
Disposal	149	19,370	130
Recycler/Composter	640	78,751	123
Transfer/Processor	404	45,210	112
Weighted Average			**120**

Annual Ongoing Costs

When estimating annual ongoing costs, CalRecycle included all costs except training (i.e., gathering or transferring data and reporting information in RDRS). As for the initial costs, it was assumed that costs would be determined by hours required to meet regulations and wages per hour. CalRecycle assumed that these numbers should vary by regulatory requirement and RDRS activity type, rather than by whether an entity is a small business. To estimate the average annual cost, CalRecycle calculated the annual cost excluding training per entity within each RDRS activity type. CalRecycle then averaged these per entity costs, weighting them by the number of entities in each activity type group (Table **5),** producing an expected annual cost per affected operation of $3,772. Details on how CalRecycle calculated costs for each RDRS activity, based on number of entities, hours to train, and wages per hour, are provided in Appendix B.

Table 5: *For each RDRS activity, the total estimated annual cost.*

Activity	Number Entities	Cost ($)	Cost Per Entity ($)
Broker/Transporter	44	209,220	4,755
Contract Hauler	1,000	1,408,836	1,409
Disposal	149	1,060,508	7,118
Food Waste Self Hauler	4	416	104
Recycler/Composter	640	3,329,136	5,202
Transfer/Processor	404	2,445,410	6,053
Weighted Average			**3,772**

Total Lifetime Costs

As evidenced by the proposed rulemaking, reporting requirements may change periodically. Consequently, CalRecycle cannot know the actual lifetime of the proposed regulations. CalRecycle assumed 10 years in the calculations below. Thus, the lifetime cost of the regulations was the initial cost ($151,615) plus the ongoing cost over 10 years ($84,535,255): $84,686,870.

B.2. Costs by Industry

Rather than NAICS code, in Table 6, CalRecycle provides the percentage of ongoing costs attributed to each RDRS activity type.

Table 6: *The percentage of the estimated total annual ongoing cost that will be associated with each RDRS activity type.*

Activity	Cost ($)	Percentage
Broker/Transporter	209,220	2.5%
Contract Hauler	1,408,836	16.7%
Disposal	1,060,508	12.5%
Food Waste Self Hauler	416	0%
Recycler/Composter	3,329,136	39.4%
Transfer/Processor	2,445,410	28.9%

B.3. Reporting Costs

All of the costs stemming from these regulatory updates in some way relate to reporting in RDRS (either training, collecting and transferring the needed data, or actually reporting). Previous sections of this Appendix A thus provide the cost estimates for reporting. See, for example, the Initial, Annual, and Lifetime Costs section above (Section B.1.).

B.4. Housing

RDRS is not associated with housing. The regulatory updates for RDRS will not impact housing.

B.5. Comparable Federal Regulations

There are no comparable Federal regulations. These regulatory updates are needed to clarify the reporting requirements created by SB 343 and AB 881. The regulatory updates also clarify existing RDRS regulations.

C. Estimated Benefits

Updates to the current AB 901 regulations for RDRS will improve CalRecycle's data regarding material type of recycled or otherwise recovered materials, jurisdiction of origin for solid waste and exported mixed plastic, and source sector. These datasets will help the public evaluate products pursuant to the labeling requirements of SB 343, improve the information available to jurisdictions regarding their disposal and progress towards disposal mandates, and provide enhanced granularity of the source sector of solid waste. Taken together, these datasets will shed light on

disposal and recovery material flows within California, improving CalRecycle's ability to create strategies for reducing statewide disposal and moving towards a circular economy. Note that these benefits are all intangible. CalRecycle has no way of estimating monetary values for these benefits. In this Appendix A, Cal Recycle does note that the regulatory changes may produce up to 70 new full-time equivalent positions. If created, thesejobs are likely to be added to existing businesses, since the regulations overall will not incentivize the creation of new businesses.

D. Alternatives

D.1. Alternatives Descriptions

When considering alternatives, CalRecycle grouped the regulatory updates into three categories: those related to SB 343, those related to AB 881, or general updates. CalRecycle considered the most reasonable alternative for each of the three groups and calculated the sum cost of that alternative. With in Section D.2. below, CalRecycle discusses the specific alternative that is used for each of the three groups. Within D.2., the Total Difference subsection sums the cost difference between the alternatives and the actual updated regulations across all considered alternatives.

D.2. Costs and Benefits of Alternatives

58343

SB 343 requires CalRecycle to update the RDRS regulations to obtain information about how recovered materials are collected. The updated regulations require all RDRS activity types to report on collection method. Rather than all activity types, CalRecycle could have required only transfer/processors to provide collection method in RDRS.

The primary benefit of this approach would be a lower overall cost to the regulations. Under this method, the costs would stem from: 1) contract haulers gathering and transferring collection method to transfer/processors; 2) transfer/processors gathering and reporting collection method, and training to do so therein. Table 7 compares the cost of collection method by RDRS activity between the alternative and actual updated regulations. The alternative is $2,204,071 fewer dollars than the actual proposed regulations.

Table 7: For each RDRS activity, the total estimated cost of the actual collection method updates versus the alternative.

Activiti	Actual Cost	Alternative Cost	Alternative - Actual
Broker/Transporter	104,060	0	-104,060
Contract Hauler	316,836	312,000	-4,836
Disposal	416,455	0	-416,455
Recycler/Composter	1,678,720	0	-1,678,720
Transfer/Processor	955,460	955,460	0
Total	**3,471,531**	**1,267,460**	**-2,204,071**

CalRecycle rejected the alternative because other RDRS activities play a critical role in California's recovery infrastructure. Materials move in complicated and often unexpected ways within California's recycling infrastructure. Ignoring facilities besides transfer/processors would therefore lead to gaps in CalRecycle's understanding of who receives material for recovery and how that material was collected. Since SB 343 requires CalRecycle to obtain representative information about recovered materials in the state, it is contended that any alternative method that ignores activity types will not be as effective as the actual regulatory updates. Further, given CalRecycle's findings that the average business would not experience more than an additional $8,000 cost per year due to all of the regulatory updates, it is argued that the data provided by the actual regulatory updates for collection method justify the cost. Note that food waste self-haulers are not included within Table 7 because this activity type will not report collection method in RDRS. Further, food waste self-haulers should not incur a cost to gather and pass along collection method to destination reporting entities. Food waste self-haulers are the generator of their hauled materials, so the entity should know how they generated the material.

AB881

AB 881 requires CalRecycle to update the RDRS regulations to obtain the jurisdiction of origin for mixed plastic waste. The updated regulations require entities to transfer the jurisdictions of origin for mixed plastic waste or materials containing mixed plastic to destination entities, so that the when the mixed plastic waste is exported, the exporting entity can report the origins in RDRS. Rather than requiring entities to transfer origins, CalRecycle could have allowed host assignment. That is, when an entity exported mixed plastic waste, CalRecycle could have allowed that entity to host assign the tons either to the jurisdiction in which the exporting entity was located or to the jurisdiction of the entity from which the exporting entity received the tons. Note that CalRecycle did not consider requiring *only* contract haulers to pass along origins because CalRecycle does not know the portion of ultimately exported mixed plastic waste tons that pass directly from a contract hauler to the exporting entity. If most exported tons are not received directly at the exporting facility from a contract hauler, then requiring *only* contract haulers to pass along origins would not.

The main benefit of allowing host assignment would be a lower overall cost to the regulations. Under this method, the costs would stem from: 1) training on how to report origins in RDRS for entities that were not familiar with origins; 2) reporting origins in RDRS for exported mixed plastic waste. Costs to gather and pass along origins would not exist if all tons were host assigned. Table 8 compares the cost of mixed plastic origins by RDRS activity between the alternative and actual updated regulations. The alternative is $4,173,330 fewer dollars than the actual updated regulations.

Table B: *For each RDRS activity, the total estimated cost of the actual mixed plastic waste origins updates versus the alternative.*

Activity	Actual Cost($)	Alternative Cost ($)	Alternative - Actual ($)
Broker/Transporter	105,380	3,740	-101,640
Contract Hauler	1,092,000	0	-1,092,000
Disposal	406,770	0	-406,770
Recycler/Composter	1,651,087	11,407	-1,639,680
Transfer/Processor	946,330	13,090	-933,240
Total	**4,201,567**	**28,237**	**-4,173,330**

CalRecycle rejected the alternative because it would not provide a representative accounting of the origins of mixed plastic waste. While relatively few tons of mixed plastic waste are exported (~2500 tons per quarter from 2019 Q3 through 2022 Q1), allowing all entities to host assign would drastically skew the origins of exported mixed plastic waste. Given that tons cannot often be exported at the source of generation, most plastic waste will likely need to travel from the source of generation to the exporting entity. If plastic moves a large distance or moves among operations along the journey, then host assigning the tons will likely inappropriately determine the jurisdiction of origin. Note that the alternative cost of contract haulers and disposal facilities is $0 because CalRecycle estimated costs based on the number of entities that have ever reported exporting mixed plastic waste in RDRS. No contract hauler or disposal facility has reported such outflows. Meaning, under the alternative scenario, in which costs stem from reporting exported mixed plastic waste in RDRS and training on how to do so, contract haulers and disposal facilities would have no costs.

General Updates

The proposed rulemaking updates the RDRS regulations in several ways beyond those related to SB 343 and AB 881. Briefly, these other updates alter the categories for reporting source sector, expand data transfer for jurisdiction of origin, require materials to be reported when entities send outflows of mixed materials, require CalRecycle to approve alternative data collection methods, and a few other non-substantive miscellaneous changes, such as correcting references and changes for grammar or clarity. The alternative for all these changes is the same: simply not implementing these changes. The cost of this alternative is

therefore zero and $5,105,372 fewer dollars than the actual updated regulations (Table 9).

Table 9: *For each RDRS activity, the total estimated cost of the other updates versus the alternative of no change.*

Activity	Actual Cost($)	Alternative Cost($)	Alternative - Actual($)
Broker/Transporter	106,480	0	-106,480
Contract Hauler	1,095,224	0	-1,095,224
Disposal	663,422	0	-663,422
Food Waste Self Hauler	416	0	-416
Recycler/Composter	1,717,760	0	-1,717,760
Transfer/Processor	1,522,070	0	-1,522,070
Total	**5,105,372**	0	**-5,105,372**

CalRecycle rejected the alternative of no change because the updates were necessary.

For source sector, CalRecycle needs to change the definition to split self-haul into residential and commercial because the goal of source sector is to determine what portion of solid waste stems from the commercial versus residential source sectors. If self-haul is left unchanged, as a mixture of residential and commercial, then CalRecycle will not be able to determine accurate estimates of source sector. Since self-haul is approximately 20% of solid waste, the commercial and residential estimates are each plus/minus 20%.

For origins, CalRecycle needs to expand reporting because several entities and jurisdictions have informed CalRecycle that the current RDRS regulations, which require host assignment, do not allow accurate tracking of disposed tons' true jurisdiction of origin. Further, the expanded requirements related to jurisdiction of origin are not requirements for all RDRS activities. For recycler/composters and broker/transporters, CalRecycle is not introducing a new required burden, but instead allowing for expanded detail in reporting behavior if the entity chooses to do so.

For the other changes, CalRecycle needs to increase detail on the information that is already collected. Currently, entities are allowed to send outflows of "mixed materials" materials. To meet the goals of SB 1335 (Allen. Chapter610. Statutes of 2018), SB 54 (Allen, Chapter 75, Statutes of 2022), and SB 343, CalRecycle needs information about all outflows related to recovery, and outflows of "mixed materials" will not suffice. Thus, when entities send mixed material outflows, CalRecycle needs to require the list of materials that were present in that mixture. Likewise, CalRecycle needs to require reporting of an entity's Solid Waste Information System (SWIS) number, if an entity has one, because CalRecycle often needs to aggregate RDRS data by SWIS number. If CalRecycle does not have a SWIS number, then operational needs cannot be met. Lastly, the updated regulations require CalRecycle to approve methods other than what is allowed by

regulation because CalRecycle has a vested interest in the quality of the data. Allowing entities to use methods without approval, as is currently the case, would prevent CalRecycle from ensuring appropriate data quality. Altogether then, CalRecycle determined that the alternative of no action would not enable CalRecycle to meet program goals and standards for RDRS data.

Total Difference

The total difference between cost of the actual proposed regulations and the single least-cost alternative is the sum of the difference reported in each of the previous three sections of this Appendix A, with one exception. Within *both* the AB 881 alternatives and the General Updates alternatives sections, when comparing the actual cost versus the alternative, CalRecycle included gathering and transferring origins in the cost of the proposed regulations. However, because the General Updates group includes the requirement to gather and transfer origins for *all* materials, not just mixed plastic waste, the cost of gathering and transferring origins for mixed plastic waste is included within the cost of gathering and transferring origins for all materials. Table 10 accounts for this double-counting in its summary of the actual cost, alternative cost, and total cost difference, $7,309,444, across all alternatives.

Table 10: *For each RDRS activity, the total estimated cost of all RDRS regulatory updates versus the considered alternatives.*

ActivitX	Actual Cost t!]	Alternative Cost t!]	Alternative - Actual t!]
Broker/Transporter	214,280	3,740	-210,540
Contract Hauler	1,412,060	312,000	-1,100,060
Disposal	1,079,878	0	-1,079,878
Food Waste Self Hauler	416	0	-416
Recycler/Composter	3,407,887	11,407	-3,396,480
Transfer/Processor	2,490,620	968,550	-1,522,070
Total	**8,605,141**	**1,295,697**	**-7,309,444**

D.3. Potential Issues when Comparing Costs and Benefits

As CalRecycle is unable to estimate the monetary benefits of the actual updated regulations or the alternatives, Cal Recycle cannot easily compare the benefits of the actual and alternative regulatory updates. Broadly, the alternatives considered would not provide sufficient detail in data collected within RDRS to meet statutory and CalRecycle program goals.

D.4. Performance Standards

The regulatory updates require entities to use particular methods to ascertain collection method and source sector. While these methods do not list desired

outcomes and do not allow any method to be used, the regulatory updates allow several options from which entities may choose. By listing acceptable options, rather than listing the desired goal, CalRecycle simplifies compliance for reporting entities because entities do not need to seek CalRecycle's approval for a method that is listed. However, if an entity can justify that an alternative is appropriate, then they can do so pursuant to the regulatory updates (i.e., section 18815.9(m), California Code of Regulations [Title 14, Division 7, Chapter 9, Article 9.25]).

E. Major Regulations

CalRecycle determined that the updated regulations would impose costs less than $10 million. The benefits to the updated regulations are as described in the Estimated Benefits section of this Appendix A (Section C., above).

Fiscal Impact Statement

A. Fiscal Effect on Local Government

The updated regulations will impose additional costs on local governments that operate entities subject to the RDRS regulations. However, these costs are not reimbursable. Reimbursable costs are those that mandate a new program or higher level of service per Article XIII B, section 6 of the California Constitution. The proposed regulatory updates do not create a new program. Further, while the proposed regulations do expand reporting in RDRS, RDRS is not a service that local governments provide residents. In addition, courts have held that costs are not reimbursable if they are not unique to local governments (*County of Los Angeles v. State of California (1987) 43 Cal.3d 46).* The RDRS regulations as currently implemented and the proposed updates to the RDRS regulations apply both to local governments and private businesses. In fact, most RDRS entities are not operated by governments (Table).

Though the costs that the proposed regulations impose on local governments are not reimbursable, CalRecycle estimated these costs below. To estimate the additional costs that local governments may incur due to the updated regulations, CalRecycle determined whether a government agency operated each entity in RDRS. We used the contact emails associated with entities in RDRS, looking for ".gov," "gov.us," "ca.us", "city.us", and "county.us". Based on associated emails, CalRecycle estimates that 60 unique local governments operate 10.7% of all entities that report in RDRS (Table).

***Table** 11: For each RDRS activity, the number and percentage of government-run facilities.*

Activity	Total Number Facilities	Number Government	Percentage Government
Broker/Transporter	44	0	0.0
Contract Hauler	31	0	0.0
Disposal	149	44	29.5
Food Waste Self Hauler	4	0	0.0
Recycler/Composter	640	39	6.1
Transfer/Processor	404	53	13.1

To calculate costs to government-operated entities, CalRecycle simply multiplied the proportion of entities associated with governments by the cost. CalRecycle calculated this result separately for the initial cost (Table) and the ongoing annual cost (Table). The cost to government-operated entities in year one is the training cost plus the annual ongoing cost, $852,717. The cost to government-operated entities in year two and year three is simply the annual ongoing cost, $836,276. CalRecycle has no reason to assume that ongoing costs will increase or decrease in years two and three.

Within Table and Table , note that the portion of contract haulers that are government-run differs between the two tables. The portion is different because no registered contract haulers had government emails, and only registered contract haulers will bear training costs. For ongoing costs, registered and non-registered contract haulers will bear costs, and the original AB 901 rulemaking estimated that 2% of contract haulers overall were government-run (please see the attached 2018 STD 399).

***Table** 12: For each RDRS activity, the total estimated cost of training for government-run operations.*

Activity	Percentage Government	Total Cost ($)	Government Cost($)
Broker/Transporter	0.0	5,060	0
Contract Hauler	0.0	3,224	0
Disposal	29.5	19,370	5,714
Recycler/Composter	6.1	78,751	4,804
Transfer/Processor	13.1	45,210	5,923
Total			**16,441**

***Table** 13: For each RDRS activity, the total estimated ongoing annual cost for government-run operations.*

Activity	Percentage Government	Total Cost ($)	Government Cost($)
Broker/Transporter	0.0	209,220	0
Contract Hauler	2.0	1,408,836	0
Disposal	29.5	1,060,508	312,850
Food Waste Self Hauler	0.0	416	0
Recycler/Composter	6.1	3,329,136	203,077
Transfer/Processor	13.1	2,445,410	320,349
Total			**836,276**

B. Fiscal Effect on State Government

CalRecycle staff who currently work on RDRS will implement the updates to RDRS and provide the training needed. CalRecycle anticipates that the main cost of the regulations to CalRecycle will stem from updating RDRS to gather the newly required information. However, the additional required information is not completely new conceptually. RDRS already collects origins and source sector, and the gathering of collection method will be similar to source sector from a reporting perspective. Thus, we expect that CalRecycle will be able to update RDRS without additional resources, as part of the maintenance existing systems. However, if that does not occur, CalRecycle does not anticipate that development will take more than one Information Technology Associate position for one year ($164,667, including overhead), funded out of the Integrated Waste Management Account (IWMA). CalRecycle expects that there will be no costs for the second and third

fiscal years beyond the normal maintenance of RDRS.

C. Fiscal Effect on Federal Funding of State Programs

The proposed regulations do not affect any federally funded State agency or program.

Economic and Fiscal Impact Statement – Appendix B

Recycling and Disposal Reporting System Regulatory Update

Contents

Summary

This document is an appendix to the STD 399 form completed for the RDRS regulatory updates. Appendix A explains the logic that the Department of Resources Recycling and Recovery (CalRecycle) used to derive the answers provided for each question within the STD 399. This document, Appendix B, provides the specific methodology that CalRecycle used to estimate the costs for the regulatory changes. Specifically, for any given change, the cost per quarter is the product of the number of entities affected, the hours it will take a given entity to comply, and the wages per hour for the entity. This document explains how CalRecycle determined the number of entities affected by the regulatory updates, the hours it would take entities to comply with the updates, and the wages to use when calculating costs per entity. Throughout this appendix, wages and costs are reported in US dollars ($). Wages always refer to wages per hour.

The proposed regulatory changes can be grouped into five categories:

1. Collection Method (Senate Bill (SB) 343 [Allen, Chapter 507, Statutes of 2021])
2. Exported Mixed Plastic Waste (Assembly Bill (AB) 881 [Gonzalez, Chapter 501, Statutes of 2021])
3. Jurisdiction of Origin by Recyclers and of Recycling
4. Source Sector
5. Other Changes

The rest of the document details the costs for each of these changes, separately for each of three components: the cost to train entities on the new reporting requirements, the cost to gather and transfer needed data, and the cost to report in RDRS.

Together, CalRecycle estimates that these changes will cost reporting entities, including both government and nongovernmental operations, $8,605,140 (Table **1**). Note that the sum of the sub-totals in the table may not match the grand total, since individual values were rounded after calculating the grand total.

***Table 1**: The total cost of the updated regulations through a year of their full implementation.*

Type	Cost ($)
Collection Method	3,471,531
Mixed Plastic Export	28,237
Altered Origins	4,284,998
Source Sector	670,005
Other	150,370
Total	**8,605,141**

Wages and Entities

To assess wages, CalRecycle used the California Employment Development Department's 2021 Quarterly Census of Employment and Wages (QCEW) dataset and the Bureau of Labor Statistics (BLS) Employer Costs for Employee Compensation Summary report for March 2022. CalRecycle used the first source to estimate salaries for RDRS activity types, separately for government versus privately operated facilities. CalRecycle then used the BLS report to add overhead (e.g., benefits) onto the wages.

To use the QCEW dataset, CalRecycle first applied several filters. CalRecycle selected wages from North American Industry Classification System (NAICS) industries that were known to be associated with RDRS activities, particularly the waste management and bookkeeping industries (Table **2**). Within each industry, CalRecycle kept only wages associated with California, and removed Federal government wages since the economic assessment does not include costs to Federal agencies. Wages in the QCEW dataset are also organized by NAICS level (e.g., 5- versus 6-digit NAICS code). If an industry had wage observations for more than one NAICS level, then CalRecycle used only the wage for the most granular (largest number) NAICS code.

***Table 2**: 2021 average wage of employees by industry according to the Employment Development Department's Quarterly Census of Employment and Wages dataset, adjusted to provide the total cost to the employer.*

Industry	Activity	Government Wage ($)	Private Wage ($)
Sewage Treatment Facilities	Recycler/Composter	80.43	50.90
Solid Waste Landfill	Disposal	69.98	59.26
Accounting and Bookkeeping Services	All		66.63
Materials Recovery Facilities	Recycler/Composter, Transfer/Processor		48.39
Other Nonhazardous Waste Disposal	Disposal		51.94
Other Waste Collection	Hauler		38.25
Recyclable Material Merchant Wholesalers	Recycler/Composter, Broker/Transporter		47.58
Solid Waste Collection	Hauler, Transfer/Processor, Broker/Transporter		50.02
Solid Waste Combustors and Incinerators	Disposal		73.14

Once CalRecycle used the QCEW dataset to obtain wages, the BLS report was used to adjust those wages for overhead. According to the BLS report, wages account for

61.9% of total employment costs for state and local governments, whereas wages account for 70.4% of total costs for private employers. If wages equal total costs multiplied by some percentage (wages = total cost * percent), then total cost expressed as a wage is wage divided by the stated percentage. Thus, the total cost for governments, expressed in terms of wages, is the government wage divided by 0.704, and the total cost for private employers is the private employer wage divided by 0.619. Table **2** provides these adjusted final wages by NAICS industry.

CalRecycle used the wages within Table **2** to calculate wage by RDRS activity type. Within this table, the census industries do not use the same terminology as activities in the RDRS regulations, which is to be expected. CalRecycle therefore mapped RDRS activities onto the industries using institutional knowledge of the system. Using these mappings, CalRecycle calculated the wage for each RDRS activity as follows: 1) for every NAICS industry associated with a given RDRS activity, if there was both a private and a government wage present, then CalRecycle kept the larger of the two to be conservative (i.e., to overestimate rather than underestimate costs); 2) CalRecycle averaged the selected wages and rounded to the nearest dollar. Recycler/composters, for example, are associated with sewage treatment plants, materials recovery facilities, wholesalers, and accountants. CalRecycle therefore averaged the following wages: $80.43 (sewage), $48.39 (materials recovery), $47.58 (wholesalers), and $66.63 (accountants). The wage $80.43 was used for sewage treatment plants because that was the larger of the government ($80.43) and private ($50.90) wages for that NAICS industry. CalRecycle rounded the average of the recycler/composter wages to the nearest dollar, producing a final wage for recycler/composters of $61/hour. Table **3** reports the averaged hourly wages for each RDRS activity.

Note that CalRecycle did also obtain wage estimates from the survey that was hosted during informal rulemaking preparations for this proposed rulemaking. However, CalRecycle acquired wage estimates only for recycler/composters, transfer/processors, and disposal facilities. Because the numbers reported for those facilities were qualitatively similar to, if not the same as, the Employment Development Department estimates, CalRecycle chose to use the latter only.

***Table 3**: The number of reporting entities and final estimated wage by activity type, including overhead.*

Activity	Number	Wage ($)
Broker/Transporter	44	55
Contract Hauler	31	52
Disposal	149	65
Food Waste Self-Hauler	4	52
Recycler/Composter	640	61
Transfer/Processor	404	55

In addition to wages, Table **3** reports the number of entities that were required to report in RDRS as of 23 September 2022. CalRecycle obtained the count of entities

from RDRS Public Report 0, filtering the report to entities that were "Active" (Registration Status), "Required" (Reporting Status), and not "Provisional" (i.e., not created by other reporting entities). Two points regarding the count of entities need explanation. First, the "Disposal" activity count includes landfill, transformation, engineered municipal solid waste (EMSW) conversion, and other disposal facilities. CalRecycle does not calculate costs separately for the four disposal facility types. Second, the count of recycler/composters includes "dependent" entities. RDRS regulations allow facilities with onsite recycler/composters to combine the recycler/composters' reporting. These "dependent" recycler/composters do not report themselves, but instead report under the RDRS number of a parent recycler/composter, transfer/processor, or disposal facility. Even though these dependent entities do not report themselves, they still exist and are subject to RDRS regulations. CalRecycle therefore included dependent entities in the total count of recycler/composters. For information on why CalRecycle included only Active, Required, and non-provisional entities from Public Report 0, see Appendix A (Section A.3. within the Economic Impact Statement section).

Temporal Implementation

When estimating costs, CalRecycle calculated the cost through a year of full implementation of the proposed regulations. Portions of the regulations do not take effect until 2024 Q4, so estimated costs span the start of implementation through 2025 Q4. However, changes that do not start until 2024 Q4 do not impose costs before the start of implementation, meaning most costs were estimated for only 1 year (i.e., 4 four quarters). CalRecycle notes in the document where the number of quarters used differed from four.

Collection Method

Within collection method, CalRecycle first assessed how many entities reported already gathering this information. Of the respondents who reported accepting material for recycling (14), 14 entities indicated that they obtain collection methods for accepted materials. This may indicate that collection method is likely already gathered as part of standard business practice.

Within the survey, the average time estimated to gather collection method was 15 hours. However, one entity reported a time double the highest of the rest (80 vs 40). CalRecycle felt that this was an overestimate and instead used the average of the other values, which was 10. The average time estimated to report collection method was 9 hours.

When calculating the costs associated with collection method, only 1 year is needed for the interval. Collection method is not needed to be reported until 2024 Q4, and nothing needs to happen before that point. Thus, the total cost from 2024 Q1 through 2024 Q3 is zero.

Cost to Gather and Pass Along

Besides wages, the costs to gather and pass along collection method will depend on how long it takes each entity to acquire such information and how many entities are doing so. Importantly, CalRecycle expects that the hourly requirement will vary by activity type, since entities differ in their operations and corresponding information available to them. For example, food waste self-haulers should not incur a cost to gather and pass along collection method. The entity is the generator, so the entity should know how they generated the material. The other activity types will incur a cost, but that cost should vary.

Contract haulers will be responsible for delivering the majority of the collection method information. However, since CalRecycle has designed collection method to be similar to standard collection types (e.g., residential mixed waste versus residential source-separated recycling), and because contract haulers already gather source sector (residential versus commercial), it is expected that contract haulers should be able to determine the collection method from their routes, franchise agreements, and other readily available sources. Therefore, while no contract haulers completed the survey, CalRecycle expects that their hours to gather collection method would be less than that for the other activity types. According to the survey, it will take entities on average 10 hours to gather collection method. Assuming that this time includes both time to obtain information from contract and self-haulers, and if 80% of these entities' information will come from contract haulers (since 20% of solid waste tons are estimated to be from self-haul in RDRS), then the self-hauler portion of this hour amount is 20% of 10, or 2 hours. Here, CalRecycle assumes that the time to gather information from self-haulers will approximate the time it will take contract haulers to gather collection

method from their contractees. This hour amount likely still overestimates the time it will take contract haulers to gather collection method, since contract haulers will not have to ask generators for collection method and will instead be able to infer it from franchise agreements and other sources. CalRecycle therefore adjusted the gathering time down to 1.5 hours.

For the other activity types – transfer/processors, disposal facilities, recycler/composters, and broker/transporters – CalRecycle assumed that each activity type will require similar hours to gather collection method. Note that brokers and transporters will likely receive fewer tons from self-haulers than the other activity types and thus require fewer hours (since contract haulers will provide collection method for the other materials). However, to be conservative, CalRecycle applied the same hour estimate for the other activity types to broker/transporters. CalRecycle obtained this hour estimate as the average reported within the survey (10 hours). Note that these activity types do not pass along collection method information to destinations.

In addition to hours, as noted earlier, the cost of gathering collection method depends on the number of entities obtaining such information. For contract haulers, the 2018 rulemaking for AB 901 (Gordon, Chapter 746, Statutes of 2015), which established the RDRS regulations, estimated that approximately 1,000 contract haulers would be required to collect and pass along information to destination entities (AB 901 Economic and Fiscal Impact Statement Form 399 and Supplemental Information. California Department of Resources Recycling and Recovery, September 2018). The updated regulations have not changed who is subject to the regulations, so CalRecycle assumed that 1,000 contract haulers would be required to gather and transfer collection method information because CalRecycle has no evidence suggesting that there has been significant changes in the number of contract haulers. Further, the 2018 rulemaking estimated almost 200 contract haulers would be required to report in RDRS, yet only 31 are currently listed as such (Table **3**). CalRecycle therefore considers the 1,000 contract haulers to be a conservative estimate (i.e., one that likely overestimates rather than underestimates the true number). For the activity types other than contract haulers, CalRecycle used the count of RDRS entities provided by Public Report 0 (Table **3**).

Table **4** provides the final count of RDRS entities, as well as hours to obtain collection method per entity per quarter, number of quarters, and wage. Combining these pieces of information, CalRecycle estimated that the total cost to gather and pass along collection method was $3,246,600.

***Table 4**: For each reporting entity activity, the total estimated cost over four quarters of gathering collection method.*

Activity	Number Entities	Quarters	Hours	Hourly Wage ($)	Cost ($)
Broker/Transporter	44	4	10.0	55	96,800
Contract Hauler	1,000	4	1.5	52	312,000
Disposal	149	4	10.0	65	387,400
Recycler/Composter	640	4	10.0	61	1,561,600
Transfer/Processor	404	4	10.0	55	888,800

Cost to Report

To estimate the cost for reporting collection method, CalRecycle relied upon an analogous approach as for acquiring and passing along collection method. CalRecycle calculated cost as the product of number of entities, hours to submit collection method per quarter, number of quarters, and hourly wage of the person submitting the reports. CalRecycle used the same number for entities as reported in the gathering collection method section of this Appendix B. However, note that CalRecycle does not set the number of contract haulers to 1,000, but rather uses the number who have sent outflows of recycling/composting, brokering/transporting, and end use out of state. To estimate the hours to submit quarterly reports, CalRecycle relied upon the survey and existing data within RDRS. From the survey, the average time to submit collection method to RDRS was 9 hours. CalRecycle compared this with the time taken for stakeholders to submit reports in RDRS. In RDRS, 60% of quarterly reports are submitted within 5 hours of being started. 51% are submitted within 1 hour. There are some large submission times, but these likely stem from users starting quarterly reports and finishing them several days or weeks later since the system saves progress. Given that most quarterly reports are submitted in under 5 hours and half are submitted in less than 1 hour, CalRecycle adjusted the survey estimate down to a quarter of an hour. The addition of collection method, being a minor component relative to the rest of the RDRS report, should only minorly affect reporting time. Combining the time to report estimate with the number of reporting entities, CalRecycle estimates the total cost for reporting to be $74,977 (Table **5**).

***Table 5**: For each reporting entity activity, the total estimated cost over four quarters of reporting collection method.*

Activity	Number Entities	Quarters	Hours	Hourly Wage ($)	Cost ($)
Broker/Transporter	44	4	0.25	55	2,420
Contract Hauler	31	4	0.25	52	1,612
Disposal	149	4	0.25	65	9,685
Recycler/Composter	640	4	0.25	61	39,040
Transfer/Processor	404	4	0.25	55	22,220

Note that food waste self-haulers are not present in the table. This entity type does not report collection method in RDRS.

Cost to Train

CalRecycle estimates that for each activity type, entity staff would need 2 hours of training. These staff should already be familiar with the RDRS reporting system. Further, the gathering of collection method should be straightforward, since it is similar to source sector and follows standard common collection system terminology (e.g., source-separated recycling). But, CalRecycle estimated two hours to include both training on the new reporting in RDRS and training regarding the collection method options.

Assuming a one-time 2 hour of training and an analogous equation as for the reporting section, the total training cost for each activity type would be: $149,954.

***Table 6**: For each reporting entity activity, the estimated training cost for collection method.*

Activity	Number Entities	Quarters	Hours	Hourly Wage ($)	Cost ($)
Broker/Transporter	44	1	2	55	4,840
Contract Hauler	31	1	2	52	3,224
Disposal	149	1	2	65	19,370
Recycler/Composter	640	1	2	61	78,080
Transfer/Processor	404	1	2	55	44,440

As for the cost to report table, food waste self-haulers are not present in the training cost table. This entity type does not report collection method in RDRS.

Exported Mixed Plastic Waste

Like collection method, the costs for the proposed regulations related to exported mixed plastic can be separated into several components: gathering origins, passing them along, entering them into RDRS, and training. However, when calculating the costs for these components, CalRecycle does not include the costs to gather and pass along origins. While the regulatory updates do require such behavior for mixed plastic, the regulatory updates also require this behavior for all recyclable materials. Thus, the costs for gathering and passing along origins for mixed plastic are incorporated into the requirements for all recyclable materials. The costs for mixed plastic therefore include only reporting and training.

When assessing costs of reporting and training for exported mixed plastic waste, CalRecycle did not assume that all entities in RDRS would export mixed plastic. Within the survey, only 2 entities indicated that they export mixed plastic. Likewise, few entities have reported exporting mixed plastic in RDRS (Table 7). These entities, additionally, comprise only broker/transporters, recycler/composters, and transfer/processors (Table 8).

***Table 7**: The total, average per quarter, and maximum per quarter number of unique entities that have reported exporting mixed plastic waste in RDRS from 2019 Q3 through 2022 Q2.*

Total Unique	Average	Maximum
29	11	17

***Table 8**: The total number of unique entities within each activity type that have reported exporting mixed plastic waste in RDRS from 2019 Q3 through 2022 Q2.*

Activity Type	Number
Broker/Transporter	4
Recycler/Composter	11
Transfer/Processor	14

Cost to Report and Train

To estimate cost, CalRecycle had to determine the number of reporting entities who export mixed plastic waste. To be conservative, CalRecycle assumed that the total number of unique entities that were ever observed to export mixed plastic waste (29) *could* all export mixed plastic waste in a single quarter. CalRecycle estimated cost to report in RDRS for one year (four quarters). Though a full implementation of the regulatory updates will not occur until the end of 2025 Q4, origins for mixed plastic waste do not need to be reported until 2024 Q4. The total cost prior to 2024 Q4 is thus zero, except for the one-time training cost.

Within the survey, the average time estimated to report exported mixed plastic was 4 hours. Given the number of reporting entities, wages per hour, and four quarters of implementation, the total estimated cost to report origins in RDRS is $26,576 (Table 9).

***Table 9**: The total estimated cost over four quarters of reporting exported mixed plastic origins in RDRS.*

Activity	Number Entities	Quarters	Hours	Hourly Wage ($)	Cost ($)
Broker/Transporter	4	4	4	55	3,520
Recycler/Composter	11	4	4	61	10,736
Transfer/Processor	14	4	4	55	12,320

For training, CalRecycle estimated that reporting entity staff will need 1 hour of training. These staff should already be familiar with the RDRS reporting system. They will simply need training on how to enter origins. Since some entities will already be familiar with entering origins, due to reporting origins for solid waste and green material, this hour estimate is likely an overestimate. But some entities will not have provided origins before. These two scenarios led CalRecycle to estimate a middle-ground value of one hour. Assuming a one-time 1 hour of training and an analogous equation as for the reporting section, the training cost for all entities would be: $1,661 (Table 10).

***Table 10**: The estimated cost of training for reporting exported mixed plastic origins in RDRS.*

Activity	Number Entities	Quarters	Hours	Hourly Wage	Cost ($)
Broker/Transporter	4	1	1	55	220
Recycler/Composter	11	1	1	61	671
Transfer/Processor	14	1	1	55	770

Altered Origins Requirements

The updated regulations alter reporting of origins. First, the updated requirements expand origins to materials beyond solid waste and green material for beneficial reuse, specifically for recycling, composting, and mixed plastic waste. Second, existing regulations do not allow certain entities to gather origins for solid waste or green material for beneficial reuse. The updates will allow the gathering of such information.

Just as for collection method and mixed plastic, the cost of these updated regulations will include collecting the information, passing it along, reporting it in RDRS, and training. Notably, the updated regulations regarding origins do not require all entities to comply. Recycler/composters, for example, may *elect* to determine and provide origins for residual solid waste materials sent to disposal. All entities, on the other hand, must provide origins for mixed plastic sent to an entity. The fact that origins are not always required creates variable costs among entities. However, to be conservative, here CalRecycle assumed that whenever entities had an option, they would choose to follow the most burdensome form of the regulations. CalRecycle therefore assumed that all entities would specifically track origins for their inbound materials, using one of the methods specified in the proposed regulations.

Cost to Gather and Pass Along

To estimate the cost of gathering and passing along expanded origins, CalRecycle first needed to determine hours. According to the survey, the average time to gather and pass along origins was 12 (rounded to the nearest hour). A few respondents reported hours that were extreme compared to the others (e.g., more than 13 times greater than the average when excluding those values), so CalRecycle chose to remove these values. In addition, within survey respondents, only 50% of recycler/composters did not already collect origins for inbound materials (the other activity types had higher instances of collecting origins), indicating that many entities may already collect origins for inbound materials. To constrain the economic impact to costs beyond pre-existing business practices, CalRecycle therefore reduced the number of hours to 6. CalRecycle also additionally halved the hours for contract haulers, since haulers should already know the origins from their routes, contract agreements, and other sources.

To actually determine cost, as before, CalRecycle multiplied the number of reporting entities by the number of hours, quarters, and hourly wage. As for the other regulatory updates, CalRecycle used Public Report 0 to find the number of entities currently required to report in RDRS. CalRecycle adjusted the number of contract haulers to 1,000, following the 2018 AB 901 rulemaking's estimate of contract haulers in the state. CalRecycle increased the number of quarters to seven because these origins updates are slated to take effect in 2024 Q1 (which is when CalRecycle estimates that the proposed regulations will be effective), yet the

regulations will not be entirely implemented for one year until the end of 2025 Q3. Taken together, CalRecycle estimated the total cost to gather origins as $4,173,330 (Table 11).

***Table 11**: For each reporting entity activity, the total estimated cost over seven quarters of gathering and passing along origins.*

Activity	Number Entities	Quarters	Hours	Hourly Wage ($)	Cost ($)
Broker/Transporter	44	7	6	55	101,640
Contract Hauler	1,000	7	3	52	1,092,000
Disposal	149	7	6	65	406,770
Recycler/Composter	640	7	6	61	1,639,680
Transfer/Processor	404	7	6	55	933,240

Note that food waste self-haulers are not included in the cost because they should not incur a cost to tell destinations their jurisdiction of origin.

Cost to Report

The updated origins requirements mostly involve the collection and transfer of origins information among reporting entities. When a reporting entity needs to report such origins in RDRS, the updated requirements will create additional burden only if the new origins are more granular than were previously available, thus taking more time to calculate and enter into RDRS. CalRecycle anticipates that such reporting will take only an additional half an hour per quarter. This reporting burden will also only apply to transfer/processors and disposal facilities. CalRecycle already accounted for the cost to report origins for exported mixed plastic, and only transfer/processors and disposal facilities will potentially have more granular origins for solid waste and green material for beneficial reuse as a result of the updated regulations. CalRecycle therefore estimated the total cost to report by multiplying the number of reporting entities by the number of hours, quarters, and hourly wage, yielding a total cost of $111,668 (Table 12).

***Table 12**: For transfer/processors and disposal facilities, the total estimated cost over seven quarters of reporting origins.*

Activity	Number Entities	Quarters	Hours	Hourly Wage ($)	Cost ($)
Disposal	149	7	0.5	65	33,898
Transfer/Processor	404	7	0.5	55	77,770

Cost to Train

Entities are already familiar with the concept of jurisdiction of origin. Further, entities who report jurisdiction of origin in RDRS should not need training on how to do so. CalRecycle therefore does not anticipate further training costs to entities for the altered origins requirements.

Source Sector

The updated regulations require entities to distinguish between residential and commercial self-haul for solid waste. However, this regulatory change applies only to transfer/processors and disposal facilities, since only these entities report source sector for self-hauled material. Contract haulers do report source sector, but by definition, contract haulers can report only contract-hauled residential or contract-hauled commercial as the source sector.

Cost to Gather

To estimate the cost of gathering source sector, CalRecycle first determined hours. From the survey, the average time to gather source sector was 5 hours. A few respondents reported hours that were extreme compared to the others (e.g., more than 19 times greater than the average when excluding those values), so CalRecycle chose to remove these values.

To actually determine cost, as before, CalRecycle multiplied the number of reporting entities by the number of hours, quarters, and hourly wage. As for the other regulatory updates, CalRecycle used Public Report 0 to find the number of entities currently required to report in RDRS. Taken together, CalRecycle estimated the total cost to gather source sector information as $638,100 (Table 13).

***Table 13**: For transfer/processors and disposal facilities, the total estimated cost over four quarters of gathering source sector.*

Activity	Number Quarters	Hours	Hourly Wage ($)	Cost ($)	Entities
Disposal	149	4	5	65	193,700
Transfer/Processor	404	4	5	55	444,400

Cost to Report

The updated source sector requirements mostly involve the collection of source sector with increased granularity. CalRecycle anticipates that the additional time to report this information within RDRS will be minimal, taking only an additional quarter hour per quarter (similar to collection method). Transfer/processors and disposal facilities are already familiar with source sector and should thus require minimal time to report the new source sector granularity. To calculate the cost to report source sector, CalRecycle multiplied the number of reporting entities by the number of hours, quarters, and hourly wage, yielding an estimated total cost of $31,905 (Table 14).

***Table 14**: For transfer/processors and disposal facilities, the total estimated cost over four quarters of reporting source sector.*

Activity	Number Entities	Quarters	Hours	Hourly Wage ($)	Cost ($)
Disposal	149	4	0.25	65	9,685
Transfer/Processor	404	4	0.25	55	22,220

Cost to Train

Transfer/processor and disposal facilities are already familiar with the concept of source sector. Further, entities who report source sector in RDRS should not need training on how to report slightly altered categories. CalRecycle therefore does not anticipate further training costs to entities regarding source sector.

Other Reporting Changes

For the other regulatory changes, such as providing a Solid Waste Information System (SWIS) number, requesting approval for alternative methods, and reporting materials within mixed material outflows, CalRecycle anticipates that together these changes will likely take half an hour for entities to meet reporting obligations per quarter. Providing the SWIS number should take only a few minutes one-time. Requesting approval for alternative methods and listing the materials with mixed material outflows should likewise be rare. Disregarding the few outlier values, the survey produced an average time of 1 hour. CalRecycle expects that most entities already know the component materials in outflows of "mixed" materials, as entities should be unlikely to sell or transfer materials to a destination without providing *any* information about the material content of the outflows. For the entities that send outflows of mixed materials, CalRecycle does not think that it should take more than 15 minutes to list the materials in those outflows. Note that CalRecycle did not estimate separate costs for gathering, reporting, and training. For training, none of these regulatory requirements are conceptual changes, and should require no training in how to report in RDRS. Using half an hour for the total time for these changes, CalRecycle estimated a total cost of $150,370 (Table **15**).

***Table 15**: For each entity, the total estimated cost over four quarters for other changed regulatory requirements.*

Activity	Number Entities	Quarters	Hours	Hourly Wage ($)	Cost ($)
Broker/Transporter	44	4	0.5	55	4,840
Contract Hauler	31	4	0.5	52	3,224
Disposal	149	4	0.5	65	19,370
Food Waste Self-Hauler	4	4	0.5	52	416
Recycler/Composter	640	4	0.5	61	78,080
Transfer/Processor	404	4	0.5	55	44,440

Note that CalRecycle does not estimate the cost of the change requiring newly created entities to report immediately as opposed to one quarter after becoming subject to reporting. CalRecycle has no way of estimating the number of entities that will be created in the future. The costs associated with such entities would likely be accounted for by the other conservative estimates in this analysis.