DEPARTMENT OF RESOURCES RECYCLING AND RECOVERY

Notice to Prospective Proposers

May 4, 2023

You are invited to review and respond to this Request for Proposal (RFP) Secondary, entitled "Tire Market Analysis and Support," DRR22057. In submitting your Proposal, you must comply with the instructions herein.

Note that all Contracts entered into with the State of California will incorporate by reference General Terms and Conditions, Special Terms and Conditions and Contractor Certification Clauses which are referenced in this package. If you do not have internet access, a hard copy can be provided by contacting the person listed below.

In the opinion of the Department of Resources Recycling and Recovery (CalRecycle) this RFP is complete and without need of explanation. However, if you have questions, or should you need any clarifying information, the contact person for this RFP is:

Melissa Mojonnier
contracts@calrecycle.ca.gov
Phone: (916) 341-6048
Fax: (916) 319-7345

Please note that no *verbal* information given will be binding upon the State unless such information is issued in writing as an official addendum.

Melissa Mojonnier
Contract Administrator

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Section 1 Overview

General Information

CalRecycle's mission is to protect California's environment and climate for the health and prosperity of future generations through the reduction, reuse and recycling of California resources, environmental education, disaster recovery and the transition from a disposable to a fully circular economy.

CalRecycle Contact Information

Department of Resources Recycling and Recovery
Physical Address: 1001 I Street
Sacramento, CA 95814
CalRecycle Contracts Unit, MS-19A
Mailing Address: P.O. Box 4025
Sacramento, CA 95812-4025
Attn: Contracts Unit, MS-19A
Phone: (916) 341-6048
Email: contracts@calrecycle.ca.gov

Any documents delivered in person must be received by 2:00 p.m. on May 26, 2023 in the Visitor`s & Environmental Service Center located in the lobby of the CalEPA Headquarters Building at 1001 I Street, Sacramento, CA 95814.

Service Needed

The Contractor shall be responsible for providing the necessary technical resources, collecting data, conducting analysis, and making recommendations to help assess and strengthen tire markets and support CalRecycle's tire market development programs. Refer to the Sample Standard Agreement in the Attachments of this document for a complete description of the Scope of Work.

Contract Budget

This Contract is valid and enforceable only if sufficient funds are made available by the Budget Act of the appropriate fiscal year for the purposes of this program. In addition, this Contract is subject to any additional restriction, limitations or conditions enacted by the Legislature, which may affect the provisions, terms, or funding of this Contract in any manner.

Subject to availability of funds and approval by CalRecycle, there is a current maximum budget of $550,000 (Five hundred fifty thousand dollars and zero cents). CalRecycle reserves the right to amend the budget for this Agreement as needs arise.

Contract Amendment

CalRecycle reserves the right to amend the Agreement for additional time as required for completion of work, or to increase funding, in accordance with Exhibit B, Budget Detail and Payment Provisions of the resulting Agreement.

Any contract amendments require CalRecycle and contractor to execute a Std. 213A, and approval by DGS, if required. The contract awarded pursuant to this RFP may be amended in compliance with the State Contracting Manual Volume 1, including but not limited to section 3.09 and 5.81.

Payment Withhold
The provisions for payment under this contract shall be subject to a ten percent (10%) withholding per task. The withheld payment amount will be included in the final payment to the Contractor and will only be released when all required work has been completed to the satisfaction of CalRecycle.

Contract Term
The term of this Agreement will span approximately 31 months and is expected to begin in June 2023. CalRecycle reserves the right to amend the term of this Contract as needs arise.

Process Type
Request for Proposal (RFP) (Secondary Method).

Process Schedule
This process will be conducted according to the following tentative schedule where all times are Pacific Standard Time.

Advertisement Date	May 4, 2023
Written questions due by 5:00PM	May 11, 2023
Submittals Due by 2:00 pm	May 26, 2023
Post Notice of Intent to Award	June 8, 2023

Section II Rules and Conditions

Introduction
There are conditions that this RFP, submitting Proposers, Proposals and resulting Contracts are subject to and/or with which they are required to comply.

Commitment
Upon submittal of a Proposal, the Contractor has committed to comply with the following requirements:

- All items noted in RFP documents.
- Special Terms and Conditions, which are viewable in Exhibit D of the Sample Standard Agreement (Attachment E).
- General Terms and Conditions (GTCs) and Contractor Certification Clauses (CCCs) are both available for viewing at https://www.dgs.ca.gov/OLS/Resources/Page-Content/Office-of-Legal-Services-Resources-List-Folder/Standard-Contract-Language

The above terms, conditions, and/or requirements are not subject to negotiation. Any Proposal that reserves a right to negotiate or expresses any exception to the above terms, conditions, and/or requirements will be disqualified. However, requests to revise any of the above terms, conditions, and/or requirements may be submitted during the formal question and answer period. Any such requests must include the current language, the proposed revised language, and the justification for the proposed revision. Any revisions are at the sole discretion of CalRecycle and will only be made under very limited circumstances in which the revisions apply to all Proposers and benefit or enhance the Contract.

If the Proposer fails to meet any of the requirements or comply with CalRecycle requests, CalRecycle can reject, disqualify, or remove the firm from the process. CalRecycle is not committed to awarding a Contract resulting from this RFP.

Antitrust Claims
In submitting a Proposal Package to a public purchasing body, the Proposer offers and agrees that if the Proposal Package is accepted, it will assign to the purchasing body all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Sec. 15) or under the Cartwright Act (Chapter 2 [commencing with Section 16700] of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, materials, or services by the Proposer for sale to the purchasing body pursuant to the Proposal Package. Such assignment shall be made and become effective at the time the purchasing body tenders final payment to the Proposer. (See Government Code Section 4552.)

If an awarding body or public purchasing body receives, either through judgment or settlement, a monetary recovery for a cause of action assigned under this chapter, the assignor shall be entitled to receive reimbursement for actual legal costs incurred and may, upon demand, recover from the public body any portion of the recovery, including

treble damages, attributable to overcharges that were paid by the assignor but were not paid by the public body as part of the Proposal Package price, less the expenses incurred in obtaining that portion of the recovery. (See Government Code Section 4553.)

Upon demand in writing by the assignor, the assignee shall, within one year from such demand, reassign the cause of action assigned under this part if the assignor has been or may have been injured by the violation of law for which the cause of action arose and (a) the assignee has not been injured thereby, or (b) the assignee declines to file a court action for the cause of action. (See Government Code Section 4554.)

Contractor's Cost
All costs resulting from the Contractor's participation in the RFP process are at the firm's expense. No costs incurred by the Contractor participating in the RFP process will be reimbursed by CalRecycle.

Information
All materials submitted in response to this RFP will become the property of CalRecycle and, as such, are subject to the Public Records Act (Government Code Sections 6250 et seq.). CalRecycle will disregard any language purporting to render all or portions of the RFP package confidential.

All information obtained or produced during the course of the Agreement will be made available to CalRecycle.

Any information obtained or produced during the course of the Agreement that qualifies as confidential or a trade secret(s) under the Public Records Act (PRA) or the Public Contract Code (PCC) and is thus exempt from disclosure under those statutes shall be so marked by the firm prior to submission to CalRecycle. Any claims of confidentiality or trade secret(s) except as to information that qualifies as such under the PRA or PCC may result in disqualification.

CalRecycle will hold information obtained or produced during the course of the Agreement deemed confidential or trade secret(s) by the firm to the extent allowable by the California PRA and the PCC.

Written Questions
The RFP includes a formal question and answer period in which Proposers have the opportunity to submit questions regarding the RFP. All questions must be submitted in writing either by mail, fax, or e-mail to the CalRecycle Contact as listed in Section I, Overview. The questions and answers will be published in an Addendum to the RFP (see below, Addenda).

Addenda
CalRecycle reserves the right to amend, alter, or change the rules and conditions of this RFP.

Any ambiguity, conflict, discrepancy, omission, or other error discovered in the RFP should immediately be reported to CalRecycle prior to the deadline for submission of written questions. CalRecycle will issue addenda to address such issues.

Modification of Submittals
A Proposal submitted prior to the submittal deadline can be withdrawn or modified by the submitting Proposer. The Proposer must:

- Provide a written request
- Identify the requesting individual and their association to the Proposer

A Proposal cannot be withdrawn for modification after the submittal deadline has passed.

Errors in Submittals
An error in a Proposal package may be cause for rejection of that Proposal.

CalRecycle may make certain corrections, if the Proposer's intent is clearly established based on review of the complete Proposal.

Unreliable List
Any Contractor or subcontractor currently on CalRecycle's Unreliable List is ineligible to apply for or participate in this contract.

Electronic Waste Recycling
If the Contractor or any subcontractors participate in activities that result in the disposition of electronic components, they will comply with the provisions of PRC Chapter 8.5.

Use Tax
If, during the course of the Contract, the Contractor will be involved in the re-sale of goods to the State, they must comply with the requirements of Section 6452.1, 6487, 6487.3, 7101, and 18510 of the Revenue and Taxation Code, in addition to Section 10295.1 of the Public Contract Code.

Subcontractors
All subcontractors identified in the Proposal, must be experts in their respective disciplines and capable of performing the tasks for which they are hired.

The Department of General Services (DGS), Office of Small Business and Disabled Veteran Business Enterprise Services (OSDS) oversees the Small Business (SB) and Disabled Veteran Business Enterprise (DVBE) certification programs. If awarded the Contract, the Contractor must use all of the SB and DVBE firms identified on the Bidder Declaration form (link in the Required Forms section of this document).

Contractor understands and agrees that should award of this contract be based in part on their commitment to use the DVBE subcontractor(s) identified in their Proposal, per Military and Veterans Code 999.5 (e), a DVBE subcontractor may only be replaced by another DVBE subcontractor and must be approved by the DGS. Changes to the scope

of work that impact the DVBE subcontractor(s) identified in the Proposal and approved DVBE substitutions will be documented by contract amendment.

Failure of Contractor to seek substitution and adhere to the DVBE participation level identified in the Proposal may be cause for contract termination, recovery of damages under rights and remedies due to the State, and penalties as outlined in M&VC § 999.9; Public Contract Code (PCC) § 10115.10, or PCC § 4110 (applies to public works only).

CalRecycle reserves the right to approve substitutions of subcontractors, as long as, certified business participation levels remain unchanged.

Payments to the Contractor
Payments to the Contractor by CalRecycle will be made in arrears. Services rendered by the Contractors must be identified on an invoice, to be billed monthly in arrears.

Equipment and Software Purchases
Although equipment or software purchases are not anticipated in this contract, any equipment or software purchased to perform the responsibilities under the contract are considered state property and shall be returned to CalRecycle at the end of the contract or upon request of the CalRecycle Contract Manager (Contract Manager).

Section III Proposal Submittal Requirements

Introduction
Failure to follow the instructions contained in this document may be grounds for rejection of a Proposal.

CalRecycle may reject any Proposal if it is conditional, incomplete or contains irregularities.

CalRecycle may waive an immaterial deviation in a Proposal, if deemed in the best interest of CalRecycle.

Deadline
The Proposal package must be received by CalRecycle, at the address listed in Section I, Overview and by the "Submittals Due by 2:00" date in Section I, Overview. Proposals received after the deadline will be considered late and returned to the Proposer unopened.

Addressing
The Proposal package must clearly state that it is in response to this RFP and note the RFP number listed with the direction of "Mailroom – do not open."

Number of Copies
The Proposer is required to submit all required documents in the following format:

- One original, non-bound hard copy marked "Original"
- One electronic copy on USB flash drive viewable by Adobe Acrobat Reader. The entire Proposal, including any attachments, must be saved as a single document.

It is the submitting Proposer's responsibility to ensure that the electronic copy is formatted in Adobe Acrobat Reader and viewable by CalRecycle.

Document Printing
All documents must be submitted double-sided on paper with a minimum of 100% post-consumer recycled content fiber.

Cover Letter
The cover letter shall be signed by an individual who is authorized to bind the Proposer and shall indicate that person's title or position. The cover letter must be on the Proposer's company letterhead and contain the following information:

a. Name and address of the Proposer submitting qualifications;
b. Proposer's Headquarters for purposes of this Contract, if awarded;
c. Name, telephone number, and e-mail address of a person who can be contacted if further information is required;
d. Name, title, address, telephone number, and e-mail address of individual(s) with authority to execute a binding Contract on behalf of the Proposer;

e. Statement that personnel who will provide services under the Contract will have the required certifications and that the Proposer will have qualified personnel available to meet the service needs;
f. Statement attesting to the fact of the percentage of post-consumer recycled content fiber paper used in the compilation of the Proposal package.
g. Statement stating that the Contractor and any Subcontractors to be used during the performance of the contract are eligible to contract with the State of California, pursuant to PCC 10286; and
h. List of Contractor's and any subcontractor(s') business names, identification of certified Small Business (SB) or Disabled Veteran Business Enterprise (DVBE) status, if applicable, and corresponding Office of Small Business and Disabled Veteran Business Enterprise Services (OSDS) Reference number(s) issued by DGS.
i. Statement acknowledging the receipt of all issued Addenda pertaining to this RFP.

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The information must be organized as presented with corresponding page references.

Summary
The Proposer shall include a brief overview of the project and summarize the Proposer's approach to the work.

Methodology
The Proposal should include a Work Plan describing the methods to be employed to accomplish the contract activities described in the Scope of Work in the Sample Standard Agreement in this document.

The methodology must be described in sufficient detail to allow CalRecycle staff to evaluate the methods and must address all tasks and items in the Scope of Work. The description should include not only what work will be performed, but how it will be performed.

The tasks described in the Scope of Work outline a general approach for meeting the requirements; detailed approaches for the tasks must be proposed that meet or exceed the requirements in meeting the project objectives.

Proposals must describe in detail how project objectives will be met and the methods the Contractor will use to achieve project objectives outlined in the Scope of Work.

Organization
Provide a brief description of the organization's services and activities, including:

- Date of establishment
- History
- Location
- Any known conflicts of interest

Qualifications and Resources
The prospective contractor must have the experience, qualifications, and resources to perform the required tasks of the project.

Each Proposal must include a description of the resources to be used on the project while demonstrating an individual or team members' abilities to perform the work. The Proposals must include resumes for the Project Manager, Personnel and Subcontractors, that include:

- Experience
- Knowledge
- Educational Background
- Professional Licenses where required by law or industry standards

References
The Proposer's team must provide a minimum of three (3) verifiable references, for the Proposer and for each proposed Subcontractor, which supports the above qualifications.

If a reference or project experience is unable to be verified, it will be disregarded.

Contractor Eligibility
The Proposer must include a written declaration stating that the Contractor and any Subcontractors to be used during the performance of the contract are eligible to contract with the State of California, pursuant to PCC 10286.1. Statement may be included in the cover letter.

Qualification/Licenses
The Contractor shall be an individual or firm qualified to do business in California. Required documentation includes the following as applicable:

- A copy of the Proposer's registration with the Secretary of State.

- Additionally, pursuant to the California Business and Professions Code, for services of a "professional" nature requiring a professional license issued by the CA Department of Consumer Affairs, Proposers must submit a copy of the appropriate license(s) for each team member who will provide "professional" services under the contract.

Small Business (SB) Participation
CalRecycle requires a minimum of twenty-five percent (25%) of the project services to be contracted to a California OSDS certified SB that performs a commercially useful function.

This goal can be achieved by a combined effort of the prime and/or any Subcontractors, which includes:

- If the Proposer is a certified OSDS SB, as defined in Section V Definitions and Terms, the GSPD-05-105 Bidder Declaration form (link provided in the Required Forms section of this document) shall be completed and submitted with the Proposal.

- If the Proposer has identified qualified certified OSDS SB firms to use as Subcontractors to meet this goal, the GSPD-05-105 Bidder Declaration form (link provided in the Required Forms section of this document) shall be completed and submitted with the Proposal. When completing the Bidder Declaration, the submitting firm must clearly identify all subcontractors proposed for participation in the Contract.

SB and non-SB may receive preference as set forth below.

For purposes of this RFP, references to “Small Business” include “Microbusiness” unless contrary to law. SB certification of “SB-PW” (public works) cannot be used to fulfill the SB/Non-SB Preference Program(s).

Small Business (SB) Preference Application
Any Proposer competing in this process as a California certified SB, or as a non-SB certifying to subcontract a minimum of 25% of the total contract services to a California certified SB, will receive a five percent (5%) preference. Certification must be provided by DGS, OSDS.

Each listed certified small business must perform a "commercially useful function" in the performance of the contract as defined in Government Code Section 14837(d)(4).

The required list of California certified small business subcontracts must be attached to the bid response and must include the following: 1) subcontractor name, 2) address, 3) phone number, 4) a description of the work to be performed and/or products supplied, 5) and the dollar amount or percentage of the net bid price (as specified in the solicitation) per subcontractor. Use the Bidder Declaration form (link in Required Forms section of this document) to report this information.

Questions regarding certification should be directed to the OSDC at (916) 375-4940. In no event shall the SB preference or non-SB subcontracting preference exceed $50,000 in any single bid.

CalRecycle will apply the preference as described below.

For award based on high score, the preference is applied by calculating the "earned" score for all Proposers: If the highest scored Proposal is from a non-certified SB then:
1. Calculate five percent (5%) of the highest responsible Proposer's total score.

2. Add the amount calculated in Step 1 above to the score of each of the Proposals eligible for the SB preference to obtain the new total scores for the eligible Proposals.

Application of the preference shall not displace an award to a SB with a non-SB.

A copy of the Proposer's and or/ SB subcontractor's SB certification shall be included with the Proposal.

If the Proposer makes a commitment to achieve SB participation, then the Proposer, if awarded this contract, must within 60 days of receiving final payment under this Agreement (or within such other time period as may be specified elsewhere in this Contract) report to the awarding department the actual percentage of SB participation that was achieved (Govt. Code § 14841). Refer to the Small Business Enterprise Subcontractor Payment Certification form (Attachment A) to fulfill this requirement.

Disabled Veteran Business Enterprise (DVBE) Participation
CalRecycle requires a minimum of three percent (3%) of the project services be contracted to a California OSDS certified DVBE that performs a commercially useful function.

This goal can be achieved by a combined effort of the prime and/or any Subcontractors, which includes:

- If the Proposer is a certified OSDS DVBE, as defined in Section VI Definitions and Terms, the GSPD-05-105 Bidder Declaration form (under Section VII Required Forms) shall be completed and submitted with the Proposal.

- If the Proposer has identified qualified certified OSDS DVBE firm to use as Subcontractors to meet this goal, the GSPD-05-105 Bidder Declaration form (link provided in the Required Forms section of this document) shall be completed and submitted with the Proposal. When completing the Bidder Declaration, the submitting firm must clearly identify all subcontractors proposed for participation in the Contract.
- Proposers claiming the DVBE incentive must complete and return the Disabled Veteran Business Declarations (DGS PD 843) (link provided in the Required Forms section of this document).

After being awarded, Contractor shall use the DVBE subcontractors or suppliers proposed in the bid to the State unless a substitution is requested and approved. Contractor shall request the substitution in writing to CalRecycle and receive approval from both the CalRecycle and DGS in writing prior to the commencement of any work by the proposed subcontractor or supplier. A DVBE subcontractor may only be replaced by another DVBE subcontractor. Changes to the scope of work that impact the DVBE subcontractor(s) identified in the bid or offer and approved DVBE substitutions will be documented by contract amendment.

The Contractor shall report and certify DVBE subcontractor payments to CalRecycle by completing and submitting an accurate Prime Contractor's Certification – DVBE Subcontracting Report STD 817 upon contract completion. CalRecycle will withhold $10,000 from the final payment, or the full final payment if less than $10,000, until the Contractor complies with the reporting and certification requirements above. A Contractor that fails to comply with the reporting and certification requirement shall, after written notice, be allowed to cure the defect. Notwithstanding any other law, if, after at least 15 calendar days but not more than 30 calendar days from the date of notice, the prime contractor refuses to comply with the certification requirements, CalRecycle shall permanently deduct $10,000 from the final payment, or the full payment if less than $10,000.

A person or entity that knowingly provides false information shall be subject to a civil penalty for violation (M&VC § 999.5(d); GC § 14841). Contractor agrees to comply with the rules, regulations, ordinances, and statutes that apply to the DVBE program as defined in Section 999 of the M&VC, including, but not limited to, the requirements of Section 999.5(d). (PCC Code 10230.)

Disabled Veteran Business Enterprise (DVBE) Incentive Application
Any Proposer competing in this process as a California certified DVBE, or as a non-DVBE certifying to subcontract a minimum of 3% of the total contract services to a California certified DVBE, will receive an incentive. The incentive amounts for DVBE participation percent are as shown below:

- Five percent (5%) or more participation will receive five percent (5%) incentive calculation.
- Four percent (4%) participation will receive two percent (2%) incentive calculation.
- Three percent (3%) participation will receive one percent (1%) incentive calculation.

Certification must be provided by DGS, OSDS. The incentive is available to a non-DVBE claiming a minimum of three percent (3%) California certified DVBE subcontractor participation. If claiming the non-DVBE subcontractor incentive, the bid response must include a list of the DVBE(s) with which you commit to subcontract in an amount of at least three percent (3%) of the net bid price with one of more California certified DVBEs. Each listed certified DVBE must perform a "commercially useful function" in the performance of the contract as defined in Government Code Section 14837(d)(4).

The required list of California certified DVBE subcontracts must be attached to the bid response and must include the following: 1) subcontractor name, 2) address, 3) phone number, 4) a description of the work to be performed and/or products supplied, 5) and the dollar amount or percentage of the net bid price (as specified in the solicitation) per subcontractor. Use the Bidder Declaration form (link in Required Forms section of this document) to report this information.

Questions regarding certification should be directed to OSDC at (916) 375-4940.

CalRecycle will apply the incentive as follows:

The incentive is applied during the evaluation process and is only applied for responsive bids from responsible bidders proposing the percentage(s) of DVBE participation for the incentive(s) specified above.

For award based on high score, the incentive is applied by calculating the "earned" score for all bidders. If the highest scored Proposal is from a non-certified DVBE then:

1. Calculate five percent (5%) of the highest responsible Proposer's total score.
2. Add the amount calculated above to the score of each of the Proposals eligible for the DVBE incentive according to the participation levels to obtain the new total scores for the eligible Proposals.

Application of the incentive shall not displace an award to a DVBE with a non-DVBE.

A copy of the Proposer's DVBE certification should be included with the Proposal Package.

If awarded, the Proposer who has made a commitment to achieve disabled veteran business enterprise (DVBE) participation, must within 60 days of receiving final payment under this Agreement (or within such other time period as may be specified elsewhere in this Agreement) certify in a report to the awarding department: (1) the total amount the prime Contractor received under the contract; (2) the name and address of the DVBE(s) that participated in the performance of the contract; (3) the amount each DVBE received from the prime Contractor; (4) that all payments under the contract have been made to the DVBE(s); and (5) the actual percentage of DVBE participation that was achieved. A person or entity that knowingly provides false information shall be subject to a civil penalty for each violation (Military & Veterans Code (M&VC) § 999.5(d)). See Attachment B for the link to the Disabled Veteran Business Enterprise (DVBE) Subcontractor Payment Certification Form.

SB/DVBE Reporting Requirement

In compliance with GC 14841, awarded Contractor shall, upon completion of an awarded contract for which a commitment to small business subcontractors, report to CalRecycle the actual percentage of small business participation that was achieved.
In compliance with M&VC 999.5(d) and 999.7, awarded Contractor shall, upon completion of an awarded contract for which the Contractor entered into a subcontract with a DVBE, certify to CalRecycle all of the following:

1. The total amount the prime contractor received under the contract.
2. The name and address of the DVBEs that participated in the performance of the contract and the contract number.
3. The amount and percentage of work the prime contractor committed to provide to one or more DVBEs under the requirements of the contract and the amount each DVBE received from the prime contractor.
4. That all payments under the contract have been made to the DVBE. Upon request by the awarding department, the prime contractor shall provide proof of payment for the work.

After being awarded, Contractor shall use the DVBE subcontractors or suppliers proposed in the bid to the state unless a substitution is requested and approved. Contractor shall request the substitution in writing to CalRecycle and receive approval from both the CalRecycle and DGS in writing prior to the commencement of any work by the proposed subcontractor or supplier. A DVBE subcontractor may only be replaced by another DVBE subcontractor. Changes to the scope of work that impact the DVBE subcontractor(s) identified in the bid or offer and approved DVBE substitutions will be documented by contract amendment.

If for this contract, Contractor made a commitment to achieve the DVBE participation goal, CalRecycle will withhold $10,000 from the final payment, or the full final payment if less than $10,000, until the Contractor complies with the certification requirements above. A Contractor that fails to comply with the certification requirement shall, after written notice, be allowed to cure the defect. Notwithstanding any other law, if, after at least 15 calendar days but not more than 30 calendar days from the date of notice, the prime Contractor refuses to comply with the certification requirements, the CalRecycle shall permanently deduct $10,000 from the final payment, or the full payment if less than $10,000.

A person or entity that knowingly provides false information shall be subject to a civil penalty for violation (M&VC § 999.5(d); GC § 14841). Contractor agrees to comply with the rules, regulations, ordinances, and statutes that apply to the DVBE program as defined in Section 999 of the M&VC, including, but not limited to, the requirements of Section 999.5(d). (PCC Code 10230.)

Refer to the Small Business and Disabled Veteran Business Enterprise Subcontractor Payment Certification form (Attachment D) to fulfill this requirement.

SB/DVBE Resources
The following may be used to locate DVBE Suppliers.

STATE: State of California, Department of General Services, Procurement Division, Office of Small Business and DVBE Services (OSDS) offers many services that assist contractor/business owners with a variety of information designed to streamline the State contracting process. OSDS also certifies DVBE contractors. For more information, please contact OSDS to find out more:

Office of Small Business and DVBE Services
Department of General Services
Procurement Division
707 Third Street
West Sacramento, CA 95605
Phone: (916) 375-4940
Email: OSDSHelp@dgs.ca.gov

Access the link to the list of Focus-Trade Papers and Referral Organizations at: https://www.dgs.ca.gov/PD/Resources/Page-Content/Procurement-Division-Resources-List-Folder/Commercially-Useful-Function-for-Certified-Firms

Access the list of all certified DVBEs by using the Department of General Services, Procurement Division (DGS-PD) online certified firm database at: https://caleprocure.ca.gov/pages/PublicSearch/supplier-search.aspx

Search by "Keywords" or United Nations Standard Products and Services Codes (UNSPSC) that apply to the elements of work you want to subcontract to a DVBE.

Check for subcontractor ads that may be placed on the California State Contracts Register (CSCR) for this solicitation prior to the closing date. You may access the CSCR at: https://caleprocure.ca.gov/pages/index.aspx

Remember to verify each firm's status as a California certified DVBE.

AWARDING DEPARTMENT: Contact the department's contracting official named in this solicitation for any DVBE suppliers who may have identified themselves as potential subcontractors, and to obtain suggestions for search criteria to possibly identify DVBE suppliers for the solicitation.

Target Area Contract Preference Act (TACPA)
If the budget for services outlined in this announcement exceeds $100,000, CalRecycle provides the optional TACPA preference for TACPA qualified Proposers. Proposers are not required to apply for this preference. Denial of the TACPA preference request is not a basis for rejection of the Proposal.

The Proposer shall provide reasonable demonstration of contract labor hours and certify that they will comply with the requirements of the TACPA.

The TACPA workplace and workforce preferences will be evaluated for this solicitation. California-based companies seeking TACPA preferences will need to complete and submit preference request forms with the bid/offer. The following webpage contains required preference request forms and an interactive map to determine if a business is located within a TACPA qualified zone: Request a Target Area Contract Preference.

Proposers seeking to obtain a TACPA preference must complete and submit the TACPA Preference Request, STD. 830, and DGS/PD 526 with their Proposal. The STD. 830 and DGS/PD 526 are available to download at the link provided above.

Maximum Combined Preferences and Rules for Award
In combination with any other preferences (TACPA, SB, or DVBE participation) the maximum limit of the combined preferences is 15% of the bid amount and, in no case, more than $100,000.00 per solicitation.

Preference programs for TACPA or the non-SB subcontracting preference cannot displace a direct award to a certified SB. In the event of a tie between a SB and a firm that is SB and DVBE, the award shall be made to the firm that is SB and DVBE.

Section IV Cost Proposal Submittal

Evaluation

The Contractors Cost Proposal submittal will be evaluated based on whether the cost breakdown is sufficiently detailed to determine if the proposed expenses are reasonable.

Cost Breakdown

Attachment C, Cost Proposal Sheet, must be completed, specifying the total cost and including detailed project costs and subcontractor commitments, identified by each task and dollar amount. The awarded Proposer's invoices must be itemized as shown in the submitted Cost Proposal Sheet.

With the exception of travel expenses, the cost of food and beverage purchases is not reimbursable. All travel must be itemized in the Cost Proposal Sheet, under Column 6. For further travel information read the following section, Travel and Per Diem.

The costs identified in the Cost Proposal Sheet, should take into consideration the length of the contract, rise in salaries and overhead costs.

If fringe benefits and/or overhead are not specifically itemized in the Cost Proposal Sheet and if the Proposer inserts a $0, the Proposer must explain on the Cost Proposal Sheet why these line items are not itemized. A blank space for either fringe benefits or overhead will be grounds for immediate disqualification.

Failure to include on the Cost Proposal Sheet budgeted costs for all tasks included in the Scope of Work will be grounds for disqualification.

The Cost Proposal Sheet is a self-contained document for the purpose of calculating cost points and evaluating whether all information required by the RFP has been submitted. Therefore, all information (such as explanations of $0 instead of itemized costs) must be included. Reference by incorporation to the Proposal is not acceptable.

The amount identified in the Cost Proposal Sheet may not be changed and will remain in effect for the life of the Contract.

Travel and Per Diem

All travel must be pre-approved by the Contract Manager. Only the least costly travel method (for example, personal car, rental car, or air travel) will be reimbursed. When determining the least costly travel method, the Contractor should take into consideration not only direct expenses, but also the time billed. If the Contractor is unsure what least costly method may be, he or she shall consult with the Contract Manager. All travel will be reimbursed at the excluded employee travel rates in accordance with the California Code of Regulations Title 2, Division 1, Chapter 3, Subchapter 1, Article 2, Section 599.615.1 et seq. At the time of the RFP release, the rates listed below apply. However, they are subject to change and the Contractor will be held to the State per

diem rates in effect at the time of travel. Per diem (lodging, meals and incidentals) will not be reimbursed for travel within 50 miles of Contractor's headquarters.

- Lodging (receipts required) per day:

  All counties/cities located in California (except as noted below):
  Actual lodging expense, supported by a receipt, up to $90 per night, plus tax and mandatory fees.

  Napa, Riverside, and Sacramento Counties:
  Actual lodging expense, supported by a receipt, up to $95 per night, plus tax and mandatory fees.

  Marin:
  Actual lodging expense, supported by a receipt, up to $110 per night, plus tax and mandatory fees.

  Los Angeles, Orange, and Ventura Counties and Edwards AFB, excluding the City of Santa Monica:
  Actual lodging expense, supported by a receipt, up to $120 per night, plus tax and mandatory fees.

  Monterey, San Diego Counties:
  Actual lodging expense, supported by a receipt, up to $125 per night, plus tax and mandatory fees.

  Alameda, San Mateo, and Santa Clara Counties:
  Actual lodging expense, supported by a receipt, up to $140 per night, plus tax and mandatory fees.

  City of Santa Monica:
  Actual lodging expense, supported by a receipt, up to $150 per night, plus tax and mandatory fees.

  San Francisco:
  Actual lodging expense, supported by a receipt, up to $250 per night, plus tax and mandatory fees.

- Meals (actual expense) (up to $7 for breakfast, $11 for lunch and $23 for dinner) – up to a maximum of $41 per day

- Incidentals – up to a maximum of $5 per day.

- Coach airfare, mid-size/economy rental cars, parking and fuel – actual costs verified by bills or receipts. Expenses for rental car insurance, fuel for rental cars purchased from the rental car company, and additional air travel expenses such as preferred

boarding, will not be reimbursed. First Class or Business Class air travel is not allowed. Airport parking must be at the most economical rate. Expenses for one way rental car expense (i.e. charges for returning a rental car to a location other than that from which it was rented) will only be reimbursed if preapproval is given by the Contract Manager prior to the expense being incurred.

- Personal Vehicle Use for travel is reimbursed at $0.665 per mile; however fuel will not be reimbursed if a personal vehicle is used.

  If the Contractor is unable to obtain lodging at the excluded employee rate, the Contractor shall request preapproval from the Contract Manager for lodging rates that exceed the allowable rates. Preapproval of excess lodging rates requires the Contractor to complete and submit CalRecycle form 151. The form requires a written justification and supporting documentation including a minimum of three lodging quotes to validate the excess lodging rate. The Contract Manager will notify the Contractor of their decision. Excess lodging that is not preapproved will not be reimbursed.

Section V Evaluation and Selection

Introduction

CalRecycle will perform a Pre-Qualification Evaluation process to ensure that the Proposer has included all required documentation in the Proposal submittal. Each Proposal will first be reviewed to ensure the following items: Proposal is received by date and time specified; Proposal contains all the required documents (see Proposal Completion Checklist); and that the Proposal meets the format requirements specified.

If a Proposal package does not meet all of the requirements set forth in this RFP, it will be considered non-responsive and rejected from further competition.

Those Proposer's submittals that pass this review will be forwarded to the evaluation team.

Selection Process

The evaluation team will individually and/or as a team review, evaluate and numerically score all Proposals passing the Pre-Qualification Evaluation, utilizing the following scoring system to assign points. Following this chart is a list of the considerations that the evaluation team may take into account when assigning individual points to a technical Proposal.

Points	Interpretation	General Basis for Point Assignment
0	Inadequate	Proposal response (i.e., content and/or explanation offered) is inadequate or does not meet CalRecycle's needs/requirements or expectations. The omission(s), flaw(s), or defect(s) are significant and unacceptable.
1	Barely Adequate	Proposal response (i.e., content and/or explanation offered) is barely adequate or barely meets CalRecycle's needs/requirements or expectations. The omission(s), flaw(s), or defect(s) are inconsequential and acceptable.
2	Fully Adequate	Proposal response (i.e. content and/or explanation offered) is fully adequate or fully meets CalRecycle's needs/ requirements or expectations. The omission(s), flaw(s), or defect(s), are inconsequential and acceptable.
3	Excellent or Outstanding	Proposal response (i.e. content and/or explanation offered) is above average or exceeds CalRecycle's needs/requirements or expectations. Minimal weaknesses are acceptable. Proposer offers one or more enhancing feature, method or approach that will enable performance to exceed our basic expectations.

In assigning points for individual rating factors, the evaluation team may consider issues including, but not limited to, the extent to which a Proposal response:

1. Is lacking information, lacking depth or breadth or lacking significant facts and /or details, and or;
2. Is fully developed, comprehensive and has few, if any, weaknesses, defects or deficiencies, and or;
3. Demonstrates that the Proposer understands CalRecycle's needs, the services sought, and/or the Contractor's responsibilities, and/or;
4. Illustrates the Proposer's capability to perform all services and meet all scope of work requirements, and/or;
5. If implemented, will contribute to the achievement of CalRecycle's goals and objectives, and/or;
6. Demonstrates the Proposer's capacity and/or commitment to exceed regular services.

Responses which only restate or paraphrase information found in the RFP will receive 0 or 1 points.

Below are the point values for each rating category that will be scored.

1) Each subcategory of a proposal, excluding the Cost section, will be scored on a scale of 0 to 3. The overall rating categories and their point values are shown below. Some subcategories are weighted, and the scores for those subcategories will be multiplied by a weighting factor shown in Attachment D, Proposal Scoring Sheet. For individual subcategory descriptions refer to Attachment D.

Rating Category	**Maximum Points**
Experience/Methodology	42
Cost Points	18
Maximum Total	60

2) CalRecycle will consider a proposal technically deficient and non-responsive if the proposal earns a score that is less than 30 of the 42 points of the Experience/Methodology.

The Proposal Evaluation criteria listed specifies the total number of points available for each requirement. Using the Scoring Methodology, the evaluation team will determine the number of points to be awarded to each requirement, and multiply that by the multiplier for that requirement to determine the score.

Only those Proposals that receive a score of at least the minimum requirement identified on the Scoring Sheet will be ranked.

Cost Points
Cost points account for approximately 30% of the total points available (see Proposal Scoring Sheet). Proposers will be awarded Cost Points as follows:

1) Lowest cost Proposal is awarded the maximum cost points.
2) Other Proposals are awarded cost points based on the following calculation:

Other Proposer's Cost Points = (factor*) X maximum cost points
* factor is the Lowest Proposer's cost divided by Other Proposer's cost

EXAMPLE

Lowest Proposer's cost = $10
Other Proposer's cost = $12
Maximum cost points = 30 cost points
factor = $10 ÷ $12 = .83

Cost Points Calculation for Other Proposer's Cost
.83 X 30 cost points = 25 cost points

Final Cost Points Awarded
Lowest cost Proposal receives 30 cost points
Other cost Proposal receives 25 cost points

Grounds for Rejection
All Proposals may be rejected whenever the determination is made that the Proposals received are not really competitive, when the cost is not reasonable, or when the cost exceeds the amount expected.

Additionally, a Proposal may be rejected if any of the following apply:

- It is received after the due date and time for submittal
- The cost submittal is unsigned
- The proposal cost is not prepared as required by the RFP
- The Proposer has been prohibited from contracting with the State by the Department of Fair Employment and Housing
- The Proposer has received a substantive negative contract performance report from the State
- Any items required by the RFP are not included with the submittal

No Proposal may be rejected arbitrarily or without reasonable cause.

Award of Contract
Award of this Contract will be to the highest ranking responsible Proposer meeting all of the RFP requirements.

In the event of a tie, CalRecycle may utilize a tiebreaker to determine the winning Proposer. The tiebreaker will be determined based on which Proposer has the most SB and DVBE participation identified in the Proposal package.

CalRecycle reserves the right not to award a Contract.

Notice of Intent to Award
CalRecycle will post a notice of intent to award this Contract five (5) working days prior to the award being made.

Notice of the intent to award will be posted on CalRecycle's website at https://www2.calrecycle.ca.gov/Contracts/Current/ and at the headquarters building noted in Section I. It is the Proposer's responsibility to check one of these locations for a copy of the Notice of Intent to Award.

Rejection of Award
If the Proposer fails to enter into a satisfactory Contract within a reasonable timeframe after the award is made CalRecycle may deem that the Proposer has rejected the award.

CalRecycle reserves the right to disqualify the awardee and award the Contract to the next highest ranked Proposer.

Protest of Award
A Proposer may protest the proposed award by filing an official protest with the Department of General Services. The protest must be filed after the notice of intent to award the contract, but before the actual award.

Within five (5) calendar days of the initial protest filing, the Proposer must submit a detailed written statement with information that supports that the Proposer would have been awarded the contract and the grounds for that position.

The Contract will not be awarded until a decision has been made on the filed protest.

The protest documents should be sent to the following two parties:

1) Department of Resources Recycling and Recovery
Attn: Contracts Unit
1001 I Street, MS-19A
Sacramento, CA 95814
Fax (916) 319-7345
Email contracts@calrecycle.ca.gov

3) Department of General Services
Office of Legal Services
Attention: Bid Protest Coordinator
707 Third Street, 7th Floor, Suite 7-330

West Sacramento, CA 95605
Bid Protest Coordinator Email address: OLSProtests@dgs.ca.gov

Section VI Definition and Terms

General
Unless the context otherwise requires, wherever in this RFP or addenda, the following abbreviations and terms, or pronouns in place of them, are used, the intent and meaning shall be interpreted as provided in this Section.

Working titles having a masculine gender, such as “draftsman” and “journeyman” and the pronoun “he”, are utilized in these provisions for the sake of brevity, and are intended to refer to persons of either sex.

Abbreviations

ADA	Americans with Disabilities Act
CAL EPA	California Environmental Protection Agency
CALRECYCLE	Department of Resources Recycling and Recovery
CCR	California Code of Regulations
DVBE	Disabled Veteran Business Enterprise
EPA	Environmental Protection Agency (Federal Government)
GC	Government Code
PCC	Public Contract Code
RFP	Request for Proposals
SB	Small Business
SOW	Scope of Work
OSDS	The Department of General Services (DGS), Procurement Division (PD), Office of Small Business and DVBE Services (OSDS)

Cal EPA
The California Environmental Protection Agency

CalRecycle Staff
Staff of the Department of Resources Recycling and Recovery involved in the implementation of this contract or representatives of Consultant to the Department of Resources Recycling and Recovery as designated in the Work Orders.

Consultant
The person or persons, firm, partnership, corporation, or combination thereof, which may enter into this Contract with CalRecycle to provide work pursuant to this RFP or his or their legal representatives.

Contract
A legally binding Agreement between the state & another entity, public or private, for the provision of goods or services; the written Agreement covering performance of the work and furnishing of labor, materials, tools, and equipment in providing the work. The Agreement shall include the RFP, Proposal, general and specific terms and conditions, Work Orders, and supplemental Agreements which may be required to complete the work in a substantial and acceptable manner.

Contract Manager
A person designated by the responsible state agency or department to manage performance under a contract.

Contractor
A party contracting with the awarding agency. Vendor is often used synonymously with contractor.

Director
The Director of CalRecycle, or his/her designees. Any references to Executive Officer shall mean the Director and/or designated officer.

Disabled Veteran Business Enterprise (DVBE Certified)
A business that meets all of the following criteria: (1) at least 51% of the business is owned by one or more disabled veterans or, in a business whose stock is publicly held, at least 51% or more of the stockholders are disabled veterans (2) the management and control of the business are exercised by one or more disabled veterans; (3) the business is domestically owned and its home office is in the United States; and (4) the business has been certified as a DVBE by the State of California, Department of General Services (DGS), Procurement Division (PD), Office of Small Business and DVBE Services (OSDS).

Legal Holiday
Those days designated as State holidays in the Government Code.

Project Manager
Contractor's representative for all work performed under this Contract. All official correspondence, reports, submittals, billings, and other work done under this Contract shall be reviewed and signed by the Project Manager prior to submittal to CalRecycle.

Scope of Work
The description of work required of a contractor by the awarding agency.

Small Business (Certified)
A business that has been certified by the Department of General Services (DGS), Procurement Division (PD), Office of Small Business and DVBE Services (OSDS), as a small business as defined in GC 14837 and 2 CCR 1896.

State
The State of California.

State Contract Law
The Public Contract Code and other applicable laws that form and constitute a part of the provisions of this Contract to the same extent as if set forth herein in full.

Subcontractor
A person or entity which contracts with the Contractor to perform all or a portion of the work as specified in the Scope of Work.

Section VII Required Forms

This section contains both required forms and links to additional required forms that shall be completed and submitted. Firms are advised that this is not an inclusive list of supporting documentation that must be submitted.

Client References
Contractor Status Form
Bidder Declaration Form
Disabled Veteran Business Enterprises Declarations (DGS PD 843)
Contractor Certification Clauses
Darfur Contracting Act Certification
California Civil Rights Laws Certification

Client References
List at least three (3) client references that can attest to the firm's qualifications to fulfill the requirements of the Scope of Work. List the most recent first. Client references must also be provided for any subcontractors identified in this Proposal. Duplicate and attach additional pages as necessary.

FIRM'S / SUBCONTRACTOR'S NAME:

Name of Firm			
Street Address	City	State	Zip Code
Contact Person		Telephone Number	
Dates of Service		Cost of Service	
Brief Description of Service Provided			

Name of Firm			
Street Address	City	State	Zip Code
Contact Person		Telephone Number	
Dates of Service		Cost of Service	
Brief Description of Service Provided			

REFERENCE 3			
Name of Firm			
Street Address	City	State	Zip Code
Contact Person		Telephone Number	
Dates of Service		Cost of Service	
Brief Description of Service Provided			

If three references cannot be provided, explain why:

Contractor Status Form

Contractor's Name _____ County: _____

Address: _____

Phone Number: _____ Fax Number _____

Federal Employer Identification Number: _____

STATUS OF CONTRACTOR PROPOSING TO DO BUSINESS

☐ Individual ☐ Limited Partnership ☐ General Partnership ☐ Corporation ☐ Other

If Individual or sole proprietorship, state the true name of sole proprietor: _____

If a Limited or General Partnership, list each partner and state their true name and interest in the partnership:

_____ _____

_____ _____

_____ _____

If a Corporation, state place and date of incorporation: _____

President: _____ Vice President: _____

Secretary: _____ Treasurer: _____

Other Officer: _____ Other Officer: _____

Provide explanation if claiming Other: _____

SMALL BUSINESS PREFERENCE

Are you claiming preference for small/micro business?
☐ YES – Attach approval letter from Office of Small Business Certification and Resources
☐ NO

Are you claiming incentive for DVBE?
☐ YES – Attach approval letter from Office of Small Business Certification and Resources
☐ NO

NOTE: THIS FORM MUST BE COMPLETED OR YOUR BID MAY BE REJECTED

Below are the links to five additional required forms to be completed and submitted as part of the Proposal.

Bidder Declaration
Bidder must complete and submit the Bidder Declaration form available at: https://www.documents.dgs.ca.gov/dgs/fmc/gs/pd/gspd05-105.pdf

Bidders shall list the name and location of all subcontractors who will be employed, the kind of work which each will perform, and the percentage of the total bid that will be paid to each in the completion of the work.

For Bidders who are Certified SB and/or DVBE, Bidder shall indicate their certification by completing item 1(a).

For Bidders using subcontractors to meet the SB and DVBE requirements the Bidder shall complete item 2(b) and include the listed subcontractor's Office of Small Business and DVBE Services (OSDS) certification number and certify that the subcontractor will perform a commercially useful function.

Failure to submit this form with the proposal will result in the proposal being considered non-responsive.

Disabled Veteran Business Enterprises Declarations (DGS PD 843)
Bidder must complete the Disabled Veteran Business Enterprise Declarations (DGS PD 843) form available at: https://www.documents.dgs.ca.gov/dgs/fmc/gs/pd/pd_843.pdf to fulfill the DVBE Declaration requirement. List all Disabled Veteran Business Enterprise (DVBE) Subcontractor firms involved with this contract that will provide materials, supplies, services, or equipment {Military and Veterans Code Section 999.2].

Failure to submit this form with the proposal will result in the proposal being considered non-responsive.

Contractor Certification Clauses (CCC 04/2017)
Bidders must complete and submit CCC's included by reference and available for download at: https://www.dgs.ca.gov/OLS/Resources/Page-Content/Office-of-Legal-Services-Resources-List-Folder/Standard-Contract-Language.

An Agreement entered into by the State of California will include by reference the Contractor Certification Clauses (CCC).

Failure to submit this form with the proposal will result in the proposal being considered non-responsive.

Iran Contracting Act (PCC 2202-2208)
Bidders must complete and submit the Iran Contracting Act Certification included by reference and available for download at: http://www.documents.dgs.ca.gov/dgs/FMC/GS/PD/PD_3.pdf

Pursuant to the Iran Contracting Act of 2010 (PCC sections 2200 through 2208, "the Act"), a Person, as defined in the Act, is ineligible to bid on, submit a proposal for, enter into, or renew any contract with the state for goods or services of one million dollars ($1,000,000) or more if the Person engages in investment activities in Iran, as defined in the Act. Prior to submitting a bid or proposal and prior to executing any state contract or renewal for goods or services of one million dollars ($1,000,000) or more, a person must complete and return the attached IRAN Contract Act Certification form with its proposal certifying that it is not on the list of ineligible vendors prohibited from doing business with the State of California.

Failure to submit this form with the proposal will result in the proposal being considered non-responsive.

Darfur Contracting Act
Bidder must complete, as instructed, and submit the Darfur Contracting Act included by reference and available at: http://www.documents.dgs.ca.gov/dgs/FMC/GS/PD/PD_1.pdf

PCC section 10475 through 10481 apply to any company that currently or within the previous three (3) years has had business activities or other operations outside of the United States. For such a company to bid on or submit a proposal for a State of California contract, the company must certify that it is either: a) not a scrutinized company or b) a scrutinized company that has been granted permission by the DGS to submit a proposal.

A scrutinized company is a company doing business in Sudan, as defined in PCC section 10476. Scrutinized companies are ineligible to, and cannot, bid on or submit a proposal for a contract with a State agency for goods or services (PCC section 10477(a)) unless written permission from the Director of DGS to bid on this procurement has been granted (PCC section 10477(b)).

Failure to submit this form with the proposal will result in the proposal being considered non-responsive.

California Civil Rights Laws Certification
Bidders must complete and submit the California Civil Rights Laws Attachment included by reference and available at:https://www.dgs.ca.gov/-/media/divisions/pd/acquisitions/solicitation document attachments/California civil rights law.pdf

Pursuant to PCC section 2010, any Bidder entering into or renewing a contract over one hundred thousand dollars ($100,000) on or after January 1, 2017, must certify that they are in compliance with:

- the Unruh Civil Rights Act (Section 51 of the Civil Code).
- the California Fair Employment and Housing Act (Chapter 7 (commencing with section 12960) of Part 2.8 of Division 3 of Title 2 of the Government Code).

Failure to submit this completed form with the proposal will result in the proposal being considered non-responsive.

Attachments

Attachment A - Small Business Subcontractor Payment Certification

As Contractor of record for the Department of Resources Recycling and Recovery, Contract number _____, I certify, in accordance with Government Code 14841, upon completion of a public contract for which a commitment to achieve small business participation goals was made, the contractor shall report to the awarding department the actual percentage of small business (SB) participation that was achieved. I understand certification must be made to the Department of Resources Recycling and Recovery within 60 days of receiving final payment under this Agreement. I further understand and acknowledge that falsification of this Certification may result in the imposition of civil or criminal penalties for not less than $2,500 or more than $25,000 for each violation.

*Please copy this form to include as many SB BE firms as necessary. Authorized signatures and information are required on each separately submitted form. Return to: Department of R*esources Recycling and Recovery*, Contracts Unit- MS 19-A, Attn: SB/DVBE Advocate, P.O. Box 4025, Sacramento, CA 95812-4025 or to contracts@calrecycle.ca.gov with "Attn: SB/DVBE Advocate" and the RFP number in the Subject line.*

State Department Name	Department of Resources Recycling and Recovery 1001 I Street, Sacramento, CA 95814		
Dept. Contact Name, Phone#			
Prime Contractor Name		FEIN Number:	
Prime Contractor Contact (Address, Phone #, Email)			
Date Contract Entered:		**Date Contract Completed:**	
Total Amount Received Under this Contract	$	**Date Final Payment Received:**	

List all Certified Small Business Subcontractor firms involved with this contract.

			%
			%
			%

Printed Name		**Signature:**	
Title:		**Report Date:**	

Attachment B - Disabled Veteran Business Subcontractor Payment Certification

The Contractor is required to use the DGS Standard Form 817 (STD817) located at: https://www.documents.dgs.ca.gov/dgs/fmc/pdf/std817.pdf to fulfill the reporting and certification of requirement. List all Disabled Veteran Business Enterprise (DVBE) Subcontractor firms involved with this contract. *Upon contract completion, return to: Department of R*esources Recycling and Recovery*, Contracts Unit- MS 19-A, Attn: SB/DVBE Advocate, P.O. Box 4025, Sacramento, CA 95812-4025 or to contracts@calrecycle.ca.gov with "Attn: SB/DVBE Advocate" and the RFP number in the Subject line.*

Attachment C - Cost Proposal Sheet
Tire Market Analysis and Support, DRR22057

Complete this form and submit the original in accordance with the requirements of this RFP.
Any invoices submitted by Contractor will identify line-item costs and corresponding task number.

Contractor/Company Name: _____

Task #	**Personnel Services**: (Do not include travel or overhead) estimated # of hours needed for contract services multiplied by the individual or position rates per hour. (Include name/position title and hours)				**Fringe Benefits** (Identify fringe benefit costs citing actual benefits or as a percentage of personal services costs)	**Operating Expenses** (operating expenses related to the services provided in this Agreement, including rent and supplies, as applicable)	**Equipment Costs** (Include a description of equipment)	**Travel Expenses** (Include travel expenses and per diem. Rates are set at the rate specified by CalHR for excluded employees)	**Overhead (This information shall be provided**)	**Other** (any other specific breakdown required to sufficiently explain the budget costs)	**Total by Task**
	Name / Position	$/Hr	Hrs.	Total $							

Total by Line Item	(Sum of Total $)							**GRAND TOTAL**

Acknowledgement/Authorization

The undersigned acknowledges the submittal of this Proposal constitutes an irrevocable offer for a ninety (90) day period for CalRecycle to award an Agreement. Additional acknowledgement is made of receipt of all competitive documents, including Addenda, relating to this Agreement.

The undersigned acknowledges that the Proposer has read all of the requirements set forth in CalRecycle documents and will comply with said provisions.

The undersigned hereby authorizes and requests any person, firm, agency, or corporation to furnish any information requested by CalRecycle in verification of the recitals comprising this Proposal and also hereby authorizes CalRecycle to contact such persons, firms, etc., in order to obtain information regarding the undersigned.

The undersigned acknowledges that there are no potential conflicts of interest, as defined in Public Contract Code (PCC) 10410, 10411, and Government Code (GC) 87100, by the submitting firm and/or any Subcontractors listed in the Proposal.

I declare under penalty of perjury that the foregoing is true and correct.

Contractor Name: _____ Address: _____

City, State

Telephone #: _____ Zip: _____

Name & Title of Authorized Representative: _____ Email: _____

Signature of Authorized Representative: _____ Date Signed: _____

If fringe benefits and/or overhead are not specifically itemized in the Cost Proposal Sheet and if the Proposer inserts a $0, the *Proposer shall explain why these line items are not itemized. A blank space for either fringe benefits or overhead will be grounds for immediate disqualification.*

Attachment D - Proposal Scoring Sheet
Tire Market Analysis and Support, DRR22057

Contractor/Company Name: _____

The Proposer must pass the Methodology and Qualifications section with the minimum points indicated.

Methodology and Qualifications (Max 42 points) (Min 30 points to qualify)	**SCORE**	**MULTIPLIER**	**POINTS EARNED**
Overall approach and understanding of objectives, issues and required tasks. (3 pts possible)		1	
Addresses all items in RFP. (3 pts possible)		1	
Completeness of proposed methodology. (3 pts possible)		1	
Adequate personnel resources to perform the work of the contract. (3 pts possible)		1	
Feasibility of methodology and schedule(s). (6 pts possible)		2	
Assigned staff's knowledge/experience and educational background for the particular work involved. (6 pts possible)		2	
Respondent and/or team possess sufficient knowledge of and experience working with the California waste tire industry. (6 pts possible)		2	
Experience in 1) previous work with State entities/contracts and 2) work of a similar nature as work detailed in this RFP. (6 pts possible)		2	
Success, including level of completion, of past work (general) and any RFP related work (specific). (6 pts possible)		2	
METHODOLOGY & QUALIFICATIONS SUBTOTAL (42 pts possible)			
COST Points (18 pts possible)			
TOTAL POINTS (60 pts possible)			

Attachment E - Sample Standard Agreement

STATE OF CALIFORNIA-DEPARTMENT OF GENERAL SERVICES **STANDARD AGREEMENT** STD 213 (Rev. 04/2020)	AGREEMENT NUMBER DRR22057	PURCHASING AUTHORITY NUMBER (If Applicable)

1. This Agreement is entered into between the Contracting Agency and the Contractor named below:

CONTRACTING AGENCY NAME:
Department of Resources Recycling and Recovery

CONTRACTOR NAME:
TBD

2. The term of this Agreement is:

START DATE:
TBD or Upon DGS Approval, whichever is later

THROUGH DATE:
December 31, 2025

3. The maximum amount of this Agreement is:
$TBD

4. The parties agree to comply with the terms and conditions of the following exhibits, which are by this reference made part of this Agreement:

Exhibits		Title	Pages
	Exhibit A	Scope of Work	
	Exhibit B	Budget Detail and Payment Provisions	
	Exhibit B-1	Rate Sheet	TBD
	Exhibit C*	General Terms and Conditions	Online
	Exhibit D	Special Terms and Conditions	
		Attachment 1, Recycled Content Certification	
	Exhibit E**	Request for Proposals, Secondary (RFP), DRR22057	
	Exhibit F**	Proposal from TBD, in response to RFP, DRR22057 Items shown with double asterisks (**), are hereby incorporated by reference and made part of this agreement as if attached hereto.	

Items shown with an asterisk (*), are hereby incorporated by reference and made part of this agreement as if attached hereto. These documents can be viewed at https://www.dgs.ca.gov/OLS/Resources

IN WITNESS WHEREOF, THIS AGREEMENT HAS BEEN EXECUTED BY THE PARTIES HERETO

CONTRACTOR

CONTRACTOR NAME (if other than an individual, state whether a corporation, partnership, etc.)			
CONTRACTOR BUSINESS ADDRESS:	CITY	STATE	ZIP
PRINTED NAME OF PERSON SIGNING	TITLE		
CONTRACTOR AUTHORIZED SIGNATURE	DATE SIGNED		

STATE OF CALIFORNIA

CONTRACTING AGENCY NAME

STATE OF CALIFORNIA-DEPARTMENT OF GENERAL SERVICES **STANDARD AGREEMENT** STD 213 (Rev. 04/2020)	AGREEMENT NUMBER DRR22057	PURCHASING AUTHORITY NUMBER (If Applicable)

Department of Resources Recycling and Recovery			
CONTRACTING AGENCY ADDRESS 1001 I Street	CITY Sacramento	STATE CA	ZIP 95814
PRINTED NAME OF PERSON SIGNING Brandy Hunt	TITLE Deputy Director, Administration		
CONTRACTING AGENCY AUTHORIZED SIGNATURE	DATE SIGNED		
CALIFORNIA DEPARTMENT OF GENERAL SERVICES APPROVAL	EXEMPTION (If Applicable)		

EXHIBIT A
SCOPE OF WORK

1. TBD (Contractor) agrees to provide the Department of Resources Recycling and Recovery (CalRecycle), with tire market analysis and support services as described herein.
2. The Project Coordinators during the term of this Agreement will be:

CalRecycle Contract Manager	Contractor
Name: Mustafe Botan	Name:
Phone: (916) 341-6367	Phone: ( ) -
Email: Mustafe.botan@calrecycle.ca.gov	Email: @

Direct all Agreement inquiries to:

CalRecycle Contract Analyst	Contractor
Contracts Unit	
Attention: Melissa Mojonnier	Attention: TBD
Address: 1001 I St., MS 19-A Sacramento, CA 95814	Address:
Phone: (916) 341-6048	Phone: ( ) -
Email: Melissa.mojonnier@calrecycle.ca.gov	Email: @

3. WORK TO BE PERFORMED

The Contractor shall be responsible for providing the necessary technical resources, collecting data, conducting analysis, and making recommendations to help assess and strengthen tire markets and support CalRecycle's tire market development programs. The following is a general overview of the work that the Contractor shall perform.

Annually prepare a California tire market analysis report. The report will be the result of data collection and analysis efforts quantifying the various tire markets and uses, and shall document waste tire flows, market demands and trends, recycling rate and the quantity of the California-generated waste tires managed. The results of the waste tire market analysis report shall be used to assist CalRecycle staff to identify gaps in tire market data, develop solutions to fill data gaps, and identify opportunities to expand markets for waste tires that will increase the tire recycling rate.

Provide tire industry-specific insights and content to assist CalRecycle with the development and organization of two CalRecycle sponsored tire conferences.

4. TASKS

A. Task 1: Prepare an Annual Tire Market Analysis Report and Present Findings
   1) The contractor shall prepare an annual tire market report for calendar years 2022, 2023 and 2024. To prepare each report, the contractor shall perform the following activities:

a) Conduct an annual survey to quantify tires generated and used in tire markets and other uses. The survey shall gather information from entities that collect, haul, dispose, process, and use waste tires and tire material. Survey entities shall include, but not be limited to, tire haulers, landfills, tire material feedstock processors and producers, retreaders, rubberized asphalt suppliers, tire-derived fuel (TDF) users, and used tire resellers. Other sources of information that shall be analyzed and used to prepare the report include CalRecycle's Waste Tire Management System (WTMS), the Recycling and Disposal Reporting System (RDRS), and reports from Caltrans and United States Tire Manufacturers Association (USTMA). The survey must be comprehensive to characterize the generation of used and waste tires. Additionally, the survey shall characterize the flow of waste tires, by specification (e.g., whole tires, shredded tires), to end use markets or disposal. The survey shall quantify the amounts of rubber commodities produced from California waste tires (e.g., retreads, crumb rubber, tire derived products, tire derived aggregate, tire derived fuel). The various data sources listed above should also be used to cross-check the validity of the data gathered (e.g., to avoid double counting or resolve outlying data issues).

b) Determine the quantity of waste tires used by various market segments and analyze trends, opportunities and challenges for each tire market segment. Historical market segments include used tires, retreads, crumb/ground rubber, civil engineering, TDF, export and landfill disposal. Provide annual updates regarding opportunities and potential market development mechanisms to address barriers to increasing tire material use including recent and/or expected expansions or contractions in market segments, tire processing capacity, export market impacts, etc.

c) Utilize the results of the waste tire market analysis to develop recommendations for consideration by CalRecycle staff. Recommendations shall include, but not be limited to, methods to improve tire market data, opportunities to expand markets for waste tires that will increase the tire recycling rate, and issues that may adversely impact tire markets.

d) Identify statewide infrastructure needs for increased tire processing and use of tire derived materials and commodities. Determine the amount of excess tire processing capacity which could be used to process additional tires. Identify the reasons why some tire processing companies are not operating at full capacity and mechanisms that would enable them to operate at full capacity.

e) Participate in an initial meeting with the CalRecycle Contract Manager to kick off the contract and throughout the agreement, meet at least quarterly to discuss work progress and review draft documents.

2) Annually submit a draft report for CalRecycle review and comment. The draft report shall include all the market data, analysis, and findings detailed in the above sections. The draft report shall be similar to past tire market analysis reports to allow comparison of data and trends between the draft report and prior reports. For an example of a prior tire market analysis report see Attachment A: California Waste Tire Market Report 2021 PDF.

3) Revise the draft report in response to comments received from CalRecycle. Annually conduct a public workshop to present the draft report and solicit stakeholder feedback on

the draft report. The draft report and all presentation materials shall meet the CalRecycle Contractor Publications Guide requirements (see Note below for more information) so they can be posted on CalRecycle's website in advance of the workshop. Prepare and present to CalRecycle a summary of stakeholder feedback received on draft report and recommended revisions to the draft report in response to stakeholder input. Revise the draft report based on direction from CalRecycle to prepare the final report.

4) Annually present the findings from the market analysis conducted that year at a public meeting. All presentation materials shall meet CalRecycle Contractor Publications Guide requirements.

5) Update the market survey and analysis guidance document (Attachment B: T1-Market Analysis Guidance Document Memo 2-21-23 PDF) annually based upon lessons learned in conducting the market surveys and performing analyses.

6) All documents and/or reports drafted for publication by or for CalRecycle in accordance with this contract shall adhere to the latest CalRecycle Contractor Publications Guide at www.calrecycle.ca.gov/Contracts/PubGuide.

B. Task 2: Provide Tire Industry-specific Insights and Content to Assist CalRecycle with the Development and Organization of Two CalRecycle Sponsored Tire Conferences

1) The contractor will assist CalRecycle staff in the development and implementation of two CalRecycle sponsored tire conferences. In coordination with the CalRecycle designated conference planning committee lead, act as a co-chairperson on the conference planning committee and perform the following activities:

2) Using tire industry expertise and key industry contacts, enlist the participation of statewide, national, and international tire industry subject matter experts at the tire conferences.

3) Using national and international industry connections, assist conference session and agenda content development by surveying and soliciting input from tire industry stakeholders and contacts. Provide industry insight and suggest important topics for the conferences and potential industry-leading presenters.

4) Give presentations at the tire conferences on nationally and internationally tire related emerging issues, new technologies, and industry trends.

5) Present findings from the current tire market analysis (draft or final) report, as appropriate, at the conferences.

5. CONTRACT/TASK TIME FRAME

Upon contract execution through December 31, 2025.

Task	Deliverable(s)	Due Date
Task 1: Annual Tire Market Analysis Report public workshop, and presentation of report findings.		

	2022 Draft Report	On or before October 12, 2023
	2022 Final Report	December 15, 2023
	2023 Draft Report	June 14, 2024
	2023 Final Report	August 14, 2024
	2024 Draft Report	June 12, 2025
	2024 Final Report	August 12, 2025
Task 2: California Tire Conference: Assist in the development and organization of the tire conference. Participate in and conduct presentations.		
	2023 California Tire Conference	TBD - Spring 2024
	2024 California Tire Conference	TBD - Fall 2025

6. Location of Services
   Services will be provided state-wide. The location for meetings with the Contract Manager will be determined by the Contract Manager. Meetings will be held via teleconference, at the Sacramento Environmental Protection Agency Headquarters (1001 I Street, Sacramento, CA 95814), or by other appropriate means such as webinar.

7. Control of Work
   A. The Contract Manager has the authority to determine the quality and acceptability of the following:
      - Work to be performed
      - Rate and progress of the work
      - Fulfillment of the services provided by the Contractor
      - Compensation for services provided by the Contractor

   B. These decisions will be deemed final and enforceable by the Contract Manager when the Contractor fails to complete orders required by this Contract.

   C. The Contractor shall immediately bring any unanticipated issues to the attention of the Contract Manager. The Contract Manager will confer with appropriate CalRecycle staff, if necessary, and the Contractor to resolve the issue.

   D. The Contractor will designate a Project Manager who holds the following authority:
      - Act as the Contractor's Representative for work to be provided under this Contract
      - Act as the Contractor's Representative regarding contractual matters relating to this Contract

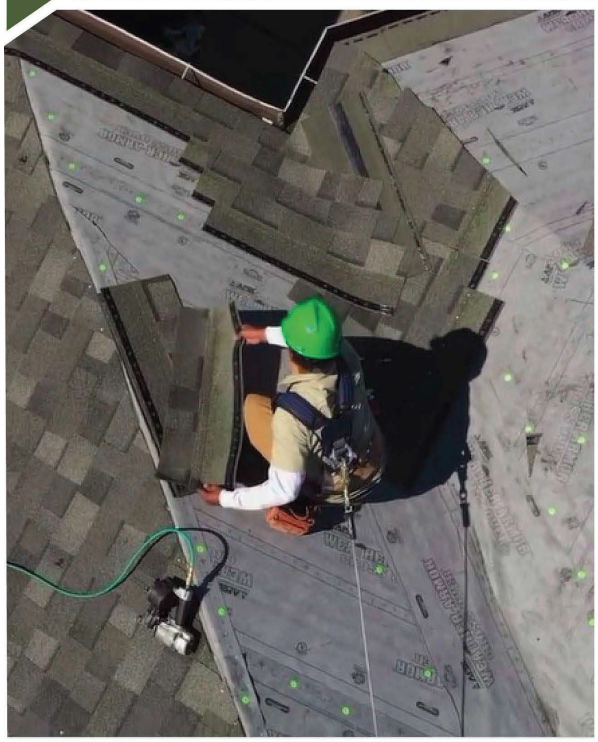
   E. If during the course of the Contract, it is deemed necessary to replace the Project Manager, Contract Manager approval is required.

ATTACHMENT A to Sample Standard Agreement (47 pages)

California Waste Tire Market Report: 2021

Contractor's Report
Produced Under Contract
By Boisson Consulting

80ISSONCONSULTING
recycling industry development



CalRecycle

California Department of Resources Recycling and Recovery

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Publication # DRRR-2022-1712

Prepared as part of contract number DRR 19054, total three-year contract value $648,845, including other services.

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Disclaimer: This report was produced under contract by Boisson Consulting. The statements and conclusions contained in this report are those of the contractor and not necessarily those of the Department of Resources Recycling and Recovery (CalRecycle), its employees, or the State of California and should not be cited or quoted as official Department policy or direction.

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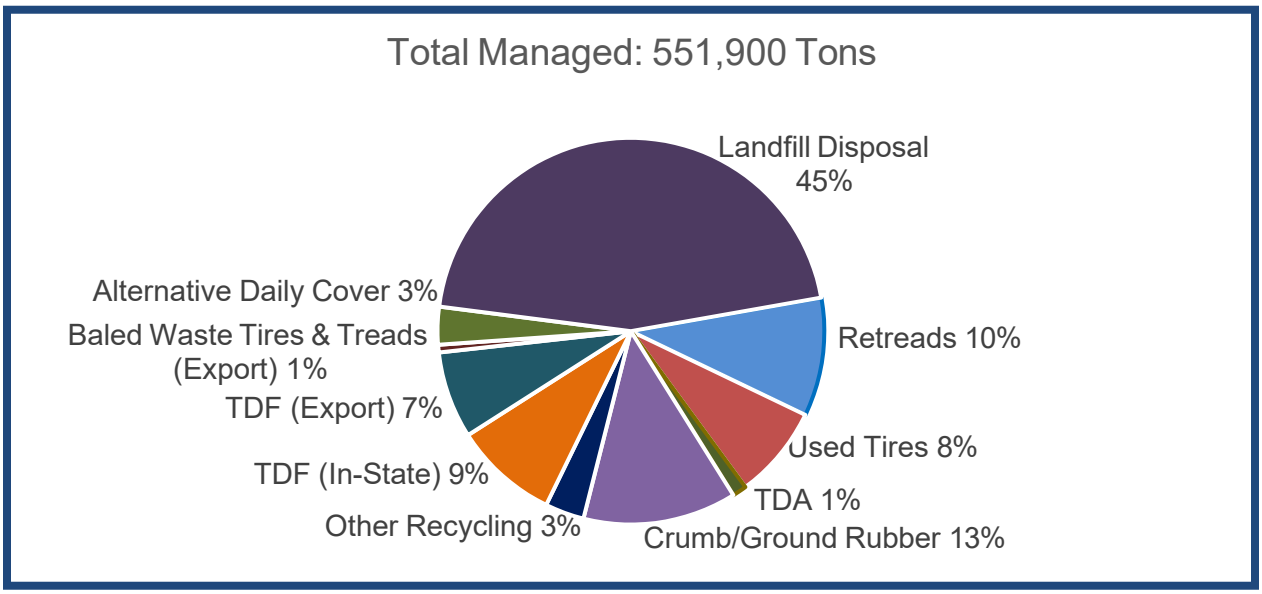
Acknowledgments

This report was prepared by Boisson Consulting in partnership with subcontractor DK Enterprises (tire recycling industry expert and liaison) and RWR Strategies (research support). We sincerely thank the many industry stakeholders who contributed their information, data, and insights as well as CalRecycle staff who coordinated access to department databases and clarified program policies and trends.

Executive Summary

This report describes California waste tire flows in 2021 and trends as of Spring 2022, based on analysis of data from industry surveys, interviews, CalRecycle databases, and other sources. As shown in Figure 1, in 2021 an estimated 551,900 tons (55.2 million PTEs*) of California-generated waste tires were managed. California waste tires flowed to 10 different market segments and a variety of disruptions impacted business operations and markets, including ongoing shifts in: COVID infections, health impacts and restrictions; economic growth followed by high inflation and the prospect of a potential 2022 recession; persistent staffing and hiring challenges; high trucking and ocean shipping costs combined with logistical challenges; and a variety of supply chain disruptions impacting diverse commodities and products related to tire-derived products (TDPs).

Figure 1
California-Generated Waste Tire Flows in 2021



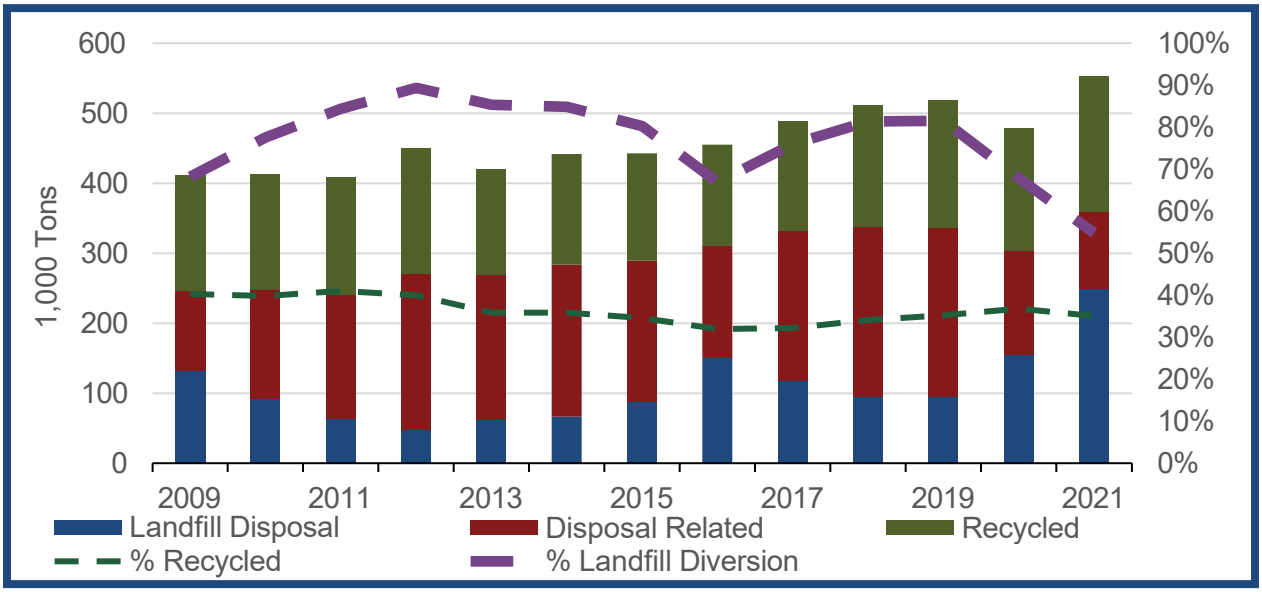
See source data for Figure 1 in Appendix C.

CalRecycle has informally adopted a 75 percent waste tire recycling goal, consistent with a statewide 75 percent recycling goal covering all waste materials mandated by AB 341 (Chesbro, Chapter 476, Statutes of 2011). As Figure 2 shows, after modest gains over four years, the California waste tire recycling rate dropped slightly in 2021 to 35

* PTE means Passenger Tire Equivalent, defined by CalRecycle (14 CCR § 17225.770) as 20 pounds. The PTE is a useful standardized reporting metric; but actual tire weights vary significantly by type, and passenger tires typically weigh more than 20 pounds.

percent. Recycled tons increased by 10 percent to 193,200 tons (19.3 million PTEs); however, this was offset by a 15 percent increase in total generation. Retreading grew by 20 percent in 2021, driven by significant supply chain disruptions that reduced new tire supplies and increased new tire pricing. Crumb rubber and ground rubber production increased 40 percent, driven by gains in the paving segment, although the molded/other product, synthetic turf infill and ground rubber market segments all saw gains as well. Used tire sales dropped in 2021 but remained a strong market. Use of tire-derived aggregate (TDA) in civil engineering dropped but may well rebound in 2022 due to new projects underway. Landfill disposal increased in 2021 by 62 percent, after a similar increase in 2020, to 249,400 tons (24.9 million PTEs or 45.2 percent of all waste tires managed), a 20-plus year record. Exported tire-derived fuel (TDF) declined 45 percent due to high port costs and logistical challenges, and in-state TDF shipments also declined 16 percent as cement kilns adjusted their fuel use.

Figure 2
California-Generated Waste Tire Recycling, Disposal Related and Landfill Disposal Trends, 2008-2021



See source data for Figure 2 in Appendix C.

In 2022 and 2023, there is potential for recycling to grow further if 2021 gains hold, especially in the retreading, paving and molded/other market segments. Recent changes in ownership and investments to expand or enhance waste tire recycling operations may also support continued growth. There is a need for continuing expansion and diversification in TDP markets and the types of California-made TDPs and TDM applications. While the conditions for transformational growth in tire recycling do not yet appear to be in place, there is good potential for incremental progress, and California's waste tire management system continues to be strong, enabling sound management of waste tires generated throughout the state.

1. Introduction

The Department of Resources Recycling and Recovery (CalRecycle) oversees management of waste and used tires in California as authorized by Senate Bill 876 (Escutia, Statutes of 2000, Chapter 838).† CalRecycle's long-term, informal goal is to achieve a 75 percent waste tire recycling rate consistent with requirements of AB 341 (Chesbro, Chapter 476, Statutes of 2011) that established a 75 percent statewide recycling rate goal for all materials by 2020.

This report estimates the 2021 California tire recycling rate and describes current and historical trends in the flow of California-generated waste tire and TDM to different market segments. Boisson Consulting prepared the report in partnership with industry specialist DK Enterprises with research support from RWR Strategies. Findings are based on detailed analysis of data and information provided by California waste tire management companies, CalRecycle staff and databases, and other sources.

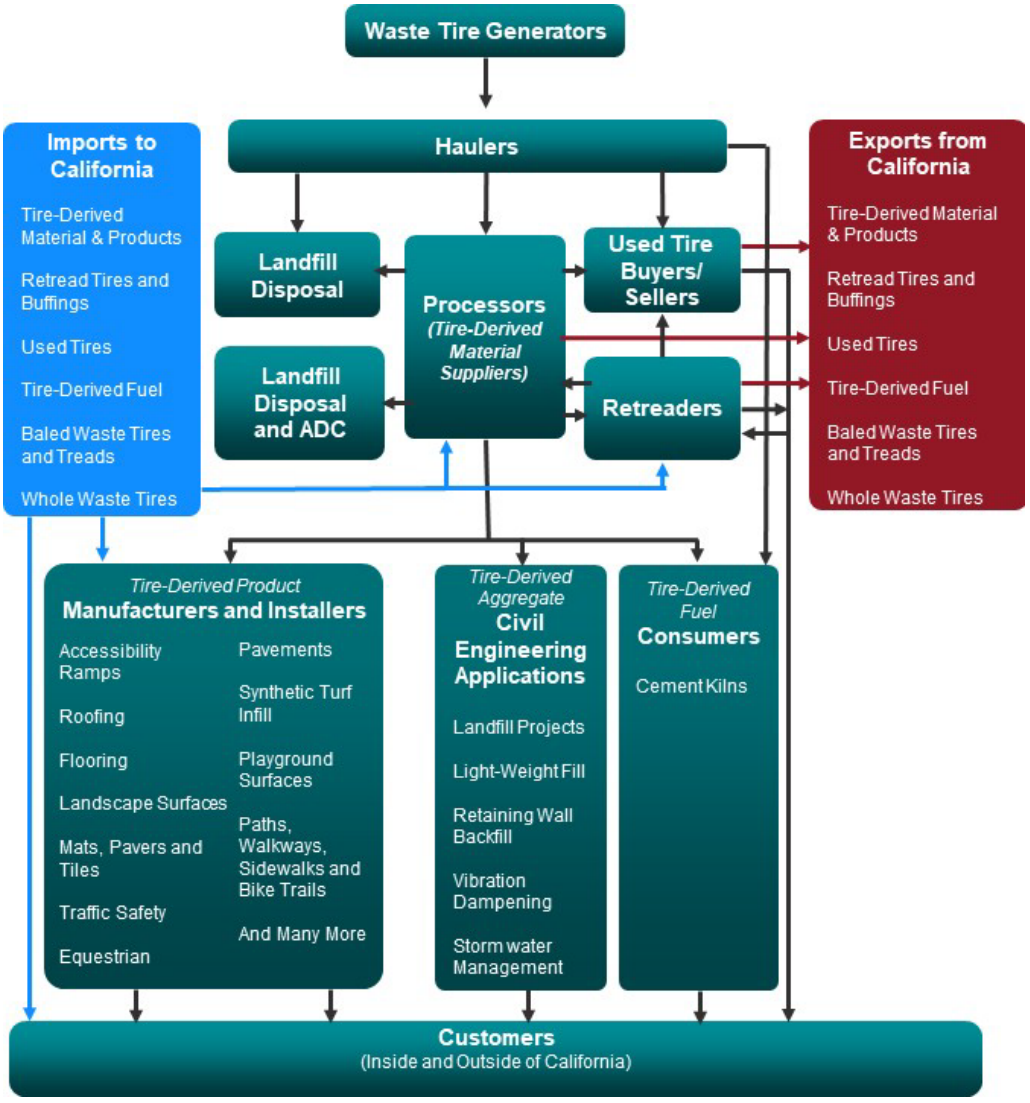
Following this introduction, Section 2 summarizes California waste tire management infrastructure. Section 3 identifies broad trends influencing waste tire markets. Section 4 provides detailed findings by market segment. The main report concludes with Section 5, discussing the outlook for increased tire recycling. Appendix A is a glossary of key terms and acronyms. Appendix B covers the report methodology. Appendix C provides notes and source data for graphs and charts to make this report fully accessible to readers of all abilities in compliance with the American Disabilities Act, Government Code sections 11546.7, 7405, and 11135, and Web Content Accessibility Guidelines 2.0. Finally, the End Notes section at the end of the report lists cited information sources.

† Unlike some tire recycling studies, this report covers waste tires, used tires and retread tires. See definitions and regulatory references in Appendix A.

2. California Waste Tire Management Infrastructure

Figure 3 illustrates flows of California-generated waste tires and tire-derived materials (TDM). Table 1 lists the number of distinct types of facilities and companies serving California. Waste tire collection and processing companies serve all areas of the state. CalRecycle's California Tire-Derived Product Catalog provides detailed product information, maps, and directories with company contacts. The TDP Catalog is available online.

Figure 3
California Waste Tire Recycling Industry Flow Chart



See detailed description of Figure 3 in Appendix C.

Table 1

California Waste Tire Management Active Facilities and Companies in 2021

Category	Counts
Registered Waste Tire Haulers	> 13,000[1]
Registered Waste Tire Generators	> 23,000[2]
Number of 2020 Waste Tire Shipments (Each Documented with a Comprehensive Trip Log in CalRecycle's Waste Tire Manifest System)	> 594,000[3]
Retreaders	37[4]
Facilities with a Major Waste Tire Facility Permit (Specified onsite maximums range from 9,960 to 336,300 PTEs)	14[5]
Facilities with a Minor Waste Tire Facility Permit (Allowing up to 4,999 PTEs onsite)	20[6]
Processors Reporting Crumb Rubber or Ground Rubber Shipments	6
Processors Reporting TDA Shipments	3
Processors Reporting In-State TDF Shipments (Includes size-reduced TDF, whole tire TDF and residual fluff from crumb rubber production)	7
Processors Reporting Exported TDF (e.g., chips, shreds) and/or Baled and Cut Waste Tire Tread Shipments	5
Tire-Derived Product Manufacturers Listed in the California TDP Catalog	16[7]
Tire-Derived Product Installers Listed in the California TDP Catalog	9[8]
California Cement Kilns Consuming TDF	4
California Landfills Disposing Size Reduced Waste Tire Material On-Site (Two additional landfills in Nevada received California waste tires in 2021)	15

3. Broad Trends Influencing Markets

As in 2020, important trends continued to create uncertainty and disrupt business operations and markets to varying degrees in 2021 and early 2022. These trends include:

- **The COVID 19 Pandemic – continued infection waves but with less restrictions.** Repeated variant-fueled spikes in infections occurred in 2021 and early 2022, with decreasing hospitalizations and deaths due to increasing vaccination rates and infection-acquired immunity. A trend towards relaxing restrictions has eased concerns over shut down orders, while staffing shortages sometimes disrupt specific workplaces due to periodic spikes in infections.
- **Shifting economic outlook**. Strong federal and state relief programs for small businesses and industry in 2020 were extended in early 2021 and helped support some California waste tire management companies. After a net decline of 2.8 percent in California's 2020 economy, the state saw a surge in growth of 7.8 percent in 2021.[9] By early 2022 the state had accumulated a near $100 billion surplus,[10] with separate, dedicated funding identified for roads and other infrastructure previously allocated at the state and local levels. However, inflation, which in January 2021 was a negligible 1.5 percent, has grown steadily, reaching 8.6 percent by May 2022.[11] In 2022, the economic outlook has come full circle with widely acknowledged recession risks as interest rates rise.
- **Staffing challenges**. With continuing low unemployment, waste tire management companies (as in other industries) have continued to deal with persistent staffing and hiring challenges, along with rising wages. This is a widely cited issue for companies in all market segments covered in this report.
- **Trucking and ocean shipping costs and challenges.** The staffing shortage is particularly an issue in the trucking industry, and costs have skyrocketed in recent years. Ports continue to be severely disrupted by increased volumes and worker disruptions caused by COVID and other factors. As a result, shipping costs are extremely high and securing shipping containers has become extremely challenging. This, in turn, has made export of TDF and baled waste tires uneconomical for certain processors.
- **Supply disruptions.** Companies in most market segments said they had experienced a degree of supply disruptions. While sometimes this led to reduced production, some respondents said the main effect was merely to slow and/or complicate ordering and scheduling of projects. Retreaders had an extraordinarily strong year as supply disruptions reduced new tire supplies and caused prices for new tires to increase significantly in 2021.
- **Additional potential global disruptions.** Further, additional disruptions and uncertainty may arise. For example, Russia's invasion of Ukraine has disrupted

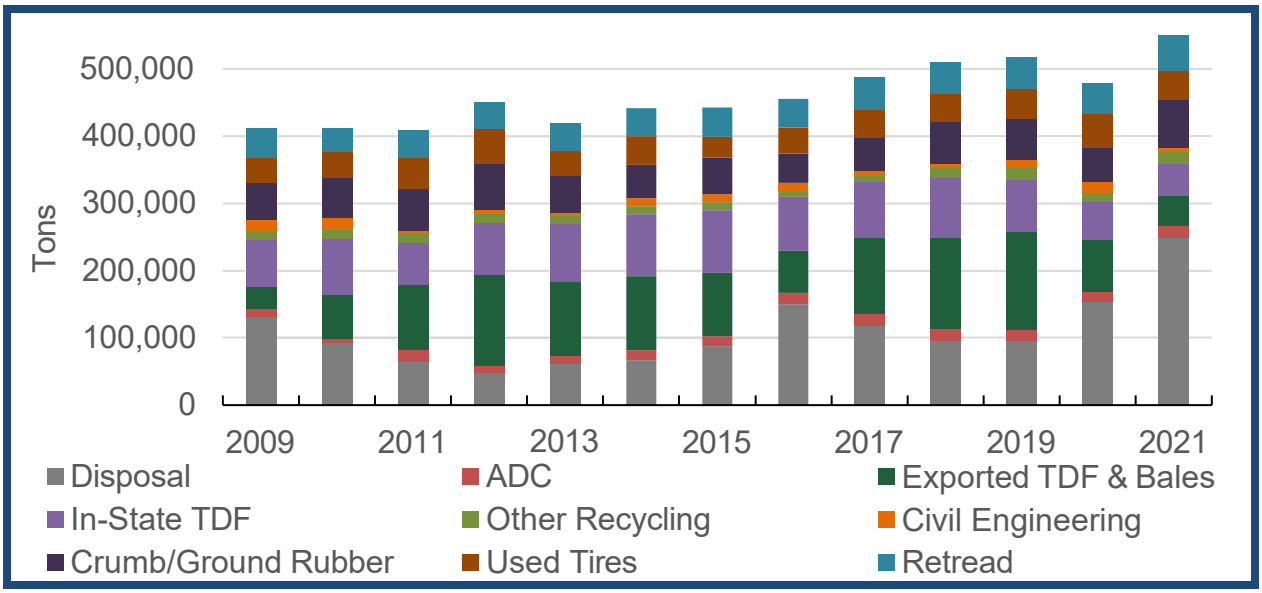
flows of many commodities, from food to carbon black, and could potentially lead to greater shipping and economic disruptions if it escalates. China's continued adherence to a zero COVID policy has triggered broad shutdowns of major cities and industrial sectors in China with associated supply chain disruptions of a variety of goods.

4. Trends by Market Segment

4.1 Historic Trends

Figure 4 shows the long-term trend in uses of California-generated waste tires and TDM, and Table 2 (on the next page) provides additional detail for the past three years. These findings are based only on California-generated waste tires and exclude imports. Likewise, the flow estimates exclude buffings from retreader operations. Appendix B describes the report methodology. The remainder of Section 4 describes trends in each market segment.

Figure 4
Historical Market Trends for California-Generated Waste Tires by Segment, 2009-2021



See Figure 4 source data in Appendix C.

Table 2

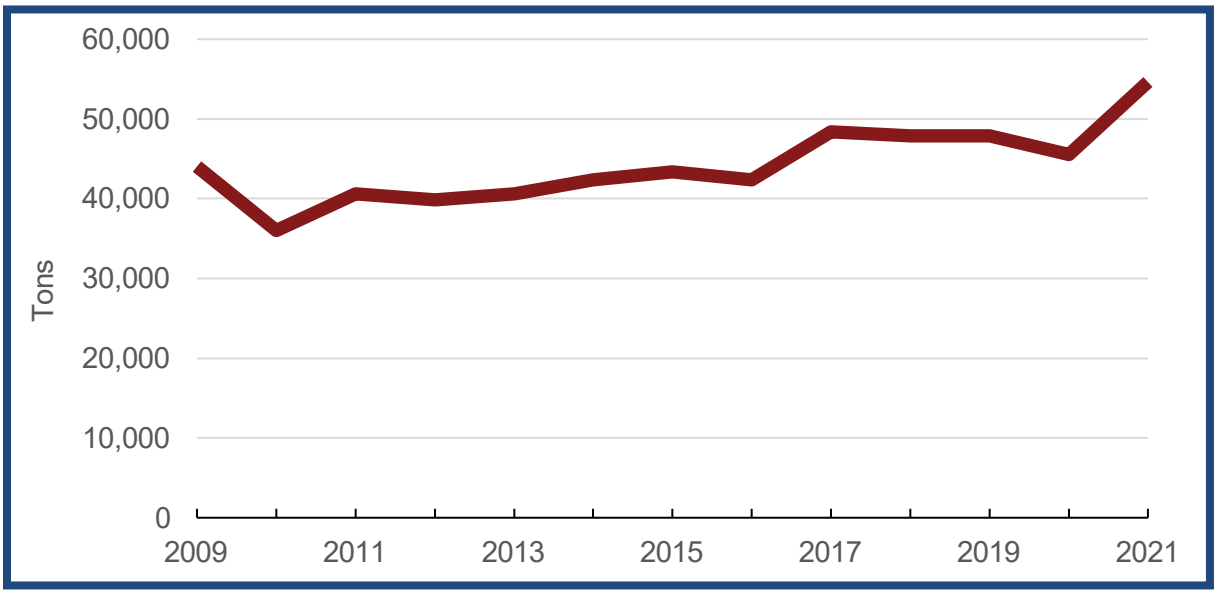
Estimated End-Uses for California-Generated Waste Tires, 2019 – 2021

Category	2019 Tons	2019 M PTEs	2019 %Total	2020 Tons	2020 M PTEs	2020 %Total	2021 Tons	2021 M PTEs	2021 %Total	% Tons Change 2020 - 2021
Retreads	47,900	4.8	9.2%	45,500	4.6	9.5%	54,600	5.5	9.9%	20%
Used Tires	44,800	4.5	8.6%	51,000	5.1	10.7%	43,000	4.3	7.8%	-16%
Crumb Rubber and Ground Rubber	60,000	5.7	11.6%	50,500	5.1	10.5%	70,900	7.1	12.8%	40%
Tire-Derived Aggregate	13,300	1.3	2.6%	16,900	1.7	3.5%	6,600	0.7	1.2%	-61%
Other Recycling	16,400	1.6	3.2%	11,900	1.2	2.5%	18,100	1.8	3.3%	52%
Sub-Total, Recycled	182,400	18.0	35.2%	175,900	17.6	36.7%	193,200	19.3	35.0%	10%
Tire-Derived Fuel (In-State)	78,300	8.0	15.1%	57,600	5.8	12.0%	48,200	4.8	8.7%	-16%
Tire-Derived Fuel (Export)	114,400	11.4	22.1%	73,400	7.3	15.3%	40,100	4.0	7.3%	-45%
Baled Waste Tires and Treads (Export)	31,000	3.1	6.0%	3,200	0.3	0.7%	3,500	0.4	0.6%	10%
Landfill Alternative Daily Cover	16,800	1.7	3.2%	14,900	1.5	3.1%	17,400	1.7	3.2%	17%
Sub-Total, Disposal Related	240,500	33.5	46.4%	149,100	14.9	31.1%	109,300	10.9	19.8%	-27%
Landfill Disposal	95,400	9.3	18.4%	154,000	15.4	32.2%	249,400	24.9	45.2%	62%
Total Managed	518,400	51.5	100.0%	479,000	47.9	100.0%	551,900	55.2	100.0%	15%
Whole Waste Tire Imports	5,700	0.6	1.1%	26,800	2.7	5.6%	29,500	3.0	5.4%	10%

4.2 Retreading

Retreaders experienced an extraordinarily strong year in 2021 and into 2022. Figure 5 shows an estimated 20 percent increase in the quantity of retread tires in 2021, to 54,600 tons (5.5 million PTEs, or 9.9 percent of all waste tires managed), based on California and national industry interviews. This was reportedly caused by significant supply chain disruptions that affected new tire supplies and increased new tire pricing, while retreaders continued to build on their inventory enabling them to seize the growth opportunity. Demand for retread tires remains high and, despite some ongoing constraints on rubber supply and workers needed by retreaders, the retread industry appears to be experiencing continued growth in 2022. In 2021, the CalRecycle sponsored Retread Services Contract (led by DK Enterprises) compiled data on retread benefits, conducted a series of seven workshops supported by the five leading retread and new tire manufacturers to educate fleet managers about retread tires, and produced new retread tire educational materials now available on CalRecycle's web site.

Figure 5
Estimated California-Generated Retread Tire Shipments, 2009-2021



See Figure 5 Source Data in Appendix C.

4.3 Used Tires

In 2021, an estimated 43,000 tons of used tires (4.3 million PTEs, or 7.8 percent of all waste tires managed) were culled from the waste tire stream. The used tires are sold in tire shops throughout California and exported primarily to Mexico, which maintains a quota limiting such imports of used tires to approximately 750,000 per year. Used tires is a profitable market and is expected to remain strong in 2022.

4.4 Crumb Rubber and Ground Rubber

In this report, crumb rubber and ground rubber are combined into a single category for the purpose of reporting total quantities shipped, as in Figure 6 below and Table 2 above. However, in this section we describe each of four sub-categories, with total quantities shipped estimated as a range. Specific estimates of the amount of crumb rubber and ground rubber shipped in each sub-category are no longer provided in this report series, due to the competitive nature of this market segment.

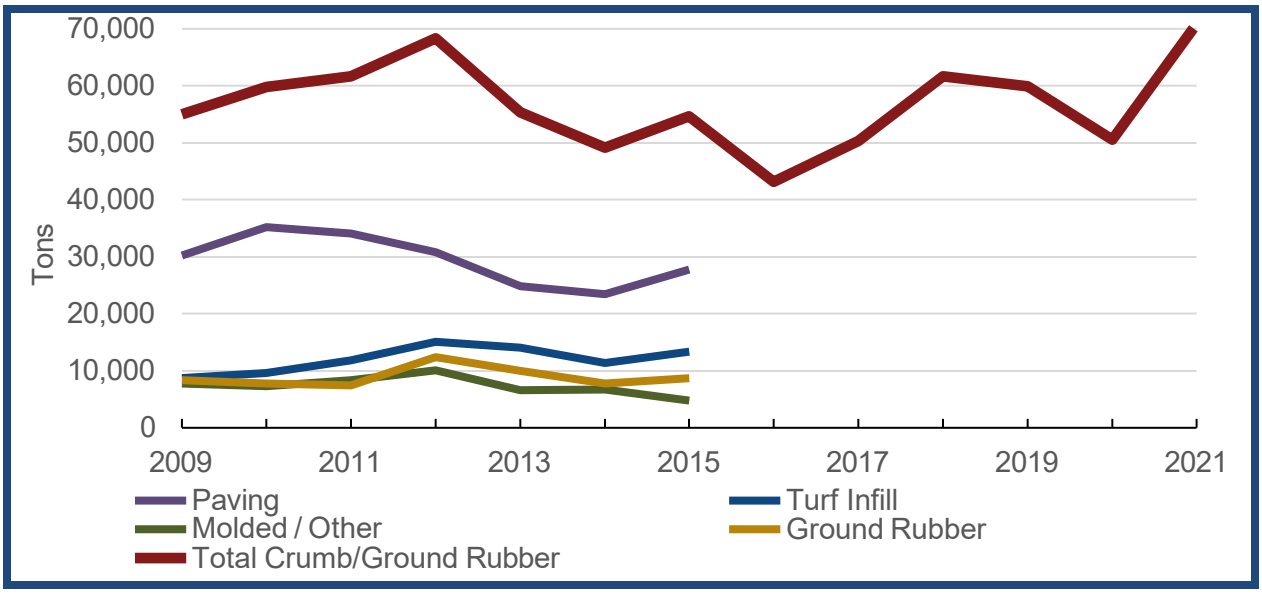
Crumb rubber is defined as TDM equal to or less than ¼ inch in size, and is commonly used in the following three sub-categories of products as described below in this report section:

- Paving, including rubberized hot mix asphalt and chip seal surface treatments
- Infill used on synthetic turf athletic fields
- Molded and Other – A catch-all grouping of other products made with crumb rubber including molded products like flooring tiles, ADA transition ramps, traffic safety devices, and pipe couplings, as well as non-molded products such as SBS modified bitumen roofing membranes

A fourth sub-category of products in the Crumb Rubber and Ground Rubber category is Ground Rubber products. Ground rubber is defined as TDM greater than ¼ inch and typically up to one inch in size. Products and uses made with ground rubber include landscape surfaces, playgrounds, and ballistics applications, among others.

As illustrated in Figure 6, estimated shipments of California-generated crumb rubber and ground rubber increased by 40 percent in 2021 to 70,900 tons (141.8 million pounds, 7.1 million PTE, or 12.8 percent of all waste tires managed). This increase came after declines in the previous two years. A description of trends for each sub-category follows Figure 6.

Figure 6
Shipments of California-Generated Crumb Rubber and Ground Rubber, 2009-2021



See Figure 6 source data in Appendix C.

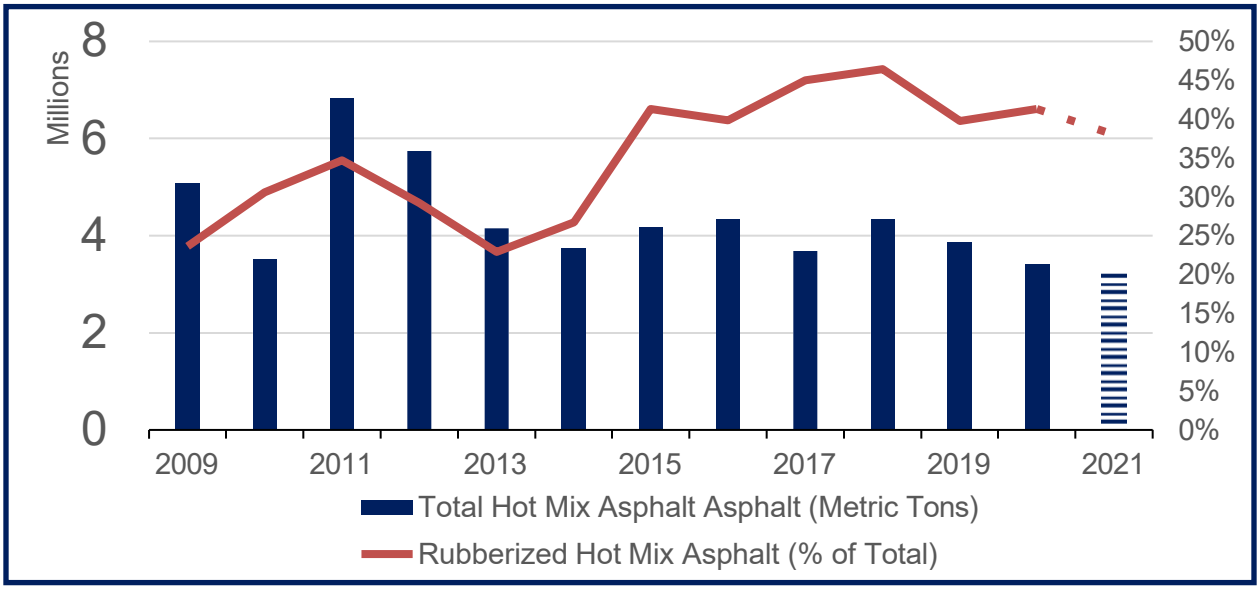
In addition to crumb rubber and ground rubber, raw and screened buffings of different specifications are also used in certain TDPs, especially pour-in-place playground surfacing, molded products, landscape mulch, and turf infill. Buffings are produced as a by-product of the retreading process, and we estimate that well over 15 million pounds were shipped by California retreaders in 2021. It is important to note that buffings are excluded from crumb rubber and ground rubber estimates and are not counted in recycling rates because the retreaded tires they originated from are already counted under retreads. Buffings continue to be in high demand

Paving

California producers shipped 72-92 million pounds of crumb rubber for use in asphalt paving projects, an increase over the 60-70 million pounds reported in 2020. Many industry representatives said they had expected greater increases in demand by Caltrans due to enactment of SB1, the Road Repair and Accountability Act of 2017. However, Caltrans staffing changes have contributed to delays in preparing and publishing bid documents for some projects, and the net result has been fewer, larger bids and an increase in bids for materials and services other than asphalt paving.

Figure 7 illustrates this trend, showing reductions in the total amount of asphalt placed over each of the last four years. While Caltrans has satisfied the mandate that at least 35 percent of its paving projects be rubberized hot mix asphalt (RHMA), the actual percentage has declined in recent years. Some survey respondents suggested a need for additional training, especially in districts with relatively low RHMA usage rates, to reinforce policies calling for use of RHMA as the surface of choice.

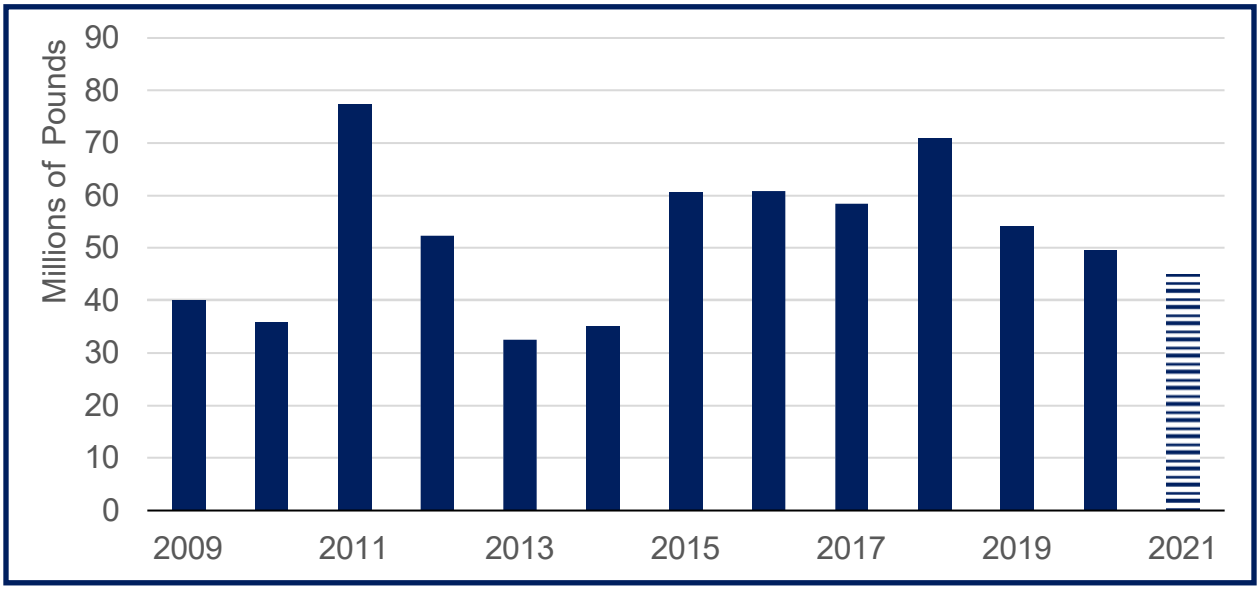
Figure 7
Caltrans Asphalt Placement and Rubberized Asphalt Percent of Total, 2009-2021[12]



Source: Caltrans annual Crumb Rubber Reports. (2021 data are estimates based on discussion with Caltrans representatives.) See Figure 7 source data in Appendix C.

The net result is seen in Figure 8, showing a reduction in estimated annual Caltrans crumb rubber use to about 45 million pounds in 2021. Since 2009, Caltrans has used an average of 51.8 million pounds of crumb rubber each year.

Figure 8
Caltrans Annual Use of Crumb Rubber in Paving Applications, 2009-2021[13]



Source: Caltrans annual Crumb Rubber Reports. (2021 data are estimates based on discussion with Caltrans representatives.) See Figure 8 source data in Appendix C.

Several California local governments use crumb rubber in paving projects, including rubberized hot mix asphalt (known as rubberized asphalt concrete, or RAC, in CalRecycle's programs) and in chip seals. CalRecycle supports a portion of this use through the Rubberized Pavement Grant Program (TRP). In the most recent grant cycle for the 2021-22 fiscal year, 37 projects were approved with a combined projected total use of 10.9 million pounds, which may be used in projects through the end of the grant cycle in April 2024. Historically, the program has funded average annual use of 9.0 million pounds of crumb rubber each year. This average figure is based on analysis of eight years of completed grants culminating in the 2018/19 fiscal year. Data from the most recent grant cycles are not used because historically, actual TDM use is typically less than the amount estimated in grant applications due to changes in, postponement, or cancelation of some projects.

Molded and Other Products

California producers shipped 27-34 million pounds of crumb rubber to molded and other product manufacturers/installers in 2021, an increase over the 20-25 million pounds shipped in 2020. This diverse category includes a variety of roofing, flooring, tiles, traffic sign bases, ADA transition ramps and more. The quantity of crumb rubber feedstock consumed by firms in this category ranges widely, with several using less than 50,000 pounds per year, while a few commonly use at least five million pounds each year.

CalRecycle's Tire Incentive Program (TIP) provides grants that support most of the crumb rubber used in this category. The program provides direct payments to tire-derived product (TDP) manufacturers of 10 cents per pound for new and existing products; 40 cents per pound for feedstock conversion projects involving new use of recycled feedstock in existing products, or for use of devulcanized TDM; and 50 cents per pound for fine mesh crumb rubber of at least 50 mesh.

In the most recent TIP grant cycle, for the 2021-22 fiscal year, six companies were awarded grants, with combined projected use of 22.1 million pounds of crumb rubber through April 2014. Based on analysis of six years of completed grants culminating in 2018-19, the TIP program supported an average of 10.9 million pounds per year. Data from the most recent grant cycles are not used because historically, actual TDM use is typically less than the amount estimated in grant applications due to changes in, postponement, or cancelation of some projects. TDM purchases and use can occur anytime within the three-year grant cycle.

CalRecycle's Feedstock Conversion Technical Assistance and Material Testing Services Contract provides additional support for uses in this category. Through this contract (currently led by DK Enterprises) CalRecycle offers a variety of material and product testing services and technical assistance services to help manufacturers design and develop new TDPs. In recent years, the contractor has worked with 11

manufacturers to produce 25 newly designed product specifications and has conducted over 640 certified laboratory tests.

Turf Infill

California producers shipped 12-18 million pounds of crumb rubber for use as infill in new and replacement synthetic turf athletic fields in 2021, an increase over the 8-12 million pounds shipped in 2020. It was reported that the percentage of fields using crumb rubber as infill had been declining, with significantly lower numbers in northern California. However, industry representatives said there is growing recognition that alternative infill materials do not perform as well from a fall height safety perspective. They also indicated there were approximately 140-150 fields constructed in California in 2021, including mostly new fields and some replacements of dismantled fields at the end of their useful lifetime, with a modest increase in crumb rubber use in this category. For a small portion of replacement fields in California, the end-of-life crumb rubber/sand mixture extracted from the dismantled field was reused in the new replacement field. While this practice is reportedly more common in the northeast and other U.S. regions, it is currently not a widespread practice in California. CalRecycle is not providing funding support for this category pending publication of a long-awaited study on crumb rubber environmental health and safety issues, expected to be available at the end of 2022.

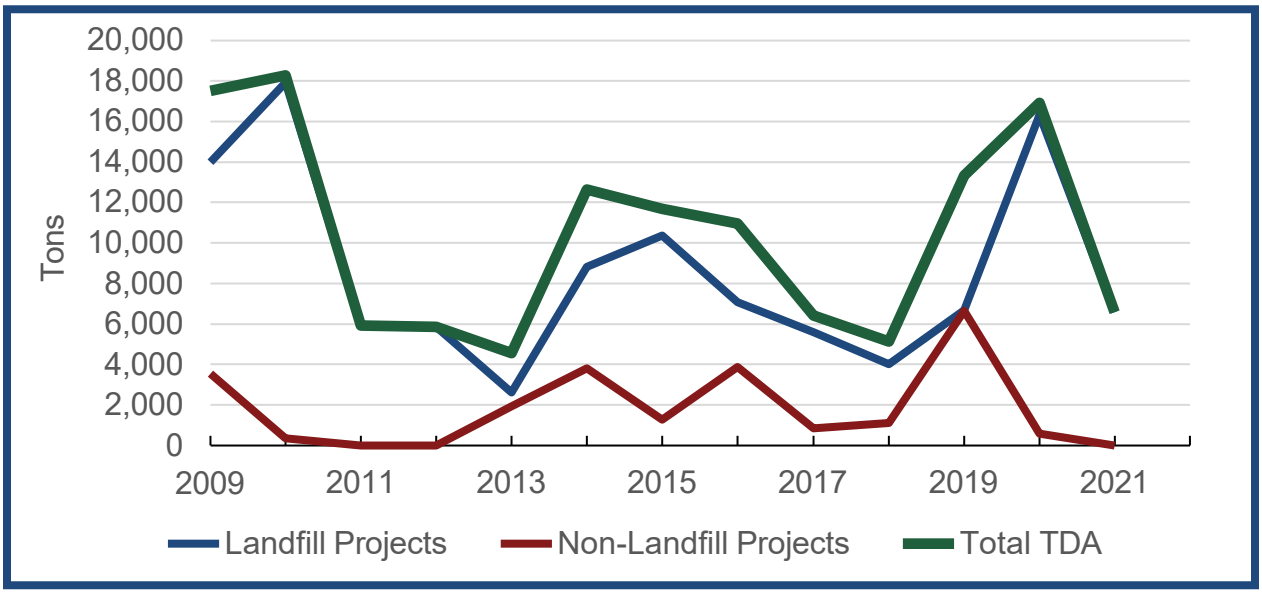
Ground Rubber Applications

California producers shipped 5-9 million pounds of ground rubber in 2021, an increase over the 5-7 million pounds reported for 2020. Tire-derived materials in this broadly defined category are used in playgrounds, landscaping, and ballistics applications, among others. CalRecycle's TDP Grant Program supports a portion of these uses. In the latest grant cycle for the 2021-22 fiscal year, five projects were approved with a combined total estimated use of 1.1 million pounds through April 2024. In recent years, the program has been offered only every-other-year, with less funding than in prior years. Based on analysis of six years of completed grants culminating in the 2019-20 fiscal year, the program has supported 2.7 million pounds per year of TDM use. Data from the most recent, not-yet-completed grant cycles are not used because historically, actual TDM use is typically less than the amount estimated in grant applications due to changes in, postponement, or cancelation of some projects.

4.5 Civil Engineering

Figure 9 shows how use of California-generated TDA in civil engineering projects has varied in recent years. In 2021, TDA use declined 61 percent compared to 2020 use of 6,600 tons (0.7 million PTEs or 1 percent of all waste tires managed). TDA was used in projects at landfills, primarily related to landfill gas collection systems, although some of those uses also involved road construction. Outside of landfills, common TDA uses involve roadside repair, retaining wall backfill, embankment fill, stormwater infiltration galleries and light rail sound dampening projects, among others. However, there were zero non-landfill uses in 2021.

Figure 9
California-Generated Tire-Derived Aggregate Shipped for Use in Civil Engineering Projects, 2009-2021



See Figure 9 source data in Appendix C.

CalRecycle's TDA Grant Program support for these uses can lead to ongoing usage. In 2021, for example, one landfill that previously received TDA Grant Program support accounted for 73 percent of total use, outside of the grant program.

According to CalRecycle's TDA technical assistance team, one factor that reduced demand for TDA was the initial reaction to a 2020 study[14] linking a chemical known as 6PPD-quinone derived from tire road wear particles with urban runoff mortality syndrome in coho salmon. The California Department of Toxic Substances Control's (DTSC's) Safer Consumer Product Program has proposed listing motor vehicle tires containing 6PPD as a priority product. CalRecycle is conducting research to understand how 6PPD-quinone may relate to TDA uses and projects.

Separately, DTSC has also proposed listing motor vehicle tires containing zinc as a priority product under the Safer Consumer Products Program. A recent CalRecycle sponsored Humboldt State University study[15] found that "…use of rubberized hot mix asphalt pavement plays a minor role in determining the zinc concentration in runoff from road surfaces. Leaching of zinc from tire wear particles generated by vehicles on the roadway and from galvanized materials along the roadway are the largest sources of zinc in the runoff from roads identified in this work, and both deserve additional study."

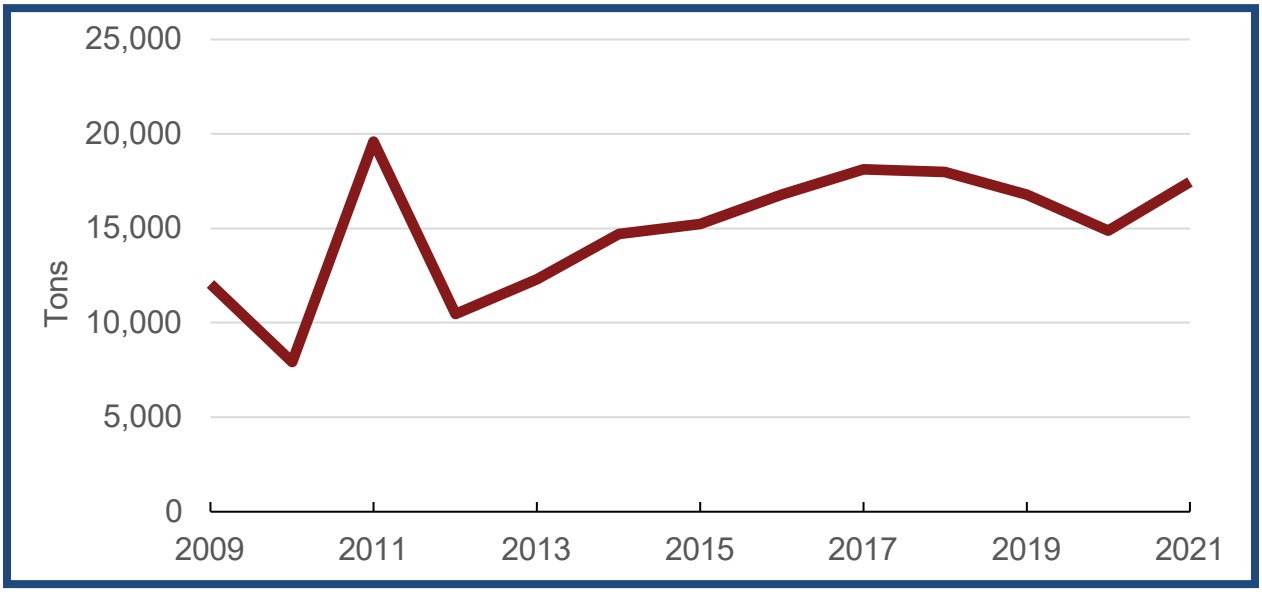
Two newly funded projects involving light rail sound dampening are underway and could use an estimated 6,700 tons of TDA in 2022. The TDA Grants Team is in discussions with project managers that could further increase the number of TDA in civil engineering

projects. Historically, based on analysis of eight years of completed grants culminating in the 2018-19 fiscal year, the TDA Grant Program has supported 4,700 tons (9.4 million pounds) per year of TDA use. Data from the most recent grant cycles are not used because actual TDM use is typically less than the amount estimated in grant applications due to changes in, postponement, or cancelation of some projects.

4.6 Landfill Alternative Daily Cover

California landfills are required to apply an approved type of daily cover to the top of active landfill faces at the end of operations each day, and some landfill permits allow use of alternative materials such as tire shreds. As Figure 10 shows, a significant quantity of tire shreds is used as alternative daily cover (ADC) in California by two landfills. In 2021, 17,400 tons (1.7 million PTEs or 3.2 percent of all waste tires managed) were used in this application. We expect this amount to remain roughly stable in coming years.

Figure 10
California-Generated Tire-Derived Material Used as Landfill Alternative Daily Cover, 2009-2021



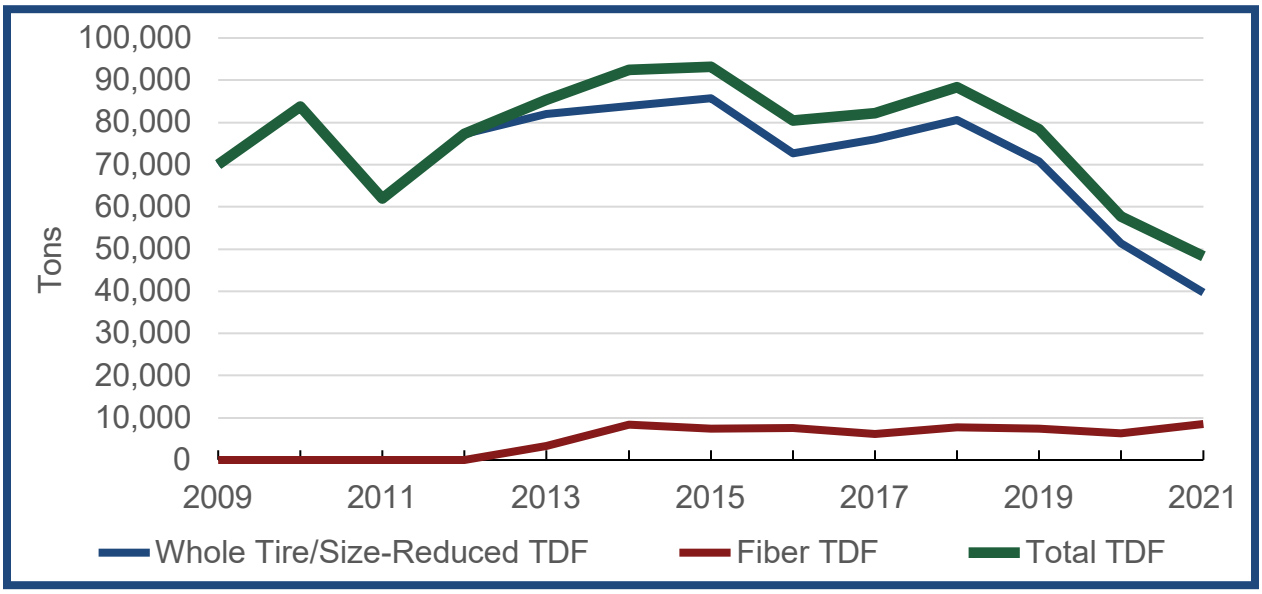
See Figure 10 source data in Appendix C.

4.7 Tire-Derived Fuel (In-State)

Four California cement kilns continued to consume TDF in 2021. As illustrated in Figure 11, reported shipments of California-generated TDF declined in 2021 by 16 percent, to 48,200 tons (4.8 million PTEs, or 8.7 percent of all waste tires managed). This amount includes 39,700 tons (4.0 million PTEs) of whole waste tires and size-reduced TDF as well as 8,500 tons of tire fiber generated as residual by processors. An additional 7,300 tons of whole tire and size-reduced TDF, plus over 10,000 tons of tire fiber shipped to

California cement kilns, is estimated to have been derived from out-of-state sources. Cement kiln fuel use patterns have changed over the past two years as use of TDF generally declined, reportedly as demand and production increased and other types of fuel became preferred. Also, a portion of demand has shifted from whole tires to size-reduced TDF. Finally, an increasing share of TDF consumed is comprised of residual tire fiber from processors. According to cement kiln respondents, overall use may remain flat or increase moderately in 2022.

Figure 11
California-Generated Whole Waste Tires, TDF and Residual Fiber Consumed at California Cement Kilns, 2009-2021



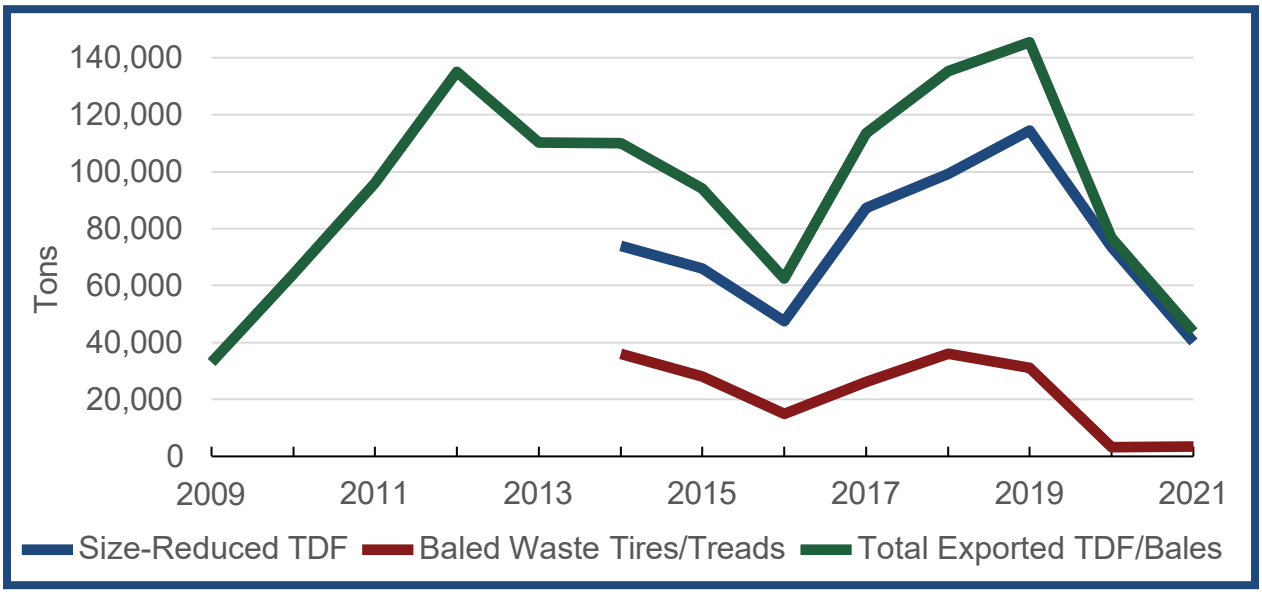
See Figure 11 source data in Appendix C.

4.8 Tire-Derived Fuel and Baled Waste Tires and Truck Treads (Export)

As Figure 12 shows, export of California-generated TDF (including size-reduced TDF, baled waste tires and baled truck tire treads) peaked in 2019 but declined markedly in 2020 and again in 2021 by 43 percent to 43,700 tons (4.4 million PTEs, or 7.9 percent of all waste tires managed). Export of size reduced TDF, primary to Japan and Korea dropped by 45 percent to 40,100 (4.0 million PTEs or 7.3 percent of all waste tires managed). California processors exported an additional 3,700 tons of TDF; however, this was derived from waste tires imported from out of state and allocated to shipments from these processors. Export of baled waste tires and truck tire treads primarily to India and Pakistan (baled separately as two distinct products) remained at very low levels in 2021 at 3,500 tons. This represented a 10 percent increase over the very small amount shipped in 2020, which was down 90 percent from the amount in 2019. We are not aware of any export of baled waste tires since early 2021.

The reduction in exports is due to poor economics and logistical challenges. Costs have increased significantly due to a variety of port and shipping related challenges including trucking to and from ports, difficulty securing access to containers, and unpredictable delays and changes to established bookings. Customer pricing on the importing end has not adjusted to account for these increased costs. There is also competition from suppliers in other countries. As of mid-2022, these conditions have not substantially changed, and consequently exports are expected to remain very low in 2022.

Figure 12
California-Generated Exported TDF and Baled Waste Tires and Truck Treads, 2009-2021

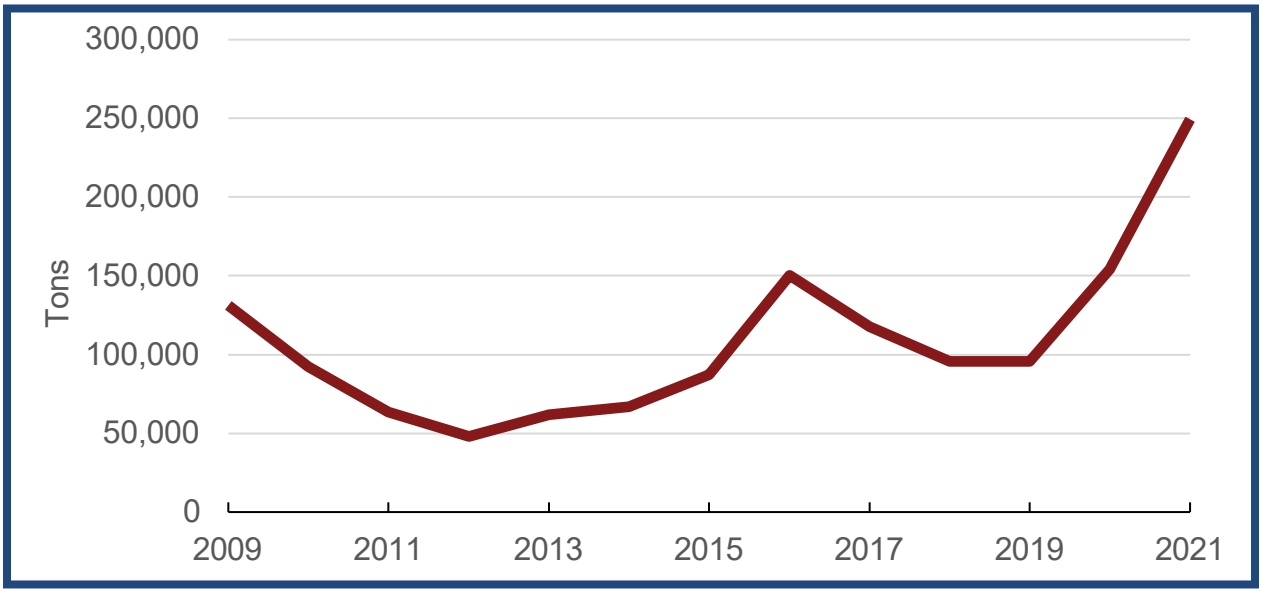


See Figure 12 source data in Appendix C.

4.9 Landfill Disposal

As shown in Figure 13, after a 61 percent rise in 2020, landfill disposal of California-generated waste tires increased markedly again in 2021 by 62 percent to 249,400 tons (24.9 million PTEs or 45.2 percent of all waste tires managed). An additional 12,300 tons (1.2 million PTEs) were also shipped for landfill disposal by California processors; however, this was derived from out-of-state flows processed at California facilities. This shattered the previous 20+ year record for waste tire landfill disposal in California. As discussed in Section 4.8 above, the main cause of the landfill disposal spike was the disrupted export economics and logistical feasibility which left companies that typically export with few options. An additional cause was a reduction in TDF demand at California cement kilns as discussed in Section 4.7 above. These factors caused TDF producers and exporters to redirect waste tire flows to landfills, including a significant amount to one landfill located in Nevada. Landfill disposal is expected to remain extremely high in 2022.

Figure 13
California-Generated Waste Tires Disposed in Landfills, 2009-2021



See Figure 13 source data in Appendix C.

4.10 Waste Tire Imports

In 2021, an estimated 29,500 tons (3.0 million PTEs or 5.4 percent of all waste tires managed) of whole waste tires were imported from out-of-state and flowed to multiple California processors. The study methodology allocates a proportionate share of all outbound shipments from these processors to imports, based on the percentage of inbound tires that were imported, as presented in Table 3 below. These amounts were excluded from the California tire use estimates presented in Table 2 above and throughout this report.

Table 3
Estimated Flows in Tons of Out-of-State Waste Tires Imported to California Processing Facilities (2021)

Category	Allocated Import Adjustments
Retreads	NA
Used Tires	4,700
Crumb Rubber and Ground Rubber	200
Tire-Derived Aggregate	1,300
Other Recycling	Neg.
Total Recycled	**6,200**
Tire-Derived Fuel (In-State)	7,300
Tire-Derived Fuel (Export)	3,700
Baled Waste Tires and Truck Tire Treads (Export)	0
Landfill Alternative Daily Cover	0
Total Disposal Related	**11,000**
Landfill Disposal	**12,300**
Total Managed	**29,500**

5. The Outlook for Increased Waste Tire Recycling

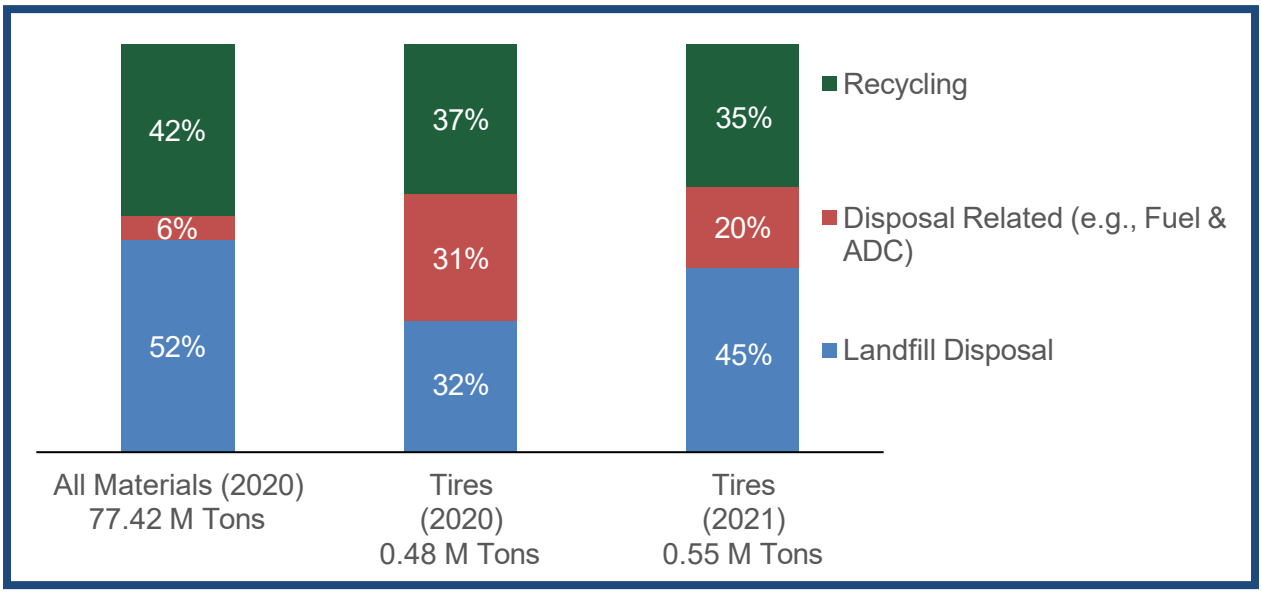
The following sections examine California waste tire management and recycling in the context of all types of waste, historical trends in waste tire recycling, and the outlook for increasing California waste tire recycling.

5.1 Waste Tire Recycling in the California Context

California has a mandatory statewide 75 percent recycling rate goal by 2020 for all waste types per AB 341 (Chesbro, Chapter 476, Statutes of 2011). While not codified in statute, CalRecycle has also informally adopted a 75 percent recycling goal specifically for waste tires. Consistent with AB 341, the recycling rate measurement excludes landfill ADC and fuel related uses, including TDF (included in the "disposal related" category to distinguish them from recycling (broadly defined to include reuse) and landfill disposal.

Figure 14 illustrates how California waste tire management compares to management of the entire waste stream. The figure shows the 2020 breakdown for all waste materials (the most recent data available) along with 2020 and 2021 high level data on waste tires management for comparison.

Figure 14
Comparison of All California Waste Materials and California Waste Tires Management

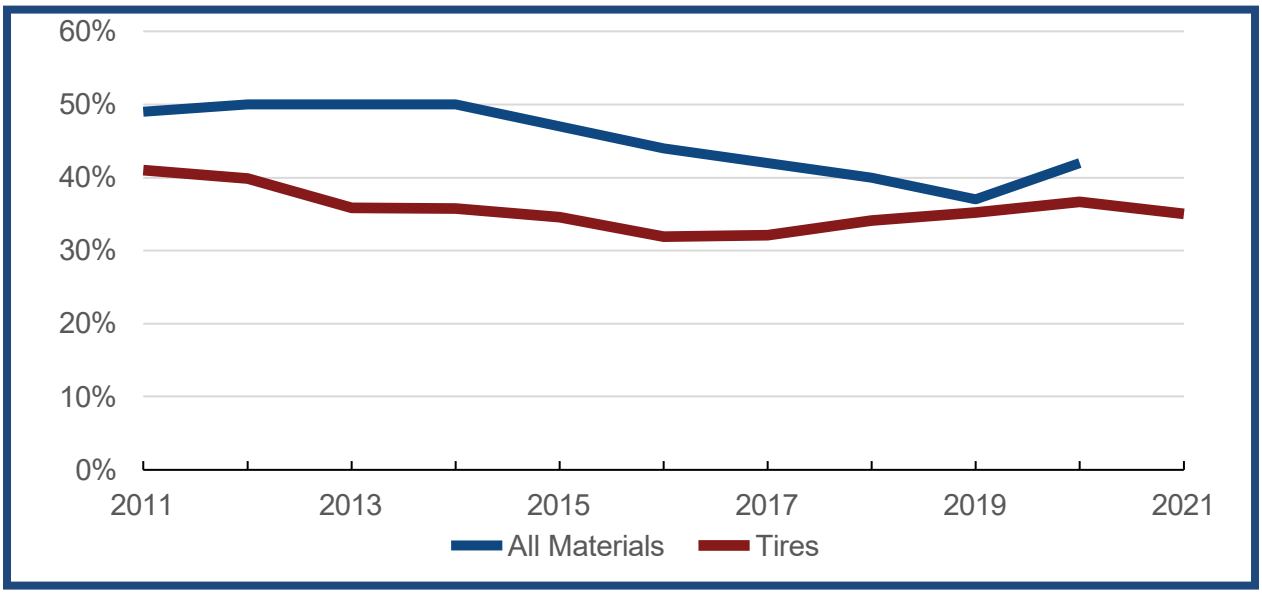


See Figure 14 source data in Appendix C. Source for all materials: CalRecycle, State of Disposal and Recycling in California for Calendar Year 2020.

Waste tires represent about 0.6 percent of the total California waste stream. The big increase in 2021 waste tire landfill disposal resulted in a disposal rate of 45 percent, close to the 2020 all materials landfill disposal rate of 52 percent. Over the last decade the waste tire landfill disposal rate has been much lower than the all-materials landfill disposal rate. For all materials the disposal related category (again, defined to include ADC and fuel related uses such as TDF) is more stable and comprises a much lower portion than for tires, even after the disposal related quantity dropped to a 20+ year record low in 2021. Compared to tires, there is less incineration or other fuel use for all materials, and the bulk of the all materials disposal related category is comprised of ADC.

Finally, the 2020 all-materials recycling rate of 42 percent is a jump of five percent from 2019, when the 37 percent recycling rate was comparable to waste tire recycling of 37 percent in 2020 and 35 percent in 2021. As shown in Figure 15, since 2011 the waste tire recycling rate has fluctuatedbetween 32 percent and 41 percent. During this period the waste tire recycling rate was significantly lower than the all materials recycling rate until 2019 when the two recycling rates came within two percentage points of each other. The waste tire recycling rate subsequently increased two percentage points in 2020 before dropping back to the 2019 level of 35 percent in 2021. The all materials recycling rate jumped five percentage points in 2020, and may be poised to accelerate further as several new and significant statewide policies are implemented in coming years.

Figure 15
California All Waste Materials and California Waste Tires Recycling Rates, 2011-2021

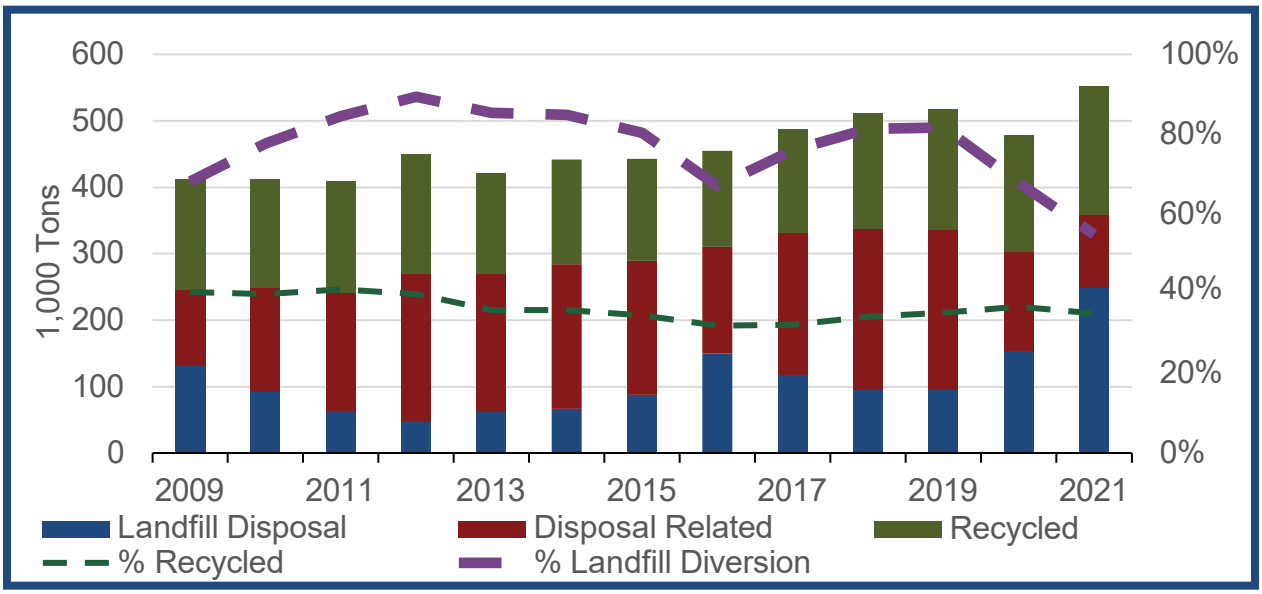


See Figure 15 source data in Appendix C.

5.2 Historic Recycling, Disposal Related and Landfill Disposal Trend

As shown in Figure 16, the California waste tire recycling rate has fluctuated within a narrow range over the past 12 years before reaching a low point in 2016 of 32 percent, but has inched up slowly since then, reaching 37 percent in 2020. Then in 2021, recycling tons increased by 10 percent to 193,200 tons (19.3 million PTEs or 35 percent of all waste tires managed). At the same time, the recycling rate declined by 1.7 percentage points to 35 percent, because overall waste tire generation increased at a greater pace than the increase in recycled tons.

Figure 16
California Waste Tire Recycling, Disposal Related and Landfill Disposal Trend, 2009-2021



See Figure 16 source data in Appendix C.

5.3 Future Tire Recycling Trends and Considerations

Table 4 summarizes the short-term outlook for each market segment in 2022, based on the trends identified earlier in this report. The outlook for growth in 2022 and 2023 is difficult to predict. Considerations include:

- **Can 2021 recycling gains be maintained or expanded?** As discussed above, retreading increased by 20 percent in 2021 and the crumb rubber/ground rubber market segment increased by 40 percent. Industry feedback suggests retreading is on track for continued growth in 2022. Crumb rubber markets, especially in the paving and molded/other segments, appear strong with further growth in paving if Caltrans can increase the pace of new paving bids utilizing SB1 transportation funding and local governments do the same with separate dedicated transportation funding which is available in certain cities and counties.

Table 4
The Outlook for California Waste Tire Recycling

Category	2021 Tons	2021 M PTEs	2021 % Total	Outlook in 2022
Retreads	54,600	5.5	9.9%	Continued growth after sizable increase in 2021
Used Tires	43,000	4.3	7.8%	Steady
Crumb Rubber and Ground Rubber	70,900	7.1	12.8%	Steady or modest decline after sizable increase in 2021
Tire-Derived Aggregate	6,600	0.7	1.2%	Modest increase as new grant-funded light rail projects begin
Other Recycling	18,100	1.8	3.3%	Flat, sustained by residual wire recycling, pressed tire products and agricultural applications
Total Recycling	193,200	19.3	35.0%	Unclear. May stay roughly flat
TDF (In-State)	48,200	4.8	8.7%	Steady or modest increase per cement kilns
TDF and Baled Waste Tires & Treads (Export)	43,700	4.4	7.9%	Steady at low level due to ongoing port/shipping issues and poor economics
Landfill Alternative Daily Cover	17,400	1.7	3.2%	Steady use at two landfills
Total Disposal Related	109,300	10.9	19.8%	Roughly steady
Landfill Disposal	249,400	24.9	45.2%	Steady or modest decline
Overall Diversion	302,500	30.3	54.8%	Roughly steady
Waste Tires Managed	551,900	55.2	100.0%	Modest decline after significant increase in 2021

- **To what extent will new or expanded products and markets emerge?** The Tire Incentive Program and Feedstock Conversion Services Contract discussed above target expansion and diversification of TDP manufacturing in California. As of the time of writing new application cycles are open. To the extent that new, high-volume products and markets can be identified, this could open the door for new investments and expanded production of recycled tire products.
- **To what extent will disruptions continue to negatively impact business operations and markets?** Unfortunately, the main disruptions impacting waste tire management and recycling companies, as summarized in Section 2, do not appear to be subsiding so far in 2022. These include persistent staffing and hiring challenges, high trucking and ocean shipping costs, high inflation and supply disruptions involving a wide range of disparate commodities and products, potential additional disruptions that may occur related to evolving COVID spikes and shutdowns (especially in China), and from the Russian invasion of Ukraine. While some market segments may benefit from certain disruptions, such as retreader gains in 2021 at the expense of new tire supply disruptions, these factors are likely to continue to constrain efficient business operations and market expansion in most waste tire management and recycling industry segments by adding complications and costs.
- **How may recent business ownership changes and investments benefit recycling?** In 2021, there were some key changes in ownership involving California waste tire TDM suppliers, TDP manufacturers, retreaders and other market segments, including new investments to expand or enhance operations. While the impact of these changes is not yet clear, investments that satisfy customer needs, especially in high-volume uses, hold the potential to drive expansion of tire recycling.

5.4 Concluding Remarks

California has a strong, diverse existing waste tire management infrastructure. In 2022 and 2023, there is potential for recycled tire tonnages to grow if 2021 gains hold, especially in the retreader, paving and molded/other market segments. Recent changes in business ownership and investments to expand or enhance waste tire recycling operations may also support continued growth. However, the industry disruptions discussed above do not appear to be receding as of mid-2022, and there is a need for continuing expansion and diversification in TDP markets and the types of California TDPs and TDM applications. While the conditions for transformational growth in tire recycling do not yet appear to be in place, there is good potential for incremental progress, and California's waste tire management system continues to be strong, enabling sound management of waste tires generated throughout the state.

Appendix A
Glossary of Key Terms and Acronyms

ADC: Alternative Daily Cover used at landfills instead of soil.

Buffings: Tire rubber produced as a by-product of the tire retreading process.

California-Generated: As used in this report, this term refers to waste tires generated in California and/or tire-derived materials or products made from waste tires generated in California, excluding any amounts derived from waste tires imported into California.

Caltrans: California Department of Transportation.

CARB: California Air Resources Board.

Circular Economy: An economic system where products and services are traded in closed loops or cycles. It tackles global challenges like climate change, biodiversity loss, waste, and pollution. Circular Economy aims to redefine growth, focusing on positive society-wide benefits. It is based on three principles: Design out waste and pollution; keep products and materials in use; regenerate natural systems.

Comprehensive trip log (CTL): Paper or electronic forms used by haulers and waste tire facilities to document waste and used tire pickup or delivery transactions. Forms are submitted to CalRecycle and entered in the Waste Tire Manifest System database.

Crumb rubber: Tire-derived material equal to or less than ¼ inch in size, free of wire and fiber. In this report the broad category Crumb Rubber and Ground Rubber is defined to include the following three sub-categories of products made from crumb rubber:

- Paving, including rubberized hot mix asphalt and chip seal surface treatments
- Infill used on synthetic turf athletic fields
- Molded and Other – A catch-all grouping of other products made with crumb rubber including molded products like flooring tiles, ADA transition ramps, traffic safety devices, and pipe couplings, as well as non-molded products such as SBS modified bitumen roofing membranes

A fourth sub-category of products in the Crumb Rubber and Ground Rubber category is Ground Rubber products, defined to include any products or applications made with ground rubber as defined below.

Disposal-Related Activities: As defined in CalRecycle's annual State of Disposal and Recycling Reports, a set of activities considered as part of overall disposal: alternative daily cover, alternative intermediate cover, other beneficial reuse at landfills (such as construction activities, landscaping, and erosion control), transformation, engineered municipal solid waste, and waste-tire derived fuel.

DTSC: California Department of Toxic Substances Control

End-of-Life (EOL): Refers to products that have reached the end of their useful life and are ready to be discarded and managed, whether through reuse, recycling, landfill disposal, or another means.

Feedstock conversion: The process whereby a manufacturer converts a portion of the raw materials (e.g., virgin rubber, EPDM, plastic, aggregate, or other raw material) used to make a product with recycled tire rubber.

Ground rubber: Tire-derived material greater than ¼ inch and up to one inch in size, sometimes referred to as nuggets depending on the specification and application. In this report Ground Rubber is also a sub-category of products within the broader Crumb Rubber and Ground Rubber category that includes any product made with ground rubber.

Landfill Disposal: Disposal of waste materials at a landfill, excluding materials disposed as part of disposal-related activities.

OEHHA: California Office of Environmental Health Hazard Assessment.

Passenger tire equivalent (PTE): Defined as 20 pounds of tire rubber for the purpose of making consistent comparisons in this and other reports. (The actual weight of waste passenger tires may vary considerably.)

Retread tire: A quality casing satisfying established standards to which a new tread has been affixed to extend the usable life of the tire.

Tire-derived aggregate (TDA): Tire-derived material used to replace conventional aggregates like rock in civil engineering applications.

Tire-derived fuel (TDF): Whole waste tires or tire-derived material consumed as fuel (referred to as size reduced TDF in this report). Residual tire fiber from crumb rubber operations sent used as fuel in California cement kilns is also categorized as tire-derived fuel in this report.

Tire-derived material (TDM): Tires processed to meet market specifications, for example, crumb rubber, ground rubber, tire-derived aggregate, and tire-derived fuel.

Tire-derived product (TDP): Product made entirely or in part from tire-derived material.

Tire Incentive Program (TIP): A CalRecycle program launched in June 2015 to promote feedstock conversion and the use of crumb rubber as feedstock by California manufacturers.

Used Tire: 30 PRC § 42806.5 defines "used tire" as a tire that: a) is no longer mounted on a vehicle but is still suitable for use as a vehicle tire; b) meets applicable

requirements of the Vehicle Code and Title 13 of the California Code of Regulations; and c) meets specified storage requirements.

Waste Tire Manifest System (WTMS): Waste Tire Management System. A CalRecycle database containing information on waste tire management firms, permits, and submitted comprehensive trip log data.

Waste Tire: 30 Public Resources Code (PRC) § 42807 defines a "waste tire" as a tire that is not mounted on a vehicle and is no longer suitable for use as a vehicle tire due to wear, damage, or deviation from manufacturer original specifications.

Appendix B
Methodology

The main goal of the annual Waste Tire Market Report series is to document California waste tire recycling trends, the recycling rate and the quantity of California-generated waste tires managed (including used tires and retread tires) along with trends in each segment they ultimately flow to.

Conducting the annual market analysis involves the following steps:

- Update a list of currently operating California facilities and companies waste tire management, including processors, TDP manufacturers and installers, asphalt rubber blender operators, brokers, retreaders, cement kilns, and landfills that dispose waste tires. Sources include CalRecycle databases, industry networking online searching.
- Compile information on these facilities through surveys, CalRecycle databases (especially the Waste Tire Manifest System) and online searches.
- Enter facility specific data into a customized flow model spreadsheet and systematically analyze flows, with emphasis on flows to and from waste tire facilities to end-use market segments. This is an iterative process in which researchers identify issues and follow up with facilities repeatedly to refine and validate the analysis. The process continues until researchers conclude the findings are as complete and accurate as possible, while avoiding double-counting.
- Where data are unavailable or contradictory, estimations are made based on the information available and perspectives offered by industry representatives.

Readers should keep the following in mind when interpreting and using findings:

- Findings reported in the main body of the report are rounded to the nearest one hundred tons, reflecting a reasonable level of accuracy. However, the underlying source data used to generate charts, as presented in Appendix C, lists the exact numerical estimates generated through use of the customized flow model.
- The findings quantify California-generated waste tires and TDM/TDPs made from them. Imported waste tires and TDM/TDPs made from them are excluded from the California-generated findings, as are buffings from retread operations, since the rubber has already been “counted” as part of the retreading process.
- The findings do not represent estimates of California’s total market for TDM or TDPs.
- The waste tire market report series employs a consistent methodology that the authors strive to refine and improve over time. This includes extensive data

gathering and validation through multiple sources wherever possible, as well as rigorous and systematic data analysis. Because of this, despite the need to address data gaps and inconsistencies, the authors believe the findings provide reasonably accurate information that can be used to evaluate trends over time.

Appendix C
Accessibility Notes and Source Data

Following is the source data used for charts and figures in this report. Note that in the body of the report, findings are rounded to the nearest one hundred, reflecting a reasonable level of accuracy. However, in this appendix we present the exact estimates as generated in the waste tire flow model used by the study team to produce charts that reflect the best information available.

Table C-1

Source Data for Figure 1 California Waste Tire Flows in 2021

Category	2021 Tons	2021 Percent
Retreads	54,635	9.90%
Used Tires	43,044	7.80%
Crumb/Ground Rubber	6,575	1.19%
Tire-Derived Aggregate	70,862	12.84%
Other Recycling	18,082	3.28%
Tire-Derived Fuel (In-State)	48,243	8.74%
Tire-Derived Fuel (Export)	40,148	7.27%
Exported Baled and Cut Waste Tires	3,516	0.64%
Alternative Daily Cover	17,440	3.16%
Landfill Disposal	249,377	45.18%
Total Managed	**551,921**	**100.00%**
Total Recycled	**193,197**	**35.0%**
Total Disposal Related	**109,347**	**19.8%**

Table C-2

Source Data for Figure 2 California Waste Tire Recycling, Disposal Related and Disposal Trends, 2009-2021

Category	2009	2010	2011	2012	2013	2014
Landfill Disposal	131,152	92,033	63,444	47,908	61,682	66,770
Disposal Related	114,968	155,603	177,500	222,695	207,754	217,043
Recycled	165,997	164,206	167,516	179,768	150,741	158,094
% Recycled	40.3%	39.9%	41.0%	39.9%	35.9%	35.8%
% Landfill Diversion	68.2%	77.7%	84.5%	89.4%	85.3%	84.9%

Category	2015	2016	2017	2018	2019	2020	2021
Landfill Disposal	87,170	150,226	117,448	95,401	95,412	154,050	249,377
Disposal Related	202,382	159,654	213,707	241,597	240,503	149,099	109,347
Recycled	152,767	145,288	156,994	174,264	182,438	175,868	193,197
% Recycled	34.5%	31.9%	32.2%	34.1%	35.2%	36.7%	35.0%
% Landfill Diversion	80.3%	67.0%	75.9%	81.3%	81.6%	67.8%	54.8%

Accessibility Notes for Figure 3, California Waste Tire Recycling Industry Flow Chart

This chart illustrates how California waste tires, tire-derived material (TDM) and tire-derived products (TDPs) flow between various entities. Haulers pick up waste tires from generators and may deliver them to either: a landfill for disposal; a processor (who may produce TDM); a used tire buyer or seller; or a TDF consumer (i.e., one of four California cement kilns). Processors may send tires or TDM to a landfill for disposal, use in civil engineering projects or other beneficial uses, a used tire buyer or seller, an exporter, a TDP manufacturer or installer, a TDF consumer, or a civil engineering project. Imports into and exports from California include: TDM and TDPs, retread tires and buffings, used tires, tire-derived fuel, baled and cut waste tires, and whole waste tires. Such imports may flow to California processors, TDP manufacturers and installers, TDF consumers, or directly to customers. Such exports may flow from California processors, TDP manufacturers, used tire buyer and sellers, and retreaders.

Categories of manufacturers and installers include:

- Accessibility ramps
- Roofing
- Flooring
- Landscape surfaces
- Mats, pavers, and tiles
- Traffic safety
- Equestrian applications
- Pavements
- Synthetic turf infill
- Playground surfaces
- Paths, walkways, and sidewalks

Types of civil engineering applications include:

- Landfill projects
- Light-weight fill
- Retaining wall backfill
- Vibration dampening
- Storm water management

Finally, TDP manufacturers and installers, civil engineering project leads, and TDF consumers sell products directly to their customers, inside and outside of California.

Table C-

Source Data for Figure 4 Historical Market Trends by Segment, 2009-2021

Category	2009	2010	2011	2012
Landfill Disposal	131,152	92,033	63,444	47,908
ADC	12,042	7,928	19,589	10,486
Exported TDF & Bales	33,000	64,000	96,000	135,000
In-State TDF	69,926	83,675	61,911	77,209
Other Recycling	12,221	12,121	13,427	14,059
Civil Engineering	17,510	18,274	5,915	5,844
Crumb/Ground Rubber	55,000	59,850	61,700	68,350
Used Tires	37,266	37,942	45,823	51,678
Retread	44,000	36,018	40,651	39,838
Total Managed	**412,117**	**411,842**	**408,459**	**450,372**

Category	2013	2014	2015	2016	2017
Landfill Disposal	61,682	66,770	87,170	150,226	117,448
ADC	12,316	14,691	15,217	16,798	18,108
Exported TDF & Bales	110,144	110,000	94,000	62,476	113,405
In-State TDF	85,295	92,352	93,165	80,380	82,194
Other Recycling	12,166	11,643	12,114	9,790	10,433
Civil Engineering	4,557	12,632	11,668	10,961	6,431
Crumb/Ground Rubber	55,350	49,200	54,700	43,165	50,345
Used Tires	38,033	42,278	30,927	39,032	41,375
Retread	40,635	42,341	43,358	42,341	48,409
Total Managed	**420,177**	**441,907**	**442,318**	**455,168**	**488,149**

Category	2018	2019	2020	2021
Landfill Disposal	95,401	95,412	154,050	249,377
ADC	17,975	16,784	14,876	17,440
Exported TDF & Bales	135,236	145,412	76,612	43,664
In-State TDF	88,386	78,307	57,611	48,243
Other Recycling	16,791	16,442	11,862	18,082
Civil Engineering	5,127	13,330	16,911	6,575
Crumb/Ground Rubber	61,728	59,985	50,530	70,862
Used Tires	42,692	44,757	51,036	43,044
Retread	47,925	47,925	45,529	54,635
Total Managed	**511,262**	**518,353**	**479,017**	**551,921**

Table C-
Source Data for Figure 5 Estimated California-Generated Retread Tire Shipments, 2009-2021

Category	2009	2010	2011	2012	2013	2014
Retreads	44,000	36,018	40,651	39,838	40,635	42,341

Category	2015	2016	2017	2018	2019	2020	2021
Retreads	43,358	42,341	48,409	47,925	47,925	45,529	54,635

Table C-5

Source Data for Figure 6 Shipments of California-Generated Crumb Rubber and Ground Rubber, 2009-2021

Category	2009	2010	2011	2012	2013	2014
Paving	30,160	35,206	34,043	30,793	24,806	23,429
Turf Infill	8,723	9,605	11,871	15,089	14,034	11,355
Molded / Other	7,733	7,308	8,357	10,076	6,583	6,719
Ground Rubber	8,383	7,731	7,428	12,392	9,927	7,698
Total Crumb/Ground Rubber	**55,000**	**59,850**	**61,700**	**68,350**	**55,350**	**49,200**

Category	2015	2016	2017	2018	2019	2020	2021
Paving	27,808	NA	NA	NA	NA	NA	NA
Turf Infill	13,415	NA	NA	NA	NA	NA	NA
Molded / Other	4,759	NA	NA	NA	NA	NA	NA
Ground Rubber	8,718	NA	NA	NA	NA	NA	NA
Total Crumb/Ground Rubber	**54,700**	**43,165**	**50,345**	**61,728**	**59,985**	**50,530**	**70,862**

Table C-6
Source Data for Figure 7, Caltrans Total Asphalt Placement and Rubberized Asphalt Percent of Total, 2009-2020

Year	Total Asphalt Placed (Tons)	RHMA % Total
2009	5,589,914	23.60%
2010	3,860,646	30.60%
2011	7,522,354	34.70%
2012	6,333,678	29.20%
2013	4,578,258	22.90%
2014	4,120,457	26.70%
2015	4,602,421	41.30%
2016	4,785,160	39.80%
2017	4,056,991	45.03%
2018	4,767,951	46.43%
2019	3,860,363	39.75%
2020	3,405,088	41.31%

Table C-7

Source Data for Figure 8 Caltrans Use of Crumb Rubber in Paving Projects, 2009-2020

Year	Crumb Rubber Used (Million Pounds)
2009	40,103,331
2010	35,919,690
2011	77,543,629
2012	52,286,289
2013	32,514,454
2014	35,220,943
2015	60,775,793
2016	60,892,762
2017	58,456,877
2018	70,839,587
2019	54,133,231
2020	49,611,420

Table C-8

Source Data for Figure 9 California-Generated Tire-Derived Aggregate Shipped for Use in Civil Engineering Projects, 2009-2021

Category	2009	2010	2011	2012	2013	2014
Landfill Projects	13,975	17,924	5,915	5,844	2,612	8,806
Non-Landfill Projects	3,535	350	0	0	1,945	3,826
Total TDA	**17,510**	**18,274**	**5,915**	**5,844**	**4,557**	**12,632**

Category	2015	2016	2017	2018	2019	2020	2021
Landfill Projects	10,374	7,083	5,583	4,021	6,682	16,311	6,575
Non-Landfill Projects	1,294	3,878	853	1,106	6,648	600	0
Total TDA	**11,668**	**10,961**	**6,431**	**5,127**	**13,330**	**16,911**	**6,575**

Table C-9

Source Data for Figure 10 California-Generated Tire-Derived Material Used as Landfill Alternative Daily Cover or in Beneficial Reuse Applications, 2009-2021

Category	2009	2010	2011	2012	2013	2014
ADC	12,042	7,928	19,589	10,486	12,316	14,691

Category	2015	2016	2017	2018	2019	2020	2021
ADC	15,217	16,798	18,108	17,975	16,784	14,876	17,440

Table C-10

Source Data for Figure 11 California Whole Waste Tires and TDF Consumed at California Cement Kilns, 2009-2021

Category	2009	2010	2011	2012	2013	2014
Whole Tire/Size-Reduced TDF	69,926	83,675	61,911	77,209	81,982	83,934
Fiber TDF	0	0	0	0	3,313	8,418
Total TDF	**69,926**	**83,675**	**61,911**	**77,209**	**85,295**	**92,352**

Category	2015	2016	2017	2018	2019	2020	2021
Whole Tire/Size-Reduced TDF	85,721	72,723	75,989	80,603	70,807	51,315	39,704
Fiber TDF	7,443	7,656	6,205	7,783	7,500	6,297	8,539
Total TDF	**93,165**	**80,380**	**82,194**	**88,386**	**78,307**	**57,611**	**48,243**

Table C-11

Source Data for Figure 12 California-Generated TDF and Bales of Waste Tires and Truck Tire Treads, 2008-2021

Category	2008	2009	2010	2011	2012
Size-Reduced TDF	NA	NA	NA	NA	NA
Baled and Cut Waste Tires	NA	NA	NA	NA	NA
Total Exported TDF/Bales	**22,000**	**33,000**	**64,000**	**96,000**	**135,000**

Category	2013	2014	2015	2016	2017
Size-Reduced TDF	NA	74,000	66,000	47,476	87,317
Baled and Cut Waste Tires	NA	36,000	28,000	15,000	26,089
Total Exported TDF/Bales	**110,144**	**110,000**	**94,000**	**62,476**	**113,405**

Category	2018	2019	2020	2021
Size-Reduced TDF	99,197	114,427	73,412	40,148
Baled and Cut Waste Tires	36,039	30,985	3,200	3,516
Total Exported TDF/Bales	**135,236**	**145,412**	**76,612**	**43,664**

Table C-12

Source Data for Figure 13 California-Generated Waste Tires Disposed in Landfills, 2009-2021

Category	2009	2010	2011	2012	2013	2014
Landfill Disposal	131,152	92,033	63,444	47,908	61,682	66,770

Category	2015	2016	2017	2018	2019	2020	2021
Landfill Disposal	87,170	150,226	117,448	95,401	95,412	154,050	249,377

Table C-13

Source Data for Figure 14 Comparison of California All Materials and Waste Tires Management

Category	All Materials (2020) 77.42 M Tons	Tires (2020) 0.48 M Tons	Tires (2021) 0.55 M Tons
Landfill Disposal	52%	32%	45%
Disposal Related (e.g., Fuel & ADC)	6%	31%	20%
Recycling	42%	37%	35%

Table C-14

Source Data for Figure 15 Historic California All Materials and Waste Tires Recycling Rates

Year	All Materials	Tires
2011	49.0%	41.0%
2012	50.0%	39.9%
2013	50.0%	35.9%
2014	50.0%	35.8%
2015	47.0%	34.5%
2016	44.0%	31.9%
2017	42.0%	32.2%
2018	40.0%	34.1%
2019	37.0%	35.2%
2020	42.0%	36.7%
2021	NA	35.0%

Table C-15

Source Data for Figure 16 California Waste Tire Recycling, Disposal Related and Disposal Trends, 2009-2021

Category	2009	2010	2011	2012	2013	2014
Landfill Disposal	131,152	92,033	63,444	47,908	61,682	66,770
Disposal Related	114,968	155,603	177,500	222,695	207,754	217,043
Recycled	165,997	164,206	167,516	179,768	150,741	158,094
% Recycled	40.3%	39.9%	41.0%	39.9%	35.9%	35.8%
% Landfill Diversion	68.2%	77.7%	84.5%	89.4%	85.3%	84.9%

Category	2015	2016	2017	2018	2019	2020	2021
Landfill Disposal	87,170	150,226	117,448	95,401	95,412	154,050	249,377
Disposal Related	202,382	159,654	213,707	241,597	240,503	149,099	109,347
Recycled	152,767	145,288	156,994	174,264	182,438	175,868	193,197
% Recycled	34.5%	31.9%	32.2%	34.1%	35.2%	36.7%	35.0%
% Landfill Diversion	80.3%	67.0%	75.9%	81.3%	81.6%	67.8%	54.8%

End Notes

[1] CalRecycle, Waste Tire Program, Facilities Search Web Page.

[2] See end note 1.

[3] Analysis of Waste Tire Manifest Data as provided by CalRecycle to Boisson Consulting, April 8, 2022.

[4] CalRecycle, California Tire-Derived Product Catalog, October 2021 Revision, Appendix A, Business Directories.

[5] Updated list of permitted waste tire facilities as provided to Boisson Consulting by CalRecycle on April 25, 2022.

[6] See end note 5.

[7] See end note 4.

[8] See end note 4.

[9] Statista, Annual percent change of the real GDP in California from 2000 to 2021, accessed on June 22, 2022.

[10] Cal Matters, "Behind Newsom's $301 billion budget, big financial concerns," May 16, 2022.

[11] U.S. Inflation Calculator, U.S Inflation Rates 2000-2022.

[12] Chart data is based on Caltrans annual Crumb Rubber Reports available online in various locations. The 2020 report is available here. 2021 data are unpublished estimates based on verbal discussion with Caltrans representatives.

[13] See end note 12.

[14] "A ubiquitous tire rubber–derived chemical induces acute mortality in coho salmon." The Journal Science, Vol 371, Issue 6525. December 3, 2020.

[15] "Contribution of Leachate from Rubberized Hot Mix Asphalt to Zinc Loading in Roadway Stormwater Runoff." Prepared by Humboldt State University under contract to CalRecycle. May 2021. Page 6.

BOISSONCONSULTING

To: Sally French, Nate Gauff, and Mustafe Botan

From: Ed Boisson, Project Manager, Tire Market Analysis and Support Contract (DRR19054)

Date: February 21, 2022

Re: Market Analysis Guidance Document

Background

This memorandum describes the methodology used to prepare CalRecycle's annual California Waste Tire Market report. It was prepared by Boisson Consulting, the prime contractor under CalRecycle's Tire Market Analysis and Support contract (TMAS, #DRR19054) to satisfy the Task 1 requirement to prepare a market analysis guidance document. It is intended to assist CalRecycle staff and/or contractors in conducting the study and preparing the waste tire market report in future years, in a manner directly comparable with past studies.

The methodology was initially developed in 2008 under the Tire-Derived Product Business Assistance Program (TBAP) by R.W. Beck, Inc. (subsequently SAIC and Leidos), and it has been refined in subsequent years. The California Waste Tire Market Report: 2021 was published in summer 2022 and is the most recently completed market report.

Table 1 provides a sample project schedule. The project manager should prepare a more detailed schedule and tracker that identifies milestones and check-ins with project staff and work with the CalRecycle task manager to finalize it. At a minimum, the project schedule should identify deadlines for surveys, interviews and other research, and for developing draft findings needed for the annual stakeholder workshop. Holding a kick off meeting with project staff is essential to align all team members, set common expectations for timing, budget and outcomes at each milestone date, and to agree on document naming and filing protocols.

Table 1 Sample Project Schedule[1]

Step	Typical Study Timeline
1. Prepare for Study 1a. Organize Team and Make Assignments 1b. Update Survey Forms 1c. Update Business Lists	Dec. 1, 2022 – Jan. 15, 2023
2. Gather Data 2a. Conduct Surveys and Interviews 2b. Compile CalRecycle Data and Prepare WTMS Analyses 2c. Conduct Internet Research	Jan. 15, 2023 – Apr. 15, 2023
3. Analyze Data in Master Flow Model 3a. Update the Master Flow Model 3b. Enter data into the Master Flow Model 3c. Iteratively Analyze and Refine Flow Data to Develop Best Estimates (Follow-Ups with Companies Often Needed)	Mar. 15, 2023 – Apr. 30, 2023
4. Prepare Draft Presentation and Report and Solicit CalRecycle/Stakeholder Feedback	May 1, 2023 – Jun. 15, 2023
5. Finalize and Publish Report	Jun. 15, 2023 – Jul. 1, 2023
6. Update Survey Forms, Tools, and this Protocol	Jul. 1, 2023 – Jul. 31, 2023

This remainder of this memo consists of a step-by-step guide for conducting the annual study and preparing the Waste Tire Market Report. It references the following attachments that can be adapted for use in the 2022 study and beyond:

Attachment 1: 2022 Processor Survey Template

Attachment 2: 2022 Tire Derived Product Manufacturer-Installer Survey Template

Attachment 3: 2022 Retreader Survey Template

Attachment 4: 2022 Tire-Derived Fuel User Survey Template

Attachment 5: 2022 Tire-Derived Fuel Contacts

Attachment 6: 2022 Landfill Operator Survey Template

Attachment 7: 2022 Landfill Contacts and Survey Summary Template

Attachment 8: 2021 Targeted Companies List

Attachment 9: 2021 CalRecycle Waste Tire Facility Permit Report

[1] If the start date is delayed, all steps must be moved back accordingly. In practice the steps tend to overlap as preparing the report requires iteratively going back to some survey respondents to clarify information as data is being analyzed and draft results are developed.

Attachment 10: Master Flow Model Template

Attachment 11: 2021 Market Analysis Presentation (Draft Results)

Attachment 12: CA Waste Tire Market Report: 2021 (As Published, PDF Document)

The next section below describes some considerations and methodology refinements that should be considered when planning for the next annual report covering 2022 and expected to be conducted during 2023. Following this, the remaining sections describe each step in the methodology.

Methodology Refinements to Consider for the Next Market Analysis Study

Following are some refinements that CalRecycle and the Market Analysis Contractor should consider for the 2022 and future market analyses studies.

1. Recycling and Disposal Reporting System.

In 2019 CalRecycle launched the new Recycling and Disposal Reporting System (RDRS). This program requires a wide range of recycling and disposal related facilities to report tonnages electronically to CalRecycle on a quarterly basis. The program was mandated under AB 901 (Gordon, Chapter 746, Statutes of 2015). To date the only data pertinent to the market studies available through this system has been ADC data reported by landfill, which is very helpful. Few if any processors have reported data to date.

In 2022, under this TMAS contract, we prepared a series of memos and collaborated with CalRecycle staff to evaluate options for optimizing value from the RDRS system in relation to tires. The contractor should review these memorandums. Possible steps for inclusion in the market study may include, subject to budget and CalRecycle concurrence:

- Preparing samples and guidance to clarify which companies must report what, when. In general processors will be obligated to report to the system.
- Work with RDRS staff to refine reporting categories, including related to end users.
- Determine whether the market contractor will have a role in informing and educating tire companies about the RDRS reporting obligation. Note that this is sensitive and while there is potential to obtain new information, there is also the potential for some firms to stop participating in the voluntary market surveys since they will now have another CalRecycle mandatory reporting obligation, on top of the manifest system and, for participants, TIP or grant related reporting.
- Consider seeking written permission from tire related companies reporting to RDRS that will allow the market contractor to access their data in the RDRS system. Without such written permission, we have been informed by RDRS staff that the contractor will only be able to access aggregated data.

- Overall, adjust the study methodology to optimize results given whatever policies and developments occur with the RDRS system in relation to tires in coming years.

2. Enhanced Analysis of Waste Tire Manifest System Data

Also under the current TMAS contract, Boisson Consulting prepared several memoranda and collaborated with CalRecycle staff to develop a task to measure select waste tire and tire-derived material loads of varying sizes, composition and containers to calculate conversion rates between tire counts, volumes and weights. The purpose is to refine the WTMS analysis protocol described under Step 2b below.

The market contractor should review these memoranda in detail, especially the findings memo, and work with CalRecycle's contract manager to agree on whether and how to use the new information. The findings and recommendations also include ideas for refinements to the comprehensive trip logs underlying the WTMS data that could greatly facilitate its use in estimating flows. CalRecycle and the market contractor should consider whether and how this could be advanced in coming years.

3. Updating TDP Catalog Directories

Previous CalRecycle contracts covering the waste tire market analysis also included under a separate task, updating the California TDP Catalog. Based on a general scope of work released in February 2023, our current understanding is that the next TMAS contract will not include updates to the catalog. Nevertheless, updating the directories in this catalog could be an essential step to conducting the market analysis as it will provide an up to date listing of companies and contact information and is not too budget heavy. However, painstaking effort should be made to identify new and changed company information, as these are in constant flux. Short of updating the catalog, updating the directories could also include preparing a simple summary of product types produced by each firm.

4. Move to Online Surveys

We have been hesitant to move to online surveys due to the time required to do so, and the fact that in many cases companies ultimately respond verbally, via email or by hand marking up a printed survey form. However, moving the surveys online also could provide efficiencies and should be considered.

Step 1: Prepare for Study

1a. Organize Team and Make Assignments

To launch the annual market analysis project, the task manager first assigns roles, prepares a project schedule and holds a kick-off meeting. Typically, a single individual will play and/or share multiple roles in the project. The key roles are:

- **Project Manager:** Oversees the study and coordinates all team members; ensures all documents, survey responses and interview notes are filed in a clear manner; and ensures the study is completed on time and on budget. Typically,

the project manager will present findings as well, and has overall responsibility for the final report and power point summary presentation.

- **Researchers:** Update and conduct surveys and interviews; conduct on-line research and generally seek to ensure that all pertinent information is obtained and filed appropriately in the project files.
- **Data Analysis Lead:** Updates the master flow model; coordinates and provides direction to other researchers and WTMS analysts; enters or validates all data into the spreadsheet; reviews and integrates information from separate summary spreadsheets for landfills and retreaders and ensures information is as complete and clear as possible and that responses are logical; analyzes and refines data in the master flow model (through iterative follow-up as needed with survey and interview respondents or other research) to develop the final flow analysis results to be used in the study report.
- **Quality Control:** May be one person or spread across several under coordination of the Data Analysis Lead. Reviews data entered into the model, spreadsheets, WTMS analyses. Double-checks model calculations from data entry through final results. Performs calculations in an effort to find errors or anomalies, and then fixes them.
- **Lead Writer/Presenter:** Prepares the draft summary presentation and report based on research and data analysis findings, and revises and finalizes these documents based on CalRecycle and stakeholder feedback.

1b. Update Survey Forms

Several separate surveys are conducted to support the market analysis focused on:

- Tire-derived material feedstock producers / processors.
- Tire-derived product manufacturer/installers.
- Retreaders.
- Landfills disposing significant quantities of waste tires.
- Tire-derived fuel users.

Each year the survey forms must be updated, at a minimum to reflect current dates and response guidance. Surveys are typically also updated to refine them for efficiency and clarity, to address any specific issues that have been identified for additional study, and generally to make them easier to use for respondents, surveyors and data analysts. The forms must strike an appropriate balance: detailed survey forms provide more information but can quickly become complex while shorter surveys are easier to complete but provide less information. In practice most information comes from follow up phone calls, especially for some of the most critical processor surveys.

We have found that it is often more efficient (depending upon the particular survey or respondent) to begin by contacting respondents for information by phone (and summarizing information in separate notes), rather than via presenting them with a survey (usually via email). Information for some respondents (i.e., landfills and retreaders) has typically summarized in a separate spreadsheet with the resulting totals

entered into the master flow model. Even when complete survey responses are provided, it is often useful to conduct phone interviews with company representatives in each category to more fully understand trends and perspectives and to validate tentative conclusions.

In recent years we have begun pasting information on companies, where pertinent, that is currently published in the TDP Catalog directories. Even if the catalog is not continued, this is a good way to update information on the companies for use in future years.

The surveys include:

- **The Processor Survey (Attachment 1)** – The 2021 study gathered data from 17 companies that operate waste tire facilities handling significant quantities of tires. The processor survey is perhaps the most critical to the annual market analysis as it documents a high percentage of the total flows and is used to validate information from other sources (and vice versa), to obtain information needed to remove double counting, and to identify areas where additional research is needed. Consequently, it is important that the processor surveys be as complete and as accurate as possible. Invariably there will be a need to follow-up with many processors, often several times, with detailed questions as the final data analysis is being conducted under Step 3. Many processors provide information via telephone, not in writing. Increasingly in recent years some are becoming reluctant to provide all needed information due to its sensitive nature. In such cases it may be necessary to rely on WTMS data (discussed below) and/or estimations based on available qualitative information. For the 2022 and future surveys of processors, researchers must consider and integrate as appropriate the Recycling and Disposal Reporting System, as discussed under the Methodology Refinements to Consider Section above.
- **The Tire-Derived Product Manufacturer-Installer Survey (Attachment 2)** – For the 2021 study Boisson Consulting sought information from 15 California manufacturing firms that received TIP grants, as well as several additional TDP manufacturers or installers as listed in the California TDP Catalog directories. As with other surveys, some firms reply in writing while many prefer to discuss the questions by phone. The flow data from manufacturers and installers is helpful to validate processor information. Because TDM flows to a wide variety of purchasers inside and sometimes outside of California, attempting a comprehensive, detailed flow survey capturing all TDM flows is not possible in practice. Consequently, the TDP manufacturer survey should attempt to elicit comprehensive information, but qualitative information on trends in each product segment is typically the most valuable information derived from the survey. Detailed flow data is useful, however, for validating certain flows, especially to larger TDP manufacturers. And, combined with data from CalRecycle's Tire Incentive Program it provides an opportunity to characterize trends in the TDP manufacturing segment. Some manufacturers participating in the TIP Program have pushed back on responding to the market survey since they have already provided rubber use data via the TIP. However, their general trend and other

broad information is still needed, and we have often found additional quantities of tire rubber used that was not reported in TIP. Also, TIP may conflate crumb rubber and buffings, and data from processors can help clarify that. Note that not all manufacturers and installers participate in the TIP so diligence is needed to identify and contact all firms that may be using some California tire rubber, and to confirm the portion that may have been sourced out of state.

- **The Retreader Survey (Attachment 3)** – For the 2021 study Boisson Consulting surveyed 36 California-located retreaders, in each of the last several years there have been several changes to retreader company affiliations and contact information. This is due to steady mergers and acquisitions. One result of this trend is that securing completed surveys has become increasingly difficult as larger companies sometimes have across-the-board policies against responding to voluntary state surveys. Retreaders typically require significant follow-up to secure responses of at least minimal trend information. To support use of the information in data analysis, Boisson Consulting summarizes retreader survey responses in a separate Retreader Summary Spreadsheet. In recent years securing completed surveys from retreaders has become increasingly difficult. As previously independent retreaders are increasingly becoming subsidiaries of larger companies, some have policies not to participate in voluntary government surveys. In practice, we have had to estimate total quantities based on survey responses focuses on percentage growth and, where national statistics are available, through extrapolation to estimate California quantities.
- **The Tire-Derived Fuel Users Survey (Attachment 4)** – For the 2021 study Boisson Consulting contacted four California cement kilns known to be using TDF as fuel. We were unable to identify a contact for one firm that had changed hands the prior year. Again, some respondents typically complete and return the form, while others are most comfortable providing information via telephone. One cement kiln sometimes is not responsive; however, this facility has an exclusive agreement with one waste tire processor to supply TDF, and this processor has consistently provided a robust survey response. TDF surveys are simple, with the key information needed being the quantity of TDF, whole tires and/or tire fiber consumed. Typically, processor surveys and Waste Tire Manifest System (WTMS) data is analysed to assess whether these entities need to be surveyed for that year.
- **The Landfill Survey (Attachment 6)** – For the 2021 study Boisson Consulting contacted 29 landfills that had previously received significant quantities of waste tires for disposal, or TDM for use in civil engineering projects or as alternative daily cover (ADC), or which current year WTMS data indicated they received significant net quantities of waste tires that WTMS data indicates never left the site. We also identified landfills to survey based on documented flows in the WTMS system. Boisson Consulting has found that it is generally most efficient to conduct the landfill surveys by phone, and to directly enter the respondent's information into a Landfill Summary (Attachment 7). The key information to obtain is the number of tires disposed and TDM used as tire-derived aggregate

(TDA) in civil engineering projects or as ADC. However, the spreadsheet seeks to obtain a variety of related information that is very useful in practice, including planned projects, pricing and specifications. This information is validated by comparing it with separate information from CalRecycle (e.g., ADC data in the disposal reporting system and civil engineering information from the grants and technical assistance programs). Occasionally a landfill operator will prefer to see the written survey.

1c. Update the List of California Scrap Tire Management Businesses

Attachment 8 is a simple list of the firms targeted in surveys and/or interviews for the 2021 market study, along with TPID numbers where pertinent. These lists are intended for use as tools to facilitate assigning surveys to team members and facilitating contacts and tracking progress. Contact information for the most companies on the list is available in the California Tire-Derived Product Catalog, also prepared for CalRecycle under this TOMA contract (available at https://www.e-productcatalog.com/TDPCatalog/) which should be used to update lists where possible. The Catalog was updated in November 2022 and numerous changes were made to companies and contact information. Information for updating the list is also available from CalRecycle's permitting system which can be searched by company type. Some surveyed companies are not in the catalog. Attachment 5 lists TDF users and Attachment 7 has contact information for the landfills that have disposed of significant quantities of waste tires and were surveyed in recent years. CalRecycle's TPID Search and SWIS permit search sites can also be used to find facility information, as can a list of major and minor waste tire facility permit holders that can be obtained from CalRecycle staff (a sample from 2021 is provided as Attachment 9.)

Business operations are constantly changing, especially in relation to the types of products produced and extent that they use California tire rubber as feedstock. Consequently, there is a need to monitor industry publications and other information and identify any new, closed or changed (e.g., ownership/name/location) businesses. These steps include:

- Constantly watching for information on new and changed businesses throughout the year, and store information in a tracker file for use when beginning the market analysis project.
- Check with knowledgeable staff at CalRecycle (e.g., permitting, RMDZ loan, grants, LAMD, RAC/TDA technical assistance and market development staff) who are in a position to know of any new scrap tire management firms, especially processors.
- Review agendas for CalRecycle monthly meetings for items with new or revised waste tire facility permits.
- Review monthly issues of the Scrap Tire New and the most recent annual update to the Scrap Tire and Rubber Users Directory (both available at http://www.scraptirenews.com/).

Step 2: Gather Data

2a. Conduct Surveys and Interviews

It is important to secure survey responses from as many targeted firms as possible, especially processors, TDF users and landfills which together cover the vast majority of tires managed. Processors are perhaps the best resource for documenting market trends and insight into the industry and should be considered the top priority. The second highest priority for the purposes of documenting market trends are the landfills that accept scrap tires for disposal, use as alternative daily cover (ADC) or use as tire-derived aggregate (TDA) and the tire-derived fuel (TDF) facilities that accept scrap tires for use as fuel. Finally, retreaders are also a priority because survey data and qualitative trend information is the primary source of information available to estimate their collective tonnage. The data received from these facilities both documents a sizeable portion of flows and is also used to confirm processor information.

It is very important that written notes or formal survey responses be prepared and correctly filed for all responses and interviews conducted. During data analysis in Step 3, it is critical that all information sources be readily accessible as a significant amount of compilation, double checking and review is needed to ensure results are as complete and accurate as possible.

Note on Confidentiality: Confidentiality is paramount when speaking with any firm. Assure company representatives that in general, information will be held in confidence and only aggregate information will be presented in the report and in presentation. Without the trust of industry insiders, the market analysis would be near impossible. Confidentiality must always be the highest priority. Most importantly, never mention anything to one firm about the activities, scale of operation or any other business/market activity of another firm.

2b. Compile CalRecycle Data and Prepare WTMS Analyses

In addition to survey responses, Waste Tire Manifest System (WTMS) data provides a critical source of information on the flow of whole waste tires. Boisson Consulting compiles information on the quantity of tires delivered or picked up from each processor, landfill and TDF user as identified under Step 1c, as well as select haulers that are also processors and/or that handle large quantities of tires. This information is then entered alongside survey data and other notes in the master flow model in Step 3b and is often consulted to validate or shed light on information provided in surveys and other sources.

Note that the following methodology should be updated in 2022 as discussed in the Methodology Refinements to Consider section above, based on new data on conversion factors for specific load types that can help to increase the accuracy of WTMS based flow estimates.

Following are the steps involved in conducting WTMS research to support the annual market analysis:

i. Obtain a spreadsheet with all WTMS data for the study year from CalRecycle staff. We have typically obtained this as an Excel spreadsheet and then set up a database to simplify queries.

Note that WTMS data is available for retreaders, but we have found it is not useful in estimating flows as it covers casings sent to processors for management/disposal which does not necessarily correlate to the number of retreads processed.

ii. Download WTMS data for each facility and hauler for the entire calendar year being analysed. For each of the processors, TDF users, and landfills identified in Step 1c, a separate WTMS file should be prepared. All should be analyzed as facilities, and processors who are also haulers should also be analyzed as haulers. We have found it necessary to analyze additional key haulers for select facilities to document sources and destinations of flows.

To prepare each facility or hauler analysis, first identify the TPID number. We set up a query in the database that allows us to export to an Excel file all comprehensive trip logs (CTLs) for a given TPID number by entering it either as a hauler or a facility, or in cases where a processor does both, doing it twice, once as a hauler and separately as a facility.

This generates a comprehensive list of CTL data, one row for each documented shipment under the entered CTL. The WTMS analyst can then adjust outliers of deliveries (large entries that are incorrectly entered by the hauler or by CalRecycle contractors responsible for maintaining the database. Pivot tables can then be prepared to quickly show the trend in deliveries and pickups (for facilities), and totals by hauler (for facilities) or by facility (for haulers). As flows to specific facilities being analyzed in the study are identified, these are entered into the master flow spreadsheet for use in validating surveys, identifying the need for follow up questions if the flows were not covered in survey responses. In some cases where no other data sources are available, the WTMS flow estimates may be used directly.

Note that, as discussed in the Methodology Refinements to Consider Section above, there are many ways that analysts can improve up on the PTE data shown at a high level in the WTMS database. The WTMS Conversion Factor report prepared under this TMAS contract (DRR 19054) will be a useful resource in this effort and provides new, refined conversion factor estimates that can be used in some cases.

iii. Analyze haulers delivering and picking up at the facility. For facilities, create a pivot table showing PTE picked up and delivered by hauler and another pivot table showing total delivered by month, which can be used to create a line chart showing the trend for the year. For processors that are also haulers, download data by hauler and create similar pivot tables, except showing total

delivered and picked up by facility (not hauler as above) and totals hauled by month (not picked up and delivered as above for facilities). Together, the total volumes and trend information from this analysis is very helpful in identifying trends and in some cases is the best data available. However, there are many issues with WTMS data due to conversion factors, occasional errors and gaps, so the data should be used mainly to help validate other sources, identify issues to address through surveys or other data gathering and to show broad trends. It should be used to estimate flows to a facility only as a last resort.

vi. Analyze the key haulers for each facility. For the largest haulers at each facility, if handling a significant quantity of tires (i.e., more than 100,000 PTE) it can be helpful to prepare a WTMS analysis per above for each. This may yield useful information and insights on other facilities.

Since WTMS is usually not used as the sole source of tire volumes handled by a given company or facility, the analysis should focus on significant tire flows only, usually that means about 100,000 PTE or more. However, for very large facilities the threshold in practice could be much higher, and lower volumes are sometimes useful to analyze.

There are many reasons why WTMS tire flow estimates for a given facility may not match survey responses. But WTMS data still provides very important information regarding the approximate range of flows to and from facilities, and on the types of destinations of tires picked up at a given facility. Reasons for WTMS data not matching survey responses include:

- CalRecycle data entry and conversion factors. Tire quantities may be entered in CTLs in either tons, tires (actual count, regardless of size) or cubic yards. The entries themselves may be subject to approximation. CalRecycle then converts these to standard PTEs using: a) for tons, 20 lbs. per PTE; for tires, assumed each is 20 lbs. even though they are likely of varying size; and for cubic yards, 100 lbs. per cubic yard or five PTE per cubic yard.
- Some entries in WTMS system may sometimes be blank even if there is a CTL with data.
- Effects of inventory on the ground at the beginning or end of the year (the study methodology does not attempt to take inventory into account and, in effect, assumes that year-start and year-end inventories are constant).
- CTLs may show data entered as cubic yards (approximate conversion).
- CTLs may show data entered as the number of tires for truck or off-the-road (OTR) tires (CalRecycle will assume they are standard PTEs, even if they are a mixed load, truck or OTR tires).
- CTLs may have data entry errors and/or CalRecycle may make data entry errors in converting all data to number of tires for the WTMS system.
- Some flows may be inappropriately un-manifested, and some processors may have received a limited exemption for select flows.
- Tires managed by a given processor may sometimes bypass their facility entirely, for example, when truckloads of whole tires are shipped directly to a TDF user.
- Survey respondents may make errors in completing survey forms.

- Some respondents may intentionally provide false or misleading information on occasion.
- The facility may have multiple Tire Program Identification Database (TPID) numbers or operate under different affiliated names or locations.

Additional CalRecycle data sources to compile include:

- Request an up to date list of major and minor waste tire facility permit holders to validate that the current list is complete.
- Request recent data from the TDA Grant, Rubberized Asphalt and TDP grant programs. This will include the number and size of grants awarded and closed, and in some cases will provide pertinent tonnage data, though this may not definitely provide the year in which flows occurred. In practice, the TDA grant data has been very helpful to validate flows to TDA engineering projects.
- The Recycling and Disposal Reporting System in recent years has only provided useful data on ADC use at landfills, though this has been very helpful to validate data provided by processors and landfills. In future years additional data may become available, although it is expected to be challenging to use in practice. Again, see the discussion above in the Methodology Refinements to Consider Section and documentation developed in this current TMAS Contract related to using the RDRS system to support market analyses.

2c. Conduct Internet Research

In addition to the surveys and WTMS research, pertinent data and trend information can be obtained from various sources on the Internet and through a small number of interviews. Boisson Consulting's basic approach to the market analysis is to gather data from as many pertinent sources as possible, and then systematically analyze it to achieve the very best results possible, eliminating double counting while trying to ensure results are as complete as possible.

A variety of data is available to verify information received from tire recyclers or to fill in missing information. It is important to file all pertinent data sources clearly for use in the analysis phase of the project. Ideally all data and information received from the tire recyclers should be confirmed or verified by another source. While this ideal is impossible to achieve 100 percent of the time in practice, information from the sources below can be used to verify much processor-reported information and, in some cases, serves to identify questions or issues that can then be raised with processors during interviews.

Examples of information sources used by Boisson Consulting include the following (representatives of each of these sources may also be useful to interview for broad perspectives on trend s and issues, in addition to the surveys of industry company representatives):

- **Caltrans.** Caltrans prepares annual reports documenting crumb rubber used in asphalt paving. The location of these reports on the Internet has varied in recent years, but some historical reports are available at https://dot.ca.gov/programs/maintenance/crumb-rubber-report-archive.

- **Asphalt product blenders and prime contractors.** Using the list available in the CalRecycle California TDP Catalog directories (Appendix A), contact a number of firms and interview them regarding trends in use of crumb rubber in various asphalt and paving applications, including trends with Caltrans and, separately, at the local level.

- **CalRecycle Monthly Meeting Agenda Items.** Monthly agendas are available at: http://www.calrecycle.ca.gov/PublicMeeting/. These agenda items may include information on facility permitting, statistics on tire-related grants and incentive payments, research projects, related CalRecycle research and updates, etc. CalRecycle staff should be contacted to validate information and obtain perspectives on trends and issues, including the Rubberized Pavement and Civil Engineering Grant and Technical Assistance Staff, and Enforcement Staff.

- **The periodic national scrap tire market studies and presentations available from the U.S. Tire Manufacturers Association (USTMA).** Go to https://www.ustires.org/scrap-tire-markets/. While intermittent and national in scope, these reports provide useful information on trends at the national level.

- **Review of Scrap Tire News publications**. Subscriptions to this monthly publication are available at: http://www.scraptirenews.com/. This publication covers tire recycling industry and markets nationally and can be a valuable source of information on company and broad trends.

Step 3: Analyze Data Using the Master Flow Model

3a. Update the Master Flow Model

The Master Flow Model (Attachment 10) is used as a tool to compile data from various sources, evaluate and compare data and, most importantly, to iteratively develop the most complete and accurate estimates of tire flows possible. Tab 1 within the spreadsheet provides an overview of each tab within the file, along with notes on its use.

The first step is to update the master flow model used in the previous year by systematically reviewing each tab and: 1) Deleting previous year's data; 2) Changing dates to reflect the new study year; and 3) Making any other adjustments previously identified to enhance or refine the analysis.

In some cases, such as Tab 10, Report Summary Table which shows the current and last two years of results, it is necessary to transfer results to prior year columns, making

room for the new current year results to be developed. Care must be taken to ensure that results are correctly transferred.

It is essential that the Lead Data Analyst systematically track all data from entry to final results and production of summary charts and tables to ensure they understand how the model works and that all calculations are correct. This flow model is dynamic and is used in slightly different ways each year. While it is an effective tool, it has not yet been refined into a "black box" model with static, permanently defined parameters.

3b. Enter Data into Master Flow Model

The next step is to enter data into the Master Flow Model (Attachment 10) from the various sources discussed under Step 2 above. In Step 3c below, these data are analysed and refined to develop final results. Following are detailed instructions for entering data into the spreadsheet. Tab 1 provides overview information. Tab 2 shows the final adjustments used to derive study results and will be discussed under Step 3c below. Data entry begins with Tabs 3 and 4.

Tab 1- General Notes. This tab provides some general notes and an explanation of each tab in the model.

Tab 2 – Used Tires Adjustment. Use this tab to make final adjustments and estimates of used tire flows. The estimates come from two sources: a) Survey responses for facilities that track used tires and conduct their own hauling and/or appear to have low "skim off" of used tires prior to loads reaching their site; and b) An aggregated estimated percentage of flows for other sites (less reported used tires and retreads) that accounts for used tire culling not reported in surveys, both by surveyed companies and the large number of unsurveyed haulers (and even surveyed processors) who may not report used tire shipments. Information from processors and haulers is used to adjust the approach and assumed percentage of broad waste tire flows that are used tires culled for resale.

Tab 3 – Final Adjustments. Use this tab at the end of the analysis to make final, industry-wide adjustments to each market segment after entering data into tabs 4-7 and completing the separate landfill and retreader summary spreadsheets. The tab starts with results from processors (Tab 4). Adjust each segment based on best data available (e.g., from tabs 5-7 and from the separate retreader summary and landfill summary sheets).

Tab 4 – Processors. This tab contains the detailed data and information on processors (i.e., tire-derived material suppliers). Enter data for each processor or exporter from surveys and the WTMS in the cells indicated. Enter WTMS data in PTE in the middle column, and then multiply by 100 to show tons in the third column. Then enter survey responses, if available, in the three columns shown for each firm for each market segment. The first column, "Buffings Use" is for the amount of buffings shipped to different market segments. Only a few processors typically will have shipped buffings and data may not be available. The second column is for survey responses as reported. The third column is for final, adjusted flows, which represents the best estimate for each firm based on all sources and considerations. Enter data on flows shipped to other

processing facilities below the facility summary, and also data on flows received from other companies to avoid double counting. We typically report cross shipments at the last surveyed facility to handle the material, subtracting the shipment from the prior facility. Include in the notes the source of the information and any other available details. This information will be considered in Step 3c to eliminate double counting and to validate flows to TDF and other facilities. In the notes section for each firm enter any notes or assumptions used that may be useful in interpreting the data. Be careful to only enter the quantity of tires generated in California and enter the percentage of whole tires received by each firm that were imported from out of state. This can be calculated from data on each processor/exporter survey response. Generally, do not enter estimates for used tires or other market segments for each processor unless there is a clear and justified method for doing so. Instead, flag a missing number in yellow highlight and make a single industry-wide adjustment in Tab 2.

Tab 5 – TDF Users. In Tab 5 enter data from the TDF surveys. Generally, pertinent data will include the quantity of tires used for TDF, whether the material was whole tires or a processed TDF product, the quantity of tire fluff purchased, and information on sources of whole tires and TDF supplied. Exported TDF notes may be consolidated on this page a well to provide all TDF information in one place.

Tab 6 – Import Adjustments. Tab 6 is used in Step 3c below to adjust results for imported tires shipped to other processors or market segments. There is no need to enter data into Tab 6 at this stage.

Tab 7 – Landfill ADC and TDA. In this tab, enter data from processors and from landfill surveys on the quantity of ADC and TDA used by each landfill, and for the landfills using tires in these applications, also list disposed quantities. This tab is used to help reconcile different data obtained from different sources on the amount of tires used for ADC and TDA at landfills including CalRecycle's technical assistance and grant programs. Also enter data from CalRecycle's Recycling and Disposal Reporting System (RDRS) on the quantity of tires used for ADC. This tab will be shared in Step 3c with CalRecycle staff to determine the best estimates for ADC and civil engineering, given the range of information available (which usually is not consistent).

Tab 8 - Raw TIP Data and Manufacturer Data. Paste TIP data obtained from CalRecycle staff into this tab, and also create a table to enter data from TDP manufacturer-installers. Compare all data sources for each company and develop the best estimates of total flows, being careful to parse crumb rubber vs. buffings and California-produce tire-derived materials vs. material sourced from out of state. This provides fodder for describing TDP manufacturing and installing and also serves as a validation for total estimates to these categories as provided by processor shipment surveys.

Tab 9 - Report Summary. This tab provides the three-year summary table, based on previous studies and the current year results from Tab 2. Hide the tons columns to produce the table as used in the study report.

Tab 10 - Pie Chart. This tab provides a pie chart summary of findings for the study year.

Tab 11 - Historical Tons Data. This tab provides historical data by category for use in charts. Note that due to changes in certain categories and methodology, data is not available for all categories and years. Also, not all detailed categories have been reported.

Tab 12 - Historical Charts. This tab provides historical line charts for several categories. It also at the top includes historical bar chart covering all categories in one place.

Tab 13 - Statewide Comparisons. This tab provides a template for updating data on all California waste management and comparing it with tires only. A chart template is also provided. CalRecycle's annual State of Recycling and Disposal Reports are the source of all materials data.

Tab 14 - Five Year Plan. We have often included or cited information from the current CalRecycle Five Year Tire Plan in waste tire market reports, usually the market development and research budget. This tab provides a place to store this information that is handy.

Tab 15 – Caltrans. This tab provides a template for updating current data on Caltrans use of crumb rubber in asphalt paving, including a chart.

Tab 16 - Miscellaneous Notes. This tab provides a location for entering key notes from interviews and surveys that is directly related to flow estimates. For example, in recent years we entered information related to use of crumb rubber as infill material in synthetic turf athletic fields and exports of TDF.

3c. Iteratively Analyze Refine Data to Develop Best Estimates

This is the most challenging and crucial step as it involves systematically and iteratively analyzing all sources of data to determine the most complete and accurate final estimates of the flow of California tires to each market segment. It is critical that all research documents be coherently filed and readily available as this analysis is conducted, as it is often necessary to consult the survey responses, WTMS analysis sheets or other sources simultaneously. The process involves systematically considering final flows to markets, usually from processors but in the case of TDF or landfill sometimes direct from generators via haulers. Each data point must be compared across sources and where possible validated by data from other facilities. The goal is to identify and address inconsistencies and be as complete as possible while avoiding double counting. Decisions on how to handle flows to/from each facility must be tracked for future and repeated reference, and updated where necessary as all facilities and data sources are considered. It is essential to systematically review each cell and formula to ensure that all calculations are correct and that the best available information is being used to determine results.

Begin by validating that all processor flows are estimated as accurately as possible and are correctly summed in column B. In Tab 4, systematically work from left to right and consider each market segment flow estimate for each firm one by one. For each firm, look at the estimates of materials shipped to other facilities. If shipped to a landfill, confirm in the Landfill Summary that the landfill shows this tonnage either as disposal, ADC or civil engineering. If not, highlight it in yellow for reconsideration later. If shipped

to a TDF user, confirm that this information is listed for the user as received from another facility in Tab 5. If shipped to another processor, subtract the tonnage from the totals shown for the firm that shipped the material, and confirm that this quantity is shown for the receiving firm. Whenever material is shipped from one facility to another, it is tracked at the firm that shipped material to market and subtracted from the processor that sent the material to the other processor that shipped to market. In some cases, where necessary conservative estimates (seeking to not overstate flows) can be determined based on previous year survey responses, anecdotal information and/or general trend information. Next, for each processor and exporter, look at the quantity and type of material received from another facility and ensure that this information is listed for the facility that shipped the material. If the shipping facility is another processor, subtract that quantity from their flow so that it is not double counted.

Finally, consider each final, adjusted flow entry for each processor, and generally look for any issues or inconsistencies. Where questions or abnormalities are identified, seek to reconcile them by considering other sources and/or by re-contacting the facility representative for more information. Flag issues by highlighting them in yellow for further consideration later. As each facility is completed, it is helpful to label it “done” or “issues to address” in row 1 to aid in completing refinements.

A similar approach is needed for Tabs 5-8. On each tab scrutinize the data input, consider and address any inconsistencies with other sources and determine the final best estimates. The Lead Data Analyst should double check and refine all model calculations to “own” the entire analysis and findings.

After doing this for each tab it is then time to return to Tab 3 to make final adjustments needed to determine the overall final study results. Systematically walk through each market category and the columns in this tab, refining the overall estimate using the best available information and constantly double checking, looking for possible calculation errors or weak data that could be improved. For example, we typically use the total disposal estimate from the landfill survey summary (Attachment 7) in lieu of the processor summary, since it excludes many direct shipments by haulers that are captured by landfill surveys and/or WTMS estimates. The same holds for tire-derived fuel in which the Tab 4 estimates may be considered the most accurate since independent haulers may ship direct to TDF users that accept whole waste tires. This is a painstaking process that must be conducted slowly and in an iterative fashion.

Once all data containing tabs have been optimized and Tab 3 is complete, the final flow estimates are available. At this stage, the analyst should review Tabs 9-13 which present a variety of charts and graphs to ensure that all data presented are correctly calculated based on the data in Tab 2. If resources and time allow additional follow up phone calls with some respondents and other industry representatives may be necessary to address inconsistencies or to verify trends that become apparent through analysis of the data.

Step 4: Prepare Draft Presentation and Report and Solicit Stakeholder/CalRecycle Feedback

Attachment 11 presents a template for a PowerPoint slide deck presenting draft findings, and Attachment 12 presents a sample final waste tire market report covering 2021. Numerous tables and figures summarizing market trend information will be automatically generated in the Master Flow Model. These include the tables and figures used in the presentation slides and report. It is useful for the lead writer to review all survey responses and other research documents identified under Task 2, and to compile trend notes for each market segment to the extent possible. Armed with these compiled trends and the final results, tables and figures, preparing the presentation slides and notes, and a draft report is relatively straight-forward.

Before finalizing results, obtaining stakeholder feedback is useful to validate conclusions regarding broad trends and the magnitude of estimated tire flows in certain markets. Boisson Consulting typically prepares a PowerPoint presentation to summarize key draft results and has collaborated with CalRecycle Staff to present the information to stakeholders at a forum in which they may participate in person or via webinar. Based on comments received from CalRecycle and stakeholders, Boisson Consulting may revisit the Master Flow Model and review any findings that stakeholders questioned, possibly even returning to respondents or other data sources if needed. Boisson Consulting then finalizes the report content and resubmits it to CalRecycle.

After the report content is complete, it is beneficial to prepare a short list of any potential adjustments to consider the following year, based on new issues or lessons learned.

Note that per CalRecycle and State of California Policy, the word and power point files must be prepared in a manner that satisfies accessibility requirements. When each is converted to a pdf file, it will then again be necessary to take steps to ensure the pdf file satisfies accessibility requirements. Using properly formatted word and power point files will greatly facilitate making the corresponding pdf files accessible.

Step 5: Finalize and Publish Report

Once CalRecycle Program Staff receives the full report with all substantive content finalized, it then routes the report to the Office of Public Affairs (OPA) for final review and editing. This typically yields a number of technical edits. Once these are addressed satisfactorily, CalRecycle posts the report on its website, both on the publications page and on a link on the CalRecycle TDP landing page: https://calrecycle.ca.gov/tires/products/. While the finalization step does not typically involve a lot of work, it may take one or two months or more due to OPA schedules.

6. Update Survey Forms, Tools, and this Guidance Document

A final step at the conclusion of each year's study is to update the dates on survey forms, prepare tools for use in the next study and, if called for under the current contract, to update this Guidance Document.

EXHIBIT B

BUDGET DETAIL AND PAYMENT PROVISIONS

1. INVOICING AND PAYMENT:

   A. For services satisfactorily rendered and upon receipt and approval of the invoices, the State agrees to compensate the Contractor for work performed in accordance with the Scope of Work and the approved Work Plan at the rates specified herein, not to exceed the per Task totals from the Cost Proposal Sheet.

   B. Itemized invoices shall be submitted electronically, with one set of supporting documentation (i.e., receipts, timesheets, etc.), not more frequently than monthly in arrears to:

   contractpayment@calrecycle.ca.gov

   C. Each invoice submitted to CalRecycle must include the following information:
      - Invoice Number
      - Contract Number
      - Description of Rendered Activities/Services
      - Submitting Contractor's Address
      - Invoice Period

2. BUDGET CONTINGENCY CLAUSE:

   A. It is mutually agreed that if the Budget Act of the current year and/or any subsequent years covered under this Agreement does not appropriate sufficient funds for the program, this Agreement shall be of no further force and effect. In this event, the State shall have no liability to pay any funds whatsoever to the Contractor or to furnish any other considerations under this Agreement and the Contractor shall not be obligated to perform any provisions of this Agreement.

   B. If funding for any fiscal year is reduced or deleted by the Budget Act for purposes of this program, the State shall have the option to either: cancel this Agreement with no liability occurring to the State, or offer an Agreement Amendment to the Contractor to reflect the reduced amount.

3. PROMPT PAYMENT CLAUSE: Payment will be made in accordance with and within the time specified in Government Code, Chapter 4.5 (commencing with Section 927).

4. TAXES: The State of California is exempt from Federal Excise Taxes, and no payment will be made for any taxes levied on employees' wages. The State will pay for any applicable State of California or local sales or use taxes on the services rendered or equipment or parts supplied pursuant to this Agreement. California may pay any applicable sales or use tax imposed by another state.

5. COST BREAKDOWN: See Exhibit B1

6. TRAVEL CLAUSE: All travel will be reimbursed at the excluded employee travel rates in accordance with the California Code of Regulations Title 2, Division 1, Chapter 3, Subchapter 1, Article 2, Section 599.615.1 et seq. The Contractor will be held to the State per diem rates in effect at the time of travel. For specific per diem (lodging, meals and incidentals) reimbursement rates, see California Code of Regulations Title 2, Division 1,

Chapter 3, Subchapter 1, Article 2, Section 599.619. For this agreement, the Contractor's headquarters are located at <Enter Address>. Per diem will not be reimbursed for travel within 50 miles of Contractor's headquarters.

7. PROGRESS PAYMENT AND PAYMENT WITHHOLD: If progress payments are allowed for services performed under this agreement, not less than ten (10) percent of the agreement amount shall be withheld pending final completion of the agreement, and receipt and acceptance by the State of any final reports required under the agreement. However, for those agreements that consist entirely of separate and distinct tasks, any funds withheld with regard to a particular task may be paid upon completion of that particular task. The Contractor agrees to comply with the requirements of Public Contract Code (PCC), Section 10346.
8. This contract is subject to final payment withholding in accordance with Military & Veterans Code § 999.7 until the Contractor complies with the certification requirements of subdivision (d) of § 999.5. CalRecycle will withhold $10,000 from the final payment, or the full final payment if less than $10,000, until the Contractor complies with the certification requirements and submits the Prime Contractors Certification – DVBE Subcontracting Report (STD 817) form to CalRecycle.

EXHIBIT B1

Selected Contractor’s Cost/Rate Sheet will appear here.

EXHIBIT D

SPECIAL TERMS AND CONDITIONS

1. AGENCY LIABILITY: The Contractor warrants by execution of this Agreement, that no person or selling agency has been employed or retained to solicit or secure this Agreement upon agreement or understanding for a commission, percentage, brokerage, or contingent fee, excepting bona fide employees or bona fide established commercial or selling agencies maintained by the Contractor for the purpose of securing business. For breach or violation of this warranty, CalRecycle shall, in addition to other remedies provided by law, have the right to annul this Agreement without liability, paying only for the value of the work actually performed, or otherwise recover the full amount of such commission, percentage, brokerage, or contingent fee.

2. AMENDMENT: No amendment or variation of the terms of this Agreement shall be valid unless made in writing, signed by the parties and approved as required. No oral understanding or agreement not incorporated in this Agreement is binding on any of the parties. CalRecycle reserves the right to amend this Agreement through a formal written amendment signed by both parties, for additional time and/or funding.

3. CALIFORNIA WASTE TIRES: Unless otherwise provided for in this contract, in the event the Contractor and/or Subcontractor(s) purchases waste tires or waste-tire derived products for the performance of this Agreement, only California waste tires and California waste tire-derived products shall be used. As a condition of payment under this Agreement, the Contractor must provide documentation substantiating the source of the tire materials used during the performance of this Agreement to the Contract Manager.

   All formal notices required by this Agreement must be given in writing and sent by prepaid certified mail, fax, personal delivery or telex.

4. CONTRACT MANAGEMENT: The Contractor and the agents and employees of the Contractor, in the performance of this Agreement, shall act in an independent capacity and not as officers or employees or agents of the State of California. The Contractor may change the designated Project Director, but CalRecycle reserves the right to approve any substitution of the Project Director. The Contractor's key personnel may not be substituted without CalRecycle's Contract Manager's prior written approval. CalRecycle may change the Contract Manager by notice given to the Contractor at any time. CalRecycle staff will be permitted to work side-by-side with the Contractor's staff to the extent and under conditions that may be directed by the Contract Manager. In this connection, CalRecycle's staff will be given access to all required data, working papers, etc. The Contractor will not be permitted to utilize CalRecycle's staff for the performance of services, which are the responsibility of the Contractor unless the Contract Manager previously agreed to such utilization in writing, and any appropriate adjustment in price is made. No charge will be made to the Contractor for the services of CalRecycle's staff for coordination or monitoring functions.

5. CONTRACTOR EVALUATIONS: CalRecycle will evaluate the Contractor's performance within sixty days of the completion of this Agreement and shall remain on file by CalRecycle for a period of thirty-six months. If the Contractor does not satisfactorily perform the work or service specified in this Agreement, CalRecycle will submit a copy of the negative evaluation to the Department of General Services (DGS), Office of Legal Services, within five (5) working days of the completion of the evaluation. Upon filing an unsatisfactory evaluation with the DGS, CalRecycle shall notify and send a copy of the

evaluation to the Contractor within fifteen (15) days. The Contractor shall have thirty days to prepare and send a written response to CalRecycle and the DGS. CalRecycle and the DGS shall file the Contractor's statement with the evaluation. (Public Contract Code, § 10369).

6. CONFIDENTIALITY/PUBLIC RECORDS: The Contractor and CalRecycle understand that each party may come into possession of information and/or data which may be deemed confidential or proprietary by the person or organization furnishing the information or data. Such information or data may be subject to disclosure under the California Public Records Act, commencing with Government Code § 6250, or the Public Contract Code (PCC). CalRecycle agrees not to disclose such information or data furnished by the Contractor and to maintain such information or data as confidential when so designated by Contractor in writing at the time it is furnished to CalRecycle, only to the extent that such information or data is exempt from disclosure under the California Public Records Act and the PCC.

7. CONFLICT-FUTURE BIDDING LIMITATION: Pursuant to PCC § 10365.5:

   (a) No person, firm, or subsidiary thereof who has been awarded a consulting services contract may submit a bid for, nor be awarded a contract for, the provision of services, procurement of goods or supplies, or any other related action that is required, suggested, or otherwise deemed appropriate in the end product of the consulting services contract.

   (b) Subdivision (a) does not apply to any person, firm, or subsidiary thereof who is awarded a subcontract of a consulting services contract that amounts to no more than ten (10) percent of the total monetary value of the consulting services contract.

   (c) Subdivisions (a) and (b) do not apply to consulting services contracts subject to Chapter 10 (commencing with Section 4525) of Division 5 of Title 1 of the Government Code.

8. CONSULTING SERVICES: If this Agreement is for consulting services, the Contractor is hereby advised of its duties, obligations and rights under PCC §§ 10335 through 10381.

9. DELIVERABLES: All documents and/or reports drafted for publication by or for CalRecycle in accordance with this contract shall adhere to CalRecycle's Contractor Publications Guide at www.calrecycle.ca.gov/Contracts/PubGuide/ and shall be reviewed by CalRecycle's Contract Manager in consultation with a CalRecycle editor.

   For contracts of $5,000 or more, any document or written report prepared for or under the direction of CalRecycle, shall include a notation on the inside cover as follows:

   "Prepared as part of CalRecycle contract number DRR#####, Total Contract Amount $$$$$$, pursuant to Government Code § 7550."

10. ENTIRE AGREEMENT: This Agreement supersedes all prior agreements, oral or written, made with respect to the subject hereof and, together with the Attachments and/or Exhibits hereto, contains the entire Agreement of the parties.

11. ENVIRONMENTAL JUSTICE: In the performance of this Agreement, the Contractor shall conduct its programs, policies, and activities that substantially affect human health or the environment in a manner that ensures the fair treatment of people of all races,

cultures, and income levels, including minority populations and low-income populations of the State. (Gov. Code, § 65040.12(e).)

12. EXECUTIVE ORDER N-6-22 – RUSSIA SANCTIONS: On March 4, 2022, Governor Gavin Newsom issued Executive Order N-6-22 regarding Economic Sanctions against Russia and Russian entities and individuals. “Economic Sanctions” refers to sanctions imposed by the U.S. government in response to Russia’s actions in Ukraine, as well as any sanctions imposed under state law. By submitting a bid or proposal, the Contractor represents that it is not a target of Economic Sanctions. Should the State determine that the Contractor is a target of Economic Sanctions or is conducting prohibited transactions with sanctioned individuals or entities, that shall be grounds for rejection of the Contractor’s bid/proposal any time prior to contract execution, or, if determined after contract execution, shall be grounds for termination by the State.
13. FORCE MAJEURE: Neither CalRecycle nor the Contractor, including the Contractor's subcontractor(s), if any, will be responsible hereunder for any delay, default or nonperformance of this Agreement, to the extent that such delay, default or nonperformance is caused by an act of God, weather, accident, labor strike, fire, explosion, riot, war, rebellion, sabotage, or flood, or any other cause beyond the reasonable control of such party.
14. GRATUITIES: CalRecycle may terminate this Agreement if gratuities were offered or given by the Contractor, or any agent or representative of the Contractor, to any employee of CalRecycle, with a view toward securing a contract or securing favorable treatment with respect to awarding or amending or making a determination with respect to performance of this Agreement.
15. HEALTH AND SAFETY: Contractors are required to, at their own expense, comply with all applicable health and safety laws and regulations. Upon notice, Contractors are also required to comply with CalRecycle’s specific health and safety requirements and policies. Contractors agree to include in any subcontract related to performance of this Agreement, a requirement that the subcontractor comply with all applicable health and safety laws and regulations, and upon notice, CalRecycle’s specific health and safety requirements and policies.
16. IMPRACTICABILITY OF PERFORMANCE: This Agreement may be suspended or cancelled, without notice at the option of the Contractor, if the Contractor’s or CalRecycle’s premises or equipment is destroyed by fire or other catastrophe or is so substantially damaged that it is impractical to continue service or in the event the Contractor is unable to render service as a result of any action by any governmental authority.
17. INSURANCE: When required, the Contractor must provide: 1) a Certificate of Insurance insuring CalRecycle, and/or 2) verification of Worker’s Compensation insurance. The Contractor must provide said Certificate of Insurance and/or verification to CalRecycle within ten (10) days after notification of CalRecycle’s intent to award the Agreement. The Agreement will not be executed, nor can work begin, unless said Certificate of Insurance and/or verification is provided to CalRecycle.

    The Certificate of Insurance must be in effect for the duration of the Agreement and shall include the following terms and conditions:

    (a) CalRecycle, its officers, agents, employees, and servants shall be included as additional insured.

(b) The dates of inception and expiration of coverage shall be specified.

(c) A minimum liability coverage of not less than $1,000,000 per occurrence for bodily injury and property damage liability combined shall be specified. The coverage shall not include a deductible feature.

(d) The insurer will not cancel the insured's coverage without thirty days prior written notice to CalRecycle.

(e) CalRecycle is not liable for the payment of premiums or assessments on said policy.

(f) The insurance coverage shall be on an occurrence basis only.

In the event the Certificate of Insurance should expire or be cancelled during the term of this Agreement, the Contractor agrees to provide, at least thirty days prior to said expiration or cancellation, a new Certificate of Insurance evidencing coverage, as provided for herein, for not less than one (1) year or for the remainder of the contractual agreement, whichever is greater. In the event the Contractor fails to keep in effect at all times insurance coverage as herein provided, CalRecycle may, in addition to any other remedies it may have, terminate this Agreement upon occurrence of such event.

18. INTELLECTUAL PROPERTY: CalRecycle shall exclusively own all intellectual property rights in and to all work product, including, but not limited to, writings, ideas, inventions (whether patentable or not), discoveries, research, proposals, and all other results and work product of any nature whatsoever, that is created, authored, produced, conceived, or reduced to practice in the course of the performance of this Agreement. Such intellectual property rights, whether registered or unregistered, and including all applications for and renewals or extensions thereof, shall include, but are not necessarily limited to copyrights; trademarks, service marks, trade dress, trade names, logos, and domain names, together with all of the goodwill associated therewith; and patents. The Contractor agrees, and shall cause all of its relevant personnel, including all employees, agents, subcontractors, and other personnel participating in any way in the creation or achievement of such work product, to agree, that any such work product that may qualify as "work made for hire" pursuant to 17 U.S.C. § 101 is hereby deemed a "work made for hire" for CalRecycle. To the extent that any of the work product does not constitute a "work made for hire" for CalRecycle, Contractor hereby irrevocably assigns to CalRecycle, and shall cause such personnel to irrevocably assign to CalRecycle, in each case without additional consideration, all rights, title, and interest throughout the world in and to the work product, including all intellectual property rights therein. Upon request of CalRecycle, the Contractor shall promptly take, and shall cause its relevant personnel to promptly take, such further actions, including execution and delivery of all appropriate instruments of conveyance, as may be necessary to assist CalRecycle to prosecute, register, perfect, or record its rights in or to any such work product.

19. LIABILITY FOR NONCONFORMING WORK: The Contractor will be fully responsible for ensuring the completed work conforms to the agreed upon terms. If nonconformity is discovered prior to the Contractor's deadline, the Contractor will be given a reasonable opportunity to cure the nonconformity. If the nonconformity is discovered after the deadline for the completion of the project, CalRecycle, in its sole discretion, may use any reasonable means to cure the nonconformity. The Contractor shall be responsible for reimbursing CalRecycle for any additional expenses incurred to cure such defects.

20. LICENSES OR PERMITS: The Contractor shall be an individual or firm licensed to do business in and with the State of California and shall obtain at his/her expense all license(s) and permit(s) required by law for accomplishing any work required in connection with this Agreement.

    In the event the Contractor fails to keep in effect at all times all required license(s) and permit(s), CalRecycle may, in addition to other remedies it may have, terminate this Agreement upon occurrence of such event.

21. ORDER OF PRECEDENCE: In the event of conflict or inconsistency between the articles, exhibits, attachments, specifications or provisions that constitute this Agreement, the following order of precedence shall apply: STD 213; GTC 04/2017 – General Terms and Conditions (incorporated by reference); Exhibit A – Scope of Work; Exhibit B – Budget Detail and Payment Provisions; Exhibit D – Special Terms and Conditions; Other exhibits in alphabetical order, beginning with E; Attachments in numerical order, beginning with 1.

22. OWNERSHIP OF DRAWINGS, PLANS AND SPECIFICATIONS: CalRecycle will have separate and independent ownership of all drawings, design plans, specifications, notebooks, tracings, photographs, negatives, reports, findings, recommendations, data and memoranda of every description or any part thereof, prepared under this Agreement. The originals and all copies thereof will be delivered to CalRecycle upon request. CalRecycle will have the full right to use said originals and copies in any manner when and where it may determine without any claim on the part of the Contractor, its vendors or subcontractors to additional compensation.

23. PUBLICITY AND ACKNOWLEDGEMENT: The Contractor shall acknowledge CalRecycle's support whenever projects funded, in whole or in part, by this Agreement are publicized in any news media, brochures, or other type of promotional material.

24. RECYCLED-CONTENT PRODUCT PURCHASING: In the performance of this Agreement, the Contractor shall purchase used and/or recycled-content products as set forth on the back of the Recycled-Content Certification Form (Exhibit D, Attachment 1). For assistance in locating recycled-content products, please search the recycled-content product database available at: www.calrecycle.ca.gov/rcpm. If after searching the database, contractors are unable to find the recycled-content products they are looking for, please notify CalRecycle's Contract Manager. All recycled content products purchased or charged/billed to CalRecycle that are printed upon such as promotional items, publications, written materials, and other educational brochures shall have both the total recycled content (TRC) and the post-consumer (PC) content clearly printed on them.

    In addition, any written documents such as, publications, letters, brochures, and/or reports shall be printed double-sided on 100% post-consumer (PC) paper. Specific pages containing full-color photographs or other ink-intensive graphics may be printed on photographic paper. The paper should identify the post-consumer recycled content of the paper (i.e., "printed on 100% post-consumer paper"). When applicable, the Contractor shall provide the Contract Manager with an electronic copy of the document and/or report for CalRecycle's uses. When appropriate, only an electronic copy of the document and/or report shall be submitted and no hard copy shall be provided.

25. REMEDIES: The Contractor shall perform all work pursuant to the Agreement in a safe, satisfactory, professional, efficient, and expeditious manner to the satisfaction of CalRecycle. Unless otherwise expressly provided herein, the rights and remedies

hereunder are in addition to, and not in limitation of, other rights and remedies under the Agreement, at law or in equity, and exercise of one right or remedy will not be deemed a waiver of any other right or remedy. In the event of the Contractor's default under this Agreement, CalRecycle shall be entitled to all remedies available at law including, but not limited to, termination of this Agreement, withholding of any amount billed, and/or recovery of funds disbursed.

26. SETTLEMENT OF DISPUTES: In the event of a dispute, the Contractor shall file a "Notice of Dispute" with CalRecycle's Director or his/her designee with ten (10) days of discovery of the problem. Within ten (10) days, the Director or his/her designee shall meet with the Contractor and CalRecycle Project Manager for the purpose of solving the dispute.

27. STOP WORK NOTICE: Immediately, upon receiving a written notice to stop work, the Contractor shall cease all work under this Agreement.

28. SUBCONTRACTORS: All Subcontractors previously identified in the bid/proposal submitted are considered to be acceptable to CalRecycle. Any change or addition of Subcontractors will be subject to the prior written approval of the Contract Manager or the Director or his/her designee. Upon termination of any Subcontract, the Contractor shall notify the Contract Manager or the Executive Director immediately. If CalRecycle or the Contractor determines that the level of expertise or the services required are beyond that provided by the Contractor or its routine Subcontractors, the Contractor shall be required to employ additional Subcontractors. Nothing contained in this Agreement or otherwise, shall create any contractual relation between CalRecycle and any Subcontractors, and no Subcontract shall relieve the Contractor of its responsibilities and obligations hereunder. The Contractor agrees to be as fully responsible to CalRecycle for the acts and omissions of its Subcontractors and of persons either directly or indirectly employed by any Subcontractor as it is for the acts and omissions of persons directly employed by the Contractor. The Contractors obligation to pay its Subcontractors is an independent obligation from CalRecycle's obligation to make payments to the Contractor. As a result, CalRecycle shall have no obligation to pay or to enforce the payment of any moneys to any Subcontractor.

29. SUCCESSORS: The provisions of this Agreement will be binding upon and inure to the benefit of CalRecycle, the Contractor, and their respective successors.

30. TERMINATION: CalRecycle shall have the right to terminate this Agreement at its sole discretion at any time upon thirty (30) days written notice given to the Contractor. In the case of early termination, a final payment will be made to the Contractor upon approval by the Contract Manager of a financial report, invoices for costs incurred to date of termination and a written report describing all work performed by the Contractor to date of termination.

31. UNRELIABLE LIST: Prior to authorizing a Subcontractor(s) to commence work under this Agreement, the Contractor shall submit to CalRecycle a declaration from the Subcontractor(s), signed under penalty of perjury, stating that within the preceding three years, none of the events listed in Section 17050 of Title 14, California Code of Regulations, Natural Resources, Division 7, have occurred with respect to the subcontractor(s).

    Placement of the Contractor on CalRecycle's Unreliable List at any time after award of this Agreement may be grounds for termination of Agreement. If a Subcontractor is

placed on CalRecycle's Unreliable List after award of this Agreement, the Contractor may be required to terminate the Subcontract.

32. WASTE REDUCTION: In the performance of this Agreement, the Contractor shall take all reasonable steps to ensure that materials purchased or consumed in the course of the project are utilized both effectively and efficiently to minimize the generation of waste. The steps should include, but not necessarily be limited to, the use of reusable products, the use of recyclable and compostable products, discretion in the amount of materials used, the provision of alternatives to disposal for materials consumed, and the practice of other waste reduction measures where feasible and appropriate.

Recycled-Content Certification

STATE OF CALIFORNIA
Department of Resources Recycling and Recovery (CalRecycle)
CalRecycle 74C (Rev. 06/10 for Contracts)

To be completed by Contractor	
Name of Contractor:	
Contract #:	Work Order #:

☐ Check this box if no products, materials, goods, or supplies were purchased with contract dollars and submit to the CalRecycle Contract Manager.

This form to be completed by contractor. The form must be completed and returned to CalRecycle with a row completed for each product purchased with contract dollars. Attach additional sheets if necessary. **Information must be included, even if the product does not contain recycled-content material**. Product labels, catalog/website descriptions, or bid specifications may be attached to this form as a method of providing that information. Add additional rows as needed.

Contractor's Name _____ Date _____

Address _____

Fax _____ Phone _____

E-mail _____ Website _____

Product Manufacturer	**Product Description / Brand**	**Purchase Amount ($)**	**[1]Percent Postconsumer Material**	**[2]SABRC Product Category Code**	**Meets SABRC**

Public Contract Code sections 12205 (a) (1) (2) (3) (b) (1) (2) (3).

I certify that the above information is true. I further certify that these environmental claims for recycled content regarding these products are consistent with the Federal Trade Commission's Environmental Marketing Guidelines in accordance with PCC Section 12205.

Print name _____ Signature _____ Company _____ Date _____

(See footnotes on the back of this page.)

1. Postconsumer material comes from products that were bought by consumers, used, then recycled. For example: a newspaper that has been purchased and read, next recycled, and then used to make another product would be postconsumer material.

If the product does not fit into any of the product categories, enter "N/A." Common N/A products include wood products, natural textiles, aggregate, concrete, electronics such as computers, TV, software on a disk or CD, telephone

2.Product category refers to one of the product categories listed below, into which the reportable purchase falls. For products made from multiple materials, choose the category that comprises most of the product by weight, or volume.

Note: For reused or refurbished products, there is no minimum content requirement.

For additional information visit www.calrecycle.ca.gov/BuyRecycled/.

Code	Description	Minimum content requirement
	Product Categories (11)	
1	Paper Products - Recycled	30 percent postconsumer fiber, by fiber weight
2	Printing and Writing - Recycled	30 percent postconsumer fiber, by fiber weight
3	Compost, Co-compost, and Mulch - Recycled	80 percent recovered materials. i.e., material that would otherwise be normally disposed of in a landfill
4	Glass - Recycled	10 percent postconsumer, by weight
5	Rerefined Lubricating Oil - Recycled	70 percent re-refined base oil
6a	Plastic - Recycled	10 percent postconsumer, by weight
6b	Printer or duplication cartridges	a. Have 10 percent postconsumer material, or b. Are purchased as remanufactured, or c. Are backed by a vendor-offered program that will take back the printer cartridges after their useful life and ensure that the cartridges are recycled and comply with the definition of recycled as set forth in Section 12156 of the Public Contract Code.
7	Paint - Recycled	50 percent postconsumer paint (exceptions when 50 % postconsumer content is not available or is restricted by a local air quality management district, then 10% postconsumer content may be substituted)
8	Antifreeze - Recycled	70 percent postconsumer material
9	Retreated Tires - Recycled	Use existing casing that has undergone retreading or recapping process in accordance with Public Resource Code (commencing with section 42400).
10	Tire- Derived - Recycled	50 percent postconsumer tires
11	Metals - Recycled	10 percent postconsumer, by weight

Attachment F - Proposal Completion Checklist

Please use this checklist to assist in the preparation of your Proposal package to ensure that all required items are included.

- ☐ Cover Letter with contact information and statements as required in the RFP.
- ☐ Organizational information and Personnel Information (Resumes)
- ☐ Proposal (detailed Work Plan)
- ☐ Copy of Required License(s) (Secretary of State)
- ☐ Client References
- ☐ Contractor Status Form
- ☐ Bidder Declaration Form *shall be submitted even if participation levels are zero (write zero participation on form)*
- ☐ Disabled Veteran Business Enterprise STD 843 Form
- ☐ Contractor Certification Clauses
- ☐ Iran Contracting Act Certification
- ☐ Darfur Contracting Act Certification
- ☐ California Civil Rights Laws Certification
- ☐ Cost Proposal Sheet

The following number of PROPOSAL packages shall be submitted as the Contractor's response to this RFP:

- ☐ One (1) unbound reproducible original Proposal package marked "Original"
- ☐ One (1) Electronic copy of Proposal Package in Adobe Acrobat format with all documents in a single file, including the bid sheet and all other attachments.

The following form is only required upon submittal as applicable pursuant to the provisions outlined in Section III, Submittal Requirements:

- ☐ Certification of Target Area Contract Preference Act

The following forms are not required at the time of the Proposal submission but will be required by the successful Contractor during the contract period:

- ☐ Small Business (SB) Subcontractor Payment Certification (Attachment A)
- ☐ Disabled Veteran Business Enterprise (DVBE) Subcontractor Payment Certification (Attachment B)
- ☐ Recycled Content Certification (end of Attachment D)
- ☐ Payee Data Record (Standard Form 204) viewable at https://www.calrecycle.ca.gov/Contracts/Forms/default.htm)

Please note that if any of the items are missing from the Proposal package, the package will be considered incomplete and will be disqualified from the process.