

Department of Resources Recycling and Recovery

SCOPE OF WORK

Feedstock Conversion Technical Assistance and Material Testing Services

I. INTRODUCTION/OBJECTIVES

The [Tire Incentive Program](#) (TIP) is designed to expand demand for different and higher value-added tire-derived products (TDP) by providing an incentive to use (at least five percent) recycled tire rubber (crumb rubber) to partially replace virgin rubber, plastic, or other raw material (also referred to as “feedstock conversion”) and to increase sales of products that already contain crumb rubber.

To implement the TIP and further develop a sustainable and diversified market for recycled waste tires, the Department of Resources Recycling and Recovery (CalRecycle) uses a coordinated approach with three components: financial incentives provided by the TIP grant; TIP development and initial feedstock conversion prospect identification provided by SAIC (now known as Leidos Engineering, LLC) under the Tire-Derived Products Business Assistance contract and by Leidos under the Tire Outreach and Market Analysis contract; and feedstock conversion technical assistance and material testing services, which is the subject of this Scope of Work (SOW). This SOW includes technical assistance for TIP eligible manufacturers that desire to implement feedstock conversion of products. This SOW also provides material testing services to support the TIP grant by ensuring consistent quality crumb rubber is used.

The Contractor shall identify and qualify rubber product manufacturers, rubber compounders, calendered rubber manufacturers, and plastic product manufacturers (manufacturers) using TIP eligibility criteria and, if necessary, prioritize assistance based on potential volume and value-added use of crumb rubber.

The Contractor shall identify and qualify waste tire processors that demonstrate the ability to produce crumb rubber to specifications and in sufficient quantities for use in the contract. The Contractor shall coordinate appropriate engineering, manufacturing, testing, and certification resources to formulate the optimum mix/size (mesh) of crumb rubber, provide technical assistance to ensure the **timely** production and sale of the TDPs, and provide appropriate reports regarding contract activities and results.

The Contractor shall also provide for material testing services as necessary to support the TIP. These services shall include on-site sampling and laboratory testing of crumb rubber to ensure appropriate mesh size and particle distribution; identifying contaminants; quantifying the percentage of natural rubber; and performing appropriate quality assurance and quality control checks.

II. WORK TO BE PERFORMED

The Contractor shall identify TIP eligible manufacturers and products, provide appropriate technical assistance and resources to successfully facilitate feedstock conversion of products, and provide for material testing services as necessary to support the TIP. The Contractor may assemble a team of technical experts from a variety of disciplines in order to effectively execute the contract. The Contractor is responsible and accountable for all aspects of the contract, including the timely performance of any subcontractors.

III. TASKS IDENTIFIED

Task 1: Develop Project Work Plan

The Contractor shall prepare a detailed project work plan and schedule for the contract activities as described in Tasks 2 through 6 below. The project work plan must be approved by the Contract Manager prior to commencing work on Tasks 2 through 6 and may be revised only with the Contract Manager's approval.

Task 2: Identify Prospective Manufacturers, Conduct Marketing Outreach, Develop Individual Manufacturer Activity Plans and Budgets for Participating Manufacturers, and Qualify Processors to Provide Crumb Rubber

- A. The Contractor shall research and identify prospective California manufacturers: with sales in excess of \$1 million for the previous year; that may be interested in feedstock conversion; and have products with a stable or increasing demand and that have the potential to use more than 5 percent crumb rubber. As a result of previous outreach efforts, CalRecycle may identify additional prospective manufacturers. The Contractor shall ensure that prospective manufacturers and products meet the applicant and product eligibility criteria of the [TIP grant](#) (see TIP Guidelines and Instructions). The Contractor shall prepare a prioritized list of prospective manufacturers to solicit for participation. The list shall be approved by the Contract Manager before solicitation begins.
- B. The Contractor shall develop marketing material to be used in discussions with prospective manufacturers regarding feedstock conversion benefits and assistance available under the contract. The Contractor shall coordinate and execute meetings with prospective manufacturers (previously approved by CalRecycle) to: confirm their eligibility, solicit their interest in feedstock conversion through this contract, and secure their commitment to produce the resulting products with crumb rubber. The Contractor shall include the Contract Manager and or other CalRecycle staff in the meetings as appropriate.
- C. The Contractor shall work with qualified manufacturers to identify specific products and estimate their potential crumb rubber usage as well as to identify technical assistance needs and corresponding budget. The technical assistance proposed and corresponding budget must have a reasonable relationship to the estimated crumb rubber usage and likelihood of success as measured by the feasibility of incorporating crumb rubber into making the product and the product's marketability once that is done. Depending on the required tests and certifications (see below for a list of possible tests and certifications), a product may require anywhere from \$2,000 to \$40,000 in technical assistance, with an assumed average of \$6,500 per product. Assuming an average of three products per manufacturer, the Contractor may work with approximately 20 manufacturers. Depending on the manufacturer's business need, some tests may also need to be performed on existing products in order to compare the results and performance of the products made with crumb rubber. Tests shall be performed in accordance with appropriate American Society for Testing and Materials (ASTM) standards, or alternative methods when applicable.

The Contractor shall develop individual manufacturer activity plans and corresponding budgets for feedstock conversion technical assistance activities that are specific to individual

manufacturer needs. The Contractor may need to consult technical experts for input on proposed individual manufacturer activity plans and budgets.

Possible Tests

Abrasion Resistance	Peel Adhesion	Tensile Strength
Americans with Disability Act Accessibility, Various	Playground Material, Various	Thermal Expansion
Air Leakage	Product Compression	Thermal Transmission
Air Permeance	Puncture Resistance	Toxic Characteristic Leaching Procedure
Colorant Coverage	Resistance to Hydrostatic Head	UV Durability
Compression	Resistance to Wear	UV Stability
Elongation	Slip Resistance	VOC Emissions
Emissions	Solar Reflectance Index	Water Absorption
Endurance	Stability	Water Loading
Flammability	Static Coefficient of Friction	Water Permeability
Freezing and Thawing Cycles	Static Load	Water/Moisture Vapor Transmission
Hardness	Surface Burn	Other
Impact Attenuation	Surface Friction	
Material Density	Tear Strength	

Possible Certifications

- International Play Equipment Manufacturers Association (IPEMA)
- Leadership in Energy and Environmental Design (LEED)
- Made in USA

- D. The Contractor shall provide the Contract Manager a summary report of the individual manufacturer activity plans and budgets for the proposed qualified manufacturers that includes detailed product information, proposed technical assistance, and line item budgeted amounts. In the summary report, the Contractor shall include a proposed process to prioritize the manufacturers to be assisted.

The Contract Manager, in consultation with other CalRecycle staff, will review the summary report to ensure the proposed individual manufacturer activity plans and budgets are reasonable and the products selected have a likelihood of success. The Contract Manager will determine the final list of manufacturers to be assisted. The Contractor shall not begin Task 3 or perform any technical assistance under any individual manufacturer activity plan until the summary report and final list of manufacturers to be assisted is approved in writing by the Contract Manager.

- E. The Contractor shall work with California waste tire processors to identify and qualify those who are willing and able to produce sufficient crumb rubber to specifications from only

California-generated waste tires. The Contractor shall require waste tire processors providing crumb rubber to sign a California Waste Tire Processor Letter similar to that used in the TIP grant. The Contract Manager will provide a sample letter that can be used.

In order to ensure that a processor can produce crumb rubber to specifications, the Contractor shall perform on-site sampling and laboratory testing on at least three different dates (including at least four different samples on each date) to: perform sieves analysis to determine particle size and distribution; determine the type and amount of contaminants; and the natural rubber content. Depending on the circumstances and business need, the Contractor may also need to analyze the crumb rubber surface morphology and perform other tests.

The Contractor shall perform appropriate quality assurance and quality control checks and obtain from each processor a crumb rubber Material Safety Data Sheet. Only processors that can consistently produce crumb rubber material to specifications and in sufficient quantity, as determined by the Contractor, will be used to provide material for this contract.

Task 3: Work with Manufacturers to Execute Individual Manufacturer Activity Plans

The Contractor shall engage with approved manufacturers to execute the individual manufacturer activity plans. The Contractor shall perform necessary specialized technical services including, but not limited to, engineering, manufacturing, testing, and certification. The types of activities include, but are not limited to: working with the manufacturers to formulate the optimum mix (percentage crumb rubber and particle size distribution) to maintain or enhance product performance characteristics; perform appropriate performance and properties tests on the product; and provide or obtain applicable certifications. The Contractor shall coordinate the **timely** completion of the individual manufacturer activity plans to ensure production of TDPs by the participating manufacturers.

The Contractor shall also provide other technical assistance, per the individual manufacturer activity plans; to assist in the resolution of production impediments or other concerns that hinder the manufacturer's timely production and sale of the TDPs. The Contractor shall **not** provide assistance to manufacturers regarding marketing, web site design, and actual product sales. The Contractor shall assist in the documentation and reporting of product sales that verify feedstock conversion.

Task 4: Crumb Rubber Material Testing

The Contractor shall provide for any necessary crumb rubber material testing to support execution of individual manufacturer activity plans for feedstock conversion and production of TDPs. The Contractor shall also provide necessary material testing to support the TIP grant program. CalRecycle estimates 8 – 12 TIP participants from June 2014 through December 2014, and 16 – 24 TIP participants from January 2015, through March 2016.

Crumb rubber material testing services include, but are not limited to, on-site sampling (at both processor and manufacturing facilities) and laboratory testing of crumb rubber to ensure appropriate mesh size and particle distribution; identifying contaminants; and performing appropriate quality assurance and quality control checks. Depending on the circumstances and business need, the Contractor may also need to analyze the crumb rubber surface morphology and perform other tests.

For the feedstock conversion technical assistance, the number of on-site sampling and laboratory tests may vary depending on the product and formulation results, but are estimated at four samples (two each at the processor and manufacturing facilities) for each product. This may be reduced if product formulation occurs at a limited number of manufacturing facilities. For support of the TIP, the number of on-site sampling and laboratory testing may vary depending on product production requirements and delivery schedule, but are estimated at two samples (one each at the processor and manufacturing facility) every other month. The Contractor shall forward testing results to the Contract Manager as part of the monthly reporting.

Task 5: Reporting

The Contractor shall provide Monthly Reports and a Final Report to the Contract Manager covering contract activity. The Monthly Reports shall include, but are not limited to: tasks (broken down by manufacturer and product); sub-tasks; total budget; previously billed amount, current month billing; amount remaining; summary of activity completed; anticipated next steps; and significant issues or potential impediments and proposed/recommended resolution. The Monthly Report shall include: copies of completed tests; certifications; and digital photographs (before and after) of completed products. Confidential and proprietary information appropriately labeled will be considered a “trade secret” consistent with Public Resource Code 40062.

The Contractor shall provide a draft Final Report by February 1, 2016, and a Final Report incorporating any CalRecycle comments by April 1, 2016. The Final Report shall include, but not limited to: a summary of the contract activity; a summary by manufacturer of the products; the aggregated anticipated usage of crumb rubber and projected annual sales of all products; challenges and how they were overcome; suggestions for future assistance activity; the ability to replicate for other similar products; and four successful case studies. The draft Final Report will be reviewed by the Contract Manager and other CalRecycle staff who will provide comments or questions that shall be addressed or incorporated into the subsequent draft of the report. Any requested changes shall be completed by the Contractor and resubmitted to the Contractor Manager for final approval. Only when all revisions are made and approved by the Contract Manager will the report be deemed final.

The Contractor shall present a summary of the contract activity and results at a CalRecycle meeting or workshop.

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 <http://www.calrecycle.ca.gov/Publications/pubguide/> and must be reviewed by a technical editor of the Contractor’s choice to assure that the reports comply with CalRecycle’s Guidelines, after which they shall be submitted to and reviewed by the Contractor Manager in consultation with the CalRecycle editor.

The Contractor is encouraged to consult with the CalRecycle Contract Manager and CalRecycle editorial staff early in the development process to ensure deliverable requirements are clearly understood and to minimize the need for revisions.

IV. CONTRACT/TASK TIME FRAME

The contract is scheduled to begin in June 2014, and expected to end April 1, 2016. The table below reflects the estimated contract task/time frame.

Task	Deliverable(s)	Timeframe
Task 1: Develop Work Plan	Work Plan	June – July 2014
Task 2: Identify Prospective Manufacturers, Conduct Marketing Outreach, Develop Individual Manufacturer Activity Plans and Budgets for Participating Manufacturers, and Qualify Processors to Provide Crumb Rubber	A. Prospect list. B. Marketing material, execution of meetings with potential manufacturers. C. Individual manufacturer activity plans and corresponding budgets, Summary Report, and technical assistance priority process. D. Summary Report, prioritized list of prospective manufacturers. E. List of qualified processors and testing results.	A. July – September 2014 B. August – October 2014 C. October – November 2014 D. October – November 2014 E. October – November 2014
Task 3: Work with Manufacturers to Execute Individual Manufacturer Activity Plans	Activity summarized in monthly progress reports	Included with monthly reports.
Task 4: Crumb Rubber Material Testing	Test result reports	Included with monthly reports.
Task 5: Reporting	Monthly Progress Reports, Draft Final Report, Final Report	Monthly, starting July 2014. Draft Final Report by February 1, 2016. Final Report by April 1, 2016.

The following provisions will be included in the Terms and Conditions or Special Terms and Conditions of the Contract:

V. COPYRIGHT PROVISION

The contractor shall assign to the Department of Resources Recycling and Recovery (CalRecycle) any and all rights, title and interests to any copyrightable material or trademarkable material created or developed in whole or in any part as a result of this Agreement, including the right to register for copyright or trademark of such materials. The contractor shall require that its subcontractors agree that all such materials shall be the property of the CalRecycle. Such title will include exclusive copyrights and trademarks in the name of the CalRecycle.

VI. CALIFORNIA WASTE TIRES

Unless otherwise provided for in this SOW, in the event the contractor and/or subcontractor(s) purchases waste tires or waste tire-derived products for the performance of this contract, all crumb rubber must be from only California-generated waste tires processed in California. This

may include crumb rubber from truck tire buffings. CalRecycle considers crumb rubber from a California processor to be eligible to be used in this contract even if a de minimis amount (not more than five percent) of the tires processed during a fiscal year at a facility were from non-California sources. Crumb rubber from tires processed outside California cannot be used under this contract. The Contractor shall have waste tire processors providing crumb rubber sign a California Waste Tire Processor Letter similar to that used in the TIP grant. The Contract Manager will provide a sample that can be used.

VII. WASTE REDUCTION AND RECYCLED-CONTENT PRODUCT PROCUREMENT

In the performance of this Agreement, the contractor shall use recycled content, used or reusable products, and practice other waste reduction measures where feasible and appropriate.

Recycled Content Products: All products purchased and charged/billed to CalRecycle to fulfill the requirements of this contract shall be Recycled Content Products (RCPs), or used (reused, remanufactured, refurbished) products. All RCPs purchased or charged/billed to CalRecycle to fulfill the requirements of the contract shall have both the total recycled-content (TRC) and the postconsumer content (PC) clearly identified on the products. Specific requirements for the aforementioned purchases and identification are discussed in the Terms and Conditions of the Contractual Agreement under Recycled-Content Product Purchasing and Certification.

The contractor should, at a minimum, ensure that the following issues are addressed, as applicable to the services provided:

A. WRITTEN DOCUMENT PROVISION

All documents and/or reports drafted for publication by or for CalRecycle in accordance with this contract shall adhere to CalRecycle's Contractor Publication Guide and shall be reviewed by the CalRecycle's Contract Manager in consultation with one of CalRecycle's editors.

In addition, these documents and/or reports shall be printed double-sided on one hundred percent (100%) recycled-content paper. Specific pages containing full-color photographs or other ink-intensive graphics may be printed on photographic paper. The paper should identify the postconsumer recycled content of the paper (i.e., "printed on 100% postconsumer paper"). When applicable, the contractor shall provide the contract manager with an electronic copy of the document and/or report for CalRecycle's uses.

To the greatest extent possible, soy ink instead of petroleum-based inks should be used to print all documents

B. CONFERENCING PROVISION :

The contractor shall take any and all steps necessary to make sure that the event is a model for future recycling, waste prevention, diversion, buy recycled, and waste management events.

Paper Products: All paper products used to fulfill the requirements of this contract (nametags, badges, letters, envelopes, brochures, etc.) must contain at least 30 percent post-consumer recycled content fiber.

Re-usable Cups, Plates & Utensils: To the greatest extent possible, use re-usable/washable utensils, dishes, tableware, etc., rather than single-use disposable products.

Leftover Food/Beverages: All leftover food and/or beverages associated with the event will be donated to an established food donation outlet. Arrangements for the donation must be made prior to the date of the event. CalRecycle staff will assist the contractor in identifying these donation outlets, if needed.

Recycling/Composting: Arrangements must be made with the venue, sponsor, or by contract, to provide adequate collection bins for recyclables, organics (food waste) or biodegradable materials, and trash (non-recyclables). The bins should contain at least 30 percent post-consumer plastic. In addition, the contractor shall work with the venue and/or sponsors to maximize diversion of the discarded materials.

Soy-based Printing Ink: To the greatest extent possible, soy ink instead of petroleum-based inks should be used to print all documents needed for the event.