

Jim Oddie, **President**
ACWMA

Peter Maass, **2nd Vice President**
ACWMA

Jillian Buckholz, Recycling Programs

Bernie Camara, Recycling Materials Processing Industry

Nancy Deming, Environmental Educator

Sara Lamnin, ACWMA

Dianne Martinez, ACWMA

John Moore, Environmental Organization

Tim Rood, ACWMA

Matthew Southworth (Interim), Source Reduction Specialist

Vacant, Solid Waste Industry Representative

Wendy Sommer, Executive Director

AMENDED AGENDA

MEETING OF THE PLANNING COMMITTEE AND

ALAMEDA COUNTY RECYCLING BOARD

Thursday, September 13, 2018

7:00 P.M.

**City of Dublin Civic Center
Regional Room
100 Civic Plaza
Dublin, California 94568
(925) 833-6645
(Directions attached)**

**Teleconference
Jim Oddie
The Westin Long Beach
333 East Ocean Boulevard
Long Beach, California 90802
(562) 436-3000**

Meeting is wheelchair accessible. Sign language interpreter may be available upon five (5) days' notice to 510-891-6500.

I. CALL TO ORDER

II. ROLL CALL OF ATTENDANCE

III. ANNOUNCEMENTS BY PRESIDENT

IV. OPEN PUBLIC COMMENT

An opportunity is provided for any member of the public wishing to speak on any matter within the jurisdiction of the Board, but not listed on the agenda. Each speaker is limited to three minutes.

Page V. CONSENT CALENDAR

- | | |
|-----------|---|
| 1 | 1. Approval of the Draft Minutes of August 9, 2018 (Tom Padia) |
| 11 | 2. Board Attendance Record (Tom Padia) |
| 13 | 3. Written Report of Ex Parte Communications (Tom Padia) |

VI. REGULAR CALENDAR

15 1. ReThink Disposable Update (Wendy Sommer & Cassie Bartholomew)

This item is for information only.

17 2. Discards Behavior and Markets (Tom Padia)

This item is for information only.

21. Waste Characterization Study 2017-18 (Meghan Starkey)

This item is for information only.

VII. MEMBER COMMENTS AND COMMUNICATIONS FROM THE EXECUTIVE DIRECTOR

VIII. ADJOURNMENT



DIRECTIONS

DUBLIN CIVIC CENTER
DUBLIN PUBLIC LIBRARY

100 CIVIC PLAZA
200 CIVIC PLAZA

Traveling From Hayward (Eastbound on Interstate-580)

- ◆ Take the Hopyard Road/Dougherty Road exit.
- ◆ Turn left at the top of the exit ramp and stay in the left lane
- ◆ Continue over the freeway on Dougherty Road.
- ◆ Turn left at the second Traffic Signal onto Dublin Boulevard.
- ◆ At the second light, approximately ¼ mile down, turn left onto Civic Plaza
- ◆ Follow Civic Plaza around to the parking areas. The first building is the Civic Center (100 Civic Plaza) and the second building towards the freeway is the Dublin Library (200 Civic Plaza).

Traveling From Livermore (Westbound on Interstate – 580)

- ◆ Take the Hopyard Road/Dougherty Road Exit. If possible use the center right turn lane and turn right at the top of the exit ramp.
- ◆ Immediately move to one of the Left Turn Lanes to turn left at the first traffic signal – Dublin Boulevard.
- ◆ At the second light, approximately ¼ mile down, turn left onto Civic Plaza
- ◆ Follow Civic Plaza around to the parking areas. The first building is the Civic Center (100 Civic Plaza) and the second building towards the freeway is the Dublin Library (200 Civic Plaza).

Traveling From Walnut Creek (Southbound on Interstate 680)

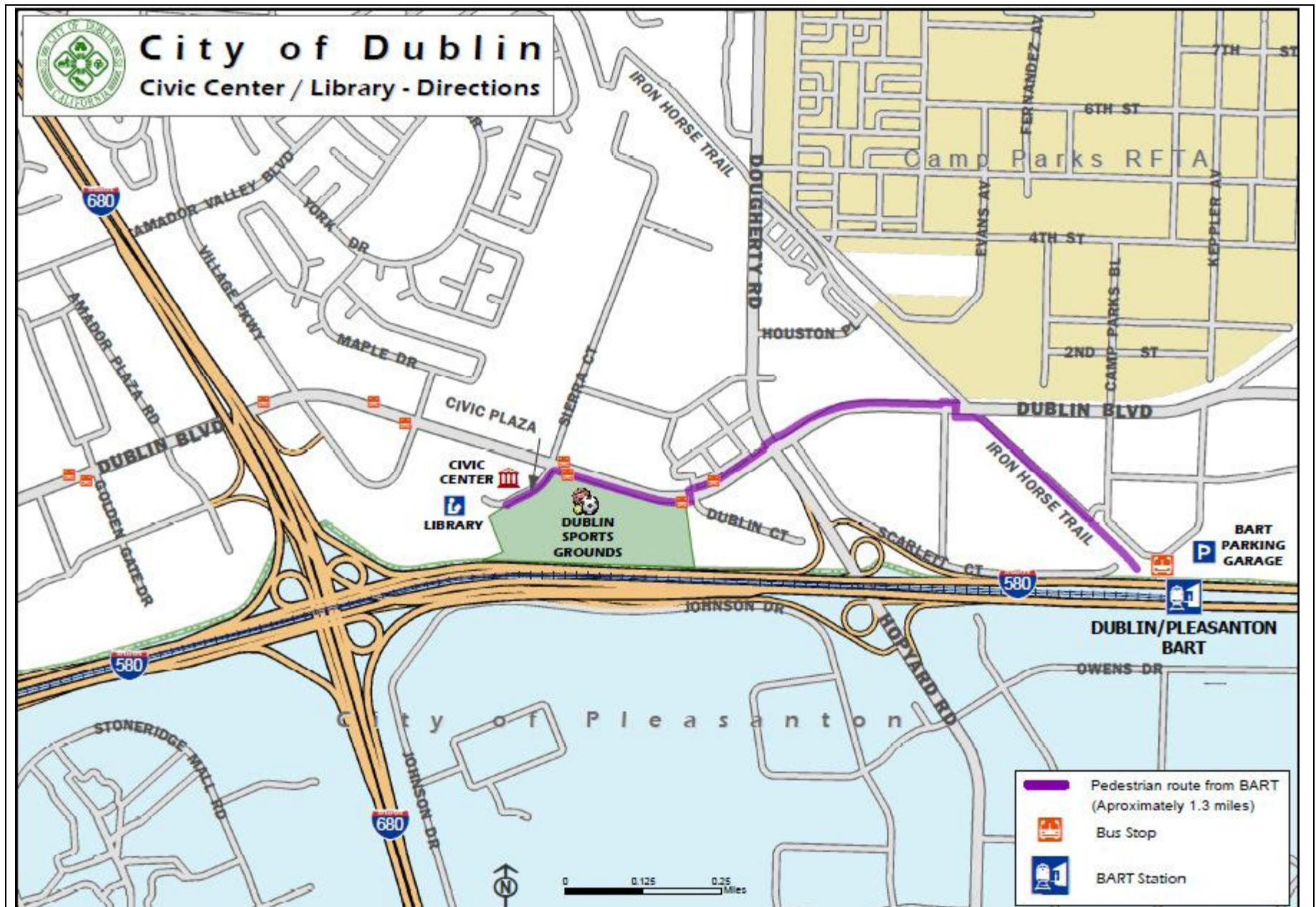
- ◆ Take the Dublin Boulevard exit just before the I-580 Interchange.
- ◆ Turn right at the traffic signal at the bottom of the exit ramp onto Amador Plaza Road.
- ◆ Turn right at the first traffic signal onto Dublin Boulevard
- ◆ Turn right at the third light onto Civic Plaza.
- ◆ Follow Civic Plaza around to the parking areas. The first building is the Civic Center (100 Civic Plaza) and the second building towards the freeway is the Dublin Library (200 Civic Plaza).

Traveling From Fremont (Northbound on Interstate 680)

- ◆ At the Interstate 680/580 Interchange, take Interstate 580 East (Towards Stockton) exit.
- ◆ Take the Hopyard Road / Dougherty Road exit.
- ◆ Turn left at the top of the exit ramp and stay in the left lane
- ◆ Continue over the freeway on Dougherty Road.
- ◆ Turn left at the second Traffic Signal onto Dublin Boulevard.
- ◆ At the second light, approximately ¼ mile down, turn left onto Civic Plaza
- ◆ Follow Civic Plaza around to the parking areas. The first building is the Civic Center (100 Civic Plaza) and the second building towards the freeway is the Dublin Library (200 Civic Plaza).

Traveling Via Bay Area Rapid Transit (BART) – Dublin / Pleasanton Station (End of Line)

- ◆ Exit Station on North Side (Dublin Side – Has the large BART parking garage and residential projects)
Bus & Taxi connections are available – Check bus schedules for Livermore Amador Valley Transit Authority - Wheels Bus Service at :
<http://www.lavta.org/schedules/fixedroute.html> OR
- ◆ Approximately 1.3 mile walk – See Map



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**MINUTES OF REGULAR MEETING OF THE
PLANNING COMMITTEE
AND
ALAMEDA COUNTY RECYCLING BOARD**

Thursday, August 9, 2018

4:00 P.M.

**StopWaste Offices
1537 Webster Street
Oakland, CA 94612
510-891-6500**

I. CALL TO ORDER

Jim Oddie, President, called the meeting to order at 4:00 p.m.

II. ROLL CALL

Jillian Buckholz, Recycling Programs
Bernie Camara, Recycling Materials Processing Industry
Nancy Deming, Environmental Educator
Dan Kalb (Interim), ACWMA
Sara Lamnin, ACWMA
Dianne Martinez, ACWMA
John Moore, Environmental Organization
Jim Oddie, ACWMA
Tim Rood, ACWMA
Matthew Southworth (Interim), Source Reduction Specialist

Absent:

Vacant, Solid Waste Industry Representative

Staff Present:

Tom Padia, Deputy Executive Director
Wendy Sommer, Executive Director
Meri Soll, Senior Program Manager
Meghan Starkey, Senior Management Analyst
Angela Vergara, Program Manager
Farand Kan, County Counsel
Arliss Dunn, Clerk of the Board

Others Participating:

Terry McDonald, DR3 Recycling
Jordan Figueiredo, Castro Valley Sanitary District
Barbara Lee, Livermore Valley Joint Unified School District
Natasha Neves, Oro Loma Sanitary District
Andreea Simion, Oro Loma Sanitary District
Arthur Boone
Toni Stein

III. ANNOUNCEMENTS BY THE PRESIDENT

President Oddie stated that he may need to leave at 4:30 and Board member Martinez had agreed to chair the meeting in his absence.

IV. CONSENT CALENDAR

- 1. Approval of the Draft Minutes of July 12, 2018 (Tom Padia)**
- 2. Board Attendance Record (Tom Padia)**
- 3. Written Report of Ex Parte Communications (Tom Padia)**

There were no public comments on the Consent Calendar. Board member Martinez made the motion to approve the Consent Calendar. Board member Moore seconded and the motion carried 6-0.

(Ayes: Camara, Deming, Moore, Martinez, Oddie, Southworth. Nays: None. Abstain: None. Absent: Buckholz, Kalb, Lamnin, Rood. Vacant: Solid Waste Industry Representative).

IV. OPEN PUBLIC DISCUSSION

Arthur Boone provided public comments regarding the proposed mixed-waste processing facility at the Davis Street Transfer Station. Mr. Boone distributed a handout entitled "The Evolution of Mixed Waste Processing Facilities 1970-Today (copy of the handout is attached)."

VI. REGULAR CALENDAR

1. DR3 Mattress Recycling – Facility Relocation Support (Meri Soll)

Provide a \$57,500 one-time grant to The Society of St. Vincent de Paul (nonprofit entity operating as DR3) to offset facility relocation costs from Oakland to Livermore.

Meri Soll provided an overview of the staff report. A link to the report is available here: [DR3-Funding-Request-08-09-18.pdf](#). Mr. Terry McDonald, DR3 Recycling, was present to answer questions.

Board member Kalb stated that the funds are intended for grants to non-profits and inquired about the status of DR3 Recycling. Mr. McDonald stated that DR3 Recycling is a dba of the Society of St. Vincent De Paul, which is a non-profit. Board member Kalb stated that he is concerned that the relocation to Livermore will create a decrease in the number of mattresses recycled in North County. Mr. McDonald stated that they are working with the Mattress Recycling Council (MRC) to locate a magnet facility in Oakland to mitigate any potential decrease in mattress recycling in North County. Mr. McDonald added it is difficult to find a warehouse processing facility near the 880 corridor and those that are available do not have sufficient yard space. Board member Kalb inquired about the timeline for the magnet facility in Oakland. Mr. McDonald stated that he is still working with MRC to locate a site. Board member Kalb recommended that Mr. McDonald reach out to the Oakland Department of Environmental Services to assist in finding a location. Mr. Padia stated that Steve Lautze, City of Oakland Economic Development, was assisting with attempting to find a location in Oakland. Mr. Padia added that he is pleased that they were able to find a location in Alameda County and there is another mattress recycler located in San Leandro. President Oddie stated the Mattress Recycling Bill was authored by Senator Loni Hancock and he is also concerned that Oakland would be losing the facility. He added that he is pleased to know that there are ongoing efforts to find another location in Oakland. Board member Moore stated that it is a

DRAFT

struggle to find facilities especially for industrial uses and inquired if there were suitable facilities but had zoning issues. Mr. McDonald stated there were no zoning issues but the building owners expressed concerns about fires and mattress deconstruction as an industry and required additional insurance and a policy in case of abandonment.

There was no public comment on this item. Board member Martinez made the motion to approve the staff recommendation. Board member Southworth seconded and the motion carried 7-0.

(Ayes: Camara, Deming, Kalb, Martinez, Moore, Oddie, Southworth. Nays: None. Abstain: None. Absent: Buckholz, Lamnin, Rood. Vacant: Solid Waste Industry Representative).

2. Municipal Panel: Member Agency Schools Programs (Meghan Starkey)

This item is for information only.

Meghan Starkey provided an overview of the staff report and introduced the panelists: Jordan Figueiredo, Castro Valley Sanitary District; Barbara Lee, Livermore Valley Joint Unified School District; Natasha Neves, Oro Loma Sanitary District; and Andreea Simion, Oro Loma Sanitary District. The panelists shared their experiences and insights on the opportunities and challenges of implementing recycling and organics programs and other waste reduction efforts in their schools. Staff Angelina Vergara provided comments on the agency's efforts regarding the schools program. (Board members Rood and Lamnin arrived during the presentation). A link to the staff report and the CVSan PowerPoint presentation is available here: [Municipal-Panel-Schools-08-09-18.pdf](#)

A link to the StopWaste Schools Program Overview is available here:

<http://www.stopwaste.org/recycling/schools>

An audio link to the presentation and discussion is available here:

[Municipal-Panel-Presentation-08-09-18](#)

VII. OTHER PUBLIC INPUT

Toni Stein expressed her concerns regarding the proposed anaerobic digester at the Davis Street Transfer Station in San Leandro. Ms. Stein stated that the potential air quality and high odor issues are significant. Ms. Stein stated that Zero Waste Energy Development located at Zanker Road, has contracted with Davis Street to do the anaerobic digestion and since 2014, has received over 3,000 complaints regarding odors that have not been addressed. Ms. Stein stated that she is concerned about the odor impacts when transporting the materials.

VIII. COMMUNICATIONS/MEMBER COMMENTS

There were none. Board member Buckholz arrived during member comments.

IX. ADJOURNMENT

The meeting adjourned at 4:53 p.m.

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Recycling Industries Coalition Policy Position

The Recycling Industries Coalition represents industries and companies that are concerned about the potential degradation of recyclable materials when they are mixed with solid waste. Our experience, along with that of thousands of American communities and businesses, shows that separate collection of recyclables continues to be the most effective and cost-efficient method of maximizing the collection of clean recyclable raw materials. Simply put, collecting recyclable materials in the same bin as garbage degrades the quality of those collected materials.

Preserving the quality of recyclable materials, from collection through production into new products, will ultimately expand both the supply and the demand for recyclable feedstock for the world's manufacturing industries. Coalition members know that a facility processing waste and recyclables mixed together, known as a Dirty MRF, may harm recycling. When processing recyclables mixed with solid waste, it can result in the recyclable materials being reduced to being reprocessed into lower quality products. Mixing these valuable recyclables with food, diapers, and other contaminants will severely degrade them.

The private and public sectors have invested billions of dollars in infrastructure enabling citizens and businesses to reduce, reuse and recycle efficiently. The \$270 billion dollar recycling industry supports hundreds of thousands of direct and indirect jobs. Maintaining the current large job base in the overall recycling network as well as the creation of new well-paying jobs in the recycling and manufacturing industries in the United States is critically important. Recycling conserves non-renewable natural resources, helps numerous industries reduce their energy use and significantly reduces the amount of waste sent to landfills and incinerators. Products made from recycled materials can be recycled many times, whereas recyclables converted to energy, burned or landfilled are lost forever. Finally, recycling is sustainable and results in a significant reduction of greenhouse gas emissions.

Recyclables aren't waste, let's keep it that way.

4/10/15

1778 K Street, N.W., Suite 200
Washington, D.C. 20006
(202) 347-9061

(<https://www.resource-recycling.com/recycling/>)

RESOURCE RECYCLING

Your trusted source for recycling news and analysis

Recycling Industries Coalition opposes "dirty MRF" concept (<https://resource-recycling.com/recycling/2014/12/09/recycling-industries-coalition-opposes-dirty-mrf-concept/>)

Posted on December 9, 2014

by Editorial Staff (<https://resource-recycling.com/recycling/author/editorial-staff/>)

A newly formed group of recycling organizations and stakeholders is weighing in on the effects of mixed waste processing on recycling.

"Coalition members know that a facility processing waste and recyclables mixed together, known as a dirty MRF, will not improve and may harm recycling," the policy statement from the newly formed Recycling Industries Coalition (RIC) reads. RIC is made up of recycling stakeholders from across the country and initially formed to combat an Indianapolis project centered around a mixed waste processing facility, or dirty MRF.

While that facility was eventually approved (<https://resource-recycling.com/recycling/2014/06/25/indianapolis-says-yes-to-garbage-sorting-mrf/>) by city officials, RIC "continues as a way to educate policy makers, local officials and the community about the potential negative consequences of multi-material processing facilities," the group writes in an official release.

Mixing solid waste and recyclables, according to RIC's official policy statement on the approach, "will severely degrade them to the point that they will only be usable for incineration, landfilling or energy recovery, which is not recycling."

RIC members include a number of large industry groups and stakeholders, including: American Forest & Paper Association, Glass Packaging Institute, Institute of Scrap Recycling Industries, Knauf Insulation, Newark Group, Owens-Illinois, Inc., Paper Recycling Coalition, the Steel Recycling Institute and Waste Management.

The group's position has been supported by the National Recycling Coalition (NRC) as well.

"NRC supports the policy adopted by the RIC in highlighting concerns with the implementation of dirty MRFs," an NRC post states. "The NRC agrees with concerns with dirty MRFs that RIC highlighted and other concerns. Instead of relying on dirty MRFs, NRC urges communities to implement best practices for the separate collection of recyclables."

While the mixed waste processing approach is not new, it has seen a resurgence in interest among some U.S. cities looking to boost relatively low recycling rates. Beyond the Indianapolis project, a \$35 million mixed waste processing facility for residential waste opened (<https://resource-recycling.com/recycling/2014/06/18/alabama-mrf-grabs-attention/>) earlier this year in Montgomery, Alabama. Houston has also continued (<https://resource-recycling.com/recycling/2014/09/03/houston-leader-says-dirty-mrf-not-definite/>) looking into the merits of the "all in one bin" approach. According to equipment maker Bulk Handling Systems, which has released a six-part video series (<http://www.msw.bulksystemshandling.com/>) on the issue, mixed waste processing has evolved significantly and can now effectively separate recyclables from a mixed municipal waste stream.

Posted in [News](https://resource-recycling.com/recycling/category/news/) (<https://resource-recycling.com/recycling/category/news/>) | Tagged [industry groups](https://resource-recycling.com/recycling/tag/industry-groups/) (<https://resource-recycling.com/recycling/tag/industry-groups/>), [mixed-waste MRF](https://resource-recycling.com/recycling/tag/mixed-waste-mrf/) (<https://resource-recycling.com/recycling/tag/mixed-waste-mrf/>) |

Read more recent stories

- [Depressed fiber prices felt by Casella and Advanced](https://resource-recycling.com/recycling/2018/08/07/depressed-fiber-prices-felt-by-casella-and-advanced/) (<https://resource-recycling.com/recycling/2018/08/07/depressed-fiber-prices-felt-by-casella-and-advanced/>)
- [Where are the current paper and plastics export markets?](https://resource-recycling.com/recycling/2018/08/07/where-are-the-current-paper-and-plastics-export-markets/) (<https://resource-recycling.com/recycling/2018/08/07/where-are-the-current-paper-and-plastics-export-markets/>)
- [Recycled paper pulp facing tariff threat](https://resource-recycling.com/recycling/2018/08/07/recycled-paper-pulp-facing-tariff-threat/) (<https://resource-recycling.com/recycling/2018/08/07/recycled-paper-pulp-facing-tariff-threat/>)
- [Here's how well Canadian programs did last year](https://resource-recycling.com/recycling/2018/08/07/heres-how-well-canadian-programs-did-last-year/) (<https://resource-recycling.com/recycling/2018/08/07/heres-how-well-canadian-programs-did-last-year/>)

<https://resource-recycling.com/recycling/2014/12/09/recycling-industries-coalition-opposes-dirty-mrf-concept/>

Resource Recycling

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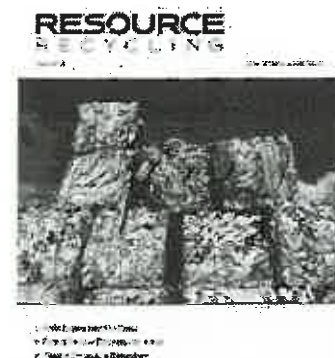
(<https://www.linkedin.com/company/resource-recycling-inc->)

Register now!



(<http://rrconference.com/>)

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(<https://cloud.3dissue.com/168774/169114/1>)

Our "flip" edition lets you look through back issues of Resource Recycling with ease. Look through the **June edition**

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or head to our **print edition page**

(<https://resource-recycling.com/recycling/magazine/>) for an archive of magazines from past months.

The latest recycling industry news

Depressed fiber prices felt by Casella and Advanced (<https://resource-recycling.com/recycling/2018/08/07/depressed-fiber-prices-felt-by-casella-and-advanced/>)

4

The Evolution of Mixed Waste Processing Facilities 1970-Today

Prepared for:

The American Chemistry Council

Prepared by:

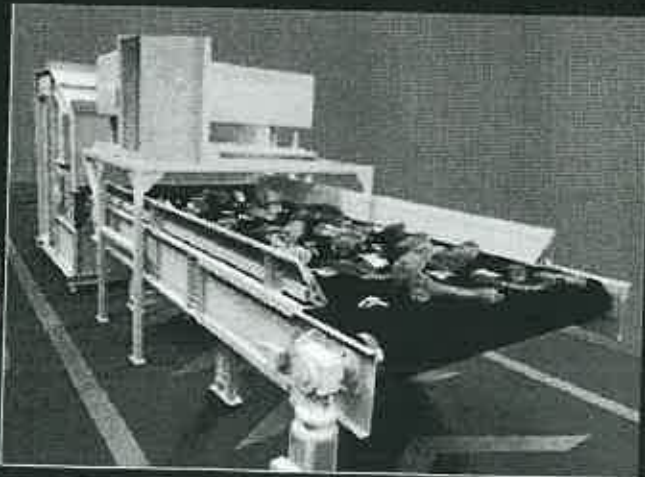
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Fairfax, VA 22031
800-573-5801
www.gbbinc.com

June 2015

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1 Executive Summary

Mixed waste processing (MWP) is a mechanical system that separates recyclable commodities from Municipal Solid Waste (MSW). Mixed waste processing facilities (MWPF) use a variety of new and existing technologies to sort recyclables from a stream of mixed trash. Sometimes MWPFs are combined with source-separated collection of recyclables and a Materials Recovery Facility (MRF). Or a MWPF can be found as a stand-alone facility processing the entire waste stream.

MWPFs, in their earliest of designs, were first introduced in the 1970s¹ as a way to capture high BTU elements of MSW for combustion-based energy recovery. Today, MWP is attracting renewed interest across the country as a way to address low participation rates for source-separated recycling collection systems and prepare feedstocks for conversion technologies and/or fuel products. In theory, these facilities can give communities the opportunity to recycle at much higher rates than has been demonstrated by curbside or other collection systems. Advances in technology make today's mixed waste processing facilities different and in many respects better than older versions. Yet legitimate questions remain regarding recovery rates, quality and contamination of recovered materials, and the commercial readiness of the technologies compared to existing systems.²

There are three questions regarding MWPF that proponents need to address with performance data and a coherent public policy argument:

- Will increased volumes of recyclables from MWPFs be contaminated? And would the increased volumes offset discounted prices for contaminated materials?
- Are MWPFs inconsistent with the conventional wisdom that the act of source separating one's recyclables is by itself important?
- Is the belief correct in suspecting that energy recovery, not recycling, is still the main driver behind these facilities?

Interest in these facilities is high. Several communities across the country are evaluating mixed waste processing systems as a way to reduce collection costs while also increasing the recovery of recyclable materials in the waste stream.

The key findings of this Report are:

- Sortation technology continues to evolve and improve. This has enabled significantly higher diversion rates and more recoverable streams. For example, optical near infrared (NIR) light and sensors that recognize different types of plastics are being utilized in modern MWPFs. These systems accurately separate plastics by resin type. This dramatically increases the potential overall recovery of plastics for both recycling and energy recovery.
- Recovery of high value materials, such as plastics and metals, has the potential to increase significantly via modern MWPFs. Recovery rates for lower value materials, such as fiber/paper and glass, are likely to be reduced.

¹ Robert H. Brickner, Gershman, Brickner & Bratton, Inc., Paper titled: Solid Waste Processing Industry: Technology, Vendors, Developers & Operators. Conference: Municipal Solid Waste Symposium, Washington D.C. December 1986

² The findings presented in this Report are based on publicly available information and present the background and design concepts of the original facilities in the context of today's technological advancements through March 2015. This Report also presents historical data on the number of existing MWPFs and their type, as the industry has adjusted to market demands with advanced higher performance equipment.



0406

FILE 037
p. 56

September 15, 2016

Scott Smithline
Director, CalRecycle
1001 I Street – PO Box 4025
Sacramento, CA 95814-4025

RE: Letter of Support – CalRecycle GHG Organics Grant Program

Dear Mr. Smithline:

I am writing in support of Waste Management of Alameda County, Inc's application for grant funding of its innovative, end-of-the-line solution to capture organics before they reach our landfills.

Our current Strategic Plan goal is for landfilled material from Alameda County to be comprised of less than 10 percent "readily recyclable or compostable materials" by 2020. It is an ambitious goal supported by our Mandatory Commercial and Multi-family Recycling Ordinance and the three-stream residential collection system adopted by our 17-member jurisdictions. Diverting recyclables and compostables at the source is the focus of our outreach and enforcement efforts. However, as our 2015 Benchmark Study revealed, significant volumes of food waste are still going to our landfills.

We believe the Organics Material Recovery Facility ("OMRF") proposed by Waste Management for its Davis Street facility in San Leandro can play a vital role in helping Alameda County achieve its resource conservation goals as well as reduce greenhouse gas emissions and extend the life of our in-county landfills. An additional benefit will be the "recovery of last resort" of recyclables from the processed waste stream, bringing us closer to achieving our long-term goals.

Waste Management has long been a valued partner in our campaign to stop waste in Alameda County. We entered into an incentives-based partnership with Waste Management at the Davis Street Transfer Station to build and operate the first and most robust Construction and Demolition mixed debris recycling line in our county back in 2002, and they have been an invaluable partner in our schools outreach efforts, providing space for our Education Center classroom at Davis Street from which we provide hundreds of tours to thousands of elementary school students each year.

We believe the OMRF is an innovative step that will take us closer to reaching our diversion goals and we heartily support Waste Management's grant application to bring this technology to Alameda County. With CalRecycle's assistance, California will be home to the most technically advanced organics diversion efforts in the country. Thank you for your consideration.

Wendy Sommer
Executive Director

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2018 - ALAMEDA COUNTY RECYCLING BOARD ATTENDANCE

	J	F	M	A	M	J	J	A	S	O	N	D
REGULAR MEMBERS												
J. Buckholz				X	X	X	X	X				
B. Camara	X	X	A	I	X	X	X	X				
N. Deming							X	X				
S. Lamnin		X	X	X	X	X	X	X				
K. Lewis	X	X	A	A								
P. Maass	X	X	X	X	I	X	X	I				
D. Martinez	X	X	X	X	X	X	X	X				
J. Moore	X	X	X	X	X	X	X	X				
J. Oddie	X	X	X	A	X	X	X	X				
T. Rood	X	X	X	X	A	X	X	X				
T. Stein	X	X	X	X	X	A						
S. Vared	X	X	A	X	X	X	I	I				
INTERIM APPOINTEES												
M. Southworth				X			X	X				
J. Pentin					X							
D. Kalb								X				

Measure D: Subsection 64.130, F: Recycling Board members shall attend at least three fourths (3/4) of the regular meetings within a given calendar year. At such time, as a member has been absent from more than one fourth (1/4) of the regular meetings in a calendar year, or from two (2) consecutive such meetings, her or his seat on the Recycling Board shall be considered vacant.

X=Attended

A=Absent

I=Absent - Interim Appointed

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DATE: September 13, 2018

TO: Recycling Board

FROM: Tom Padia, Deputy Executive Director

SUBJECT: Written Reports of Ex Parte Communications

BACKGROUND

Section 64.130 (Q)(1)(b) of the Alameda County Charter requires that full written disclosure of ex parte communications be entered in the Recycling Board's official record. At the June 19, 1991 meeting of the Recycling Board, the Board approved the recommendation of Legal Counsel that such reports be placed on the consent calendar as a way of entering them into the Board's official record. The Board at that time also requested that staff develop a standard form for the reporting of such communications. A standard form for the reporting of ex parte communications has since been developed and distributed to Board members.

At the December 9, 1999 meeting of the Recycling Board, the Board adopted the following language:

Ex parte communication report forms should be submitted only for ex parte communications that are made after the matter has been put on the Recycling Board's agenda, giving as much public notice as possible.

Per the previously adopted policy, all such reports received will be placed on the consent calendar of the next regularly scheduled Recycling Board meeting.

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DATE: September 13, 2018

TO: Programs & Administration Committee
Planning Committee/Recycling Board

FROM: Tom Padia, Deputy Executive Director

BY: Cassie Bartholomew, Program Manager

SUBJECT: ReThink Disposable Update

SUMMARY

In partnership with StopWaste, ReThink Disposable is actively seeking businesses to participate in our 2018 program. At the September Programs & Administration Committee meeting, staff will share a new video developed by Clean Water Fund designed to build awareness about the Alameda Theater's transition from disposables to reusable trays, cups and utensils.

DISCUSSION

StopWaste has partnered with ReThink Disposable, a program of Clean Water Fund, to reduce single use disposable food service ware and packaging distributed and used by food businesses and institutions in Alameda County. ReThink Disposable is a technical assistance program that helps food businesses implement voluntary best management practices to reduce waste and cut costs by minimizing the use of disposable products. With StopWaste's support since 2014, the Rethink Disposable campaign (www.rethinkdisposable.org) has reached over 430 Alameda County businesses, with 50 sites implementing measures that reduced over 11,000 lbs. of disposable single-use food ware products. The Alameda Theater, a current ReThink participant, recently launched a "how to" pre-roll video showing movie attendees the impact of the program and how to properly sort their reusables at the end of each feature.

RECOMMENDATION

This item is for information only.

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DATE: September 13, 2018

TO: Programs & Administration Committee
Planning Committee/Recycling Board

FROM: Tom Padia, Deputy Director

SUBJECT: Discards Behavior and Markets

SUMMARY

This is the latest in the series of informational briefings for the Boards as background and updates in preparation for the priority setting process. Focus for this presentation will be on “end of life” for discarded materials (or what is still landfilled), contamination issues with materials in the recycling and composting streams and how we measure progress in these areas. Results from the 2017/2018 Waste Characterization Study (WCS), describing what is still being “wasted,” will be presented as a separate agenda item, given the large amount of content in that report.

DISCUSSION

This agenda item will cover trends in overall landfill volumes, international and domestic recycling markets (i.e. “National Sword”), and other end-of-life concerns such as illegal dumping.

Trends in Landfill Volumes

Landfill disposal volumes throughout the Bay Area and the state have been trending up during the most recent sustained economic expansion. Statewide, total landfill disposal increased 27.5% from 2012 to 2017. San Francisco daily landfill volumes had increased from 1,222 tons per workday in December 2013 to 1,582 average tons per workday in June 2018, for an increase of 29.5%. In Alameda County, our landfill volumes have increased approximately 20% from 2012 to 2017. In-county landfill volumes for the first six months of 2018 appear to be relatively flat compared to the same months of 2017.

Recycling Markets Update

Changes in international markets for secondary materials over the last year, and specifically to new policies and practices adopted by China – tightened contamination standards, increased inspections, restricted

import licenses and outright bans on categories of scrap imports (including mixed paper and mixed plastics) - have left recycling processors and brokers scrambling to secure markets in other countries, many of whom have been overwhelmed beyond their capacity to accept materials. Locally, MRF operators have reported being able to market all processed recyclables, although some mixed paper and plastics at negative pricing at times (i.e. paying someone to accept your loads of baled recyclables, instead of getting paid for them). Local MRF operators also report increased levels of “residuals” sent to landfill as a result of efforts to clean up the processed recyclables to meet the newer, stricter contamination standards. Local processors have fared better than many in other regions of the U.S. and in other countries, where recycling collections have been shut down altogether or loads of collected recyclables have been redirected to the landfill.

The overall international market situation does not appear to have yet achieved a stable “new normal” although two things do appear clear at this point – tightened contamination standards are here to stay; and the net cost of municipal recycling has increased.

Concurrent with the upheaval in recycling markets has been a new level of scrutiny of contamination levels in organics collected for composting and in the finished compost product itself, especially in light of looming state mandates requiring major increases in diversion of organics from landfills (SB 1383). For the first seven years since the adoption of the current Strategic Plan in 2010, Agency focus has been on reducing the amount of “good stuff in the garbage;” we are now equally focused on reducing the amount of garbage in the good stuff, in order to preserve the usefulness and marketability of diverted materials.

Market and regulatory forces have been combining for several years to steadily erode the statewide demand for wood chips to fuel biomass power plants, which historically has constituted the major market for scrap wood in the state – from orchards and tree maintenance, forest enterprises, commercial manufacturers, construction and demolition, and other urban sources. Urban wood waste from construction and demolition recycling is the lowest quality feedstock for these plants and the first to lose out when the market constricts. We are at a point now where some major C&D recycling plants are no longer separating wood for biomass fuel. Limited quantities of clean dimensional lumber and pallets continue to supply the mulch markets.

China’s ban on the import of mixed paper and mixed plastics for recycling and the severe reduction in the biomass markets for scrap wood are the type of developments that may require StopWaste to revisit what constitutes “good stuff” in the garbage at some point. If a material no longer has any viable market outlet, or can be marketed only at a cost multiple times higher than landfill disposal (and requiring large rate increases to sustain), it may not be reasonable to continue categorizing it as “readily recyclable.”

Other Discards Issues

An issue gaining increasing attention locally and statewide is that of illegal dumping. While there might be an opportunity to recover certain illegally dumped materials for recycling – white goods, mattresses, tires,

etc. –exposure to the elements and concerns about biohazards (e.g. needles, human waste, bedbugs, etc.) often render such materials unfit for recovery. StopWaste has no power to enforce against illegal dumping nor to provide for bulky waste collections or dropoffs through local franchises, and enforcement efforts by local jurisdictions (who do have such powers) have not proven effective or financially feasible, for the most part. StopWaste regularly promotes free drop-off events for bulky items and HHW materials across social media. Aside from assisting with outreach messaging, we are not proposing that the WMA adopt any new policies, ordinances or fees to create any such role.

RECOMMENDATION

This item is for information only.

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DATE: September 13, 2018

TO: Programs & Administration Committee
Planning Committee/Recycling Board

FROM: Tom Padia, Deputy Director

BY: Meghan Starkey, Senior Management Analyst

SUBJECT: Waste Characterization Study 2017-18

SUMMARY

A waste characterization study is a valuable snapshot in time of the materials that comprise our waste stream, and can contribute to priority setting by highlighting the largest components of the landfill. It also provides high-level measurement of progress towards goals by comparing current results to previous studies. It's important to note that the study only shows *what* and *how much* is in the waste stream, but not necessarily *why*.

The waste characterization study uses industry-standard sampling techniques and statistical analysis to estimate the composition of the waste stream and tonnages by material type and generating sector.

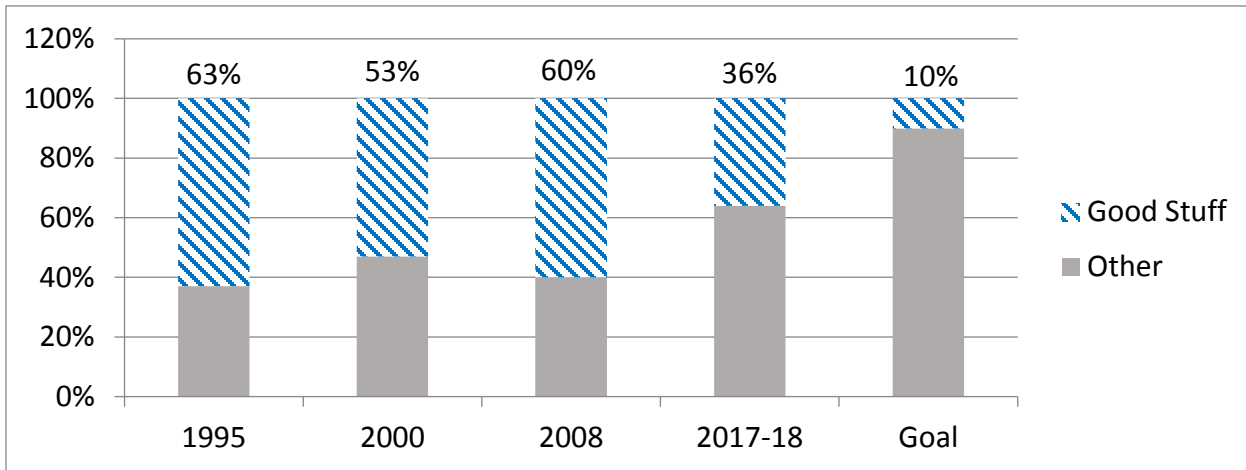
DISCUSSION

Countywide Results

The 2008 Waste Characterization Study (2008 Study) found that “good stuff” – readily recyclable materials such as cardboard, plastic, metal, glass bottles and cans, food and food-soiled paper, as well as untreated lumber, gypsum board, and crushable inerts – comprised 60% of the waste stream. The 2017-18 Waste Characterization Study (2017-18 Study) found that “good stuff” comprised 36% of the waste stream, meaning that we are over halfway towards our aspirational goal. The figure on the next page shows the decrease over time in the proportion of readily recyclable materials (represented with diagonal stripes), with the 10% goal represented in the last bar. Visually, a decrease in size of the striped segment and a corresponding increase in the size of the solid segment indicates progress towards goals.

When looking more closely at specific materials, compostable organics (food, food soiled paper and plant debris) show the greatest decreases in overall composition and tonnages, while simultaneously remaining the greatest proportion of readily recoverable materials. Dry recyclables such as paper, bottles and cans have decreased as a proportion of total materials, although less steeply than organics. Readily recyclable construction and demolition debris (untreated wood, crushable inerts, and gypsum board) have decreased as a percent of the whole. (See Table 1 in the Executive Summary for more detail.)

“Good Stuff” in Garbage over Time



The table below shows the countywide total tons of materials by sectors. The study was conducted on a countywide basis only, as all previous studies showed no significant statistical difference between the county as a whole and individual jurisdictions, therefore not justifying the significant extra cost for sampling.

Countywide Tonnages by Material Type Across All Sectors

Waste Stream	Other	Plant Debris	Food Scraps	Food Soiled Paper	Recyclable	Total
Single Family	144,600	1,500	33,800	37,000	14,200	231,000
Multi-Family	66,700	1,000	10,600	16,300	8,500	103,000
Commercial	97,300	4,600	41,800	18,200	33,200	195,000
Roll-Off	143,000	4,400	9,400	900	9,300	167,000
Self-Haul	280,900	7,600	1,800	100	5,700	296,000
MRF Residuals	40,800	200	200	2,300	12,300	55,800
Countywide Total	773,300	19,300	97,600	74,900	83,100	1,047,800

Analysis by Sector

Reporting results by sector is important for targets and program design, since materials are handled very differently depending on how they are collected and delivered for processing, and different programmatic approaches are required to capture materials for diversion.

Residential

Both single family and multifamily sectors demonstrated significant progress towards countywide goals. Changes in food scraps and plant debris are the main drivers of overall decrease in “good stuff” and the corresponding increase in “Other.” (See Tables 1 and 2 in the Executive Summary for residential composition and tonnages.)

Commercial

When comparing progress over time in the commercial sector, results are mixed. There are significant *increases* in proportion and tonnages for cardboard, plastic bottles and containers, plastic bags, and clean dimensional lumber. Significant *decreases* in proportion and tonnages were found for recyclable paper, steel food/beverage containers, yard waste, food, food soiled paper. Total tonnage has also dropped remarkably over time as well. (For more detail, see Table 3 in the Executive Summary that follows.)

Roll Off and Self Haul

In the roll off sector, large and significant decreases in proportion and tons are found for many material types, as seen in Table 4 of the Executive Summary. Particularly noticeable is the large drop off in plant debris. The agency's yard debris ban was enacted in 2009. Treated wood waste shows another remarkable decline. The self-haul sector similarly sees drops in these materials (see Table 5 in the Executive Summary). Yard waste in this sector in the 2017-18 Study is 30% of the tons disposed in 2008 Study, and less than 10% of the tons disposed in 1995.

The 2017-18 Study sampled Material Recovery Facility (MRF) residuals for the first time, since StopWaste staff believe this is an important and growing segment of the waste stream. Table 6 in the Executive Summary shows the MRF residual composition by major material classification.

Conclusions

There are several significant conclusions that can be made with confidence based on the data contained in the study. Most importantly, progress towards goals is significant and real.

Other conclusions include:

- Organic materials are by far the main drivers of change across all sectors.
- Residential sectors show significant decreases in all curbside recyclables materials, especially food.
- Commercial results show mixed results for progress, with both increases and decreases in dry recyclable materials, and decreases in food, food soiled paper and plant debris.
- Roll off and self-haul sectors show very remarkable declines in both tonnages and composition of recyclable materials.

In terms of informing priority setting going forward, these results need to be understood in the context of current challenges such as the implementation of SB 1383 (Short Lived Climate Pollutant Act) and National Sword. Given the maturity of diversion programs, continued progress is more likely to require focusing upstream. In addition, contamination in recycling and organics recycling streams can compromise the quality of materials, thereby negatively impacting markets and undermining the programs' overall success.

While the results of the 2017-18 Study do show significant progress, it also illuminates both significant opportunities and challenges for the future.

The full study may be found at: [2017-18-Waste-Characterization-Study.pdf](#)

RECOMMENDATION

This item is for information only.

Attachment: Waste Characterization Study 2017-18 Executive Summary

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Alameda County 2017-18 Waste Characterization Study

StopWaste
1537 Webster Street
Oakland, CA 94612

01217129.00 | September 5, 2018

SCS ENGINEERS

7041 Koll Center Parkway, #135
Pleasanton, CA 94566
707-546-9461

StopWaste is a public agency governed by the Alameda County Waste Management Authority, the Alameda County Source Reduction and Recycling Board, and the Energy Council.

1.0 EXECUTIVE SUMMARY

StopWaste conducts periodic waste characterization studies to understand better the types and quantities of materials disposed of in Alameda County. Using sampling techniques, this study measured the composition of the waste stream by generating sector and material type. This study provides a valuable snapshot in time of the materials that comprise our waste stream and can contribute to priority setting and evaluation of progress towards goals. The study was designed to be comparable with previous countywide waste characterization studies conducted in 2008, 2000, 1995, and 1990 to facilitate tracking of waste disposal trends.

1.1 RESULTS

Data gathered from StopWaste's Benchmark Study and fieldwork were summarized to develop waste composition estimates for each waste sector and the overall countywide waste stream. Waste compositions were compared to the 2008 waste characterization study conducted for Alameda County as well as the 2015 CalRecycle Statewide Waste Characterization Study.

1.1.1 Single Family Residential Waste

The composition of single family residential waste is presented in **Table 1**. The relative proportions and annual tons of recyclable and compostable materials have decreased significantly since 2008. Food Soiled Paper represents a greater proportion of single family residential waste in Alameda County than statewide; however, the proportion of Recyclable materials, Plant Debris, and Food Scraps are significantly lower than statewide.

Since the benchmark study only included materials that were collected at the curb, divertable materials such as dimension lumber and gypsum board (which were sampled in Commercial, Roll off and Self-Haul waste) are included in the "Other" material for residential and countywide tables. There's a longer, clearer explanation in the main portion of the study.

Table 1. 2017-18 Single Family Residential Waste Composition

Material Components	Annual Tonnage	Mean Composition	Standard Deviation	90% Confidence Limits	
				Lower	Upper
Recyclable	14,200	6.1%	12.3%	5.7%	6.5%
Plant Debris	1,500	0.6%	5.1%	0.5%	0.8%
Food Scraps	33,800	14.6%	21.5%	13.9%	15.3%
Food Soiled Paper	37,000	16.0%	20.3%	15.4%	16.7%
Other *	144,600	62.6%	28.6%	61.7%	63.5%
TOTAL	231,000	100.0%			

Note: Waste composition based on sorting refuse in 2,605 carts.

* Since the benchmark study only included materials that were collected at the curb, divertable materials such as dimension lumber and gypsum board are included as "Other."

1.1.2 Multi-Family Residential Waste

The composition of multi-family residential waste is presented in **Table 2**. The relative proportion and annual tonnage of recyclable and compostable materials have decreased significantly since 2008. Food Soiled Paper represents a greater proportion of multi-family residential waste in Alameda County than statewide; however, the proportion of Recyclable materials, Plant Debris, and Food Scraps are significantly lower than statewide.

Table 2. 2017-18 Multi-Family Residential Waste Composition

Material Components	Annual Tonnage	Mean Composition	Standard Deviation	90% Confidence Limits	
				Lower	Upper
Recyclable	8,500	8.3%	11.4%	7.2%	9.4%
Plant Debris	1,000	0.9%	5.8%	0.4%	1.5%
Food Scraps	10,600	10.3%	14.1%	8.9%	11.7%
Food Soiled Paper	16,300	15.8%	16.4%	14.2%	17.4%
Other *	66,700	64.7%	21.3%	62.6%	66.8%
TOTAL	103,000	100.0%			

Note: Waste composition based on sorting refuse in 2,605 carts.

* Since the benchmark study only included materials that were collected at the curb, divertable materials such as dimension lumber and gypsum board are included as "Other."

1.1.3 Commercial Waste

The composition of commercial waste is presented in **Table 3**. The symbols indicate significant differences between the current 2017-18 study and both the the 2008 study and the 2015 CalRecycle Statewide Waste Characterization Study. A "+" indicates a significant increase and a "-" indicates a significant decrease in the material compared to the 2008 study. A ">" indicates a significant increase and a "<" indicates a significant decrease compared to the statewide study.

Table 3. 2017-18 Commercial Waste Composition

Material Components	Annual Tonnage		Mean Composition	Standard Deviation	90% Confidence Limits	
					Lower	Upper
Paper	19,800		10.1%	0.0%	7.6%	9.3%
Uncoated Corrugated Cardboard / Kraft Paper	7,300	+	3.7% +	0.0%	3.8%	3.3%
Recyclable Paper (no food/liquid contamination)	12,500	-	6.4%	0.0%	6.1%	5.7%
Plastic	14,600		7.5%	0.0%	5.1%	6.9%
Bottle and Plastic Container	8,600	+	4.4% + >	0.0%	2.9%	4.1%
Plastic Bags	4,400	+	2.3% + >	0.0%	3.1%	1.9%
Other Film	1,600	-	0.8% -	0.0%	2.5%	0.5%
Glass	3,100		1.6%	0.0%	1.8%	1.4%
Recyclable Glass Bottles/Containers						
Metal	6,000		3.1%	0.0%	4.1%	2.6%
Aluminum Cans	700		0.3% >	0.0%	1.3%	0.2%
Steel Food/Beverage Containers	1,100	-	0.6% -	0.0%	0.8%	0.5%
Other Non-Ferrous	1,800		0.9% +	0.0%	2.8%	0.6%
Other Ferrous	2,400	-	1.2% -	0.0%	2.9%	0.9%
Compostable Organics	64,500		33.1%	0.0%	21.0%	30.8%
Yard Waste	4,600	-	2.3% - <	0.0%	5.5%	1.7%
Food Waste	41,800	-	21.4% -	0.0%	20.3%	19.2%
Compostable Paper	18,200	-	9.3% -	0.0%	8.0%	8.4%
Compostable Organics - Wood	12,900		6.6%	0.0%	13.4%	5.2%
Clean Dimensional Lumber	6,600		3.4% +	0.0%	8.8%	2.4%
Clean Engineered Wood	5,900		3.0%	0.0%	8.6%	2.1%
Pallets	500	-	0.3% - <	0.0%	2.4%	0.0%
Textiles/Other	8,100		4.1%	0.0%	5.3%	3.6%
Textiles/Leather	7,400		3.8%	0.0%	5.2%	3.2%
Carpet	700	-	0.3% -	0.0%	1.4%	0.2%
Inerts	8,100		4.1%	0.0%	7.8%	3.3%
Crushable Inerts	5,200		2.7%	0.0%	6.1%	2.0%
Gypsum Boards	1,200		0.6%	0.0%	3.4%	0.3%
Treated Wood Waste	1,600	-	0.8% -	0.0%	4.0%	0.4%
Electronics	2,900		1.5%	0.0%	4.4%	1.0%
Brown Goods / White Goods	2,000	+	1.0% +	0.0%	4.3%	0.5%
Computer Related Electronics	400		0.2%	0.0%	1.0%	0.1%
Other Small Consumer	400		0.2% >	0.0%	0.5%	0.2%
HHW	900		0.4%	0.0%	2.8%	0.1%
Paints/Adhesives & Vehicle/Equipment Fluids	100	-	0.1% -	0.0%	0.1%	0.0%
Universal Hazardous Waste	300		0.2%	0.0%	2.4%	-0.1%
Medical Waste	400		0.2%	0.0%	1.3%	0.1%
Other Hazardous Waste	<100		0.0%	0.0%	0.1%	0.0%
Special	800		0.4%	0.0%	2.3%	0.1%
Tires						
Other	53,500	+	27.4%	0.0%	15.1%	25.8%
TOTAL	195,000		100.0%			

Note: Waste composition based on 250 samples.

Clean Dimensional Lumber and Clean Engineered Wood are merged in the 2008 study

Computer Related Electronics and Other Small Consumer Electronics are merged in the 2008 study

- Indicates a significant decrease from the 2008 study

+ Indicates a significant increase from the 2008 study

< Indicates a significant decrease from the 2015 CalRecycle Statewide Waste Characterization Study

> Indicates a significant increase from the 2015 CalRecycle Statewide Waste Characterization Study

1.1.4 Roll Off Containers

The composition of roll off container waste is presented in **Table 4**. The symbols indicate significant differences between the current 2017-18 study and the the 2008. A “+” indicates a significant increase and a “-” indicates a significant decrease in the material compared to the 2008 study. Waste disposed in roll-off containers was not characterized as a separate sector in the CalRecycle Statewide Waste Characterization Study in 2015; therefore, there are no comparisons to statewide results.

Table 4. 2017-18 Roll Off Container Waste Composition

Material Components	Annual Tonnage	Mean Composition	Standard Deviation	90% Confidence Limits	
				Lower	Upper
Paper	8,700	5.2%	9.4%	4.3%	6.2%
Uncoated Corrugated Cardboard / Kraft Paper	3,200 -	1.9% -	4.7%	1.5%	2.4%
Recyclable Paper (no food/liquid contamination)	5,500 -	3.3% -	7.5%	2.6%	4.1%
Plastic	400	0.2%	1.1%	0.1%	0.3%
Bottle and Plastic Container	100 -	<0.1% -	0.3%	<0.1%	0.1%
Plastic Bags	<100 -	<0.1% -	0.1%	<0.1%	<0.1%
Other Film	200 -	0.1% -	0.9%	<0.1%	0.2%
Glass	400 -	0.2% -	1.2%	<0.1%	0.3%
Recyclable Glass Bottles/Containers					
Metal	1,400	0.8%	3.3%	0.5%	1.1%
Aluminum Cans	<100 -	<0.1% -	0.1%	<0.1%	<0.1%
Steel Food/Beverage Containers	<100 -	<0.1% -	0.2%	<0.1%	<0.1%
Other Non-Ferrous	400	0.2%	1.2%	<0.1%	0.3%
Other Ferrous	900 -	0.5% -	3.1%	0.2%	0.9%
Compostable Organics	14,700	8.8%	18.3%	7.0%	10.6%
Yard Waste	4,400 -	2.6% -	12.4%	1.4%	3.8%
Food Waste	9,400 -	5.7% -	13.4%	4.3%	7.0%
Compostable Paper	900 -	0.5% -	1.3%	0.4%	0.6%
Compostable Organics - Wood	10,300	6.1%	17.1%	4.4%	7.9%
Clean Dimensional Lumber	3,500	2.1%	8.6%	1.2%	2.9%
Clean Engineered Wood	2,400	1.4%	7.4%	0.7%	2.2%
Pallets	4,400	2.6% -	13.2%	1.3%	3.9%
Textiles/Other	1,900	1.1%	8.1%	0.3%	1.9%
Textiles/Leather	1,000 -	0.6% -	6.1%	<0.1%	1.2%
Carpet	1,000	0.6%	5.4%	<0.1%	1.1%
Inerts	11,800	7.0%	19.8%	5.1%	9.0%
Crushable Inerts	6,100	3.7%	13.6%	2.3%	5.0%
Gypsum Boards	3,100	1.8%	11.0%	0.7%	2.9%
Treated Wood Waste	2,600 -	1.5% -	10.0%	0.6%	2.5%
Electronics	200	0.1%	2.0%	<0.1%	0.3%
Brown Goods / White Goods	200 -	0.1%	2.0%	<0.1%	0.3%
Computer Related Electronics	<100	<0.1%	0.3%	<0.1%	<0.1%
Other Small Consumer	<100 -	<0.1% -	<0.1%	<0.1%	<0.1%
HHW	<100	<0.1%	<0.1%	<0.1%	<0.1%
Paints/Adhesives & Vehicle/Equipment Fluids	<100 -	<0.1% -	<0.1%	<0.1%	<0.1%
Universal Hazardous Waste	<100 -	<0.1% -	<0.1%	<0.1%	<0.1%
Medical Waste	<100 -	<0.1% -	<0.1%	<0.1%	<0.1%
Other Hazardous Waste	<100 -	<0.1% -	<0.1%	<0.1%	<0.1%
Special	<100 -	<0.1% -	<0.1%	<0.1%	<0.1%
Tires					
Other	117,400 +	70.3% +	28.2%	67.5%	73.1%
Materials not specified above					
TOTAL	167,000	100.0%			

Note: Waste composition based on 274 visually characterized waste loads

Clean Dimensional Lumber and Clean Engineered Wood are merged in the 2008 study

Computer Related Electronics and Other Small Consumer Electronics are merged in the 2008 study

- Indicates a significant decrease from the 2008 study

+ Indicates a significant increase from the 2008 study

1.1.5 Self Haul Waste

The composition of self haul waste is presented in **Table 5**. The symbols indicate significant differences between the current 2017-18 study and both the the 2008 study and the 2015 CalRecycle Statewide Waste Characterization Study. A “+” indicates a significant increase and a “-” indicates a significant decrease in the material compared to the 2008 study. A “>” indicates a significant increase and a “<” indicates a significant decrease compared to the statewide study.

Table 5. 2017-18 Self Haul Waste Composition

Material Components	Annual Tonnage	Mean Composition	Standard Deviation	90% Confidence Limits	
				Lower	Upper
Paper	5,300	1.8%	6.5%	1.3%	2.3%
Uncoated Corrugated Cardboard / Kraft Paper	3,100 -	1.0% -	4.4%	0.7%	1.4%
Recyclable Paper (no food/liquid contamination)	2,200 -	0.7% -	4.2%	0.4%	1.1%
Plastic	400	0.1%	1.0%	<0.1%	0.2%
Bottle and Plastic Container	200 -	<0.1% -	0.5%	<0.1%	<0.1%
Plastic Bags	<100 -	<0.1% -	<0.1%	<0.1%	<0.1%
Other Film	200 -	<0.1% -	0.9%	<0.1%	0.1%
Glass	100	<0.1%	< 0.6%	<0.1%	<0.1%
Recyclable Glass Bottles/Containers					
Metal	3,200	1.1%	6.7%	0.6%	1.6%
Aluminum Cans	<100	<0.1%	0.2%	<0.1%	<0.1%
Steel Food/Beverage Containers	<100	<0.1%	< 0.2%	<0.1%	<0.1%
Other Non-Ferrous	500 -	0.2% -	1.0%	<0.1%	0.2%
Other Ferrous	2,600 -	0.9% -	6.6%	0.4%	1.4%
Compostable Organics	9,500	3.2%	17.9%	1.8%	4.6%
Yard Waste	7,600 -	2.6% -	< 16.0%	1.3%	3.8%
Food Waste	1,800 -	0.6% -	8.2%	<0.1%	1.2%
Compostable Paper	100 -	<0.1% -	< 0.7%	<0.1%	<0.1%
Compostable Organics - Wood	17,100	5.8%	17.4%	4.5%	7.1%
Clean Dimensional Lumber	10,600	3.6%	15.4%	2.4%	4.7%
Clean Engineered Wood	3,000	1.0%	< 6.5%	0.5%	1.5%
Pallets	3,600	1.2%	5.4%	0.8%	1.6%
Textiles/Other	10,000	3.4%	15.7%	2.2%	4.6%
Textiles/Leather	1,900 -	0.6% -	< 3.3%	0.4%	0.9%
Carpet	8,000	2.7%	15.5%	1.5%	3.9%
Inerts	52,500	17.7%	25.7%	15.8%	19.7%
Crushable Inerts	27,500	9.3%	18.3%	7.9%	10.7%
Gypsum Boards	12,600	4.3%	14.5%	3.2%	5.4%
Treated Wood Waste	12,400 -	4.2% -	12.7%	3.2%	5.2%
Electronics	300	0.1%	1.0%	<0.1%	0.2%
Brown Goods / White Goods	200 -	<0.1% -	0.7%	<0.1%	0.1%
Computer Related Electronics	<100	<0.1%	< 0.3%	<0.1%	<0.1%
Other Small Consumer	100 -	<0.1% -	0.6%	<0.1%	<0.1%
HHW	<100	<0.1%	0.4%	<0.1%	<0.1%
Paints/Adhesives & Vehicle/Equipment Fluids	<100 -	<0.1% -	<0.1%	<0.1%	<0.1%
Universal Hazardous Waste	<100 -	<0.1% -	0.4%	<0.1%	<0.1%
Medical Waste	<100 -	<0.1% -	<0.1%	<0.1%	<0.1%
Other Hazardous Waste	<100 -	<0.1% -	0.2%	<0.1%	<0.1%
Special	<100	<0.1%	0.2%	<0.1%	<0.1%
Tires					
Other	197,500 +	66.7% +	> 33.9%	64.1%	69.3%
TOTAL	296,000	100.0%			

Note: Waste composition based on 463 visually characterized waste loads

Clean Dimensional Lumber and Clean Engineered Wood are merged in the 2008 study

Computer Related Electronics and Other Small Consumer Electronics are merged in the 2008 study

- Indicates a significant decrease from the 2008 study

+ Indicates a significant increase from the 2008 study

< Indicates a significant decrease from the 2015 CalRecycle Statewide Waste Characterization Study

> Indicates a significant increase from the 2015 CalRecycle Statewide Waste Characterization Study

1.1.6 MRF Residuals

The composition of MRF Residuals from both C&D and MSW (collected as garbage or single stream recyclables) is presented in **Table 6**.

Table 6. 2017-18 MRF Residuals Composition

Material Components		Annual Tonnage	Mean Composition
Paper		7,280	13.0%
	Uncoated Corrugated Cardboard / Kraft Paper	3,070	5.5%
	Recyclable Paper (no food/liquid contamination)	4,200	7.5%
Plastic		5,780	10.4%
	Bottle and Plastic Container	4,580	8.2%
	Plastic Bags	830	1.5%
	Other Film	370	0.7%
Glass	Recyclable Glass Bottles/Containers	110	0.2%
Metal		750	1.3%
	Aluminum Cans	150	0.3%
	Steel Food/Beverage Containers	150	0.3%
	Other Non-Ferrous	250	0.5%
	Other Ferrous	190	0.3%
Compostable Organics		2,740	4.9%
	Yard Waste	200	0.4%
	Food Waste	210	0.4%
	Compostable Paper	2,330	4.2%
Compostable Organics - Wood		3,240	5.8%
	Clean Dimensional Lumber	2,330	4.2%
	Clean Engineered Wood	910	1.6%
	Pallets	<100	<0.1%
Textiles/Other		2,560	4.6%
	Textiles/Leather	1,660	3.0%
	Carpet	900	1.6%
Inerts		5,050	9.0%
	Crushable Inerts	1,370	2.5%
	Gypsum Boards	120	0.2%
	Treated Wood Waste	3,550	6.4%
Electronics		360	0.6%
	Brown Goods / White Goods	130	0.2%
	Computer Related Electronics	<100	0.1%
	Other Small Consumer	160	0.3%
HHW		<100	<0.1%
	Paints/Adhesives & Vehicle/Equipment Fluids	<100	<0.1%
	Universal Hazardous Waste	<100	<0.1%
	Medical Waste	<100	<0.1%
	Other Hazardous Waste	<100	<0.1%
Special	Tires	<100	<0.1%
Other	Materials not specified above	27,940	50.1%
TOTAL		55,800	100.0%

Note: Compositions based on sorting over 16,000 pounds of sampled materials.

1.1.7 Countywide

By design, the Benchmark Study limited the number of material types for sampled residential waste (both from single family and multi-family sources) to five classifications, which are described below. In contrast, field activities for this study targeted waste from the commercial, roll off, self haul, and MRF sectors and sorted waste samples into 30 material types. To combine waste compositions from the six waste sectors into a countywide waste composition, the material types from the field-sampled waste sectors were condensed to match the five material classifications of the Benchmark Study as follows:

- **Recyclable**- materials that can be recycled through curbside collection services including uncoated corrugated cardboard/Kraft paper, recyclable paper (without food contamination), plastic bottles and containers, glass bottles and containers, aluminum cans, and steel food/beverage containers.
- **Plant Debris** – plant material including leaves, grass, plants, pruning, trimmings, branches, and stumps.
- **Food Scraps** – food including meat, fruit, and egg shells, etc. and containerized liquids.
- **Food Soiled Paper** – paper contaminated with food/wax/moisture, waxed corrugated cardboard, napkins, pizza boxes, paper towels, fast food wrappers, egg cartons, paper plant pots, take-out food containers, paper plates, tissues, and newspaper with pet waste.
- **Other** – Primarily garbage, but also includes other materials, some of which could be diverted from landfill disposal, including plastic bags, other ferrous and non-ferrous metal, clean wood, textiles, leather, carpet, crushable inerts (e.g., stone, rock, cement, tile, etc), electronics, HHW, and tires. Also includes materials such as other plastic film, treated wood, polystyrene, etc.

Table 7 presents the countywide waste composition as well as the contributing waste sector compositions.

Table 7. Detailed 2017-18 Countywide Composition

Waste Sector	Recyclable	Plant Debris	Food Scraps	Food Soiled Paper	Other	Total
Single-Family Residential	6.1%	0.6%	14.6%	16.0%	62.6%	37.4%
Multi-Family Residential	8.3%	0.9%	10.3%	15.8%	64.7%	35.3%
Commercial	17.0%	2.3%	21.4%	9.3%	49.9%	50.1%
Roll-Off	5.6%	2.6%	5.7%	0.5%	85.6%	14.4%
Self-Haul	1.9%	2.6%	0.6%	0.0%	94.9%	5.1%
MRF Residuals	22.0%	0.4%	0.4%	4.2%	73.1%	26.9%
Countywide	7.9%	1.8%	9.3%	7.1%	73.8%	26.2%

Figure 1 presents the countywide waste composition graphically.

Figure 1. 2017-18 Countywide Waste Composition

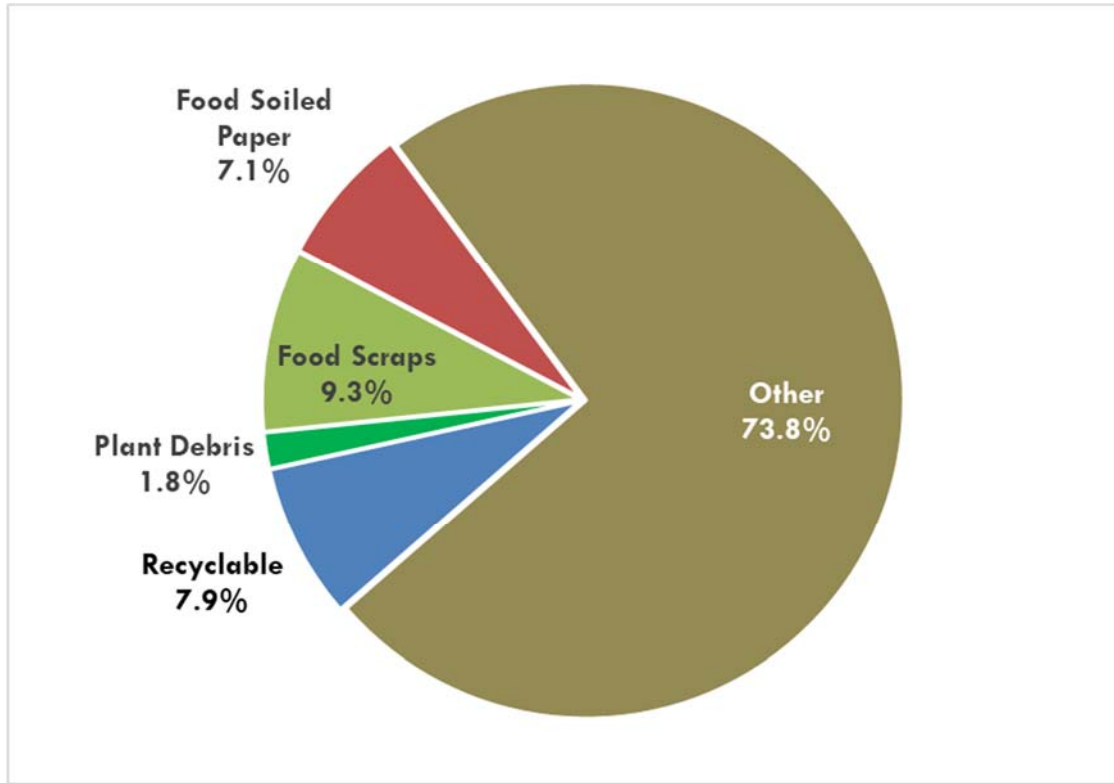


Table 8 presents the annual tonnage of waste by sector and Benchmark Study classification.

Table 8. 2017-18 Waste Quantity by Sector

Waste Stream	Recyclable	Plant Debris	Food Scraps	Food Soiled Paper	Other	Total
Single-Family Residential	14,200	1,500	33,800	37,000	144,600	231,000
Multi-Family Residential	8,500	1,000	10,600	16,300	66,700	103,000
Commercial	33,200	4,600	41,800	18,200	97,300	195,000
Roll-Off	9,300	4,400	9,400	900	143,000	167,000
Self-Haul	5,700	7,600	1,800	100	280,900	296,000
MRF Residuals	12,300	200	200	2,300	40,800	55,800
Countywide Total	83,100	19,300	97,600	74,900	773,300	1,047,800

1.2 STUDY DESIGN

Multiple sources of information were used to estimate the annual waste quantity disposed within Alameda County by sector, which included the 2016 and 2017 Jurisdiction Quarterly Tonnages Reports and communication with each franchised hauler operating in Alameda County. Similar to the 2000 and 2008 waste characterization studies, this study classified waste generated and disposed of in Alameda County as originating from the following sectors: 1) Single Family Residential, 2) Multi-Family Residential, 3) Commercial, 4) Roll-Off Containers, 5) Self Haul. Unlike the previous studies, this study added a sixth sector, MRF Residuals.

As shown in **Table 9**, the annual quantity of waste disposed for each sector has a decreasing trend since 1990. Self Haul waste is the only sector that increased, albeit slightly, since 2008.

Table 9. Reported In-County Waste Disposal Quantities

Waste Sector	1990	1995	2000	2008	2017-18
Single-Family Residential	499,150	333,030	332,700	275,080	231,000
Multi-Family Residential	*	112,090	122,870	132,080	103,000
Commercial	666,300	264,530	354,400	237,320	195,000
Roll-Off	264,500	339,250	406,470	273,420	167,000
Self-Haul	428,550	465,560	336,240	269,210	296,000
MRF Residuals	NA	NA	NA	NA	55,800
Total Countywide	1,858,500	1,514,460	1,552,680	1,187,110	1,047,800

Note: Multi-family residential waste quantities included in commercial quantities for 1990.

MRF Residuals not quantified 1990 through 2008.

A variety of data was utilized and collected to estimate the types and quantities of materials disposed of as garbage for each of the waste sectors. Data from StopWaste's benchmark services (year-round waste characterization of individual carts and dumpsters located at single family residences and multi-family properties) was used to characterize residential waste. Field sampling and sorting activities were used to characterize waste disposed of by the commercial, roll off, self haul, and MRF residuals sectors.

Residential waste was characterized into five material types: recyclable (through curbside collection programs), plant debris, food scraps, food soiled paper, and other (primarily garbage but also including other materials separately classified in the remaining sectors). Commercial, roll off, self haul, and MRF residuals were characterized into 11 material classifications and 30 material types.

1.3 FIELD METHODS

Fieldwork was completed at six host facilities (two landfills and four transfer stations) over two seasons. Season One fieldwork was conducted in August and September 2017; Season Two was conducted in January and February 2018. Manual sorting was used to characterize commercial waste samples and MRF residuals. Visual characterization of entire waste loads was used to characterize roll off containers and self haul waste.

Table 10 summarizes the characterization method, number of samples, and number of material types into which the samples were sorted.

Table 10. Summary of Waste Characterization Methods and Number of Samples By Waste Sector

Waste Sector	Characterization Method	Number of Samples	Number of Material Types
Single Family Residential	Data from Benchmark Services	2,605 carts	5
Multi-Family Residential	Data from Benchmark Services	665 carts/dumpsters	5
Commercial	Manual (Hand Sorting)	250 samples	30
Roll Off Containers	Visual Characterization	274 waste loads	30
Self Haul	Visual Characterization	463 waste loads	30
MRF Residuals	Manual (Hand Sorting)	16,000 pounds	30