

Committee Members

Dave Sadoff, **Chairperson**
Castro Valley Sanitary District
Shelia Young, **Vice Chairperson**
Oro Loma Sanitary District
Keith Carson, County of Alameda
Jesse Arreguin, City of Berkeley
Don Biddle, City of Dublin
Vinnie Bacon, City of Fremont
Sara Lamnin, City of Hayward
Bob Carling, City of Livermore
Mike Hannon, City of Newark
Dan Kalb, City of Oakland
Deborah Cox, City of San Leandro
Lorin Ellis, City of Union City
Wendy Sommer, Executive Director

AGENDA

ALAMEDA COUNTY WASTE MANAGEMENT AUTHORITY MEETING OF THE PROGRAMS AND ADMINISTRATION COMMITTEE

January 11, 2018

9:00 A.M.

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

1. Convene Meeting

2. Public Comments

Open public discussion from the floor is provided for any member of the public wishing to speak on any matter within the jurisdiction of the Programs & Administration Committee, but not listed on the agenda. Each speaker is limited to three minutes unless a shorter period of time is set by the Chair.

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1 3. Approval of the Draft Minutes of December 14, 2017 meeting (Pat Cabrera)

5 4. Five Year Program Review (Meri Soll)

This item is for information only.

21 5. Packaging Update (Justin Lehrer)

This item is for information only.

6. Member Comments

7. Adjournment

The Programs & Administration Committee is a Committee that contains more than a quorum of the Board. However, all items considered by the Committee requiring approval of the Board will be forwarded to the Board for consideration at a regularly noticed board meeting.

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**MINUTES OF THE ALAMEDA COUNTY WASTE
MANAGEMENT AUTHORITY MEETING
OF THE
PROGRAMS AND ADMINISTRATION COMMITTEE**

Thursday, December 14, 2017

9:00 A.M.

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

Members Present:

Castro Valley Sanitary District
City of Dublin
City of Fremont
City of Hayward
City of Livermore
City of Newark
Oro Loma Sanitary District
City of San Leandro
City of Union City

Dave Sadoff
Don Biddle
Vinnie Bacon
Sara Lamnin
Bob Carling
Mike Hannon
Shelia Young
Deborah Cox
Lorrin Ellis

Absent:

County of Alameda
City of Berkeley
City of Oakland

Keith Carson
Jesse Arreguin
Dan Kalb

Staff Present:

Wendy Sommer, Executive Director
Pat Cabrera, Administrative Services Director
Tom Padia, Deputy Executive Director
Justin Lehrer, Senior Program Manager
Arliss Dunn, Clerk of the Board

Others Present:

Allan Crecelius, President, Rewards Strategy Group (RSG)

1. Convene Meeting

Chair Dave Sadoff called the meeting to order at 9:02 a.m.

2. Public Comments

There were none.

3. Approval of the Draft Minutes of November 9, 2017 (Pat Cabrera)

Board member Young made the motion to approve the draft minutes of November 9, 2017. Board member Biddle seconded and the motion carried 8-0 (Ayes: Bacon, Biddle, Carling, Cox, Hannon, Lamnin, Sadoff, Young. Nays: None. Abstain: None. Absent: Arreguin, Carson, Ellis, Kalb).

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4. **Classification Review and Compensation Study: Comparator Agencies (Pat Cabrera)**

Staff recommends that the P&A Committee approve the recommended comparator agencies and job measurement approach.

Pat Cabrera provided an overview of the staff report and introduced Allan Crecelius, Rewards Strategy Group (RSG). Mr. Crecelius presented a PowerPoint presentation outlining the objectives and the approach that will be utilized to complete the upcoming Compensation Study. A link to the staff report and the presentation is available here: [Classification-Compensation-Study-Presentation-12-14-17.pdf](#)

Board member Carling inquired if the agency had previously conducted a compensation study. Ms. Cabrera stated yes, however this study applies a different approach using some different comparators and analyzes a wider net of jobs with comparable scopes of work and responsibilities. Another difference is the previous studies focused on percentile to market and RSG will apply a different approach. Ms. Sommer added the agency previously focused on compensation and current classifications instead of looking at what is needed for the agency in the coming years. She added that we will also be looking specifically at the program manager series to see if there is an opportunity to create different paths such as a management analyst or similar classifications. The previous studies focused on competitiveness with respect to compensation and the current study will seek to analyze if the agency compensation package is in alignment or consistent within the marketplace.

Board member Carling inquired if the employees were aware of the study and if they would be able to see the report. Ms. Cabrera stated yes the employees are aware of the study and will be able to see the results of the report. Ms. Cabrera added the human resources manual states that the agency will conduct a total compensation survey periodically but no sooner than every three years to enable the Board to assess whether compensation remains competitive with the market. Board member Carling added he is uncomfortable with the descriptive use of the term “a measure of relative worth” and recommended replacing the word “worth,” as all employee positions are important to the agency. Mr. Crecelius stated that he would do so.

Board member Biddle inquired if the study will be completed in time for the fiscal year 18/19 budget. Ms. Cabrera stated any action requires both committee and Board approval and the proposed timeline is to present findings to the committee in either February or March 2018. Board member Lamnin inquired if the employees will have input with respect to the relative findings. Ms. Sommer stated that RSG interviewed a cross section of employees and in addition, the Program Manager I & II classes were asked to complete a position description questionnaire outlining what they do. We have also developed a workforce committee that will look at the results and convey the information to staff and ultimately make a recommendation to the P&A Committee. Board member Lamnin stated with respect to comparable agencies, Recology or a similar agency is not listed as a comparator. Ms. Sommer stated that the mission may be somewhat similar but their primary function is hauling and collecting materials, while we do administrative, programmatic and policy work. Board member Lamnin inquired if strategic thinking and keeping up with best practices is included with respect to qualities of job. Ms. Sommer stated yes.

Board member Ellis inquired with respect to transparency as well as affordability, specifically whether the compensation analysis considers the long term liabilities or any compounded effect within a 5-10 year measurement. Ms. Cabrera stated the study does not do that but staff can create a model looking at the compounded cost. Mr. Crecelius added with respect to the affordability question it's not only a fiscal consideration but a political one as well. Ms. Cabrera added we are also looking at how we can pay down our unfunded liability.

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Board member Hannon inquired as to how many other companies responded to the RFP in April and what is the cost of the contract. Ms. Cabrera stated that there were five respondents to the RFP and we interviewed three of the respondents. The cost of the contract is a little over \$31,000. Board member Hannon asked for clarification about the term “internal job content relationships.” Mr. Crecelius responded that the “internal job content relationships” represents doing the quantitative job evaluation of each job without regard to the marketplace. The actual data (22 comparator organizations) submitted from the marketplace will be surveyed upon approval of the Committee. Board member Hannon inquired about the number of staff working on the contract. Mr. Crecelius stated that there is one senior principal and an administrative staff to do number crunching, and himself. Board member Hannon inquired if staff is revising and updating the job classifications. Ms. Cabrera stated that some of the classifications are well written and require minor tweaking, however, there are issues with the program manager series and defining complexity of projects between the entry level and journey level. We are also contemplating creating a management analyst series and developing job descriptions for those positions. Board member Hannon concurred with Board member Ellis regarding the budgetary impacts to the agency should the Board decide to implement results of the compensation study, and he stated agreement with Board member Carling regarding revising the wording with respect to placing value or worth on certain positions.

Board member Young inquired if the study includes a rework of classifications or only salaries. Ms. Sommer stated it is both a rework of classifications and salaries. Board member Young stated that the leading page of the study should state both classifications and salaries. Board member Young inquired about the RSG office locations. Mr. Crecelius stated that they have offices in San Diego and Pasadena. Ms. Cabrera stated that Koff and Associates was the only firm located in Alameda County and we have utilized them on several occasions. Ms. Sommer stated that although RSG is headquartered in Southern California the client list included cities in Alameda County, e.g. Berkeley, Pleasanton, etc. Ms. Sommer added the travel expenses are inclusive in the contract. Board member Young suggested adding the Contra Costa Solid Waste Committee to the list of comparators. Tom Padia stated that the Central Contra Costa Solid Waste Authority administers franchise collection and processing and disposal and manages Republic Services in their jurisdiction, which is something that we do not do. Although there is some overlap they are a much smaller (five employees) operation. The West Contra Costa Solid Waste Authority handles the western Contra Costa jurisdictions and they are also very different in structure and scope of work. Board member Young inquired if the agency has had employees that left the agency due to low compensation. Ms. Cabrera stated yes, over the past couple of years there have been a few issues of compensation as well as a desire to do something different. Additionally, recently there have been challenges with respect to starting pay when recruiting for new positions.

Board member Cox stated that it appears that the agency is doing something different than what we have done previously and inquired as to how the agency would handle the issue if the study indicates lower compensation for some positions. Ms. Cabrera stated that if this occurs, as it has in the past, then there are no pay raises until the pay catches up or the position is “Y” rated. If the compensation comes in higher it is up to the Board to make any decisions regarding rate increases.

Chair Sadoff stated that the JPA is more like a special district and inquired if there are any material differences between special districts and municipalities. Mr. Crecelius stated that there may be structural differences and municipalities may be larger but they will be looking for jobs that are comparable no matter the size because that will reflect part of the marketplace that we are competing with. Mr. Crecelius added positions may be treated differently with respect to compensation depending on the type, size, and the financial situation of a company, municipality, or an organization. Chair Sadoff inquired if the approach includes percentiles. Mr. Crecelius stated that the study will include the high, low, median and average, and

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if the Committee would like to discuss the pricing point of salary ranges in these grades above the median, how much above that is part of the discussion. Board member Young inquired about the format of the final report. Mr. Crecelius stated that RSG will submit to agency staff a report that will include a data sheet on the positions with the list of comparators including title and minimum to maximum compensation for the position, as well as a classification report.

Chair Sadoff proposed creating an Ad Hoc sub-committee to meet with staff and review the process and review the report prior to bringing the information back to the committee. Board members Young and Ellis expressed agreement with the proposal and volunteered to serve on the committee. Ms. Sommer stated that she would like clarification on the scope of the committee's role. Ms. Cabrera suggested allowing RSG to begin collecting the data and submitting it to the agency and then including the committee to help provide direction to staff prior to going to the full committee and ultimately to the Board. Board member Biddle stated that he would not like the process to slow down the project and hinder submitting the information in time for the budget cycle.

Board member Biddle made the motion to approve the recommended comparator agencies and job measurement approach. Board member Bacon seconded and the motion carried 9-0 (Ayes: Bacon, Biddle, Carling, Cox, Ellis, Hannon, Lamnin, Sadoff, Young. Nays: None. Abstain: None. Absent: Arreguin, Carson, Kalb).

5. Packaging Update (Justin Lehrer)

This item is for information only.

Due to the extensive discussion of the Classification Review and Compensation Study, the committee deferred the Packaging Update to the January 2018 meeting.

6. 2018 Meeting Schedule (Arliss Dunn)

It is recommended that the WMA/EC, P&A Committee, and the Recycling Board/Planning Committee, each adopt their respective regular meeting schedules for 2018.

There was no discussion on this item. Board member Carling made the motion to adopt the 2018 meeting schedule for the Programs and Administration Committee. Board member Ellis seconded and the motion carried 9-0 (Ayes: Bacon, Biddle, Carling, Cox, Ellis, Hannon, Lamnin, Sadoff, Young. Nays: None. Abstain: None. Absent: Arreguin, Carson, Kalb).

7. Member Comments

There were none.

8. Adjournment

The meeting adjourned at 10:00 a.m.

DATE: January 11, 2018

TO: Programs & Administration Committee

FROM: Tom Padia, Deputy Executive Director

BY: Meri Soll, Senior Program Manager

SUBJECT: Five Year Program Review

SUMMARY

In August 2016 the Recycling Board approved a schedule and scope of work for the “Five Year Program Review” and in November 2016 the Recycling Board approved award of a competitively bid contract to a consulting team led by HF&H Consultants, LLC to perform the program evaluation component of the Measure D-mandated “Five Year Audit.” The consulting team included subconsultants Kies Strategies and Mr. Kelly Runyon. The final report for the separate financial and compliance component of this Five Year Audit was presented to the Recycling Board in September 2017 by Crowe Horwath LLP. Staff from HF&H will present key findings and recommendations of the Five Year Program Review at the January 11, 2018 meeting. The Executive Summary is attached (Attachment A) and an electronic file of the full report (137 pages) is available at <http://www.stopwaste.org/file/4575>.

DISCUSSION

Subsection 64.040 (C) of Measure D requires a comprehensive financial, statistical and programmatic audit and analysis to be performed within four years of the effective date of the Act and every five years thereafter. Following is the text from Measure D relating to the comprehensive audit:

SUBSECTION 64.040: RECYCLING POLICY GOALS AND RECYCLING PLAN

C. The Recycling Board shall contract, not more than four (4) years after the effective date of this Act, and then every five (5) years thereafter, for an audit to determine compliance with the Recycling Plan and the degree of progress toward the recycling policy goal then in effect. Said audits shall be conducted by an independent auditor (or auditors) with experience in source reduction and recycling. The reports of said audits shall be completed within one (1) year and issued to each municipality, the Board of Supervisors and the Authority. Said reports shall include at least the following:

1. A narrative and analytical evaluation of all recycling programs within Alameda County, whether funded through this Act or not, both Alameda County-wide and within each municipality;
2. A statistical measure of the progress toward the recycling policy goal then in effect;
3. An evaluation of the Recycling Board's activities, including, but not limited to, an accounting of the monies spent by the Recycling Board; and
4. Recommendations to the Recycling Board, the Board of Supervisors, the Authority and the municipal governing bodies for the maintenance and expansion of recycling programs, and any necessary resulting amendments to the Recycling Plan.

SCOPE OF WORK

As in previous years, the program review utilized a “forward looking” approach with actionable recommendations. In addition, the review considered StopWaste’s recent goal-setting process in order to provide a report that will be useful for the next round of long range strategic planning. Tasks included in the scope of work:

- Compile Comparative Tables. The goal for this task shifted from historical comparisons between member agencies to maximizing value data for developing member-agency specific metrics as well as agency-wide metrics. Data compiled included targeted, high value data as opposed to exhaustive profiles of each jurisdiction’s programs.
- Collect and review benchmark study data, hauler reports and CalRecycle reported data to assess diversion data and outcomes for each member agency. Develop metrics for diversion rates by jurisdictions and data on “percentage of good stuff in the garbage” (GSIG).
- Review of submitted Measure D forms (focus on 2014 and 2015 data) with a comparison of values to the Agency Benchmark Study to assess GSIG to provide a data set for member agencies to measure their progress. Review of non-Agency studies relating to material optimization issues and upstream activities, including food waste prevention and recovery as well as reuse and repair to provide insight as to what other leading agencies are working on in this arena.
- Research and review waste characterization studies from other states, regions and jurisdictions and compare to Agency programs and studies. Develop data on commonly recycled and composted materials remaining in the landfill streams and identify trends over time. Results to provide context to our local goal of “less than 10% ‘good stuff’ in the garbage by 2020.”

FINDINGS

Representatives from HF&H will present key findings of their research at the January 11 meeting. Key findings include:

- With regard to residential Good Stuff in the Garbage, Alameda County jurisdictions are leading the way on resource conservation efforts nationally. None of the other jurisdictions studied are even close to reaching the goal of less than 10% good stuff found in the garbage.
- StopWaste is on the forefront of food waste reduction and recovery programs compared to other entities studied.
- The Agency’s approach to promoting third party certification, specifically the certification incentive program for mixed C&D facilities, is a cost effective approach to assessing recovery at processing facilities.

The findings and recommendations of the Five Year Program Review will be used to inform the next Agency strategic planning process expected to begin in 2018 (for after 2020)

RECOMMENDATION

This item is for information only.

Attachment: Five Year Program Review Executive Summary



Five Year Program Review



HF&H Consultants, LLC

in conjunction with

**Kelly Runyon
Kies Strategies**

December 2017

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EXECUTIVE SUMMARY

Overview

This Five Year Review (Review) has a "forward-looking" and topical focus. The Review seeks to provide information and analysis to support StopWaste's current and future strategic planning efforts, including to measure progress towards StopWaste's "Good Stuff in Garbage" (GSIG) goal and to support strategic planning past 2020. This summary is organized as follows:

- Where are Recycling Markets Headed?
- Pending Organics Management Issues
- The Value of Third-Party Certification
- Developing Metrics for Better Measurement
- "Ultimate Disposition" of Discards: from Collection to New Products

Where are Recycling Markets Headed?

The National Sword

In late July 2017, the Chinese national government announced its "National Sword" policy, introducing a great deal of uncertainty into the recyclables export markets. In general terms, the policy seeks to ban the import of fiber (paper and paper-related materials) and plastics with more than 0.3 percent contamination. The National Sword should not come as a surprise. The policy is a logical extension of the earlier "Green Fence" policy to reduce contamination of incoming materials, coupled with the interests of a rapidly developing economy in encouraging use of its own feedstock materials. There is ongoing speculation about the possible impacts of the National Sword.

In general, note that when there are market restrictions relatively cleaner material will be accepted while more contaminated material will not, and cleaner material will receive more favorable pricing.

Our first suggestion is "don't panic." The details of how the National Sword will be implemented, and its impacts on commodity pricing are not yet known. Our second, related suggestion is to avoid modifying recycling collection programs by dropping collected materials, or by allowing disposal. Fortunately, the Bay Area has close proximity to markets, and in the short-term there is likely to be an available market for nearly any material.

The "Evolving Ton"

The "evolving ton" is a related complication for collectors and processors.

"The Evolving Ton"

The composition of recyclables is shifting rapidly and becoming lighter with societal and commodity changes such as the "Amazon effect" (cardboard!), less newsprint, thinner plastic bottles, and use of new plastic resins.

Managing Risk

Many franchise agreements from the 1990s and early 2000s included revenue-sharing mechanisms. These provisions provided for member agencies and franchisees to share the risks and benefits of uncertain market revenues. It is now common for franchisees to enjoy the benefits as well as absorb the risks, but there may be value in returning to arrangements with shared risk. Key objectives for structuring these types of provisions should include simplicity and use of published indices and other objective measures to reduce disputes. There are many approaches for structuring these provisions, consideration of which is beyond the scope of the Review.

Pending Organics Management Issues

CalRecycle is developing regulations for SB 1383, the Short-Lived Climate Pollutants Reduction Act. In many ways, the Mandatory Recycling Ordinance (MRO) anticipates the requirements of SB 1383, including required material separation, outreach, and enforcement. Two provisions of SB 1383 are among those that will directly affect member agencies. First, SB 1383 requires landfill diversion of a broad range of organics by 2022, most of which member agencies are now collecting. Among the added materials are textiles. The Review covers approaches other jurisdictions are taking to textile recovery. Second, SB 1383 will increase demand for organics processing capacity, while more stringent facility siting and operating requirements from the State Water Resources Control Board (Water Board) will make facility siting more difficult. Together, the requirements will increase the cost of processing and possibly make it higher relative to the cost of landfilling.

Urban wood is another organic material for which demand for collection and recovery will increase.

Wood waste recovered from C&D has historically been used as a fuel for biomass plants. However, at the same time as demand for collection and recovery has increased through State action, there are significant growing market barriers for management of discarded urban wood.

The Value of Third Party Certification

Third party certification is a unifying theme of the Review. Perhaps most visibly, StopWaste's promotion of third party certification for mixed C&D facilities currently provides a cost-effective means of ensuring that C&D recovery efforts meet expectations without each member agency needing to conduct its own review of facility performance. The C&D certification process has the added value of addressing change over time, as discarded materials, processing technology and markets all evolve. Among other StopWaste programs, third party certification is an important element of materials optimization and green building (LEED certification). Among areas of interest to the Agency and member agencies for which third party certification could be of value:

- Assessment of recyclables and organics processing facility performance parallel to that for C&D, including verification of facility residue rates.



- Documenting residue levels during intermediate processing, as discussed in regard to ultimate disposition of materials.
- Ensuring responsible handling of e-scrap in regard to data security and environmental and labor impacts of e-scrap recycling practices, especially overseas.

Developing Metrics for Better Measurement

Overview

StopWaste's Strategic Plan contains two goals for 2020. One goal, based upon the questionable State methodology of calculating total waste generation, is to achieve diversion of discards from landfill of "75% and Beyond." The Agency and the member agencies use CalRecycle's per-capita disposal method to track progress towards this goal. The second aspirational goal is to reduce GSIG to no more than ten percent by weight. The Agency's FY 2017-18 budget includes "interim goals" for assessing progress towards meeting the ten percent GSIG goal.

Figure ES-1: Interim Goals for Materials Management

		Organics	Packaging	Built Environment
Upstream   Downstream	Increase in materials optimization	Additional upstream goals in development during 2017/18		
	Increase in awareness	10% increase by 2018 of families likely to prevent food waste at home	N/A	N/A
	Reduction in waste generation	10% food recovery by restaurants and groceries by 2018	50% reduction in all single-use bags distributed by newly affected stores	<45% construction and demolition waste in landfill by 2018
	Increase in proper sorting	<20% organics in landfill by 2018	<5% recyclables in landfill by 2018	

The Review analyzes the use of metrics, primarily as a means of measuring progress towards "downstream" interim goals of improving sorting. The Review also provides analysis of issues related to more "upstream" issues, and especially the interim goal for food recovery.

Metrics may provide "direct" measurement when based on data collected through waste sorts or other direct observation of GSIG or related behavior, such as through surveying. "Indirect" measurement involves use of surrogate "indicators" that provide for more simple and less costly assessment of progress using readily-available data to measure factors such as changes in program participation, the volume of subscribed service, the per-capita weight of specific discards, or the weight of material collected in

relation to the available volume. The Agency's current Characterization Study will provide crucial data for creating a new GSIG baseline.¹

Data Sources

Figure ES-2 and the following text summarize the data sources analyzed for the Review.

Figure ES-2: Sources of Data for Downstream Metrics

Data Category	Data Sub-category	Source	Materials				Indirect	Direct
			Recyclables	Organics	Disposal	Other*		
Disposal Reporting		California State			✓		✓	
Discard Stream Reporting		California State	✓	✓		✓	✓	
Member Agencies	Measure D Forms	Member Agencies	✓	✓	✓		✓	
	Hauler Reporting	Member Agencies	✓	✓	✓		✓	
	Other Data	Member Agencies					✓	
Benchmark Service Audits		StopWaste			✓			✓
Waste Characterizations	Disposal Stream (GSIG)	StopWaste, Various Jurisdictions			✓			✓
	Diverted Streams	Jurisdictions, Facility Operators	✓	✓				✓

* "Other" refers to C&D, food transported for recovery, and other materials.

1. Disposal Reporting Data. CalRecycle uses jurisdiction-specific disposal data to calculate an actual annual per-capita disposal rate for comparison to a CalRecycle target rate.
2. State Discard Stream Reporting Data. Draft regulations for recent state legislation (AB 901) expands the disposal reporting system to create the "Recycling and Disposal Reporting System." Reliable data will likely not be available until later in 2018 or early in 2019, and may prove to be more useful at the state or regional level, than at a more local level.

¹ Given the wide variation of factors affecting the materials discard "system" in multiple ways, equating cause and effect is generally difficult if not impossible. Statisticians refer to the difficulty of separating "signal from noise," which requires having an adequate amount of data and applying statistical analysis to isolate the cause(s) of a given outcome. For example, to what degree was increased organics participation for September for a given member agency a function of recent outreach efforts, the end of the summer vacation season, greater organics participation rates due to higher seasonal volumes of yard trimmings and/or other factors?

3. Member Agency Collection Data. StopWaste staff have used a "Measure D Form" since 2013 to collect annual data from each member agency, with a focus on franchise collection of recyclables, organics, and garbage from residences and businesses.²
4. Benchmark Service Audit Data. From 2013 through mid-2017, StopWaste funded "waste sorts" (characterization of the types of material contained primarily in material collected for disposal) to collect and directly analyze GSIG.
5. Waste Characterization Data. The Review focuses on the use of applicable waste characterization data from other jurisdictions to measure GSIG, with the addition of data from the current Characterization Study, once completed.

Progress Towards the "75% and Beyond" Goal

As shown in Figure ES-3, based on a calculated Agency-wide diversion rate for 2015 of 73 percent, the "75% and Beyond" goal is within reach.

Figure ES-3: Member Agency Disposal Tonnages and Diversion Rates, 2012 through 2015

Member Agency	2012		2013		2014		2015	
	Disposal Tonnages	Diversion Rate	Disposal Tonnages	Diversion Rate	Disposal Tonnages	Diversion Rate	Disposal Tonnages	Diversion Rate
Alameda	36,625	76%	35,121	77%	35,880	76%	32,036	79%
Albany	5,428	84%	6,427	81%	5,989	82%	6,096	82%
Berkeley	73,917	73%	60,659	78%	68,874	75%	67,246	76%
Dublin	24,478	76%	27,919	74%	34,787	70%	34,731	71%
Emeryville	18,052	70%	17,973	70%	10,811	83%	8,419	87%
Fremont	144,771	72%	138,179	74%	158,694	71%	160,861	71%
Hayward	106,953	72%	101,757	74%	93,153	76%	106,975	73%
Livermore	57,720	77%	57,317	77%	60,456	76%	64,811	75%
Newark	31,370	73%	35,891	69%	33,081	72%	36,190	69%
Oakland	284,151	66%	281,139	67%	269,850	68%	254,262	71%
Piedmont	4,731	71%	3,304	80%	3,026	82%	3,156	81%
Pleasanton	77,170	70%	80,682	69%	74,666	72%	91,292	67%
San Leandro	103,238	62%	115,220	58%	73,145	74%	76,743	73%
Union City	36,778	77%	36,959	77%	37,208	78%	36,223	78%
Unincorporated County	71,243	72%	71,235	72%	76,340	71%	70,996	73%
Total Tons/Avg Rate (Weighted)	1,076,625	71%	1,069,782	71%	1,035,960	73%	1,050,037	73%

Significant amounts of material collection, processing, and disposal activity occur outside of the franchise agreement, and are thus not "municipally-controlled." This is especially true for C&D and commercial recyclables. Figures ES-4 and ES-5 illustrate the value of the "municipally-controlled" concept in highlighting both the importance of monitoring material collected through the franchise to ensure increased diversion over time, as well as the crucial role that material collected outside of each member

² Private sector companies provide collection of dry commercial materials in Berkeley; all other residential and commercial services are municipally-provided.

agency's franchise plays in contributing to overall diversion of discards and to achieving "75% and Beyond."

Figure ES-4: Municipally-Controlled Disposal Tonnages, 2015

Member Agency	Total Disposal Tonnages	Municipally-Controlled Disposal Tonnages	Municipally-Controlled Disposal (Percentage)
Alameda	32,036	26,341	82%
Albany	6,096	4,315	71%
Berkeley	68,221	40,136	59%
Dublin	34,731	28,435	82%
Emeryville	8,419	7,840	93%
Fremont	174,899	121,839	70%
Hayward	108,106	84,555	78%
Livermore	65,094	41,654	64%
Newark	36,190	26,253	73%
Oakland	254,262	156,410	62%
Piedmont	3,521	2,320	66%
Pleasanton	91,292	52,201	57%
San Leandro	82,466	36,402	44%
Union City	38,420	30,513	79%
Unincorporated County *	70,996	n/a	
Castro Valley Sanitary District	n/a	14,213	92%
Oro Loma Sanitary District	n/a	50,803	
Total	1,074,746	724,230	67%

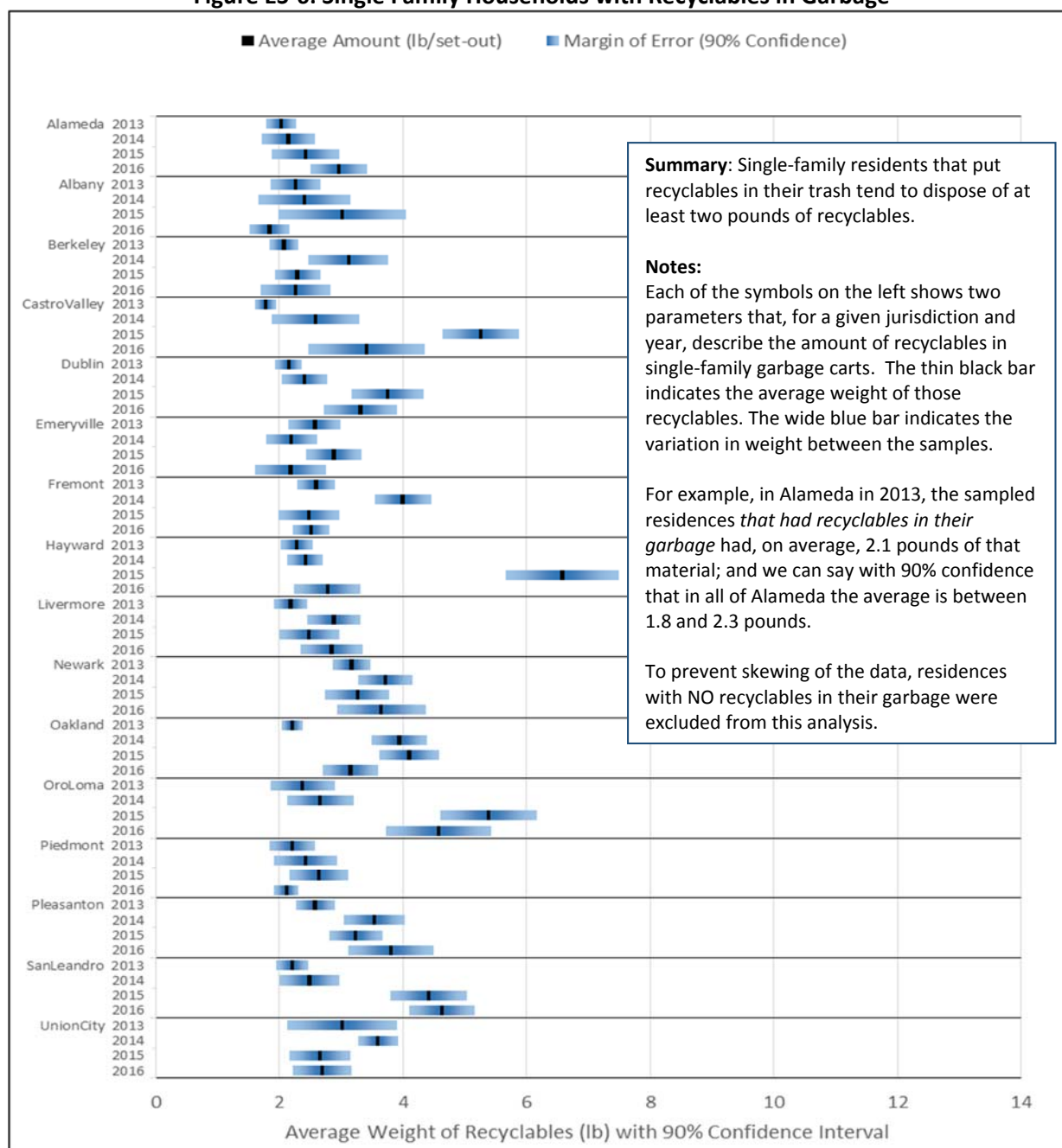
Figure ES-5: Municipally-Controlled Material Tonnages, 2015

Member Agency	Total Recyclables	Total Organics	Total Disposal	Total Generated	Diversion Rate
Alameda	11,458	11,835	26,341	49,634	47%
Albany	2,411	2,669	4,315	9,396	54%
Berkeley	15,877	22,601	40,136	78,614	49%
Dublin	19,185	9,980	28,435	57,600	51%
Emeryville	7,009	2,766	7,840	17,616	55%
Fremont	28,112	32,829	121,839	182,780	33%
Hayward	23,703	22,772	84,555	131,030	35%
Livermore	18,657	20,642	41,654	80,952	49%
Newark	5,398	5,296	26,253	36,947	29%
Oakland	38,500	53,601	156,410	248,511	37%
Piedmont	2,196	2,581	2,320	7,096	67%
Pleasanton	8,440	11,878	52,201	72,519	28%
San Leandro	8,097	9,788	36,402	54,286	33%
Union City	9,724	9,619	30,513	49,857	39%
Castro Valley Sanitary District	9,063	9,850	14,213	33,126	57%
Oro Loma Sanitary District	15,559	18,805	50,803	85,167	40%
Total	223,388	247,513	724,230	1,195,131	39%

Benchmark Service GSIG Data

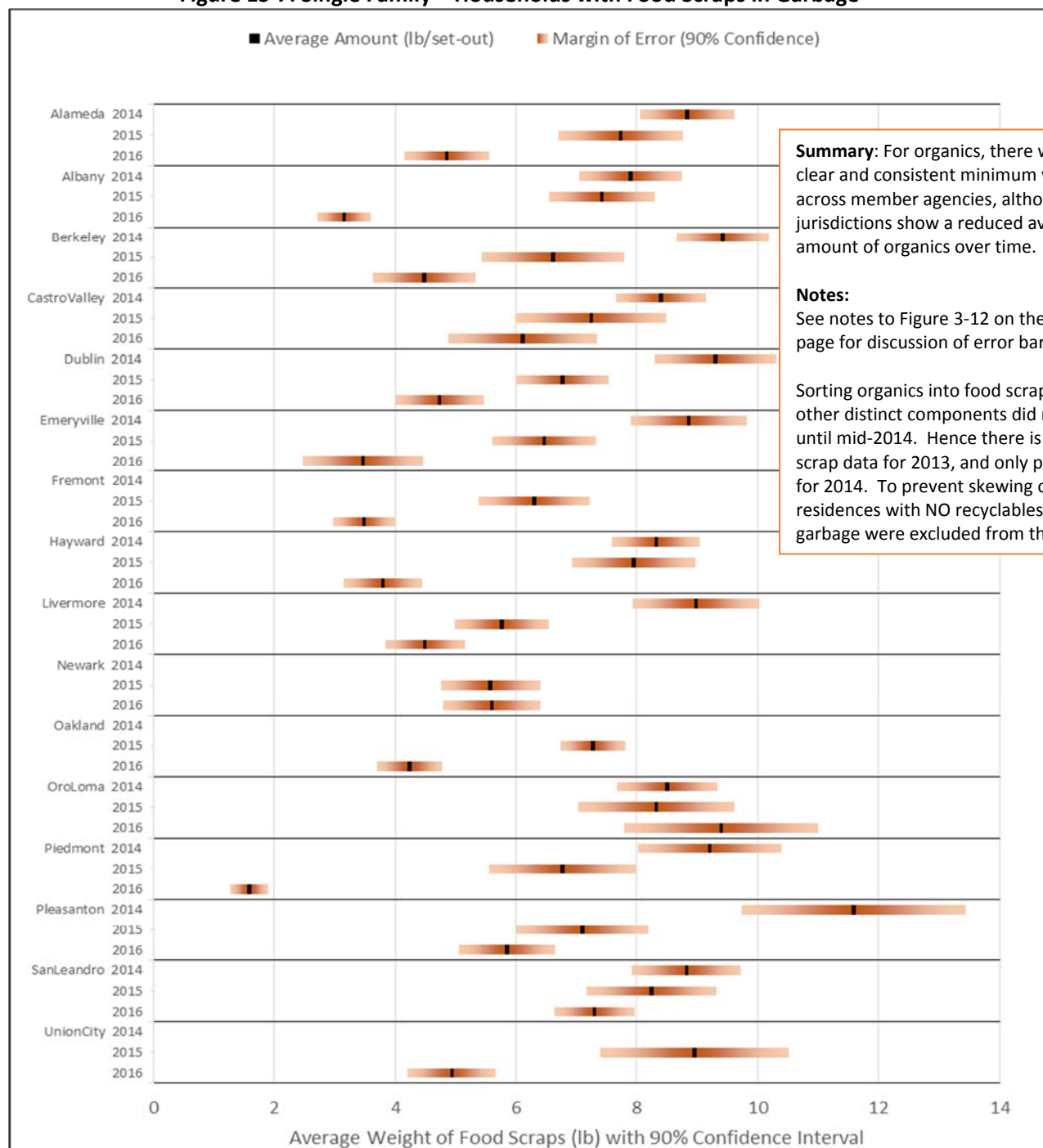
The Review Team computed the average weights, in pounds, of recyclables and food scraps (excluding food-soiled paper) found in garbage set-outs for each member agency. For recyclables, as shown in Figure ES-6, for households with GSIG, a year-by-year trend analysis did not identify distinct trends but did find a clear and consistent lower bound across the member agencies. Single-family residents that put recyclables in their trash tend to dispose of at least two pounds of recyclables. StopWaste might consider setting a goal of, for example, "one pound or less."

Figure ES-6: Single Family Households with Recyclables in Garbage



For food scraps, Figure ES-7 indicates a very clear declining trend from 2014 through 2016 in the weight of food scraps in the garbage for nearly all jurisdictions. However, unlike for recyclables, there was no clear and consistent minimum value across member agencies, which suggests that there is significant opportunity for continued improvement. The Review Team recommends setting a weight-based goal of (for example) two pounds or less, that would allow for a more concrete measurement of progress towards the interim goals of less than 20 percent food in the GSIG, and less than 10 percent GSIG overall.

Figure ES-7: Single Family – Households with Food Scraps in Garbage



General Recommendations for Downstream Metrics

Two Types of Metrics

The Review Team recommends use of two broad types of metrics:

1. Weight per-capita measures such as pounds per-resident or per-household.
2. Volume measures such as changes in subscribed service, and related density measures such as pounds per-volume of subscribed service.

Weight per-capita and volume-based metrics utilize data from the annual Measure D Forms and overall best meet the criteria for useful metrics in that they are relatively simple, necessary data is available, they require minimal calculation, and are replicable. The Review outlines logical steps for developing member agency and countywide metrics using the two approaches described above, progressing from the general to the specific. Use of multiple metrics provides different information that can lead to more nuanced understanding. Use of multiple metrics can also provide a useful cross-check, helping to identify inconsistencies in the underlying data.

Use of Weight in Measuring Progress towards Reduced GSIG

There is benefit to using weight in addition to, or rather than, percentages to set goals for reducing GSIG. As further discussed in the Review, weight is an absolute measure that does not mask changes in the composition of each of the streams, and in particular due to the "Evolving Ton." This is especially true for recyclables, for which a reduced percentage of GSIG by weight may be the result of changes in recyclables composition that reduce density, rather than reflecting changes in behavior.

Estimates of Edible Food

Based on review of data from a variety of sources, the Review Team concludes that:

1. "Edible food" is probably a little less than half of all food wastes in the single-family, multi-family or commercial streams.
2. As a first approximation, "edible food" in the Alameda County residential disposal stream (single-family and multi-family combined) is likely in the range of 8 to 12 percent of the total disposal stream.

Review of Waste Characterization Data from Other Jurisdictions

The waste characterization analysis is intended to provide a means of comparing the new GSIG data from the Characterization Study, once available, to data from previous StopWaste waste characterizations, from the Benchmark Service audits, and from other jurisdictions in the U.S and Canada with high-performing programs and comparable levels of success in achieving relatively high diversion goals. The Review Team:

- Developed summary profiles identifying key policies, programs and characteristics for six selected jurisdictions, with a focus on the factors that are most likely key to driving diversion and discard practices within each jurisdiction.
- Constructed a “Tool” in Microsoft Excel for StopWaste use containing thousands of data points from 11 studies for the six selected jurisdictions, as well as StopWaste data from the 2013-2017 Benchmark Service audits and waste characterization data from StopWaste studies from 2000 and 2008.
- Prepared a sampling of graphic comparisons, using the data contained in the Tool, to illustrate how the Tool can be used to assess possible associations between waste characterization data and key program features for specific jurisdictions, as well as identify possible larger patterns across data from multiple jurisdictions.

Figure ES-8 summarizes key policy and program features for the six jurisdictions, providing a high-level snapshot of key factors that can play the largest role, all else being equal, in driving discard behavior.³

Figure ES-8: Summary Policies and Programs for Selected Jurisdictions

Location	EPR	Diversion Goal	Mandatory Separation	Disposal Ban(s)	“Bottle Bill”	Low Volume Garbage Option(s)
California State	✓	✓		✓	✓	
King County, Washington		✓	✓	✓		✓
Lane County, Oregon	✓	✓		✓	✓	✓
San Francisco, California	✓	✓	✓		✓	✓
Vancouver, British Columbia	✓	✓			✓	
Washington State		✓		✓		

Figures ES-9 and ES-10 illustrate use of the Tool. Figure ES-9 shows the percentage of GSIG in single-family garbage, for waste characterization data from Alameda County, as well as from San Francisco, California state, King County (Seattle), Washington, and Vancouver, British Columbia.

³ Of course, many other factors also influence discard behavior, such as reduced collection rates for commercial recycling and organics relative to those for garbage. Note that the availability of low generator garbage options can result in added contamination of the recycling or organics streams. Such shifts in material can be detected only if data is simultaneously collected for all three streams.

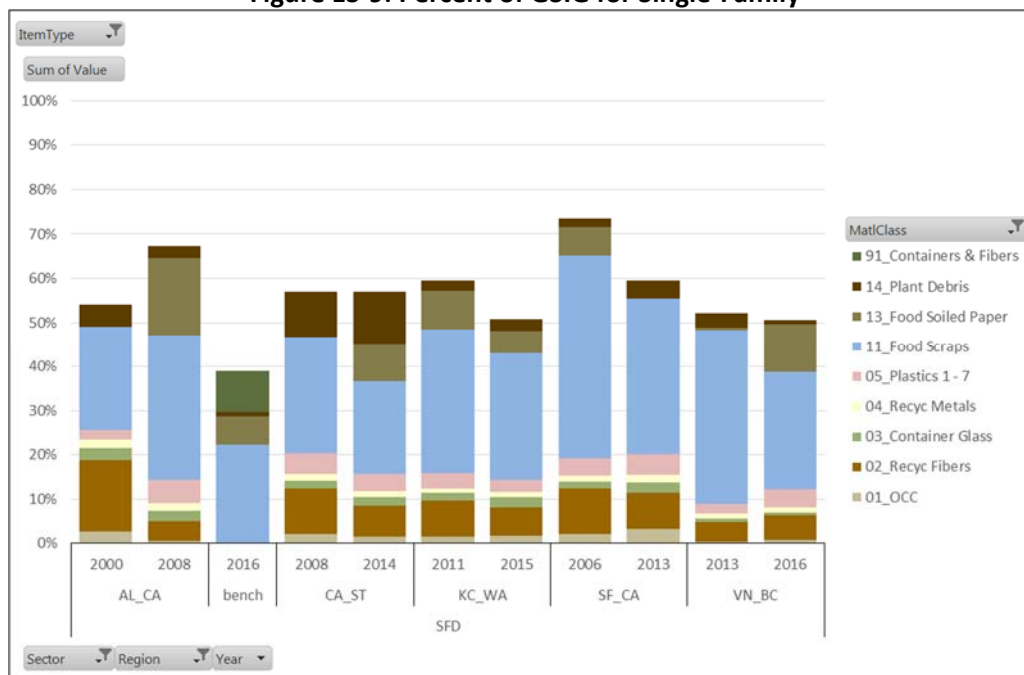
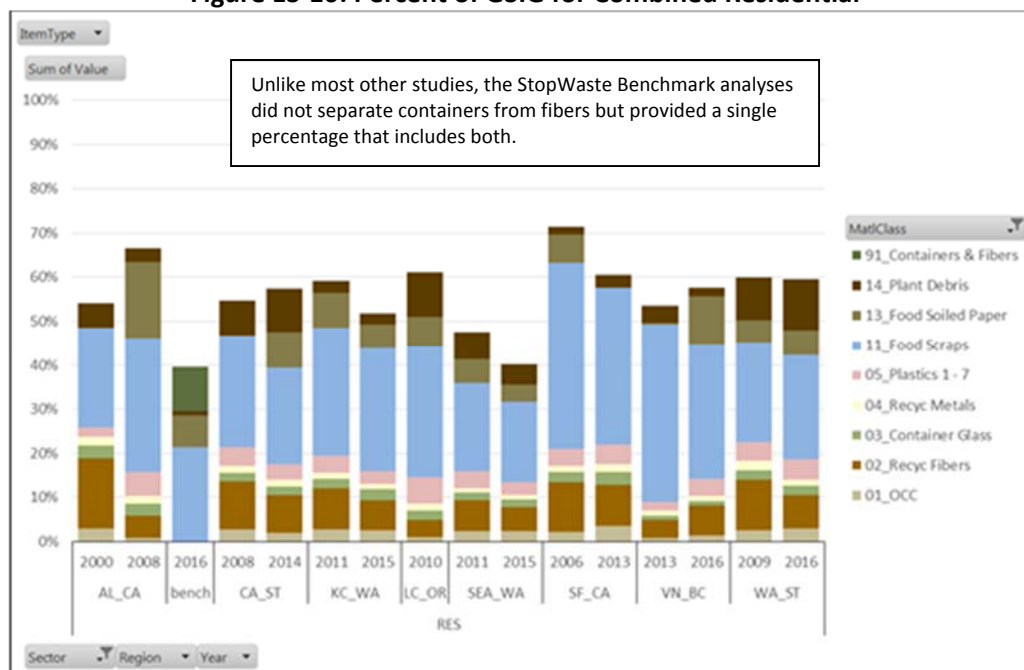
Figure ES-9: Percent of GSIG for Single-Family

Figure ES-10 shows information for all of the studies, combining single-family and multi-family as a single residential sector, total GSIG is generally in the 40% to 60% range.

With regard to residential GSIG, Alameda County is as successful as other jurisdictions in reducing GSIG. Note also that none of the jurisdictions are close to reaching a goal such as 10 percent for residential GSIG.

Figure ES-10: Percent of GSIG for Combined Residential

"Ultimate Disposition" of Discards: from Collection to New Products

Ultimate disposition can be thought of as: "What happens to collected discards (recyclables, organics or C&D) once they are delivered for initial processing?" The key related question is, "Do diversion rates reported by processors tell the full story, or is there additional unreported residue associated with additional stages of processing?" Discarded recyclables and organics are generally processed in multiple steps, often at different facilities operated by different entities. Agency and member agency value in understanding "secondary" processing is heightened by the recent issues related to the Chinese recyclables markets.

The Review discusses use of franchise agreements to require processing and marketing planning, jurisdiction-specific residue rates that reflect additional steps in processing, and certifications of end-use. The Review Team concludes that franchise agreements are not adequate tools for monitoring, reporting, and providing a useful understanding of the ultimate disposition of most materials. The Review's primary recommendation is to encourage third party certification and market self-policing for both organics and recyclables and, ideally, facility-wide residue reporting. In addition, submittal of annual processing and marketing plans should be required; member agency staff should discuss market issues with haulers on a regular basis.



DATE: January 11, 2018

TO: Programs & Administration Committee

FROM: Pat Cabrera, Administrative Services Director

BY: Justin Lehrer, Senior Program Manager

SUBJECT: Packaging Update

SUMMARY

Packaging plays an important role in product protection, but is often designed to serve this function for a very limited time before being discarded. With high visibility to consumers, packaging garners significant and sometimes negative attention when it comes to end-of-use handling and disposition, even when the package itself has fewer environmental impacts than the product it is protecting.

At the January 11 Planning & Administration Committee meeting, staff will provide an update to the committee on current Agency technical assistance and research activities relating to packaging, along with an overview and discussion of recent developments at CalRecycle, and more broadly across the packaging industry.

DISCUSSION

As a broad category of materials subject to constant innovation and change, and comprising roughly 25 percent of California's disposed waste, packaging is an important element of the waste stream for StopWaste to address. Packaging is one of three major topic areas that guide Agency policy and programs. While the mandatory recycling ordinance supports recovery of recyclable packaging materials at end-of-use (downstream), other packaging-related projects target packaging upstream, emphasizing prevention and reuse. Our work in the upstream area of packaging includes reusable transport packaging (e.g. pallets, totes, bins, pallet wrap, etc.), the reusable bag ordinance, food service ware, recyclability labeling for consumer packaging, and research and support for sustainable packaging policy.

In addition to the above project work, we actively follow developments within the broader sustainable packaging community through participation in industry groups and collaboration with other organizations. Staff will provide updates and insight on several topics of current interest in packaging, including package labeling for recyclability, ocean pollution, eCommerce packaging trends and opportunities, and more. We will also discuss CalRecycle's packaging policy development process, and how that is playing out at the State level.

RECOMMENDATION

This item is for information only.

Attachments: Four packaging-related articles



OPINION

Are the packaging wars coming to California?

By Charles White • Nov. 1, 2017

Editor's Note: This piece was written by Charles A. White, a senior advisor in the Sacramento office of Manatt, Phelps & Phillips, LLP. The opinions represented in this piece are independent of Waste Dive's views.

The state of California potentially is embarking on a mandatory comprehensive program to address packaging waste. This is in line with what some other national, regional and local governments are considering for their respective jurisdictions. The European Union, many Canadian provinces, China, India and the state of Connecticut — to name just a few — have adopted regulatory programs to manage and reduce packaging waste.

Retailers and manufacturers are also playing an important role by seeking to replace excessive packaging with more lightweight, less expensive and reusable packaging designs. Many manufacturers and retailers are working cooperatively — and voluntarily — with government and other stakeholders to minimize the impacts of packaging waste.

To build on voluntary industry efforts, the California Department of Resources Recycling and Recovery (CalRecycle) launched a "Manufacturers Challenge" in 2015. CalRecycle challenged product manufacturers and brand owners — on a collective basis, not on an individual company level — to voluntarily achieve a 50% reduction in packaging disposed in landfills in California by 2020. In CalRecycle's view, the packaging industry failed to organize and respond sufficiently to this challenge. CalRecycle currently views the voluntary efforts of the packaging industry as insufficient to reduce landfill disposal of packaging waste and to achieve California's stated recycling goals.

What's the problem?

The principal driver of CalRecycle's efforts to address packaging waste is legislation (AB 341, Chesbro) that established a statewide, mandatory commercial waste recycling program in 2011. Virtually all commercial enterprises generating more than 4 cubic yards of waste and recyclables per week will ultimately be required to recycle or use recycling services. In addition, this legislation also set a goal of achieving a statewide 75% waste diversion rate by 2020. CalRecycle is now using this stated goal as legislative direction to consider additional comprehensive mandatory regulatory programs to achieve 75% recycling. At present, CalRecycle does not have legislative authority to implement the additional comprehensive mandatory regulatory programs the organization believes may be needed to achieve this goal.

According to the report, the current system by which we produce, use and dispose of plastics has significant drawbacks: Plastic packaging material is typically used only once, resulting in lost value of \$80 billion to \$120 billion each year.

Although there is support from many environmental groups and local governments for further mandatory programs to reduce packaging waste, there is also growing concern about the nature and scope of such potential future measures. CalRecycle held a workshop on Oct. 10, 2017, in Sacramento, at which it was unable to clearly articulate an overarching need to protect the environment from packaging waste that would warrant additional comprehensive mandatory controls — a point that highlighted the complexities of implementing such a program.

From CalRecycle's perspective, AB 341 establishing the so-called goal of 75% recycling appears to be the principal driver. Further, at this workshop, CalRecycle acknowledged that the amount of

packaging waste in the overall disposal stream actually decreased from 9.5 million tons in 2008 to 8 million tons in 2014 — a decline of 17% over this six-year period. This is most likely due to increased efforts by the packaging industry to reduce the amount of packaging being used, as well as efforts by consumers, local government and recycling service providers to step up their efforts to recycle packaging waste. If these efforts are working, albeit at a modest pace, is there a need to pursue anything more?


Litter, stormwater and marine debris

Despite the efforts of manufacturers, retailers, consumers, local government and recycling service providers, excess packaging is often mismanaged by consumers — ending up as litter that degrades our environment and harms our waterways and oceans (see below). For example, a report released in 2016 by the World Economic Forum (WEF) details the extent of the plastics packaging problem worldwide. The report, "The New Plastics Economy: Rethinking the Future of Plastics," provides a vision of a global economy in which plastics never become waste and are continuously recycled. According to the report, the current system by which we produce, use and dispose of plastics has significant drawbacks: Plastic packaging material is typically used only once, resulting in lost value of \$80 billion to \$120 billion each year. Aside from the financial cost, the report asserts that remaining on the current track means that by 2050, oceans are expected to contain more plastics than fish by weight.

In a draft report expected to be finalized by early 2018, the State of California Ocean Protection Council, with the support of the California Natural Resources Agency, will likely make two priority policy recommendations for legislative action in the upcoming years — prohibiting single use products if a feasible, less damaging alternative is available and requiring the phaseout of single-use products, like convenience food and beverage packaging, from public institutions and facilities.

It is clear that the management of single-use materials (including packaging) that are easily discarded will be a subject of continuing rigorous debate in California in the upcoming months.

Also, in response to the concerns over packaging waste and other waste materials being dispersed into the environment, the California State Water Resources Control Board (SWRCB) and many of the nine Regional Water Quality Control Boards (RWQCBs) have adopted trash control policies. On April 7, 2015, the SWRCB adopted policies to limit the amount of trash discharged to the ocean waters of California (Ocean Plan) and to the state's inland surface waters, enclosed bays and estuaries (ISWEBE Plan). Together, these are collectively referred to as "the Trash Amendments."



Most local governments recognize that taking responsibility for reducing trash in waterways will be an extremely expensive undertaking, so they are looking at ways to shift some of this cost to other parties — such as the manufacturers, distributors, and retailers of trash and packaging materials that are discarded and discharged to waterways.

The objective of the Trash Amendments is to provide statewide consistency for the SWRCB's regulatory approach to protecting aquatic life and public health beneficial uses, and reducing environmental issues associated with trash in state waters, while focusing limited resources on high-trash-generating areas. Although trash is a broad, generic category of materials, packaging waste is a major part of the problem. The Trash Amendments essentially place an absolute prohibition on the discharge of trash to stormwaters of the state. The Trash Amendments also provide a framework for implementing their provisions that would be incorporated into the stormwater and waste discharge permits issued by the state and regional boards. The stormwater discharge permit categories include municipal systems, state highways, industrial sites and construction sites. Municipal permit holders must be in full compliance with the Trash Amendments within ten years of the first implementing

permit and 15 years after the effective date of the Trash Amendments.

California local governments are responding to the Trash Amendments in a variety of ways. Most local governments recognize that taking responsibility for reducing trash in waterways will be an extremely expensive undertaking, so they are looking at ways to shift some of this cost to other parties — such as the manufacturers, distributors, and retailers of trash and packaging materials that are discarded and discharged to waterways. Industry, on the other hand, is quick to point out that these discharges are the result of individuals improperly discarding these waste materials — and thus that businesses should not be held fully responsible.

Local governments are beginning to address this challenge. In one recent example, California legislation was enacted (AB 1180, Holden, 2017) that authorizes the Los Angeles County Flood Control District to levy a tax, fee, or charge to pay the expenses of carrying out projects and programs to reduce stormwater and urban runoff pollution in the district. The fee payers likely will include a mix of residents, retail stores and commercial enterprises. In fact, something like a previous, unsuccessful effort by Los Angeles County, which based a proposed fee on the amount of stormwater runoff from each parcel in the county, may emerge out of the new authority granted in AB 1180. This type of program could go a long way toward reducing the amount of trash pollution entering the waters of the state — but will it be enough?

Is packaging waste in a landfill really a problem?

Of course, there is also the concern about using landfills to manage packaging waste. The efforts of CalRecycle to consider comprehensive mandatory packaging regulatory strategies appear driven almost entirely by concerns over packaging waste disposal in landfills. CalRecycle is appropriately focusing on the landfill disposal of food waste, a significant source of landfill methane emissions.

Even if a landfill provides a safe repository for packaging waste, it makes little sense to fill up a landfill with packaging waste that has a worldwide estimated discarded value of \$80 billion to \$120 billion each year. However, given the choice of dispersing packaging waste into the environment, waterways and oceans, putting these materials in well-designed landfills would certainly seem to be a better option. Restrictions on landfill disposal of packaging waste could lead to increased disposal into the environment. But is there a better way?

Energy recovery is largely absent from California's version of the waste hierarchy. Only very limited energy recovery options are allowed for waste and waste residuals in California, due to concerns over toxic emissions resulting from the combustion of solid waste. The traditional waste hierarchy however, neglects an even lower level of waste management (or rather, mismanagement): uncontrolled dispersion into the environment. An example of this is when a waste material is discarded as litter and ultimately washed away by stormwater and discharged to the ocean. In recognition of this last, unspoken tier, land disposal and energy recovery (as a low-carbon fuel) should be seen as better alternatives.

One of California's cutting-edge environmental programs is the Low Carbon Fuel Standard (LCFS) managed by the California Air Resources Board (CARB). This program is fuel neutral, focusing entirely on the life cycle "carbon intensity" of various fuels. Studies have shown that converting solid waste (including packaging waste) to fuel can produce some of the lowest-carbon fuels. Recent work by the provincial government of British Columbia suggests that a substantially negative-carbon-intensity fuel can be produced from residual solid waste using conversion technologies.

Are there markets for California's recycled packaging waste?

Currently, California is highly dependent on other jurisdictions and countries to manufacture new products from its recycled waste materials, including packaging waste. Historically,

according to CalRecycle, most of what is collected in California's recycle bins is exported, with most going to China.

China has been in the news recently for its new import policies, which have virtually stopped all imports of packaging waste. Much of California's (and the rest of the world's) packaging waste shipments are being held up by such programs in China. California typically regulates recycled materials as being exempt from solid waste laws if they contain less than 10% contamination by weight. China's policy, however, now restricts imports of waste-derived materials that contain more than 0.3% contamination.

The challenge facing California and other jurisdictions that export recycled material is whether internal markets for the use of recycled materials can be developed. Most observers think this is possible, but it will not happen overnight — certainly not by 2020 — and will be very expensive.

What is CalRecycle up to now?

California enjoys a reputation of being a bellwether state with respect to a wide variety of programs and policies. The new CalRecycle packaging waste initiative is no different. CalRecycle is the lead California regulatory agency considering the need to develop comprehensive mandatory programs to directly regulate packaging waste.

According to CalRecycle, although (as pointed out above) the total amount of packaging waste disposed in California landfills decreased by 17% from 2008 to 2014, one-third of the 66 million tons of solid waste generated by Californians each year is packaging. Of the amount that is not recycled but is disposed of in landfills, approximately one-quarter of the 43 million tons of waste disposal in California is packaging waste.

In order to meet the statewide goal of 75% reduction of solid waste disposal by 2020, 24 million tons of solid waste will have to be reduced, recycled or composted. Assuming it would cost only an additional \$50 per ton to achieve this goal, the new

annual cost reaches over \$1 billion per year. Other estimates put this price tag much higher.

To identify priority packaging that is to be targeted by this initiative, CalRecycle is considering the following factors: Prevalence in the disposed waste stream, usage trends, current collection infrastructure, current processing infrastructure, greenhouse gas impacts of recycling, and waterway and marine debris.

Of the above factors, the only ones that can be directly linked to the protection of human health, public safety and the environment are the last two: marginal GHG impacts, if any, and waterway and marine debris.

Thus far, CalRecycle has identified several priority packaging materials for potential future regulatory action; these fall into two broad categories: fiber and plastic. One of the challenges facing CalRecycle will be determining the specific definitions used to target the potential priority packaging, including uncoated corrugated cardboard, waxed cardboard, film plastic, EPS and plastic drink pouches. All these packaging types are hard to specifically define and to differentiate from other nonpackaging applications.

The next stage in CalRecycle's process will be to identify and propose regulatory strategies that would be applied to these packaging material types. It is unlikely that CalRecycle would recommend only a single regulatory strategy, as all the materials involve different uses and characteristics.

Are there other policy models to consider?

Many observers are questioning CalRecycle's apparent focus on a limited range of models that utilize command-and-control strategies or direct market intervention mechanisms. One alternative concept would be to consider a sustainable materials management (SMM) policy — such as the one described by the USEPA, which is currently being pursued by the state of Oregon.

As described by the USEPA, SMM is a systemic approach to using and reusing materials more productively over their entire life cycle. It represents a change in how our society thinks about the use of natural resources and environmental protection. By examining how materials are used throughout their life cycle, an SMM approach seeks to:

- Use materials in the most productive way, with an emphasis on using less.
- Reduce toxic chemicals and environmental impacts throughout the material's life cycle.
- Assure we have sufficient resources to meet today's needs and those of the future.

Oregon's approach is oriented toward collaboration and developing partnerships with all stakeholders rather than sweeping command-and-control regulations. Oregon believes coordination throughout the life cycle of materials and products will support innovative solutions, through partnerships with other state agencies, businesses, local governments and nongovernmental organizations.

Where do we go from here?

CalRecycle is expected to finalize its recommendations for a packaging policy model in early 2018, at the beginning of the final year of California's current two-year legislative session. As previously noted, CalRecycle does not currently have the regulatory authority to implement many of the policy models it seems to be leaning toward. It is widely expected, however, that legislation will be introduced that authorizes CalRecycle to implement its packaging policy recommendations. The options facing the legislature are many, but the key options appear to be either implementing regulatory measures for each priority packaging type or reconsidering the need for further legislative and regulatory action. There are a few concerns that could drive that reconsideration, including the feasibility of a 75% recycling goal by 2020; the impacts of China's import policies; and whether further evaluation of the potential to produce low-carbon fuel from waste residuals is necessary.

Regardless of the eventual outcome, it is safe to say that the next few months are likely to see heated discussion of these issues. One can hope that common sense will prevail — and the "Packaging Wars" will be averted.

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

PLASTICS RECYCLING UPDATE

A Resource Recycling, Inc. publication

PETG excluded from No. 1 resin code in California (<https://resource-recycling.com/plastics/2017/10/18/petg-excluded-no-1-resin-code-california/>)

Posted on October 18, 2017

by Colin Staub (<https://resource-recycling.com/plastics/author/colinstaub/>)

California lawmakers have revised the state's definition of PET to exclude PETG, meaning products made from the glycol-modified plastic are barred from using resin code No. 1.

[Assembly Bill 906](#)



(https://leginfo.ca.gov/faces/billTextClient.xhtml?bill_id=201720180AB906) moved through both houses of California's legislature last month and was signed by Gov. Jerry Brown on Oct. 15. The bill takes effect Oct. 1, 2018, giving manufacturers about a year to comply with its requirements.

Products made with PETG have different material properties than regular PET. According to [legislative analysis](https://resource-recycling.com/resource-recycling/wp-content/uploads/2017/10/201720180AB906_Senate-Floor-Analyses-2.pdf) (https://resource-recycling.com/resource-recycling/wp-content/uploads/2017/10/201720180AB906_Senate-Floor-Analyses-2.pdf) of the bill, PETG's additional glycol makes the resulting product less brittle and removes "hazing" that sometimes occurs when manufacturing with PET.

According to bill advocates, the legislation will increase bale quality and yields by increasing sorting of the materials.

"(PETG) will be more easily identified on a visual sort," Bruce Magnani, a lobbyist for the Association of Plastic Recyclers (APR), said during a [June hearing](https://ca.digitaldemocracy.org/hearing/52890?startTime=1545&vid=7735eab4257286d9b342895954deb256) (<https://ca.digitaldemocracy.org/hearing/52890?startTime=1545&vid=7735eab4257286d9b342895954deb256>) before the Senate Standing Committee on Environmental Quality. He added PETG did not exist when the resin codes were written.

But opponents said current technology exists to separate the materials. During the June hearing, opponents said the bill's primary impact would be a "substantial revenue transfer from the product manufacturers that use PETG to the recycling program in California," due to the higher processing fee that would be placed on the products if they're labeled No. 7. In California, containers are subject to fees paid to the state by beverage manufacturers, money that's then used to subsidize the recycling industry. Reclassifying PETG from No. 1 to No. 7 means its "processing fee" increases from \$0.00035 per container up to \$0.07058 per container, according to [data from the California Department of Resources Recycling and Recovery](http://www.calrecycle.ca.gov/BEVCONTAINER/Notices/2016/ProcessFee.htm) (<http://www.calrecycle.ca.gov/BEVCONTAINER/Notices/2016/ProcessFee.htm>) (CalRecycle).

The bill could also have impacts beyond California's borders, because PETG manufacturers sell their products into numerous states and may have to choose between making separate products labeled according to California's resin codes or streamlining all products to meet California's regulations.

"It will create a dual standard for the first time," said Joe Lang, a representative of Tennessee-headquartered Eastman Chemical Co., which makes PETG. He spoke during the June hearing as well.

Material differences

Some consumers reportedly find the material creates a product that's more comfortable to hold, according to the legislative analysis. PETG is also used in some medical equipment because it can handle heavy doses of radiation, according to APR.

But as PETG has gained prominence, the recycling industry has begun to widely realize that the material acts as a contaminant during the recycling process, Magnani said.

PETG has a much lower melting point than PET, according to the analysis, which creates problems during the recycling process. AB 906 redefines PET by its melting point and material composition.

"When processed together, PETG melts and becomes sticky while PETE remains solid," according to the analysis. "This results in PETG sticking to PETE chips, forming large clumps that cannot be processed."

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The latest plastics recycling news

New ag plastics recycling facility coming to California (<https://resource-recycling.com/plastics/2017/12/06/new-ag-plastics-recycling-facility-coming-california/>)

More details have emerged about Revolution Plastics' plan to build an agricultural plastics recycling facility in the heart of California's San Joaquin Valley.

Value of recovered plastic packaging flat or down (<https://resource-recycling.com/plastics/2017/12/06/value-recovered-plastic-packaging-flat/>)

Data from the sale of recyclable plastic bottles in early December suggest the value of recovered packaging will end the year in a slightly weak position.

In My Opinion: It's time for recycled-content mandates (<https://resource-recycling.com/plastics/2017/12/06/opir-time-recycled-content-mandates/>)

Accelerating the transition to a circular economy has become a high priority for major companies and governments around the globe.

China envisions years of 'National Swords' (<https://resource-recycling.com/plastics/2017/12/06/china-envisions-years-national-swords/>)

Chinese officials have reiterated that some post-consumer plastics will be banned from import by the end of the month, and have elaborated on stringent future enforcement and regulatory plans. Even so, one exporter sees the potential for washed flake to ...

The legislation was also supported by the American Beverage Association, Californians Against Waste, Dart Container Corporation, the National Association for PET Container Resources, the Plastic Recycling Corporation of California, Talco Plastics, the Sustainable Packaging Coalition and Verdec Recycling.

Sorting solutions exist

Opponents of the bill agreed PETG is an issue when it gets mixed in with the PET stream, but they pointed to current equipment that they said can effectively separate the materials. The problem, they said, is recycling companies that have chosen not to invest in that equipment. The Eastman Chemical Co. and the Plastics Industry Association opposed the bill.

"There already is existing technology to deal with the sorting issue that the supporters of the bill just talked about," Lang said. He said companies can make the fix by adjusting the sensitivity of the near-infrared sorter at the beginning of the process. Doing so allows the equipment to differentiate between PET and PETG, Lang said.

"It's a simple change to make. Recyclers in California have made that change," he said. "Some recyclers, however, have chosen not to invest in the new technology. As a result, if you, in fact, mix PET with PETG in the stream, the author is correct in pointing out that that can cause a gooey mess, even though it's less than 2 percent of the stream."

Lang said there have been efforts to petition the standards organization ASTM International, which writes standards for resin codes, to redefine the No. 1 code to exclude PETG, efforts ASTM have rejected.

"Now, what they are doing is asking the legislatures to step in and substitute their judgment for the science-based review that occurred at ASTM," Lang said.

Joe Ackler, testifying on behalf of the Plastics Industry Association, said the bill also increases costs for manufacturers because they will have to change their machinery and molds to produce a different resin code.

Magnani said PETG would likely be labeled as No. 7 initially, but that bill advocates are open to working with Eastman and the Plastics Industry Association to create a new resin code for PETG, so it can be more easily recycled in its own stream.

To receive the latest news and analysis about plastics recycling technologies, [sign up now](https://resource-recycling.com/e-subscribe/) (<https://resource-recycling.com/e-subscribe/>) for our free monthly Plastics Recycling Update: Technology Edition e-newsletter.

More stories about PET

- Value of recovered plastic packaging flat or down (<https://resource-recycling.com/plastics/2017/12/06/value-recovered-plastic-packaging-flat/>)
- Panel OKs technologies for food-contact RPET (<https://resource-recycling.com/plastics/2017/12/01/panel-oks-technologies-food-contact-rpet/>)
- EU-supported project advances PET chemical recycling (<https://resource-recycling.com/plastics/2017/12/01/eu-supported-project-advances-pet-chemical-recycling/>)



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FEATURE

GAIA report: RDF and other WTE tech is 'a false path to zero waste'

By **Cole Rosengren** • Sept. 7, 2017

A new report from the Global Alliance for Incinerator Alternatives (GAIA) and the Tishman Environment and Design Center at The New School calls out refuse-derived fuel and other co-incineration technologies for offering "a false path to zero waste" and undermining sustainability goals.

The report cites the EPA's Non-Hazardous Secondary Materials (NHSM) rule, which expanded definitions of solid waste and created new opportunities for "non-waste fuel products," as a key factor that has allowed companies to process material with less regulatory oversight than other methods.

The four case studies include the Hefty EnergyBag program, which the report says may not be screening for plastics that create harmful emissions when burned and is sending material to a cement kiln in Omaha, NE with a record of environmental violations. The Waste Management-backed SpecFUEL project in Philadelphia is also questioned for potentially selling material to the Northampton Generating Company's coal combustion plant, which has its own record of environmental issues. The RePower South project in Virginia, which hit a serious roadblock last month, and an alternative fuel project at the Lehigh Southwest Cement Plant in California are also highlighted.


To achieve "zero waste," the report recommends staying away from any of these technologies or other traditional WTE options. Careful procurement, advocacy for more recyclable packaging design and a decreased reliance on single-use products are

listed as important actions for cities or municipalities looking to improve their recycling efforts.

"We really believe there are businesses and cities that are trying to do the right thing and we want to make sure they have all the info they need to make an informed decision," Monica Wilson, research and policy coordinator for GAIA, told Waste Dive.

GAIA's stance on WTE combustion facilities around the world is well-known. At a time when political and financial factors make the construction of such facilities difficult in the U.S., more companies are turning toward alternative options. Various refuse-derived fuel plants or similar set-ups have existed in the U.S. for years and are now gaining new attention as technology improves.

According to a presentation from the consulting firm Gershman, Brickner & Bratton earlier this year, such projects have a "moderate to low" financial risk though commercial applications are still limited. The ones that are in development, often involving some method to capture certain categories of recyclables, are being watched closely by the industry as a sign of future potential.



"We really believe there are businesses and cities that are trying to do the right thing and we want to make sure they have all the info they need to make an informed decision."

Monica Wilson

Research and Policy Coordinator, GAIA

The GAIA report makes the case that the EPA's 2013 NHSM rule change has facilitated the expansion of these technologies by allowing companies to burn waste with fewer regulations than in traditional WTE combustion facilities once it has been converted to a fuel product such as pellets. GAIA describes this as a "loophole" that lets companies process material with less

oversight and potentially hazardous environmental consequences.

A spokesperson for the EPA declined to comment on the report prior to reviewing it. They referred to a fact sheet mentioning that the rule change was designed to address stakeholder concerns by increasing flexibility, while maintaining public health protections. It remains unclear whether the waste industry played a role in advocating for those changes at the time, or if the conversation was driven more by other sectors pursuing related changes to biomass regulations.

Waste companies have shown interest in some of these alternative options before. During a May interview with Waste Dive, Waste Management CEO Jim Fish mentioned SpecFUEL as one of the more "intriguing technologies" the company was exploring. GAIA told Waste Dive that they've heard mixed reports about how active this project still was and the level of Waste Management's involvement. Asked about the project's status, and what oversight is in place to screen facilities receiving the fuel, the company provided the following response.

"WM's SpecFUEL facility in Philadelphia, PA continues to operate and make fuel for customers," wrote Toni Beck, vice president of corporate communications and community relations, via email.

"WM has partnered with Continuous Energy to facilitate the operation and optimization of the plant. WM is optimistic of SpecFUEL's prospects and we continue to maintain a pipeline of customers who are looking to use our product as a supplemental replacement to their existing fuels."

As for the EnergyBag program, the GAIA report portrays this as problematic not just because of emissions concerns about the Sugar Creek Cement facility in Omaha, but also because it encourages the use of non-recyclable plastics. Dow Chemical, in partnership with Keep America Beautiful, is currently offering grants for more municipalities to join the program. During a July interview with Jeff Wooster, the global sustainability director for Dow Packaging and Specialty Plastics, the program was described as a complement to existing curbside recycling options.

GAIA views this project as a way to avoid packaging redesign and slow efforts to move away from single-use or disposable products. Wilson described it as one of multiple industry "escape valves on the pressure around redesign" that doesn't address circular economy goals.

When asked about GAIA's claims of environmental problems with the EnergyBag program, Dow provided an extended response from Wooster. He wrote that using plastics in cement kilns "does not pose an increased risk to human health and the environment," noting that all operations are in compliance with Clean Air Act and other relevant regulations. Partner facilities, such as Sugar Creek, "undergo a strict vetting process" based on multiple factors including "environmental compliance and permits" and "analysis of the environmental impacts."

As for the argument that this program isn't sustainable, Wooster said that advancing the circular economy for plastics was an "important focus of our 2025 sustainability goals." Programs such as EnergyBag, he wrote, "could achieve positive long-term environmental and economic advantages and a solution for plastics that currently do not have strong recycling markets, including fewer tons of landfill trash, more energy resources and less dependence on fossil fuel energy."

Wilson and others focused on packaging changes still see this as a linear model because it doesn't result in material coming back into the system. They're concerned that such programs designed as interim solutions will allow companies to limit their responsibility for eventually making all packaging more recyclable. Full transparency about what comprises the remainder of the waste stream after recycling has been maximized and how that material can be addressed is viewed as a critical part of achieving "zero waste."

In many ways this debate goes to the heart of the "zero waste" challenge faced by businesses and municipalities. As currently designed, not all products in the marketplace have clear pathways toward recycling, composting, digestion or other diversion methods. This reality means that some form of disposal option is still needed, usually landfills or waste-to-energy

combustion. Because of this, cities have taken different stances on how they will achieve their own "zero waste" goals and whether energy recovery or other alternative methods fit into those definitions.

Alternative technologies offer an appealing way to sidestep some of the usual criticism around landfills and WTE combustion on the path toward hitting "zero waste" targets. Though if this report is any indication, environmental groups won't be subscribing to that logic.

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The Truth About Meal-Kit Freezer Packs

They're big. They're filled with goo. And they're rapidly accumulating in a landfill near you.

KIERA BUTLER JUN. 4, 2017 10:00 AM



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People love to complain about the wastefulness of meal-kit delivery companies like Blue Apron and Hello Fresh. The baggies that hold a single scallion! The thousands of miles of shipping! The endless cardboard boxes! Those problems

Apron has a take-back program, the company won't say whether it's actually reusing any of the freezer packs it's taking back—or only storing them in a warehouse.

about it. That's surprising, because it's actually the biggest (or heaviest, at least) thing in every meal-kit box: the freezer packs that keep the perishables fresh while they're being shipped. Blue Apron now sends out 8 million meals a month. If you figure that each box contains about three meals and two six-pound ice packs, that's a staggering 192,000 tons of freezer-pack waste every year from Blue Apron alone. To put that in perspective, that's the weight of nearly 100,000 cars or 2 million adult men. When I

shared those numbers with Jack Macy, a senior coordinator for the San Francisco Department of the Environment's Commercial Zero Waste program, he could scarcely believe it. "That is an incredible waste," he said. The only reason he suspects he hasn't heard about it yet from the city's trash haulers is that the freezer packs end up hidden in garbage bags.

Given that many meal-kit companies claim to want to help the planet (by helping customers reduce food waste and buying products from environmentally responsible suppliers, for example), you'd think they would have come up with a plan for getting rid of this ever-growing glacier of freezer packs. Au contraire. Many blithely suggest that customers store old gel packs in their freezers for future use. Unless you happen to have your own meat locker, that's wildly impractical. I tried it, and in less than a month the packs—which are roughly the size of a photo album—had crowded practically everything else out of my freezer. Two personal organizers that I talked to reported that several clients had asked for a consult on what to do with all their accumulated freezer packs.

As Nathanael Johnson at *Grist* points out, Blue Apron has also suggested that customers donate used freezer packs to the Boy Scouts or other organizations. I asked my local Boy Scouts council whether they wanted my old meal-kit freezer packs. "What would we do with all those ice packs?" wondered the puzzled council executive. (Which is saying a lot for an organization whose motto is "be prepared.")

The meal-kit companies' online guides to recycling packaging are not especially helpful. (Blue Apron's is visible only to its customers.) Most of them instruct customers to thaw the freezer packs, cut open the plastic exterior, which is recyclable in some places, and then dump the thawed goo into the garbage. (Hello Fresh suggests flushing the goo down the toilet, which, experts told me, is a terrible idea because it can cause major clogs in your plumbing.) The problem with this advice is that it does not belong in a recycling guide—throwing 12 pounds of mystery goo into the garbage or toilet is not recycling.

To its credit, Blue Apron is the only major meal-kit service to offer a take-back program: Enterprising customers can mail freezer packs back to the company free of charge. But Blue Apron spokeswoman Allie Evarts refused to tell me how many of its customers actually do this. When I asked what the company does with all those used freezer packs, Evarts only told me, "We retain them for future use." So does that mean Blue Apron is actually reusing the packs in its meal kits, or is there an ever-growing mountain of them languishing in a big warehouse somewhere? Evarts wouldn't say.

Now back to that mystery goo, which, in case you're curious, is whitish clear, with the consistency of applesauce. Its active ingredient is a substance called sodium polyacrylate, a powder that can absorb 300 times its weight in water. It's used in all kinds of products, from detergent to fertilizer to surgical sponges. One of its most common uses is in disposable diapers—it's what soaks up the pee and keeps babies' butts dry. When saturated with water and frozen, sodium polyacrylate thaws much more slowly than water—meaning it can stay cold for days at a time.

Meal-kit companies assure their customers that the freezer-pack goo is nontoxic. That's true. But while sodium polyacrylate poses little to no danger to meal-kit customers, it's a different story for the people who manufacture the substance. (Meal-kit companies

*stuff inside freezer packs is
 'e from the same stuff as fossil
 , and it doesn't biodegrade.*

typically contract with freezer-pack manufacturers rather than making their own.) In its powdered state, it can get into workers' lungs, where it can cause serious problems. The Centers for Disease Control and Prevention noted in 2011 that workers in a sodium polyacrylate plant in India developed severe lung disease

after inhaling the powder. Animal studies have shown that exposure to high concentrations of sodium polyacrylate can harm the lungs. Because of these known risks, some European countries have set limits on workers' exposure to sodium polyacrylate. Here in the United States, some industry groups and manufacturers recommend such limits as well as safety precautions for workers like ventilation, respirators, and thick gloves. But on the federal level, neither the Occupational Safety and Health Administration nor the National Institute for Occupational Safety and Health have any rules at all. (The companies that supply freezer packs to Blue Apron and Hello Fresh did not return repeated requests for information on their manufacturing processes.)

Beyond the factory, sodium polyacrylate can also do a number on the environment. In part, that's because it's made from the same stuff as fossil fuels—meaning that making it produces significant greenhouse gas emissions, a team of Swedish researchers found in 2015 (PDF). It also doesn't biodegrade, so those mountains of freezer packs sitting in the garbage aren't going anywhere anytime soon.

So to review: Freezer packs create an epic mountain of garbage, and their goo is not as environmentally benign as meal-kit companies would have you believe. So what's to be done? One place to start might be a greener freezer pack. That same team of Swedish researchers also developed a sodium polyacrylate alternative using biodegradable plant materials instead of fossil fuels. A simpler idea: Companies could operate like milkmen used to, dropping off the new stuff and picking up the old packaging—including freezer packs—for reuse in one fell swoop.

A little creative thinking might go a long way—yet none of the companies that I talked to said they had any specific plans to change the freezer-pack system (though Hello Fresh did say it planned to reduce its freezer pack size from six pounds to five pounds). And when you think about it, why should they fix the problem? Heidi Sanborn, head of the recycling advocacy group California Product Stewardship Council, points out that the current arrangement suits the meal-kit providers just fine. "It's taxpayers that are paying for these old freezer packs to sit in the landfill forever," she says. "Companies are getting a total freebie."

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Kiera Butler is a senior editor at *Mother Jones*. For more of her stories, [click here](#).

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