Humboldt County
Solid Waste Local Task Force

Cities of:
Arcata
Blue Lake
Eureka
Ferndale
Fortuna
Rio Dell
Trinidad

County of Humboldt

Humboldt Waste Management Authority

The Humboldt County Local Task Force serves in an advisory capacity to individual agencies and the HWMA towards the implementation of the integrated management of solid wastes and recyclables.

The Local Task Force is also responsible for assisting in the coordination, review and implementation the county and cities 5-Year CIWMP Report.

Agenda
Thursday, July 11, 2019 (9am-10am)
Room 207 City Hall (531 K St.)

***Copies Available**: Copies of the agenda materials are available electronically upon request by emailing mslattery@ci.eureka.ca.gov.*

1. Call to order

2. Introductions/Roll Call

3. October 15, 2018 Minutes (attached) – *Approval*

4. Waste Characterization Proposal (attached)

5. Jurisdiction Representative Reports- *Review and discuss*

6. Compliance Issues (CRV, Plastic Bags & Straws, Contamination etc.)

7. **Consolidated 2017 Diversion Reports and Pounds Per Person Per Day (attached)-** *Review and discuss*

8. Zero Waste Strategies

9. Regional Recycling

a. Organics Diversion Efforts Recommendations (attached)

9. HWMA Report

10. Oral and Written Communications
This time is provided for people to address the Task Force or to submit written communications concerning matters not on this agenda. Task Force Members may respond to statements, but any request that requires action will be referred to appropriate agency staff for review. Reasonable time limits may be imposed on both the total amount of time allocated for this item, and on the time permitted to each individual speaker. Such time allotment or portion thereof shall not be transferred to other speakers.

11. Adjournment

October 15, 2018 Minutes

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Meeting Minutes
October 15, 2018
Adorni Conference Room
1011 Waterfront Drives

Local Task Force Representatives:

Arcata	Julie Neander
Blue Lake	Nathan Sailor
Eureka	Miles Slattery
Ferndale	*Not Present*
Fortuna	Kevin Carter
Humboldt Co.	Tom Matteson
Trinidad	*Not Present*
Rio Dell	Kyle Knopp
HWMA	Jill Duffy

Members of the Public - Cooperation Humboldt and County of Humboldt Environmental Health staff were present.
Meeting was called to order by Miles Slattery at 1:05pm, with introductions by all attendees.

Oral and Written Communications – None

1. Call to order

2. Introductions/Roll Call

3. Agenda item: 7/16/18 Minutes Approval
Summary – No Comments
Motion/Second – Kyle/Julie
Public Comment - NA
Vote – Passed Unanimously

4. Agenda item: 5-Year CIWMP - Review and Approval
Summary – Members noticed that Section 6 of the CIWMP was not completed. There was also discussion about updating the contact information on the CIWMP as Tyler Egerer, HWMA, has now taken over the duties of the CIWMP. It was decided not to change the contact information as Erik Keller, HWMA, was overseeing the CIWMP for the timeframe the document covered. Clarifications to Humboldt County LEA staff were made by Jill, HWMA, about the timeframe the CIWMP covers. Also clarification was made about Section 4.2 of the document to LEA staff. Final Submitted CIWMP

attached to these minutes. Motion was made to approve the CIWMP with the modification of checking the first box under Section 6.
Motion/Second – Tom/Julie
Public Comment - NA
Vote – Passed Unanimously

5. AB 1826 Discussion
Summary – City of Eureka provided a list of commercial properties with 4yds of weekly solid waste pick up, current local options for organic waste diversion and a draft press release notifying businesses of 1826 requirements. Arcata has a list of customers, has purchased two Earth Tubs to process organics from their facility rentals and is working with CSA's on a take back program for their members. Rio Dell has sent out flyers notifying businesses of the 1826 requirements. County is at least a year out in identifying commercial customers as a lot of their region does not have curbside service.

HWMA is going to research the possibility of a bulk purchase of Earth Machines for all SWLTF members so they can be offered at reduced rates for community members. They will also research the possibility of storing them at their facility.

There was discussion about a regional facility and the feasibility of one. Members recognized the need but were concerned about the economic feasibility, permitting and effect on rates. There was also discussion of States' responsibility to enforce 1826 mandate on commercial businesses. These discussion lead into AB 876 discussion.

Public Comment - NA

6. AB 876 Discussion
Summary – Discussion about utilizing 2011-12 Waste Characterization Study as a baseline to determine the regions 15 year volume of organic waste. We would need to incorporate anything new in the region that has occurred since 2012, as well as numbers for Fortuna parts of County, etc. The Bill also requires that the region determine an estimate of the additional organic waste recycling facility capacity in cubic yards that will be needed to process that amount of waste, and areas identified by the regional agency as locations for new or expanded organic waste recycling facilities capable of safely meeting that additional need. Discussion let to the establishment of a sub-committee of the SWLTF to research these items. A motion was made to establish a sub-committee that would meet outside of the SWLTF consisting of representatives from Arcata, Eureka, Fortuna, Humboldt County and HWMA.
Motion/Second – Miles/Julie
Public Comment – NA
Vote – Passed Unanimously

7. Oral and Written Communications – None

8. Representative Reports – None

9. Adjournment

Waste Characterization Proposal

Proposed Scope of Services

Statement of Understanding

To obtain data about the composition of disposed solid waste, the Humboldt Waste Management Authority (HWMA) wants to characterize the disposed waste streams from five Humboldt County cities, and the unincorporated areas of the county (collectively, the Members). The findings from this study will be used to assess current program effectiveness, provide a baseline for planning, and target materials for future diversion programs. The study will need to be comparable to the 2010 study.

With these goals in mind, the study as envisioned will provide:

- ✓ Current composition and quantity data.
- ✓ A comparison to the 2010 composition data.
- ✓ Additional detail on disposed food waste to help plan for meeting the goals set in SB1383.

Our report will document the quantities and composition of material coming from HWMA's member agencies and specific generating sectors including residences, commercial businesses, self-haulers (from HWMA's member agencies), and construction and demolition activities.

Our approach is designed to:

- ✓ Produce an accurate and representative picture of each sector of the waste stream from HWMA's six member agencies.
- ✓ Efficiently meet the study's objectives while minimizing the cost for the Authority.

We detail our proposed approach in the following section.

Overview of Approach

Our approach includes 186 hand-sorted samples from HWMA member agencies, allocated approximately equally between the two seasons and among the six Members.

In addition to the 186 hand-sorted samples, our approach includes the visual sorting of 78 samples of C&D waste generated from construction and demolition projects throughout the county. The number of samples allocated to the Members and to each of the specified sectors is summarized in Table 1.

**Note: For the targeted C&D waste stream, visual characterization of entire loads produce more accurate findings than hand-sorting 200–250 lb. samples. The advantages of this approach are detailed in the methodology section below.*

Table 1. Proposed Sample Allocations

Jurisdiction	Sector	Sample Goals		
		Winter	Summer	Total
Arcata	Commercial	13	12	25
Arcata	Residential	5	5	10
Arcata	Self-haul	6	6	12
Blue Lake City	Commercial	3	3	6
Blue Lake City	Residential	2	1	3
Blue Lake City	Self-haul	3	3	6
Eureka	Commercial	13	12	25
Eureka	Residential	5	5	10
Eureka	Self-haul	6	6	12
Ferndale	Commercial	3	3	6
Ferndale	Residential	2	1	3
Ferndale	Self-haul	3	3	6
Rio Dell	Commercial	3	3	6
Rio Dell	Residential	2	1	3
Rio Dell	Self-haul	3	3	6
Unincorporated County	Commercial	13	12	25
Unincorporated County	Residential	5	5	10
Unincorporated County	Self-haul	6	6	12
All HWMA Jurisdictions	C&D Debris	30	48	78
Total		**126**	**138**	**264**

Our proposed approach will provide a cost-effective analysis of the quantities and types of currently disposed materials, and they will serve to inform solid waste planning, identify recycling and other diversion opportunities, and establish a foundation for measuring current and future success.

Proposed Methodology

Accurate characterization of solid waste is a complex and demanding undertaking requiring precise coordination and planning among team members and rigorous adherence to standards of quality. This section describes how our team will cost-effectively achieve those standards and produce high-quality waste characterization estimates for assessing progress, targeting additional diversion opportunities, and developing new solid waste management strategies.

Cascadia's approach to waste characterization research relies on three key principles to ensure that data are statistically valid.

- ✓ **Careful planning and coordination**. We ensure that sampling operations are efficient and that the

Data Quality and Comparability

The Cascadia field crew is a full time, professional, and experienced group of individuals who are well versed in all aspects of fieldwork. As the only full time field crew in the State they achieve an unparalleled level of productivity and accuracy. Every samples is sorted the same way, every day. Many members of the field crew as well our proposed Senior Project Advisor were also involved in the 2010 waste characterization study. The team consistency between the two studies ensures a smooth roll-out of the study and improves the comparability between the two studies.

required data are collected with minimal disruption to normal operations at disposal facilities. Our team is ready to work with HWMA, Hawthorne Street Transfer Station staff, the haulers, and other facilities to develop a thorough, efficient, and cost-effective data collection plan.

- ✓ **Selection of waste for sampling that is representative**. Representativeness is achieved by selecting vehicle loads for sampling in a way that is statistically representative of the entire "population" of waste being studied. We achieve statistical representativeness by coordinating carefully with Agency representatives, disposal facilities, and waste haulers to prepare a sampling plan that applies systematic or random selection processes.
- ✓ **Consistent, accurate, and efficient sorting and characterization methods**. The knowledge and experience of the data collection staff is crucial for reliable results and overall efficiency. Our full-time, professional waste characterization crew is ready to hit the ground running to obtain characterization data quickly and cost efficiently.

The following sections describe in detail Cascadia's proposed methodology for accomplishing the four essential tasks of a successful waste characterization study:

Task 1. Develop Plan
Task 2. Sample Disposed Waste
Task 3. Conduct Analysis
Task 4. Prepare Draft and Final Reports

Task 1: Develop Plan

Cascadia has a long and successful record of conducting waste characterization studies. This experience enables our team to develop appropriate and efficient approaches to data collection challenges, avoiding the pitfalls that less-experienced firms often encounter. Our approach to the planning process is detailed below.

Step 1: Organize Kick-off Meeting and Finalize Scope

Our past success implementing complex waste characterization studies has relied on early, up-front coordination with the client, haulers, and solid waste facility personnel. Therefore, a project kick-off meeting is vital to ensure that all expectations are met for the study, all required data are collected, and all contingencies are addressed.

At the kick-off meeting we will address:

- ✓ Any questions about the study objectives and proposed data collection methods.
- ✓ The list and definitions of materials to be considered in the study.
- ✓ Our proposed schedule for the data collection periods.
- ✓ The procedures for load and vehicle selection.

- ✓ Identification of other contacts such as haulers who can assist with the overall design and coordination of the study.
- ✓ The availability of tonnage information for the member agencies.

Step 2: Coordinate Among Facilities, Haulers, and Agency Staff

In conjunction with the kick-off meeting, the project team will work with HWMA and Hawthorne Street Transfer Station staff to collect information necessary to develop the sampling plan. This will include:

- ✓ Information on collection routing and schedules.
- ✓ Numbers of loads from each Member expected to arrive at the transfer station on each day of the week, by sector.
- ✓ Information about available space for load tipping, sample capture, and sorting of samples.

Following the kick-off meeting, the project team will also visit the Hawthorne Street Transfer Station, Humboldt Sanitation's transfer station in McKinleyville, and Recology's transfer station in Fortuna to finalize all sampling arrangements. During this visit we will accomplish the following:

- ✓ Introduce the project to participating facility personnel.
- ✓ Clarify information about facility operations, traffic patterns, and logistics.
- ✓ Finalize arrangements for setting up the work area, taking samples, queuing samples, discarding sorted samples, and other in-process activities.
- ✓ Confirm procedures requiring coordination between facility personnel and the project team.
- ✓ Review facility-specific health and safety procedures and emergency contact numbers.
- ✓ Answer any questions and address any concerns of the facility managers.

In addition, we will meet with Member staff and their respective haulers to outline our approach and objectives, obtain needed routing data to construct a sampling plan and schedule, and secure their cooperation in carrying out the study.

Step 3: Design Methodology and Develop Data Collection Plan

Cascadia will develop a detailed methodology guide that specifies the method for selecting loads and samples, the waste characterization process, and sampling procedures. A typical outline for a methodology and data collection plan appears below.

Waste Characterization Plan and Methodology

1. Objective and Overview
2. Definition of Universe
    - 2.1 Geographic Areas
    - 2.2 Sectors (e.g., residential, commercial, self-haul, C&D)
    - 2.3 Other Strata (e.g., commercial generator type, vehicle type, C&D activity type, jurisdiction of origin)
3. Numbers and Allocation of Samples
4. Sampling Calendar
5. Site Logistics and Hauler Coordination
6. Obtaining and Sorting Waste Samples
    - 6.1 Load Selection
    - 6.2 Sample Selection
    - 6.3 Sample Sorting and Data Recording
7. Method for Obtaining Tonnage Data
8. Description of Calculations and Statistical Procedures
9. Material Definitions

Step 4: Schedule Sampling

Cascadia will design a sampling schedule for each season based on regular collection schedules for each of the partners. Sampling dates will be scheduled in a way that represents each season equally and avoids sampling on or near major holidays. In addition, the schedule will be designed to ensure an even distribution of samples across days of the week. This is important, because certain neighborhoods or certain types of businesses may be more likely to have their waste collected on certain days of the week. The sampling schedule will be presented to the partners for approval and will be sent to haulers and Hawthorne Street personnel as a reminder prior to the first sampling day of each season. The 2010 study completed field work in July and February, a similar schedule is preferable for maintaining comparability between studies. An example schedule for one season is shown in Table 2

Table 2. Example Field Calendar

		Mon	Tue	Wed	Thu	Fri	Mon	Tue
Hawthorne St. Transfer Station	Arcata	X	X		X	X		
	Blue Lake	X	X		X	x		
	Eureka	X	X		X	X		
	Unincorporated County	X	X		X	X		
McKinleyville Transfer Station	Unincorporated County			X				
Fortuna Transfer Station	Ferndale						X	X
	Rio Dell						X	X
	Unincorporated County						X	X

Step 5: Develop Data Collection Forms

Following the completion of the vehicle selection plan and schedule, Cascadia will develop data collection forms specifically for this study.

- ✓ *Vehicle Selection Forms* will be created for each day of sampling activity. The forms will list the sample quotas specific to each day, by agency and by type of vehicle entering the transfer station.
- ✓ *Material Weight Tally Sheets* will be used to record the net weights for each material.
- ✓ *Sample Placards* will be created to flag vehicles selected for sampling. The *Sample Placards* are brightly colored paper signs with the sample number pre-printed on the front. They will be placed on the windshields of every vehicle chosen for sampling, so that the vehicles can be easily seen and intercepted by the sampling crew manager.

Task 2: Sample Disposed Waste

A well-conceived plan does not necessarily guarantee high quality results. Cascadia relies on proven protocols and an expert, professional crew to ensure meticulous field work and consistent, reliable results. Our approach to conducting the highest quality field work is described below.

Step 1: Select loads for sampling

To select loads, Cascadia will develop the sampling schedule (as described above as part of Task 1) and calculate a vehicle selection frequency. The frequencies are determined by dividing the total expected number of loads for each load type arriving at the facility on that day by the number of vehicles needed on that day. The resulting number determines whether every third vehicle, every sixth vehicle, or every twentieth vehicle is selected. This strategy is referred to as “systematic sampling.” For each sampling day, the Cascadia surveyor will have a day specific *Vehicle Selection Form* listing the information needed for selecting loads.

When an eligible vehicle arrives at the scale house and is selected for sampling, the surveyor will place a brightly colored *Sample Placard* on the windshield of the vehicle and direct the vehicle to the sorting area. The placard alerts the waste characterization crew manager that the vehicle has been designated for participation in the study.

Redway Loads

We will work with the hauler to pre-select loads that normally tip at Redway and have those redirected to Fortuna for sampling.

Step 2: Select samples

Our sampling approach involves characterizing 200–250 pound samples from the selected loads. In this approach, a randomly chosen portion is extracted from each selected load and placed on a tarp for sorting and characterization. When a limited number of loads are delivered to the transfer station (e.g., residential loads from one of the less populous Members), multiple samples may be extracted from a single load.

This approach is the standard used throughout the State of California and in most other states as well. It was developed and documented in CalRecycle's *Draft Regulations Governing Disposal Characterization Studies*.

Step 3: Hand Sort Residential, Commercial and Self-haul Waste

Our process for hand-sorting and characterizing waste includes the following actions:

- A portion of the load is placed on a tarp, and photographs are taken using a digital camera. The *Sample Placard* that identifies each sample is positioned so it is visible in each photograph.
- The waste is then sorted into the material categories, and the sorting crew uses plastic laundry baskets to contain the separated materials. The individual members of the sorting crew typically specialize in groups of materials, such as papers or plastics. The crew manager monitors the homogeneity of material in the baskets as they accumulate, rejecting any materials which are improperly classified.
- The crew manager then verifies the purity of each material as it is weighed in its basket, using a pre-calibrated scale, and records each material weight on the *Material Weight Tally Sheet*.

Step 4: Visually Characterize C&D Loads

We recommend using visual characterization methods to characterize entire loads of C&D material. This approach is preferable to hand-sorting for the following reasons:

- C&D loads are often "chunky" – in other words, they often consist of large pieces of the same material or large amounts of the same material concentrated in one area of the load. Hand sorting of 200-pound samples does not capture the variability of the composition even within

individual loads. Visual characterization of the entire load accounts for all the materials that are present in significant amounts.

- The composition variability from one load to another in the C&D waste stream is very high. Therefore, in order to obtain high-quality data, it is necessary to characterize relatively more samples. Our cost-effective visual characterization method allows us to characterize far more loads than could be done through hand sorting.

Our visual characterization method was developed in conjunction with CalRecycle, and it has been used in numerous studies for the State of California and cities and counties within California. The visual characterization method follows the seven steps described below.

1. **Collect information about the load.** At the sampling area, our crewmember records key information, including the net weight and jurisdiction of origin for each self-hauled load.
2. **Measure load volume.** The crewmember uses a tape measure to obtain the length, width, and height of the load while it is still in the vehicle and records it on the data sheet.
3. **Photograph the sample.** Using a digital camera, the crewmember takes a photograph after each sample is tipped. The sample placard that identifies each sample is positioned so it is visible in each photograph.
4. **Note which material classes are present.** After the driver has dumped the load onto the ground, the crewmember walks entirely around the load and indicates on the *Visual Characterization Form* which major material classes are present in the load.
5. **Estimate composition by volume for each major material class.** Beginning with the largest major material class present by volume, the crewmember then estimates the volumetric percentage of this material class and records it on the form. An example of a major material class is Paper. This process is repeated for the next most common material class, and so forth, until the volume percentage of every material class has been estimated. The crewmember then calculates the sum for this step, ensuring that it totals 100 percent.
6. **Estimate composition by volume for each specific material component.** The crewmember considers each major material class separately and estimates the percentage of each major class that is made up of each specific material component. For example, newspaper is a specific material component within the major material class of Paper materials. While considering only the Paper materials class, the crewmember estimates the volume percentage of Paper materials that is composed of newspaper. The crewmember then does the same for every other specific material component within the Paper material class (such as uncoated corrugated cardboard or office paper). The total of percentages for all of the material components must equal 100 percent. This process is repeated for the other major classes, with all the material components in each material class totaling 100 percent.
7. **Check and reconcile percentage data.** The crewmember then ensures the percentage estimates for the major material classes add up to 100 percent. Also, the percentage estimates for the specific material components within each major class must total 100 percent.
8. **Convert volume estimates to weight estimates.** This step is done at our team's offices. Data from the *Visual Characterization Forms* are entered into a customized database, and accepted

density conversion factors are used to develop estimates of the weight of each material component in each load.

Step 5: Review data and clean site

At the conclusion of each sorting day, the crew manager conducts a quality control review of the data recorded on each *Material Weight Tally Sheet*. The completed sheets are transported to the Cascadia office for data entry.

At the end of each sorting day, we also ensure that the workspace is left in good condition. Our field crew takes steps to reduce or eliminate the risk of litter, particularly in open-air environments. A thorough clean-up effort follows each day of work and includes the following:

- ✓ Organizing and stowing of sorting supplies in a designated location.
- ✓ Removing all sorted waste discarded throughout the day (the host facility loader operator will help with this).
- ✓ Sweeping and cleaning the sort area to prevent windblown litter.
- ✓ Removing and properly disposing of any single use personal protective equipment.
- ✓ Checking out with the facility manager each day.

Training and Safety Considerations

The Cascadia sorting crew is a full time, professional, and experienced group of individuals who are well versed in all aspects of fieldwork. Nevertheless, each composition study we undertake is unique. At the outset of each season, the sampling crew manager and sampling crew will familiarize themselves with the materials list, field forms, and any unique sorting protocols that will be employed during the season. At the conclusion of the review, the sorting crew will be fully prepared to conduct the seasonal sorts. On-site, the sampling crew manager will be present to provide continual support and supervision.

Training for the study also will include:

- ✓ General facility overviews
- ✓ Facility-specific health and safety requirements
- ✓ Personal protective equipment (PPE) requirements
- ✓ Waste handling techniques
- ✓ Productivity strategies and daily sampling quotas

The sampling crew manager will ensure that the sorting protocol is being followed, along with the health and safety requirements, and will closely evaluate each individual sample to ensure that the material categories are understood and being interpreted uniformly by the sorting crew.

Given the inherent risks associated with sampling and sorting municipal solid waste, ensuring worker safety is of the utmost importance. Our team follows a strict health and safety plan, a copy of which is available upon request.

Task 3: Conduct Analysis

We understand the importance of accurate information. Thus, we protect data integrity during each step – collection, review, entry, calculation, and analysis. Our forms are easy to use, and our data-entry protocols virtually eliminate errors. Our reports are clear and concise, and they identify relevant findings that are useful in establishing solid waste management policies.

Our team will design a customized database to manage the data from waste sorting, and a member of our clerical staff will enter the data from the *Material Weight Tally Sheets*. The waste characterization task manager will inspect the entered data, and any anomalies will be resolved against the hand-written information on the sheets.

Steps we take to ensure the integrity of data during entry and analysis include:

- ✓ Verifying that data forms were obtained for each day the data collection crew was in the field.
- ✓ Having our data collection crew keep copies of all forms while the originals are being shipped by courier to our office.
- ✓ Random checks of the computer-entered data against the paper form, to verify that all numbers are being entered and to look for any systematic or random mistakes.
- ✓ Encoding the composition analysis formulae into a routine that can be applied consistently to different data sets.

Step 1: Determine Annual Quantities for Each Member Agency

To develop a complete analysis of all the material that is disposed, it is necessary to determine the amount of waste associated with each of the Members and sectors that are characterized. For this study we will rely on HWMA to provide tonnage estimates for its member agencies.

Step 2: Conduct Composition Analysis

Using the statistical procedures we have developed in conjunction with CalRecycle, Cascadia will develop detailed estimates of waste composition and quantities for each waste sector and season. All estimates will be presented along with statistical confidence intervals.

Task 4: Develop Draft and Final Reports

In order to ensure that expectations are fully met, our waste characterization task manager will develop and submit an outline of the final report for review by staff. The outline will indicate all sections and analyses that are expected to be part of the final report. Upon approval of the outline, the project team

will prepare a draft of the report, including executive summary, description of research methods, waste composition findings, and recycling and waste reduction and diversion opportunities.

The draft version of the report will be submitted to staff. After comments and edits are received in response to the draft, we will incorporate comments received, make necessary changes, and submit the completed final report.

The final report and accompanying information are expected to include the following elements:

- ✓ Methodology, including study design, load selection, size and number of samples, sample preparation, and waste sorting.
- ✓ Documentation of the amounts and types of up to 90 categories of materials disposed by each partner and member agency including profiles of residential, commercial, self-haul and C&D wastes.
- ✓ Estimates of accuracy level and confidence interval for each waste category, and potential sources of error and inconsistencies in the data.
- ✓ Comparisons of the 2010 and current study composition data by Member and sector.

Budget

Our proposed budget to conduct a waste characterization study for the Members is $142,243. This includes all taxes, labor, and fees. The budget is detailed in Table 3. The budget to add samples from other local jurisdictions is also noted in Table 3. The budgets for the additional jurisdiction assume that:

- samples from those jurisdictions tip at one the same facilities as the HWMA samples on a regular schedule,
- field work for the additional jurisdictions happens concurrently with field work for the Members, and
- the jurisdictions have enough regular collection routes to support the proposed level of sampling.

Table 3. Proposed Budget

	Hours	Labor	Expenses	Total Budget
Develop Plan	95	$ 12,275	$ 2,400	$ 14,675
Sample Disposed Waste	796	$ 94,299	$ 15,345	$ 109,644
Conduct Analysis	70	$ 8,925	$ 50	$ 8,975
Draft and Final Report	75	$ 8,899	$ 50	$ 8,949
HWMA Total (264 samples)	**1,036**	**$ 124,398**	**$ 17,845**	**$ 142,243**
Fortuna (30 samples)	122	$ 14,724	$ 645	$ 15,369
Trinidad (15 samples)	140	$ 16,671	$ 1,501	$ 18,172
Hum San Contract Materials (30 samples)	171	$ 20,034	$ 2,358	$ 22,391

Schedule

The Cascadia team will work with HWMA to develop a schedule that fits their needs and results in minimal disruption to normal operations. A proposed draft schedule is provided below.

Task	Proposed Time Frame
1. Kickoff and Study Design	**Summer 2019**
2. Sample Disposed Waste	**Summer 2019 through Spring 2020**
Season One	Summer 2019
Season Two	Late Winter 2020
3. Conduct Analysis	**Spring 2020 through Summer 2020**
4. Prepare Draft Report and Final Reports	**Summer 2020 through Fall 2020**
Draft Report	Summer 2020
Final Report	Fall 2020

Consolidated 2017 Diversion Reports and Pounds Per Person Per Day

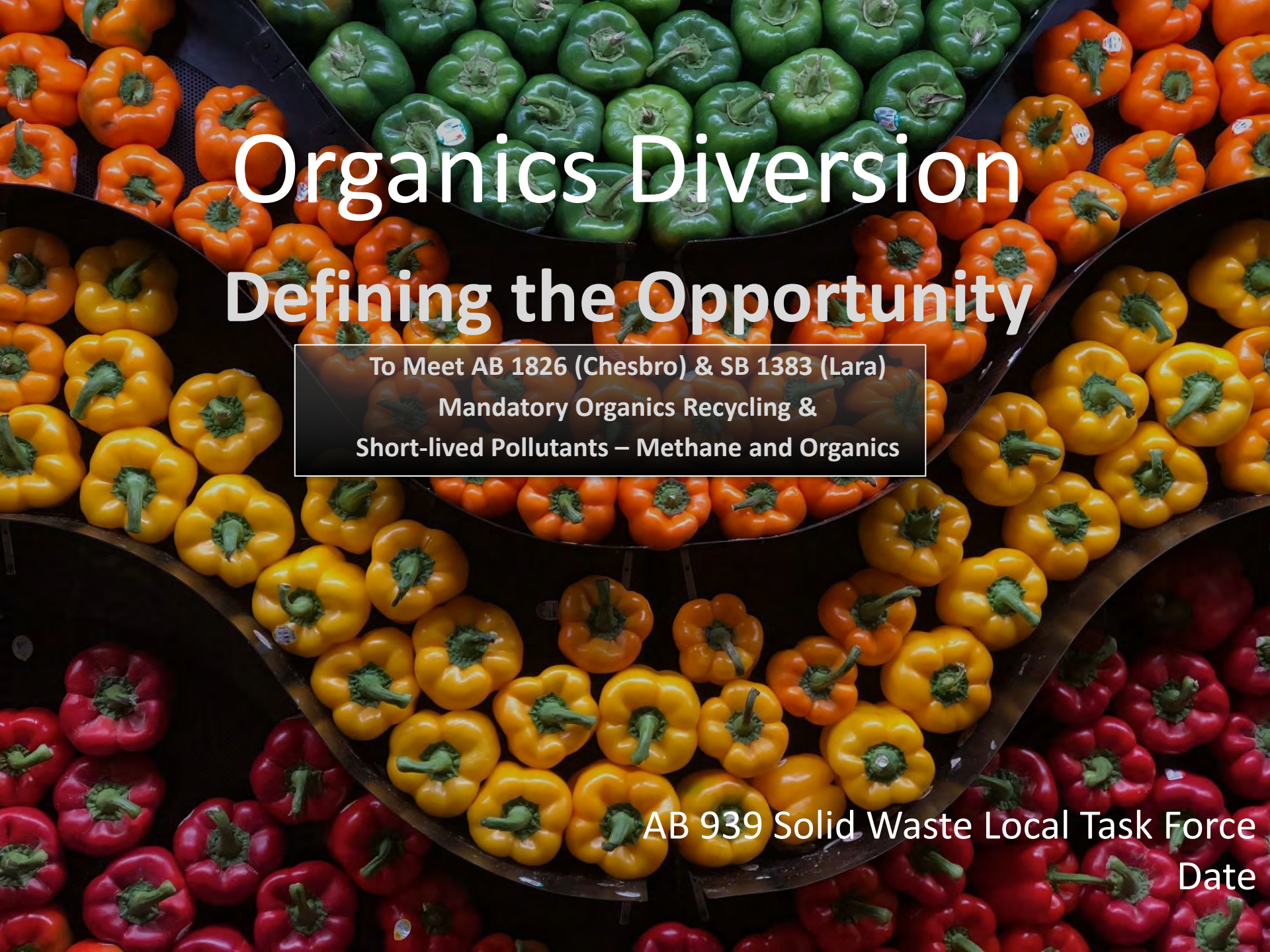
Jurisidiction	Diversion Programs Reported		Tons Disposed	Target Disposal (PPPD)	Actual Population Disposal (PPPD)
Arcata	46		10,714.81	3.7	3.2
Blue Lake	41		781.62	19.1	3.3
Eureka	43		29,263.65	6.5	6.1
Ferndale	38		740.26	3.4	3.0
Fortuna	48		9,811	4.3	4.5
Humboldt (ur	48		38,293.07	6.1	2.9
Rio Dell	42		536.08	2.1	0.9
Trinidad	41		463.51	8.2	7.6

Jill Duffy:
Compare and Evaluate Jurisdiction Program for Reporting Year 2017 & Pounds Per Person Per Day Disposed

1) Review for accurate program capture
2) Clarify or correct program
3) Determine if there is an opportunity to expand program.

This will ensure comprehensive representation, and assist in standardizing programs and services to Humboldt residents.

Organics Diversion Efforts Recommendations



Organics Diversion

Defining the Opportunity

To Meet AB 1826 (Chesbro) & SB 1383 (Lara)
Mandatory Organics Recycling &
Short-lived Pollutants – Methane and Organics

AB 939 Solid Waste Local Task Force
Date

Overview

1. Legislative Requirements & Local Goals
2. Target Disposal Objectives by Jurisdiction
3. Waste Characterization Study Comparisons for Organics
   - 2011 HWMA Waste Characterization
   - 2014 CA Waste Characterization
4. How Organics are Currently Handled in Humboldt
5. Identified Opportunities
6. Recommended Actions for Solid Waste Local Task Force/Jurisdictions

Foundational Legislation

AB 939 (Sher)*The Integrated Waste Management Act*
Established an integrated waste management hierarchy to guide the Board and local agencies in implementation, in order of priority: (1) source reduction, (2) recycling and composting, and (3) environmentally safe transformation and land disposal. Included:

- *California Integrated Waste Management Board*
- *Integrated Waste Management Planning*
- *Waste Diversion Mandates-*
  - 25 percent of all solid waste from landfill by January 1, 1995
  - 50 percent of all solid waste by January 1, 2000
- *IWMP Board Review of IWMPs and Plan Implementation*
- *Permitting and Enforcement*
- *Financing*

Numerous bills affecting reporting and diversion programs between 1989 and 2019.

2008 – SB 1016 changes reporting to per capita disposal target.

2011 - AB 341 Diversion- in part, requires CalRecycle to identify strategies to enable the state to divert 75% waste from landfills by Jan. 1, 2020

2014 - AB 1826 – Organic Waste Diversion

2016- SB 1383 – SLCP – Methane Reduction

AB 1826 (Chesbro)
Commercial Mandatory Organics Recycling

Requires businesses that generate a specified amount of organic waste per week to arrange for recycling services for that waste, and for jurisdictions to implement a 'recycling program' and report to CalRecycle on their progress in implementing an organic waste recycling program.

"Program" *in this context means ordinance adoption, and administrative tracking and reporting.*

"Businesses" *include commercial and public entities, and multi-family residential dwelling (not fewer than five units)*

www.calrecycle.ca.gov/recycle/commercial/organics/faq#General

Tiered implementation schedule:

- *Jan 2016 – Jurisdictions to report qualifying generators*
- *April 2016-Businesses generating **8 cu yds/week organics** shall arrange for organic waste recycling*
- *Jan 2017 – Businesses that generate **4 cu yds/week** arrange for organic waste recycling*
- *Aug 2017 and on-going– Jurisdictions to report on their organic waste recycling program to CalRecycle*
- *Fall 2018 –CalRecycle to conduct formal review of all jurisdictions*
- *Fall 2020 – CalRecycle to conduct 2 and 4 year review of jurisdictions*
- *Summer/Fall 2021 – CalRecycle to determine if organic waste has been reduced 50% of the state-wide level based on 2014 disposal volumes*

SB 1383 (Lara)
Short Lived Climate Pollutants: Organic Waste Methane Emissions Reduction

Establishes targets to achieve 50% reduction of statewide disposal of organic waste from the 2014 baseline level by 2020, and a 75% reduction by 2025. Also that not less than 20% of currently disposed edible food be recovered for human consumption by 2025.

"Program" *in this context means ordinance adoption, administrative tracking and reporting AND (franchise area) source-separated collection services.*

This is a state-mandated local program, and jurisdictions may charge and collect costs associated with program implementation

www.calrecycle.ca.gov/climate/slcp

Impacts to Cities and County

Regulatory Requirements include:

- **Organics Waste Collection Program**
  - Source-Separated Collection
  - Mixed Waste Collection (allowed if minimum organic waste recovery standards are met)
- **Edible Food Recovery Programs**
- **Education**
- **Monitoring Contamination and targeted education**
- **Inspection and Enforcement**
- **Planning for Adequate Capacity**
- **Procurement of Recycled Content Products**
- **Reporting**

Local Plans

- **HWMA approved the 2013 Strategic Plan**
  - 75% Diversion (14,800 ton) by 2020*
  - Food Waste Collection Pilot Project
  - Anaerobic Digestion Project
  - Green Waste Contracts
  - Other Strategies
- City of Arcata adopted "Zero Waste Action Plan" (2015-16)
- City of Eureka – planning stages for Zero Waste (Jan 2019)

Calendar Year 2017
Pounds per Person per Day (PPPD)

Jurisdiction	Tons Disposed in 2017	Pounds Per Day (PPD) Target Disposal	2017 Population Disposal (PPD)	Meets/Exceeds Target
Arcata	10,714.81	3.7	**3.2**	Meets
Blue Lake	781.62	19.1	**3.3**	Meets
Eureka	29,263.65	6.5	**6.1**	Meets
Ferndale	740.26	3.4	**3.0**	Meets
Fortuna	9,811	4.3	**4.5**	Exceeds
Humboldt	38,293.07	6.1	**2.9**	Meets
Rio Dell	536.08	2.1	**0.9**	Meets
Trinidad	463.51	8.2	**7.6**	Meets

HWMA Efforts Related to Regional Organics

Regional Green Waste Composting

In 2003 HWMA entered into a private-public partnership for the development of Mad River Composting, and invested in the environmental review, permitting, infrastructure and supply of green waste material. Today self-haul and franchise haulers are able to send green waste materials to this privately owned facility.

Over $500,000 was invested in the development of this site and services by the Authority.

Business remains privately owned, and works under processing contract with HWMA.

Food Waste Collection/Anaerobic Digestion

In 2008, HWMA undertook efforts for 1) the development of an anaerobic digester; and 2) conducted an 18-month pilot food waste diversion project.

Approximately $750,000 was spent (*budget allocation, grant and in-kind contributions*) –on staffing, feasibility report, training, consultants and legal counsel, conferences, food waste collection, environmental review, permitting, retrofitting of collection equipment, purchasing materials, supplies, audits and trainings, transportation and processing of food waste to an out of county processor.

Project concluded in January 2014

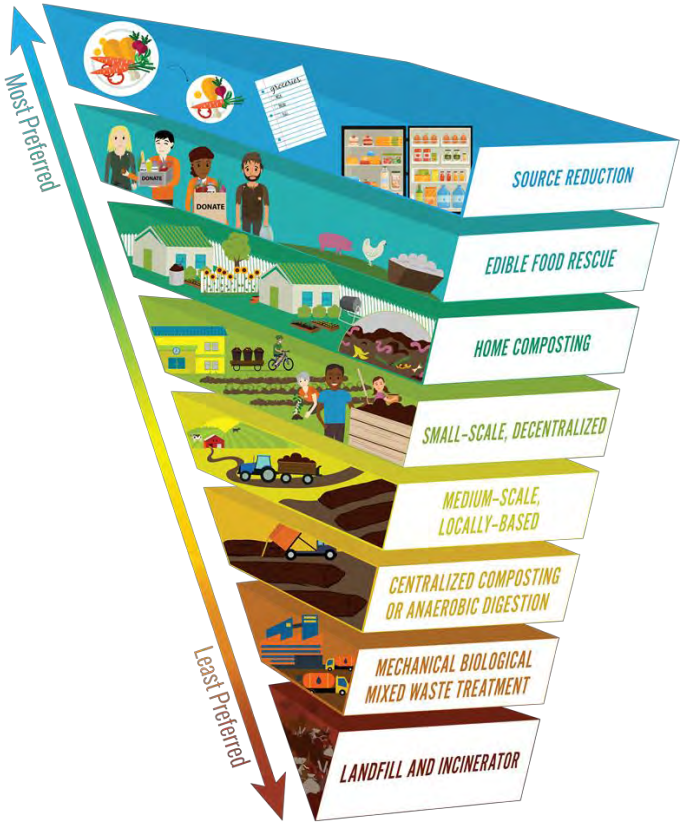
Organics Comparison

	2011 HWMA Waste Characterization Report Other Organics (tons)			2014 California Waste Characterization Report Other Organics (tons)		
	Residential Disposal	**Commercial Disposal**	**Total Disposed**	**Residential Disposal**	**Commercial Disposal**	**Total Disposed**
Arcata	1,089	2095	**3,184**	1,737	4,254	**5,991**
Blue Lake	210	95	**305**	138	69	**207**
Eureka	3,317	5,677	**8,994**	2,674	6,216	**8,890**
Ferndale	100	181	**281**	153	104	**257**
Fortuna	*Not included in HWMA Report*			1,247	1,388	**2,635**
Humboldt Co (uninc)	6,472	7,930	**14,402**	7,610	5,889	**13,499**
Rio Dell	207	382	**589**	364	102	**466**
Trinidad	44	178	**222**	39	98	**137**

“AB 1826” pertains to physical organics diversion, whereas “SB 1383” targets greenhouse gas reduction.

Compliance is the responsibility of the generator, with jurisdictions responsible for providing collection service and tracking and reporting to CalRecycle.

Food Recovery (Organics) Hierarchy



- There is a wide spectrum of recovery strategies being use, and could be used, in Humboldt.

SOURCE REDUCTION

Prevention by <u>not</u> generating food waste. Public Education is key.

Individuals

Proper Meal Planning
Purchase only what is needed
Organize fridge and storage for optimal food usage.

Restaurants

Encourage customers to take left over food home
Surplus Food to food bank

Food Waste Audits

Grocers/Markets

Encourage Grocers to send unsold food to Food Banks, Farms or other recovery venues.

Food/Beverage Manufactures

Institutions:

Hospitals, Care Facilities, Universities, Schools, Jail, Community Centers and Special Events

Difficult to quantify as this is “avoided’ waste and not included in any of our tracking systems.

Edible Food Rescue:

Two primary groups – 1) Food Recovery for People and 2) augment Livestock Feed. Public Education is important.

Little Free Pantry

Food Bank for People (serving most of Humboldt County)

St. Joseph's Pantry (Fortuna)

Community Garden Project

Eureka Rescue Mission

Humboldt County – Pig Farm

Private Livestock Owners

Examples are not meant to be all inclusive listings, but serve as talking points.

Home Composting

Composting in home backyards or at your place of work.
Avoid collection costs!

Home Composting

Bins/Education

Composting Workshops
- Cities
- HSU
- UC Ag Dept
- Private

Small-Scale Decentralized

Onsite composting or anaerobic digestion, and community composters can accept material from off-site or simply process their own material.

School Composting

Hospital/Institutional Composting

Community Centers Composting
Special Event Composting

Vermiculture

Local Worm Guy – Arcata
East Mill Creek Farms – certain food wastes

Small Scale Community Composters

Ziggy's Composting – Trinidad

Cannabis Cultivators

Per Ag Commissioner, 80-90% of inspected cannabis farms perform on-site composting of cannabis waste.

Medium-Scale Locally-Based

Composting **or** anaerobic digestion at the small town or farm scale. These systems handle typically between 10 and 100 tons per week and designed to serve small geographic areas.

Green Waste Composting
Mad River Compost
HWMA has contract for green waste composting services for Member Agency franchise haulers with GW services, Arcata self-hauled material, and HWMA received material.

Humboldt Sanitation, general public and cannabis farmers also dispose of green waste at this facility.

City of Fortuna
Collects resident GW, and uses for sludge composting operations.

On-site Composting by Generators
This may include farmers who provide food, and accept post-consumer food from those restaurants to compost waste material (closing loop)

Green Waste Chipping & Grinding
Approximately 10-12 permitted chipping and grinding operations in Humboldt County.

Vermiculture
'The Worm Guy' operation off Warren Creek Road, accepts food waste from HSU, special events.
Looking to expand operations in Eureka.

Centralized Composting or Anaerobic Digestion

Facilities serving large geographic areas that typically handle more than 100 tons per week. Material generally leaves the community in which it is generated.

As previously described, HWMA dedicated funding and resources to evaluate anaerobic digestion, as well as an undertaking in 2016 to examine purchase of the green waste composting facility. Unless member agencies are willing to commit organic waste to HWMA, the Authority is unable to make the necessary financial, infrastructure and operational commitments.

Need to survey larger generators to determine where other organic materials are going, and the estimated volumes.

Work with local manufactures to secure alternate processing for large volume disposal due to expired or food unfit for consumption

Mechanical Biologic Mixed Waste Treatment

Mixed garbage is mechanically and biologically processed to recover recyclables and reduce waste volume and the potential for methane emissions before landfill disposal.

The Strategic Plan calls for HWMA to develop a dirty Materials Recovery Facility, however:

Facility Expansion is required (land)
Only material received at HWMA's Hawthorne Street Transfer Station would be sorted

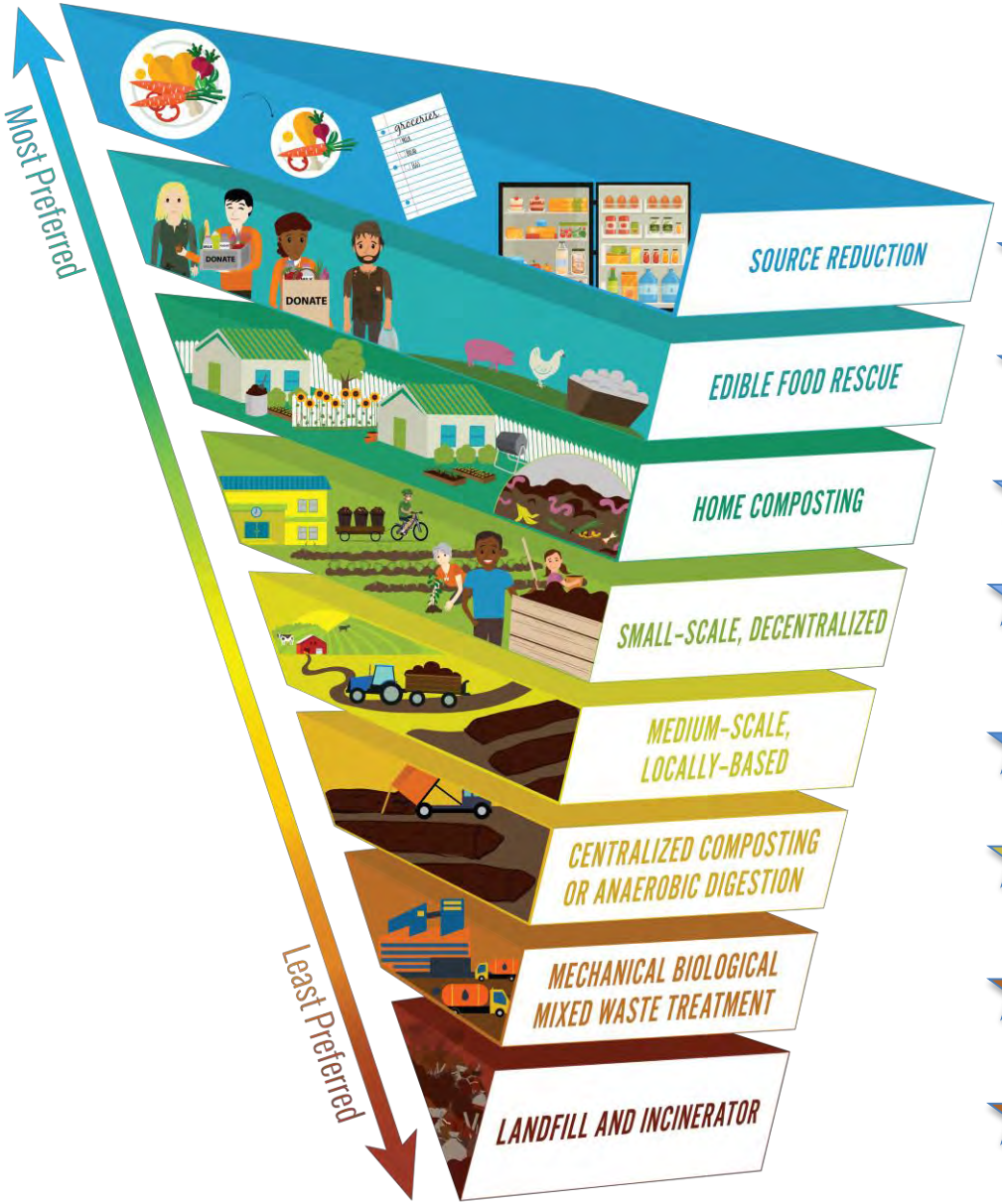
Landfill and Incinerator

In general food waste should not be sent to landfills or incinerators due to their high capital costs, pollution, and contribution to greenhouse gas emissions.

However, HWMA's municipal waste sent to the Dry Creek Landfill is disposed into a facility that actively collects methane gas and other GHG. Installation of methane collection & co-generation system generates 3.4 megawatts/annually. This is integrated into the local power grid for 3,000 homes in the Medford area.

DCL is expanding their system to fuel their fleet vehicles with CNG generated by the landfill.

The Anderson Landfill receives solid wastes from the City of Fortuna and private haulers. This landfill does not have a GHG collection or co-generation system.



Difficult to quantify but these stars represent the ideal higher use, low cost and more efficient way to handle food materials.

Encourage public/businesses to use one of these diversion pathways

Focus on data collection to determine if there is a need to build a centralized facility.

Promote food waste diversion above, and send MSW to landfills that capture GHG's

Solid Waste LTF Recommendations

LTF Subcommittee met Friday, January 11th to discuss SB 1383 (Lara), and broadly recommends the following for consideration by the LTF.

- **Compare HWMA's 2011 Waste Characterization study to the State's 2014 Baseline Characterization Study.**
- **Update and expand HWMA's 2011 Waste Characterization Study-assess material composition and percentages for all transfer stations.**
- **Req. summary description from County Ag Commissioner to characterize how cannabis waste (organic) is being handled.**
- **Work with local manufactures to secure alternate uses for large volume disposal due to expired or food deemed unfit for human consumption.**
- **That the LTF document known information about services, efforts and regional processing opportunities to help inform next steps.**
- **Invite interest groups to participate and present information to the LTF**