

## **System Description for Identifying Food Service Establishments in Orange County that Meet AB 1826 Generation Thresholds**

**Background:** EcoNomics, Inc. is a sustainability consulting firm established in 1976 that specializes in developing cost-effective waste diversion solutions for municipalities and businesses. Since 2006 EcoNomics has worked with dozens of food service establishments to implement food scrap diversion programs in Rancho Mirage, Mission Viejo, Tustin, Laguna Hills, Napa, Indian Wells, and Lake Forest. EcoNomics recently completed negotiations for a new contract for Rancho Mirage which specifically contains contract language, reporting requirements, and a pathway to mandatory organics ordinance. In Orange County, EcoNomics has six municipal clients where it provides assistance with program implementation and regulatory compliance.

### **EcoNomics has developed an effective system for identifying volume generation levels of organic materials from food service establishments.**

Two methods were developed working with the jurisdictions in Riverside and Orange County. The first was developed in the City of Rancho Mirage and is applicable for jurisdictions that are resort oriented and have a multiyear track record of working to expand commercial recycling into organics diversion.

#### Rancho Mirage

In Rancho Mirage, the volume was obtained through information gained over 8 years of waste characterizations, results from a 36 restaurant pilot program, restaurant site visits, and verified from monthly hauler reports on collection routes and tonnage data.

#### Orange County

The system developed in Orange County was designed for use in larger jurisdictions with less comprehensive pilot data. The Orange County approach for generator identification uses a combination of three data sources to estimate organics volume generation:

1. Data provided by the Orange County Health Department to identify restaurant size
2. Hauler account listings to identify weekly MSW and food scrap generation volume
3. Food scrap density data obtained from ongoing pilot food scrap programs to cross check and verify the amount of organic scraps generated by different sizes and types of restaurants.

EcoNomics believes that the system developed in Orange County, combined with pilot data from over 60 restaurants in multiple jurisdictions, can accurately identify food service establishments that meet the volume thresholds as set forth in

Assembly Bill 1826. The following section describes the methodology in detail to allow the staff at CalRecycle to assess the possibility of using it as an alternative, or compliment, to the proposed Employee Development Department (EDD) generator identification system.

### Description of Data Sources

**Data Source 1: Orange County Health Department Food Facilities Database:**

The Orange County Health Department maintains a database of every food service establishment in the County. The database includes the establishment’s name, address, contact number, latitude, longitude, a unique identification number, inspection frequency, and the program/element. The list can be found online [here](#). An excerpt of the food facility listing is included as Table 1 on page 2. The listing is searchable and sortable, allowing jurisdictions to identify the number, location, and type of food facilities within their City-limits.

The ‘Program/Element’ data provided in the database is an indication of the size and type of food service establishment. Examples of Program Element categorizations include ‘Restaurant Under 31 Persons’, ‘Restaurant 201+ Persons’, ‘Supermarket/Bakery 30,000+ Sq Ft’, ‘Senior Feeding Nutrition Site’, etc. The ‘Program/Element’ categorization can be used to determine the expected organics volume generation. Intuitively, larger size categorizations, such as ‘Restaurants 201+ Persons’, will generate larger amounts of organics than a smaller restaurant.

**Table 1: Excerpt of Orange County Health Department Food Facility Listing**

Facility ID	Facility Name	Record ID	Site Address	City	Zip	Phone	LAT	LONG	Program/Element	PE	Inspection /year
Fa0000260	El Chile Relleno	Pr0000260	25098 Marguerite Pkwy Ste D	Mission Viejo	92692		33.6	-117.7	Restaurant Under 31 Persons	0111	3
Fa0000352	Albertsons #6517	Pr0000352	25872 Muirlands Blvd	Mission Viejo	92691	94945 51961	33.6	-117.7	Supermarket/Bakery 30000+ Sq Ft	0304	3
Fa0000364	Taco Bell	Pr0000364	26171 La Paz Rd	Mission Viejo	92691	94958 71074	33.6	-117.7	Restaurant 61-100 Persons	0113	3
Fa0000731	Japanese Restaurant Shabu	Pr0000731	28715 Los Alisos Blvd Ste 1	Mission Viejo	92692	94958 83225	33.7	-117.6	Restaurant Under 31 Persons	0111	3
Fa0000748	Newhart Middle School	Pr0000748	25001 Veterans	Mission Viejo	92692		33.6	-117.6	Public School - Limited Open Food Fee Exempt	0191	1

**Data Source 2: Hauler Weight Data from Orange County Pilot Food Scrap Diversion Program:**

In 2010, the County of Orange provided a regional hauler with \$450,000 to implement a food scrap diversion program in eight Orange County cities. The hauler implemented food scrap diversion programs at over 40 food facilities. As part of the grant, the hauler was required to provide detailed collection reports, which included cart fullness levels at the time of service (% capacity used when collected) for each restaurant stop, tons collected per day, and the average weight per full cart, among other data. Using this collection data from the period of May 2010 to May 2011, EcoNomics calculated the average food scrap tonnage contribution from each restaurant participating in the pilot program. Since all of the restaurants were located in the County of Orange, EcoNomics was able to cross-reference the food facilities with the categorization by size/type description as presented in the County Health Department Database. NOTE: *Pilot data from other jurisdictions' results can be useful in verifying generation projections when compared with like restaurants (i.e. data from one chain restaurant can be applied to a sister facility in another jurisdiction).*

**Data Source 3: Development of Food Scrap Density Data**

Using the restaurant specific pilot food scrap tonnage data, EcoNomics developed a list of the average tons per year of food scraps diverted per the County's size/type classification system. The density figure was calculated by actually weighing full carts of food waste in the field and captured the operational reality that the contents are a mix of pre-consumer materials such as produce preparation trimmings and post-consumer materials, such as plate scrapings (see table below). The actual average food weight contained in 65-gallon carts was converted into cubic yards and is shown below.

	Per Full 60-gallon cart	Lbs. per Cubic Yard
Average full 65-gal Weight	197.0	621.9
Average Weight with Primarily Post-consumer Materials	261.5	825.3
Average Weight with primarily Pre-consumer Materials	147.6	465.8

Adjusting for Food Donation and/or Diversion of Only Preconsumer (prep kitchen) or Postconsumer (plate scrapings from dishwashing area).

A restaurant's total food scrap generation could include donated food and the program may only capture pre or post consumer food scraps. Therefore, a capture coefficient was applied that assumed 50% of the organics being generated by the participating food facility were actually being captured in the pilot food scrap diversion program. *The collection coefficient is a very conservative estimate that assumes that 50% of the food scraps are going to existing food rescue programs or*

that the restaurants may only be diverting their pre-consumer or post-consumer organic materials. By applying the 50% capture coefficient and by using a conservative density calculation, EcoNomics has increased the likelihood that all food facilities that meet the AB 1826 threshold are fairly identified in the analysis. The expected volumes of organics generated by 'Program/Element' categorization are included as Table 2 below.

**Table 2: Expected Organics Generation by County Size/Type ('Program/Element') Categorization**

County 'Program/Element' Categorization	Average Captured Organics Tons per Year	Estimated Volume (CY/WK) of Organics GENERATED
RESTAURANT 201+ PERSONS	51.40	8
RESTAURANT 151-200 PERSONS	22.20	4
RESTAURANT 101-150 PERSONS	23.58	4
RESTAURANT 61-100 PERSONS	32.22	5
RESTAURANT 31-60 PERSONS	13.60	2
RESTAURANT UNDER 31 PERSONS	6.80	1
SENIOR FEEDING NUTRITION SITE	20.28	3
SUPERMARKET/BAKERY 6000-29999 SQ FT	54.74	9
HOSPITAL OR LONG-TERM CARE KITCH 61-100 BEDS	26.78	4
HOSPITAL OR LONG-TERM CARE KITCHEN 201+ BEDS	54.05	9
PUBLIC SCHOOL - LIMITED OPEN FOOD FEE EXEMPT	60.94	10
PUBLIC SCHOOL - PRODUCTION KITCHEN FEE EXEMPT	115.26	19

Using these data, it can be assumed that the County 'Program/Element' Categorizations with green highlighted volume generation figures will be required to implement food scrap diversion programs on or before April 1, 2016.

### Use of Hauler Account Service Data

Haulers servicing EcoNomics' client cities have provided commercial account data that includes name, address, and trash service levels. By calculating the number of trash cubic yards on service for a restaurant, EcoNomics can perform an additional crosscheck on the expected organics generation of a food facility. For example, if a food facility has one three-yard trash dumpster being serviced 6 days per week, it generates 18 cubic yards per week of trash. Assuming, conservatively, that 66% of the materials a restaurant places in its trash are organics, this restaurant would generate at least 12 cubic yards of organics per week. This approach is limited to restaurants that have a unique account with the trash hauler and do not share a centrally located dumpster with other businesses in a strip mall or business park.

**Proposed Methodology to Identify Food Facilities Required to Divert Organics**  
**Per AB 1826**

1. Use County Health Department database to identify all food facilities that fall within 'Program/Element' categories that have been found to generate 8 CY or more of organics per week (green-colored numbers in Table 2).
2. Once restaurants that generate 8 CY or more per week are identified, review hauler service account listings to locate weekly cubic yards of trash service for each restaurant.
3. Multiply the cubic yards of trash per week by 66% for each restaurant to determine the expected volume of organics being generated by the restaurant. Remove restaurants from the targeted list that have fewer than 12 cubic yards of trash on service.
4. For food facilities that do not have their own trash account, conduct site audit to assess organics generation.
5. Verify reasonableness of identification by checking that density of food scraps (volume on service and weights collected) is within a range of 150 to 300 lbs. per full 65 gallon cart.