



# ROADMAP TO A SUSTAINABLE SOLID WASTE MANAGEMENT FUTURE

County Inter-Departmental Working Group

# Roadmap Subcommittee Meeting Agenda

Thursday, April 14, 2016  
9:00 A.M. – 11:00 A.M.

1. Welcome and Introductions (10 min)
2. Anaergia Test Press Presentation (30 min)
3. State of Disposal and Recycling in CA Presentation (15 min)
4. Breakout Sessions (45 min)
  - County Unincorporated
  - Regional/Countywide Subcommittee
  - County Operations Subcommittee
  - Outreach and Education Subcommittee
5. Open Discussion and Next Steps (10 min)

# OREX Mini Press Pilot Testing Puente Hill MRF

Habib Kharrat, Supervising Engineer

April 14, 2016





# Processing Technologies

**Wet Commercial MSW**  
**(Food Waste mixed in)**



Step 1: Bag Opener



Step 2: Screens



“UNDERS”  
or  
“FINES”



Step 3: OREX Press



Step 4: Polisher @ WWTP



# Processing Technologies

## Source Separated Food Waste

Food Waste Receiving Hopper



Food Waste Storage Tanks



Food Waste Tanker  
to Receiving Station @ WWTP



Polisher @ WWTP



DODA BioSeparator Screening Drum



Food Waste Slurry Mixing Section



# Comparing Technologies

## Food Waste Processing Technologies

(for a nominal 100 tons per 8-hour shift)

	DODA	Anaergia OREX Press
<b>Feedstock</b>	Source Separated Food Waste	Wet Commercial MSW & Source Separated Food Waste
<b>Parts Availability</b>	Italy	USA
<b>Equipment Cost</b>	\$900,000	\$2,000,000



# Mini Press Pilot Test @ PHMRF

- Completed 10-day pilot program on February 1
- 45 samples tested from routes including:
  - Restaurants, school cafeterias, single and multi-family residential, & random misc. wet commercial loads from PHMRF floor.

OREX Mini Press - manually operated



(1/4 scale of full size press)



# Mini Press in Operation



Video





# Mini Press Pilot Test @ PHMRF



## Preliminary Mini Press Test Results

Samples	Average Dry Fraction, (% by wt.)	Average Wet Fraction, (% by wt.)	Average Wet Fraction TS, (% by wt.)	Average Wet Fraction VS, (% by wt.)
45	24	76	26	93



**Questions?**



# STATE OF DISPOSAL AND RECYCLING IN CALIFORNIA

2016 UPDATE

PRESENTED BY ARMANDO C. AGUILAR  
APRIL 14, 2016



# BACKGROUND

- CalRecycle's *State of Recycling in California* and companion report *State of Disposal in California*
- A brief history of recycling in California as follows:
  - **AB 2020** (1986) – Beverage Container Recycling
  - **AB 939** (1989) – 50% diversion by 2000
  - **AB 341** (2011) – 75% recycling goal by 2020
  - **AB 1826** (2014) – Mandatory organic waste recycling
  - **AB 901** (2015) – Reporting requirements to CalRecycle

# STATEWIDE DISPOSAL DIVERSION AND RECYCLING DATA

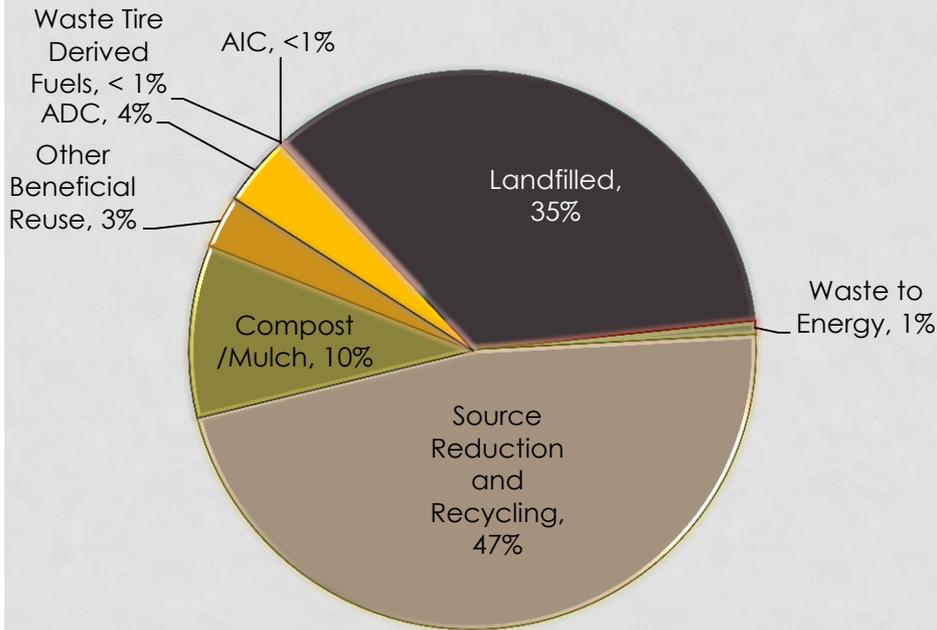
	AB 939	AB 341
Baseline Generation	12.6 ppd (2003-2006)	10.7 ppd (1990-2010)
Goal	50% Diversion <b>Mandate</b> (Jurisdictional)	75% Recycling <b>Goal</b> (Statewide)
Disposal Target	<b>6.3 ppd</b>	<b>2.7 ppd</b>
Disposal Rate	<b>4.5 ppd</b>	

# HOW IS “DISPOSAL” DEFINED?

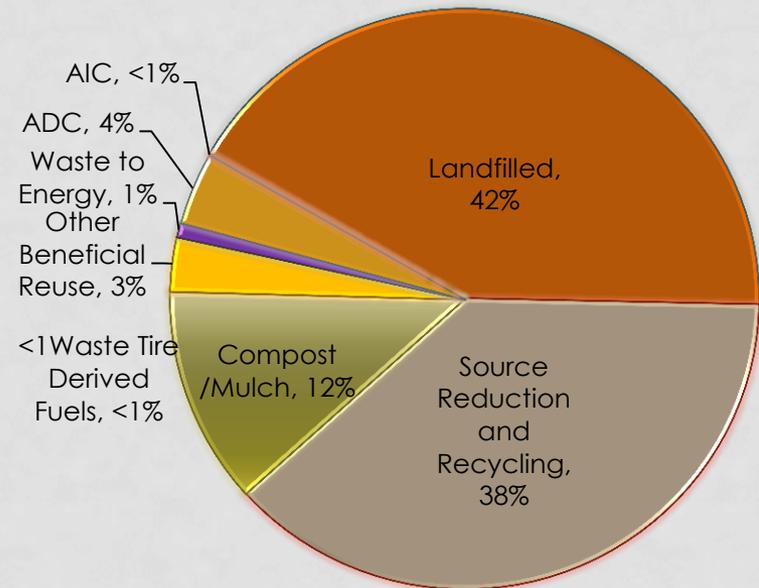
	AB 939	AB 341
Activities that Count Toward Goal	<p><u>Diversion:</u>            Source Reduction            Composting            Recycling            ADC (Alternative Daily Cover)            AIC (Alternative Intermediate Cover)            Other Beneficial Reuse            Transformation Credit</p>	<p><u>Recycling:</u>            Source Reduction            Composting            Recycling</p>
Activities that <u>Do Not</u> Count Toward Goal	<p><u>Disposal:</u>            Landfill (Including Exports)            Some Transformation            Engineered Municipal Solid Waste (EMSW)            Green Waste ADC (Beginning in 2020)</p>	<p><u>Disposal:</u>            Landfill (Including Exports)            Engineered Municipal Solid Waste</p> <p><u>Disposal-Related:</u>            ADC            AIC            Other Beneficial Reuse            All Transformation            Waste Tire-Derived Fuel</p>

## Disposal and **Diversion** (AB 939)

## Disposal and **Recycling** (AB 341)



Solid waste Generation = 88 Million Tons (12.6 ppd)  
 Solid waste Disposal (Landfilled) = 31.2 Million Tons  
 Approximately **64% Diversion**



Solid waste Generation = 74.9 Million Tons (10.7 ppd)  
 Solid waste Disposal (Landfilled) = 31.2 Million Tons  
**50% Recycling**

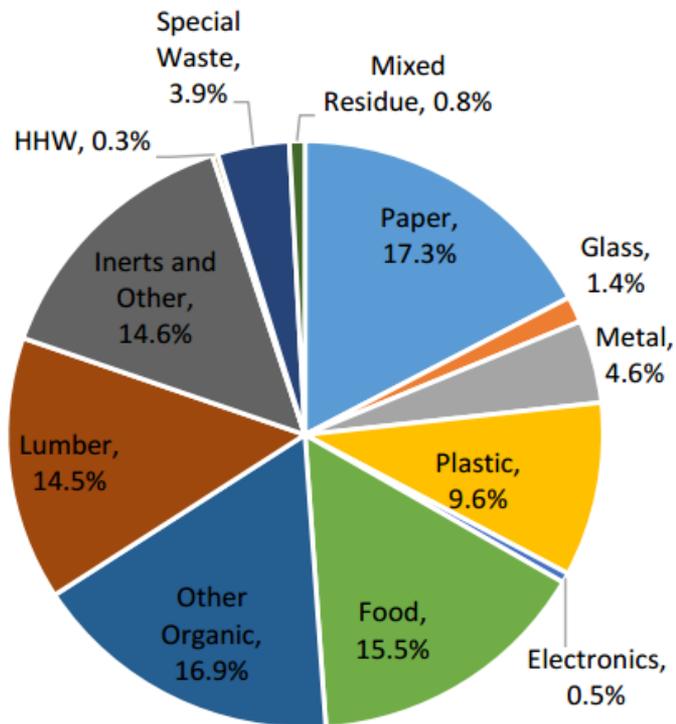
# NEW FOCUS AREAS FOR 2016

- Composition of recyclables collected at municipal solid waste operations as based on CalRecycle's 2014 waste characterization study
- Implementation of mandatory commercial recycling
- Movement of post-consumer recyclable commodities in and out of California
- The handling of organic waste

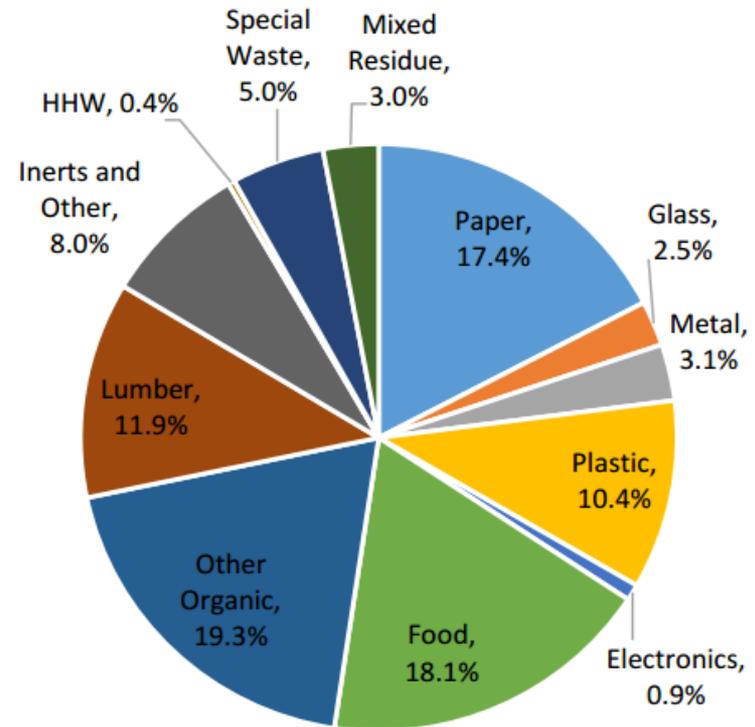
# CALRECYCLE'S 2014 WASTE CHARACTERIZATION STUDY

- CalRecycle has conducted waste characterization studies in 1999, 2004, 2006, 2008 and 2014.
- 2014 study released in November 2015
- Facility-based and generator-based

# 2008 AND 2014 WASTE CHARACTERIZATION STUDIES



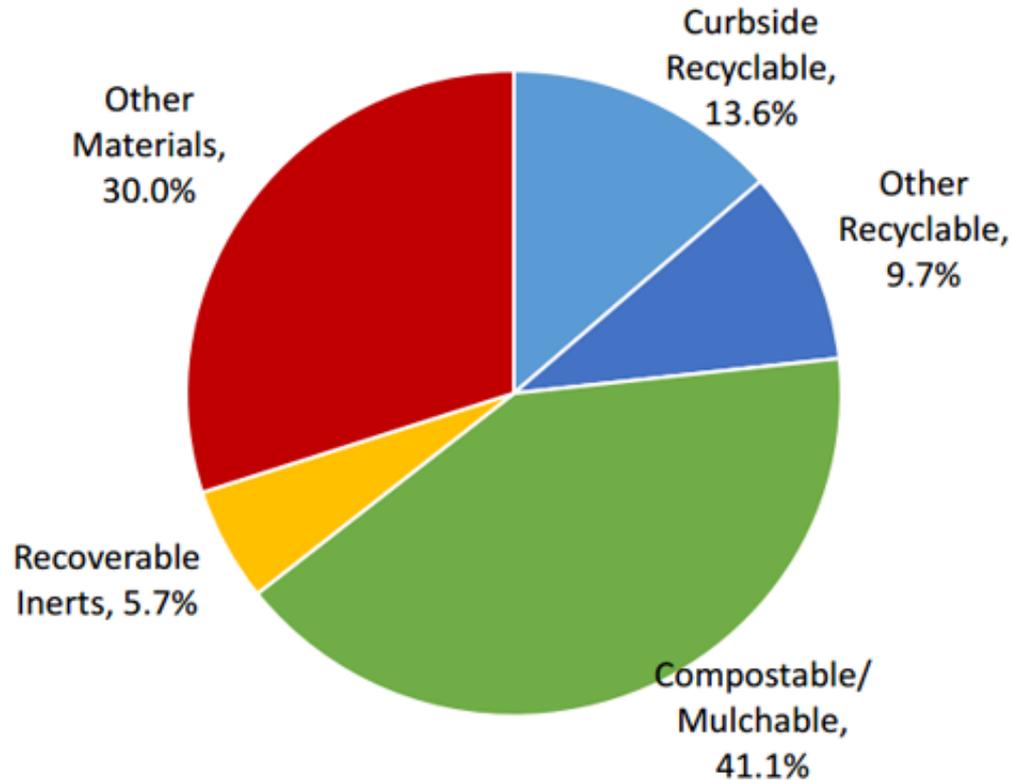
a) 2008



b) 2014

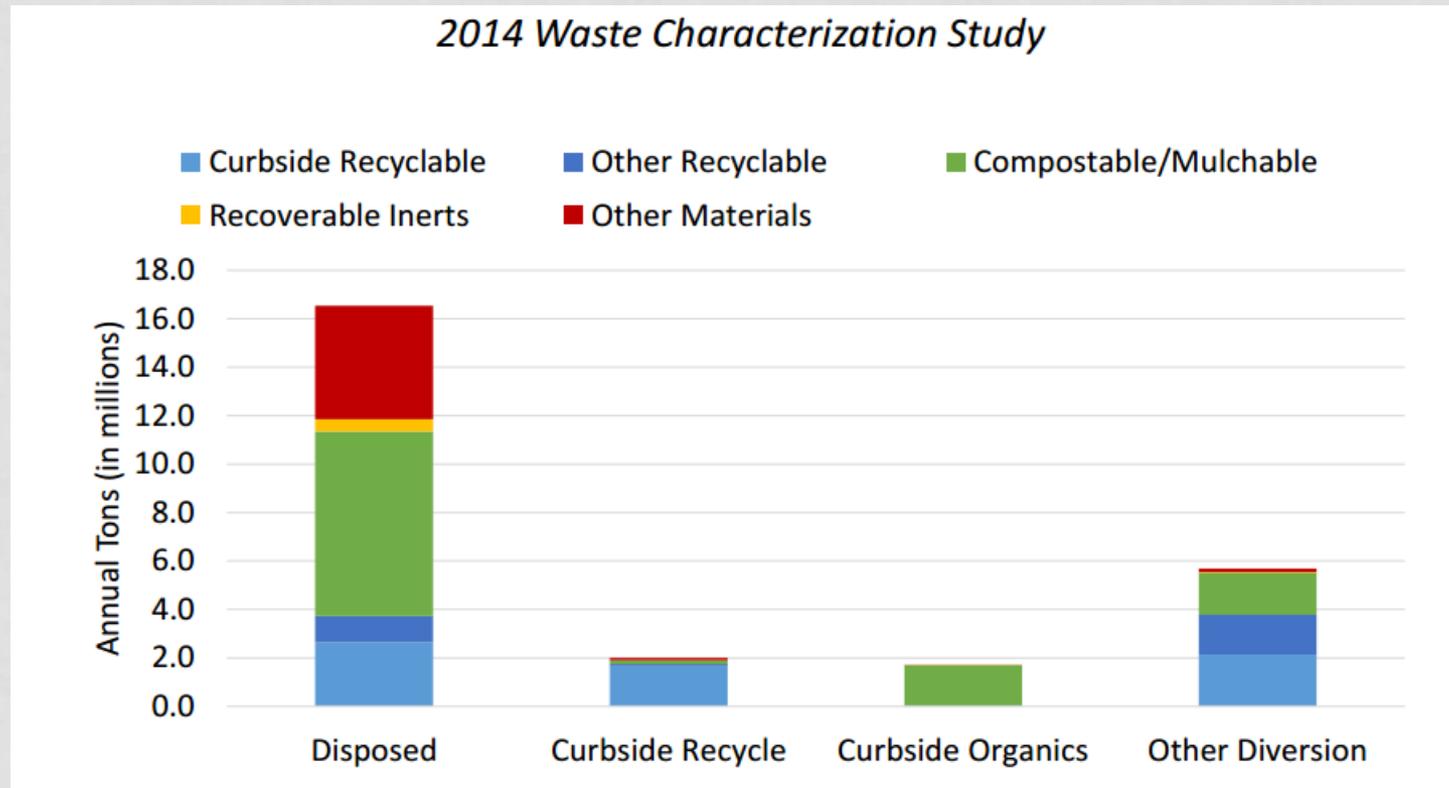
# HOW MUCH OF THE DISPOSAL STREAM IS RECYCLABLE?

## *2014 Waste Characterization Study*



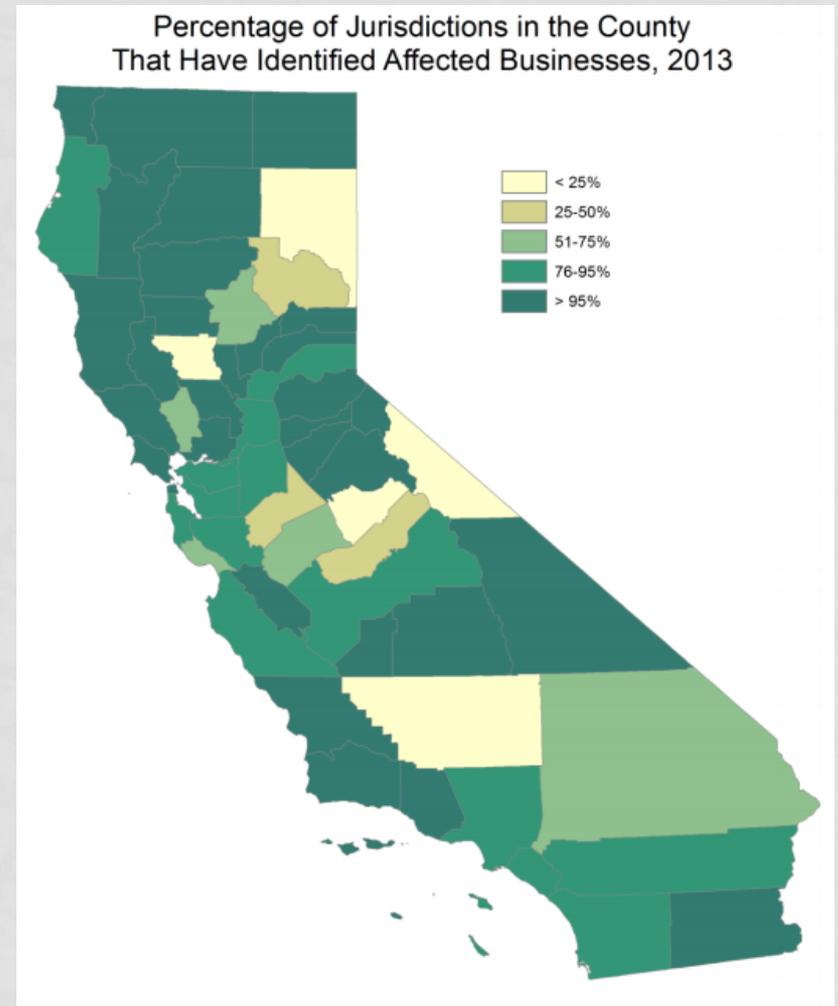
# 2014 GENERATOR-BASED WASTE CHARACTERIZATION STUDY

- Waste generated by California businesses and multi-family residences

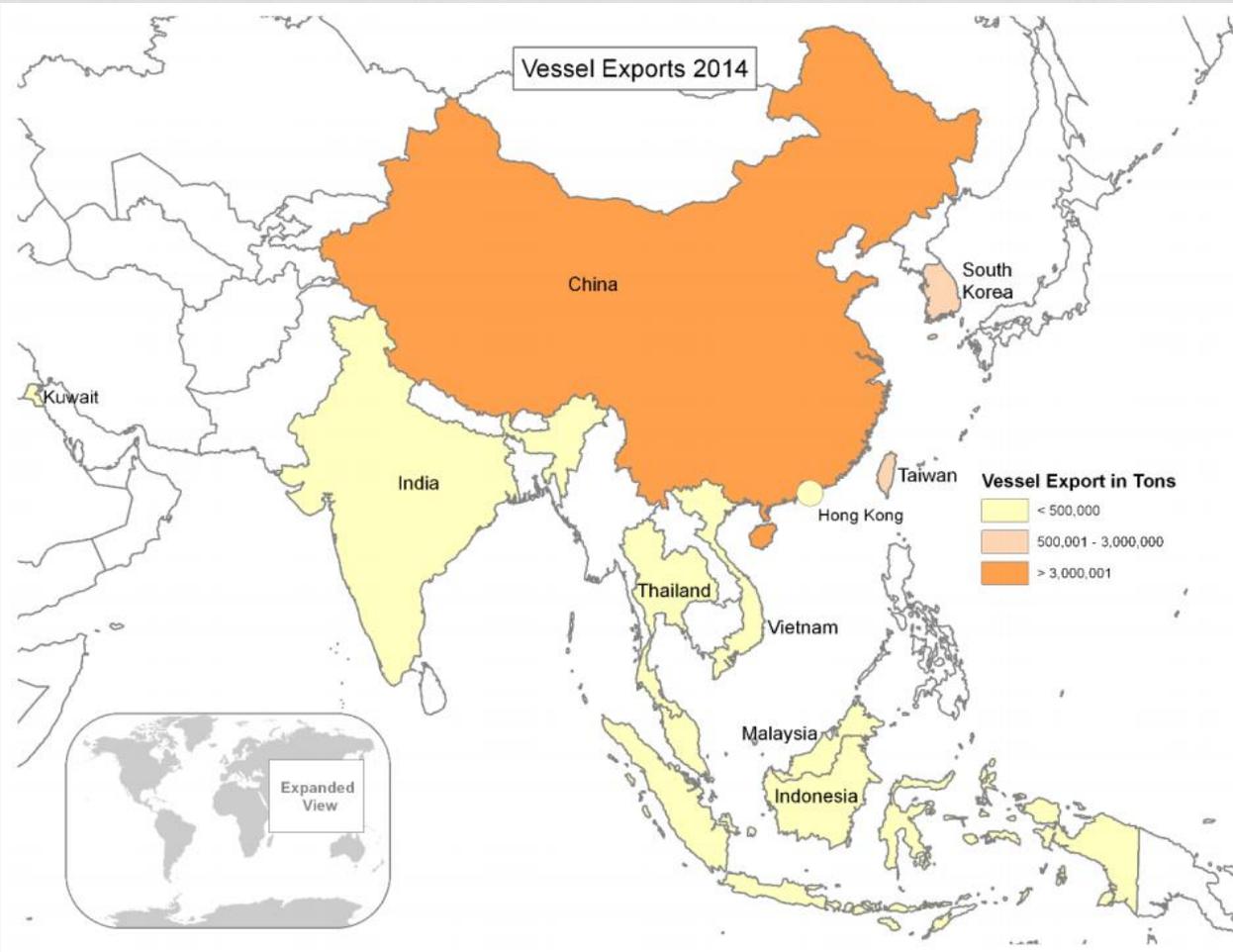


# MANDATORY COMMERCIAL RECYCLING

- MCR went into effect on July 1, 2012
- 2013 data shows stages of implementation
- Jurisdictions are improving identification and reporting
- Mandatory commercial organics recycling



# RECYCLABLE MATERIAL FLOW WITHIN AND ACROSS CALIFORNIA

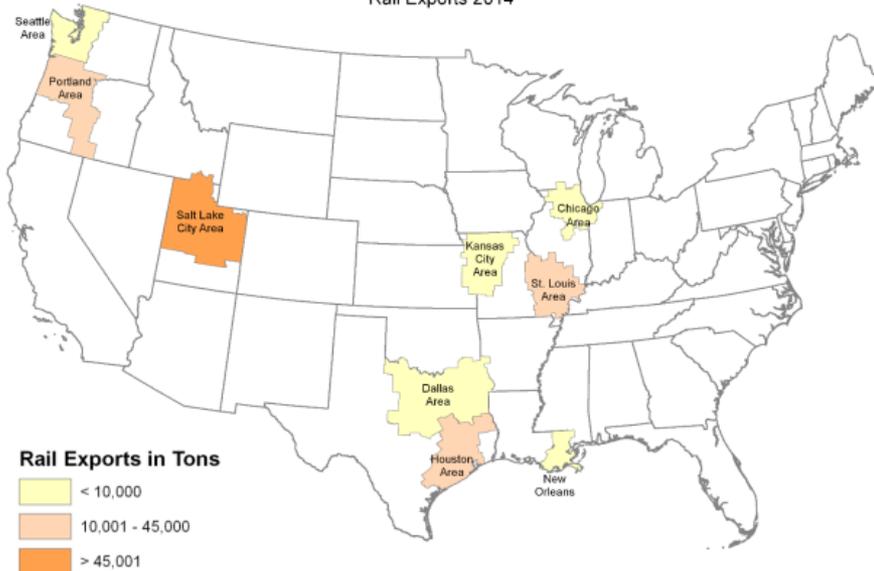


- 18 million tons of waste and scrap material exported by vessel
- 12.6 million tons of exported recyclables originate in CA

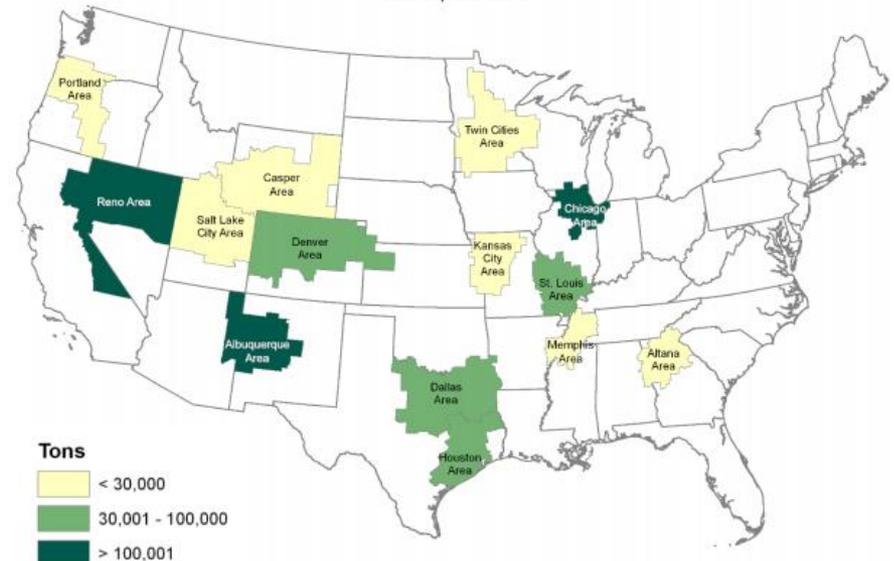
# RECYCLABLES BY RAIL

- 340,000 tons of recyclables exported from CA by rail in 2014

Rail Exports 2014



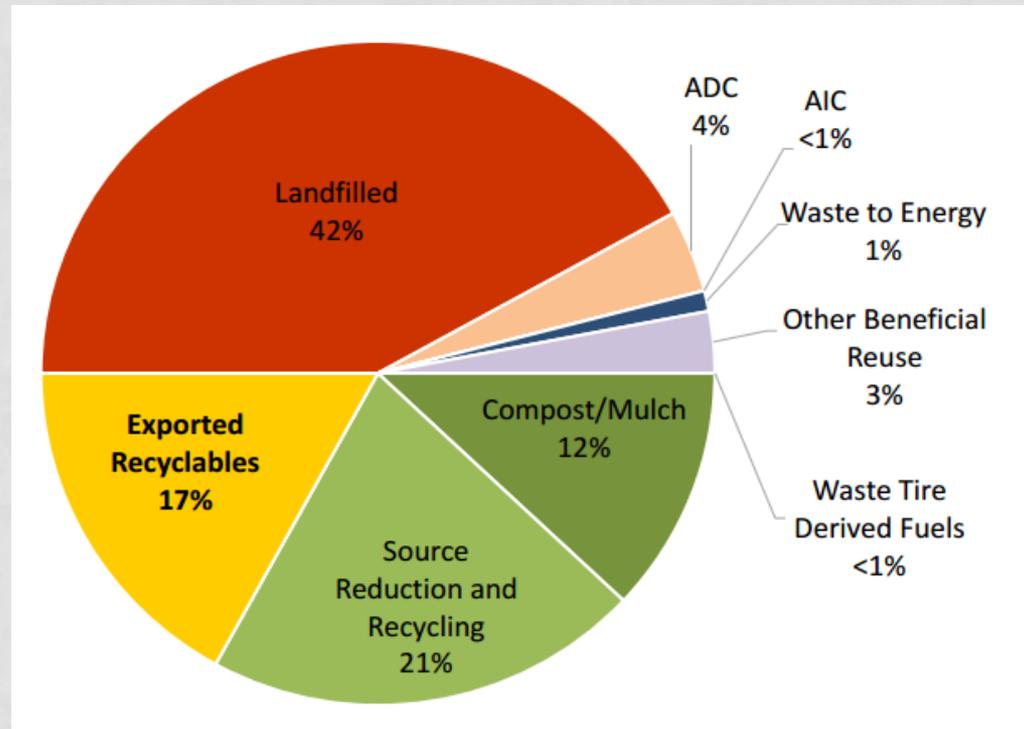
Rail Imports 2014



- 1.5 million tons of recyclables imported into CA by rail in 2014

# IMPACTS OF EXPORTING RECYCLABLES

- At least 17% of waste generated in CA is exported
- Benefits of in-state recycling



# ORGANIC WASTE

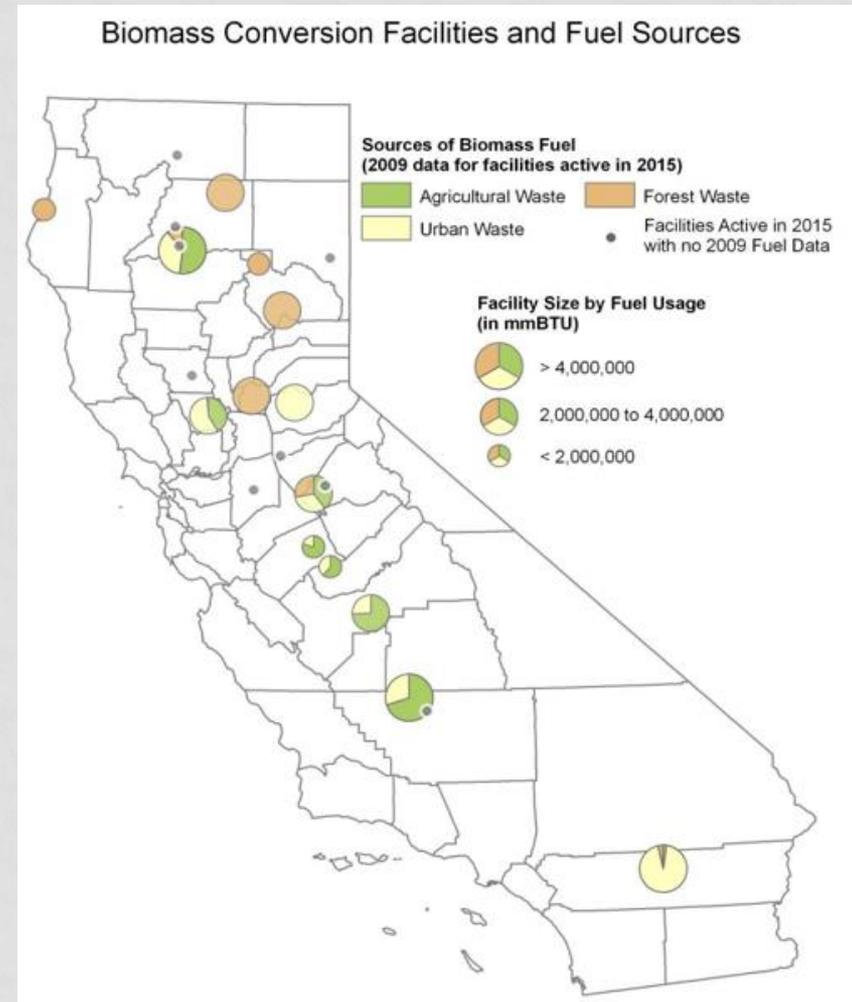
Throughput of Composting and  
In-Vessel Digestion Facilities, 2015



- 12.7 million tons of compostable material was disposed in 2014
- CalRecycle is implementing AB 1826, AB 1594 and AB 876 aimed at reducing disposal of organics

# ORGANIC WASTE

- CA infrastructure can only accommodate at most 1.1 million additional tons a year
- Publicly owned treatment works could handle large portion of the 5.6 million tons of food waste landfilled each year



# Questions?

A full copy of this report is available at CalRecycle's website at:

<http://www.calrecycle.ca.gov/Publications/Documents/1554/201601554.pdf>

# Open Discussion – Recycling Infrastructure

## Breakout Sessions

- County Operations
- County Unincorporated Communities
- Regional/Countywide
- Outreach and Education



# Next Steps



Thank you for  
participating.

## Upcoming Meetings

- Subcommittee Meeting – May 12, 2016
- Working Group Meeting – June 8, 2016