Climate Change and Agriculture:
Current Regulations

COUNTY GOALS AND EFFORTS IN ORGANICS MATERIAL MANAGEMENT

Stephanie Ewalt
County of San Diego
Department of Public Works

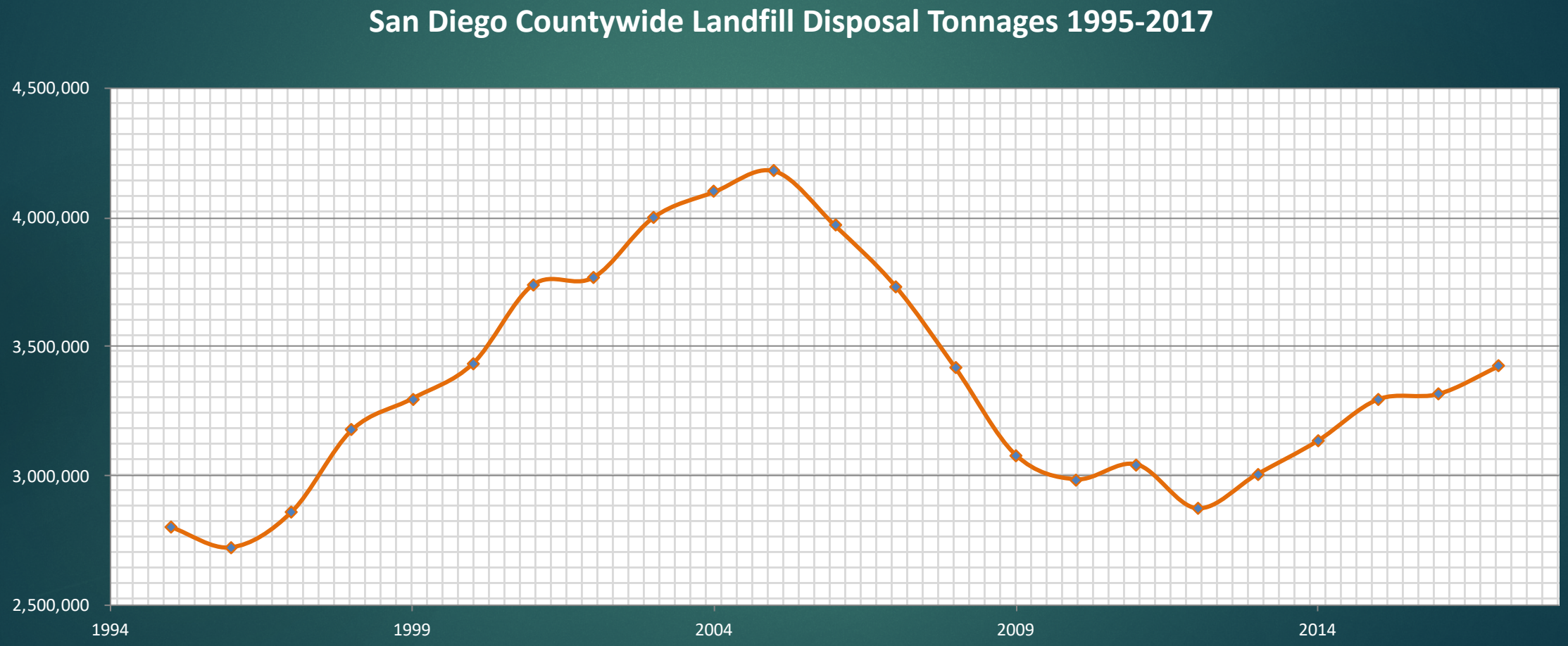
Overview

- Who we are: Solid Waste Planning and Recycling
- Countywide disposal – 3.4 Million Tons Annually
- Waste characterization – what are the numbers?
- Countywide Green "Waste"
- State: Mandates and Goals
- Local: County's Strategic Plan to Reduce Waste
- County's Zoning Ordinance – Current and Future
- Case Studies – Decentralized Options
  - Manure Management
  - On-Site Composting
  - Case study
- Technical Assistance

County of San Diego
Solid Waste Planning and Recycling

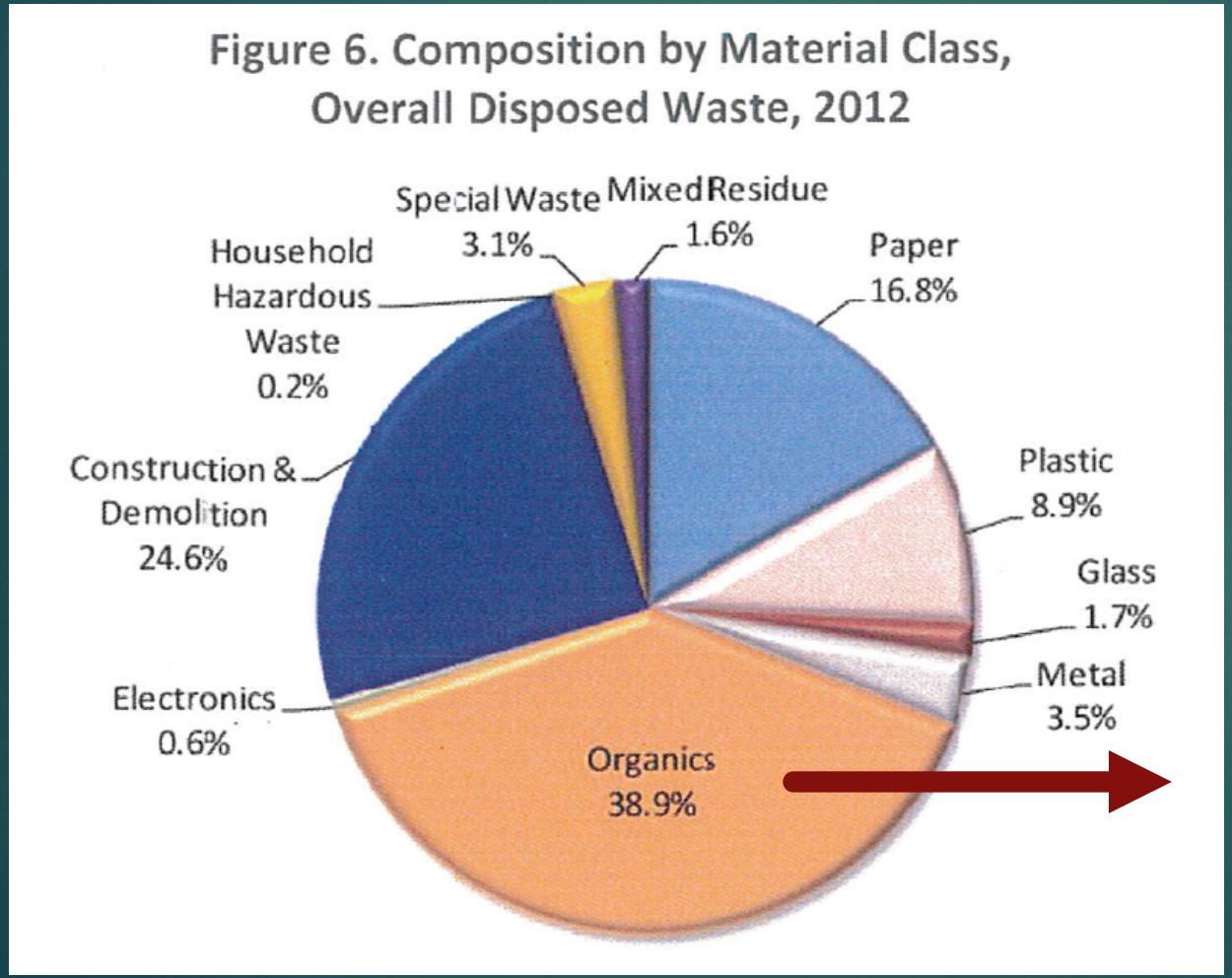
- Provide resources and assistance for unincorporated areas of the county
- Countywide solid waste and recycling infrastructure planning
- Technical assistance
- Enforce State waste diversion laws

Countywide Landfill Disposal



Alternative Daily Cover (ADC)

2012 City of San Diego Waste Composition Study, Miramar Landfill



Organics comprise:

- **Food scraps**
- **Soiled papers and cardboard**
- **Yard trimmings (e.g. leaves, grass, brush)**
- **Lumber**

Organics: 39% (1.2M tons)
Food: 15% (465,000 tons)

State Mandates & Goals

Bill	Description	Timeframe
AB 939	• 50% diversion mandate for jurisdictions	By 2000
AB 1826	• Commercial organics recycling requirements • Jurisdictions address barriers to new organics facilities	Started 2016
AB 876	• Counties plan for 15-yr organics processing capacity	Started 2017
AB 341	• 75% statewide diversion goal	By 2020
AB 1594	• No diversion credit for organics used as landfill cover	Starts 2020

SB 1383	• **Statewide organic waste reduction targets**
	  • **50% by 2020 | 75% by 2025**
	  • **20% reduction in edible food disposal**
	• **State agencies to develop regulations**
		Starts 2022

SB 1383 Requirements

2020	50 Percent Reduction in Landfilled Organic Waste (11.5 Million Tons Allowed Organic Waste Disposal)
2022	Regulations Take Effect
2025	75 Percent Reduction in Landfilled Organic Waste (5.7 Million Tons Allowed Organic Waste Disposal)
2025	20 Percent Increase in Recovery of Currently Disposed Edible Food

CalRecycle

Challenges with Meeting State Requirements

- Processing Infrastructure for food waste and green materials ("organics")
- Zoning restrictions

Organics Processing Infrastructure

	Tons Per Year
Organics Disposed	~1,400,000
(1.2 M Disposal + 188K ADC)	
Total Processed	~320,000
Food Scraps Processed ~10K	
Max. Permitted Capacity	~670,000
Lack of Regional Capacity	**~1,050,000**

Current Zoning (unincorporated)

Limitations for agriculture for processing green waste or animal waste.

1. Only allows materials onsite to be composted.

2. Agricultural sites may not have all materials they need, so need ZO to change to allow for more local exchange of materials to allow for more composting of ag materials, for ag uses.

Local Initiatives to Address State Mandates & Climate Concerns

- **Strategic Plan to Reduce Waste**
- Climate Action Plan (Proposed)
- General Plan
- Food System Initiative
- Health in All Policies Plan
- *Live Well San Diego*
- Regional Stormwater Resources Plan (SWRP)
- Strategic Energy Plan
- Comprehensive Renewable Energy Plan (Proposed)
- Regional Air Quality Strategy
- Agriculture Promotion Program

County of San Diego
Strategic Plan to Reduce Waste

75% diversion by 2020
90% diversion by 2040

Near term goals

- Supporting development of large scale organics processing facilities
- Onsite community and farm composting- farms, businesses, schools, residences, County parks & community gardens
- Educate residents & businesses on organics requirements & benefits

Near Term:
Zoning Ordinance Update

- Zoning Amendments (in progress)
  - Tiered System for Composting
  - Based on Facility Size & Intensity
- Timeline
  - Changes to take place in late 2020, early 2021
  - Will need an EIR

Case Studies and Pilot Programs
Decentralized Options

- Manure Management
  - Pilot manure pick up and land application
  - Livestock & Land Pilot in Ramona
- On-Farm Composting
  - Costanzo Farms (see case study available)
  - Terra Madre – ASP (Aerated Static Pile)
  - Sweet Spot (Bergent) – Proposed
  - Del Mar Fairgrounds Infield
- Other Decentralized
  - Ramona Unified School District

Manure Management

Horse Manure route pilot

- Horse manure is picked up from local horse owners by participating hauler.

- Then the manure is land applied onto a nearby farm at state approved agronomic rates--1,776 tons diverted since May 2018 at one farm.

Manure Management

County piloting a Livestock & Land program

- On-site manure management (windrows) at an unincorporated equestrian center

- Installing new and improving existing stormwater BMP's

- Install educational signage

- Monitoring & Testing plan

- Demonstration site will be used for community to learn from

- On-site trainings

On-Farm Composting

Costanzo Farm – see case study

Terra Madre – unincorporated Escondido

Sweet Spot Farms – Bergent
Proposed

Del Mar Fairgrounds Infield (Mid-scale demonstration site)

Other:
Ramona Unified School District

- Animal Feed
- Food rescue & donation
- Source reduction

County Assistance Programs:

- On-Farm composting training

- On-Farm technical assistance

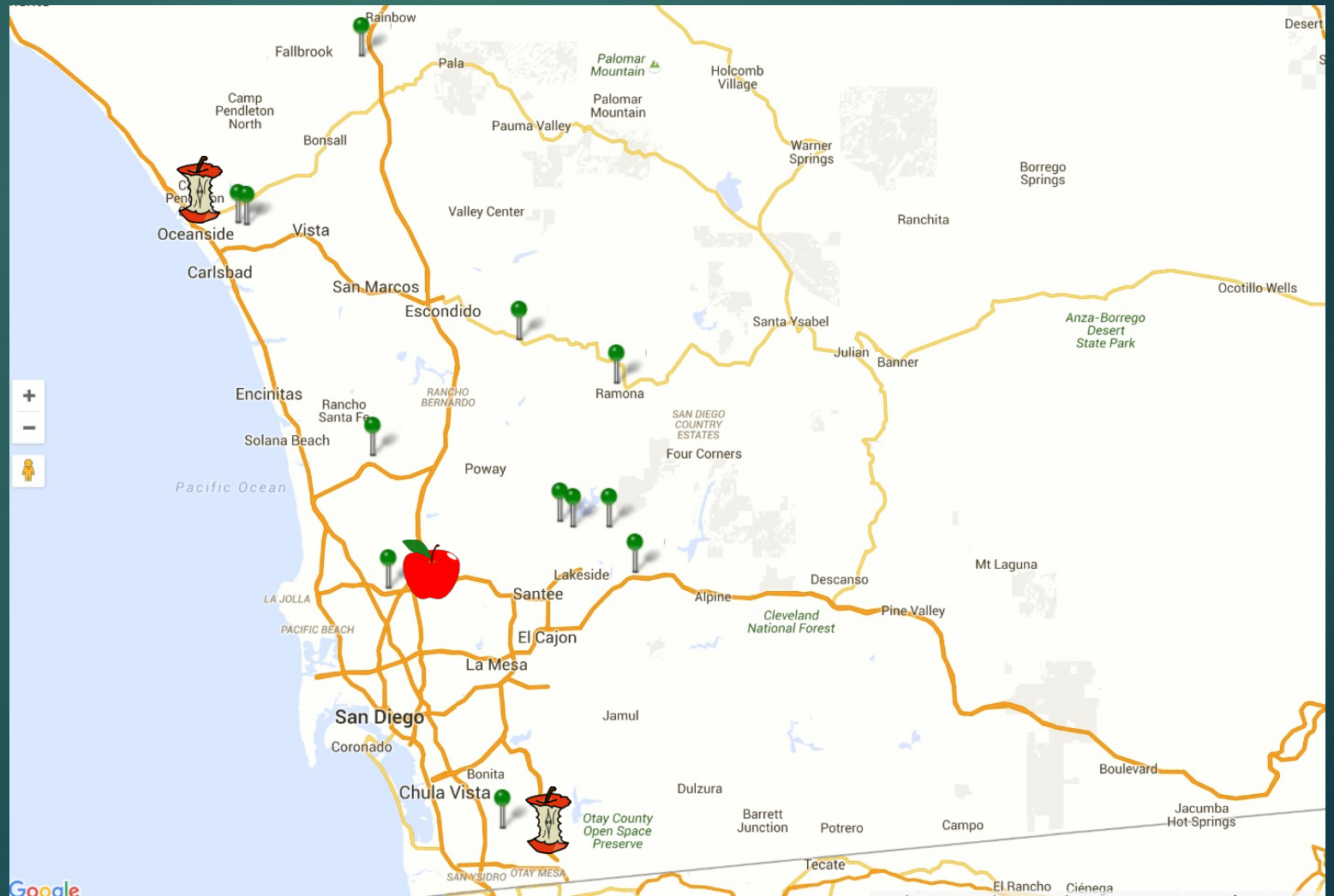
- Small and mid-scale composting assistance and trainings for schools, businesses and community gardens.

Case Study: Keeping it Local

Legend
- Yard Trimmings-
- Food Scraps-
- Pilot Food Scraps-

Regional Example- Distance from Encinitas

- Victorville- 130 miles
- Otay Landfill- 42 miles
- Miramar Greenery- 18 miles
- El Corazon- 13 miles
- *Local Farm- 1 mile*



Resources!

Case Study

COSTANZO FAMILY FARM

COUNTY OF SAN DIEGO RECYCLING
IT'S IN OUR NATURE

RESIDENTIAL FARM & ORCHARD (NON-COMMERCIAL)

Tim Costanzo's 3.5-acre family farm, which is located in the Elfin Forest, is home to an assortment of animals and over 160 varieties of fruit trees.

Having grown up on an orchard in Encinitas, stewarding the land has been one of Costanzo's core values since childhood. Composting is an essential part of the organic growing methods practiced on the farm since it began in the mid 1990s.

The Costanzo Family Farm proves that mid-scale composting can be easily accomplished in rural and agricultural settings. It also showcases numerous benefits, including improved soil health, water retention, and higher-quality crops.

Practices Implemented

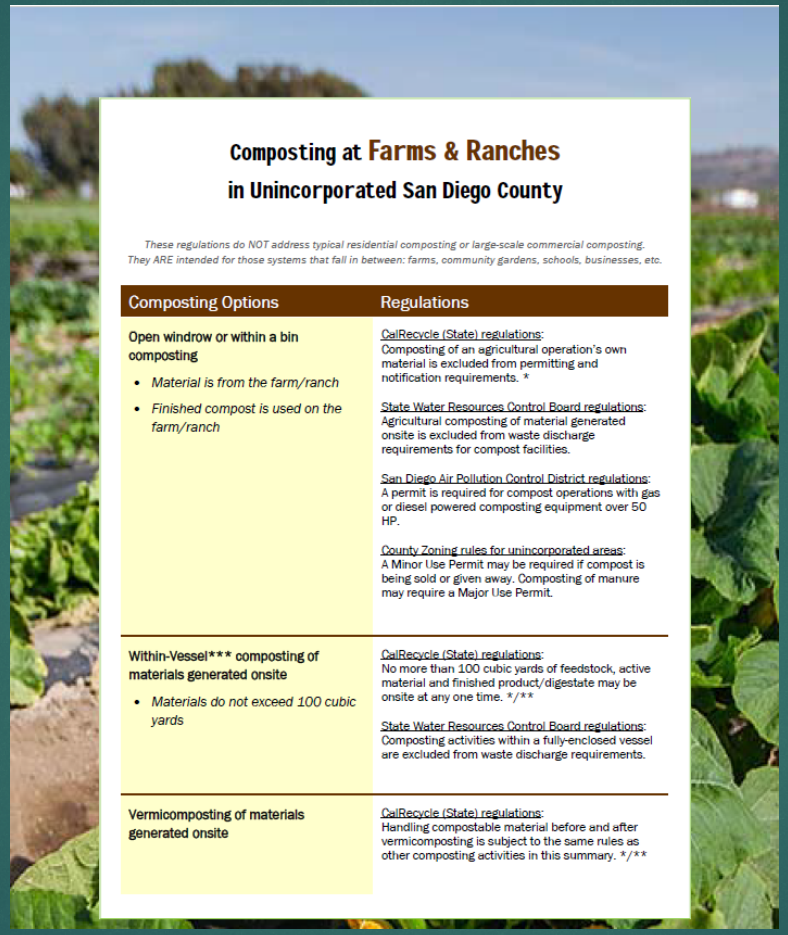
- Windrow-style composting of farm-generated waste
- Water-efficient irrigation due to increased water retention of soil
- Runoff prevention through placement of berms around compost site

Owner Tim Costanzo and his landscaper/gardener create compost at the farm using a mixture of "greens" and "browns" which are all generated on-site. The resultant compost is used as a soil amendments for the farm's fruit trees, increasing flavor and yields while helping the soil retain water and nutrients.

The composting operation at Costanzo Family Farm consists of two windrows about 60 feet long, 14 feet wide, and 6 feet tall. One windrow is designated as the "active" pile, while the other is left to "cook" and finish its decomposition cycle. Compost feedstock includes bedding and manure from the farm's animals, as well as landscape trimmings, paper, cardboard, inedible fruit, and untreated scrap wood from the farm's operations. In addition, wood chips from tree trimmings are added to maintain optimal conditions. The composting process takes from seven months to a year depending on weather and feedstock variations.

Costanzo has developed innovative methods to optimize his composting operation. A perforated hose runs along the top of the piles and is used as needed to keep the piles moist. Repurposed treadmill belts serve to redirect water runoff. The site also features runoff capturing berms.

Enough compost is made on the farm to amend the soil for all the fruit trees and for the family's



Composting at Farms & Ranches in Unincorporated San Diego County

These regulations do NOT address typical residential composting or large-scale commercial composting. They ARE intended for those systems that fall in between: farms, community gardens, schools, businesses, etc.

Composting Options	Regulations
Open windrow or within a bin composting • *Material is from the farm/ranch* • *Finished compost is used on the farm/ranch*	CalRecycle (State) regulations: Composting of an agricultural operation's own material is excluded from permitting and notification requirements. * State Water Resources Control Board regulations: Agricultural composting of material generated onsite is excluded from waste discharge requirements for compost facilities. San Diego Air Pollution Control District regulations: A permit is required for compost operations with gas or diesel powered composting equipment over 50 HP. County Zoning rules for unincorporated areas: A Minor Use Permit may be required if compost is being sold or given away. Composting of manure may require a Major Use Permit.
Within-Vessel* composting of materials generated onsite** • *Materials do not exceed 100 cubic yards*	CalRecycle (State) regulations: No more than 100 cubic yards of feedstock, active material and finished product/digestate may be onsite at any one time. */** State Water Resources Control Board regulations: Composting activities within a fully-enclosed vessel are excluded from waste discharge requirements.
Vermicomposting of materials generated onsite	CalRecycle (State) regulations: Handling compostable material before and after vermicomposting is subject to the same rules as other composting activities in this summary. */**

Food: *Too Good to Waste*!

Feeding Animals the Foods We Don't Eat

Why Feed Animals?

San Diego County is an agricultural region with lots of farm animals. Uneaten food from school cafeterias makes a tasty supplement for them, and may potentially reduce the farm's feed costs. Feeding animals is a preferred method on the US EPA's Food Recovery Hierarchy and one of the most environmentally-friendly for managing uneaten food.

Animal Feeding Options?

If your school has an agriculture and livestock program, you're off to a great start! That's the best option for uneaten food, and your animals will love you for it. Agricultural program manager not biting, or have too much for your own needs? Consider other options:

- Feed animals at another school in your district
- Collect food for teachers' or staff's animals
- Partner with and set aside for a local farmer

Which Foods do Animals Eat?

Yes! Whole fruits and vegetables, trimmings and peels.

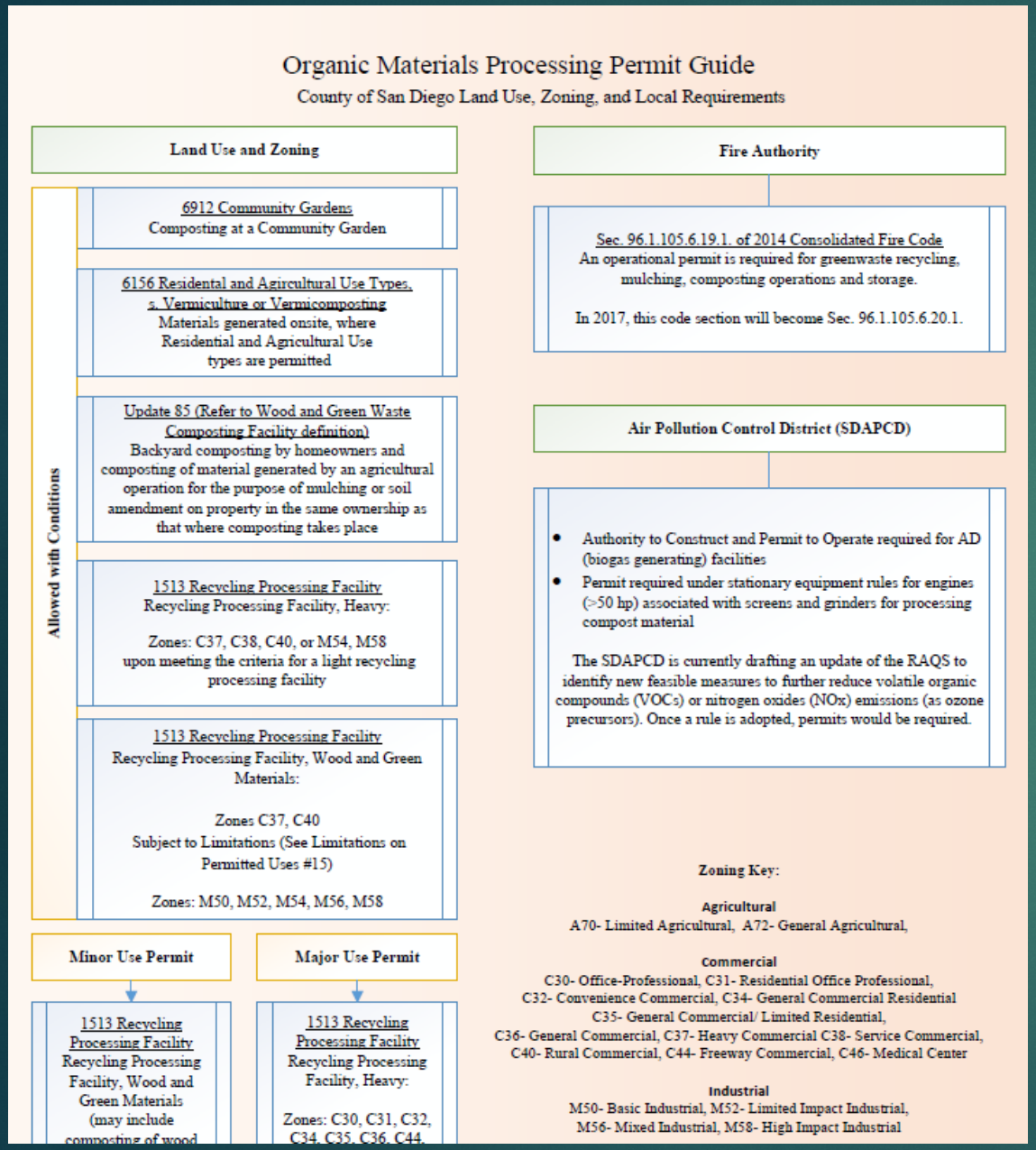
Maybe! Baked goods including breads, rice, cookies, tortillas, citrus and onions.

Definitely No!
Trash, especially plastic!

What Resources are Required?

- ***Animals*** - Of course! To consume the foods uneaten by humans.
- ***Food storage*** - Ideally animals will be fed daily, though produce will last days if properly refrigerated.
- ***Collection*** - Students assigned to collect food from storage at arranged times, to coincide with feeding animals onsite or a farmer picking them up.
- ***Storage containers*** - Small coolers, or three or 5-gallon, food-grade buckets, and a refrigerated or cool, safe area for storage.
- ***Training*** - For collection methods, storage and feeding procedures.

Resources!



Organic Materials Processing Permit Guide

County of San Diego Land Use, Zoning, and Local Requirements

Land Use and Zoning

Allowed with Conditions

6912 Community Gardens
Composting at a Community Garden

6156 Residental and Agricultural Use Types, a. Vermiculture or Vermicomposting
Materials generated onsite, where Residential and Agricultural Use types are permitted

Update 85 (Refer to Wood and Green Waste Composting Facility definition)
Backyard composting by homeowners and composting of material generated by an agricultural operation for the purpose of mulching or soil amendment on property in the same ownership as that where composting takes place

1513 Recycling Processing Facility
Recycling Processing Facility, Heavy:

Zones: C37, C38, C40, or M54, M58
upon meeting the criteria for a light recycling processing facility

1513 Recycling Processing Facility
Recycling Processing Facility, Wood and Green Materials:

Zones C37, C40
Subject to Limitations (See Limitations on Permitted Uses #15)

Zones: M50, M52, M54, M56, M58

Minor Use Permit

1513 Recycling Processing Facility
Recycling Processing Facility, Wood and Green Materials (may include composting of wood

Major Use Permit

1513 Recycling Processing Facility
Recycling Processing Facility, Heavy:

Zones: C30, C31, C32, C34, C35, C36, C44,

Fire Authority

Sec. 96.1.105.6.19.1. of 2014 Consolidated Fire Code
An operational permit is required for greenwaste recycling, mulching, composting operations and storage.

In 2017, this code section will become Sec. 96.1.105.6.20.1.

Air Pollution Control District (SDAPCD)

- Authority to Construct and Permit to Operate required for AD (biogas generating) facilities
- Permit required under stationary equipment rules for engines (>50 hp) associated with screens and grinders for processing compost material

The SDAPCD is currently drafting an update of the RAQS to identify new feasible measures to further reduce volatile organic compounds (VOCs) or nitrogen oxides (NOx) emissions (as ozone precursors). Once a rule is adopted, permits would be required.

Zoning Key:

Agricultural
A70- Limited Agricultural, A72- General Agricultural,

Commercial
C30- Office-Professional, C31- Residential Office Professional, C32- Convenience Commercial, C34- General Commercial Residential C35- General Commercial/ Limited Residential, C36- General Commercial, C37- Heavy Commercial C38- Service Commercial, C40- Rural Commercial, C44- Freeway Commercial, C46- Medical Center

Industrial
M50- Basic Industrial, M52- Limited Impact Industrial, M56- Mixed Industrial, M58- High Impact Industrial

Regulatory Summary for Organics Recycling Facilities in Unincorporated San Diego County

Composting Facilities - CalRecycle Regulations and Permit Tiers
(Resource: CalRecycle Tier Chart)

Permit Tier/ Activity	Additional Points/ Clarification
Excluded	
Agricultural material derived from an agricultural site and returned to the same site or agricultural site owned or leased by the owner, parent, or subsidiary (≤ 1,000 yd^3 given away or sold annually)	"Agricultural Material" means waste material of plant or animal origin, which results directly from the conduct of agriculture, animal husbandry, horticulture, aquaculture, vermiculture, viticulture and similar activities undertaken for the production of food or fiber for human or animal consumption or use, which is separated at the point of generation, and which contains no other solid waste… Material that is defined as "food material" or "vegetative food material" is not agricultural material. Agricultural material includes, but is not limited to, manures, orchard and vineyard prunings, grape pomace, and crop residues.
Vermicomposting and Mushroom Farming (Note: The handling of compostable materials used as growth medium is not excluded)	Pre-composting of material would be subject to composting regulations if it is handled in a manner that allows the material to reach 122 degrees Fahrenheit Compostable material when not being used as a growth medium is subject to the Transfer/Processing Operations and Facilities Regulatory Requirements.
New In-Vessel Digester Regulations. (<100 yd3)	See In-Vessel Digester Regulations (below)
Composting green material, agricultural material, food material, and vegetative food material, alone or in combination, is an excluded activity if the total amount of feedstock and compost on-site at any one time does not exceed 100 cubic yards and 750 square feet. [Note: Persons handling compostable material under the above exclusion are obligated to obtain all permits, licenses, or other clearances that may be required by other regulatory agencies including, but not limited to local health entities and local land use authorities.]	This is a new exemption effective January 1, 2016 that consolidates and replaces formerly excluded activities. This exemption does not require that material be generated from onsite and compost used onsite.
Beneficial use	New regulations effective January 1, 2016 include specifications for direct land application

Questions or Comments

Stephanie Ewalt, County of San Diego

Stephanie.Ewalt@sdcounty.ca.gov

(858) 694- 2458