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# COUNTY OF LOS ANGELES

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September 7, 2021

TO: Each Supervisor

FROM: Mark Pestrella, PE  
Director of Public Works

### **BOARD MOTION OF JUNE 8, 2021, AGENDA ITEM NO. 5 ENHANCING COUNTYWIDE SOLID WASTE MANAGEMENT THROUGH EXPANDED PROGRAM AND INFRASTRUCTURE INVESTMENTS**

On June 8, 2021, the Board adopted a motion introduced by Supervisor Sheila Kuehl instructing Public Works, in consultation with the Chief Executive Office, Chief Sustainability Office, and Regional Planning, to report back within 90 days with a strategy addressing challenges to the implementation of source reduction and waste diversion infrastructure and programs needed to achieve new State and County climate and waste management goals.

In response to the motion, Public Works prepared the attached Enhancing Countywide Solid Waste Management Programs and Infrastructure Report, outlining existing policies and programs, highlighting actions currently underway, and recommending next steps that should be taken to achieve the County's waste prevention and diversion goals.

This report builds upon the Roadmap to a Sustainable Waste Management Future, approved by the Board in 2014. The Roadmap established long-term landfill diversion targets for unincorporated County and provides a high-level comprehensive framework of best practices for each aspect of solid waste management to guide decisions. In contrast, this report provides more focused recommendations for actions that can be implemented immediately.

Recommendations address source reduction and waste diversion policies and programs to prevent, reduce, and recycle waste in County unincorporated communities and County facilities. This includes limiting single-use plastics and updating the County Green Purchasing Policy to incorporate procurement of recovered organic waste products as required by new State organics diversion regulations.

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This report strongly emphasizes the critical need for infrastructure development to comply with rapidly approaching State deadlines for reducing organic waste disposal. It provides results of a Countywide organics processing facilities needs analysis, preliminary feasibility results for locating needed facilities at existing County waste management properties, and a recommendation to advance development of one such organic waste processing facility at the Calabasas Landfill.

Recommendations to enhance regional leadership include collaboration with regional stakeholders and advancing the recommended programs and infrastructure development through the InfrastructureLA Sustainable Waste and Recycling Management subcommittee and the Los Angeles County Integrated Waste Management Task Force.

On June 18, 2021, the Board sent a five-signature letter to CalRecycle outlining the funding needed by the County, requesting State financial assistance, and making recommendations to remove other policy barriers to Senate Bill 1383 (2016) implementation. The report further identifies State funding opportunities for advancing regional solid waste management infrastructure.

A final recommendation of the report is for Public Works to update the Roadmap to a Sustainable Waste Management Future to address current challenges and to integrate the relevant actions and recommendations of this report to serve as a framework for achieving long-term landfill diversion targets and help guide future solid waste management decisions.

If you have any questions or would like a briefing, please contact me or your staff may contact Deputy Director Keith Lilley at (626) 458-4016 or [klilley@pw.lacounty.gov](mailto:klilley@pw.lacounty.gov).

KAL:ak

P:\SEC\BRIENHANCING COUNTYWIDE SWM 10286-1-1

Attach.

cc: Chief Executive Office  
Executive Office  
Chief Sustainability Office  
Department of Regional Planning

# Enhancing Countywide Solid Waste Management Programs and Infrastructure Report





## EXECUTIVE SUMMARY

In 2014, the Board adopted the Roadmap to a Sustainable Waste Management Future (Roadmap), which provides a comprehensive framework for managing solid waste including long-term diversion goals for County unincorporated communities. While much progress has been made since 2014, new challenges such as the collapse of international recycling markets, a surge in the disposal of single-use plastics, and a lack of local infrastructure to process organic waste and recyclables affect the County's ability to achieve its sustainability goals. In addition, in its efforts to combat climate change, the State has imposed new requirements on the waste management sector, such as Senate Bill (SB) 1383 (Lara, 2016), which established ambitious new Statewide goals for managing organic waste, including organic waste prevention, collection, recycling, and infrastructure planning and development. These events necessitate renewed County efforts to meet State requirements and achieve the County's sustainability goals.

With this in mind, the Board adopted a motion on June 8, 2021, directing Public Works, in consultation with the Chief Executive Office, Chief Sustainability Office, and Regional Planning, to develop a strategy for addressing these challenges and recommendations for developing new policies, programs, and infrastructure.

In response to the motion, Public Works has prepared this report, which outlines existing policies and programs, highlights actions currently underway, and recommends future actions and next steps that should be taken to achieve the County's waste prevention and diversion goals.

The report is organized to cover the five key areas identified in the Board motion:

1. Source reduction and waste diversion programs and infrastructure.
2. Infrastructure needs to meet the County's goals and new State mandates, including potential locations for new or expanded facilities.
3. Procurement of recovered organic waste products per SB 1383 (2016) requirements.
4. Mechanisms and incentives to reduce waste generation and disposal.
5. Existing funding sources to support source reduction and waste diversion programs and infrastructure along with opportunities to pursue additional funding.

Implementing source reduction programs and advocating for similar policies and legislation at the State level should be a top priority for the County since these programs will reduce the amount of waste that needs to be managed. While this report identifies several such programs to implement, even the most effective will not eliminate all waste. The County will still need to develop additional waste diversion programs and facilities to handle waste that cannot be avoided and would otherwise be disposed in landfills.

To process the nearly two million tons of food waste disposed each year, the County will need at least 12 new anaerobic digestion (AD) facilities, which are estimated to cost over \$800 million to develop. This does not include the additional recycling and manufacturing infrastructure needed to manage materials that were previously exported or disposed and will need to be recycled.

This report identifies potential capacity from proposed privately developed organic waste processing facilities and also analyzes active and closed County-owned solid waste sites for potential new facilities. The County's Preliminary Draft Countywide Siting Element, recently released for public review, also includes a list of potential sites for new facilities that are owned by private entities or cities. The number of facilities needed and the extensive time needed to site, permit, and build new facilities make it important to consider County-owned sites in addition to sites owned by private entities and cities. Current and former solid waste facility sites provide a unique opportunity in that they already contain the backbone infrastructure needed to support a project as well as proper zoning and even existing permits. In an effort to leverage existing infrastructure, Public Works identified a list of County-owned solid waste sites. The list was evaluated with regard to available space, current zoning, land use, equity and environmental justice considerations, and other factors in order to determine recommended sites for further feasibility analysis.

Public Works had previously completed an extensive multi-year feasibility analysis for one of the sites, the Calabasas Landfill, in the Third Supervisorial District. Based on our additional analysis, Public Works has confirmed its viability. For this reason, one of the key infrastructure-related recommendations of this report is to develop an organic waste processing facility at the Calabasas Landfill. The facility would serve as a showcase project to demonstrate the financial and environmental benefits of anaerobic digestion technologies to process organic waste and pave the way for additional investment from the solid waste industry in the region. It could also create a model for public-private partnerships that could be replicated by other jurisdictions to close the regional infrastructure gap.

Another way to support the development of organic waste processing infrastructure is through the purchase of organic waste products, such as compost, mulch, and biomethane. As described in this report, the County can leverage its purchasing power and advocate for new incentives to support markets for these materials, which in turn makes infrastructure projects financially viable.

The County also plans to enhance its leadership role in the region through the Los Angeles County Integrated Solid Waste Management Task Force (Task Force) and the Sustainable Waste and Recycling Management (SWARM) Subcommittee of Infrastructure LA and work with regional solid waste management leaders to develop new programs and regional infrastructure to reduce waste and divert it from landfills.

The County should continue to advocate for policy, legislation, and funding to encourage regional infrastructure development. As approved in the motion, the Board sent a five-signature letter to CalRecycle on June 18, 2021, outlining the funding needed by the County, requesting State financial assistance, and making recommendations to

remove other policy barriers to SB 1383 implementation. This report identifies additional potential funding opportunities including sponsoring new legislation.

In summary, this report builds upon the framework of the Roadmap and provides focused recommendations for policies, programs, and infrastructure development opportunities that can be implemented immediately to address new waste management challenges. In addition, this report strongly emphasizes the critical need for infrastructure to comply with rapidly approaching State deadlines for reducing organic waste disposal. Some highlights of the recommendations, which can be found at the end of the report include:

1. Implement source reduction, Extended Producer Responsibility (EPR), and waste diversion policies and programs, such as ordinances for battery EPR and limiting single-use plastics.
2. Adopt policies to prevent, reduce, and recycle waste in County unincorporated communities and at County facilities such as updating the County Green Purchasing Policy to include requirements to procure recovered organic waste products as required by SB 1383, purchase products with third-party resource management certifications, give preference to manufacturers with take back programs, and/or purchase products that meet established recyclability requirements, minimum recycled content requirements, or similar standards.
3. Conduct feasibility analyses at certain County-owned landfill sites for potential development of co-located facilities and release a Request for Proposals for an organic waste processing facility at the Calabasas Landfill along with robust public outreach and engagement regarding such a facility.
4. Provide regional leadership for infrastructure development in close collaboration with SWARM, the Task Force, Cities, and the solid waste industry to further address infrastructure and program implementation challenges.
5. Continue advocacy efforts to support sustainable funding for waste prevention and diversion, such as State legislation, State ballot measures, Federal infrastructure packages, and leverage this funding to enhance regional infrastructure development and provide direct technical assistance to jurisdictions.
6. Develop a sustainable approach to using bioenergy and biomethane created from recycled organic waste while also supporting vehicle electrification goals.
7. Support Statewide implementation and consider local adoption of policies recommended by the AB 1583 Statewide Commission on Recycling Markets and Curbside Recycling.
8. Update the Roadmap to address current challenges and integrate the relevant actions and recommendations in this report to serve as a high-level comprehensive framework for achieving long-term landfill diversion targets and guiding future solid waste management decisions.

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### APPENDICES

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## ACRONYMS & ABBREVIATIONS

Acronyms/Abbreviations	Definition
ACT	Advanced Clean Truck
AD	Anaerobic Digestion
ATAS	Alternative Technology Advisory Subcommittee
AVECC	Antelope Valley Environmental Collection Center
C&D	Construction & Demolition
CALMAX	California Materials Exchange
CARB	California Air Resources Board
CBSM	Community-Based Social Marketing
CPSC	California Product Stewardship Council
CSD	Los Angeles County Sanitation Districts
CSE	Countywide Siting Element
CT	Conversion Technology
CUC	County Unincorporated Communities
EPA	Environmental Protection Agency
EPR	Extended Producer Responsibility
GDD	Garbage Disposal District
GHG	Greenhouse Gas
HHW	Household Hazardous Waste
ICI	Industrial, Commercial and Institutional
ISD	Internal Services Department
ISWM	Integrated Solid Waste Management
LCFS	Low Carbon Fuel Standard
MRF	Material Recovery Facility
MSW	Municipal Solid Waste
RINs	Renewable Identification Numbers
RFI	Request for Information
RFP	Request for Proposals
RFS	Renewable Fuel Standard
RMDZ	Recycling Market Development Zone
SUP	Single-Use Plastic
SWARM	Sustainable Waste & Recycling Management Subcommittee
TPD	Tons per Day
WTE	Waste to Energy

## 1.0 INTRODUCTION

This report responds to the June 8, 2021, motion by Supervisor Sheila Kuehl titled "Enhancing Countywide Solid Waste Management Through Expanded Program and Infrastructure Investments". The motion directed Public Works to coordinate with other County departments to provide recommendations for developing source reduction and waste diversion infrastructure and programs to achieve new State and County climate and waste management goals. A full copy of the Board motion is provided in Appendix A.

The report includes recommendations on the five topics that the Board directed Public Works to analyze in order to address challenges to achieving waste management and climate goals:

Section 4.0 – Identifying source reduction and waste diversion programs and infrastructure.

Section 5.0 – Analyzing infrastructure needs and potential locations for new or expanded facilities.

Section 6.0 – Identifying opportunities and strategies to procure recovered organic waste products.

Section 7.0 – Providing leadership in identifying mechanisms and incentives to reduce waste generation and divert waste from landfills.

Section 8.0 – Identifying funding sources to support source reduction strategies, infrastructure, and programs.

## 2.0 BACKGROUND

### 2.1 Goals and Objectives

The County's goals and objectives for managing solid waste resources include:

- Diverting 80 percent of solid waste produced in unincorporated County areas from landfills by the year 2025, 90 percent by 2035, and 95 percent or more by 2045 as specified in the County's Roadmap to a Sustainable Waste Management Future (Roadmap)<sup>1</sup> and the OurCounty Sustainability Plan.<sup>2</sup>
- Reducing overall per capita waste generation by 25 percent by 2025, 30 percent by 2035, and 35 percent by 2045; and by 2025 increasing organic waste processing capacity by 20 percent, 30 percent by 2035, and 45 percent by 2045 as specified in the OurCounty Sustainability Plan.
- Reducing greenhouse gas (GHG) emissions 11 percent by 2020 and achieving 75 percent landfill diversion by 2020 per the County's Climate Action Plan.<sup>3</sup>
- Implementing State laws outlined in Section 2.2 including the goal to achieve 75 percent organic waste diversion from landfills and recover 20 percent of edible food for human consumption by 2025 per Senate Bill (SB) 1383.

<sup>1</sup> Los Angeles County Roadmap to a Sustainable Waste Management Future. <https://pw.lacounty.gov/epd/roadmap/>

<sup>2</sup> OurCounty Sustainability Plan. <https://ourcountyla.lacounty.gov/>

<sup>3</sup> Los Angeles County Climate Action Plan. <https://planning.lacounty.gov/ccap>

## 2.2 Legislative Drivers

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Several laws and regulations are driving the implementation of sustainable waste management and GHG reduction initiatives throughout California:

- **Assembly Bill (AB) 939** established a requirement for local jurisdictions to source reduce, recycle, or compost at least 50 percent of their solid waste by the year 2000.
- **AB 32** established a State GHG emissions reduction target and established a Low Carbon Fuel Standard (LCFS), resulting in increased solid waste diversion. SB 32 expanded upon AB 32 with an emission reduction goal of 40 percent below 1990 levels by 2030.
- **AB 341** established a Statewide goal that a minimum of 75 percent of solid waste generated be source-reduced, recycled, or composted by the year 2020. In 2019, California's Statewide recycling rate was down to 37 percent from its 2014 peak of 50 percent. Recycling has been significantly impacted by China's National Sword Policy enacted in 2017.
- **AB 1826** established requirements for businesses and multi-family residences to recycle organic waste. Organic waste collection services are more expensive than trash collection. Because AB 1826 had no enforcement provisions, commercial organic waste collection rates in the County are low.
- **SB 1383** established targets to achieve a 50 percent reduction in the level of the Statewide disposal of organic waste from the 2014 level by 2020, and a 75 percent reduction by 2025. SB 1383 establishes an additional target that not less than 20 percent of edible food that is currently disposed of is recovered for human consumption by 2025. Organic waste includes food waste, landscaping waste, organic textiles and carpets, wood waste, paper products, manure, biosolids, digestate, and sludges. Once disposed in landfills, organic waste decomposes and creates emissions of methane, a powerful GHG and short-lived climate pollutant. Beginning on January 1, 2022, the SB 1383 regulations require every jurisdiction to provide organic waste collection services to all residents, businesses, and local government facilities. Jurisdictions are required to adopt ordinances to impose mandatory minimum penalties on organic waste generators, such as residents and businesses, who do not recycle organic waste. Jurisdictions who fail to comply with the requirements will be subject to penalties of up to \$10,000 per day from CalRecycle. These enforcement mechanisms are a key component of SB 1383 making it a significant regulatory driver for changes to organic waste management.

## 3.0 CURRENT SOLID WASTE MANAGEMENT SYSTEM

The County's solid waste management responsibilities include oversight and reporting for regional disposal and organic waste processing capacity as well as waste collection and diversion programs specifically for the County unincorporated communities (CUC) and County facilities. This Section summarizes the current collection programs and infrastructure in the County as well as the available disposal and organic waste processing capacity inside and outside the County. This Section also describes capacity gaps in meeting future solid waste management demand throughout the County, which are further explored in Section 5.0.

## **3.1 Current Collection Programs and Infrastructure**

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Cities in the County are responsible for developing and implementing Solid Waste Management programs to meet State mandates. The cities are required to report their organic waste processing capacity to the County so that the County can prepare reporting to CalRecycle required by SB 1383.

The County is responsible for solid waste programs and infrastructure for the CUC and County facilities. Within the CUC, solid waste collection services are provided through a system that includes 20 exclusive residential waste collection franchises serving 600,000 residents, 7 garbage disposal districts (GDDs) serving 380,000 residents and businesses, and a non-exclusive commercial franchise system serving 20,000 businesses and multi-family residential complexes within CUC but outside the GDDs. Approximately 100,000 CUC residents in the northern portion of the County continue to operate under an open market system for waste collection. Under this system, residents contract directly with waste haulers for waste collection services. Residents and businesses also have the option to haul their own waste directly to publicly or privately owned processing and disposal facilities. County facilities can choose to receive waste collection services through the Facility Ancillary Master Services Agreement (FASMA) or from the County's commercial franchise haulers. County facilities located in cities may also have the option to receive waste collection services provided by the City.

Public Works will begin providing mandatory organic waste collection services to all residents and businesses in 2022. Public Works has already begun updating residential franchise and GDD contracts to include SB 1383 requirements. The Board recently approved an application by Public Works to initiate proceedings with the Local Agency Formation Commission for the County to establish four new GDDs within the CUCs of Acton, Agua Dulce, and Antelope Valley. Because GDDs receive exclusive waste hauling services from one provider, Public Works will require the GDD waste haulers to provide SB 1383 organic waste collection services to all residents and businesses. Public Works has also developed a generator ordinance to ensure organic waste is properly sorted and can be processed at local organic waste processing facilities. The generator ordinance was presented to the public via workshops in July 2021 and will be presented to the Board for consideration in October 2021.

The materials collected by private waste haulers are taken to publicly and privately owned and operated processing and disposal facilities. These haulers have the discretion to determine which facilities to direct the waste and materials, usually based on the economics of tip fees and distance to sites.

## **3.2 Current Solid Waste System Capacity**

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### **3.2.1 Solid Waste Disposal System**

The existing solid waste disposal facility infrastructure in the County includes ten permitted Class III municipal solid waste (MSW) landfills, one permitted inert waste landfill, one transformation (waste-to-energy) facility, and ten inert debris facilities operating within the County.

Most solid waste facilities are privately owned and operated. However, the County owns the Calabasas Landfill, which is operated by the Los Angeles County Sanitation Districts (CSD). In addition, the County and the City of Glendale share ownership of the Scholl Canyon Landfill, which is operated by CSD. A few other landfills are owned and/or operated by cities or government agencies, such as the Burbank Landfill (City of Burbank), Savage Canyon Landfill (City of Whittier), Pebbly Beach Landfill (owned by City of Avalon and privately operated), and San Clemente Landfill (United States Department of the Navy). The transformation facility, the Southeast Resource Recovery Facility is jointly owned by CSD and the City of Long Beach and operated by the City of Long Beach.

Per the Preliminary Draft Countywide Siting Element (CSE)<sup>4</sup>, as of December 31, 2018, the total remaining permitted Class III landfill capacity in the County was estimated at 163.9 million tons. The Preliminary Draft CSE states that residents and businesses within the County disposed of approximately 10.8 million tons of solid waste at existing permitted landfills and transformation facilities both in and outside of the County (as of 2018). Of this, approximately 5.1 million tons was disposed of at Class III out-of-County landfills (approximately 47 percent). Successful waste diversion programs implemented by jurisdictions throughout the County have had a substantial impact on lowering disposal volumes. For the purposes of complying with AB 939, the County achieved an overall waste diversion rate of 69 percent in 2019.

### **3.2.2 Solid Waste Capacity**

The Preliminary Draft CSE shows that the combination of an increase in diversion rate, development of waste diversion facilities, and use of out-of-County landfills would address the disposal need of all the jurisdictions in the County for the 15-year planning period (2018-2033). Out-of-County landfill capacity is expected to be reliably available to jurisdictions within Los Angeles County for the planning period to supplement and extend the life of in-County capacity. Based on the 2018 annual disposal rate of 10.8 million tons, the County will need additional waste diversion infrastructure to process organic waste and other recoverable materials to avoid reliance on in-County landfills and meet the County's overall solid waste disposal needs. The County's recommended strategies include enhancing source reduction efforts and developing new waste diversion infrastructure including conversion technologies to further reduce reliance on landfill disposal capacity.

### **3.2.3 Organic Waste Disposal**

SB 1383 defines organic waste as food, green waste, landscape and pruning waste, wood waste, paper products, printing and writing paper, organic textiles and carpets, digestate, and biosolids. It is estimated that the County disposes 5 million tons of organic waste each year.

### **3.2.4 Organic Waste Processing Capacity**

Organic materials that are diverted and not disposed are taken to in-County and out-of-County organic waste processing facilities, which include composting, chipping and grinding, anaerobic digestion (AD) and co-digestion facilities. An estimated 1.4 million tons of organic waste are diverted per year.

The County and cities in the County have access to 76 organic waste processing facilities with a combined annual processing capacity of 5.2 million tons. However, the majority of this capacity is located outside of the County. Other communities outside the County have access to these facilities and may have plans to use this capacity for SB 1383 compliance. Annual in-County organic waste processing capacity is limited to just 479,000 tons.

Public Works will implement and expand programs that focus on reducing organic waste (such as purchasing less food so that less is discarded) and reusing organics (such as donating food for human or animal consumption) to reduce the amount of organic waste that will require processing capacity. Section 4.0 provides an overview of existing reduction and reuse programs in the County and recommendations to further expand these efforts. Public-private partnerships will be required to meet the future organic waste processing infrastructure demand, which is further described in Section 5.0.

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<sup>4</sup> Preliminary Draft Revised CSE. <https://dpw.lacounty.gov/epd/cse/References/>



## 4.0 SOURCE REDUCTION AND WASTE DIVERSION PROGRAMS

As described in the introduction, the Board motion directed Public Works to provide recommendations on source reduction and waste diversion programs, which include initiatives that rethink, reuse, reduce, and recycle waste. Integrated solid waste management (ISWM) includes a "waste hierarchy" that displays the most preferred method to the least preferred method of managing waste.



**Figure 41: Los Angeles County's Waste Management Hierarchy**

Waste prevention or source reduction is at the top of the County's resource management hierarchy because it prevents adverse environmental, economic, and social impacts. The impact of our products and packaging – our consumption-based carbon footprint – is 44 percent of overall national GHG emissions.<sup>5</sup> From a life cycle perspective, the greatest opportunity for GHG emission reduction comes from preventing emissions produced in energy-intensive extraction and manufacturing processes.

Policies can increase source reduction by establishing financial incentives, product bans, and local, State, or national mandates. In this report, Public Works recommends advocating for new State or national source reduction policies as well as implementing source reduction policies and programs in CUCs and at County facilities.

Source reduction requires changes in public behavior. The behavior and actions of a knowledgeable and conscientious citizens is key to sustainable waste management and climate resiliency. To encourage behavior change, Public Works will expand its existing public outreach program using strategies described in Public Works' SB 1383 Organic Waste Reduction Communications Plan. These strategies include enhanced social media, media campaigns, community engagement, publications, and the development of collateral material in order to reduce organic waste, especially food waste, in CUCs at County facilities and Countywide. Public education outreach and strategies will include information on how to minimize food waste, reduce the use of single-use convenience products, and reuse and repurpose items that would otherwise be disposed.

In cases where waste is unavoidable, recycling, composting, and energy recovery through AD and thermal conversion technologies (CTs) are environmentally sound options for diverting the waste. Benefits include reducing GHG emissions, replacing fossil-based energy and fuels, displacing virgin inputs to supply materials for industry, creating valuable soil amendments, and conserving resources. Ongoing source reduction efforts followed by implementation of recycling, composting, AD, and thermal CTs provides a comprehensive and sustainable solution to manage waste.

<sup>5</sup> Stolaroff, J. & Sheehan, B. (2009). Products, Packaging and US Greenhouse Gas Emissions. Accessed at [https://www.researchgate.net/publication/327060546\\_Products\\_Packaging\\_and\\_US\\_Greenhouse\\_Gas\\_Emissions](https://www.researchgate.net/publication/327060546_Products_Packaging_and_US_Greenhouse_Gas_Emissions)

## **4.1 Existing or Planned Source Reduction and Reuse Programs**

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The County has multiple existing and planned policies and programs to source reduce and reuse certain materials. A high-level summary of these programs, including their intent, any measurable success, and recommendations for expansion, is provided below. It should be noted that although these programs are highly effective, they only address a small portion of the overall waste stream. Therefore, this report includes recommendations for additional policies that should be implemented to source reduce a greater portion of the waste stream as well as recommendations for diverting waste that cannot be avoided from landfill disposal.

### **4.1.1 Food DROP**

The SB 1383 regulations require large commercial edible food generators such as restaurants and grocery stores to donate excess edible food to food recovery organizations or services. Local jurisdictions are required to provide education and resources for commercial edible food generators, enforce the requirements, and ensure sufficient edible food recovery capacity.

In 2018, Public Works launched the Food Donation Recovery and Outreach Program or Food DROP to facilitate the recovery of edible food to feed those in need instead of being disposed. The County posted resources on its website for food donors, including a toolkit with helpful information and an interactive map of the County's 50 non-profit organization partners. Technical assistance was provided to 130 commercial edible food generators in the CUC to distribute the toolkit information and recommend non-profit organization partners based on location, transportation needs, and food types. In 2020, approximately 500 tons of excess edible food were recovered by businesses in County unincorporated areas and donated to local food banks. The County is planning to expand Food DROP by providing outreach to all edible food generators in the County unincorporated areas and visit all non-profit organizations to offer support in connecting them with potential donors. Under Food DROP, Public Works will also offer additional support to food recovery infrastructure through grants to non-profit organizations and donating businesses. As a regional leader in developing waste prevention programs, the County will make food donation resources available to all 88 cities and other local jurisdictions. County facilities that generate excess edible food will be required to donate excess edible food and have the option of using Food DROP to comply with SB 1383.

### **4.1.2 Single-Use Food Service Ware and Plastics**

The County has implemented several successful initiatives to reduce single-use food service ware and single-use plastics. Public Works recommends updating the County's existing Green Purchasing Policy to reduce or avoid the purchase of single-use items at County facilities and adopt ordinances to ban or reduce single-use items in unincorporated County. To expand its reach beyond CUCs and County facilities, the County will also implement regional outreach campaigns to influence businesses and consumers to voluntarily reduce the use of single-use products, provide sample policies and ordinances for other local jurisdictions to adopt, and advocate for Statewide adoption of local policies.

#### **Plastic Bag Ordinance**

In November 2010, the Board adopted an ordinance that prohibits the distribution of single-use plastic carryout bags at certain stores in the County unincorporated area and requires them to charge ten cents for each paper or alternative bag provided to a customer. SUP bags present both a financial and an environmental burden. Litter cleanup costs within the unincorporated areas costs County taxpayers over \$20 million annually, and plastic bags are a significant amount of the litter stream. Plastic bags clog machinery at material recovery facilities (MRFs), which slows the recovery of other recyclables and creates

significant down time. Through significant outreach to affected businesses, the County achieved a 100 percent compliance rate. Paper and alternative bag usage in large stores leveled off at 175,000 bags by 2016 compared to 2.2 million estimated bags used in large stores in 2009. Six years after the County's ordinance was adopted, State voters approved a Statewide ban demonstrating the importance of implementing source reduction policies locally while continuing to advocate for adoption on a wider scale.

### **Single-Use Food Service Accessories Upon Request Ordinance (Previously Plastic Straws and Stirrer's Ordinance)**

Many jurisdictions throughout California have existing bans or restrictions for plastic straws and stirrers. AB 1884, while not specifically banning Single-Use Plastic (SUP) straws, does prohibit full-service restaurants in California from providing SUP straws to consumers unless requested by the customer. The County's "Plastic Straws and Stirrers Upon Request" ordinance prohibits all food service businesses within the County unincorporated areas from providing single-use plastic straws or stirrers to customers unless requested by the customer. Non-compliance may result in notices of violation and \$25 fines for each day the business is in violation, not to exceed \$300 annually. The ordinance was recently expanded to include all single-use food service accessories, such as cutlery, napkins, chopsticks, condiments, beverage sleeves and lids, and non-plastic straws and stirrers. The expanded ordinance allows businesses to ask customers if they would like any single-use food service accessories, and also allows single-use food service accessories except for plastic straws and stirrers to be made available in self-serve dispensers. The County will continue to build upon its success by developing comprehensive single-use plastic policies.

### **Comprehensive Single-Use Plastic Policies**

In October 2019, the Board passed a motion directing the County Chief Sustainability Office (CSO) to contract with the UCLA Luskin Center for Innovation to study the issues of plastic waste, processing and recyclability of plastic materials, and potential disposal and recycling alternatives in the County. According to the study, no recovery facility serving the County currently recycles plastic food service ware, primarily due to issues of food residue contamination, product size, and product material. All available evidence suggests that replacing SUP food service ware with reusables (e.g., multiuse dish ware, cups, and utensils) will reduce the negative impacts of plastic waste in the County. The 2019 motion also directed the CSO to work with County departments and stakeholders to develop an ordinance for the Board's consideration to reduce the use of SUP food service ware throughout the County; however, ordinance development was put on hold as a result of the COVID-19 pandemic.

Although the UCLA report suggests that a transition to more sustainable food service ware materials is unlikely to cause a significant economic burden to food service providers, this transition should be conducted in partnership with restaurants to ensure changes do not negatively affect their individual businesses.

In May 2021, the Board directed Public Works in coordination with the CSO and the Department of Public Health to consult with relevant County departments and report back to the Board within 180 days with a draft Board Policy that eliminates the use of SUPs at County facilities requires that any single-use items are compostable or highly recyclable and encourages the use of reusables. Public Works is currently developing this policy, which will also establish guidelines for County convenings to be zero waste events and establish expectations for SB 1383 implementation at County departments.

In 2019, Governor Newsom signed into law The California Recycling Market Development Act (AB 1583) establishing the Statewide Commission on Recycling Markets and Curbside Recycling with priorities to develop California markets for processing and remanufacturing recycled materials, achieve the SB 1383

and AB 341, and identify products that are recyclable or compostable as defined by Public Resource Code 42370.2. On June 25, 2021, the AB 1583 Commission submitted a final report with policy proposals to the California State Legislature. Many policy proposals adopted by the AB 1583 Commission would support the County's waste management priorities. The County should encourage the Statewide implementation of the policies. For policies that are not implemented Statewide, the County should implement these policies on a local level.

One policy adopted by the AB 1583 Recycling Commission is titled "Compostable Products Certification and Approval for Composting or Anaerobic Digestion". This policy would create a compostable products certification standard for food service ware items to limit contamination that reduces the quality and marketability of compost and other soil amendments. Uncertified products using the label will be subject to fines and penalties. The County should support Statewide adoption of this policy.

### **Bring Your Own (BYO) Campaign**

Public Works developed the BYO campaign<sup>6</sup> to encourage the use of reusable items, such as plates, cups, utensils, bags, etc. and increase awareness of the environmental impacts of single use items. A number of flyers, videos, tips, and web banners have been developed as part of the campaign. Public Works will continue to provide outreach materials to assist County departments, jurisdictions, businesses, and academia to encourage BYO.

#### **4.1.3 Reuse Centers**

Reuse Centers collect discarded materials from the public that can be reused or repurposed. Many centers resell these items to the public at a discount or donate them to teachers, organizations, or other groups. Public Works is working on establishing reuse centers at the County's two permanent household hazardous waste (HHW) sites: (1) the Waste Management Antelope Valley Environmental Collection Center (AVECC) in Palmdale and (2) the Environmental Collection Center located at EDCO Recycling and Transfer in Signal Hill, California.

#### **4.1.4 Textile Source Reduction and Recycling Pilot Program**

In 2014, more than 1.24 million tons of textiles were disposed in California landfills, comprising 4 percent of landfilled waste. Every year Californians spend more than \$70 million to dispose of textiles in landfills. Public Works is currently conducting a study to characterize textile waste from commercial generators in unincorporated areas of the County with assistance from the California Product Stewardship Council (CPSC). Public Works will use the study to develop best management practices for pre-sorting and strategies to achieve zero commercial textile waste. To enhance regional leadership in source reduction, Public Works will share the findings with businesses and local government facilities Countywide.

#### **4.1.5 Material Exchange Programs**

Material exchange programs connect individuals and organizations looking to donate, sell or buy materials to maximize the value and recovery of resources and reduce the amount of waste disposed in landfills. The California Materials Exchange (CalMAX) is a platform that connects business, organizations, manufacturers, schools, and individuals with online resources for material exchanges. In addition, the County operates a surplus program that sells surplus County materials and allows County departments to exchange used materials and reduce purchasing of new materials. The County will evaluate the success of these programs and, if needed, implement upgrades to increase effectiveness.

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<sup>6</sup> <https://pw.lacounty.gov/epd/drp/BringYourOwn.aspx>

## 4.2 Example Source Reduction and Reuse Programs

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Below are examples of successful source reduction and reuse policies and programs. Because source reduction policies can be more effective when implemented consistently across all jurisdictions, Public Works recommends exercising its regional leadership by working with the County's legislative advocates to support Statewide or even national implementation of these policies and programs. If not adopted on a wider scale, Public Works recommends implementing such policies and programs at a local level where feasible.

### 4.2.1 Right to Repair

Products not designed or permitted to be repaired result in a shorter life span of products and create needless waste. The "Right to Repair" is a movement advocating for consumers and businesses to have the right to use, modify or repair products they have purchased, such as cars, electronic items, and appliances. Just recently, the White House announced plans to draft a framework for Federal Right to Repair legislation.<sup>7,8</sup>

Under California law, manufacturers are required to make service literature and functional parts for certain products available for a specified period of time. Proposed Right to Repair legislation such as AB 1163 would require manufacturers to provide access to repair information and software for electronics and appliances, and to sell spare parts and any required tools on fair and reasonable terms.

A policy proposal from the AB 1583 Commission titled "Support and Expand Reuse and Repair Businesses" seeks to implement financial support and foster growth of existing businesses and non-profits that provide services to reuse, repair, salvage, and resell items that otherwise would be landfilled. Repair networks can include tailors, repair shops, welders, upholsterers, salvagers and scavengers, artists, and educators. Another Commission proposal titled "Right to Repair" would establish an "ease of repair" requirement for manufacturers, such that products can be reasonably disassembled and reassembled by the consumer to replace consumable or defective parts.

The Los Angeles County Library began a pilot program allowing residents to rent tools to fix broken items instead of throwing them away. The County should continue to support Right to Repair policies, implement repair programs, and support organizations that host repair events.

### 4.2.2 Sustainable Design Certifications

Many waste management issues stem from a lack of product design foresight that would consider end-of-life management. Product design is a key component of a transition to a circular economy. These design considerations include ensuring products last longer, have a lower environmental footprint, can be repaired, use less material and/or recycled content material in the manufacturing process, and can ultimately be easily reused, composted, or recycled. The County will review and support the adoption of Statewide legislation to foster product design changes. The County will also update its Green Purchasing Policy to include requirements for County facilities to purchase products with third-party resource management certifications, give preference to manufacturers with take back programs, and/or purchase products that meet established recyclability requirements, minimum recycled content requirements, or

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<sup>7</sup> Tool Box, 2021, United States Possibly Back on Track to Bring Right to Repair Regulations, <https://www.toolbox.com/tech/tech-general/news/united-states-possibly-back-on-track-to-bring-right-to-repair-regulations/>

<sup>8</sup> European Commission, 2020, Circular Economy Action Plan, [https://ec.europa.eu/environment/pdf/circular-economy/new\\_circular\\_economy\\_action\\_plan.pdf](https://ec.europa.eu/environment/pdf/circular-economy/new_circular_economy_action_plan.pdf)



similar standards. Below are examples of sustainable design certifications and programs that Public Works will assess for local use and, if necessary, tailor to suit the County's needs.

### **Cradle to Cradle**

Manufacturers can use the Cradle-to-Cradle Certification registered trademark for certified products that provide a safer, more sustainable product made for the circular economy.<sup>9</sup> To become certified, the product must meet design, manufacturing, and reuse standards.

### **Green Dot Program**

Developed in Germany, the "Green Dot Program" allows producers who choose to participate to use a designated symbol on their packaging. Participating producers are required to pay into a qualified national packaging recovery organization to recover, sort, and recycle their packaging.<sup>10</sup> By requiring participants to bear the costs of end-of-life management for their products, the program incentivizes producers to use packaging that is designed to be highly recoverable.

### **Living Product Challenge**

Manufacturers can use the Living Product Challenge<sup>11</sup> framework to design products that have a net positive impact on the environment, including eliminating waste production, and implementing ways to use waste in a closed loop cycle. Participating companies may use a Handprint Label, which communicates the positive environmental actions they are taking within and outside of their supply chains.

### **Association of Plastic Recyclers (APR) Guide**

APR's Design Guide<sup>12</sup> helps package designers measure each aspect of a package design against industry accepted criteria to ensure that it is truly recycling compatible. The APR Design Recognition Program recognizes companies that have implemented innovations to improve plastic recycling feedstocks and create a circular economy for plastic packaging.

## **4.3 Waste Diversion and Recycling Programs**

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Source reduction and reuse avoid the environmental impacts of waste by preventing it from being generated. Unfortunately, not all waste can be completely avoided. To reduce the environmental impacts of waste that is generated, the waste should be diverted from landfill disposal.

The Roadmap, which was adopted by the Board in 2014, includes a detailed summary of the County's existing waste diversion and recycling programs. Updates on the County's waste diversion and recycling programs are included in the annual Roadmap reports<sup>13</sup> to the Board, which have been provided since 2015. The Roadmap, which is currently being updated<sup>14</sup> by Public Works to address new State waste and climate goals and requirements, establishes long-term landfill diversion targets for unincorporated County, and provides a comprehensive framework of best practices for each aspect of solid waste management. The Roadmap will also be updated to incorporate applicable recommendations from this report.

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<sup>9</sup> Cradle to Cradle Products Innovation Institute. <https://www.c2ccertified.org/get-certified/product-certification>

<sup>10</sup> <https://www.pro-e.org/the-green-dot-trademark>

<sup>11</sup> <https://living-future.org/lpc/>

<sup>12</sup> <https://plasticsrecycling.org/>

<sup>13</sup> Los Angeles County Roadmap to a Sustainable Waste Management Future Annual Reports. <https://pw.lacounty.gov/epd/roadmap/>

<sup>14</sup> <https://pw.lacounty.gov/epd/roadmap/Roadmap2020.cfm>

A selection of some of the County's waste diversion priorities and existing programs are listed below:

- **Extended Producer Responsibility (EPR):** EPR "is a policy approach under which producers are given a significant financial and/or physical responsibility for the treatment or disposal of post-consumer products". EPR shifts this responsibility, with government oversight, upstream to the manufacturer and away from the public sector. EPR can effectively minimize health, safety, environmental, and social impacts of a product and its packaging throughout its lifecycle while also maximizing economic benefits. EPR policies can increase waste diversion by incentivizing producers to develop products that are easy to recycle and can even lead producers to prevent waste by minimizing the amount of packaging that is used.

EPR laws in California have been established for mercury thermostats, pesticide containers, paint, carpet, mattresses and pharmaceuticals and sharps. New bills are periodically introduced to the State legislature, such as EPR for batteries (i.e., SB 289). Other notable legislation is SB 54, which was introduced by Senators Allen, Stern, and Wiener in December 2020 and would require single-use, disposable packaging and food service ware products to be recyclable or compostable. The bill was last amended in February 2021. It is currently inactive at the request of Senator Allen, but the Legislature may take action on this bill in the next session.

The AB 1583 Commission adopted a policy titled, "Extending Producer Responsibilities Framework for Household Hazardous Waste (HHW)". The policy recommends that the State legislature pass an EPR framework bill requiring a State agency to annually identify products that should be managed by EPR programs until local governments are no longer fiscally responsible for managing any toxic or hazardous products.

The County's efforts to develop a local pharmaceutical and sharps ordinance led to the pharmaceutical industry's collaboration with the State to develop the program. Similar advocacy by the County is needed to develop EPR programs for other products such as batteries because Statewide legislation experiences opposition from industry groups. As these programs evolve, the County will need to continue to monitor progress, adjust to accommodate changing collection and accountability patterns, and provide ongoing stakeholder education to support infrastructure and consumer behavior shifts.

- **Pharmaceuticals and Sharps Stewardship:** Governor Brown approved Senate Bill 212 (Jackson, Chapter 1004, Statutes of 2018) in September 2018, to promote and establish safe disposal options for pharmaceutical drugs and residential sharps. SB 212 requires a minimum of five bins in every county and one bin for every 50,000 residents for pharmaceuticals. For sharps, the law requires a safe disposal container mail back program provided at the point of sale as well as reimbursements for local jurisdictions' HHW collection programs. On January 7, 2021, the Office of Administrative Law approved the Pharmaceutical and Sharps Waste Stewardship Regulations, which require manufacturers, distributors, wholesalers, re-packagers, and trademark owners to develop and fully implement stewardship plans by July 2, 2022. The County will continue to facilitate efforts to divert pharmaceuticals and sharps by providing containers to residents at HHW collection events, developing a mail back program for elderly and disabled residents, installing drop-off boxes and picking up the discarded materials, and educating residents through social media.
- **Construction and Demolition (C&D) Debris Recycling:** The County is in the process of updating the C&D Debris Recycling and Reuse Ordinance to increase the recycling requirement from 50 to 70 percent for projects in the CUCs. The Ordinance will also require tracking and reporting of all materials to ensure they are managed at an appropriate facility, which will reduce illegal dumping in vulnerable areas of the County.

- **Enhancing Recycling Markets:** In alignment with the County's State Legislative Agenda, the County should support State legislation that promotes the use of recycled content products, with preference for products remanufactured in the State of California. The County should also develop local policies and/or ordinances with purchasing requirements for County Departments and/or CUC businesses.
- **Smart Gardening/Backyard Composting:** Public Works will expand its current efforts to encourage decentralized organic waste management (such as home and community composting) to reduce the demand for new waste management infrastructure. Public Works' Smart Gardening Program educates residents about backyard and worm composting, grass cycling and other techniques to reduce organic waste disposal. In the past year, Public Works has hosted 129 Smart Gardening webinars. The April 10, 2021, webinar was the 100th webinar hosted since the beginning of the COVID-19 pandemic and the May 1, 2021, webinar boasted more than 2,000 attendees. As part of SB 1383 implementation, Public Works will provide information and resources about backyard and community composting for residents as well as on-site composting and organic waste management for businesses and County facilities.

## 5.0 INFRASTRUCTURE NEEDS AND POTENTIAL LOCATIONS FOR NEW OR EXPANDED FACILITIES

For waste that cannot be avoided or diverted using existing infrastructure, the Board motion directed Public Works to analyze the amount of new infrastructure required to meet the County's waste diversion goals and new State mandates, including SB 1383, along with potential locations for new or expanded facilities.

In 2018, California's ports exported 15.4 million tons of recyclable materials to international markets. The County is home to approximately 25 percent of the State's population and is responsible for generating about a quarter of these recyclable exports. Due to the China National Sword policy which strictly limits the import of contaminated and unrecyclable materials, California's recyclable materials must be thoroughly separated at MRFs before export to comply with China's restrictions or must be managed domestically. Due to a lack of local advanced MRFs and domestic recycling infrastructure, many materials are simply disposed of in landfills. A significant number of new facilities will be needed to manage the County's recyclables locally.

Due to the rapidly approaching SB 1383 compliance and enforcement deadlines and the large amount of organic waste in the County's disposal stream, organic waste processing technologies are a priority for County infrastructure development and is the focus of Section 5.0 of this report. There is not sufficient infrastructure capacity in the County to meet the long-term organic waste processing needs. To process the nearly two million tons of food waste disposed each year, the County needs at least 12 new AD facilities which are estimated to cost over \$800 million, not including additional infrastructure needed to address other types of organic waste. This Section discusses the available technologies that can be utilized to address the organic waste processing capacity shortfall, as well as the opportunities and challenges for siting new facilities. Public Works recommends using a public-private partnership to develop at least one regional organic waste processing facility to demonstrate its financial and environmental benefits and encourage further private investment in regional infrastructure.

## 5.1 Technology Review

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### 5.1.1 Organic Waste Processing Technologies

#### Chipping and Grinding

Chipping and grinding refer to the practice of separating, grading and resizing landscaping waste or wood waste to be sent to a composting facility, used at a landfill for Alternative Daily Cover (ADC) or sent to miscellaneous end markets such as feedstock at biomass to energy plants.

#### Composting

Composting is the traditional biological decomposition process that creates a stable soil amendment from organic material. It is utilized in many jurisdictions for processing food scraps, compostable food-soiled paper, green waste, animal by-products, manure, and biosolids. Covered and enclosed composting systems use filters to control and minimize odors and other impacts. Composting produces carbon dioxide emissions, but unlike other organic waste processing technologies, it does not produce biomethane. The use of compost also provides environmental benefits such as enriching soil with nutrients, helping retain soil moisture, suppressing plant diseases and pests, and reducing the need for chemical fertilizers.

#### Anaerobic Digestion

AD is a completely enclosed biological decomposition process that breaks down food waste and/or green waste to produce a methane-rich gas in the absence of oxygen. The resulting biogas may be used to generate steam, electricity, or biomethane for pipeline injection or transportation fuel. Feedstock for this biological process may be secured from the organic fraction of mixed MSW or from source separated organic (SSO) waste. A by-product of the AD process is a residual digestate, which may be used for direct application as an organic fertilizer or composted to generate a soil amendment. AD is considered a biological CT, as opposed to the thermal CTs described in Section 5.1.2.

#### Co-Digestion at Wastewater Treatment Plants

Food waste may also be co-digested with municipal wastewater using existing anaerobic digesters at wastewater treatment plants (WWTP). Many WWTPs have found that co-digestion can increase the amount of biogas generated. CSD's Joint Water Pollution Control Plant can co-digest up to 600 tons per day of food waste with sewage sludge. The resulting biogas is used to create renewable electricity and biomethane vehicle fuel.

### 5.1.2 Thermal Conversion Technologies

Thermal CTs, such as gasification or pyrolysis, can be employed to treat biomass which is defined as landscaping waste, wood waste, and unrecyclable paper through a practice called biomass conversion. Thermal CTs can also be used to process residuals from organic waste processing facilities, contaminated paper and cardboard from MRFs, carpet and textiles, and other waste that cannot be source reduced, recycled, composted or digested but must be diverted from landfills per SB 1383. Thermal CTs can also process non-organic waste, such as unrecyclable residuals from MRFs as well as other hard-to-manage materials. This includes materials that were previously being exported and are not truly recyclable. In contrast to transformation/waste-to-energy, thermal CTs are not incineration because they do not burn or combust the waste.

## Gasification

Gasification uses high heat and pressure in the near absence of oxygen to convert a wide range of feedstock including MSW into a synthesis gas that consists primarily of hydrogen and carbon monoxide. The synthesis gas can be used to generate electricity, converted to ethanol fuels, or converted to valuable chemicals, providing flexibility for optimizing project economics. Gasification can result in residual ash requiring landfill disposal.

## Pyrolysis

Pyrolysis is a thermal decomposition process occurring in the absence of oxygen to create liquids (oxygenated oils), and syngas (consisting of carbon dioxide, carbon monoxide, methane, and hydrogen) from MSW. The pyrolytic liquids and syngas can be used as boiler fuel to generate electricity or refined for other uses, such as engine fuels, chemicals, adhesives, and other products. Pyrolysis also creates a solid residue called char, which can be used as a soil amendment.

### 5.1.3 Environmental Benefits of Technologies

In 2016, Public Works commissioned a Comparative Analysis to compare the net GHG emissions of disposing 1000 tons of residual waste from a MRF with further processing the waste using an Integrated MRF approach with recycling, composting, AD, and thermal CTs. Using the Integrated MRF approach would provide numerous environmental benefits and result in a total GHG reduction of approximately 2.31 million MTCO<sub>2</sub>E compared to landfilling. The Integrated MRF approach reduces GHG emissions from landfilling waste and creates approximately 70 to 90 green jobs per 10 MW of electricity produced. The advanced sorting techniques employed at an Integrated MRF maximize the recovery of recyclables, and the use of thermal CTs to process waste that cannot be feasibly recycled reduces dependence on waste exportation. Used together, advanced sorting and thermal CTs localize ways to achieve zero waste without depending heavily on the volatility of the international recycling market. The use of electricity, biomethane and/or ethanol fuels produced by AD and thermal CTs reduces GHG emissions from the use of fossil fuels. The compost produced from the Integrated MRF approach enriches the soil with nutrients, helps retain soil moisture, suppresses plant diseases and pests, and reduces the need for chemical fertilizers.

Using public-private partnerships to develop composting, AD, or thermal CT facilities reduces risk and saves taxpayers' money. The County will support the development of thermal CT infrastructure as part of an Integrated MRF approach by assisting facilities in conducting lifecycle greenhouse gas emissions studies to become verified as SB 1383 organic waste disposal reduction facilities. Verification will allow local jurisdictions to comply with the SB 1383 regulations by sending organic waste to thermal CT facilities, providing an outlet for organic waste such as carpets, textiles, and unrecyclable paper and cardboard that cannot be processed through composting or AD. The County will also analyze the feasibility of providing financial assistance for thermal CT facilities in the form of grants.

## 5.2 Infrastructure Considerations

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The County provides regional leadership in analyzing and promoting solid waste and organic waste infrastructure development and aims to develop sufficient infrastructure to manage waste that cannot be reduced at the source. As required by AB 939, the Los Angeles County Integrated Solid Waste Management Committee/Integrated Waste Management Task Force (Task Force) and Public Works collaborate to develop the CSE report that describes how the County and the cities within the County plan to manage the disposal of their solid waste over a planning horizon of 15 years. The report's primary purpose is to identify disposal capacity as well as to discuss waste prevention, materials reuse, recycling and alternatives to landfills to meet the waste disposal needs of the County. As required by AB 876 and



SB 1383, the County annually prepares an Organic Waste Management Report that determines whether there is an adequate amount of organic waste processing facility infrastructure and quantifies the additional capacity needed. The County reviews, analyzes, and reports to CalRecycle on an annual basis the infrastructure needs for solid waste disposal and organic waste processing for the County and all 88 Cities.

In addition to the above infrastructure planning and reporting responsibilities, The County has launched the Infrastructure LA Sustainable Waste and Recycling Management (SWARM) Subcommittee, a planning platform that has a goal to support solid waste and organic waste infrastructure development in the County. SWARM allows the County to work with local solid waste management leaders to discuss strategies to develop of regional recycling and organic waste management infrastructure. Public Works will enhance its regional leadership role by expanding the influence of SWARM to take action to reduce barriers to infrastructure development, including establishing close collaboration with State legislators to further advocate for infrastructure resources. The Task Force has several subcommittees including the Alternative Technology Advisory Subcommittee (ATAS), which was established to evaluate and promote the development of CTs. Public Works will refocus the Task Force and ATAS, leveraging their existing role in regional solid waste management to address challenges to infrastructure development. This will include ramping up efforts to analyze new technologies for diverting waste, identifying potential locations for facilities, and providing assistance to private facility developers with feasibility analyses, permitting, and grant applications.

### 5.2.1 Current Organic Waste Processing Capacity and Potential Gaps<sup>15</sup>

The County currently disposes over 5 million tons per year of organic waste. Public Works will work with the 88 Cities and other counties to identify available processing capacity for organic waste that is currently disposed and encourage the development of additional infrastructure. Facilities in the County have less than 0.5 million tons per year of available capacity. Additional capacity is available at facilities outside of the County, but other jurisdictions will also be interested in using this capacity to comply with SB 1383. Table 5-1 describes the additional in-County processing capacity needed for each organic waste material type. To provide this capacity, many new organic waste-processing facilities, including chipping and grinding, composting, recycling, AD, and thermal CT facilities, are needed. To process the nearly 2 million tons of food waste disposed each year, the County needs at least 12 new AD facilities which are estimated to cost over \$800 million, not including additional infrastructure needed to address other types of organic waste.

**Table 5-1: Additional Capacity Needed (Based on In-County Capacity)**

Material Type	Additional Capacity Needed (tons per year)
Food Waste	1,550,000
Green Waste (includes landscaping and pruning waste)	386,000
Wood Waste	1,020,000
Paper Products	1,285,000
Printing and Writing Paper	306,000
Biosolids	361,000

Table 5-2 provides a breakdown of organic materials in the disposal stream in 2019.

<sup>15</sup> [Los Angeles County Countywide Organic Waste Management Plan 2019 Annual Report \(sharepoint.com\)](#)

**Table 5-2: Organic Waste Composition in Disposal Stream in 2019**

Material	Estimated Organic Waste Composition in Disposal Stream	Estimated Total Organic Waste in Disposal Stream (tons)
Food Waste	14.9%	1,569,630
Green Waste	2.3%	242,292
Landscape and Pruning waste	4.6%	484,584
Wood Waste	10.8%	1,137,719
Paper Products	12.2%	1,285,201
Printing and Writing Paper	2.9%	305,499
Digestate	N/A	N/A
Biosolids	3.4%	360,987
Total	51.1%	5,385,912

The available processing capacity within the region has been analyzed both for in-County and out-of-County facilities. Out-of-County areas analyzed include the Counties of Kern, Orange, Riverside, San Bernardino, and Ventura. Table 5-3 summarizes the current number of organic waste processing facilities inside and outside the County and their total available processing capacity (as of 2019).

**Table 5-3: In-County and Out-of-County Organic Waste Processing Facility Capacity as of 2019**

Facility Type	Number of Facilities	Total Available Processing Capacity (tons per year)
Composting Facility	8	235,000
Chipping & Grinding Facility	12	225,000
AD/Co-Digestion Facility	3	19,000
<b>In-County Sub-Total</b>	<b>23</b>	<b>479,000</b>
Composting Facility	35	4,100,000
Chipping & Grinding Facility	14	618,000
AD/Co-Digestion Facility	4	31,000
<b>Out-of-County Sub-Total</b>	<b>53</b>	<b>4,750,000</b>
Total	76	5,229,000

The available processing capacity at in-County and out-of-County facilities was also analyzed for specific organic waste material types. Table 5-4 and Table 5-5 summarize the available processing capacity at each type of facility for specific organic waste materials as of 2019.

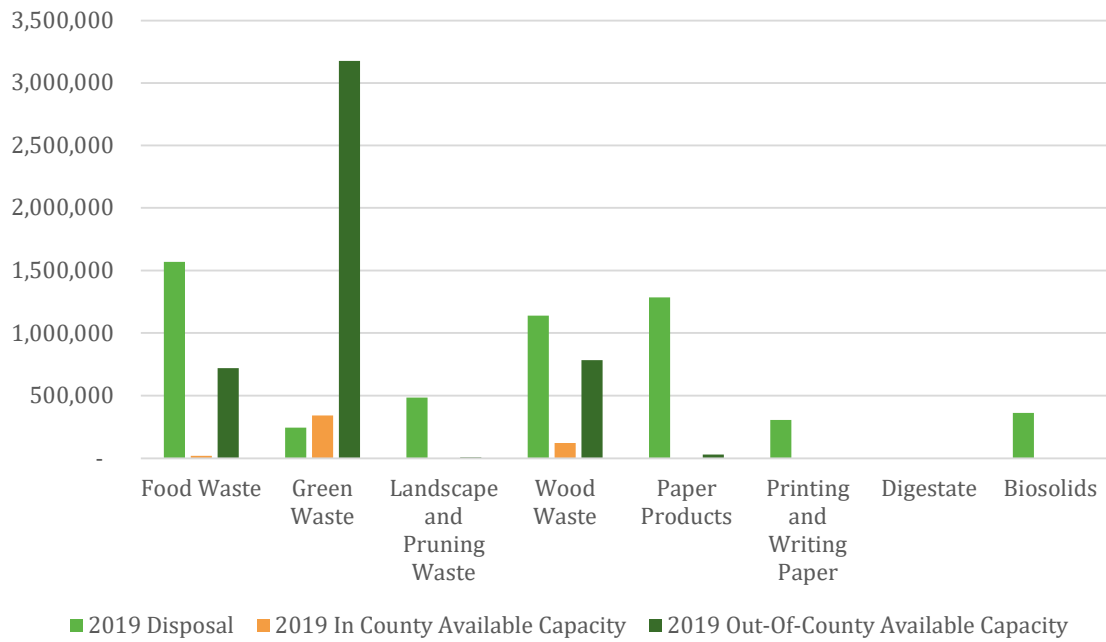
**Table 5-4: In-County Diversion Facility Capacities by Material Type as of 2019**

Facility Type	Food Waste (tons/year)	Green Waste (tons/year)	Landscape & Pruning Waste (tons/year)	Wood Waste (tons/year)	Total (tons/year)
Composting		175,240		59,800	235,040
Chip & Grind		164,918		60,450	225,368
AD/Co-digestion	18,798				18,798
<b>Total</b>	<b>18,798</b>	<b>340,158</b>	<b>N/A</b>	<b>120,250</b>	<b>479,206</b>

**Table 5-5: Out-of-County Diversion Facility Capacities by Material Type as of 2019**

Facility Type	Food Waste (tons/year)	Green Waste (tons/year)	Landscape & Pruning Waste (tons/year)	Wood Waste (tons/year)	Paper Products (tons/year)	Total (tons/year)
Composting	687,977	2,772,046	6,656	568,256	27,456	4,062,391
Chip & Grind		402,896		215,072		617,968
AD/Co-digestion	31,200					31,200
<b>Total</b>	<b>719,177</b>	<b>3,174,942</b>	<b>6,656</b>	<b>783,328</b>	<b>27,456</b>	<b>4,711,559</b>

Figure 5-1 illustrates the amount of each type of organic waste material disposed compared to the available processing capacity for both in-County and out-of-County facilities as of 2019. The graph shows that although there is enough available capacity for green waste, there is insufficient processing capacity at both in-County and out-of-County facilities for food waste, landscape and pruning waste, wood waste, paper products (including writing and printing paper) and biosolids.



**Figure 5-1: In-County Organic Waste Capacity Supply vs. Demand (By Material Type)**

Although out-of-County facilities are accessible to the County, there will be competition from other jurisdictions for the available capacity at those facilities. Public Works' priority is to support the development of regional in-County capacity to serve local residents, create local jobs, minimize transportation costs and related environmental impacts, reduce climate and disaster risk, and minimize cost impacts of potential out-of-area fees. To realize these benefits, it is critical that these facilities are sited through an inclusive and equitable process, and do not create additional impacts on communities that already shoulder disproportionate environmental burdens.

## 5.2.2 Community-Based Projects

In addition to supporting the development of commercial-scale organic waste processing facilities, Public Works will support the development of community-based compost projects similar to LA Compost, Long Beach Community Compost, and Compost Culture. For example, LA Compost<sup>16</sup> maintains considerable onsite composting infrastructure and allows thousands of residents to drop off food waste and yard waste at farmer's markets, parks, urban farms, schools, churches, and community gardens for composting each year. In 2020, LA Compost diverted over 700,000 pounds of organic waste from landfill. After the County begins providing organic waste collection services to all residents pursuant to SB 1383, Public Works will assess demand for a community compost project in the CUCs.

## 5.2.3 Facility Considerations

### Siting and Permitting

Developing required infrastructure to meet projected disposal and organic waste processing demand for the County has been challenging due to siting, permitting, high development costs and difficulties in securing feedstock. As SB 1383 organic waste collection programs are implemented, securing feedstock should become easier for organic waste processing facilities but there is high risk placed on facility developers to invest in a facility without processing contracts in place. The siting and permitting process for facilities also takes 3 to 5 years in California, and in some cases 10 or more years. This leads to high costs for development when added to the higher capital cost for some facilities such as AD. The following discusses the challenges of siting and permitting of new or expanded facilities and opportunities to address development challenges.

Regional Planning is developing a Green Zones Ordinance which will clarify local zoning, permitting, and development requirements for organic waste facilities in the CUCs. In addition, permitting from other local, regional, and state agencies is also required. Due to regulatory uncertainty for thermal CT facilities in California and the fact that no commercial facility has been developed in the State to set regulatory precedent, the permitting process for thermal CT facilities is expected to be challenging. However, there are several operating AD and composting facilities processing organic waste throughout California. An option for expediting siting and permitting of AD and composting facilities is co-locating them with existing MRFs, transfer stations, landfills, and wastewater treatment plants.

A Policy Proposal from the Statewide Commission for Consolidated Permit Process Utilization and Enhancement has been prepared for consideration to provide a more effective and efficient permitting process, which would provide increased certainty and reduce investment risk for environmentally beneficial projects. The proposal provides recommendations to increase efficiency needed to accelerate worthy project permits by streamlining processes among the varying jurisdictional Federal, State, and local agencies.

### Potential Facility Locations

In the County, there are currently no Class III MSW landfills identified for potential expansion. No site has been identified for potential development of new Class III or inert waste landfills. Additionally, there is only one existing transformation facility in the County, and there are no proposals to expand this facility or develop new transformation facilities in the County. To encourage the development of composting, AD, and thermal CT facilities, Public Works is working with the ATAS to investigate and promote the development of one or more demonstration facilities in Los Angeles County.

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<sup>16</sup> LA Compost, 2021. <https://www.lacompost.org>



Public Works collaborated with cities and private landowners to identify nine potential locations for thermal CT facilities in the Preliminary Draft Revised CSE, although these sites could also potentially be used for composting or AD facilities. Public Works recently released a Request for Information (RFI) to gather information on existing and planned organic waste processing infrastructure in the region. Twenty-four companies responded with interest in receiving organic waste feedstock from CUCs. Of the 24 companies, nine companies have one or more operational facilities local to the County and six companies have secured or identified local sites to develop facilities in the near future. The other nine respondents have not yet secured sites. The types of processing facilities include AD, composting, thermal CTs, and de-packaging/pre-processing to prepare feedstocks for AD or composting. Most respondents have available processing capacity and are open to accepting feedstock from residential, multi-family, and commercial sectors. The respondents are flexible in regard to the length of potential feedstock agreements and the minimum required tonnages with tipping fees ranging from \$45 to \$130 per ton. Despite the additional organic waste processing capacity identified through the RFI, the additional facilities would not be able to process all the organic waste disposed in the County so Public Works will ramp up efforts to encourage regional infrastructure development.

As discussed above, it is recommended that new composting, AD, or thermal CT facilities be co-located at existing solid waste facilities such as MRFs, transfer stations, landfills, and wastewater treatment plants due to numerous benefits of co-location such as readily available feedstock, pre-processing capacity, appropriate zoning, potential land availability, and transportation avoidance. Opportunities for co-location are being evaluated at multiple locations in the County, including operating and closed County-owned landfills such as the Palos Verdes Landfill and other County properties. The County will also collaborate with other jurisdictions and agencies to evaluate potential opportunities at their landfills, MRFs, and transfer stations. In an effort to leverage existing infrastructure, Public Works identified a list of County-owned solid waste facility sites that may be suitable for co-location. The sites are listed in Appendix C. These sites were chosen because County-owned sites can be used in public-private partnerships to reduce development costs and these sites are more likely to be zoned appropriately for new solid waste infrastructure. Public Works further evaluated these sites to consider available space, current zoning, land use, equity, and environmental justice considerations. Based on this evaluation, Public Works identified sites that are recommended for additional feasibility analysis.

One of the sites on the list in Appendix C is the Calabasas Landfill, which is owned by the County and operated by CSD. Public Works previously completed a preliminary feasibility analysis in 2011 to evaluate various options for siting a CT facility at the Calabasas Landfill, which is located in the Third Supervisorial District. The analysis determined that the Calabasas Landfill, located in the Third Supervisorial District, is suitable for a commercial-scale AD project processing up to 700 tons per day of organic waste. In 2016, Public Works assessed various facility development options and determined that a public-private partnership could provide regional benefits, reduce capital costs, and minimize risks to local jurisdictions such as the County. The feasibility analysis was updated in 2020 to inform the development of a Request for Proposals (RFP) to engage a private partner to design, build, own, and operate a commercial-scale AD facility at Calabasas Landfill. The analysis conducted for this report confirmed the viability of such a facility at Calabasas Landfill and the results of the RFI reinforced the need for new infrastructure in this area.

The Preliminary Draft CSE and this report identified potential sites that warrant further analysis similar to the feasibility analysis conducted for Calabasas. However, the Calabasas Landfill is the only site that is currently ready to move forward with an RFP process. Therefore, Public Works recommends that the County further enhance its regional leadership role by releasing an RFP in late 2021 to initiate the facility development process. Public Works recommends it conduct robust outreach and engagement with the community surrounding Calabasas Landfill, as well as other interested stakeholders to help it guide the project development process. An AD facility at the Calabasas Landfill would serve as a showcase project

to pave the way for additional investment from the solid waste industry in the region. It could also create a model for public-private partnerships that could be replicated by other jurisdictions to close the regional infrastructure gap.

### **Role of High Diversion Organic Waste Processing Facilities (per SB 1383)**

Another option to divert organic waste from a landfill are high diversion organic waste processing facilities. These facilities, also known as mixed waste MRFs, accept mixed waste (such as food waste disposed in the black trash bin) and employ processing technologies that separate the organic waste from trash. These types of facilities would allow jurisdictions to comply with SB 1383 without having to source separate the organic waste.

These facilities can be useful for multi-family residents and businesses that do not generate a lot of organic waste as it reduces the number of bins required for collection and eliminates the risk of improper separation. These facilities are required by the SB 1383 regulations to recover at least 75 percent of organic waste from mixed waste and must adhere to strict measurement protocols. Residuals from mixed waste processing and some types of organic waste, such as organic carpets, organic textiles, contaminated paper, and contaminated cardboard, cannot be processed by composting or AD and there are few options to recycle these materials domestically. These materials could be diverted from landfills at thermal CT facilities. However, because State law does not allow thermal CTs to be used to divert organic waste other than biomass (yard waste, wood waste, and unrecyclable paper), high diversion facilities may currently be unable to meet the required recovery rate.

No qualifying high diversion facilities are currently operating in or around the County. The City of Los Angeles and Los Angeles County Local Enforcement Agencies are developing an alternative recovery rate methodology to support the development of high diversion facilities in the County. The methodology is being developed using Anaergia's Organic Extrusion Press Technology at Waste Management's MRF located in Sun Valley which is capable of separating the organic fraction of mixed black bin trash. Public Works is providing feedback on the methodology and encouraging the ATAS to provide input as well to ensure the alternative methodology can be implemented effectively at local facilities.

### **Financial Considerations**

In most situations, financial considerations are calculated based on estimated capital costs for the technology and processing capacity being considered. Annualized capital and annual operating costs are calculated based on financial details from past projects. The total annual cost is then divided by the design processing capacity to calculate the unit processing rate (dollars per ton). Any revenue from the sale of by-products, such as energy, fuel, recyclables and/or soil amendments are typically accounted for in the operating costs. The calculated unit processing cost is also called the break-even cost, which is the minimum tipping fee charge that is required to make the processing facility financially sustainable.

Financial incentives such as capital cost grants or incentives for purchasing end products (such as LCFS and Renewable Fuel Standard [RFS] credits for fuel, renewable energy credits for electricity, and the Healthy Soils Incentives Program for compost) reduce the financial liability of the proposed processing facility. Depending on the level of financial support available, the unit processing cost could be lowered substantially such that the proposed processing option becomes very financially attractive compared to other options. The County should continue to support and advocate for new or expanded grants, incentive programs, and other financial support to reduce the costs to develop infrastructure.

## **5.3 Environmental Justice**

Environmental justice as defined in California Government Code Section 65040.12(e) is "the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies."

Environmental justice communities are defined by the areas' exposure to, and amount of, environmental health challenges. Such challenges leave these environmental justice communities to bear a disproportionate burden of pollution and other environmental impacts that yield health concerns. This includes communities that are in densely populated areas with low-income, minority residents, located near or adjacent to industry-related activities including landfills. The CSE includes an environmental justice document which provides a framework to inform stakeholders within the County, particularly environmentally sensitive communities in proximity to potential new facilities and recommends outreach strategies to ensure these communities are offered the opportunity to participate in the environmental review process.

While waste management facilities may provide local jobs and the environmental benefits described in earlier sections related to diversion from landfills, communities have long raised concerns with siting these facilities near residential areas based on potential toxic or air pollutant emissions including odors from the facilities, as well as increased heavy-duty truck traffic to transport waste to the facilities. Because of these concerns, it is critical that facilities are sited in an equitable way, seeking to avoid adding additional burden to environmental justice communities that already face disproportionate burdens, and that project development is done in a transparent and inclusive manner that ensures that community concerns are addressed.

The Green Zones Program was initiated by the Board of Supervisors in 2015 to enhance public health and land use compatibility in the unincorporated communities that have been disproportionately impacted by pollution. The Green Zones Ordinance includes permitting requirements and standards for recycling and solid waste facilities, with more stringent requirements for facilities sited in the Green Zones Districts, which historically have been disproportionately impacted by pollution from industrial sources. The Green Zones Districts were identified using Environmental Justice Screening Method (EJSM), which used detailed local data to illustrate cumulative risks associated with multiple types of pollution. The Green Zones Ordinance will limit the development of solid waste facilities in Green Zones Districts and ensure that facilities that are developed in the County will incorporate measures to prevent impacts to nearby sensitive uses, such as homes, schools, parks, hospitals, etc.

In response to an August 10, 2021, Board motion, Public Works and other County departments and agencies are currently developing goals, metrics, and related actions to achieve Board-adopted equity-based policies. In addition, definitions of equity, disadvantaged/impacted communities, and community engagement are being developed along with a digital map of County projects overlaid with demographic and other equity based data. Future investment in waste infrastructure will be informed by equity principles.

## **6.0 PROCUREMENT OF RECOVERED ORGANIC WASTE END PRODUCTS**

To provide markets for end products of organic waste processing facilities and encourage infrastructure development, the Board motion directed Public Works to analyze strategies to increase procurement of recovered organic waste products. Starting on January 1, 2022, the County will be required to comply with the procurement requirements of SB 1383. Local jurisdictions must procure processed organic waste end products such as mulch, compost, biomethane, electricity, and/or heat. Alternatively, local jurisdictions may require their contractors and/or service providers to procure and use these products. The required quantity is determined at a rate of 0.08 tons of organic waste per resident within the jurisdiction as determined by the latest census. The SB 1383 procurement requirement allows local jurisdictions to meet the procurement requirement with a combination of multiple recovered organic waste products.

## 6.1 County Procurement Strategy

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Public Works developed an SB 1383 procurement strategy, which includes the procurement requirement for the CUCs, quantifies current products that the County's Internal Services Department (ISD) and contracted waste haulers procure that can be replaced by SB 1383-certified end products, and identifies additional opportunities to procure eligible products to satisfy the requirement.

In response to a May 4 Board motion, Public Works is also developing a policy that, if adopted by the Board, will require all departments to procure recovered organic waste products whenever feasible. The proposed policy will include requirements for County departments to:

- Identify potential opportunities where the various recovered organic waste products, such as compost, mulch, biomethane, and electricity, can be procured for their operations;
- Collect data on costs to determine the fiscal impacts of procuring end products from organic waste processing facilities;
- Update existing contracts to include procurement requirements for compost, mulch, and other targeted end products; and
- Complete vendor selection and contracting for procurement of recovered organic waste products.

## 6.2 Procurement Benefits and Challenges

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Procurement of organic-based end products ultimately supports a circular economy. At the end of its useful life, organic waste can be processed to create compost, which in turn can be used to grow food and vegetation. Energy can be recovered from organic waste processed through AD or thermal CTs to generate electricity, create vehicle fuel, or produce pipeline gas.

In advance of the SB 1383 implementation deadlines, Public Works is working with County departments to update landscaping contracts to require use of SB 1383-compliant compost or mulch at County facilities. Public Works will also require its contracted waste haulers to procure additional compost for use in their operations or to give away to customers. Public Works encourages residents to divert their food waste and green waste by composting it at home or at community composting locations and using the compost in their backyard gardens. To further increase the use of compost, Public Works can consider developing an education and outreach program emphasizing the soil health, water reduction, waste diversion, and carbon sequestration benefits of compost and mulch application. Public Works will also analyze the feasibility of an incentive program for residents and/or businesses using compost and mulch or practicing grass cycling. In addition, Public Works will encourage local growers and ranchers to sign up for the Healthy Soils Incentives Program, which provides financial incentives to implement conservation management practices such as the production and use of compost and mulch.

One of the most immediate options to meet the SB 1383 compliance deadlines and satisfy the procurement requirement is to procure biomethane vehicle fuel since County fleets and the County's contracted waste haulers use significant amounts of vehicle fuel. Proposed AD facilities as well as AD facilities in development locally are opting to sell transportation fuel instead of generating electricity because of State and Federal incentives for renewable fuel production.

County facilities use significant quantities of electricity, but no local waste handlers/processors are selling electricity created from recovered organic waste. Currently, there is only one facility in the region, the Joint Water Pollution Control Plant in Carson that produces electricity from recovered organic waste. The facility does not sell the electricity and instead uses it to power its wastewater treatment operations. The facility uses excess biogas to produce biomethane transportation fuel.

While biogas created at AD facilities is a flexible resource that can be used in a multitude of different applications, its use as a vehicle fuel is currently driving the growth of the industry. Developers in California can generate Federal RFS credits (aka Renewable Identification Numbers [RINs]) and State LCFS credits to add to the value of biomethane. In June 2020, the California Air Resources Board (CARB) adopted the Advanced Clean Truck (ACT) regulation, which requires manufacturers to sell zero-emission medium- and heavy-duty vehicles as an increasing percentage of their sales. The ACT regulation directs CARB staff to take steps to electrify medium- and heavy-duty vehicles by 2045, with a full transition to zero-emission refuse fleets, local bus fleets, and utility and government vehicles by 2040.

Public Works and the CSO are collaborating to develop a strategy to reconcile the State electrification goals and the need for organic waste infrastructure that generates biomethane. The use of biomethane created from organic waste to replace diesel and fossil natural gas fuel in heavy-duty vehicles that do not currently have a cost-effective or functionally equivalent ZEV alternative may provide market certainty in the short term. In the long-term, new State incentives for electricity or possibly hydrogen produced from diverted organic waste could be a win-win strategy.

## 7.0 MECHANISMS AND INCENTIVES FOR WASTE REDUCTION AND DIVERSION

The Board motion directed Public Works to identify potential opportunities for developing mechanisms and incentives to reduce waste generation, divert waste from landfill disposal, and encourage the development of new infrastructure in the County.

### 7.1 Mechanisms for Diversion

Below are potential mechanisms for diversion and recommendations on whether the County should implement these mechanisms to decrease the amount of waste that is sent to landfill.

#### 7.1.1 Collection Approaches

This section introduces two potential collection approaches that the County could enlist to increase diversion.

##### Franchise Agreement

Collection and diversion of certain materials is easier to implement and enforce within an exclusive franchise agreement. Exclusive franchise agreements specify which materials are to be collected by specific haulers for different zones within a jurisdiction. Parameters can be established for where materials are processed or disposed, how tonnages are to be tracked, and consistent messaging and base level requirements for customer engagement. An effective example of a franchise system is the City of Los Angeles' RecycLA for managing industrial, commercial, and institutional (ICI) materials and optimizing diversion.<sup>17</sup> Key benefits of exclusive commercial franchise agreements are that the County can control the waste management services (i.e., who controls the waste, where does the waste go). It sets a level playing field for the ICI sector while actively promoting diversion. Further, it makes it easier to promote a uniform approach to waste collection and educate waste generators.

<sup>17</sup> Los Angeles Sanitation, about RecycLA 2020. [https://www.lacitysan.org/san/faces/home/portal/s-lsh-wwd/s-lsh-wwd-s/s-lsh-wwd-s-zwla/s-lsh-wwd-s-zwla-au;jsessionid=S9PuuW6XHZzMQ5NBsL1uNwBLnrlNoREXcw-cDuq0k-oZhLLoD2!1232504809!-1446399063?\\_afLoop=128328618556714&\\_afWindowMode=0&\\_afWindowId=null&\\_adf.ctrl-state=uscya2ak\\_1#!%40%40%3F\\_afWindowId%3Dnull%26\\_afLoop%3D128328618556714%26\\_afWindowMode%3D0%26\\_a df.ctrl-state%3Duscya2ak\\_5](https://www.lacitysan.org/san/faces/home/portal/s-lsh-wwd/s-lsh-wwd-s/s-lsh-wwd-s-zwla/s-lsh-wwd-s-zwla-au;jsessionid=S9PuuW6XHZzMQ5NBsL1uNwBLnrlNoREXcw-cDuq0k-oZhLLoD2!1232504809!-1446399063?_afLoop=128328618556714&_afWindowMode=0&_afWindowId=null&_adf.ctrl-state=uscya2ak_1#!%40%40%3F_afWindowId%3Dnull%26_afLoop%3D128328618556714%26_afWindowMode%3D0%26_a df.ctrl-state%3Duscya2ak_5)

In 2020, the County began the process to transition to an exclusive commercial franchise system, which will designate multiple zones within the CUCs where trash collection and disposal services are provided to businesses and multi-family residential complexes by one contracted private waste hauler per zone. The County is pursuing the development of GDDs for the northern portion of the County (Antelope Valley) that currently operates under an open-market system to ensure compliance with existing and future regulations.

## **Flow Control**

Flow control provisions in waste collection contracts allow jurisdictions to direct their contracted waste haulers to take material to specific processing facilities. Flow control can encourage the development of local processing infrastructure by providing consistent amounts of material to facilities. Additionally, high diversion rates can be achieved by ensuring that organic materials are delivered to the desired processing facility. Public Works is including flow control provisions in residential and commercial waste collection contracts in case flow control is needed in the future to ensure waste haulers comply with SB 1383. However, Public Works does not recommend enacting flow control provisions at the present time to allow waste haulers the opportunity to identify cost-effective options for diverting organic waste.

### **7.1.2 Disposal Bans and Tariffs**

Disposal bans target specific materials to prevent them from being disposed as trash. In concert with flow control, disposal bans can support increased diversion. However, disposal bans are typically only recommended once there are established, alternative processing options for the banned material(s), which the County and surrounding region lack. Almost half of the County's waste is exported to out-of-County disposal sites so disposal bans would be difficult to enforce unless adopted at a Statewide or national level. Due to AB 939 and SB 1383 requiring the diversion of waste from landfills, Public Works does not see the need to support or pursue disposal bans at this time.

### **7.1.3 Education and Outreach**

While the County has several existing waste reduction and diversion-related education and outreach programs for residents and businesses, there is an opportunity for continuous improvement and expansion as more organic waste management programs come online. Generators typically have greater program compliance when changes are supported by a well-executed education and outreach program.

Providing educational information through a variety of mechanisms is integral to diversion programs, including: visually strong, image-based materials such as brochures, door hangers and posters; online and social media; short videos; direct send and online newsletters; earned media; call-in hotlines; and bus/billboard/bus stop posters. Partnering with local organizations to develop and distribute tailored messaging and educational materials can increase the impact of outreach efforts and help jurisdictions reach the targeted audiences. These mechanisms increase program awareness and show how to participate in ways that optimizes capture and minimizes contamination. Establishing consistent, relatable, and catchy branding with easy-to-understand and key messages is essential to a program success. Messaging that integrates the waste management hierarchy can actively support waste prevention, reuse/repair/food rescue, followed by recycling and composting to ensure efficient resource use, maximum environmental benefits, and minimum cost impacts. Focus groups or surveys can be used to help determine the most common barriers to program compliance and what messages will best motivate the community to engage – whether they are related to climate, reducing what goes to landfill, supporting future generations, or complying with waste diversion laws. Easily downloadable multi-lingual materials – for



home and business front and back of house – and 'sign maker'<sup>18</sup> webpages provide additional access and offer turnkey tools for residents, business owners, and haulers to actively support the programs. Getting ongoing feedback around the effectiveness of these education tools can be integrated into education campaigns over time.

Direct engagement using person-to-person interaction and word of mouth has been shown to be the most effective way to foster long-term behavior change and motivate generators to actively integrate education messages and adopt new behaviors. The County supports this approach by providing onsite technical assistance for businesses. Onsite engagement allows for direct communication with generators to assess diversion set ups, provide color-coded and appropriately sized containers, provide visual audits, educate staff on accepted items and troubleshooting system challenges, offer team trainings, advise on hauler contract management, and create accountability by developing a connection with generators. When technical assistance is combined with a robust education campaign, legislative requirements, and enforcement, such as in Alameda County, it can be particularly effective.<sup>19</sup> Residential collection programs, including a recent City of Los Angeles curbside food scraps collection pilot, can also benefit from behavior change tactics ranging from door-to-door campaigns to distribute kitchen containers and ambassador-led community events and tabling to engage residents directly.<sup>20</sup>

To optimize behavior change, it can be beneficial to use a community-based social marketing (CBSM) approach for all education and direct engagement efforts.<sup>21</sup> CBSM is a marketing approach that can provide a framework for how to most effectively target specific behavior changes by overcoming barriers and reinforcing benefits of a behavior and then applying specific behavior change tools. The CBSM approach can help identify specific barriers and motivators related to resident participation in a program. Specific behavior change tools can be employed, such as commitment agreements, prompts, norms, social diffusion, communication, incentives/disincentives, and convenience.<sup>22</sup>

Public Works is implementing many of these best practices as part of its SB 1383 Organic Waste Reduction Communications Plan. Public Works will use this opportunity to enhance its regional leadership by launching media campaigns and collaborating with CalRecycle, local cities, waste haulers, community organizations, and other stakeholders to provide unified messaging on organic waste management. Public Works will share information via websites and social media platforms. Public Works will also identify innovative new strategies such as social media influencers to reach target audiences. Within the CUCs and for County facilities, Public Works will use community engagement strategies such as public meetings and in-person site visits. Public Works will also develop materials such as flyers, videos, brochures, and other collateral material to educate residents, businesses, and employees.

## 7.2 Incentives for Diversion

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This section includes recommendations on incentives the County can use to increase the diversion of organic waste within the County, including incentives for waste haulers and incentives for use of end products.

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18 San Francisco Department of the Environment, 2021. Make a Sign! <https://sfrecycles.org/signmaker>

19 Alameda County, 2021. Recycling Rules Alameda County. <http://www.recyclingrulesac.org>

20 LASAN, 2020. Curb Your Food Waste LA. [OrganicsLA.org](https://OrganicsLA.org)

21 Community-based Social Marketing, [www.cbsm.com](http://www.cbsm.com)

22 Choosing Effective Behavior Change Tools, <http://media.cbsm.com/uploads/1/BECC.pdf>

## **Incentives for Haulers**

Through the Public Works Smart Business Recycling program, the County initiated a pilot program in 2016 to offer commercial food waste collection to businesses at no cost to support private haulers in testing food waste collection systems. The program provides a \$60 per ton franchise fee credit incentive to the partnering haulers to offset the \$70 per ton tipping fee for food waste taken to the Puente Hills MRF for processing, resulting in a net cost that is lower than disposing the food waste in a landfill. The County provided the participating food waste generators with internal collection bins, liners, and informational signage. The haulers' requirements included providing the food waste generators with employee education and training along with monitoring contamination of the collected food waste. The one participating hauler, NASA Services, collects food waste from four grocery stores. As of June 2021, the pilot program has resulted in the diversion of 2,776 tons of food waste from the landfill.

Despite the success of the pilot program, subsidizing tipping fees is not a sustainable approach for incentivizing organic waste diversion for SB 1383 in the long term. Because the County will enforce organic waste diversion requirements with penalties, Public Works does not recommend the use of subsidized tipping fees or incentives for haulers and businesses to participate in mandatory organic waste collection programs.

### **7.2.1 Incentives for End Products of Organic Waste Processing Facilities**

Existing and planned AD facilities are usually designed to produce biomethane because it generates more revenue than electricity production due to the financial benefits of generating and selling RINs and LCFS credits. Such incentives may be needed until the organic waste diversion/biomethane production industry further matures to achieve price efficiency, supply larger volumes of fuel, and/or sell into new markets, such as the natural gas pipeline or until there are similar incentives for the use of these end products for non-transportation uses, such as electricity generation.

Ideally, however, biomethane as a transportation fuel would solely serve an interim role during the long-term transition to electrified heavy-duty vehicles. Although biomethane may provide GHG benefits compared to fossil fuels, these vehicles still produce emissions of criteria air quality pollutants that lead to adverse health impacts.

The long-term and sustainable approach is to encourage and incentivize the use of digester gas for onsite non-transportation uses and to produce electricity. Additional financial incentives for the use of electricity from digester gas would bolster another market for diverted organic waste products, further supporting the State's long-term goal of electrification. The incentives for renewable electricity have decreased precipitously over the last 20 years as solar and wind projects have become ubiquitous. Less mature renewable industries, such as biomethane, have been marginalized by this trend.

The primary draw back to solar and wind electric resources is the intermittency of electricity production. Electricity is only available when the sun is shining or the wind is blowing. Biomethane, on the other hand, can be both a power source that is always on, serving a baseload of electricity demand and it could also be used to meet increased electrical loads when the grid needs it. Although efforts to reduce organic waste are needed, organic waste generation cannot be completely avoided so using it to create baseload power will divert organic waste while providing other environmental benefits. Targeted support of this type of electrical production – renewable baseload or on demand generation – could further the development of AD facilities that produce electricity.

Supporting or increasing incentives for the development of renewable electricity projects that highlight the benefits for biogas production versus treating all renewable electricity the same would benefit further development of organic waste diversion and AD facilities.

The County is collaborating with the Clean Power Alliance (CPA) to identify sources of renewable electricity created from recycled organic waste, such as a potential AD facility at the Calabasas Landfill. The renewable electricity would be provided to CPA member agencies including CUCs, helping them fulfill the SB 1383 procurement requirements. A regional AD facility producing electricity for local use would further develop local markets for renewable energy produced from organic waste.

## **8.0 FUNDING SOURCES AND OPPORTUNITIES**

To offset the costs of developing source reduction and waste diversion programs and infrastructure, the Board motion directed Public Works to identify existing funding sources and opportunities to pursue additional funding. To avoid funding programs and infrastructure solely through customer rate increases, the County should consider leveraging appropriate financing and grant opportunities, using public-private partnerships for infrastructure development, sponsoring legislation to provide funding, and supporting new sources of funding such as fees.

A wide array of funding opportunities for solid waste management strategies and projects are generally available. These include the more conventional approaches of tax-exempt debt for publicly owned projects and taxable (or tax-exempt) financing for privately owned projects (usually including some form of private equity). Capital intensive projects typically apply some form of long-term (e.g., 20-year) debt, with the debt amortized through the revenues generated by the projects for waste processing and product generation services. EPR policies, while not technically a source of funding, can reduce waste management costs for local jurisdictions, allowing them to invest the cost savings in new source reduction and waste diversion programs or infrastructure.

Beyond these, the County will be able to look to a variety of State grant and aid programs to fund implementation. Agencies such as the California Energy Commission, CalRecycle, CARB have over the years offered discrete funding for various types of solid waste-related projects and strategies. Others, such as the California Pollution Control Financing Authority, provide conduit financing (often tax-exempt) for private business that undertake solid waste projects.

The funding approaches for individual strategies or projects will be highly specific to each strategy or project implemented. The factors that can influence the selection of a funding approach for a project include environmental and social benefits, technology applied, ownership, location, scale (size and capacity), and capital and/or operating/program costs.

The timing of the selection of a funding approach is highly dependent on the opportunities that are available at the time of implementation. While it can generally be assumed that the opportunities described at the end of this Section will be available in some form at the time of project or strategy implementation, the specifics of key elements such as eligibility, amount, feedstock, and commercial scale vs. pilot projects may differ from current conditions.

### **8.1 Funding Opportunities**

This Section discusses State and Federal funding opportunities. A summary table of these funding opportunities is provided in Appendix B. These are representative of the types of funding support and incentives that have been available but will need to be updated once a project or strategy is well defined. Although current and past opportunities can be instructive as guides to the general priorities and

preferences of grantors and funders, they should not be considered indicative or otherwise representative of future opportunities. Grant funding and financial incentives are typically based on budget allocations as well as agency priorities and objectives, which are variable, often year-to-year. It is not always possible to predict which grants, loans, incentives and other support mechanisms will be available in the future. Moreover, it is difficult to identify available and appropriate opportunities in the absence of a defined project, where key parameters such as scale, technology, feedstock, and products are not known.

### **8.1.1 Federal Funding Opportunities**

There are attractive opportunities at the Federal level under either the bipartisan infrastructure legislation now being considered by Congress or the "Build Back Better" plan that is being advocated by the President Joe Biden Administration. Details of specific opportunities may not be known until legislation is enacted and associated agency and departmental policies, guidelines, and regulations are promulgated. On August 10, 2021, the United States Senate passed the bipartisan Infrastructure Investment and Jobs Act, which includes \$550 billion in new funding for infrastructure. The Senate and House are currently reconciling differences in the bill. If the bill becomes law; California is expected to receive billions of dollars in formula funding alone. While it is not clear what funding may be available for recycling and organic waste, the County should continue to monitor the bill's progress.

Previous research undertaken by the County-identified opportunities that are beyond what could be usually expected. For example, the US Department of Transportation has over the years offered assistance to transportation projects that use renewable products (such as those produced from solid waste). Similarly, the US Department of Energy has in the past offered support in the form of grants and loan guarantees. Other Federal agencies, such as the EPA, the National Science Foundation, Department of Agriculture, and the Economic Development Administration have offered funding that could support solid waste strategies and projects. However, over time (often from year-to-year), the specifics of such potentials are revised and, while indicating possibilities, cannot be adequately considered until the specifics of an individual project or strategy being considered are known and can be weighed in view of the specific conditions of the funding potentials at that time.

In addition to direct Federal support such as grants or loans or indirect support such as loan guarantees, Federal tax benefits and credits can also act to partially subsidize projects, albeit only privately owned ones. Examples include the tax deduction that a private owner would earn for the interest paid on project debt as well as investment tax credits or production tax credits for the production of renewable energy. Production tax credits are an example of a support mechanism that was authorized, expired under law, and then eventually reauthorized demonstrating the unpredictability of potential support programs. Federal law has also in the past enabled special types of debt (such as New Market Tax Credits and Qualified Renewable Energy Bonds) that were heavily tax leveraged and acted to reduce the overall cost of capital to private developers.

## 8.1.2 State Funding Opportunities

In response to requirements of SB 1383, CalRecycle has been awarding GHG Reduction Grant Program funding for expanding existing capacity or establishing new facilities in California to: (1) reduce the amount of green material, food materials or alternative daily covers sent to landfills; (2) use post-consumer recycled fiber (paper, corrugated cardboard, paper board or textiles), plastic or glass to manufacture products; and (3) provide funding for expanding existing or establishing new food waste prevention and/or rescue projects that would send remaining food waste to composting or digestion facilities, if available. SB 1383, while providing regulatory drivers for waste reduction and diversion, also provides indirect financial support in the form of requirements for the public procurement of certain recovered organic waste products. While not a direct subsidy, such requirements establish markets for the products that will directly benefit project economics. Other State items, such as sales tax exemption on equipment and materials used to construct projects, can also help reduce overall costs. Similarly, local government incentives, such as property tax exemptions for privately owned waste management and recovery projects, can also help reduce costs and enhance project viability.

Local governments and solid waste industry representatives continue to advocate to the Governor, CalRecycle, and the State Legislature to provide funding for organic waste recycling infrastructure to meet the needs of SB 1383 compliance. The Board sent a five-signature letter to CalRecycle on June 18, 2021, outlining the funding needed by the County, requesting State financial assistance, and making recommendations to remove other policy barriers to SB 1383 implementation.

CalRecycle administers the Recycling Market Development Zone (RMDZ) program, which provides product marketing as well as technical and financial assistance to businesses that manufacture a recycled content product or process materials for recycling. Since 1994, the County's local RMDZ program has provided over \$157 million in loans to businesses, such as a plastics, paper, and cardboard recyclers and manufacturers. Public Works recently implemented a social media campaign to advertise the availability of the RMDZ loans to qualified businesses.

For programs that involve little if any capital, customer rates and fees may be adequate to fund ongoing operating costs. However, implementing SB 1383 will cost \$40 billion to implement Statewide. Increasing customer rates to fully fund new organic waste collection programs and infrastructure may not be supported by the public.

The County-sponsored AB 2612 (2020), which unfortunately did not pass due to the Legislature prioritizing pandemic-related bills. If passed, AB 2612 would have continuously appropriated \$200 million from the Greenhouse Gas Reduction Fund for organic waste processing and recycling infrastructure annually. The County should consider sponsoring similar legislation in future legislative cycles.

The California Recycling and Plastic Pollution Reduction Act will appear on the November 2022 ballot. If passed, the measure will establish a maximum one cent per item fee on manufacturers of plastic packaging and food service ware. The fee will be used to invest in waste reduction, packaging EPR, litter cleanup, and local recycling/remanufacturing infrastructure. The County should consider supporting funding mechanisms such as this ballot measure.

## 9.0 CONCLUSIONS AND RECOMMENDATIONS

The County and Public Works are already working to address challenges to the implementation of programs and infrastructure designed to meet waste and climate goals. These actions include but are not limited to:

### Source Reduction

- Expanding Food DROP through outreach to all edible food generators in the CUCs including County facilities.
- Establishing reuse centers at the County's two permanent HHW sites in Palmdale and Signal Hill.

### Waste Diversion

- Implementing mandatory organic waste collection by updating existing residential franchise and GDD contracts, transitioning to an exclusive commercial franchise system, and developing new GDDs in current open market areas in the Antelope Valley.
- Developing a generator ordinance to enforce mandatory food donation and organic waste recycling requirements for residents and businesses.
- Updating the County's Construction and Demolition Debris Ordinance to require a 70 percent recycling rate.

### Infrastructure Development

- Conducting capacity planning in collaboration with cities to determine infrastructure needs, identifying sites for new infrastructure through the Preliminary Draft CSE, RFI, and list of County-owned landfill sites (listed in Appendix C), and providing assistance to private facility developers.
- Analyzing the current zoning and land use of County-owned landfill sites as well as equity and environmental justice considerations to specify which sites are recommended for a preliminary feasibility analysis and/or RFP.
- Including procurement requirements for recovered organic waste in residential, GDD, and commercial waste collection contracts.
- Assisting private facility developers with feasibility analyses, siting, permitting, and securing funding.

Below is a list of recommendations for the County to implement to further address waste management challenges and enhance Countywide solid waste management programs and infrastructure.

### Recommendation No.1: Source Reduction Policies and Programs

Although waste diversion and recycling will be necessary strategies to meet waste management goals for the foreseeable future, source reduction is by far the most sustainable approach to waste management and should be prioritized as such. The County should continue to advocate for and implement source reduction policies and programs including:

- Developing a comprehensive County source reduction strategy.
- Supporting State legislation for "Right to Repair."
- Providing leadership by supporting organizations that will host repair clinics
- Adopting ordinances to prevent waste including banning or limiting single-use food service ware in CUCs.

### Recommendation No. 2: County Waste Prevention and Recycling Policies

The County should adopt policies to enhance resource management at County facilities. The County should also update its existing Green Purchasing Policy to align with waste reduction and diversion goals. Such policies and updates should encourage or require County facilities to:

- Eliminate the use of single-use plastics at County facilities and encourage the use of reusable, compostable, or recyclable alternatives.



- Procure recovered organic waste products such as compost, mulch, renewable energy, and biomethane.
- Implement guidelines for County convenings to be zero waste events.
- Purchase products with third-party resource management certifications and/or give preference to manufacturers with take back programs.
- Purchase products that meet established recyclability requirements, minimum recycled content requirements, or similar standards.

### **Recommendation No. 3: Waste Diversion and EPR Programs**

Although preventing waste is the top priority, the County should also implement and update policies to increase diversion of waste from landfills. Waste diversion policies should include EPR to shift the responsibility for managing various waste streams, including but not limited to problematic or hard-to-handle waste, from local jurisdictions to manufacturers and producers. County efforts should include:

- Developing a local EPR ordinance for batteries while continuing to advocate for a Statewide program.
- Sponsoring or supporting State legislation for EPR.
- Enhancing markets for recycled materials by supporting minimum recycled content policies.
- Engaging residents in waste diversion programs, including encouraging residents to compost organic waste at home and/or at community compost sites and encouraging the development of additional community composting projects.

### **Recommendation No. 4: Regional Leadership in Infrastructure Development**

To address waste that cannot feasibly be prevented, the County must support the development of additional waste diversion infrastructure to process organic waste as required by SB 1383. The County should take the following steps to enhance its regional leadership role in infrastructure development:

- Release an RFP for a private developer to build, and/or own, and/or operate an AD facility through a public-private partnership at the Calabasas Landfill, which Public Works has determined through an extensive feasibility analysis is viable for such a facility; and conduct robust community engagement associated with such a facility's development.
- Conduct additional feasibility analyses for co-locating organic waste processing facilities at specific County-owned landfill sites throughout the County, which are listed in Appendix C, and identify other County-owned properties that may be suitable for infrastructure.
- Collaborate with other jurisdictions and agencies to analyze the feasibility of siting organic waste processing facilities at additional sites, including proposed facilities that were included in responses to the RFI and potential sites identified in the Preliminary Draft CSE.
- Work with CalRecycle and LEAs to develop feasible standards for high diversion organic waste processing facilities.
- Assist thermal CT facilities with achieving organic waste landfill disposal reduction certification to provide additional outlets for organic waste.
- Provide County grants for developing thermal CT facilities.
- Engage with the InfrastructureLA SWARM subcommittee and the Task Force and collaborate with Cities to address challenges to infrastructure development.
- Adopt compost and mulch procurement requirements for County facilities and contracted waste haulers, conduct outreach to residents and businesses on benefits and existing incentives for compost and mulch use, and analyze the feasibility of a compost, mulch, and/or grass cycling incentive program to encourage the development of new composting and mulching facilities.

### **Recommendation No. 5: Bioenergy and Zero Emission Transition Framework**

The County should develop and adopt a sustainable approach to bioenergy to meet waste and GHG reduction goals while also supporting vehicle electrification goals. Such an approach should:

- Evaluate strategies to optimize biogas use including but not limited to onsite power generation, transportation fuel, and/or pipeline injection.
- Advocate for Statewide incentives for use of digester gas for electricity production.

- Use bioenergy projects to manage a substantial portion of the organic waste stream that cannot be source reduced, diverted, or composted.
- Rapidly and progressively transition from fossil fuels to ZEVs.
- Create carbon negative bioenergy from diverted organic waste and use it to offset fossil fuel use.
- Use any biomethane that cannot be used onsite or for non-transportation uses to replace diesel and fossil natural gas fuel in heavy-duty vehicles that do not currently have a cost-effective or functionally equivalent ZEV alternative.
- Continue to reduce the carbon intensity of the electric grid using bioenergy, hydrogen, and other renewable energy technologies.

#### **Recommendation No. 6: Sustainable Funding**

Enhancing waste management programs and infrastructure will require sustainable funding sources. The County should consider supporting funding initiatives such as:

- The California Recycling and Plastic Pollution Reduction Act ballot measure.
- Sponsoring State legislation for funding for recycling and organic waste processing infrastructure.
- Federal infrastructure funding packages.

#### **Recommendation No. 7: AB 1583 Statewide Commission Policy Proposals**

The County should support the Statewide adoption of the AB 1583 Commission policy proposals. If not enacted Statewide, the County should implement the policy proposals on a local level wherever feasible, such as:

- Compostable Products Certification and Approval for Composting or Anaerobic Digestion
- Consolidated Permit Process Utilization and Enhancement
- Support Right to Repair and Expand Reuse and Repair Businesses
- Extending Producer Responsibilities Framework for Household Hazardous Waste (HHW)

#### **Recommendation No. 8: Roadmap to a Sustainable Waste Management Future**

The County should update the Roadmap to address current challenges and to integrate the relevant actions and recommendations of this report. The updated Roadmap will:

- Serve as a high-level comprehensive framework for achieving long-term landfill diversion targets.
- Help guide future solid waste management decisions.

MOTION BY SUPERVISOR SHEILA KUEHL

June 8, 2021

**Enhancing Countywide Solid Waste Management Through Expanded Program  
and Infrastructure Investments**

In 2014, the Los Angeles County Board of Supervisors adopted the Roadmap to a Sustainable Waste Management Future (Roadmap), which envisions adoption of innovative policies and procedures for managing solid waste and includes a goal to divert 80 percent of solid waste produce in unincorporated County areas from landfills by the year 2025, 90 percent by 2035, and 95 percent or more by 2045. Additionally, in 2019 the Board adopted the OurCounty Sustainability Plan that set forth a hierarchy for waste management that prioritizes source reduction and set targets for reducing overall per capita waste generation by 25 percent by 2025, 30 percent by 2035, and 35 percent by 2045.

While much progress has been made, including a solid waste diversion rate of 69% in 2019, new challenges affect the County's ability to achieve sustainability goals. Due to the COVID-19 pandemic, the County saw an increase in recyclables and green waste being disposed in landfills, a surge in the disposal of single-use plastics, and a loss in revenue for recycling centers, which were already impacted by changes to international policies that have severely restricted the export of recyclables in 2018 and

**MOTION**

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upended the market for these materials. The lack of local infrastructure to divert solid waste is an additional challenge that must be addressed.

Additionally, California is experiencing the effects of a climate crisis, and recognizes that solid waste disposal creates greenhouse gas (GHG) emissions which are exacerbating our climate crisis. This has led to new State goals to reduce GHG emissions from organic waste disposal. To reduce landfill emissions of methane, a powerful short-lived climate pollutant 84 times more potent than carbon dioxide, Senate Bill 1383 (2016) requires 75 percent of organic waste Statewide be diverted from landfills, as well as 20 percent of edible food be recovered for human consumption by 2025. CalRecycle's Analysis of the Progress Toward SB 1383 Organic Waste Reduction Goals showed that the State's 2020 goals for organic waste diversion were not met, largely due to a lack of infrastructure. SB 1383 regulations also require the County to procure recovered organic waste products for use in County operations or to be given away to residents. These products may include compost, mulch, and bio-methane. Importantly, the proper management of organic waste and use of these resulting products has the potential to create other environmental benefits, such as rebuilding soil health.

As a regional leader, the County has a role to help ensure sufficient organic waste processing capacity Countywide to reduce GHG emissions. The most recent Countywide Organic Waste Management Plan Annual Report estimates that approximately 5.4 million tons of organic waste is disposed of Countywide per year, while there is less than 0.5 million tons per year of available organic waste processing capacity. In addition to the Roadmap and the OurCounty Sustainability Plan, the County's Climate Action Plan (CAP), which is currently being updated, will include specific goals to reduce waste generation and to divert waste from landfills to reduce

the climate impacts of solid waste management.

The State Legislature has expressed interest in allocating funding for recycling infrastructure. President Biden's "Build Back Better" plan also includes funding for recycling and technologies to recover organic waste. It is in the County's interest to conduct comprehensive planning to identify source reduction opportunities and to leverage potential Federal and State investments in solid and organic waste management infrastructure. Because the County is responsible for achieving ambitious waste and climate goals, it is important for the County to support investment in a portfolio of infrastructure and programs to advance source reduction and solid waste management in the County.

**I, THEREFORE, MOVE** that the Board of Supervisors direct the Department of Public Works, in consultation with the Chief Executive Office, Chief Sustainability Office, and Regional Planning, to report back to the Board within 90 days with a strategy for addressing these challenges to the implementation of programs and infrastructure designed to meet the roadmap and sustainability plan objectives; and with recommendations for developing source reduction and waste diversion infrastructure and programs to achieve new State and County climate and waste management goals, including:

1. Identifying source reduction and waste diversion programs and infrastructure that could maximize environmental benefits and optimize climate resilience;
2. Analyzing infrastructure needs to meet the County's waste diversion goals and new State mandates, and potential locations for new or expanded facilities that take into account environmental justice considerations;
3. Identifying opportunities and strategies for meeting the SB 1383 procurement requirement for recovered organic waste products;

4. Identifying opportunities for providing leadership in developing mechanisms and incentives to reduce waste generation and to divert waste from landfill disposal;
5. Identifying potential existing funding sources to support source reduction strategies, infrastructure, and program implementation, and opportunities to pursue additional funding aligned with the County's State and Federal legislative agendas; and
6. Sending a 5-signature letter to CalRecycle outlining the funding needed by the County in order to develop source reduction and organic waste diversion programs and infrastructure, and requesting State financial assistance as well as removal of other barriers to implementation necessary to support the successful fulfillment of SB 1383.



**SUMMARY TABLE**  
**Grants, Loans/Financing Programs, and Incentives Potentially Applicable to MSW Conversion Technology Projects**  
**(August 2021)**

This document identifies selected grants, loans/financing programs, and other financial incentives that are potentially applicable to California conversion technology (CT) projects processing organic waste or other post-recycled residual solid waste.

Although current and past opportunities can be instructive as guides to the general priorities and preferences of grantors, they should not be considered indicative or otherwise representative of future opportunities. Grant funding and financial incentives are typically based on budget availability, as well as agency priorities and objectives, which are often variable year-to-year. It is not always possible to predict which grants, loans, incentives, and other support mechanisms will be available in the future. Moreover, it is difficult to identify available and appropriate opportunities in the absence of a defined project, where key parameters such as scale, technology, feedstock, and products are known.

This summary focuses on State and Federal grants and incentives. Certain local incentives may also be available to CT projects from cities and municipal utilities, such as tax credits, fee waivers, low interest loans or grants, expedited permitting, and other unique incentives. Stakeholders are encouraged to explore local incentives based on the location of the project. The Los Angeles County Economic Development Corporation is one source for information on business incentives.

When reviewing the following tables, it should be kept in mind that it is difficult to identify available and appropriate opportunities in the absence of a defined project, where key parameters, such as scale, technology, feedstock, and products and materials are known. However, the information on the tables are valuable in identifying overall State and Federal policy initiatives, priorities (as indicated by the types of projects that have been funded previously), and will provide a starting point at the time that a project is sufficiently defined to warrant direct funding research.

Although the current infrastructure bill being considered by Congress may not explicitly provide for solid waste management and recovery/recycling programs or facilities, in three areas there may be relevance to the County's planning activities, depending upon final legislative language and the associated regulations that will be issued by the relevant Federal departments and agencies. These include:

- \$7.5 billion for electric vehicle charging infrastructure and charging stations -- CT projects that generate electricity may have some potential under this A7.
- \$21 billion for environmental remediation -- CT facilities that can be sited as part of a larger brownfield project may have some potential.
- \$73 billion for power infrastructure -- while focused more on distribution and the power grid, this category will include funding for power generation technologies, which could include CT.

Where available, hyperlinks have been provided to websites providing supplemental information on individual programs and opportunities. Stakeholders using this resource should conduct their own due diligence regarding the availability and applicability of funding opportunities and financial incentives.

**GRANT PROGRAMS POTENTIALLY APPLICABLE TO MSW CONVERSION TECHNOLOGY PROJECTS**

<b>AGENCY</b>	<b>PROGRAM</b>	<b>GRANT</b>	<b>RELEASE DATE</b>	<b>STATUS</b>	<b>FUNDS</b>	<b>DESCRIPTION</b>
California Energy Commission (CEC)	Electric Program Investment Charge Program (EPIC)	<a href="#">GFO-20-307 - Food Production Investment Program 2020</a>	11/18/2020	Awarded	\$7 million; potential for additional funding	Goals of the program are to accelerate adoption of advanced energy efficiency and renewable energy technologies at California food processing plants, demonstrate their reliability and effectiveness, help California food processors work towards a low carbon future, and benefit priority populations.
California Energy Commission (CEC)	CalSeed	<a href="#">CalSeed Fund</a>	11/23/2021	Ongoing	\$24 million	Qualified early stage California clean energy startups can receive up to \$600,000 to bring their concepts and prototypes to market.
California Energy Commission (CEC)	Clean Transportation Program	<a href="#">Low Carbon Fuel Production Program (GFO-19-601)</a>	8/28/2019	Awarded	\$12.5 million	LCFPP will support new and expanded renewable, ultra-low-carbon transportation fuel production at advanced fuel production plants and help the California fuel industry, vehicle manufacturers, and operators work toward a low-carbon future. Providing support for more low-carbon fuels will reduce GHG emissions, decrease air pollution, and help achieve the State's climate change and clean air goals.
California Department of Food and Agriculture (CDFA)	Healthy Soils Program (HSP)	<a href="#">Healthy Soils Incentives Program</a>	2/27/2020	Awarded	\$39.84 million	The HSP Incentives Program provides financial incentives to California growers and ranchers to implement conservation management practices that sequester carbon, reduce atmospheric greenhouse gases (GHGs), and improve soil health. GHGs benefits are estimated using quantification methodology and tools developed by California Air Resources Board (CARB), USDA-NRCS and CDFA and soil health improvement will be assessed by measuring soil organic matter content.
California Department of Forestry & Fire Protection	CALFire Grant Program	<a href="#">Urban and Community Forestry Grant</a>	Unknown	Closed	Unknown	Projects may receive \$150,000 - \$1.5 million to further the goals of AB 32 and result in a net greenhouse gas benefit among other things, and two of the co-benefits listed are the production of biofuel and creation of clean energy.
CalRecycle	Greenhouse Gas Reduction Grant Program	<a href="#">Organics Grant Program</a>	Unknown	Unknown	Unknown	The purpose of this competitive grant program is to lower overall greenhouse gas emissions by expanding existing capacity or establishing new facilities in California to reduce the amount of California-generated green materials, food materials, and/or Alternative Daily Cover being sent to landfills.

**GRANT PROGRAMS POTENTIALLY APPLICABLE TO MSW CONVERSION TECHNOLOGY PROJECTS**

AGENCY	PROGRAM	GRANT	RELEASE DATE	STATUS	FUNDS	DESCRIPTION
CalRecycle	Greenhouse Gas Reduction Grant Program	<a href="#">Recycled Fiber, Plastic, and Glass Grant Program</a>	Unknown	Awarded	\$10,460,830 was available for the fiscal year 2019–20 grant cycle.	The purpose of this competitive grant program is to lower overall greenhouse gas emissions by expanding existing capacity or establishing new facilities in California that use California-generated postconsumer recycled fiber (old corrugated cardboard, paper board, or textiles), plastic, or glass to manufacture products. The allocation for large tier projects is \$9,460,830 with a minimum grant award of \$250,001 and a maximum grant award of \$3,000,000 per application. One million dollars allocation for small tier projects with a minimum grant award of \$125,000 and a maximum grant award of \$250,000 per application.
California Natural Resources Agency	Environmental Enhancement and Mitigation Grant Program	<a href="#">Environmental Enhancement and Mitigation (EEM) Grant Program</a>	Unknown	Closed	\$13.4 million	The EEMP encourages projects that produce multiple benefits, which reduce greenhouse gas emissions, increase water use efficiency, reduce risks from climate change impacts, and demonstrate collaboration with local, State and community entities. Eligible projects must be directly or indirectly related to the environmental impact of the modification of an existing transportation facility or construction of a new transportation facility. Grants for individual projects are generally limited to \$500,000 each.
Environmental Research and Education Foundation	Research Grants and Projects	<a href="#">General RFP</a>	Ongoing	\$15k to \$500k	Unknown	The Foundation supports solid waste research. This general RFP looks to support and increase sustainable solid waste management practices, including waste minimization, recycling, waste conversion to energy, biofuels, chemicals, or other useful products. This includes, but is not limited to, the following technologies: waste-to-energy, anaerobic digestion, composting, and other thermal or biological conversion technologies. This also includes strategies to promote diversion to higher and better uses (e.g. organics diversion, market analysis, optimized material management, logistics, etc.)
United States Department of Agriculture (USDA)	Business and Cooperative Program	<a href="#">Agriculture Innovation Center Program</a>	Unknown	Ongoing	\$7.4 million	Makes grants to Agriculture Innovation Centers that may be used by the Centers to provide technical assistance to agricultural producers to help them develop and market value-added agricultural products using a variety of options, except joint marketing efforts. Up to \$1 million is available in funding for each project.
United States Department of Agriculture (USDA)	Utilities Programs	<a href="#">High Energy Cost Grants</a>	Unknown	Closed	\$10 million	Assists energy providers and other eligible entities in lowering energy costs for families and individuals in areas with extremely high per-household energy costs (275 percent of the national average or higher. Includes biomass technologies for consideration). \$100,000 - \$3 million is available per applicant.

# GRANT PROGRAMS POTENTIALLY APPLICABLE TO MSW CONVERSION TECHNOLOGY PROJECTS

AGENCY	PROGRAM	GRANT	RELEASE DATE	STATUS	FUNDS	DESCRIPTION
United States Department of Agriculture (USDA)	Utilities Programs	<a href="#">Solid Waste Management Grants</a>	10/1/2021	Closed	Unknown	This program reduces or eliminates pollution of water resources by providing funding for organizations that provide technical assistance or training to improve the planning and management of solid waste sites. This grant is included because one possible objectives listed is to reduce the solid waste stream.
United States Department of Agriculture (USDA)	Business and Cooperative Program	<a href="#">Rural Energy for America (REAP), Energy Audit and Renewable Energy Development Assistance Grants</a>	Unknown	1/31/2022	Unknown; limited to \$100 k per award	Provides grants to State and local governments, federally-recognized tribes, institutions of higher education, rural electric cooperatives, public power entities, and certain other defined applicants to assist agricultural producers and rural small businesses. Grant funds must be used to conduct and promote energy audits and provide renewable energy development assistance. Grant funds cannot be used for construction-related activities or purchase/lease of equipment.
United States Department of Energy (DOE)	Office of Science	<a href="#">Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR)</a>	7/12/2021	11/12/2021	Varies	The goals of this program are to encourage research and development in several areas, some of which could include waste conversion technologies. Funding is in phases for innovation, R&D, then commercialization.
United States Federal Government	Grants and Loans Official Website (www.grants.gov)	<i>The U.S. Federal Government maintains an official website that allows users to search, review, determine eligibility, apply for and track grants from dozens of federal agencies.</i>				In addition to departments expressly involved in energy and environmental programs, others (e.g., Transportation, Economic Development, Agriculture) periodically provide funding for relevant projects and facilities. For example, the Economic Development Administration has in the past shown interest in recycling/recovery projects that project attractive employment opportunities. Similarly, Transportation has shown interest in projects that generate renewable energy for public transit systems.
United States Department of Energy (DOE)	Office of Energy Efficiency & Renewable Energy	<a href="#">Plastic Waste Reduction R&amp;D</a>	N/A	Applications due 9/21/2021	\$14.5 million	This program is intended to support R&D to develop new plastics that are more recyclable and biodegradable.
US EPA	Supporting Anaerobic Digestion in Communities	<a href="#">Sustainable Materials Management 2021 Anaerobic Digestion Funding Opportunity</a>	N/A	Applications due 10/7/2021	\$2 million	Total of \$2 million available (\$50k to \$200k per project). There is \$800k set aside for designated applicants (e.g., tribal governments, U.S. territories). Funds can be used to develop new or expand existing food waste processing AD facilities. Representative of the types of projects generally supported by USEPA.

## LOAN AND FINANCING PROGRAMS POTENTIALLY APPLICABLE TO MSW CONVERSION TECHNOLOGY PROJECTS

AGENCY	PROGRAM/INCENTIVE	DESCRIPTION
California Energy Commission	<a href="#">Financing for Energy Efficiency and Renewable Energy Generation Projects (PON-17-401)</a>	Provides 1 percent interest rate to cities, counties, special district, public colleges or universities, or public care institutions/public hospitals for eligible projects. Maximum loan amount is \$3 million. The most recent solicitation totaled \$8 million; there is no current solicitation.
California Pollution Control Financing Authority (CPCFA)	<a href="#">Tax-Exempt Bond Financing Program</a>	Green Bonds provide private activity tax-exempt bond financing to California businesses for the acquisition, construction, or installation of qualified pollution control, waste disposal, waste recovery facilities, and the acquisition and installation of new equipment. Previous project financings have ranged from \$15 million to \$228 million.
California Pollution Control Financing Authority (CPCFA)	<a href="#">California Recycle Underutilized Sites (CALReUSE) Assessment Program</a>	Provides forgivable loans (up to \$300,000 generally) to fund site assessment and characterization, technical assistance, remedial action plans, and site access for development of brownfields to bring these sites into productive use. Funding priority is given to distressed communities.
CalRecycle	<a href="#">Greenhouse Gas Reduction Loan Program</a>	Provides funds to support new or expanded organics infrastructure, such as composting and anaerobic digestion facilities, as well as for facilities that manufacture fiber, plastic or glass waste materials into beneficial products. Eligible applicants include government, private, and non-profit organizations. Fund availability as of October 20, 2019, was about \$4.5 million at a 4 percent interest rate. The maximum loan amount is \$2 million or 75 percent of project cost, whichever is less. There is a 25 percent funding match requirement.
CalRecycle	<a href="#">Recycling Market Development Zones (RMDZ) Revolving Loan Program</a>	Provides low-interest loans to public and private entities for the purchase of equipment and other relevant business costs. Intended to help California manufacturers increase their processing capabilities and create additional markets for recycled-content products. Examples of eligible projects include anaerobic digestion of food waste and green waste. Fund availability for FY 22 is \$12.4 million at a 4 percent interest rate. The maximum loan amount is \$2 million or 75 percent of project cost, whichever is less.
California Alternative Energy and Advanced Transportation Financing Authority (CAEATFA)	<a href="#">Clean Energy Bond Financing</a>	The California Alternative Energy and Advanced Transportation Financing Authority issues tax-exempt bonds to finance green projects. Over its lifetime, CAEATFA has issued more than \$212 million in bond financing for 26 green projects. The projects help California meet its energy goals and have included solar, hydroelectric, geothermal, biomass and cogeneration projects. Clean energy bond financing includes Qualified Energy Conservation Bonds (QECB) and Private Activity Bonds for District Heating and Cooling. Currently there is no QECB volume cap allocation available from the State of California--allocation to be determined.

# **LOAN AND FINANCING PROGRAMS POTENTIALLY APPLICABLE TO MSW CONVERSION TECHNOLOGY PROJECTS**

AGENCY	PROGRAM/INCENTIVE	DESCRIPTION
California Infrastructure and Economic Development Bank (iBank)	<a href="#">Infrastructure State Revolving Fund (ISRF) Program</a>	Provides financing to public agencies and non-profit corporations sponsored by public agencies for a wide variety of infrastructure and economic development projects (excluding housing). ISRF Program funding is available in amounts ranging from \$50,000 to \$25 million, with loan terms for the useful life of the project up to a maximum of 30 years. Eligible projects include, but are not limited to, power generation and waste conversion facilities.
California Infrastructure and Economic Development Bank (iBank)	<a href="#">Bond Financing Program</a>	Provides tax-exempt and taxable conduit revenue bond financing for public and private entities featuring low-interest rates, long-term financing, and flexible terms. Includes 501(c)(3) bonds for nonprofit public benefit corporations, industrial development bonds, exempt facility bonds, and public agency revenue bonds.
United States Department of Energy (DOE) Loan Program Office	<a href="#">Title XVII Innovative Clean Energy Projects Loan Program Open Solicitations</a>	This program provides loan guarantees to accelerate the deployment of innovative clean energy technology including renewable energy, advanced fossil energy, nuclear energy and energy efficiency. There is a total of \$45 billion available, with \$4.5 billion designated for Renewable Energy & Efficient Energy Projects.



## OTHER INCENTIVES POTENTIALLY APPLICABLE TO MSW CONVERSION TECHNOLOGY PROJECTS

AGENCY	PROGRAM/INCENTIVE	DESCRIPTION
California Alternative Energy and Advanced Transportation Financing Authority (CAEATFA)	<a href="#">Advanced Transportation and Alternative Source Manufacturing Sales and Use Tax Exclusion Program</a>	The Sales and Use Tax Exclusion (STE) Program excludes from sales and use taxes purchases of Qualified Property, which includes certain property used either to process recycled feedstock or using recycled feedstock in the production of another product or soil amendment as well as certain property used for Alternative Source manufacturing projects (e.g., solar photovoltaic, biogas, biomass, landfill gas, and renewable fuels). Statute limits the Program to awarding \$100 million in sales and use tax exclusions in each calendar year. In general, individual projects are limited to \$10 million of STE in a given calendar year. Projects may receive more than the individual cap, at the discretion of the Authority and subject to STE allocation availability at the end of the calendar year.
California Air Resources Board (CARB)	<a href="#">Low Carbon Fuel Standard</a>	Low Carbon Fuel Standard (LCFS) is a California State greenhouse gas reduction program adopted in 2009 and most recently re-adopted in 2015. In 2018, the Board approved amendments to the regulation, which included strengthening and smoothing the carbon intensity benchmarks through 2030 in-line with California's 2030 greenhouse gas (GHG) emissions reduction target enacted through SB 32, adding new crediting opportunities to promote zero emission vehicle adoption, alternative jet fuel, carbon capture and sequestration, and advanced technologies to achieve deep decarbonization in the transportation sector. The program sets annual declining carbon intensity (CI) standards for fuels. Fuels below the standard generate credits that can be sold to regulated parties who must offset deficits created by their supply of fuel with CIs that exceed the standards. California Air Resources Board has been working with other jurisdictions (e.g., the Pacific Coast Collaborative) to build an integrated West Coast market for low carbon alternative fuels.
California Air Resources Board (CARB)	<a href="#">Cap and Trade Program</a>	California's Cap-and-Trade program is a market-based regulation designed to reduce GHG emissions. Sources that reduce GHGs below allowable levels through investments in clean energy can earn credits issued by CARB. In accordance with program requirements, excess credits can be traded to help other regulated entities meet compliance obligations. On January 1, 2018, the California Cap-and-Trade Program and the Quebec Cap-and-Trade System officially linked with the Ontario Cap-and-Trade Program, enabling the mutual acceptance of compliance instruments issued by each jurisdiction to be used for compliance with each program. These three jurisdictions now hold joint GHG allowance auctions to allow entities to acquire GHG allowances.

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AGENCY	PROGRAM/INCENTIVE	DESCRIPTION
California Public Utilities Commission (CPUC)	<a href="#">Self Generation Incentive Program (SGIP)</a>	Provides financial incentives for the installation of new qualifying technologies that are installed to meet all or a portion of the electric energy needs of a facility. The purpose of the Self Generation Incentive Program (SGIP) is to contribute to GHG emission reductions, demand reductions and reduced customer electricity purchases, resulting in the electric system reliability through improved transmission and distribution system utilization; as well as market transformation for distributed energy resource technologies. Qualifying technologies include wind turbines, waste heat to power technologies, pressure reduction turbines, internal combustion engines, microturbines, gas turbines, fuel cells, and advanced energy storage systems. Based on the 2019 SGIP Handbook, authorized incentive collections through the end of 2019 are more than \$500 million, with 80 percent reserved for energy storage projects and 20 percent for generation technology projects. Four utilities participate in the program: PG&E, SCE, CSE, SoCalGas.
California Public Utilities Commission (CPUC) and California Energy Commission (CEC)	<a href="#">Renewable Portfolio Standard (RPS)</a>	The California RPS program is jointly implemented by the CPUC and CEC. California's electric utilities are required to have 60 percent of their retail sales derived from eligible renewable energy resources in 2030 and all subsequent years, with certain interim goals, including 33 percent by 2020. CPUC's most recent annual report for the RPS program (November 2018) reports that the three large investor-owned utilities (which includes SCE) have executed renewable electricity contracts to meet the 33 percent goal by 2020.
Southern California Gas (SoCalGas)	<a href="#">Biomethane Interconnection Incentive Program</a>	This program can provide an incentive that can contribute up to 50 percent of interconnection costs, with a cap of \$3 million per project. The program is described in detail in SoCalGas Rule 39, Section A.3.a. It is stated to be in effect through December 31, 2021, or until it exhausts its \$40 million in funding.
Southern California Gas (SoCalGas)	<a href="#">Biogas Conditioning/Upgrading Services Tariff (Schedule G-BCUS)</a>	An optional tariff service for customers that allows SoCalGas to plan, design, procure, construct, own, operate, and maintain biogas conditioning and upgrading equipment on customer premises. RNG for pipeline injection is a an example of an eligible energy product.
United States Environmental Protection Agency (USEPA)	<a href="#">Renewable Field Standard Program (RFS)/Renewable Identification Numbers (RINs)</a>	The RFS is a national program implemented by the USEPA that requires a specified volume of renewable fuel be used to replace or reduce petroleum-based fuel. Volume requirements are currently specified out to 2022 (36 billion gallons in total). Obligated parties under the RFS are refiners or importers of gasoline or diesel fuel. Obligations can be met by using renewable fuels and/or by purchasing credits (RINs) from other renewable fuel importers/producers. RIN prices are market-based and can be volatile. Various outlets track and report RIN values (e.g., <a href="http://www.progressivefuelslimited.com">www.progressivefuelslimited.com</a> ).

## OTHER INCENTIVES POTENTIALLY APPLICABLE TO MSW CONVERSION TECHNOLOGY PROJECTS

AGENCY	PROGRAM/INCENTIVE	DESCRIPTION
United States Department of the Treasury, Community Development Financial Institutions (CDFI) Fund	<a href="#">New Markets Tax Credit (NMTC) Program</a>	NMTC is a federal program that provides private investors with a federal tax credit for certain investments in low-income communities. The NMTC Program is jointly administered by the CDFI Fund and the Internal Revenue Service. Investors receive a tax credit over a seven-year period, cumulatively equal to 39 percent of the total qualified equity investment made. Tax credits are allocated through a competitive application process. Only a certified Community Development Entity (CDE), can apply for NMTC allocation. The CDE then offers NMTC to investors. The last NMTC program deadline was November 16, 2020, with the next announcement on further program activities anticipated expected in September 2021.
United States Department of Agriculture (USDA)	<a href="#">Advanced Biofuel Payment Program</a>	The program was originally established as part of the 2008 Farm Bill and intended to increase the private sector supply of renewable energy and decrease the demands for fossil fuel. Applications were accepted in October of each year. A facility was eligible only if it produced biofuels in the prior fiscal year, among other requirements. The program provided quarterly payments for eligible advanced biofuel produced. Payment amounts depended on the funding available for the fiscal year as well as the number of eligible producers and the quantity of biofuel produced. The program has expired; the prospects for renewal or extension are unknown at this time.
United States Internal Revenue Service (IRS)	<a href="#">Renewable Electricity Production Tax Credit (PTC) and Business Energy Investment Tax Credit (ITC)</a>	The federal PTC is an inflation-adjusted per-kilowatt-hour (kWh) corporate tax credit for electricity generated by qualified energy resources and sold by the taxpayer to an unrelated person during the taxable year. The duration of the credit is 10 years after the date the facility is placed in service. The PTC program expires on December 31, 2021 (note: the program has been renewed in the past as the expiration date approached). The ITC, which is a tax credit tied to private investment in eligible projects and technologies, has been extended. The credits vary based on the type of energy used and/or the specific type of technology applied. For example, the credit for waste-to-energy projects is 26 percent in 2023 (the last year of eligibility); for geothermal heat projects it is 10 percent in 2023.
State of California	<a href="#">Recycled Organic Waste Incentives</a>	Beginning on January 1, 2022, SB 1383 requires cities and counties to procure annually recovered organic waste products such as compost, mulch and renewable energy from anaerobic digestion and electricity from biomass conversion. These requirements will create local markets for the outputs of CT facilities.

### Appendix C: Potential Opportunities for Further Evaluation for Siting Waste Infrastructure

SUPERVISORIAL DISTRICT	NAME	ADDRESS	CITY/CUC	JURISDICTION	RECOMMENDATION
1	Blanchard Street Dump/Kerner Dump	4531 West Blanchard Street/1110 North Eastern Avenue	City of Monterey Park	Incorporated/City	Not recommended due to environmental indicators
1	Cogen Dump	4500 City Terrace Drive	City of Monterey Park	Incorporated/City	Not recommended due to environmental indicators
1	Blanche Teeter	6116 Paramount Boulevard	City of Pico Rivera	Incorporated/City	Further evaluation needed
2	BKK - Carson Public Dump	19200 South Main Street	City of Carson	Incorporated/City	Further evaluation needed
2	Cal Compact LF/Metro 2000	20400 South Main Street/701 East Carson Street	City of Carson	Incorporated/City	Not recommended due to existing multi-family residential use
2	Gardena Valley #6 (Ford Center)	21107 Chico Street	City of Carson	Incorporated/City	Further evaluation needed
3	Calabasas Landfill	5300 Lost Hills Road	Agoura Hills, Los Angeles County	Unincorporated	Feasibility analysis complete; recommended for Request for Proposals
4	Dairy Valley Reclamation	19900 Bloomfield Avenue	City of Cerritos	Incorporated/City	Further evaluation needed
4	City Dump and Salvage	Loynes Drive and North Studebaker Road	City of Long Beach	Incorporated/City	Further evaluation needed
4	Torrance Municipal Dump	20466-20500 Madrona Avenue/505 Maple Avenue	City of Torrance	Incorporated/City	Further evaluation needed
4	Palos Verdes Landfill	26401 Crenshaw Boulevard/25706 Hawthorne Boulevard	City of Rolling Hills Estates	Incorporated/City	Recommended for preliminary feasibility analysis
5	Quartz Hill Solid Waste Disposal	Avenue M-2 and 40th Street West	Quartz Hill, Los Angeles County	Unincorporated	Recommended for preliminary feasibility analysis
5	LA Verne City Dump	1855 Carrion Road	City of La Verne	Incorporated/City	Recommended for preliminary feasibility analysis
5	Gorman Dump	49740 Golden State Freeway	Gorman, Los Angeles County	Unincorporated	Recommended for preliminary feasibility analysis