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EXECUTIVE SUMMARY

Introduction/Background

Since its adoption in October 2014 by the Los Angeles County Board of Supervisors, the County Roadmap to a Sustainable Waste Management Future has guided the County to develop and implement the strategies and supporting initiatives to achieve its landfill diversion goals of 80 percent by 2025, 90 percent by 2035, and 95+ percent by 2045 while focusing on the environment, economy, and social impacts of programs on County residents and communities. However, since 2014, there have been new laws passed and major changes in the recycling markets that guided the County to update this planning document now referred to as Roadmap 2020.

The County strives to lead by example by developing creative and innovative waste diversion programs to ensure that the social justice mandates of clean air and water, and pollution-free communities for everyone are a part of County residents' daily life experience regardless of their race, color, national origin, economic status, or where they reside in the County. The County has joined forces with local jurisdictions and residents to develop programs to address community blight in low-income communities caused by the illegal dumping of trash and bulky items by residents, visitors and people experiencing homelessness.

The County has made progress towards its goals, including:

- Implementing organics management plans and programs.
- Implementing special collection events to collect and recycle tires and mattresses in low-income communities.
- Advocating for development of conversion technology projects.
- Advocating for statewide and local extended producer responsibility legislation and policies.
- Facilitating proper management of household hazardous waste (HHW) and electronic waste (E-Waste) and development of resource recovery centers.
- Planning for emergency debris management.
- Educating residents, businesses and schools to reduce, reuse, recycle, and rethink.
- Facilitating sustainable practices at County facilities and departments.
- Administering local green business and market development program.

Focus Areas

The County's solid waste management responsibilities include oversight for disposal capacity, regional diversion programs, waste collection and diversion programs specific to County unincorporated communities, and waste collection and diversion programs at County facilities. Therefore, the Roadmap is divided into the following focus areas:

1. Regional/Countywide
2. County unincorporated communities, and
3. County Operations.

Strategies and Initiatives

Roadmap 2020 includes three strategies with supporting initiatives to reduce waste and divert material from landfills. The three strategies are:

Strategy 1: Programs and Services
Strategy 2: Measuring Results
Strategy 3: Facilities and Infrastructure

Within each strategy are specific recommended initiatives that include a mix of "upstream" activities that identify ways to keep materials out of the waste stream entirely and "downstream" activities that sustainably manage materials that are currently being disposed of at landfills.

Alignment with Current County Priorities

The strategies and initiatives identified in this Roadmap align closely with Los Angeles County's adopted plans and priorities, as well as other sustainability efforts, including:

- Los Angeles County Strategic Plan
- Los Angeles County General Plan 2035
- Our County: The Los Angeles County Sustainability Plan
- Los Angeles County Community Climate Action Plan

Priorities

Roadmap 2020 reflects changes in the waste management industry, focuses on reducing greenhouse gas (GHG) emissions, new recycling laws and mandates, and responds to the impacts on recycling markets created by China's National Sword Policy.

Certain issues are a major focus of Roadmap 2020 due to the proportion of the waste stream potentially affected or the impacts those issues have on sustainability and the quality of life of residents in the County. Roadmap 2020 includes new priorities to address social justice concerns, such as environmental equity.

The priorities of Roadmap 2020 include:

- Waste Prevention and Source Reduction
- Local Recycling Infrastructure and Market Development
- Organics Management
- Extended Producer Responsibility and Product Stewardship
- Conversion Technologies
- Household Hazardous and Electronic Waste
- Construction and Demolition Debris
- Illegal Dumping
- Environmental Justice
- Homelessness
- Emergency Management and Regional Debris Management Planning
- Outreach and Education

Conclusions and Next Steps

Roadmap 2020 is intended to outline a recommended approach to establishing a sustainable waste management future, while more detailed implementation plans will be developed for various initiatives, which will incorporate specific details on feasibility, costs, funding sources, and timelines/schedules. The Roadmap is intended to be a resource for residents, businesses, cities, County departments, public agencies, the waste industry, environmental organizations, and other interested stakeholders who want to help make Los Angeles County a greener and more sustainable community, particularly in the area of solid waste management.

INTRODUCTION

Since its adoption in October 2014, the County Roadmap to a Sustainable Waste Management Future has guided the County to develop and implement the strategies and supporting initiatives to achieve the County's landfill diversion goals of 80 percent by 2025, 90 percent by 2035, and 95+ by 2045. Roadmap 2020 along with the original Roadmap embraces sustainability which encompass and reflects the environment, the economy, and equity.

The County has made progress towards its sustainability goals, including:

- Implementing organics management plans and programs:
  - In 2015, the County began developing a food donation and recovery program. The Food Donation and Recovery Outreach Program facilitates and promotes the safe donation and distribution of excess edible food to reduce food waste and helps address food insecurity. The Food Donation and Recovery Outreach Program launched in 2018 and has received multiple awards, including from the California State Association of Counties and the County's Quality and Productivity Commission
  - In 2016, Senate Bill (SB) 1383 was signed into law, which directed CalRecycle, the State Agency responsible for solid waste management, to develop regulations requiring local jurisdictions provide mandatory organic waste collection services to all organic waste generators, including residents, businesses, and local government facilities. SB 1383 established statewide goals to reduce organic waste landfill disposal 50 percent by year 2020 and 75 percent by year 2025. It also includes a goal to recover 20 percent of edible food by year 2025. More details of SB 1383 are included in the Priority Issues Section of this document under Organics Management.

- Advocating for development of conversion technology projects:
  - In 2016, the County launched the Commercial Food Waste Collection Pilot Program in partnership with the Los Angeles County Sanitation Districts (CSD) where source separated food waste is collected from businesses that is taken to CSD's facility that converts food waste into energy and renewable transportation fuel through anaerobic digestion.

- Reaching a diversion rate of 68 percent:
  - The diversion rate reached a high of 75 percent in the County unincorporated communities (CUCs) in 2016. This is attributed in part to the County's efforts and implementation of a vast array of waste reduction, recycling, and public education programs.
  - In recent years, the diversion rate has declined (i.e., disposal has increased), due largely to strong economic activity in the CUCs and the significant decline in recyclable commodity prices caused by China's National Sword policy.

- These changes in market conditions, along with new legislative mandates and alignment with other County Plans have impacted diversion rates and have been the key drivers for updating the Roadmap for 2020.

- Advocating for statewide and local extended producer responsibility legislation and policies:
  - The County advocated for the passage of SB 212, which was signed into law in 2018. This law will establish a Statewide Extended Producer Responsibility Program for pharmaceutical and sharps waste.

- Facilitating proper management of HHW and E-waste and development of reuse centers:
  - The County continues to operate an award winning HHW/E-waste collection program consisting of permanent collection centers and mobile collections events and strives to develop reuse centers.

- Planning for emergency debris management:
  - The County prepared a Countywide Operational Area (OA) Mass Debris Management Plan (MDMP) which was approved and adopted by the County of Los Angeles Emergency Management Council. The OA MDMP establishes roles and responsibilities, determines resources, assesses operational threats and vulnerabilities, establishes mechanisms for collaboration, and prioritizes debris management efforts covering all 88 cities and CUCs.
  - The County also prepared a separate Unincorporated Area (UA) MDMP for the management of disaster debris within CUCs in 2017. The UA MDMP was submitted to the California Governor's Office of Emergency Services (CalOES) for review. Comments were received shortly prior to the 2018 Woolsey Fire, a destructive wildfire, which affected 1,769 properties and 96,949 acres of land in Los Angeles and Ventura Counties. In addition to addressing comments from CalOES, the County is currently preparing a Private Property Debris Removal Addendum to the UA MDMP based on lessons learned from the County's debris removal response during the 2018 Woolsey Fire incident. The UA MDMP will be resubmitted to CalOES with the Private Property Debris Removal Addendum for review and comment prior to subsequent submittal to the Federal Emergency Management Agency.

- Educating residents, businesses and schools to reduce, reuse, recycle, and rethink:
  - The Bring Your Own (BYO) campaign educates residents and County employees on how to implement sustainable practices by encouraging the use of reusable items.
  - Public Works conducts outreach and education to residents, businesses and County departments to encourage the Four Rs (Reduce, Reuse, Recycle, and Rethink).

- Through the Smart Gardening Program, workshops, such as composting, water-wise gardening, and grass cycling are provided to County residents at no cost.
- The County works with schools through the Environmental Defenders and Generation Earth Programs to offer environmental education through a school assembly presentation and service-learning projects on school campuses. The County developed a Waste-Free Event Guide to promote zero waste practices at various events. This guide is available by visiting the County's RoadmapLA.com website.

- Facilitating sustainable practices at County facilities and departments:
  - Since 2016, 26 County facilities have been visited by Public Works to identify sources of waste throughout facility operations and provide recommendations to eliminate, reduce, or divert generated waste from landfill disposal.
  - In 2017, County Public Works launched the Scrape Your Plate program at its Headquarters building in Alhambra, California to divert employee food waste from landfills through organics recycling. The Scrape Your Plate Program has received multiple awards including from the United States Environmental Protection Agency, the California State Association of Counties, and the County's Quality and Productivity Commission. Through this program, more than 42,000 pounds of food waste from the Headquarters' cafeteria, breakrooms, and special events, as well as special events at Public Works' field facilities, have been collected and converted to energy and renewable transportation fuel through anaerobic digestion. Over 5,000 pounds of food waste have been composted in on-site worm bins to create a soil amendment that is used to grow food and other plants at the Headquarters sustainable drought-tolerant garden. In addition, over 800 pounds of food waste have been prevented through improved planning by the cafeteria kitchen staff.
  - In 2018, County Internal Services Department added a new category of contract waste hauling service requiring haulers to offer organic waste and recyclables collection service and visit customer County facilities to make recommendations for complying with latest State laws regarding commercial recycling and organic recycling.

- Administering the local green business and Recycling Market Development Zone (RMDZ) program which provides business and technical assistance, product marketing, and financial assistance to businesses that manufacture a recycled-content product or process materials for recycling.
  - Two RMDZ loans were made to rPlanet Earth, a Polyethylene Terephthalate plastic recycler and manufacturer, for $2 million each, in 2017 and 2018.
  - An RMDZ loan was made to Princess Paper, Inc., a paper manufacturer, for $1,925,000 in 2018.
  - An RMDZ loan was made to U.S. Corrugated, Inc., a cardboard recycler and manufacturer, for $2 million in 2015.

FOCUS AREAS

The County's solid waste management responsibilities include oversight for disposal capacity, regional diversion programs, waste collection and diversion programs specific to CUCs, and waste collection and diversion programs at County facilities. Therefore, the Roadmap is divided into the following focus areas:

Focus Area 1: Regional/Countywide

Public Works, as the lead County agency advising the Board on regional waste management issues, has a Countywide responsibility to oversee certain waste management functions. Assembly Bill (AB) 939 (1989) requires each county to prepare a Countywide Integrated Waste Management Plan. The Countywide Integrated Waste Management Plan consists of the Summary Plan, which provides a summary of all the 88 cities and unincorporated County's Source Reduction Recycling Element, HHW Element, and Non-Disposal Facility Element, and a summary of the existing, planned, and contingency source reduction, recycling, and composting programs identified by the jurisdictions in the County, which are being and will be implemented to achieve the State-mandated waste diversion goals; and a Countywide Siting Element, which addresses the 15-year disposal capacity need of the 88 cities and unincorporated communities to safely handle residual solid waste which remains after recycling, composting, and other waste diversion activities.

Providing regional leadership on sustainability is important to assist the County in continuing to assure the long-term waste disposal needs of the County. In addition to disposal related activities, the County operates the largest HHW/E-Waste management program in the nation that serves all 88 cities and County unincorporated communities. The County also leads a nationally recognized research and development program for state-of-the-art technologies to convert municipal solid waste into electricity, renewable fuels, and other useful products.

The County is committed to providing high-quality solid waste management services that enhance the quality of life for all County constituents and protects the environment and its resources. Towards this end, Roadmap 2020 contains strategies and initiatives that address regional and Countywide programs, services, facilities, and infrastructure needs.

Focus Area 2: County Unincorporated Communities

The CUCs comprise 125 culturally and ethnically diverse communities spread over more than 65 percent of the County's area – approximately 2,650 square miles. More than 1 million people call the unincorporated communities of Los Angeles County home, which represents approximately ten percent of the total population in Los Angeles County. The Board of Supervisors is the governing body responsible for establishing policies and regulations for the CUCs.

In the CUCs, solid waste collection services are provided through a diverse and complex system that includes:

- Residential Waste Collection Franchise System: Public Works administers 20 exclusive residential waste collection franchises that serve approximately 600,000 residents. Each franchise waste hauler provides waste collection, recycling, and organic waste services to customers under an agreement with the County. Residents pay the franchise waste hauler directly for these services.

- Garbage Disposal Districts: Public Works administers seven Garbage Disposal Districts (GDDs) that provide waste collection, recycling, and organic waste services to approximately 380,000 residents and businesses within the Districts. The services are provided by private waste haulers under contract with the County. Property owners within the GDDs pay for these services through an assessment on the property tax rolls.

- Non-Exclusive Commercial Waste Collection Franchise System: Since 2012, Public Works has administered a non-exclusive commercial franchise system that provides waste collection and recycling services to over 20,000 businesses and multi-family residential complexes within CUCs but outside the GDDs. The services are provided through more than 25 non-exclusive franchise agreements with the County. In 2020, the County began the process to transition from the non-exclusive franchise to an exclusive franchise system. The exclusive franchise system will designate multiple zones (defined geographic boundaries) within the unincorporated County of Los Angeles where trash collection and disposal services are provided to businesses and multi-family residential complexes by one contracted private waste hauler per zone.

- Open Market System: Approximately 100,000 residents of CUCs in the northern portion of Los Angeles County continue to operate under an open market system for waste collection. Under this system, residents contract directly with waste haulers for waste collection, recycling, and/or organic waste services. Public Works is in the process of analyzing alternative waste collection systems for the northern portion of Los Angeles County to ensure compliance with existing and future regulations.

- Self-Haul: Residents and businesses also have the option to haul their own waste directly to publicly or privately-owned processing and disposal facilities. Certain categories of businesses, such as landscapers, are more likely to self-haul.

The materials collected by the private waste haulers under each of the existing collection systems are taken to various publicly and privately-owned processing and disposal facilities. Currently, waste haulers have the discretion to determine which facilities to direct the waste and materials to, and their decisions are made primarily based on economics. However, in the future the County may exercise flow control and direct waste haulers to take materials to certain facilities. This will assist in the development of much

needed infrastructure in our region by ensuring the facilities will receive enough materials for them to be financially viable.

The County offers curbside recycling, organic waste collection, and many other innovative programs to encourage the four R's (Reduce, Reuse, Recycle, and Rethink), and regulates solid waste management and disposal operations at solid waste facilities in the CUCs.

Identifying the largest waste generators in the CUCs will help to prioritize where new programs, services, and facilities and infrastructure are needed. The County continues to review the waste management practices in CUCs, evaluate options for waste diversion, assess program costs, and monitor program effectiveness. The County launched a waste characterization study in 2019 to update information on the types and quantities of materials in the CUC waste stream. However, due to COVID-19 this study was suspended in March 2020. The study may resume when the waste stream returns to more normal patterns after people return to work and more businesses reopen, following guidelines from Public Health officials. The findings of the study will help Public Works assess the effectiveness of existing diversion programs and recommend options for increasing the reduction and diversion of materials from the waste stream.

Focus Area 3: County Operations

The County is one of the largest employers in Los Angeles County with more than 100,000 employees working in more than 30 departments/agencies. To facilitate sustainable waste management at County operations, Public Works conducts site visits through the Commercial and Institutional Recycling Program. This program develops Resource Management Plans, which provide facilities with recommendations they can implement to reduce waste and generally enhance the sustainability of their operations.

The County also has a Departmental Recycling Program. This program includes paper recycling, CRV beverage container recycling, toner cartridge recycling, scrap metal recycling, computers and related equipment recycling, battery recycling, department outreach and coordination for County department recycling and related policy efforts. Public Works has created and implemented several pilot programs, including the successful Scrape Your Plate program. The lessons learned from pilot programs are shared with all County departments through Roadmap and Department Recycling Coordinator meetings. The County will continue to create, implement, and evaluate new sustainability programs and communicate this information with all County departments to streamline and expedite the implementation of effective and cost-efficient waste management programs. The Roadmap includes recommended strategies and initiatives for additional programs and services, and facility/infrastructure improvements to enhance County departments' sustainable waste management efforts and to lead by example.

ALIGNMENT WITH CURRENT COUNTY PRIORITIES

The strategies identified in this Roadmap align closely with Los Angeles County's adopted plans and priorities, as well as other sustainability efforts, including the following:

Los Angeles County Strategic Plan (2016-2021) – A plan that provides direction to departments and their partners to ensure their efforts are aligned with Board priorities in a way that increases the County's chances of successfully impacting the lives of children, adults, families, and businesses of Los Angeles County. The plan is broken down into three goals, with the second goal being "Foster Vibrant and Resilient Communities". One of the three strategies in the second goal is, "Making environmental sustainability our daily reality." Included in this goal is the initiative to reduce waste generation and recycle/reuse waste resources by increasing landfill diversion and recycling programs and infrastructure, and to inspire the community to reduce, reuse, and recycle waste materials.

Los Angeles County General Plan 2035 – As a long-range planning policy document, the General Plan establishes future growth and land use development patterns for the CUCs. The General Plan contains goals and policies that guide the provision of public services and facilities, including waste management in conjunction with future growth and land use development. Specifically, the General Plan calls for "adequate disposal capacity and minimal waste and pollution." The Roadmap is consistent with the General Plan goals and policies pertaining to waste management, as the Roadmap aims to minimize waste generation, enhance diversion, and promote conversion technologies. Furthermore, the General Plan organizes the County into 11 Planning Areas, which make up the Planning Areas Framework. The purpose of the Planning Area Framework is to provide a mechanism for local communities to work with the County to develop plans that respond to their unique and diverse character. The Roadmap will build on the Planning Areas Framework established by the General Plan to target public outreach efforts and waste studies.

Los Angeles County Sustainability Plan – OurCounty, the County's Sustainability Plan, was prepared by the Chief Sustainability Office and serves as a central hub for coordination of energy efficiency, conservation, and sustainability programs within the County, its facilities, and the region. The Board adopted this plan in August 2019. Goal No. 9 of OurCounty includes goals to divert waste going to landfills by 80 percent in 2025, 90 percent in 2035, and more than 95 percent in 2045 and are the same waste diversion goals of Roadmap 2020. Two of the sustainable strategies included in OurCounty that are directly related to the Roadmap include: capture organic waste and develop regional capacity for beneficial reuse and divert reusable and recyclable materials from landfills.

Los Angeles County Community Climate Action Plan – This plan was prepared by the Department of Regional Planning and adopted by the Board as part of the Los Angeles County General Plan 2035 in October 2015. It describes the County's plan to reduce the impacts of climate change by reducing GHG emissions from community

activities in the unincorporated areas of Los Angeles County by at least 11 percent below 2010 levels by 2020. The plan includes a waste diversion goal to divert at least 75 percent of the waste by 2020 and outlines a number of local recycling and composting initiatives that the County will implement in conjunction with waste service providers throughout the community in order to comply with all State mandates associated with diverting waste from landfill disposal. The Los Angeles County Climate Action Plan (CAP) will replace the Community Climate Action Plan, which expired in 2020. The CAP is the County's plan towards achieving carbon neutrality for unincorporated areas of the County by 2045, with interim targets to reduce GHG emissions 25 percent below 2015 levels by 2025 and 50 percent by 2035. The CAP includes goals to reduce emissions from the waste sector, including decreasing waste generation, reducing and diverting organic waste, and achieving the landfill diversion targets in the 2014 Roadmap.

THE STATE OF WASTE IN 2020

Los Angeles County is home to a diverse and complex system of solid waste infrastructure. As explained in the Focus Area 1: Regional/Countywide section of the Roadmap, the Countywide Siting Element is the plan that addresses the 15-year disposal capacity planning of the County. Given that the forthcoming revisions to the Los Angeles County Countywide Siting Element will extensively address the current state of disposal options both in and out of the County, further discussion of disposal will not be addressed in this document.

Roadmap 2020 is a fundamentally different approach from the Siting Element in that it describes visionary goals for keeping materials out of the waste stream in the first place and identifying solutions for recovering resources and commodities through a sustainable waste management system.

Los Angeles County continues to make progress toward implementing the initiatives outlined in the 2014 Roadmap. However, there have been major changes in recent years that have impacted the solid waste management system. These significant changes present challenges but also create opportunities to continue progress on meeting the diversion targets established in the original Roadmap, which remain the diversion goals in Roadmap 2020.

These challenges include unstable recycling markets as a result of the China National Sword Policy and new legislative mandates from the State to increase recycling and diversion of organics. In addition, there is a strong desire to continuously improve the quality of life and preserve the environment for current communities and future generations.

OUR SUSTAINABLE WASTE MANAGEMENT FUTURE

To achieve a sustainable waste management future, it is important to understand the terms "sustainable" and "waste." Sustainability is generally understood as meeting current needs without compromising the ability of future generations to meet their own

needs. The California Department of Resources Recycling and Recovery and the University of California at Los Angeles also highlight the three aspects of sustainability – Environment, Economy, and Society – as shown in Figure 1. Another way to express this concept is maintaining good care of people, planet, and prosperity in perpetuity.

Sustainability Goals

This Roadmap is intended to outline a recommended approach to establishing a sustainable waste management future, while more detailed implementation plans will be developed for each initiative that address feasibility, cost, proposed funding, and timeline.

Public Works is divided into multiple business functions (core service areas). Environmental Services in one of seven core service areas and has the following Vision Statement: Vibrant, waste-conscious communities with cutting-edge 21st century infrastructure. The Environmental Services Core Service Area provides trash collection and waste diversion services for approximately 1 million unincorporated area residents and over 20,000 businesses.

Roadmap 2020 has the following overarching goals, directly related to the three aspects of sustainability:

Environmental

- Foster an environmentally sound waste management system that is focused on reducing waste generation and disposal. This system will make the best use of natural resources, support the production of recycled-content products, and expand local and sustainable infrastructure.

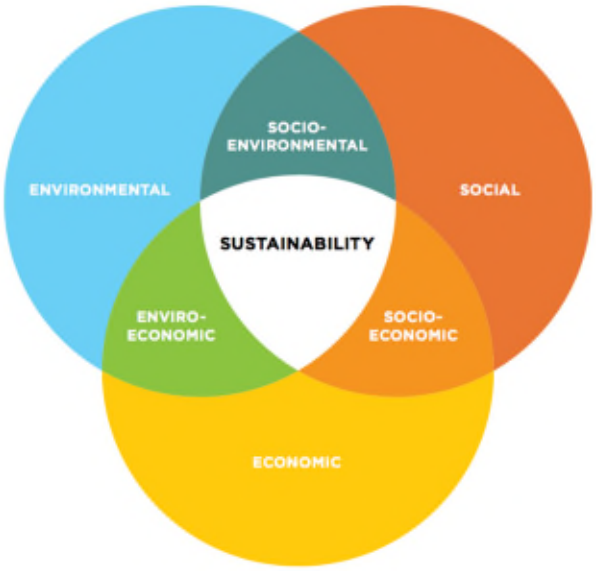
Economic

- Foster a system that is cost-effective and efficient. Work collaboratively with regional partners and private enterprises and identify new opportunities for innovation and green job creation.

Social

- Foster a system that is responsive to the needs of the community by implementing programs and policies that protect all communities from pollution, facilitate community resilience, promote clean and healthy communities, and are feasible, measurable, and meaningful for rate payers. A sustainable waste management system should empower residents and businesses to be successful and increase economic opportunities while building a sense of community.

Figure 1: A Sustainable Waste Management System



ENVIROMENTAL	• Green design/product stewardship/EPR • Legislative/regulatory advocacy • Permit structures	• Green/renewable energy • Clean fuels • Carbon footprint/reduction • Highest and best use • Waste stream analysis
ENVIRO-ECONOMIC	• Sustainable infrastructure • Green jobs/industry • Recycling market development • Technical assistance • Land use planning • Green Parks	• Green purchasing • Reward sustainable actions • Life-cycle costs • Cost-avoidance • Impact fees • Risk management
ECONOMIC	• Private sector participation • Competitive procurement • Regional collaboration • System design/efficiency	• Program effectiveness • Incentives • Flow control
SOCIO-ECONOMIC	• Diverse workforce • Work safety/training • Local economies and enterprise	• Trash rates/fees • Disadvantaged communities • Cost of living • Economic growth
SOCIAL	• Quality of life • Respect for diversity • Respect for the individual • Sense of community • Outreach/public participation	• Equal and convenient access to service • Low income, elderly, and disabled
SOCIO-ENVIRONMENTAL	• Health and safety • Legislation and Regulation • Climate change/adaption	• Environmental Justice • Crisis management

According to the United States Environmental Protection Agency, sustainable material management is a systematic approach to using and reusing materials more productively over their entire life cycles. It represents a change in how our society thinks about the use of natural resources and environmental protection. Our vision for a sustainable waste management future identifies materials as a resource that were formerly considered a liability with the goal of one day eliminating waste in the unincorporated communities of the County.

The County aspires to be a regional leader in sustainability and adopts policies that support regional collaboration and strengthen private enterprise.

As can be seen in Figure 2 below, the diversion rate continued to increase through 2016 by reaching 75 percent, after which it has begun to decrease to 68 percent in 2018 ***(this will be updated in September to include 2019 when we have the data)***. It is anticipated that China's restrictions on the importation of recyclable materials will contribute to a reduction in diversion. However, economic downturns, such as the one initiated by the COVID-19 pandemic typically result in lower disposal rates and higher rates for diversion. It is too early to tell how diversion rates for 2020 will be affected, since available data is not representative of current developments. Implementation of Roadmap 2020's initiatives, such as organic waste recycling and proposed revisions to the construction and demolition debris recycling ordinance, will help put the County back on track toward achievement of the Roadmap goal of 80 percent diversion by 2025.

Disposal Reduction Targets

The following are disposal reduction targets to achieve a sustainable waste management future:

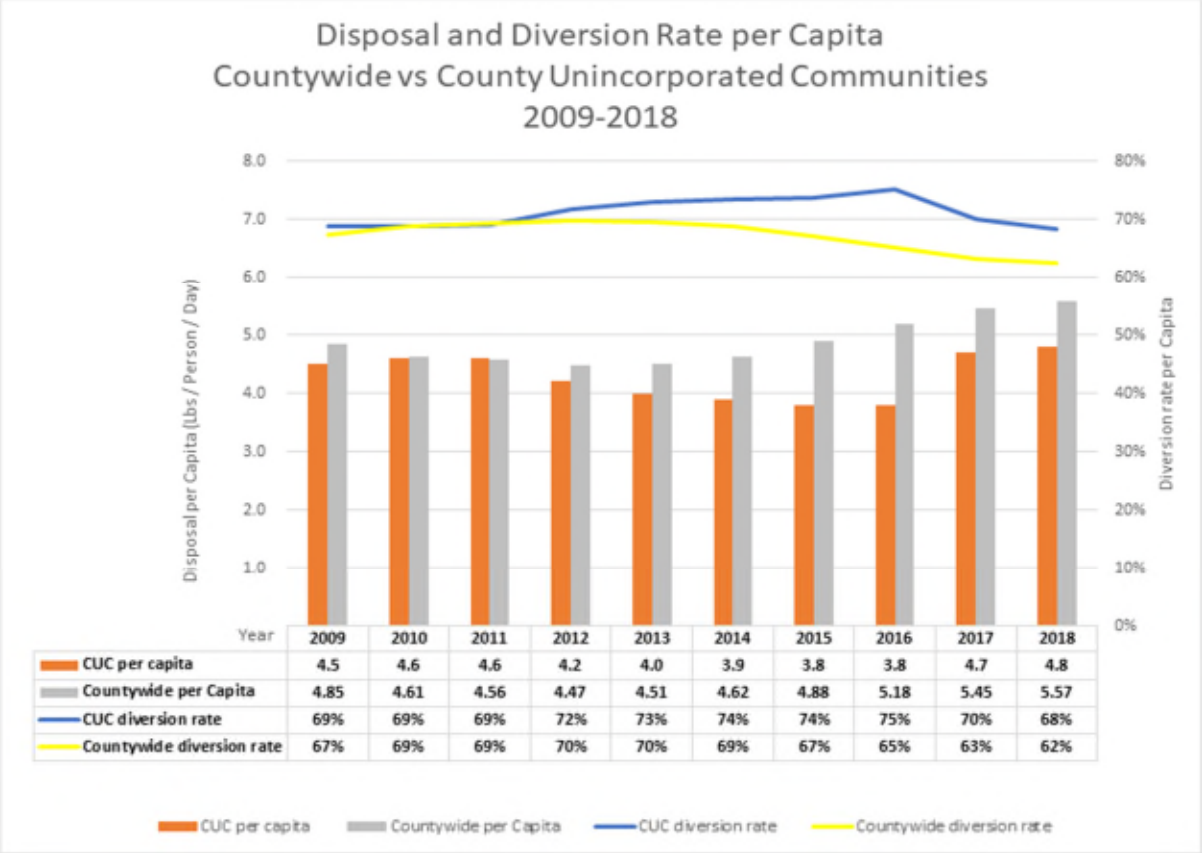
- Divert 80 percent of our waste from landfill disposal by 2025, equivalent to disposing no more than 3 pounds per person per day.

- Divert 90 percent of our waste from landfill disposal by 2035, equivalent to disposing no more than 1.5 pounds per person per day.

- Divert 95+ percent of our waste from landfill disposal by 2045, equivalent to disposing no more than 0.75 pounds per person per day.

The purpose of these ambitious targets is to set the bar high, providing the County with forward-looking goals to maintain momentum providing a crucial framework for the development of necessary infrastructure and services to achieve a truly sustainable waste management future.

FIGURE 2: Disposal and Diversion Data Per Capita
Countywide vs. County Unincorporated Communities 2009-2018



Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
CUC per capita	4.5	4.6	4.6	4.2	4.0	3.9	3.8	3.8	4.7	4.8
Countywide per Capita	4.85	4.61	4.56	4.47	4.51	4.62	4.88	5.18	5.45	5.57
CUC diversion rate	69%	69%	69%	72%	73%	74%	74%	75%	70%	68%
Countywide diversion rate	67%	69%	69%	70%	70%	69%	67%	65%	63%	62%

Key Drivers for Sustainable Waste Management

The following legislative mandates have a significant impact on the County's and cities' operations and priorities when it comes to waste management:

Greenhouse Gas Reduction

- AB 32 (2006) established GHG emissions reductions targets that require many sectors, including the waste industry to reduce emissions by 25 percent by 2020.
  - California Environmental Protective Agency reports the GHG emissions target reductions for California were reached in 2016, four years ahead of schedule.

- SB 32 (2016) requires the Air Resources Board to ensure that Statewide GHG emissions are reduced to 40 percent below the 1990 emissions level by 2030 and to maintain and continue reductions thereafter.
  - The Air Resources Board is moving forward with an update to the Scoping Plan to reflect the 2030 target set by Executive Order B-30-15 and codified by SB 32.

- SB 100 (2018) increases the Renewables Portfolio Standard to 60 percent by 2030 and requires all the state's electricity to come from carbon-free resources by 2045.

- In 2018, Governor Brown issued Executive Order, EO B-55-18 to Achieve Carbon Neutrality, establishing a new statewide goal to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter.

Mandatory Commercial Recycling

- AB 341 (2011) established a Statewide goal that at least 75 percent of solid waste generated be source-reduced, recycled, or composted by the year 2020, from baseline average generation in years 1990-2010.
  - In calendar year 2018, California's overall disposal increased for the sixth year in a row to 46.3 million tons. As a result, California's statewide recycling rate is down to 40 percent from its 2014 peak of 50 percent. California will not meet the 75 percent statewide recycling goal in 2020 as set out in AB 341.

Organics Management

- AB 1826 (2014) established phased in requirements for businesses and multi-family residences of five units or more to recycle their organic waste starting on and after April 1, 2016, depending on the amount of waste they generate.
  - Subscribing to organic waste collection services can substantially increase waste collection costs for businesses and multi-family residences. Because AB 1826 did not include enforcement provisions, businesses and multi-family residences across the County have been reluctant to sign up for services at an increased cost.

- AB 1594 (2014) specifies that the use of green material as alternative daily cover will no longer constitute diversion through recycling, beginning in 2020, and will instead be considered disposal for the purpose of determining a jurisdiction's compliance with AB 939 diversion requirements.
  - As a result, costs for waste haulers increased due to having to find alternative outlets to divert the green waste.

- SB 1383 (2016) establishes Statewide targets to reduce emissions of short-lived climate pollutants, as well as to reduce organic waste landfill disposal by 50 percent by the year 2020 and 75 percent by the year 2025, from a 2014 baseline. SB 1383 also established a target to recover 20 percent of edible food for human consumption that is currently being disposed in landfills by the year 2025.
  - SB 1383 directs CalRecycle to adopt regulations to achieve these targets. The regulations will require local jurisdictions to provide mandatory organic waste collection and recycling services to all residents, businesses, and local

government facilities and implement edible food recovery programs for large commercial food generators beginning January 1, 2022.

- CalRecycle adopted the SB 1383 regulations in [month] 2020. **(*will add month when known*)**

China National Sword

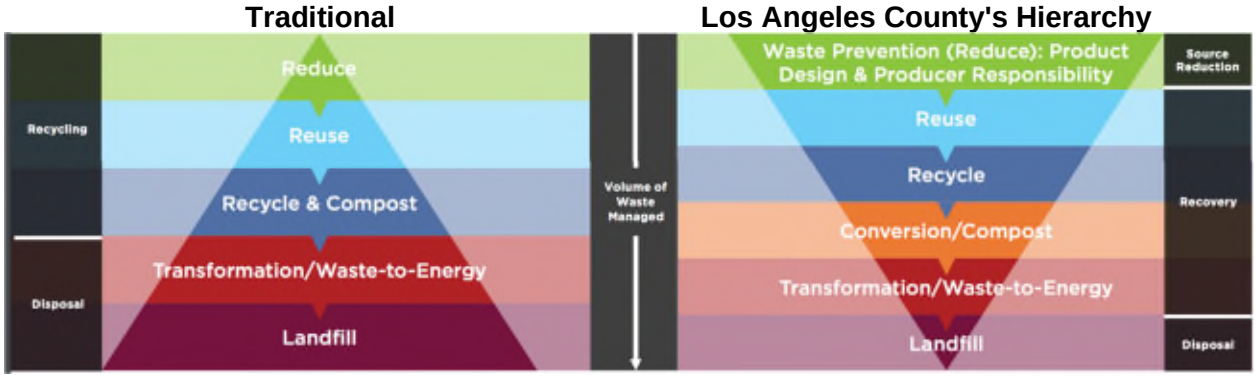
For many years, many countries around the world; including the majority of the United States, the State of California, and Los Angeles County; have heavily relied on China for purchasing recovered recyclable materials such as mixed paper and mixed plastics. In 2017, China announced a policy which would implement a ban on certain materials and very stringent contamination standards for the import of other separated recyclable materials beginning in 2018. The ban caused a significant decline in commodity prices and markets for those materials, and the stringent contamination standards increased processing costs at existing material recovery facilities, which were not designed to achieve such low contamination standards. As a result of the China National Sword Policy, material recovery facilities must now expend significantly more effort to recover less material that has a lower sales value.

PRIORITY ISSUES

Certain issues are a major focus of the Roadmap due to the proportion of the waste stream potentially affected or the impacts those issues have on sustainability and the quality of life of residents in the County.

Waste Prevention and Source Reduction

Figure 3: Traditional vs. Los Angeles County's Waste Management Hierarchy



The traditional waste management hierarchy relied primarily on landfill disposal. Los Angeles County's Hierarchy flips the paradigm on its head, emphasizing source reduction and the benefits and use of materials over disposal.

Source reduction is at the top of the County's resource management hierarchy because it is considered to be more effective and yields the highest benefits from an environmental, economic, and social standpoint. The U.S. Environmental Protection Agency defines source reduction as activities designed to reduce the volume or toxicity of waste generated, including the design and manufacture of products with minimum toxic content, minimum volume of material, and/or a longer useful life. It is fundamentally different from the other waste management approaches. Source reduction preempts the need to collect, process, and/or dispose of materials by preventing their generation.

The County manages various new and existing programs to prevent and reduce waste. For example, in 2017 the County launched the Bring Your Own (BYO) Campaign to reduce waste from single-use items and promote reuse. BYO encourages stakeholders to use reusable items, such as cups, utensils, plates, etc. The goal of the campaign is to drive behavior change in stakeholders by raising awareness and creating behavior change that reduces the disposal of single-use items.

Local Recycling Infrastructure & Market Development

Over the past few years, legislative and market changes have emphasized the need to expand and develop new local recycling infrastructure and markets for remanufactured materials in California. On October 15, 2019, the Board of Supervisors unanimously adopted a motion to pursue sponsorship of California State legislation to provide dedicated, long-term funding to spur investment in recycling, organic waste diversion infrastructure, and local market development. The proposed legislation addresses the impacts of China's National Sword Policy by providing funding for material recovery facilities to invest in advanced sorting equipment and for expansion of the State's Recycling Market Development Zone Program. In 2020, the County co-sponsored AB 2612 (Maienschein), which would annually allocate $200 million from the GHG Reduction Fund for both traditional and organics recycling infrastructure. The bill is currently on hold due to the fiscal impacts of the COVID-19 emergency but may be reintroduced in 2021 ***(update later when more info is available)***.

Organic Waste Management

Methane emissions resulting from the decomposition of organic waste in landfills are a significant source of GHG emissions. Organic materials also account for a significant portion of California's overall waste stream, including food waste which accounts for approximately 17-18 percent of total landfill disposal. SB 1383 establishes 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. The regulations will require local jurisdictions to adopt ordinances or other mechanisms to implement and enforce mandatory organic waste collection and recycling services for all residents, businesses, other organic waste generators, and mandatory edible food donation practices for large commercial food generators. Public Works is continuing to coordinate pilot residential and commercial food waste collection programs, which will become mandatory on January 1, 2022, per SB 1383.

A key challenge will be the County's lack of adequate organic waste management infrastructure. To address this, Public Works is working with organic waste facility developers to promote the development of organics recycling facilities in County unincorporated communities, in the Region/County, and at County facilities. The County's Food Donation and Food Waste Recycling programs have recovered 175 tons of edible food and diverted more than 2,300 tons of food waste from landfill disposal as of June 2020. The programs have prevented the equivalent of almost 2,000 tons of carbon dioxide emissions, offsetting the annual emissions of almost 430 passenger vehicles or 60 homes.

Extended Producer Responsibility and Product Stewardship

Producer responsibility and Product Stewardship are strategies to place a shared responsibility for end of life product management on the producers and other entities involved in the product chain to prevent these products from entering the municipal waste stream so that local jurisdictions are not solely financially responsible for managing these products.

Extended Producer Responsibility (EPR) is a mandatory-type of product stewardship that extends a producer's responsibility for their product to post-consumer management of that product and its packaging. An EPR policy shifts financial and management responsibility, with government oversight, upstream to the producer and away from the public sector. It provides incentives to producers to incorporate environmental considerations into the design of their products and packaging. Encouraging EPR in manufacturing consumer products is crucial since approximately 75 percent of our County's waste stream comes from manufactured products – from common household items, such as magazines, prepared food, or toys, to household HHW products like electronics, fluorescent lights, batteries, paint, and pesticides. Packaging represents about 65 percent of household trash and about a third of materials disposed at an average landfill. For the County to reach its sustainable waste management goals these materials must be targeted for reduction, reuse, and recycling.

The County advocates for and supports the implementation of Statewide EPR legislation and policy for solid waste management in general, and specifically for single-use packaging and products, as well as solutions for existing EPR or semi-EPR legislation and regulations regarding mattresses and carpeting. Products are prioritized based on characteristics, such as toxicity, impacts to quality of life, and cost to manage. Current EPR policies and regulations, such as those being developed for SB 212 (passed in 2018 which establishes a comprehensive statewide take-back system for sharps and pharmaceuticals), are continuously being reviewed and feedback is provided on their implementation. The County is also exploring options for local policies to address packaging and products that are not presently recycled.

Conversion Technologies

Conversion technologies refer to a wide array of non-combustion processes capable of converting post-recycled solid waste into useful products, including renewable, or negative-carbon electricity and fuels, in an environmentally beneficial way. These technologies may be thermal, chemical, biological, mechanical, or a combination of processes, but do not include incineration (waste combustion). They present a real opportunity to address the County's solid waste capacity challenges directly and bring the County significantly closer to a zero-waste future. As directed by the Board, Public Works continues to advocate for changes in State law, policy, and regulation that would facilitate the development of conversion technology projects in the State. Existing conversion technology projects in the region include the CSD Joint Water Pollution Control Plant co-digestion project in Carson, CA that converts food waste into renewable electricity, CR&R Waste and Recycling Services' Anaerobic Digestion Facility in Perris, CA that converts food waste and green waste into renewable vehicle fuel and pipeline renewable natural gas, and the Rialto Bioenergy Facility under construction (with estimated completion by end of 2020) in San Bernardino County that will convert organic waste into renewable natural gas, electricity, and organic fertilizer.

Household Hazardous and Electronic Waste

Although HHW/E-Waste represents less than 2 percent of the disposed waste stream, these materials, when not disposed properly, can be released into the environment and contaminate our air, water, and possibly the food we eat. They also represent a potential hazard to workers in the waste industry. The HHW/E-Waste Program offers convenient opportunities for residents to properly dispose of their HHW/E-Waste by hosting more than 60 temporary events and supporting permanent centers where these materials are accepted free of charge. In addition, the County also supports the City of Los Angeles' Solvents/Automotive/Flammables/Electronics Centers. Through Countywide programs and City of Los Angeles' Solvents/Automotive/Flammables/Electronics Centers, in Fiscal Year 2018-19, more than 10,382 tons of HHW/E-Waste were collected. Of the total HHW/E-Waste collected by the County, over 70 percent were recycled and the remainder properly disposed of at various hazardous waste facilities. Public Works also has partnerships with 21 County libraries that are designated drop-off locations where residents can dispose of household batteries. Residents can dispose of sharps waste, such as needles, lancets, or other devices used to administer medication intravenously at one of 21 drop boxes located at Sheriff's stations throughout Los Angeles County.

Construction and Demolition Debris

Construction and Demolition (C&D) debris consists of materials, such as lumber, drywall, metals, masonry (brick, concrete, ceramics, plaster, etc.), carpet, plastics, pipe, rock, dirt, paper, cardboard, and organic waste related to construction activity. The Board adopted the C&D Recycling and Reuse Ordinance on January 4, 2005. County Code Title 20.87 & 22.52 now requires local C&D debris recycling for building, demolition, and grading permits in CUCs. Projects must divert 50 percent (65 percent for specified projects) of

C&D debris generated and document compliance on completion. The Ordinance is expected to be revised in 2020, raising the recycling and reuse rate for construction and demolition projects to 70 percent, exceeding the California Green Building Standards Code minimum rate of 65 percent.

Illegal Dumping

Illegal dumping is a growing problem not only within the County, but also across the State, and there is no simple solution. Factors contributing to illegal dumping include, but are not limited to, high disposal costs, lack of enforcement, and lack of awareness of proper waste disposal. The County participates in the Antelope Valley Illegal Dumping Task Force that meets regularly to discuss and coordinate illegal dumping prevention programs in the County unincorporated Antelope Valley area. The County has organized a Working Group consisting of multiple County departments focused on developing and implementing solutions to address illegal dumping.

The Weed Abatement Division of the County Agricultural Commission/Weights and Measures (ACWM) has its own program to ensure vacant properties in unincorporated areas are being maintained from hazardous weeds, brush and rubbish. By resolution, the Board of Supervisors may declare non-compliant private properties as public nuisance. ACWM notifies the property owner to clear the hazard before the set due date. When property is found to be in non-compliance after the due date, ACWM performs the necessary work clearing the hazard and assesses the cost on the annual tax for the property on which the work was performed. This is in accordance with the Division 12 Fires and Fire Protection of the California Health and Safety Code. The County coordinates many illegal dumping prevention programs for unincorporated residents, such as mattress recycling collection events, bi-annual Disposal Day events at Lancaster Landfill and Sunshine Canyon Landfill allowing residents to discard up to one ton of household goods, bulky item collection, and annual curbside clean up events. The County also coordinates tire recycling collection events for all County residents. All these programs are available to residents at no additional cost.

The County administers illegal dumping collection programs. County contracted waste haulers pickup Illegal dumping in public rights-of-way with the exception of the Antelope Valley where County road maintenance staff collects trash in the rights-of-way. Town Councils and community groups coordinate community cleanup events throughout the year, including neighborhood and desert cleanups and offer education on the proper disposal of unwanted items and provide information on how to report illegal dumping.

For many years, the County has promoted how to report illegal dumping to improve the quality of life for residents by removing the dumped items, as soon as possible. The Working Group is in the process of shifting focus to prevention through enforcement with revisions to codes, new messaging, and creating a partnerships with Public Works, Regional Planning, District Attorney, County Counsel and the Sheriff to prosecute those who choose to pollute our environment instead of properly disposing waste.

Environmental Justice

It is essential for all County residents and communities to have clean air and water, as well as to feel safe and secure in their daily lives, as environmental equity is a right for everyone. The County is working towards minimizing the exposure of vulnerable populations to pollution to create and sustain resilient and healthy community environments where residents have equal opportunities to thrive.

Roadmap 2020 shares the environmental justice goal of the County's Our County Plan and Green Zones Program to protect low-income County unincorporated communities from pollution. 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. Through these programs, the County has prioritized that it is important for all County residents to have the opportunity to learn about current and new County waste diversion programs that may impact their health and communities and share their input as part of the County's routine decision-making process. The County schedules community meetings to discuss waste management topics, such as opening a new transfer station or landfill expansions in CUCs.

In efforts to promote active and healthy communities, the County ensures that environmental education and waste diversion collection programs are scheduled on a countywide basis. For example, the County's School Garden program that is offered to elementary schools promotes eating fresh vegetables and fruits and teaches students the benefits of growing their own food and how to care for a garden.

Homelessness

Due to an increase number of people experiencing homelessness (PEH), the Board authored Measure H that the voters passed in March 2017 to provide funding for homeless services and short-term housing. The Measure H funds are for placing people in housing and providing limited services. Since the implementation of the homelessness initiative three years ago, thousands of County families and individuals have received help through the major expansion of outreach, emergency shelter, rapid rehousing, permanent supportive housing programs, and benefits advocacy programs. Also, Public Works has prioritized combating homelessness, which results in the countywide reduction of debris attributed from homeless encampments on the streets of the County.

The County has implemented a 10-year effort to combat and prevent homelessness.

There are County residents of all ages and genders who are experiencing homelessness and need assistance to obtain vital services. Waste collection is one of those services that the County has evaluated to determine the best methods to provide waste collection options through pilot programs. There is a pilot program servicing PEH that live in their vehicles in the Rancho Dominguez area. The County is also coordinating similar waste collection programs to assist PEH that reside in the Broadway corridor and the

unincorporated community of Lennox. The Measure H funds are not intended for any interim services to improve the quality of life for people experiencing homelessness. Therefore, these pilot programs need to find a permanent funding source for them to be sustainable.

Emergency Management and Regional Debris Management Planning

The County's unique geography makes it susceptible to various forms of natural disasters, including earthquakes, landslides, wildfires, mudflows, and tsunamis. These natural occurrences have the potential to create large quantities of debris, which must be managed in order to maintain public services during and immediately following an emergency. The County prepared the Operational Areas (OA) MDMP, which describes roles and responsibilities during debris operation and provide guidance to the County, 88 municipalities, and other public entities within the OA. This plan was adopted by the Los Angeles County Emergency Management Council in October 2016 and is a functional index to the County OA Emergency Response Plan.

Under the broader framework of the OA MDMP, the Unincorporated Areas (UA) MDMP addresses the County's coordinated response to manage disaster debris in the County unincorporated communities following a large-scale disaster event. In November 2018, the Woolsey Fire, a destructive wildfire affected 1,769 properties and 96,949 acres of land in Los Angeles and Ventura Counties. The County implemented a two-phase debris removal program to maximize the diversion of wastes incurred. Disaster waste originating from the County unincorporated communities was disposed of in Calabasas Landfill.

Using knowledge gained from the County's debris removal programs following the 2018 Woolsey Fire, the UA MDMP is currently being updated to include information related to the establishment of a private property debris removal program. The UA Plan will continue to be implemented following a declared disaster to provide policy and guidance for the removal and disposition of disaster debris located within road and flood rights of way in the CUCs.

Outreach and Education

Sustainable management of waste relies heavily on outreach and education to have proper and consistent messaging. Waste reduction, reuse, and recycling programs are most successful when customers are not only informed, educated, and called to action, but supported in practical ways in their efforts to learn new behaviors. Public Works continues to conduct outreach and education to encourage residents to practice the four Rs (Reduce, Reuse, Recycle, Rethink). With the passing of SB 1383, organics recycling is a significant focus. Current and new outreach material will help to educate residents, businesses, and County departments on how to comply with SB 1383.

Public Works has worked with media and community partners to promote sustainability in the County. To encourage and educate residents regarding illegal dumping, media campaigns have included web banners, social media, and billboards. The County has

garnered millions of audience impressions informing residents on how to prevent and report illegal dumping. Public Works has partnered with iHeartRadio/KOST FM to educate the public on environmental initiatives focusing on waste reduction during the holidays and the proper disposal of HHW/E-Waste. Public Works also participates in community events throughout the year to educate residents on programs, such as recycling, Bring Your Own (to encourage reuse), proper disposal of HHW/E-Waste, and general waste reduction daily habits.

A Waste-Free Event Guide was completed in 2019 to provide a simple checklist of activities and equipment necessary for conducting waste-free events. This guide was showcased at environmental outreach events countywide and is available at RoadmapLA.com to all stakeholders for their use.

THE ROADMAP STRATEGIES AND INITIATIVES

This section presents the Strategies and Initiatives. The Focus Area that applies to each sub-initiative is identified with the noted acronym(s) following the description shown below.

Focus Areas:

CUCs:	**County Unincorporated Communities**
R/CW:	**Regional/Countywide**
CO:	**County Operations**
ALL:	**Applies to all Focus Areas**

*Timeline for each initiative is included in Appendix C, which lists the Strategies and Initiatives by Focus Area.

Strategy 1: Programs and Services

Develop, enhance, and expand high-quality programs and services to provide for solid waste management needs while striving to reduce the amount of waste generated and disposed of at landfills.

INITIATIVE 1A: Institutionalize Waste Prevention and Source Reduction

- Develop model purchasing guides/policies for schools, businesses, cities, and County/city facilities focusing on reducing toxics, packaging, and single-use items. (ALL)

- Support and develop reuse programs (e.g., redemption fees, repair cafes, material exchange, Bring Your Own). (ALL)

- Develop, implement and enforce policies for certain materials, such as bans, restrictions, or ordinances, (e.g., plastics, single-use items, and organics). (ALL)

INITIATIVE 1B: Advocate for Extended Producer and Manufacturer Responsibility (EPR)

- Support Extended Producer Responsibility (e.g. ordinances, legal requirements, incentives). (ALL)
  - o EPR policies could include requiring packaging reductions and targets to comply; or
  - o Ensuring manufacturers' claims are accurate and match available collection systems (for example, some products that are marketed as "compostable" or "biodegradable" cannot be easily composted at existing commercial compost facilities because they require a long time to break down).

- Support voluntary or mandatory take-back initiatives for problematic products and packaging. (R/CW, CUCs)

INITIATIVE 1C: Make Sustainability Easy and Discourage "Trashing"

- Evaluate alternative collection methods (e.g., collection frequency, size of bins, pay as you throw, true cost programs). (R/CW, CUCs)

- Create a mechanism to monitor and enforce recycling. (ALL)
  - o Penalties for contamination
  - o If feasible, require businesses to participate in recycling training as part of obtaining business license.

- Develop "Tech Lab" incubators for reuse/recycle enterprise development. (R/CW, CUCs)

- Increase recycling receptacles in public venues and business corridors with clear signage and messaging. (R/CW, CUCs)

- Develop incentives for diverting waste to non-disposal alternatives. (ALL)

INITIATIVE 1D: Recover Organics, including Food Waste, to the Highest and Best Uses

- Develop organics collection and diversion programs in collaboration with waste haulers and other stakeholders while ensuring proper education of the public and businesses. (ALL)

- Identify and partner with large food waste generators and work with local cities for food recovery and donation. (ALL)

- Establish network of community gardens and facilities for composting food/yard waste, using resources, such as the Smart Gardening program. (ALL)
  - o Consider County ordinance to support small scale composting operations.

INITIATIVE 1E: Maximize Diversion of Construction and Demolition (C&D) Debris

- Revise County's C&D Recycling and Reuse ordinance to incorporate green building standards and increase diversion requirements and make available to other jurisdictions for reference. (CUCs)
  - o Consider input from waste haulers
  - o Consider toxicity of material as a measure of what to divert

- Promote deconstruction and the use of salvaged materials via incentives and/or the development of a deconstruction services guide and support of Resource Recovery Centers. (R/CW, CUCs)

- Provide incentives for using durable building materials/products with long lifespans and minimal maintenance requirements. (ALL)

- Support historic preservation, "adaptive reuse" in building standards and the remodeling/repurposing of still functional buildings. (R/CW, CUCs)

INITIATIVE 1F: Maximize Diversion of Household Hazardous Waste and Electronic Waste

- Increase number of permanent HHW and E-Waste collection centers and expand hours/days of operation for current centers. (R/CW, CUCs)

- Establish reuse centers for reusable products dropped off at permanent centers to be made available to the public. (R/CW, CUCs)

- Provide education on alternative products to eliminate or reduce HHW. (ALL)

- Identify incentives to encourage the use of environmentally preferable items. (ALL).

INITIATIVE 1G: Outreach and Education

- Develop a standardized and consistent communication plan promoting the 4 R's, based on demographics, resources, and commercial and industrial businesses in targeted areas. (ALL)

- Educate businesses and government facilities on recycling programs that may help reduce their disposal costs and increase their recycling rate. (ALL)

- Expand communication through social media. (ALL)

- Incorporate incentives, awards, contests, etc. to encourage all stakeholders to participate in sustainability programs. (ALL)

- Incorporate multiple languages (Arabic, Armenian, Chinese, Farsi, Korean, Spanish, Tagalog, Vietnamese, etc.) in educational and outreach efforts, as needed. (R/CW, CUCs)

- Host planning workshops with waste haulers, businesses, multi-family complex owners, and other stakeholders for feedback and collaboration. (CUCs/RC)

- Expand the Generation Earth Battle of the Schools program and encourage all schools to participate. (R/CW, CUCs)

- Partner with town councils, homeowners' associations, chambers of commerce, faith-based organizations, etc., to get messaging out. (R/CW, CUCs)

INITIATIVE 1H: EMERGENCY MANAGEMENT/MASS DEBRIS MANAGEMENT PLAN

- Update the Unincorporated Area Mass Debris Management Plan to include a Private Property Debris Removal Addendum to maximize diversion of materials following emergencies and disasters. (CUCs)

Strategy 2: Measuring Results

Establish standards and protocols for benchmarking, goal-setting, monitoring, and evaluation to enhance the measurement of programs, services, facilities and infrastructure. Focus on continuous improvement and encourage innovation to reduce, reuse, recycle, and rethink waste.

INITIATIVE 2A: Waste Sector Assessment

- Conduct regular Waste Characterization Studies to determine, which material types to target for diversion and share results with stakeholders. (ALL)

- Conduct surveys to determine program effectiveness and solicit feedback. (ALL)

- Develop an Ordinance or similar mechanism to require solid waste facilities to report various information to local jurisdictions. (R/CW, CUCs)

INITIATIVE 2B: Evaluate and Measure the Success of Existing Programs and Consider New Programs

- Create a framework/template/tools to monitor and measure the success of new and existing source-reduction, recycling, and reuse programs. (ALL)

- Establish benchmarks tied to waste reduction goals – generation, disposal, recycling, and other diversion. (ALL)

- Analyze the lifecycle effects of non-recyclable, single-use materials (e.g., plastics and packaging) and recycled materials. (R/CW, CUCs)

INITIATIVE 2C: Ensure Sustainable Funding and Alignment of Incentives with Program Goals

- Review program expenditures and revenues on a regular basis to ensure efficiencies and sustainable funding. (ALL)

- Identify options for program funding adjustments that incentivize recycling/reusing and fund diversion programs. (ALL)
  - Consider increasing tipping fees and taxes to fund infrastructure
  - Consider funding to offset higher costs for managing organics (e.g. transportation).

- Explore grant funding and loans to augment program funding. (ALL)

- Evaluate the financial impact of scavenging on recycling programs and identify options to reduce scavenging. (CUCs, CO)

Strategy 3: Facilities and Infrastructure

Identify the facility and infrastructure needs for each Focus Area. Encourage the development of state-of-the-art sustainable local waste management facilities and infrastructure in a fiscally, socially, and environmentally responsible manner.

INITIATIVE 3A: Develop Sustainable Waste Management Facilities, including Conversion Technologies and Integrated Materials Recovery Facilities

- While protecting local communities, streamline the permitting process for new or modified sustainable waste management facilities. (R/CW, CUCs)
  - Identify and facilitate reduction of land use/zoning/general plan barriers
  - Seek and gain State level support of sustainable waste management facilities

- Sponsor/support legislation to encourage the development of conversion technologies and the use of their end products. (R/CW, CUCs)
  - Redefine diversion consistent with sustainable waste management goals.

- Establish incentives to level the cost differential between sustainable waste management facilities and landfills and incentivize waste haulers to direct waste to such facilities. (R/CW, CUCs)

- Establish partnerships to develop educational pilot projects to demonstrate the benefits, feasibility, and safety of sustainable waste management technologies. (ALL)

- Develop guidelines for using recovered products from sustainable waste management facilities. (R/CW, CUCs)
  - Consider environmental and health impacts
  - Consider Life Cycle Analysis
  - Consider SB 1383 purchasing requirements

INITIATIVE 3B: Organics Processing Infrastructure

- Encourage the development of organics diversion facilities, including biomass conversion, composting, and anaerobic digestion of organic materials. (ALL)

- Encourage opportunities for co-digestion of organic materials at wastewater treatment plants. (ALL)

- Develop and implement pilot organics management programs. (ALL)

- Explore opportunities to develop micro-composters or digesters at large community venues/facilities. (ALL)

- Sponsor/support legislation to fund the development of organics processing infrastructure and promote markets for their end products. (R/CW, CUCs)

- Explore grant funding and loans to fund organics processing infrastructure. (ALL)

INITIATIVE 3C: Local Green Business & Market Development

- Seek and encourage new green businesses and remanufacturing facilities to locate in Los Angeles County. (R/CW, CUCs)

- Promote and incentivize the use of locally generated reusables and recycled materials. (ALL)

- Seek out and promote grant funding for green businesses. (R/CW, CUCs)

- Expand the RMDZ to include additional interested cities in Los Angeles County. (R/CW, CUCs)

INITIATIVE 3D: Resource Recovery Centers

- Facilitate the development of Resource Recovery Centers at sustainable waste management facilities, transfer stations and landfills in the County. (R/CW, CUCs)

CONCLUSIONS AND NEXT STEPS

Achieving a truly sustainable waste management future for the County is a complex and challenging goal; however, the potential rewards are substantial and well worth the effort, including:

- Reducing dependence on landfilling and waste exporting.
- Conserving natural resources.
- Protecting the environment.
- Striving for a cost-effective waste management system.
- Creating green jobs.
- Facilitating community-based programs and venues through which to instill positive change.

Public Works will continue to hold regular meetings to engage stakeholders to solicit additional suggestions and feedback from residents, businesses, public agencies, the waste industry, environmental organizations, and any other interested stakeholders. Through a transparent stakeholder process, Public Works will develop more detailed plans for implementing the Roadmap initiatives with reference to budget, timeline, and staffing, as appropriate.

APPENDIX A
DEFINITIONS

AB 32	The California Global Warming Solutions Act of 2006 requires California to reduce its Green House Gas emissions to 1990 levels by 2020, a reduction of approximately 15 percent below emissions expected under a "business as usual" scenario.
AB 341	Mandatory Commercial Recycling Law; as of July 1, 2012, California requires all businesses that generate four or more cubic yards of garbage per week and multi-family dwellings with five or more units to recycle. The specific statutory language for the law (Assembly Bill 341) can be found in the State's Public Resources Code: PRC Division 30, Part 3, Chapter 12.8, Section 42649.
Alternative Technology	Refers to a technology capable of processing residual municipal solid waste (MSW) and/or organic waste, including as conversion technology, transformation, or other emerging technologies, in lieu of land disposal.
Anaerobic Digestion	A series of biological processes in which microorganisms break down biodegradable material in the absence of oxygen and recover an energy-rich biogas.
Beneficial Use Materials	Refers to: (1) solid waste that has been source separated or otherwise processed and put to beneficial use at a facility, or separated or otherwise diverted from the waste stream and exported from the facility, for purposes of recycling or reuse, and shall include, but not be limited to, wood waste, asphalt, concrete, or dirt; (2) clean dirt imported to cover and prepare interim and final fill slopes for planting and for berms; or (3) all Alternative Daily Cover materials types.
Biomass	Any organic material not derived from fossil fuels, such as agricultural crop residue, bark, lawn, yard and garden clippings, leaves, silvicultural residue, tree and brush pruning, wood and wood chips, and wood waste, including these materials when separated from other waste streams. 'Biomass' or 'biomass waste' does not include material containing sewage sludge, industrial sludge, medical waste, hazardous waste, or either high-level or low-level radioactive waste.

California Product Stewardship Council (CPSC)	The California Product Stewardship Council (CPSC) is a network of local governments, non-government organizations, businesses, and individuals supporting policies and projects where producers share the responsibility of managing problem products at end of life, commonly known as extended producer responsibility (EPR).
California State Association of Counties (CSAC)	The primary purpose of the California State Association of Counties (CSAC) is to represent county government before the California Legislature, administrative agencies, and the federal government. CSAC places a strong emphasis on educating the public about the value and need for county programs and services.
Compost	The product resulting from the controlled biological decomposition of organic wastes that are source separated from the municipal solid waste stream, or which are separated at a centralized facility. Compost includes food, yard, and wood wastes, which are not hazardous waste.
Compostable	Composed of materials, such as vegetable matter, paper, cardboard, and plastics that must: (1) break down to carbon dioxide, water, inorganic compounds, and biomass at a rate similar to paper; (2) disintegrate into small pieces within 90 days, so that the original product is not visually distinguishable in the compost, and; (3) leave no toxic residue.
Composting	The biological decomposition of organic wastes.
Conversion Technologies	Refers to a wide array of technologies capable of converting organic waste, post-recycled solid waste, or residual solid waste into renewable negative-carbon fuels or energy, as well as other beneficial products through non-combustion thermal, chemical, or biological processes. Conversion technologies may include mechanical processes when combined with a non-combustion thermal, chemical, or biological conversion process.
County	The County of Los Angeles including the Board of Supervisors as the legislative and executive body of county government, including any designated agency responsible for solid waste management.

County Green Purchasing Policy	Los Angeles County Policy P-1050, Purchase of Environmentally Preferable Products, established objectives for the purchase of products by County departments. Under this Purchasing Policy, the County is responsible to develop a 5-year plan to phase in categories of various goods. Easy to adopt purchasing categories, such as paper have been implemented.
Countywide	The incorporated cities within the County and the unincorporated areas of the County.
Curbside Collection	Primarily for residential collection. The collection of solid waste, recyclables, and/or other materials placed curbside by the generator. The generator is responsible for returning containers to the appropriate location after collection service.
CRV	California Redemption Value (CRV) is a deposit paid on sales of certain recyclable beverage containers in California.
Direct Haul	Hauling of collected solid waste in the collection vehicle from its point of collection to a solid waste management facility (material recovery, mulching, composting, waste-to-energy, or landfill facilities).
Disposal	The final deposition of solid waste onto land, into the atmosphere; the management of solid waste through landfill disposal or transformation at a permitted solid waste facility; the final deposition of solid wastes onto the land; "the management of solid waste through landfilling or transformation at permitted solid waste facility".
Diversion	The act of diverting one or more designated materials from a solid waste stream. Diversion typically occurs at the point of generation. Normally, diversion is used to divert recyclables for separate collection, but it may also be used to prevent certain materials from being managed with the rest of a solid waste stream.
Extended Producer Responsibility (EPR)	A mandatory form of product stewardship that includes, at a minimum, the requirement that the producer's responsibility for their product extends to the post-consumer management of that product and its packaging. There are two related features of EPR policy: (1) the shifting of management and financial responsibility upstream to the producer and away from municipalities; and (2) to provide incentives to producers to incorporate environmental considerations in the design of their products.

Flow Controls	Legal provisions that allow state and local governments to designate the places where municipal solid waste (MSW) is taken for processing, treatment, or disposal. Flow controls may take the form of a "waste shed" restriction, limits on the amount of waste from individual jurisdictions, host fees, and/or outright bans on the importation of solid waste.
Green Waste	Organic wastes from lawn, tree, horticultural, and landscaping services, including leaves, grass clippings, tree prunings, large cut waste timber and stumps, and other materials, which are generated by commercial or nonresidential activities, as well as similar materials generated by homeowners from their lawns and gardens.
Household Hazardous Waste (HHW)	Solid waste generated by residential generators that exhibit the characteristics of a hazardous waste as established by United States Environmental Protection Agency (USEPA) hazardous waste regulations (USEPA 1980). These wastes are exempt from the Resource Conservation and Recovery Act (RCRA) hazardous waste regulatory requirements but, may be included in state regulations.
Hydration station	A water fountain that provides a filtration unit designed to facilitate the filling of reusable water bottles and thereby promote reuse and eliminate the need for disposable plastic water bottles.
Landfill	A waste management unit at which waste is discharged in or on land for disposal. It does not include surface impoundment, waste pile, land treatment unit, injection well, or soil amendments.
Lean Operations	Reducing the amount of raw materials needed.
Materials Recovery Facility (MRF)	A solid waste facility where solid waste or recyclable materials are sorted or separated, by hand or by use of machinery, for the purposes of recycling, composting, or use as feedstock for alternative technology facilities.
Organic Waste	Material containing carbon and hydrogen. Organic material in [municipal solid waste] includes the biomass components of the waste stream, as well as hydrocarbons usually derived from fossil sources (e.g., most plastics, polymers, the majority of waste tire components, and petroleum residues).
Paperless Office	Refers to a County initiative to eliminate paper and digitize filing systems and internal processes.

Pay as you throw	In communities with pay-as-you-throw programs (also known as unit pricing or variable-rate pricing), residents are charged for the collection of municipal solid waste–ordinary household trash–based on the amount they throw away. This creates a direct economic incentive to recycle more and to generate less waste.
Post-Recycled	Material remaining after recycling that would have otherwise gone to disposal.
Price Signal	Information conveyed via the price charged for a product.
Putrescible Waste	Solid wastes that are capable of being decomposed by micro-organisms with sufficient rapidity as to cause nuisances because of odors, vectors, gases or other offensive conditions, and include materials, such as, but not limited to food wastes, offal and dead animals.
Recovery	Refers to any waste management operation that diverts a material from the waste stream, which results in a product with a potential economic or ecological benefit. Recovery mainly refers to the following operations: (1) re-use; (2) material recovery, such as recycling; (3) biological recovery, such as composting, and; (4) energy recovery, such as fuel production.
Recycling	The process of collecting, sorting, cleansing, treating, and reconstituting materials that would otherwise become solid waste, and returning them to the economic mainstream in the form of raw material for new, reused, or reconstituted products, which meet the quality standards necessary to be used in the marketplace.
Removal	Defined in the California Code of Regulation (CCR), Title 27, Section 20164 as "the act of taking solid wastes from the place of waste generation either by an approved collection agent or by a person in control of the premises".
Residual Solid Waste	Refers to the post-recycled content or remaining solid waste after municipal solid waste (MSW) has gone through the recycling, source reduction, and reuse method.
Rubbish	Non-putrescible solid wastes, such as ashes, paper cardboard, tin cans, yard clippings, wood, glass, bedding, crockery, plastics, rubber by-products, or litter.
Salvaging	The controlled removal of waste material for utilization.

Scavenging	Defined in CCR, Title 27, Section 20164 as "the uncontrolled and/or unauthorized removal of solid waste materials, or recyclable material at a solid waste facility".
Sharps	Hypodermic needles, pen needles, intravenous needles, lancets, and other devices that are used to penetrate the skin for the delivery of medications.
Solid Waste	All putrescible and non-putrescible solid, semisolid, and liquid wastes, including garbage, trash, refuse, paper, rubbish, ashes, industrial wastes, demolition and construction wastes, abandoned vehicles and parts thereof, discarded home and industrial appliances, dewatered, treated, or chemically fixed sewage sludge, which is not hazardous waste, manure, vegetable or animal solid and semisolid wastes, and other discarded solid and semisolid wastes. "Solid waste does not include any of the following wastes: (1) Hazardous waste, as defined in Section 40141 of the Public Resources Code (PRC); (2) Radioactive waste regulated pursuant to the Radiation Control Law (Chapter 8 (commencing with Section 114960) of Part 9 of Division 104 of the Health and Safety Code [HSC]); and (3) Medical waste regulated pursuant to the Medical Waste Management Act (Part 14 (commencing with Section 117600) of Division 104 of the [HSC]). Untreated medical waste shall not be disposed of in a solid waste landfill, as defined in Section 40195.1 of the PRC. Medical waste that has been treated and deemed to be solid waste shall be regulated pursuant to Division 30 of the PRC."
Solid Waste Disposal	Refers to the final deposition of solid waste onto land, into the atmosphere, as defined in Public Resources Code (PRC), Section 40192; or the management of solid waste through landfilling or transformation at a permitted solid waste facility.
Solid Waste Management	A planned program for effectively controlling the generation, storage, collection, transportation, processing and reuse, and conversion or disposal of solid wastes in a safe, sanitary, aesthetically acceptable, and environmentally sound and economical manner. It includes all administrative, financial, environmental, legal and planning functions, as well as the operational aspects of solid waste.
State	Refers to the State of California.

Sustainable	Ability to meet the needs of the present without compromising the ability of future generations to meet their own needs.
Toxic / Hazardous	Chemical hazards and toxic substances pose a wide range of health hazards (e.g., irritation, sensitization, and carcinogenicity) and physical hazards (e.g., flammability, corrosion, and reactivity).
Transfer Station	Refers to a facility that receives unprocessed waste, temporarily stores it, and ships it off-site to another facility.
Universal Waste	EPA's universal waste regulations streamline hazardous waste management standards for federally designated "universal wastes", which include batteries, pesticides, mercury-containing equipment and bulbs (lamps). The regulations govern the collection and management of these widely generated wastes, thus facilitating environmentally sound collection and proper recycling or treatment.
U.S. Environmental Protection Agency	The federal agency charged with setting policy and guidelines and carrying out legal mandates for the protection of human health and the environment.
Waste	Material eliminated or discarded as no longer wanted, useful, or required.
Waste-Free/ Zero-Waste	Optimally manage and reduce solid waste by diverting from the waste stream and maximizing recycling opportunities to eventually achieve 95 percent landfill diversion.
Waste shed	Refers to a geographical area from which waste can logically be delivered to a given disposal facility. This term is synonymous with waste service area.
Waste Stream	Refers to the total flow of solid waste from homes, businesses, institutions, and manufacturing plants that must be recycled, reused, composted, converted to useful products or disposed of in a landfill; or any segment thereof, such as the "residential waste stream" or the "recyclable waste stream".
Waste-to-Energy	Refers to an incineration process in which residual solid waste is combusted and the released heat is utilized to generate hot water, steam, and electric power, leaving the inert fraction (ash) as a residue.

APPENDIX B

Existing Waste Diversion Efforts and County Programs

Program Area	Description	Focus Area
Battery Recycling Program	Educates and encourages County residents to properly dispose of their household batteries. Public Works partnered with County Public Library to collect household batteries at designated libraries throughout the County. The program was designed to offer residents a free and convenient outlet to dispose of common household batteries, such as Dry Cell Batteries (AA, AAA, C, D, 9-Volt), Rechargeable Batteries (used in cell phones and power tools), and Button Cell Batteries (used in watches, cameras, and hearing aids).	County Unincorporated Communities
Climate Action Plan	The Los Angeles County Climate Action Plan (CAP) replaces the Community Climate Action Plan, which was adopted by the Board of Supervisors in 2015 as a component of the Los Angeles County General Plan 2035 and expired in 2020. The CAP is the County's path towards achieving carbon neutrality for unincorporated areas of the County by 2045, with interim targets to reduce GHG emissions 25 percent below 2015 levels by 2025 and 50 percent by 2035. The CAP includes a greenhouse gas inventory; projections for future emissions; and a roadmap for addressing emissions from transportation, stationary energy (used by buildings and other facilities), waste, industrial, agricultural, and land use sectors.	County Unincorporated Communities
Construction & Debris Ordinance	The Ordinance requires projects in the unincorporated areas to recycle or reuse 50 percent of the debris generated thereby increasing the diversion of construction and demolition debris from disposal facilities.	County Unincorporated Communities/ County Operations

County Departmental Recycling Program	Includes paper recycling, CRV beverage container recycling, toner cartridge recycling, scrap metal recycling, computers and related equipment recycling, battery recycling, and department outreach and coordination for County department recycling and related policy efforts.	County Operations
County Existing Building LEED Certifications	In 2008, the County adopted an ordinance requiring all new County facilities 10,000 square feet or greater to be LEED Silver certified. In 2016 the County adopted an ordinance upgrading this requirement to LEED Gold certification.	County Operations
County Surplus Program	Includes land sales, fleet equipment public auctions, and lost and found public auctions; includes redistribution of County consumables among County facilities and operations.	County Unincorporated Communities County Operations
Envision Sustainability Infrastructure Rating System	In 2011, in order to establish a common platform to define sustainable infrastructure, Public Works adopted EnvISIonTM, the Institute for Sustainable Infrastructure sustainability rating system. EnvISIonTM certification applies to civil infrastructure of all types and provides rating of the project's economic, social, and environmental impact during design, planning, construction, and maintenance phases.	County Operations
Sustainable Pavement Program	Public Works has developed a more sustainable and cost-effective program for pavement preservation, rehabilitation, and reconstruction of its road network. This approach focuses on addressing roads that are in good condition first (where base and sub-grade replacement are not required), incorporating materials from recycled tires and aggregates from existing pavement and modifying the existing materials in-place by also adding cement to the base and sub-grade to improve its strength. Since 2009 Public Works has completed 165 projects utilizing sustainable treatments. These projects have resulted in very significant reductions in energy usage, greenhouse gas emissions, landfill deposition, and cost.	County Unincorporated Communities

Expanded Polystyrene Food Container Eradication in County Buildings	The Los Angeles Board of Supervisors directed Public Works to phase out the use of expanded polystyrene (EPS) food packaging at all County operations, to include restricting the purchase and use of all EPS food containers at County facilities, offices, County-managed concessions, and by commercial food and beverage suppliers at County-permitted or -sponsored events.	County Operations
Farm Restoration at Pitchess Detention Center (PDC)	Farm operations offsets significant inmate food costs, provides vocational and educational opportunities for jail inmates, lowers the carbon footprint, and ensures food supply for inmates. The farm program includes bees and honey production, vermiculture, small scale protein production (tilapia and chickens), greenhouse plant propagation, and community gardens. Other planned programs will minimize water use and preserve the aquifer beneath PDC, eliminate the need for inorganic soil amendments, pesticides and herbicides, restore the health of the soil and watershed, enhance Education Based Incarceration programs, and ensure an optimal and sustainable source of inmate food with significant cost savings to the County.	County Operations
Food Donation & Recovery Outreach Program (Food DROP)	Provides resources to businesses operating in the County unincorporated communities to safely donate their excess edible food to nonprofit organizations to fight hunger and reduce food waste in Los Angeles County. Food generating businesses and food recovery agencies are matched through the program to provide excess food to those in need and divert edible food from ending up in landfills. This program also offers consultation to food establishments located in the unincorporated communities to enhance edible food donation.	County Unincorporated Communities Regional/ Countywide

Green Purchasing Policy	In 1994, County adopted a procurement policy for purchase of recyclable materials and recycled-content products. In 1998, the policy expanded to include preference of re-refined motor oil for use in County vehicles if the re-refined oil is comparable and within a 5 percent cost. In 2007, County adopted stronger green purchasing policies that encourage the purchase of products that minimize environmental impacts, toxics, pollution, and hazards to worker and community safety to the greatest extent practicable.	County Operations
Household Hazardous Waste/Electronic-Waste Program (HHW/E-Waste)	Provides residents with a convenient outlet to dispose of their HHW/E-Waste at permanent centers or at temporary collection events in various communities throughout Los Angeles County. These events provide residents with a free means to dispose of their toxic, poisonous, corrosive, flammable, and combustible household items, as well as electronic waste.	Regional/ Countywide
Illegal Dumping Reporting	Illegal dumping is any unauthorized disposal of waste on any public or private property. Under this program, the County, the community, and waste haulers collaborate to remove and eliminate illegal dumping.	County Unincorporated Communities
LACoMax Materials Exchange Program	Designed to divert usable materials from disposal. Serves as an electronic marketplace where parties can exchange materials at no cost. Users of this on-line service can post or search listings of a wide variety of available and wanted materials.	Regional/ Countywide
Library Book Recycling	Los Angeles County Library recycles 600,000 pounds of books and paper yearly. By collecting books which have reached the end of their usefulness and diverting them from landfills, the Public Library takes a further step toward being a responsible steward of the environment.	County Unincorporated Communities

Mattress Recycling Program	The California's Used Mattress Recovery and Recycling Act requires mattress manufacturers to create a statewide recycling program for mattresses and box springs discarded in the state. CalRecycle has certified Mattress Recycling Council to develop and administer the program known as Bye Bye Mattress. Mattress Recycling Council funds its California activities through a $10.50 per unit recycling fee collected from consumers when they buy a mattress or box spring.	County Unincorporated Communities
OurCounty Sustainability Plan	The Board adopted the OurCounty Sustainability Plan in August 2019. OurCounty is organized around 12 goals that describe the shared vision for a sustainable County. The plan identifies lead County entities and partners who are required to implement specific actions to bring these 12 goals to fruition.	Regional/ Countywide
Pharmaceuticals	Senate Bill 212 is a statewide stewardship program for manufacturers and distributors of pharmaceuticals and sharps waste to create, finance, and manage the safe and proper collection and disposal of unused pharmaceuticals and sharps. The stewardship program upon approval by CalRecycle would require a minimum of at least 1 drug collection site for every 50,000 residents or up to 5 per county, provide a drug collection bin for any host such as a pharmacy who wants to be a collection site.	Regional/ Countywide

Plastic Bag Ban	An ordinance banning single-use plastic carryout bags at stores in the County unincorporated areas, while requiring they charge 10 cents for each paper carryout bag sold to a customer. The 10 cent charge on paper bags is not subject to State sales tax and will be retained by stores for use in complying with the ordinance. The California legislature passed a statewide bag ban in 2014, and on November 8, 2016, California voters approved Proposition 67, to implement the statewide Single-Use Carryout Bag Ban. Most grocery stores, retail stores with a pharmacy, convenience stores, food marts, and liquor stores are no longer allowed to provide single-use plastic carryout bags to their customers. Instead, these stores may provide a reusable grocery bag or recycled paper bag to a customer at the point of sale at a charge of at least 10 cents.	County Unincorporated Communities
Recycling Market Development Zone (RMDZ)	Combines recycling with economic development to fuel new businesses, expand existing ones, create jobs, and divert waste from landfills. It also provides business and technical assistance, product marketing, and financial assistance to businesses that manufacture a recycled-content product or process materials for recycling. Manufacturing or processing must occur within the RMDZ. Developed by the California Department of Resources Recycling and Recovery (CalRecycle) in partnership with local jurisdictions.	Regional/ Countywide
Residential Recycling	Educates the community on the importance of reducing the amount of waste created and provides residents recycling tips and resources.	County Unincorporated Communities
School Source Reduction Programs	Provides guidance to schools Countywide to encourage implementing recycling programs on campus and youth education programs to teach students about recycling and waste reduction.	County Unincorporated Communities

Scrap Metal	PDC and Men's Central Jail: recycle scrap metal, such as tin, copper, and aluminum. Various County Agencies/Departments (Fire, Pubic Health, Public Works and Sheriff) recycle scrap metal through County-approved vendors. Public Works recycles scrap metal collected from public road rights of ways, fleet operations, and operational services. Under Project Isaiah, County Sheriff's Department and other law enforcement agencies recycle confiscated weapons into rebar.	County Unincorporated Communities
Sharps	Senate Bill 212 established a statewide stewardship program for manufacturers and distributors of pharmaceuticals and sharps waste to manage the safe and proper collection and disposal of unused pharmaceuticals and sharps by providing a safe return container and mail-back kit at the point of sale for all sharps. This includes home-generated sharps waste such as hypodermic needles, pen needles, intravenous needles, lancets, and other devices that are used to penetrate the skin for the delivery of medications. In addition, state-approved containers are distributed to elderly and disabled residents.	Regional/ Countywide
Sheriff/ Public Works Composting Pilot	PDC green waste and food waste is composted and used as a soil amendment for the PDC farm. This reduces waste going to landfills and the transportation costs and dump fees.	County Operations
Single-Use Plastics	In 2018, the County adopted a plastic straw and stirrer ordinance, prohibiting all food service businesses within unincorporated areas and at County operations from automatically providing single-use plastic straws or stirrers, unless requested by the customer. In 2019, the Board directed the Chief Sustainability Office and Public Works to draft a recommended ordinance to reduce the use of single-use plastics in unincorporated County, including reducing and/or eliminating the use of single-use plastic food service ware and ensuring that materials used for disposable products are recyclable or compostable.	County Unincorporated Communities County Operations

Smart Business Recycling Program	Provides resources to help businesses reduce, recycle, and properly manage the waste they generate. Business Recycling Consultants provide free consultations to businesses located in unincorporated communities to assist them in implementing or expanding their waste prevention and recycling efforts.	County Unincorporated Communities
Smart Gardening Program	Provides education on smart gardening practices, including backyard composting, worm composting, and, grass recycling, in efforts to reduce organic waste.	Regional/ Countywide
Solid Waste Information Management System (SWIMS)	Compiles disposal data collected from solid waste enterprises within the County.	Regional/ Countywide
Tire Recycling Program	Conducts waste tire collection events and promotes practical uses for recycled tires.	Regional/ Countywide
Urban Greening Program	Promotes sustainable landscapes within inner-city areas through the transformation of land into xeriscaping, planted trees, and other environmentally sensitive features.	County Unincorporated Communities
Youth Education	Programs that reach out to elementary and secondary school students to teach them about helping the environment through presentations and encourages them to make a difference in their local environment by creating campus eco-projects. It also provides development training and personalized support for schoolteachers including resource guides and lesson plans.	Regional/ Countywide

APPENDIX C - STRATEGIES AND INITIATIVES BY FOCUS AREA

REGIONAL/COUNTYWIDE

STRATEGY 1: Programs and Services

		Timeframe
INITIATIVE A: Institutionalize Waste Prevention and Source Reduction		
1	Develop model purchasing guides/policies for schools, businesses, Cities, and County/City facilities focusing on reducing toxics, packaging, and single-use items.	M
2	Support and develop reuse programs. (e.g., redemption fees, repair cafes, material exchange, Bring Your Own)	C
3	Develop, implement and enforce policies for certain materials such as bans, restrictions, or ordinances. (e.g., plastics, single-use items, and organics)	M
INITIATIVE B: Advocate for Extended Producer and Manufacturer Responsibility (EPR)		
1	Support Extended Producer Responsibility (e.g. ordinances, legal requirements, incentives) - EPR policies could include requiring packaging reductions and targets to comply - Ensuring manufacturers' claims are accurate and match available collection systems (for example, some products that are marketed as "compostable" or "biodegradable" cannot be easily composted at existing commercial compost facilities because they require a long time to break down)	C
2	Support voluntary or mandatory take-back initiatives for problematic products and packaging.	M
INITIATIVE C: Make Sustainability Easy and Discourage "Trashing"		
1	Evaluate alternative collection methods. (e.g., collection frequency, size of bins, pay as you throw, true cost programs)	L

REGIONAL/COUNTYWIDE

STRATEGY 1: Programs and Services

		Timeframe
2	Create a mechanism to monitor and enforce recycling. - Penalties for contamination - If feasible, require businesses to participate in recycling training as part of obtaining business license	M
3	Develop "Tech Lab" incubators for reuse/recycle enterprise development.	M
4	Increase recycling receptacles in public venues and business corridors with clear signage and messaging.	M
5	Develop incentives for diverting waste to non-disposal alternatives.	L
INITIATIVE D: Recover Organics, including Food Waste, to the Highest and Best Uses		
1	Develop organics collection and diversion programs in collaboration with waste haulers and other stakeholders while ensuring proper education of the public and businesses.	L
2	Identify and partner with large food waste generators and work with local Cities for food recovery and donation.	M
3	Establish network of community gardens and facilities for composting food/yard waste, using resources such as the Smart Gardening program. - Consider County ordinance to support small scale composting operations	M
INITIATIVE E: Maximize Diversion of Construction and Demolition (C&D) Debris		
1	Promote deconstruction and the use of salvaged materials via incentives and/or the development of a deconstruction services guide and support of Resources Recovery Centers.	M

REGIONAL/COUNTYWIDE

STRATEGY 1: Programs and Services

		Timeframe
2	Provide incentives for using durable building materials/products with long lifespans and minimal maintenance requirements.	M
3	Support historic preservation, "adaptive reuse" in building standards and the remodeling/repurposing of still functional buildings.	M
INITIATIVE F: Maximize Diversion of Household Hazardous Waste (HHW) and Electronic Waste (E-Waste)		
1	Increase number of permanent HHW and E-Waste collection centers and expand hours/days of operation for current centers.	M
2	Establish reuse centers for reusable products dropped off at permanent centers to be made available to the public.	M
3	Provide education on alternative products to eliminate or reduce HHW.	M
4	Identify incentives to encourage the use of environmentally preferable items.	M
INITIATIVE G: Outreach and Education		
1	Develop a standardized and consistent communication plan promoting the 4 R's, based on demographics, resources, and commercial and industrial businesses in targeted areas.	M
2	Educate businesses and government facilities on recycling programs that may help reduce their disposal costs and increase their recycling rate.	M
3	Expand communication through social media.	M

REGIONAL/COUNTYWIDE

STRATEGY 1: Programs and Services

		Timeframe
4	Incorporate incentives, awards, contests, etc. to encourage all stakeholders to participate in sustainability programs.	M
5	Incorporate multiple languages (Arabic, Armenian, Chinese, Farsi, Korean, Spanish, Tagalog, Vietnamese, etc.) in educational and outreach efforts, as needed.	S
6	Host planning workshops with waste haulers, businesses, multi-family complex owners, and other stakeholders for feedback and collaboration.	M
7	Expand the Generation Earth Battle of the Schools program and encourage all schools to participate.	C
8	Partner with town councils, homeowners' associations, chambers of commerce, faith-based organizations, etc. to get messaging out.	S

REGIONAL/COUNTYWIDE

STRATEGY 2: Measuring Results

		Timeframe
INITIATIVE A: Waste Sector Assessment		
1	Conduct regular Waste Characterization Studies to determine which material types to target for diversion and share results with stakeholders.	M
2	Conduct surveys to determine program effectiveness and solicit feedback.	S
3	Develop an Ordinance or similar mechanism to require solid waste facilities to report various information to local jurisdictions.	M
INITIATIVE B: Evaluate and Measure the Success of Existing Programs and Consider New Programs		
1	Create a framework/template/tools to monitor and measure the success of new and existing source-reduction, recycling, and reuse programs.	M
2	Establish benchmarks tied to waste reduction goals – generation, disposal, recycling, and other diversion.	M
3	Analyze the lifecycle effects of non-recyclable, single-use materials (e.g., plastics and packaging) and recycled materials.	M
INITIATIVE C: Ensure Sustainable Funding and Alignment of Incentives with Program Goals		
1	Review program expenditures and revenues on a regular basis to ensure efficiencies and sustainable funding.	S

REGIONAL/COUNTYWIDE

STRATEGY 2: Measuring Results

		Timeframe
2	Identify options for program funding adjustments that incentivize recycling/reusing and fund diversion programs. - Consider increasing tipping fees and taxes to fund infrastructure - Consider funding to offset higher costs for managing organics (e.g., transportation)	C
3	Explore grant funding and loans to augment program funding.	C

REGIONAL/COUNTYWIDE

STRATEGY 3: Facilities and Infrastructure

		Timeframe
INITIATIVE A: Develop Conversion Technologies and Integrated Materials Recovery Facilities		
1	While protecting local communities, streamline the permitting process for new or modified sustainable waste management facilities. - Identify and facilitate reduction of land use/zoning/general plan barriers. - Seek and gain State level support of sustainable waste management facilities.	S
2	Sponsor/support legislation to encourage the development of conversion technologies and the use of their end products. - Redefine diversion consistent with sustainable waste management goals.	C
3	Establish incentives to level the cost differential between sustainable waste management facilities and landfills and incentivize waste haulers to direct waste to such facilities.	M
4	Establish partnerships to develop educational pilot projects to demonstrate the benefits, feasibility, and safety of sustainable waste management technologies.	C
5	Develop guidelines for using recovered products from sustainable waste management facilities . - Consider environmental and health impacts - Consider Life Cycle Analysis - Consider SB 1383 purchasing requirements	M
INITIATIVE B: Organics Processing Infrastructure		
1	Encourage the development of organics diversion facilities, including biomass conversion, composting, and anaerobic digestion of organic materials.	C
2	Encourage opportunities for co-digestion of organic materials at wastewater treatment plants.	C

Time Frame: Continuous (C) ongoing; Short Term (S) 0-2 years; Mid Term (M) 2-6 years; Long Term (L) 6 years +

REGIONAL/COUNTYWIDE

STRATEGY 3: Facilities and Infrastructure

		Timeframe
3	Develop and implement pilot organics management programs.	M
4	Explore opportunities to develop micro-composters or digesters at large community venues/facilities.	M
5	Sponsor/support legislation to fund the development of organics processing infrastructure and promote markets for their end products.	M
6	Explore grant funding and loans to fund organics processing infrastructure.	M
INITIATIVE C: Local Green Business & Market Development		
1	Seek and encourage new green businesses and remanufacturing facilities to locate in Los Angeles County.	C
2	Promote and incentivize the use of locally generated reusables and recycled materials.	L
3	Seek out and promote grant funding for green businesses.	C
4	Expand the Recycling Market Development Zone (RMDZ) to include additional interested Cities in Los Angeles County	M
INITIATIVE D: Resource Recovery Centers		
1	Facilitate the development of Resource Recovery Centers at sustainable waste management facilities, transfer stations and landfills in the County.	M

COUNTY UNINCORPORATED COMMUNITIES

STRATEGY 1: Programs and Services

		Timeframe
INITIATIVE A: Institutionalize Waste Prevention and Source Reduction		
1	Develop model purchasing guides/policies for schools, businesses, Cities, and County/City facilities focusing on reducing toxics, packaging, and single-use items.	M
2	Support and develop reuse programs. (e.g., redemption fees, repair cafes, material exchange, Bring Your Own)	C
3	Develop, implement and enforce policies for certain materials such as bans, restrictions, or ordinances. (e.g., plastics, single-use items, and organics)	M
INITIATIVE B: Advocate for Extended Producer and Manufacturer Responsibility (EPR)		
1	Support Extended Producer Responsibility (e.g. ordinances, legal requirements, incentives) - EPR Policies could include requiring packaging reductions and targets to comply - Ensuring manufacturers' claims are accurate and match available collection systems (for example, some products that are marketed as "compostable" or "biodegradable" cannot be easily composted at existing commercial compost facilities because they require a long time to break down)	C
2	Support voluntary or mandatory take-back initiatives for problematic products and packaging.	M
INITIATIVE C: Make Sustainability Easy and Discourage "Trashing"		
1	Evaluate alternative collection methods. (e.g., collection frequency, size of bins, pay as you throw, true cost programs)	L

COUNTY UNINCORPORATED COMMUNITIES

STRATEGY 1: Programs and Services

		Timeframe
2	Create a mechanism to monitor and enforce recycling. - Penalties for contamination - If feasible, require businesses to participate in recycling training as part of obtaining business license	M
3	Develop "Tech Lab" incubators for reuse/recycle enterprise development.	M
4	Increase recycling receptacles in public venues and business corridors with clear signage and messaging.	M
5	Develop incentives for diverting waste to non-disposal alternatives.	L
INITIATIVE D: Recover Organics, including Food Waste, to the Highest and Best Uses		
1	Develop organics collection and diversion programs in collaboration with waste haulers and other stakeholders while ensuring proper education of the public and businesses.	L
2	Identify and partner with large food waste generators and work with local Cities for food recovery and donation.	M
3	Establish network of community gardens and facilities for composting food/yard waste, using resources such as the Smart Gardening program. - Consider County ordinance to support small scale composting operations	M
INITIATIVE E: Maximize Diversion of Construction and Demolition (C&D) Debris		

COUNTY UNINCORPORATED COMMUNITIES

STRATEGY 1: Programs and Services

		Timeframe
1	Revise County's C&D Recycling and Reuse ordinance to incorporate green building standards and increase diversion requirements and make available to other jurisdictions for reference. - Consider input from waste haulers - Consider toxicity of material as a measure of what to divert	S
2	Promote deconstruction and the use of salvaged materials via incentives and/or the development of a deconstruction services guide and support of Resources Recovery Centers.	M
3	Provide incentives for using durable building materials/products with long lifespans and minimal maintenance requirements.	M
4	Support historic preservation, "adaptive reuse" in building standards and the remodeling/repurposing of still functional buildings.	M
INITIATIVE F: Maximize Diversion of Household Hazardous Waste (HHW) and Electronic Waste (E-Waste)		
1	Increase number of permanent HHW and E-Waste collection centers and expand hours/days of operation for current centers.	M
2	Establish reuse centers for reusable products dropped off at permanent centers to be made available to the public.	M
3	Provide education on alternative products to eliminate or reduce HHW.	M
4	Identify incentives to encourage the use of environmentally preferable items.	M
INITIATIVE G: Outreach and Education		

COUNTY UNINCORPORATED COMMUNITIES

STRATEGY 1: Programs and Services

		Timeframe
1	Develop a standardized and consistent communication plan promoting the 4 R's, based on demographics, resources, and commercial and industrial businesses in targeted areas.	M
2	Educate businesses and government facilities on recycling programs that may help reduce their disposal costs and increase their recycling rate.	M
3	Expand communication through social media.	M
4	Incorporate incentives, awards, contests, etc. to encourage all stakeholders to participate in sustainability programs.	M
5	Incorporate multiple languages (Arabic, Armenian, Chinese, Farsi, Korean, Spanish, Tagalog, Vietnamese, etc.) in educational and outreach efforts, as needed.	S
6	Host planning workshops with waste haulers, businesses, multi-family complex owners, and other stakeholders for feedback and collaboration.	M
7	Expand the Generation Earth Battle of the Schools program and encourage all schools to participate.	C
8	Partner with town councils, homeowners' associations, chambers of commerce, faith-based organizations, etc. to get messaging out	S
INITIATIVE H: Emergency Management/Mass Debris Management Plan		
1	Update the Unincorporated Area Mass Debris Management Plan to include a Private Property Debris Removal Addendum to maximize diversion of materials following emergencies and disasters.	C

COUNTY UNINCORPORATED COMMUNITIES

STRATEGY 2: Measuring Results

		Timeframe
INITIATIVE A: Waste Sector Assessment		
1	Conduct regular Waste Characterization Studies to determine which material types to target for diversion and share results with stakeholders.	M
2	Conduct surveys to determine program effectiveness and solicit feedback.	S
3	Develop an Ordinance or similar mechanism to require solid waste facilities to report various information to local jurisdictions.	S
INITIATIVE B: Evaluate and Measure the Success of Existing Programs and Consider New Programs		
1	Create a framework/template/tools to monitor and measure the success of new and existing source-reduction, recycling, and reuse programs.	M
2	Establish benchmarks tied to waste reduction goals – generation, disposal, recycling, and other diversion.	M
3	Analyze the lifecycle effects of non-recyclable, single-use materials (e.g., plastics and packaging) and recycled materials.	M
INITIATIVE C: Ensure Sustainable Funding and Alignment of Incentives with Program Goals		
1	Review program expenditures and revenues on a regular basis to ensure efficiencies and sustainable funding.	S

COUNTY UNINCORPORATED COMMUNITIES

STRATEGY 2: Measuring Results

		Timeframe
2	Identify options for program funding adjustments that incentivize recycling/reusing and fund diversion programs. - Consider increasing tipping fees and taxes to fund infrastructure - Consider funding to offset higher costs for managing organics (e.g. transportation)	C
3	Explore grant funding and loans to augment program funding.	C
4	Evaluate the financial impact of scavenging on recycling programs and identify options to reduce scavenging.	S

COUNTY UNINCORPORATED COMMUNITIES

STRATEGY 3: Facilities and Infrastructure

		Timeframe
INITIATIVE A: Develop Conversion Technologies and Integrated Materials Recovery Facilities		
1	While protecting local communities, streamline the permitting process for new or modified sustainable waste management facilities. - Identify and facilitate reduction of land use/zoning/general plan barriers. - Seek and gain State level support of sustainable waste management facilities.	S
2	Sponsor/support legislation to encourage the development of conversion technologies and the use of their end products - Redefine diversion consistent with sustainable waste management goals.	C
3	Establish incentives to level the cost differential between sustainable waste management facilities and landfills and incentivize waste haulers to direct waste to such facilities.	M
4	Establish partnerships to develop educational pilot projects to demonstrate the benefits, feasibility, and safety of sustainable waste management technologies	C
5	Develop guidelines for using recovered products from sustainable waste management facilities. - Consider environmental and health impacts - Consider Life Cycle Analysis - Consider SB 1383 purchasing requirements	M
INITIATIVE B: Organics Processing Infrastructure		
1	Encourage the development of organics diversion facilities, including biomass conversion, composting, and anaerobic digestion of organic materials.	C

STRATEGY 3: Facilities and Infrastructure

		Timeframe
2	Encourage opportunities for co-digestion of organic materials at wastewater treatment plants.	C
3	Develop and implement pilot organics management programs.	M
4	Explore opportunities to develop micro-composters or digesters at large community venues/facilities.	M
5	Sponsor/support legislation to fund the development of organics processing infrastructure and promote markets for their end products.	M
6	Explore grant funding and loans to fund organics processing infrastructure.	M
INITIATIVE C: Local Green Business & Market Development		
1	Seek and encourage new green businesses and remanufacturing facilities to locate in Los Angeles County.	C
2	Promote and incentivize the use of locally generated reusables and recycled materials.	L
3	Seek out and promote grant funding for green businesses.	C
4	Expand the Recycling Market Development Zone (RMDZ) to include additional interested Cities in Los Angeles County.	M
INITIATIVE D: Resource Recovery Centers		

COUNTY UNINCORPORATED COMMUNITIES

STRATEGY 3: Facilities and Infrastructure

		Timeframe
1	Facilitate the development of Resource Recovery Centers at sustainable waste management facilities, transfer stations and landfills in the County.	M

COUNTY OPERATIONS

STRATEGY 1: Programs and Services

		Timeframe
INITIATIVE A: Institutionalize Waste Prevention and Source Reduction		
1	Develop model purchasing guides/policies for schools, businesses cities, and County/city facilities focusing on reducing toxics, packaging, and single-use items.	M
2	Support and develop reuse programs (e.g., redemption fees, repair cafes, material exchange, Bring Your Own).	C
3	Develop, implement, and enforce policies for certain materials, such as bans, restrictions, or ordinances. (e.g., plastics, single-use items, and organics).	M
INITIATIVE B: Advocate for Extended Producer and Manufacturer Responsibility (EPR)		
1	Support Extended Producer Responsibility (e.g., ordinances, legal requirements, incentives) - EPR policies could include requiring packaging reductions and targets to comply; or - Ensuring manufacturers' claims are accurate and match available collection systems (for example, some products that are marketed as "compostable" or "biodegradable" cannot be easily composted at existing commercial compost facilities because they require a long time to break down).	C
INITIATIVE C: Make Sustainability Easy and Discourage "Trashing"		
1	Create a mechanism to monitor and enforce recycling. - Penalties for contamination	M
2	Develop incentives for diverting waste to non-disposal alternatives.	L
INITIATIVE D: Recover Organics, including Food Waste, to the Highest and Best Uses		

COUNTY OPERATIONS

STRATEGY 1: Programs and Services

		Timeframe
1	Develop organics collection and diversion programs in collaboration with waste haulers and other stakeholders while ensuring proper education of the public and businesses.	L
2	Identify and partner with large food waste generators and work with local cities for food recovery and donation.	M
3	Establish network of community gardens and facilities for composting food/yard waste, using resources, such as the Smart Gardening program. - Consider County ordinance to support small scale composting operations.	M
INITIATIVE E: Maximize Diversion of Construction and Demolition (C&D) Debris		
1	Provide incentives for using durable building materials/products with long lifespans and minimal maintenance requirements.	M
INITIATIVE F: Maximize Diversion of Household Hazardous Waste (HHW) and Electronic Waste (E-Waste)		
1	Provide education on alternative products to eliminate or reduce HHW.	M
2	Identify incentives to encourage the use of environmentally preferable items.	M
INITIATIVE G: Outreach and Education		
1	Develop a standardized and consistent communication plan promoting the 4 R's, based on demographics, resources, and commercial and industrial businesses in targeted areas.	M
2	Educate businesses and government facilities on recycling programs that may help reduce their disposal costs and increase their recycling rate.	M

COUNTY OPERATIONS

STRATEGY 1: Programs and Services

		Timeframe
3	Expand communication through social media.	M
4	Incorporate incentives, awards, contests, etc. to encourage all stakeholders to participate in sustainability programs.	M

COUNTY OPERATIONS

STRATEGY 2: Measuring Results

		Timeframe
INITIATIVE A: Waste Sector Assessment		
1	Conduct regular Waste Characterization Studies to determine which material types to target for diversion and share results with stakeholders.	M
2	Conduct surveys to determine program effectiveness and solicit feedback.	S
INITIATIVE B: Evaluate and Measure the Success of Existing Programs and Consider New Programs		
1	Create a framework/template/tools to monitor and measure the success of new and existing source-reduction, recycling, and reuse programs.	M
2	Establish benchmarks tied to waste reduction goals, such as generation, disposal, recycling, and other diversion.	M
INITIATIVE C: Ensure Sustainable Funding and Alignment of Incentives with Program Goals		
1	Review program expenditures and revenues on a regular basis to ensure efficiencies and sustainable funding.	S
2	Identify options for program funding adjustments that incentivize recycling/reusing and fund diversion programs. - Consider increasing tipping fees and taxes to fund infrastructure. - Consider funding to offset higher costs for managing organics (e.g., transportation.	C
3	Explore grant funding and loans to augment program funding.	C
4	Evaluate the financial impact of scavenging on recycling programs and identify options to reduce scavenging.	S

COUNTY OPERATIONS

STRATEGY 3: Facilities and Infrastructure

		Timeframe
INITIATIVE A: Develop Conversion Technologies and Integrated Materials Recovery Facilities		
1	Establish partnerships to develop educational pilot projects to demonstrate the benefits, feasibility, and safety of sustainable waste management technologies.	C
INITIATIVE B: Organics Processing Infrastructure		
1	Encourage the development of organics diversion facilities, including biomass conversion, composting and anaerobic digestion of organic materials.	C
2	Encourage opportunities for co-digestion of organic materials at wastewater treatment plants.	C
3	Develop and implement pilot organics management programs.	M
4	Explore opportunities to develop micro-composters or digesters at large community venues/facilities.	M
5	Explore grant funding and loans to fund organics processing infrastructure.	M
INITIATIVE C: Local Green Business & Market Development		
1	Promote and incentivize the use of locally generated reusables and recycled materials.	L