County of San Diego

Strategic Plan to Reduce Waste

HF&H Consultants, LLC

in collaboration with

inika sustainability through inquiry, innovation and enterprise

O'Rorke

Draft for Public Review
October 27, 2016

This Public Draft Strategic Plan presents analysis and recommendations prepared by HF&H Consultants, LLC for the County's achievement of 75% diversion by 2020 and zero waste (90% diversion) by 2040.

The County has not endorsed or approved this Public Draft Strategic Plan or any of its recommendations. This Public Draft Strategic Plan will be used to gauge stakeholder interest in the program and policy options presented in the Public Draft Strategic Plan. County staff will use this Plan and stakeholder input to prepare recommendations to be presented to the County Board of Supervisors in 2017.

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P. Program and Policy Descriptions
Q. Recommended Internal Program and Policy Cost and Staffing Information
R. Sustainable Funding Background Information

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Subject: Public Draft High Diversion/Zero Waste Strategic Plan

Dear Michael,

HF&H is pleased to submit this Public Draft High Diversion/Zero Waste Strategic Plan to the County of San Diego (County). The Strategic Plan responds to the County Board of Supervisors' direction to staff to report back on the County's current diversion efforts and to develop a strategy for increasing its diversion rate to 75% by 2020 and Zero Waste (90%) by 2040. We have addressed the Board's request by including the following elements in the Strategic Plan:

- Summary of current diversion programs and policies in the County, including an overview of the County's materials management system and inventories of programs, policies, and facilities;
- Baseline data including demographic information, waste characterization data, historical tonnage data, and customer account data;
- Identification and assessment of over 230 program and policies options to support increased diversion with a near-term focus on 75% diversion;
- Overview of the stakeholder input process; and,
- Recommendations for achieving the County's Diversion Targets including implementation plans for the unincorporated areas and the County's internal operations.

The Strategic Plan separately addresses: (i) diversion of materials generated in the unincorporated areas of the County; and, (ii) diversion of materials generated by the County's internal operations.

* * * *

We look forward to receiving public comments on this draft and finalizing the Strategic Plan thereafter. Please contact me at (925) 977-6959 or rchilton@hfh-consultants.com or Tracy Swanborn at (925) 977-6963 or tswanborn@hfh-consultants.com with any questions.

Very truly yours,
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EXECUTIVE SUMMARY

On January 27, 2015, the County of San Diego's (County) Board of Supervisors (Board) directed staff to identify how the County is achieving its current diversion rate, and on programs, policies, and resources needed to achieve 75% Diversion by 2020 and Zero Waste (90% or greater Diversion) by 2040 (collectively "Diversion Targets"). The Board further identified an interest in assessing diversion opportunities and strategies for residents and businesses in the unincorporated areas of the County and for its own operations ("internal operations") to support efforts towards Zero Waste. This Strategic Plan to Reduce Waste (Strategic Plan) is a response to the Board's direction. It presents a set of diversion programs and policies to achieve 75% Diversion and additional strategies targeting Zero Waste. Strategies focus on waste prevention, reuse, repair, recycling, composting, and more.

The County's diversion rate was 62% in 2015, as calculated using the State of California (State) reporting methodology. It is reflective of waste prevention and reuse efforts as well as hauler diversion programs. The non-exclusive franchise haulers divert approximately 27% percent of the materials they collect in the unincorporated areas. Given the current diversion rate, reaching 75% Diversion and Zero Waste will necessitate a significant, well-planned, and well-funded effort. Initially, materials targeted for diversion include traditional recyclables, yard trimmings, food scraps, compostable paper, and construction and demolition debris (C&D); and, later, programs and policies will target nearly all types of materials discarded.

The County's focus on achieving its Diversion Targets at this time is advantageous for several reasons.

- The State set a 75% State-wide recycling policy goal in 2011 and has passed several pieces of legislation in the past five years supporting this goal.
- Landfills in San Diego County may not have sufficient capacity beyond 2028 if diversion levels are maintained. Increased diversion will extend the capacity.
- Zero Waste programs and policies will support the County's mission, values, and initiatives including the County's *Live Well San Diego* vision, Climate Action Plan, 2015-2020 Strategic Energy Plan, Eat Well Standards, and Food System Initiative.

The strategic planning process involved a robust program and policy analysis that included identification of over 230 program and policy options, and in-depth analysis of 40 short-listed options. The in-depth analysis examined costs, diversion potential, cost-effectiveness, greenhouse gas (GHG) emissions reductions, and job creation potential. Program and policy options address a broad range of sectors, material types, and sustainable materials management solutions including waste reduction, reuse and repair, recycling, composting, and education strategies. A stakeholder outreach process invited input from various parties including residents, businesses, members of the recycling and waste industry, non-profit organizations engaged in diversion programs, and various County departments.

Strategy for Achieving Diversion Targets in the Unincorporated Areas

A recommended set of programs and policies was developed to reach 75% Diversion and move towards Zero Waste. The County has four years (from 2017 to 2020) to achieve 75% Diversion. Several recommended programs require one to two years of planning and implementation time, with more time needed for organics processing facility infrastructure development. Furthermore, programs need time to mature to achieve the diversion success anticipated. Given these factors, reaching 75% Diversion by 2020 will require that the County initiate programs immediately, move quickly with implementation,

fully dedicate needed resources, and make a strong commitment to support and manage current and new diversion programs and policies.

Actual performance of the diversion programs will differ depending on the manner in which the programs are implemented, participation levels of the residents and businesses in the programs, the County's ongoing commitment to the programs, and external factors such as the economy, actual composition of the waste stream, growth in population, changes in demographic conditions, number and types of new businesses, product design and packaging, collection and processing technology, changes in federal and State legislation and regulations, and more.

The implementation plan is organized using three planning phases: Near-, Mid-, and Long-Term Phases.

Near-Term Programs (2017-2020) to Achieve 75%

Figure ES-1 presents the recommended list of Near-Term programs and policies and identifies priorities for 2017/2018 and 2019/2020 timeframes. The primary focuses for 2017/2018 timeframe include:

- Supporting development of large-scale organics processing facilities and on-site community and farm composting, because 40% (64,000 tons per year) of the diversion needed to achieve 75% Diversion requires processing of yard trimmings, food scraps, and compostable paper. Without significant increases in organics processing capacity, achievement of 75% by 2020 is not realistic.
- Implementing changes to the non-exclusive solid waste management agreements to increase residential and commercial diversion and C&D diversion by C&D haulers. These changes represent 73% (121,000 tons per year) of the diversion needed to achieve 75% Diversion (and are inclusive of some organic materials reflected in the above point on organics processing).
- Amending the County's C&D ordinance to expand the C&D recycling requirements to cover more C&D projects with the potential to divert 6% (10,000 tons per year) of the total diversion needed.

The 2017/2018 focus on these three key efforts must be immediate and intensive as they are critical to provide the infrastructure and framework to support implementation of several programs needed to reach 75% Diversion. The 2019/2020 programs and policies, including food waste prevention and food donation programs, expanded technical assistance and public education and outreach programs, promotion of reuse and repair opportunities, and support for and promotion of drop-off sites for paint, mattresses, carpet/padding, and other materials covered by State product stewardship legislation/regulation are also critical to achieving 75% Diversion. Two household hazardous waste (HHW) programs reduce the illegal disposal of materials that creates potentially significant health risks for the community and the environment and support the County's compliance with State AB 939 requirements for safe collection and disposal of HHW generated by residents.

Near-term implementation of supplemental programs (listed in Figure 5-2) will provide additional diversion that will serve as a contingency if the diversion from the programs and policies presented in Figure ES-1 do not result in achievement of 75% Diversion. Lastly, implementation of the recommended funding strategies (presented at the end of this section) should be accomplished in 2017/2018 to provide the essential funding resources that will enable implementation of this Strategic Plan.

Figure ES-1: Recommended Near-Term Priorities (2017 – 2020) for Unincorporated Areas

	Program/Policy	Estimated Diversion (d) (tons/year)	2017 / 2018 Priorities	2019 / 2020 Priorities
1	Enhance zoning ordinance to support organics processing (a)	---	✓	
2	Support organics processing facility development (a)	---	✓	
3	Implement commercial food scraps collection (b)	34,000	✓	
4	Regulate C&D haulers with minimum diversion requirements	29,500	✓	
5	Enhance single-family collection with consistent hauler requirements	24,700	✓	
6	Enhance commercial collection with minimum recycling level requirements	21,000	✓	
7	Enhance C&D diversion with ordinance amendment to lower project threshold	10,300	✓	
8	Expand social/behavior change marketing program	9,200		✓
9	Support on-site community/commercial/farm composting	7,500	✓	
10	Expand technical assistance for multi-family, businesses, schools	6,000		✓
11	Support efforts for reuse of textiles and State Extended Producer Responsibility (EPR) for mattresses and carpet/padding	5,300		✓
12	Collect food waste from single-family premises (b)	4,200	✓	
13	Enhance hauler performance standards, including minimum diversion goals	3,900	✓	
14	Improve diversion, tracking and oversight of haulers	2,600	✓	
15	Promote food waste prevention	2,500		✓
16	Support food donation through County Food System Initiative (c)	1,600		✓
17	Establish additional hauler-provided drop-off facilities	1,500	✓	
18	Provide regular education on County and State recycling requirements	1,400		✓
19	Collaborate with industry to establish an HHW facility in North County unincorporated area	---		✓
20	Provide additional HHW mobile drop-off events	---	✓	
	Total	165,200		

(a) Diversion is not listed for "Enhance Zoning Ordinance" and "Support Organics Processing Facility Development" because the organics diversion is included in other programs.
(b) Food scraps collection implementation is dependent on availability of organics processing facilities; implement collection as soon as possible.
(c) Food donation diversion is dependent on implementation of the County's Food System Initiative. Staffing and costs will be covered by the Initiative, and are not in the High Diversion/Zero Waste Strategic Plan.
(d) Estimated diversion shows the high end of estimates provided in the High Diversion/Zero Waste Strategic Plan. Actual results may be less.

Mid-Term Programs (2021-2030) to Progress Towards Zero Waste

A recommended set of Mid-Term programs is presented in Figure ES-2. Over the next five years, conditions will change both in response to the implementation of this Strategic Plan as well as other external factors like the global economy. Given this, the County should evaluate the Mid-Term programs and policies presented here prior to, or at the commencement of, the Mid-Term Phase and proceed with implementation, unless conditions change to reduce the need for the programs. Additional program and policy options, not listed here, may gain traction in the next few years and warrant consideration as well.

Figure ES-2: Mid-Term (2021 – 2030) Programs and Policies for the Unincorporated Areas

	Program/Policy*
1	Evaluation of the achievement of the franchise collection system diversion targets, and, if warranted, evaluation of other options including restructuring of the franchise system and supporting organics processing facility development through an RFP process
2	Expanded hauler diversion requirements
3	If warranted, evaluation of universal collection ordinance, and adoption of ordinance
4	Enforcement of County and State mandatory diversion requirements
5	Amendment of C&D ordinance to increase diversion
6	Landfill bans on selected materials
7	Producer responsibility ordinances
8	Product or packaging bans
9	More convenient organics collection service
10	Mixed materials processing

* The Mid-Term program and policy options presented here will be evaluated prior to or at the commencement of the Mid-Term Phase and implemented, if warranted.

Long-Term Programs (2031-2040) to Achieve Zero Waste

Between now and 2040, technological, legislative, economic, political, global marketplace, and cultural changes will impact waste generation, characterization of materials discarded, and the future of the materials management industry. State legislation and industry perspectives on this subject are highly dynamic. Given these factors, the Strategic Plan does not include recommendations for the Long-Term Phase. If the implementation of Near- and Mid-Term recommendations do not achieve Zero Waste, it will be critical to prepare a new Zero Waste strategic plan during the later portion of the Mid-Term Phase to assess then-current conditions and identify how to reach Zero Waste within that context.

Strategy for Achieving Diversion Targets in County Internal Operations

The County's goals for this Strategic Plan include a focus on increasing diversion for the County's internal operations. Because the County does not have a definitive baseline assessment of the current diversion level, making significant long-term commitments of staff time and costs for program and policy implementation does not seem prudent; therefore, recommendations presented for internal operations focus only on the Near-Term Phase (2017 to 2020). Key programs and policies include the following:

- Establishing a measurement and reporting process and determining baseline performance to better understand diversion and materials management practices of internal operations;
- Increasing reuse of the County's surplus property by revising the process for surplus property disposal when the contract is rebid in 2017; and offering incentives and recognition to departments that acquire surplus property through the reutilization program;
- Establishing a comprehensive Environmentally Preferable Purchasing Policy (EP3) that focuses on choosing environmentally-friendly products and services more broadly;
- Updating the County's procurement process with more diversion objectives and requirements in the County's RFPs and resulting contracts for product purchases and service providers (such as food service providers, janitorial services, maintenance services, landscaping, etc.); and,

- Enhancing diversion through new requirements in the County collection contract, new facility leases, and facility lease renewals; education of employees and janitorial staff; technical assistance to departments; improved recycling container placement and signage; and diversion of additional food waste and yard trimmings.

After these recommendations are implemented and monitored for a year or two to establish a baseline, the County can integrate continual improvement in diversion as part of its Department Excellence Goals. Figure ES-3 identifies the recommended Near-Term programs and policies for internal operations.

Figure ES-3: Recommended Near-Term Programs and Policies for Internal Operations

	Program/Policy
2017 / 2018 Timeframe	
1	Establish High Diversion/Zero Waste policy and organization (a)
2	Establish measurement and reporting process and baseline
3	Increase use of County's existing reutilization process
4	Expand the B-67 Recycled Products Purchasing Policy into an Environmentally Preferable Purchasing Policy (EP3)
5	Incorporate Zero Waste objectives into County procurements
6	Enhance diversion requirements in waste collection contracts (b)
7	Ensure optimal recycling at facilities owned and/or leased by County (b)
8	Increase diversion of yard/wood /food waste generated by County (b)
9	Provide waste reduction and recycling training to employees
10	Require regular training of janitorial staff including contractors
2019 / 2020 Timeframe	
11	Revise G-15 Design Standards to include renovations of facilities
12	Prioritize use of recycled materials in road construction
13	Partner with non-profit organization to provide reuse collections or drop-off boxes at County facilities for employees
14	Partner with Sheriff's Inmate Re-entry Services to consider training program on repair
15	Create capability for collection of used pallets from County facilities
16	Require recycling and composting for County-sponsored events
17	Support food waste reduction and food donation at County operations (b)
18	Increase use of locally-produced mulch/compost at County facilities
19	Support waste reduction and recycling by department through technical assistance (b)
20	Consider expanding partnerships with artists to create displays from repurposed material

(a) Establishment of a High Diversion/Zero Waste policy (Program 1) is anticipated to occur after a baseline of current conditions is developed (Program 2).
(b) Program implementation for leased facilities may be delayed until lease renewal or amendment.

Funding Strategy

Funding for current County diversion programs for the unincorporated areas is primarily obtained from franchise fees paid on material disposed by the non-exclusive haulers. As the County continues to implement programs to reduce material disposed, it inherently reduces funding received to support its programs. To reach the County's Diversion Targets, a sustainable funding strategy needs to be implemented in 2017 to generate funds to support current and recommended programs. The following funding mechanisms are recommended:

- **Franchise Fee Modifications**. The funding strategy recommends changing the franchise fee collection method, which is now a $2.35-per-ton fee on solid waste disposed (that has not been adjusted since 1997), to a 4.3% franchise fee that is charged as a percentage of haulers' gross rate receipts. Since gross receipts keep pace with inflation and are tied to all tonnage collected (not solely declining solid waste tonnage), this funding will be more sustainable than the County's current method. If the County chooses to continue with a per-ton franchise fee, the fee per-ton amount is estimated $6.40 for all tons. It should be assessed on all materials collected including solid waste, recycling, organics, and C&D and adjusted annually by an inflation factor. If the County chooses to recover the HHW program costs through the franchise fees, franchise fees will need to be increased by adding 1.1% for the gross receipts basis or $1.70 per ton for the per-ton basis. If the County chooses to recover franchise administration costs through the franchise fees, the franchise fees will need to be increased by adding 0.3% for the gross receipts basis or $0.40 per ton for the per-ton basis.
- **Franchise Administration Fees**. To recover costs related to the administration of the non-exclusive hauling system, recommendations include establishment of annual hauler fees ($8,000 to $12,000 per hauler per year, on average).
- **C&D Permit Fees**. To recover administration costs related to the C&D permit review process, recommendations include establishing C&D permit fees ($750 to $3,000 per C&D permit, on average).
- **HHW Fee**. To fund HHW program costs, establishment of an HHW fee is recommended on occupied residential dwelling units in the unincorporated County, using a Proposition 218 assessment process.[1] The fee is estimated to be $4.00 to $5.40 per dwelling unit per year, depending on the level of service provided.
- **Customer Rates**. Several recommended programs and policies will increase costs to the non-exclusive haulers that will provide expanded diversion services. Haulers will pass these costs onto their customers. Estimated rate impacts range from 9.2% to 11.5%, including franchise fees. The actual rate impacts will be determined by the haulers and will vary widely, with residents likely experiencing smaller impacts and businesses and industry experiencing greater impacts.

While one-time and ongoing program costs are estimated for the recommended programs and policy options for the internal operations, funding for the recommended diversion programs and policies for internal operations is not addressed in detail in the Strategic Plan. After a diversion baseline has been established, the cost estimates for the recommended programs and policies in this Strategic Plan will be reevaluated. It is anticipated that funding for one-time costs would be requested through appropriations from the Board and ongoing costs would be funded through increased internal service funds or general agreements paid by departments.

County Implementation Team

The Strategic Plan anticipates that the Department of Public Works – Solid Waste Planning and Recycling Section will be designated as the lead department for oversight and monitoring of the County's progress towards the Diversion Targets. Other departments that will play significant roles include: Department of General Services, Department of Purchasing and Contracting, Department of Environmental Health, Department of Planning and Development Services, and Health & Human Services Agency.

[1] Costs incurred by the County in implementation of an HHW fee would be in addition to the estimated HHW fee.

SECTION 1: INTRODUCTION

1.1 County's High Diversion/Zero Waste Targets

On January 27, 2015, the County of San Diego's (County) Board of Supervisors directed staff to identify: (1) how the County is achieving its current diversion level, as well as identify programs, policies, and resources needed to achieve 75% Diversion by 2020 for County operations; (2) how the County can support Zero Waste through its purchase of goods and services; and, (3) collaborate with industry to create a scope, timeline, and cost and funding options for a Zero Waste plan. The County was interested in developing a strategy for increasing its solid waste diversion rate to 75% by 2020 and Zero Waste (90%) by 2040 (collectively "Diversion Targets"). The County further identified the following objectives:

- Understand how to build off existing County programs and policies to increase diversion;
- Focus on diversion of materials generated by residents and businesses in the unincorporated areas of the County;
- Assess opportunities for the County to increase diversion of materials generated by the County's own operations ("internal operations");
- Evaluate and present new strategies to make significant advances with diversion; and,
- Seek input from stakeholders to inform the program and policy options analysis.

In response to the Board's directive, the County retained HF&H Consultants, LLC (HF&H) in March 2016 to develop this Strategic Plan to Reduce Waste (Strategic Plan). The HF&H team included HF&H as the prime consultant, with Inika Small Earth (Inika) and O'Rorke, Inc. (O'Rorke) as subconsultants. The Department of Public Works (DPW) – Solid Waste Planning and Recycling Section (DPW Recycling) managed the strategic planning effort. Representatives from the Land Use and Environmental Group (LUEG), Department of General Services (DGS), and Department of Environmental Health (DEH) were actively involved in providing input.

2015 Diversion
Unincorporated Area
Diversion Rate: 62%

Hauler-Controlled
Diversion Rates:
44% residential
7% commercial
27% industrial

The Strategic Plan identifies that current conditions and diversion efforts resulted in a 62% diversion rate for the unincorporated areas of the county in 2015.[2] It presents identification of over 230 diversion program and policy options and a detailed analysis of 40 options. It provides a recommended set of programs and policies to reach 75% Diversion and additional programs and policies to move towards Zero Waste. An implementation plan presents a strategy for moving forward framed around three planning phases: Near-Term (2017 to 2020), Mid-Term (2021 to 2030), and Long-Term (2031 to 2040). A sustainable funding approach presents a methodology for funding the high diversion efforts for the unincorporated areas to reach 75% Diversion.

[2] The current 62% diversion level is calculated based on the target and actual per-person disposal rates in the County's 2015 Annual Report to CalRecycle. It reflects waste prevention and reuse, non-exclusive hauler recycling, as well as recycling that occurs in addition to the hauler-controlled diversion programs.

The types of programs and policy options evaluated and included in the recommendations reflect a diverse range of alternatives for advancing to Zero Waste. Options presented include "upstream" strategies such as encouraging waste reduction by using less resources and materials through product decisions, reuse and repair efforts, and food waste prevention and food donation programs. Also considered were "downstream" strategies including enhancement of recycling and organics collection and drop-off programs, organics processing, expanded public education and outreach activities, and policy changes that support diversion.

1.2 Legislation, Regulations, and Policies Supporting Diversion

The County's focus on achieving 75% diversion and Zero Waste is supported by many actions of the State of California (State) and the County as summarized below.

State

In 1989, the State enacted the California Integrated Waste Management Act (commonly "AB 939"), which established a requirement for all cities and counties within the State to divert 25% of their waste by 1995 and 50% by 2000. In late 2011, the State started looking beyond the AB 939 diversion requirements and has recently passed several pieces of legislation to drive diversion to 75% and beyond. Key legislation includes:

Diversion Milestones

1989 – State enacted AB 939 with 50% County requirement
1995 – County to achieve 25% diversion per AB 939
2000 – County to achieve 50% diversion per AB 939
2011 – State enacted AB 341 with a 75% State-wide goal and mandatory recycling for multi-family and businesses
2015 – County Board of Supervisors requests Plan on reaching 75% diversion by 2020 and Zero Waste (90%) by 2040

- Mandatory commercial recycling (AB 341, 2011) – State-wide recycling goal of 75% by 2020; requires businesses and multi-family properties to recycle.
- Organics Waste Recycling Act (AB 1826, 2014) – Specifies organic materials recycling requirements for businesses and multi-family properties, phased in through 2020.
- Yard Trimmings Diversion (AB 1594, 2014) – Disallows diversion credit by agencies for processed yard trimmings that are used as landfill alternative cover.
- Organics Management Infrastructure Planning Act (AB 876, 2015) – Requires each county or regional agency to provide a 15-year estimate of organics processing generation and identify additional processing capacity needed to process this material and areas for new or expanded processing capacity for the unincorporated areas and cities within the county.
- Organic Waste Diversion from Landfills (SB 1383, 2016) – Requires State-wide reduction of organic disposal volumes by 50% by 2020 and 75% by 2025 and recovery of 20% of edible food by 2025.

County

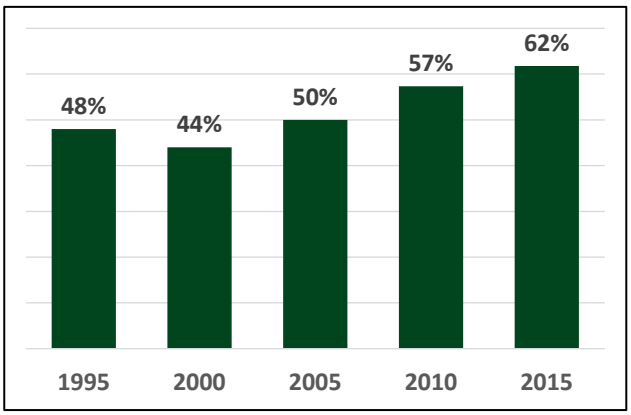
Since the passing of AB 939 in 1989, the County has adopted several policies and regulations to support diversion. The County has focused on specifying minimum recycling requirements for residents and businesses, minimum recycling collection requirements for haulers; construction and demolition debris

(C&D) recycling requirements for construction and demolition projects; and internal policies to increase the County's use of recycled-content products and to design County facilities and property with consideration of recycling and waste reduction practices.

1.3 Historical Diversion Rates

Since the State passed AB 939, the County has implemented numerous recycling and organics collection and diversion programs and policies designed to increase its diversion rate. Since 1990, the County has estimated its annual diversion rate in accordance with the State-established methodology. Figure 1-1 shows that the County's annual estimated diversion rates have generally trended upwards increasing from 48% in 1995 to 62% in 2015. The County's 2015 estimated diversion rate of 62% is just below the 2014 State-wide rate of 65%.[3]

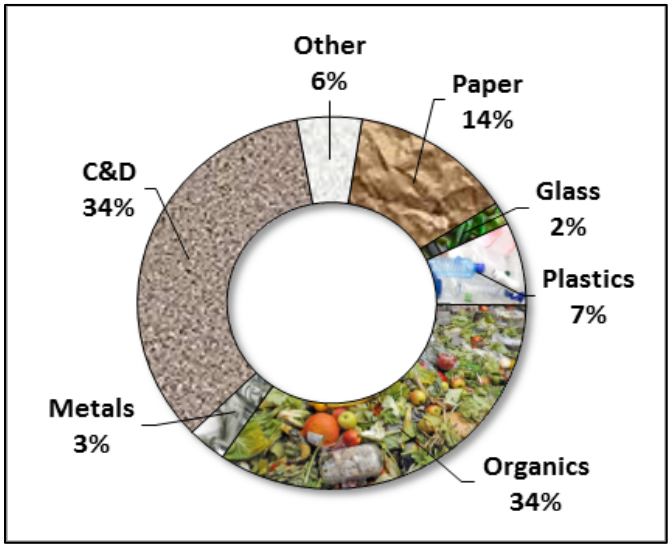
Figure 1-1: County Historical Diversion Rate from 1995 through 2015



1.4 Diversion Needed to Reach 75%

In 2015, 474,750 tons of solid waste was disposed by the unincorporated areas of the County. Figure 1-2 presents the characterization of these materials.[4] This characterization shows that diversion of recyclables, organic materials (including food scraps), and C&D are key focus areas for reaching 75% and beyond.

Figure 1-2: Overall Characterization of Waste Disposed by Unincorporated Areas



The County's Diversion Targets include: 75% by 2020 and Zero Waste (90%) by 2040. The main focus of this strategic planning effort is identifying what is needed to achieve 75% Diversion. For this reason, HF&H estimated that 164,000 tons per year of solid waste will need to be diverted to yield a 75% diversion rate. This figure is an average for the most recent three-year period (2013 to 2015). The 164,000 ton-per-year diversion target is used in determining what programs and policies have the potential of driving the County to 75% Diversion. Note that each year the State-calculated disposal rate (and related diversion rate) varies due to multiple factors, including economic conditions that impact waste generation and disposal rates. As a result, the target diversion tonnage will change over time.

[3] Source: http://www.calrecycle.ca.gov/LGCentral/GoalMeasure/DisposalRate/Graphs/EstDiversion.htm
[4] The overall waste characterization was developed using data from the 2012 – 2013 City of San Diego Waste Characterization Study adjusted to reflect average material disposed by unincorporated areas for 2013 to 2015.

1.5 Report Overview and Key Terminology

The Strategic Plan presents a summary of the research, analysis, and recommendations prepared by HF&H. This report and its attachments include the following:

- Description of the strategic planning process, including stakeholder engagement efforts;
- Overview of the County's materials management system including facility infrastructure and current programs and policies;
- Baseline data for current conditions including demographic information, waste characterization data, and tonnage of materials collected, diverted, and disposed;
- Identification of programs and policy options considered and summary of the options analysis;
- Recommendations of programs and policies for reaching 75% Diversion as well as other recommendations to move towards Zero Waste;
- An implementation strategy that sets priorities and presents phased implementation efforts; and,
- Sustainable funding strategy that lays out an approach to funding current DPW Recycling programs, current DEH household hazardous waste (HHW) programs, and the recommended programs and policies for the unincorporated areas for 75% Diversion.

In the Zero Waste community and recycling and solid waste industry, various terminology can be used or interpreted in different ways. For this reason, a brief description of a few key terms has been provided below to clarify the meaning of the terminology in the context of this Strategic Plan.

- County vs county – When "County" is capitalized, it refers to the County of San Diego as an entity, whereas when "county" is used in lower case form, it refers to the geographic areas of the County.
- Diversion – Diversion is used broadly to describe processes for reducing the amount of material landfilled including waste prevention, reuse, repair, recycling, composting, anaerobic digestion, and other forms of processing.
- Diversion Targets – Diversion Targets reflect the County-specific targets of achieving a 75% Diversion by 2020 and Zero Waste (90%) by 2040.
- Diversion rate – For the unincorporated areas, the diversion rate refers to the diversion rate calculated using the State-reporting methods and information. This method involves tracking actual annual quantities of waste disposed against a target disposal rate, where the target disposal rate can be correlated to a diversion rate. In the case of internal operations, the diversion rate refers to the amount of materials diverted from disposal divided by the sum of the amount diverted and disposed.
- Materials management – Management of materials including recyclables, organics, solid waste, C&D, electronic waste, HHW, and other material streams from the point of generation through collection, transportation, processing, and/or disposal.
- Programs – Programs is often used to broadly refer to both programs and policies.
- Zero Waste –Zero Waste is defined as reaching a 90% or greater diversion rate.

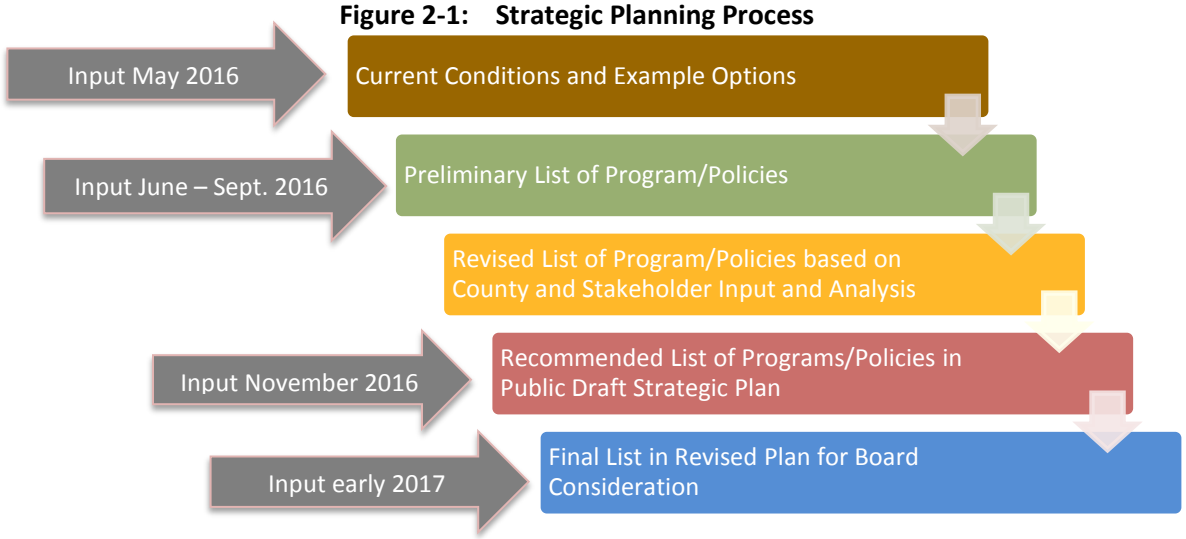
SECTION 2: STRATEGIC PLANNING PROCESS

This Section presents an overview of the strategic planning process, which involved consideration of over 230 diversion programs and policies that ranged from advocacy activities, waste prevention programs, regulatory actions to collection and processing services. It also provides a description of the Zero Waste framework that was used to categorize the various types of program and policy options. Lastly, it describes the visioning process and stakeholder outreach efforts that were conducted.

2.1 Overview of the Strategic Planning Process

The strategic planning process, which is summarized in Figure 2-1, was initiated in March 2016. Initial focus was on understanding and documenting the County's current diversion-related efforts including those programs and policies that impacted residents, businesses, and the County's own internal operations. The stakeholder outreach process was designed to invite input from various parties including residents, businesses, the recycling and waste industry, agricultural industry, reuse and repair businesses, non-profits engaged in diversion programs, and County staff from various departments. Four phases of stakeholder input were planned throughout the strategic planning process. In May 2016, the first round of stakeholder input was initiated (more details are provided in Section 2.4) to educate the stakeholders and hear ideas. Following the first round of stakeholder input, the HF&H team developed a large menu of programs and policy options focused on diversion from the unincorporated areas. The County provided input on this menu and expanded it. Approximately 150 options were included in the final comprehensive menu for the unincorporated areas. A short-list was then generated consisting primarily of those options projected to yield high diversion results. For the County's internal operations, an initial menu and a subsequent short-list of menu options were prepared based on feedback from participating County departments.

Figure 2-1: Strategic Planning Process



In June 2016, the short lists of programs and policies were shared with stakeholders. Additional refinement was made to the short-list menus based on input received from stakeholders. HF&H then conducted an analysis of each short-listed program with a focus on diversion potential, costs, cost-per-

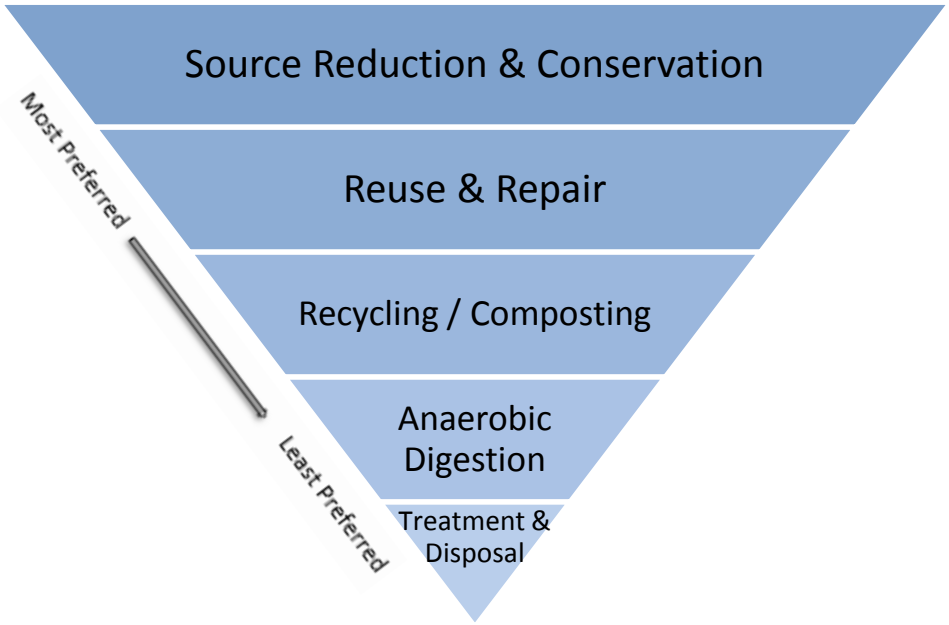
diverted ton, greenhouse gas (GHG) emissions reductions, and potential job creation. Section 4 more thoroughly describes the program and policy analysis process and results. The analysis was presented to the County in July 2016. The analysis resulted in a final set of 40 program and policy recommendations that appear in Sections 5 and 6. HF&H shaped the implementation plan and sustainability funding strategy around those recommended programs.

Throughout the process, DPW, which has the authority and responsibility for the County's solid waste planning and management functions for the unincorporated areas, provided oversight, input, and guidance. In addition, a team of County representatives from DPW, LUEG, DGS, and DEH ("Core Team") met with the HF&H on at least a monthly basis to guide the process and provide input. DGS was included as it ensures that other County departments have the necessary facilities, workspaces, services, and vehicles to accomplish their business objectives. DGS' responsibilities include management and oversight of the County facilities' contract for solid waste, recyclables, and organics collection services. DEH was included in the Core Team because of their role in managing the County's HHW facility in Ramona (operated by a contractor), contracts with the cities of El Cajon and Chula Vista for a limited number of HHW drop-off appointments, and occasional mobile collection events for the unincorporated areas; regulating hazardous and solid wastes including processing, transfer, and disposal facilities in the unincorporated areas; and, regulating food handling and food-generating businesses.

2.2 Zero Waste Framework

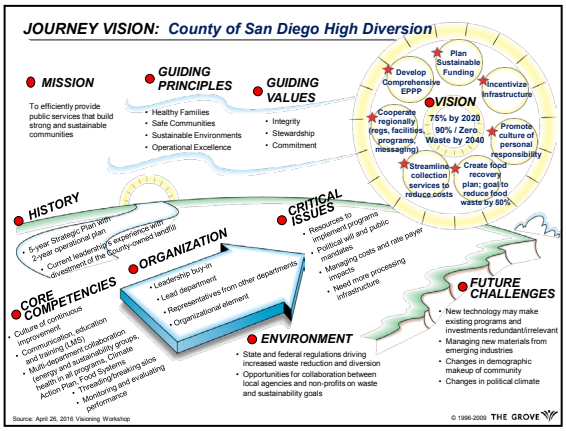
Various organizations, including U.S. Environmental Protection Agency (EPA), have developed materials management hierarchies that present program and policy categories from the most to least environmentally desirable. Figure 2-2 shows the EPA's hierarchy with minor modifications, which was used for strategic planning purposes.

Figure 2-2: Zero Waste Framework for Strategic Plan[5]



[5] Modifications to the EPA hierarchy included changing "Source Reduction and Reuse" to read "Source Reduction & Conservation"; adding a new level "Reuse & Repair"; and changing "Energy Recovery" to "Anaerobic Digestion".

2.3 Visioning Process



As part of the process for developing the Strategic Plan, HF&H facilitated a Visioning Workshop shortly after the project began. The purpose of the Visioning Workshop was to develop an understanding of the County's perspective and vision to inform the development of the Strategic Plan. To capture a diverse perspective of the County's interests and concerns, representatives from 13 departments participated. The Visioning Workshop resulted in two graphic maps that reflect the context for the Strategic Plan and the County's mission, goals, and objectives. These graphic maps have been reviewed at various points throughout the development of the Strategic Plan to confirm the process is in alignment with the context issues and targets identified. Attachment A includes a June 26, 2016 memorandum from HF&H to the County that presents the context map and journey visions, identifies the workshop participants, and provides additional information on the Visioning process.

2.4 Stakeholder Engagement Process

The stakeholder engagement and outreach strategy was designed to help create a Strategic Plan that considers the diversity of the unincorporated communities and reflects the internal operations of the County. The goal of the stakeholder engagement and outreach was to engage a relevant mix of stakeholders to provide input on the menu of program and policy options, leverage their interests and capacity to play a long-term role in the implementation of the Strategic Plan, build broad public support for the Strategic Plan, and set the stage for a financially-viable and operationally-efficient implementation.

Figure 2-3: Description of External Stakeholders

Primary Clients	System Partners	Community Partners
•Residents - Single- and multi-family •Businesses - Retail, commercial, industrial, hospitality, agricultural •Public entities	•Haulers •Transfer/processing facility operators •Landfill operators •Recyclers •Repair/reuse businesses	•Non-profit organizations •Community groups •Other cities/ agencies

The stakeholder engagement strategy was customized to "internal" stakeholders (County departments) and "external" stakeholders. External stakeholders comprised three groups – businesses and residents of the unincorporated areas; system partners engaged in provision of material management services; and community partners that support diversion activities in various ways. The external stakeholders are further described in Figure 2-3. The Stakeholder Participation and Outreach Strategy was prepared by the HF&H team with input from the Core Team and is presented in Attachment B.

The Stakeholder Participation and Outreach Strategy was structured around conducting phases (or rounds) of engagement with the stakeholders – Round 1 was the "Educate Phase;" Round 2 was the "Engage and Innovate Phase;" and Round 3 will be Public Draft Strategic Plan Input Phase. The goals of the Educate Phase were to inform stakeholders about current regulations and existing programs to increase diversion and to provide participants an opportunity to share suggestions and recommendations on issues related to diversion. During the Engage and Innovate Phase, the preliminary menu of policies and programs was presented to the stakeholder groups to gauge support for the various strategies and to receive feedback. During the Public Draft Strategic Plan Input Phase, stakeholders will be invited to provide comments on the Draft Strategic Plan.

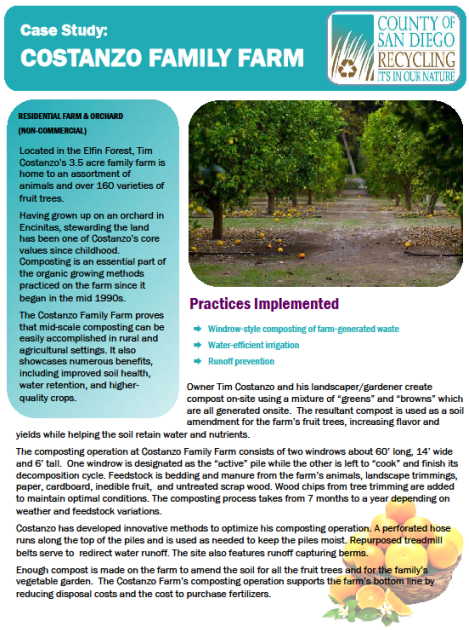
Round 1 (Educate) was conducted in April and May 2016. Round 2 (Engage and Innovate) started with public and industry meetings in June 2016 and was extended into September 2016 with presentations to business organizations. An online questionnaire was made available to residents and businesses to provide feedback regarding hauling services and barriers to improving diversion in the unincorporated areas. The online questionnaire was open from May 10 through August 8, 2016. Results are presented in Attachment D. The final round of stakeholder presentation, Round 3, will be conducted in November 2016 to present the Public Draft Strategic Plan and solicit feedback. During Rounds 1 and 2, the County conducted town-hall-style public meetings, several group meetings focused on different system and community partners, one-on-one meetings with the four largest hauling companies and the primary private landfill operator, presentations to various business groups, and online questionnaires to gather input and encourage participation. Round 3 will include a town-hall-style public meeting. In summary, external stakeholders were provided multiple opportunities to engage and provide input on the Strategic Plan, including opportunities to attend more than 20 meetings.

Attachment C provides more details on the stakeholder engagement process and feedback received.

2.5 Case Studies of Businesses

Local businesses with exemplary high diversion programs were profiled to serve as models for other businesses in the County. A range of business types was selected including a farm, college, grocery store, retirement village, and senior living facility. Each business was interviewed about their programs, best management practices, and diversion results. The featured entities are listed here and the case studies are in Attachment F.

- Costanzo Farm
- Cuyamaca College
- Jimbos...Naturally!
- Mount Miguel Covenant Village
- The Village at Rancho San Diego


Case Study:
COSTANZO FAMILY FARM

COUNTY OF SAN DIEGO RECYCLING IT'S IN OUR NATURE

RESIDENTIAL FARM & ORCHARD (NON-COMMERCIAL)

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

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

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

Practices Implemented

- Windrow-style composting of farm-generated waste
- Water-efficient irrigation
- Runoff prevention

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

The composting operation at Costanzo Family Farm consists of two windrows about 60' long, 14' wide and 6' tall. One windrow is designated as the "active" pile while the other is left to "cook" and finish its decomposition cycle. Feedstock is bedding and manure from the farm's animals, landscape trimmings, paper, cardboard, inedible fruit, and untreated scrap wood. Wood chips from tree trimming are added to maintain optimal conditions. The composting process takes from 7 months to a year depending on weather and feedstock variations.

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

Enough compost is made on the farm to amend the soil for all the fruit trees and for the family's vegetable garden. The Costanzo Farm's composting operation supports the farm's bottom line by reducing disposal costs and the cost to purchase fertilizers.

SECTION 3: OVERVIEW OF CURRENT COUNTY SYSTEM

Understanding of the current diversion and materials management conditions of the County's internal operations and the unincorporated areas is essential to building a strong foundation for the Strategic Plan and selecting future programs and policies that will move the County towards its Diversion Targets. This Section presents an overview of the County's materials management system including generator options and regulations, collection system arrangements, the non-exclusive franchise hauler system, as well as an inventory of recycling, composting, transfer, and landfill disposal facilities. It also presents a brief overview of the County's current diversion programs and policies for the unincorporated areas and internal operations. Lastly, demographic information and waste characterization data is presented. Attachments L and M provide supplemental information.

3.1 Generator Options and Regulatory Obligations

Residents and businesses may arrange collection services through one of the County's non-exclusive franchise haulers or a recyclables hauler. Alternatively, residents and businesses may self-haul their materials to processing facilities, transfer stations, drop-off recycling centers, and/or landfills of their choice. Non-exclusive haulers transport 78% of all solid waste disposed. The County calculates the annual solid waste tonnage delivered by self-haulers to landfills by subtracting the tonnage delivered by the franchise haulers from the total tonnage disposed overall. By these calculations, the self-hauled solid waste disposed has averaged 22% of the total solid waste disposed for 2013 through 2015. This includes materials transported by residential, commercial, and industrial generators.

The County's Solid Waste Ordinance was amended in 1991 to establish mandatory diversion requirements for residents and businesses in the unincorporated areas of the County and amended in 2010 and 2013 to provide additional details. More specifically, County Ordinance 68.571 requires that residents and businesses separate recyclables from solid waste for collection and diversion by haulers or self-haul the recyclables to a recycling facility. The ordinance prohibits disposal of a defined list of recyclables, which includes: newspaper and mixed paper, cardboard, glass bottles and jars, rigid plastics, plastic bottles, jugs and jars, aluminum, tin and steel cans, large appliances, and, for residents, also includes yard trimmings. Two recent State regulations place additional recycling requirements on businesses, multi-family complexes, and public entities. AB 341, which became effective July 1, 2012, requires recycling; and, AB 1826, which targets these same sectors and became effective April 1, 2016, requires diversion of organics including food waste, green waste, landscape and pruning waste, nonhazardous wood waste, and food-soiled paper, with the exception that multi-family properties do not need to divert food scraps and food-soiled paper.

Effective April 21, 2007, debris from covered C&D projects must be diverted away from landfill disposal in the unincorporated areas pursuant to the County's C&D Debris Deposit Ordinance. The ordinance requires that 90% of inerts and 70% of all other materials must be recycled from construction, demolition, and renovation projects that are 40,000 square feet or larger, either individually or in aggregate. To comply, contractors must submit a Debris Management Plan and a fully-refundable performance guarantee prior to building permit issuance (Sections 68.508 through 68.518 of the County Code of Regulatory Ordinances).

3.2 Collection System Overview

Residential and commercial materials generated in the unincorporated areas are transported to landfills, transfer stations, recyclables processing facilities, drop-off centers, and other processing facilities by various parties as summarized below.

1. **Non-Exclusive Haulers**. Through issuance of non-exclusive solid waste management agreements (SWMAs), the County grants hauling companies non-exclusive rights to collect solid waste from residential, commercial, and industrial customers that subscribe to service. Haulers transport the materials collected to processing facilities, transfer stations, and/or landfills of their choice. Section 3 provides additional information on the SWMAs including tonnage collected and customer account information. Attachment G includes a list of non-exclusive haulers, and identifies the type of service (residential, commercial, and industrial) haulers provide by geographic area.
2. **Recyclables and C&D Haulers**. Hauling companies that exclusively collect recyclable materials and construction and demolition debris (C&D) provide regular residential, commercial, and industrial collection services for these materials and transport the materials to processing facilities, and/or transfer stations of their choice. These companies are not currently regulated by the County through any type of license, permit, or non-exclusive franchise system. Attachment G includes a list compiled by the County of recycling haulers. This list includes only companies that requested to be included; and, as a result, it is not necessarily comprehensive.
3. **Self-Haulers**. Some residents and businesses transport the materials they generate directly to processing facilities, transfer stations, landfills, and drop-off recycling centers. In addition, various County departments and military units self-haul materials.
4. **Contractors**. Contractors performing construction, renovation, and demolition work, landscaping services, and other types of contracted services for residents and businesses often transport the materials resulting from their services directly to processing facilities, transfer stations, landfills, and drop-off recycling centers.

The County receives and tracks tonnage collected by non-exclusive franchise haulers; solid waste transported by self-haulers; solid waste transferred and disposed; and alternative daily cover (ADC) at landfills. Summary tonnage information is included in Attachment M. Recyclables and C&D tonnage collected by recyclers and C&D haulers is not available because these haulers are not regulated by the County nor required to report tonnage data.

Materials generated by the County's internal operations are handled in a variety of ways. Some collection services are arranged by DGS through the County's solid waste, recycling, and organics collection services contract (referred to herein as "County Collection Contract"). Currently, the County Collection contractor collects materials from nearly 150 collection sites. The contract has a term of one year, expiring June 30, 2017 with up to three additional one-year extensions (through May 30, 2020) and includes diversion-related requirements to provide recycling, food waste composting, educational outreach and training for County staff, annual waste audits, and more. Data on the County Collection Contract collection volumes and diversion is provided in Section 3.5.2. Other County sites arrange for their collection service outside the County Collection Contract, self-haul, or rely on services arranged by the lessor (for leased sites). The County also has contracts that cover the collection and recycling of specialty materials including confidential documents, batteries, bulbs, ballasts, sharps, medical waste, and e-waste.

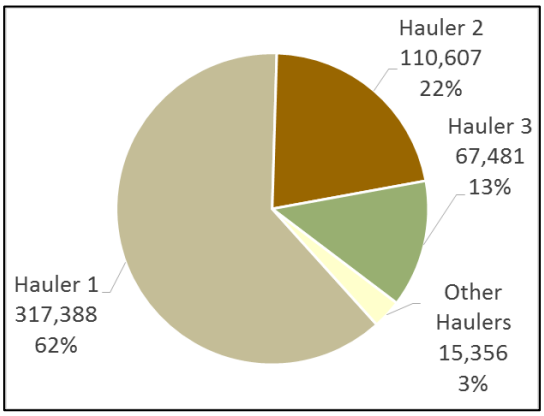
3.3 Non-Exclusive Agreements and Hauling Services

3.3.1 Franchise Arrangements

For many years, private hauling companies provided collection services to residents and businesses in the unincorporated areas and the County provided collection services for internal operations using County crews and equipment. In 1997, the County established a non-exclusive franchise system in which franchise hauling companies compete for residential and commercial customers throughout the unincorporated areas. The County regulates the haulers that offer solid waste collection services by requiring that each company enters into a SWMA, with terms and conditions that are identical for all haulers. The term of each SWMA is 10 years with an automatic renewal at the end of each year, which continually maintains a 10-year term. (This type of arrangement is often called an "evergreen" agreement.) Annually, the County has the opportunity to negotiate changes with the haulers prior to the one-year renewal. The County has the right to terminate for convenience, at any time, subject to the completion of the 10-year term. Under the provisions of the SWMAs, these haulers may also collect recyclables and organic materials. The franchise haulers identify the various service areas in which they intend to provide collection services and compete with other companies in the majority of the service areas.

When the system was originally established, 29 permitted companies were providing solid waste collection services. The County granted each company an SWMA and capped the number of available SWMAs at 29. Since that time, some haulers have sold their SWMAs to others, which has resulted in consolidation of companies. As of September 2016, effectively 11 companies hold SWMAs, when accounting for affiliated and related-party relationships.

Figure 3-1: Annual Tonnage Collected by Non-Exclusive Franchise Haulers (2015)



In 2015, four of the companies – EDCO, Daily Disposal, Republic Services (also known as Allied Waste), and Waste Management – collected 97% of the non-exclusive franchise tonnage. In September 2016, EDCO became owner of Daily Disposal, so effectively 3 haulers collect 97% of the franchise solid waste, recyclables, and yard trimmings tonnage as shown in Figure 3-1. Commercial customer account data reported by the three largest franchise haulers shows that the highest density service areas include Valley Center, Bonsall, Ramona, Barona, Lakeside, Alpine, Crest-Dehesa, Spring Valley, and Jamul-Dulzura. In these areas, two or three of the largest haulers provide solid waste, recycling, and yard trimmings cart and bin commercial collection services. In the other areas, one or two haulers provide cart and bin services. Collection of solid waste, recyclables, and yard trimmings using roll-off containers is performed by numerous non-exclusive haulers throughout the unincorporated areas.

The franchise haulers submit tonnage reports to the DPW Recycling on the quantities of recyclables, organics, and solid waste collected in the unincorporated areas. For the past three years, the solid waste tonnage collected by the non-exclusive franchise haulers amounts to approximately 78% of the overall solid waste disposed of annually by the unincorporated area. The remainder of the waste disposed is self-hauled.

Figure 3-2: Annual Tonnage Collected by Non-Exclusive Haulers by Material Type (2015)

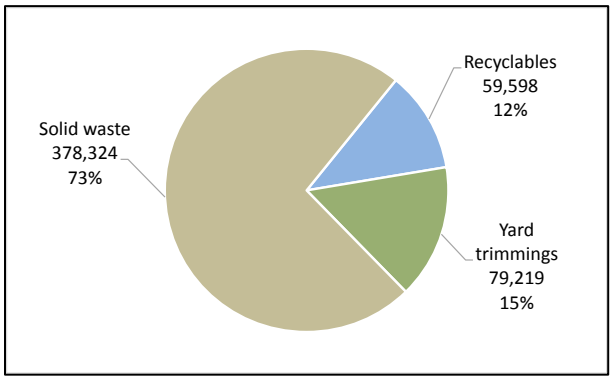


Figure 3-2 shows that a total of 517,141 tons of materials were collected in 2015 by the haulers, of which 12% was recyclables and 15% yard trimmings. This equates to an average hauler-controlled diversion rate of 27%. The hauler-controlled diversion rate varies by hauler, ranging from 15% to 56%. For the 3 largest haulers, the diversion rate ranges from 15% to 28%, with an average of 25%. The hauler-controlled diversion rate for the residential sector was at 44% in 2015; followed by the industrial sector at 27%; and the commercial sector at 7%. When looking at the commercial and industrial statistics, it is important to recognize that the diversion rate does not reflect diversion by recyclers, C&D haulers, and self-haulers because this data is not available. Attachment M contains detailed tonnage data.

3.3.2 Collection Services Provided

As part of the assessment of current conditions, a questionnaire was developed to gather information from the franchise haulers to better understand the current collection services provided in the unincorporated areas. In total, eight haulers responded to the questionnaire. A brief overview of the collection services is provided below. Attachment H presents additional information.

Residential Collection Services

Of the 11 non-exclusive franchise haulers, 3 haulers provide the majority regular residential cart collection services when accounting for affiliated- and related-party entities, with 1 additional hauler servicing less than 50 residential customers. In total, these haulers reported for April 2015 that 91,990 households subscribe to collection service, receiving once-per-week curbside solid waste collection services. It is estimated that approximately 68% of single-family households in the unincorporated areas subscribe to collection service.[6] The haulers also reported that 71,258 solid waste carts are in service, which does not align with 91,990 reported accounts. Some or all of the difference may be explained by the fact that some residential accounts use one cubic yard bins, and those containers are reported with the commercial data. It appears that each account has recycling service because 77,865 recycling carts are in service (compared to 71,258 solid waste carts); and approximately 86% of the accounts have yard trimmings service (61,291 carts in service). Approximately 64% of the volume of service provided to residents is for collection and diversion of recyclables and yard trimmings, with the remainder for solid waste.

A two-container system is offered to all customers for solid waste and recyclables collection. In many areas, a three-container system is offered for solid waste, recyclables, and yard trimmings collection. The three residential haulers offer bulky item collection for appliances, large furniture, etc. One company offers curbside collection of motor oil in Ramona. None of the haulers offer curbside collection

[6] The estimated 68% subscription rate is for single-family residences in the unincorporated areas. It does not include multi-family or mobile homes or reflect vacancies nor does it account for residents with bin service.

of motor oil filters or household batteries. Natural gas fuel (CNG or LNG) is used for nearly all of the residential collection vehicles.

Commercial Collection Services

Approximately 13,624 businesses subscribe to collection service and are serviced by 11 haulers, when accounting for affiliated- and related-party entities. Three of these haulers provide the majority of regular commercial cart and bin collection service; one additional hauler services less than 50 commercial accounts. All the cart and bin haulers offer solid waste and commingled recyclables collection in the service areas. Four haulers offer yard trimmings collection; and three haulers report offering food scraps collection in some service areas. Account data shows that approximately 11% of cart and bin service capacity is for collection and diversion of recyclables; and 0.1% for collection and diversion of yard trimmings. Bulky item (appliances, large furniture, etc.) collection services are offered by four haulers; and e-waste and u-waste collection by one hauler. Natural gas fuel (CNG or LNG) is used for the majority of the commercial collection activities.

3.4 Facility Infrastructure

San Diego County has a complex network of facilities that support materials management and provide diversion opportunities to support the County's Diversion Targets. Facilities include recycling centers, composting facilities, mixed C&D and inert processing facilities, material recovery facilities, salvage facilities, reuse and repair facilities, and drop-off centers for recyclables, HHW, and other materials. Landfills offer disposal of waste and processing residue. Transfer stations accept materials for temporary storage and transfer into large-capacity vehicles for transport to processing or disposal facilities.

The County's "Non-Disposal Facility Element Update for the County Unincorporated Area Countywide Integrated Waste Management Plan", dated September 2013 (NDFE), provides detailed information on transfer stations, materials recovery facilities, resource recovery parks at landfills, organics processing facilities, C&D recovery facilities, and other recycling facilities. In addition to the NDFE information, an inventory of landfills, specialty recycling facilities, and reuse and repair facilities was compiled from inventories available through I Love a Clean San Diego and CalRecycle's Solid Waste Information System facility database (SWIS list) and Facility Information Toolbox (FacIT). Figure 3-3 lists the number of facilities in the unincorporated and incorporated areas of San Diego County. Attachment I includes facility names, locations, permit status, and capacity information (if applicable). Figure 3-4 provides information on existing material recovery facilities, composting facilities, transfer stations, and landfills. Sections 3.4.1 through 3.4.6 provide more information on recycling, organics, C&D, transfer, and disposal facilities.

Figure 3-3: Facility Inventory Overview

		# of Facilities*
	TRANSFER AND DISPOSAL FACILITIES	
1	Landfills	6
2	Transfer Stations	31
	TRADITIONAL RECYCLING INFRASTRUCTURE	
3	Chipping & Grinding Facilities	11
4	Beneficial Reuse	3
5	Material Recovery Facilities	9
6	Composting Facilities	11
7	C&D Disposal & Processing Facilities	34
8	Buyback Centers	83
	SPECIALTY RECYCLING INFRASTRUCTURE	
9	Carpet Recycling	2
10	Tire Remanufacturing, Processing & Disposal	5
11	Used Oil Centers	260
12	Hazardous, Appliance, E-Waste	19
	REUSE, REPAIR INFRASTRUCTURE	
13	Architectural Salvage	7
14	Thrift Stores	120
15	Appliance Repair Centers	36
16	Computer & Phone Repair Centers	34
17	Bicycle Repair	18
18	Furniture Repair	30
	TOTAL	719

* Includes facilities in unincorporated and incorporated areas of the County.

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Figure 3-4: Processing, Transfer, and Disposal Facilities

Facility	Operator/Owner	Location	
Material Recovery Facilities			
Allan Company MRF	Allan Company	San Diego	---
Amswede Recycling, Inc.	Amswede Recycling, Inc.	Chula Vista	---
EDCO Recycling	EDCO	Lemon Grove	---
EDCO Station	EDCO / City of La Mesa	La Mesa	---
Escondido Resource Recovery	Escondido Resource Recovery / Jemco Equipment Corporation	Escondido	---
Fallbrook Recycling & Transfer	Fallbrook Refuse Service / EDCO	Fallbrook	---
Ramona MRF & Transfer Station	JEMCO Equipment Corporation / Ramona Disposal Services	Ramona	---
SANCO Recycling	SANCO	Escondido	---
Universal Refuse Removal Recycling & Transfer	Universal Refuse Removal / City of El Cajon	El Cajon	---
Composting Facilities			**Permitted Materials**
Agromin Oceanside Green Materials	Agromin OC-Oceanside Green Materials / Nagata Bros LLC	Fallbrook	Agricultural; green waste
El Corazon Compost Facility	Agri Service / City of Oceanside	Oceanside	Food waste; green waste (Oceanside material only)
Evergreen Nursery	Evergreen Distributors, Inc.	Oceanside	Green waste
Evergreen Nursery	Evergreen Distributors, Inc.	San Diego	Green waste
Hanson Aggregates A-1 Soils	Hanson Aggregates A-1 Soils/ Hanson Aggregates PSW	Lakeside	Agricultural, manure
Miramar Greenery	City of San Diego / U.S. Marine Corps	San Diego	Agricultural; food waste; green waste*
Otay Landfill Research Composting Operation	Otay Landfill, Inc.	Chula Vista	Food waste (Pilot project; limited volumes)
Otay Mesa Compost Facility	Agri Service Recycling, Inc. / International Industrial Park, Inc.	San Diego	Agricultural; green waste; manure
Plants Choice Compost Material Handling Operation	Plants Choice, Inc. / Otay Landfill, Inc.	Chula Vista	Green waste
San Pasqual Valley Soils	San Pasqual Valley Soils / City of San Diego	San Diego	Green waste; manure
San Pasqual Valley Soils Research	San Pasqual Valley Soils / City of San Diego	San Diego	Green waste; manure
Large-Volume Transfer Stations			**Permitted Tons/Day**
EDCO Recovery & Transfer	EDCO Disposal Corporation	San Diego	1,500
Escondido Resource Recovery	Escondido Resource Recovery	Escondido	2,500
EDCO Station	EDCO Disposal Corporation	La Mesa	1,000
Fallbrook Recycling & Transfer	Fallbrook Refuse Service	Fallbrook	500
Ramona MRF & Transfer	JEMCO Equipment Corporation	Ramona	370
Waste Management of North Co.	Waste Management of North County	Oceanside	4,500
Universal Refuse Removal	Universal Refuse Removal	El Cajon	1,000
Palomar Transfer Station, Inc.	Palomar Transfer Station, Inc.	Carlsbad	2,250
Total Maximum Permitted Throughput for Large-Volume Transfer Stations			**13,795**
Landfills			**Permitted Tons/Day**
Borrego Landfill	Borrego Landfill, Inc.	Borrego Springs	50
Otay Landfill	Republic Services, Inc.	Chula Vista	5,830
Las Pulgas Landfill	U.S. Marine Corps - Camp Pendleton	Camp Pendleton	400
Sycamore Landfill	Sycamore Landfill, Inc. (Republic Services)	San Diego	5,000
San Onofre Landfill	U.S. Marine Corps - Camp Pendleton	Camp Pendleton	100
West Miramar Sanitary Landfill	City of San Diego	San Diego	8,000
Total Permitted Throughput for Landfills			**19,380**

* Organic materials accepted at the Miramar Greenery may be limited to materials generated in City of San Diego.

3.4.1 Materials Recovery Facilities

In the unincorporated areas, non-exclusive franchise haulers collect recyclable materials from residents and businesses as commingled (also known as single-stream) recyclables, where many types of recyclables are mixed together and collected for processing. The majority of the commingled recyclables collected in the unincorporated areas are processed at the material recovery facilities listed in Figure 3-4. In some cases, each type of recyclable material is "source separated" and individually collected by non-exclusive franchise haulers or recyclables haulers, or self-hauled. These source separated recyclables are processed at numerous locations throughout the county, including the material recovery facilities listed in Figure 3-4. Buy-back centers also accept source separated recyclables, and are listed in Attachment I.

3.4.2 Organics Processing Facilities

In San Diego County the majority of organic processing is performed at chip and grind facilities and composting facilities. Eleven chip and grind facilities in San Diego County, listed in Attachment I, mechanically breakdown branches, wood, and clean lumber into mulch and other products.

Eleven facilities in San Diego County compost organic materials, and are listed in Figure 3-4. These facilities vary in size, but also in the feedstock they accept. While virtually all accept yard trimmings and other landscape debris, fewer can accept high-moisture feedstocks such as food waste and manure. Only three facilities can accept food waste, including one that is currently permitted as a research site at Otay Landfill. Mushroom farms and vermicomposting sites are also located in San Diego County and are used to compost organic materials.

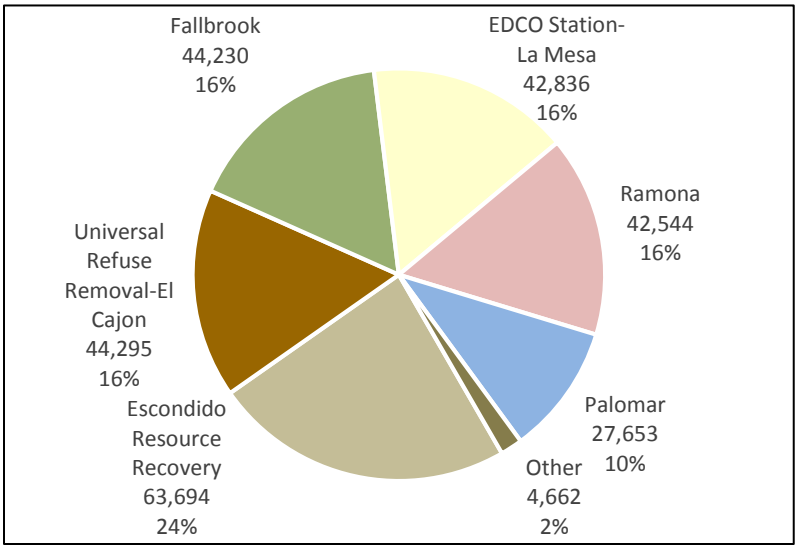
The organics processing infrastructure in the County is very limited, with little or no excess in-County capacity available. Without significant increases in organics processing capacity, the County will not be able to implement expanded organics collection programs. The County needs as much as an additional 100,000 tons per year of organic materials processing capacity to meet 75% Diversion, which is inclusive of 37,000 tons per year of capacity to process yard trimmings that will no longer be used as landfill alternative daily cover. The incorporated cities in San Diego also have growing needs for organics diversion to support their diversion goals, to support businesses in complying with AB 1826, and to handle their processed yard trimmings that are being used as landfill alternative daily cover. This places a high demand on organics processing infrastructure.

The hauling and processing industry are taking action to develop organics processing infrastructure. Republic Services has a permit for a pilot composting project at Otay landfill and has initiated a permitting process for a composting facility in the Fallbrook area for acceptance of 52,000 tons per year of agricultural waste and green waste. EDCO reports that it is working to develop composting capacity in San Diego County. CR&R recently developed an anaerobic digestion facility in Perris, California, which accepts mixed organics including food scraps and yard trimmings. Until in-county facilities are available, the CR&R anaerobic digestion facility may provide an opportunity, although more suitable for the northern unincorporated areas as the transportation costs will be high.

3.4.3 C&D Processing Facilities

Six medium and large scale facilities have solid waste facility permits for acceptance of C&D materials in San Diego County. Three are permitted processing facilities with a combined maximum annual tonnage limit of 470,706 tons. The remaining three facilities are permitted as inert debris engineered fill operations, which provide disposal services in addition to diverting materials for reuse and recycling. These facilities can accept an additional 709,086 tons per year. In addition to these facilities, there are several additional facilities that accept one or more types of source separated and mixed C&D materials for recycling and/or reuse. All of the C&D facilities, which are listed in Attachment I, are dispersed throughout the unincorporated and incorporated areas of San Diego County. This C&D processing infrastructure has considerable capacity, and is likely able to meet the future demands of the County's diversion programs, at least in the Near-Term.

Figure 3-5: Solid Waste Tonnage Delivered to Transfer Stations (2015)



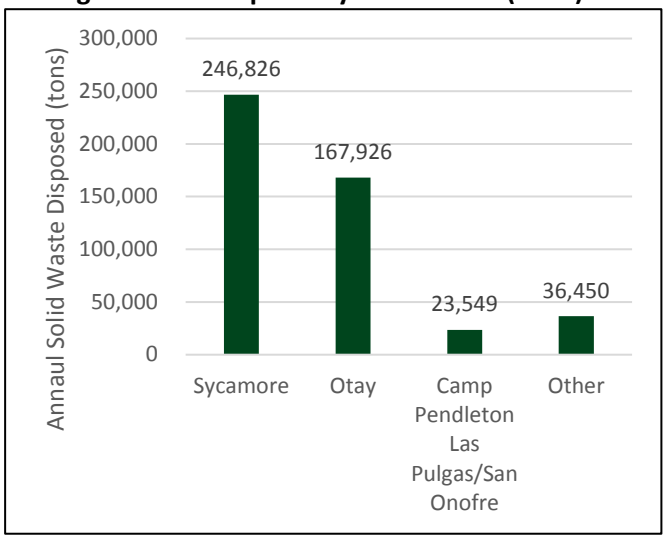
3.4.4 Transfer Stations

While Figure 3-3 lists 31 transfer stations, only 6 of these play a significant role in transferring solid waste and other materials collected by the non-exclusive franchise haulers. These large-volume facilities, presented in Figure 3-4, provide adequate capacity with no foreseeable concerns. From 2013 to 2015, an average of 56% of solid waste disposed was delivered to a transfer station and then hauled to a landfill. Figure 3-5 presents solid waste tonnages handled by the transfer stations for 2015, illustrating that six transfer stations handled 98% of the materials.

3.4.5 Landfills

Figure 3-4 identifies the six landfills located in San Diego County. Over the past three years, Sycamore and Otay Landfills received approximately 92% of the solid waste generated in the unincorporated areas and disposed. Other in-County landfill sites used for disposal of waste from the unincorporated areas include Miramar, Borrego, and Camp Pendleton Las Pulgas/San Onofore landfills. A very small percentage (1.4% in 2015) of solid waste is disposed in landfills outside of the County or outside of the State. For the past four years, 2012 through 2015, there has been little change in the disposal volumes, with 474,751

Figure 3-6 Disposal by Landfill Site (2015)



tons disposed in 2015. Figure 3-6 presents disposal tonnage by landfill for 2015.

As of the 2012 Five-Year Review Report of the San Diego County Integrated Waste Management Plan (CIWMP), the landfill infrastructure in San Diego County was forecasted to have sufficient capacity through 2028 depending on many factors.[7] A regional Zero Waste focus by the County and the incorporated cities can extend the landfill capacity.

3.4.6 Future Infrastructure Needs

As the County works towards its Diversion Targets, additional processing capacity will be needed for recyclables, organics, and C&D. The current infrastructure appears to have sufficient processing capacity in the near term for recyclables, C&D, and solid waste. The largest and most immediate need is for organics processing infrastructure for yard trimmings, wood waste, food scraps, and food-soiled paper. Organics processing capacity is not only needed by the County, but also by the cities in the County as AB 1826 and SB 1383 are driving organics diversion and AB 1594 will disallow diversion credit for the use of processed yard trimmings as landfill alternative daily cover effective January 1, 2020.

3.5 Current Diversion Programs and Policies

The County supports several programs and policies to encourage higher diversion within the unincorporated areas and its internal operations. These initiatives are briefly summarized below and presented in more detail in Attachments J and K.

3.5.1 Unincorporated Areas

The County has been committed to increasing diversion in the unincorporated areas since AB 939 was passed in 1989. It has adopted recycling requirements in its Solid Waste Ordinance and C&D Debris Deposit Ordinance that require residents and businesses to recycle. DPW Recycling manages the non-exclusive franchise haulers through the SWMAs, which include requirements of the haulers to provide recycling services. DPW Recycling also supports diversion through a technical assistance program for businesses, multi-families, and schools; provision of composting bins and workshops for backyard composting; operation of a recycling and HHW hotline; development and distribution of numerous recycling brochures; provision of recycling and HHW information through its website; and more. DEH provides one permanent HHW drop-off facility (operated by a contractor) in Ramona, contracts with the cities of El Cajon and Chula Vista for a limited number of HHW drop-off appointments, and offers occasional mobile HHW drop off events throughout the unincorporated areas. The County was instrumental in creating the San Diego Reuse and Repair Network (SDRRN) and San Diego Food Systems Alliance and supports regional efforts of non-profit organizations related to reuse and recycling, food waste prevention, food donation, community composting, and more.

3.5.2 Internal Operations

While the County has numerous programs and policies that support waste prevention and diversion of materials from internal operations, data is not readily available to fully quantify the diversion rate for internal operations. DGS reports that the County has approximately 1,100 properties, about 80% are owned by the County and 20% are leased by the County from others. The duration of the lease arrangements varies, with some leases having 10- to 15-year terms. Collection services are provided to

[7] An updated Five-Year Review Report of the CIWMP is anticipated to be completed in mid- 2017.

approximately 150 collection sites under the County Collection Contract. The current contractor periodically estimates the tonnage of recyclables, organics, and solid waste collected from the internal operations and reported collecting 1,644 tons of recyclables in 2014. The recycling and organics diversion capacity provided through this contract is approximately 25% based on service volumes. Adjusting this figure to estimate diversion tonnage collected, yields a diversion estimate of approximately 10% to 15% for the services provided through the County Collection Contract. The data also shows that 25% of the weekly service volume is recyclable materials, 2% is yard trimmings, and 2% is food waste. The service information shows that 29 locations do not have recycling service and that food scraps collection is very limited with only 3 sites using the service. Collection of yard trimmings and other materials that occurs on an on-call or temporary basis is not reflected in these figures as data is not readily available.

Some departments make arrangements for hauling services separate from the County Collection Contract or may self-haul materials to processing facilities or landfills. For leased properties, the lessor arranges hauling services. For these situations, the County does not have data on quantities of materials diverted or disposed.

In addition to the diversion programs provided under the County Collection Contract, other County programs and policies result in diversion. For example, DPW Roads recycled 13,753 tons of materials in 2015, 97% of which was inert materials (i.e., sand, road grindings, concrete) and the remainder was wood chips, tires, metals, and appliances. DPC receives tonnage data for the County contract for collection of batteries, bulbs, and ballasts for recycling, which shows 14 tons were collected in 2015. DGS manages construction contract for County facilities and reports for 2015 that 824 tons were diverted from the Las Colinas Detention and Re-entry Facility and 78 tons from Alpine Library. In addition, DPC reports that 1,050 tons of confidential documents were collected in 2015 for shredding and recycling. In the last year, contracts for landscape maintenance of County facilities included requirements for landscapers to divert yard trimmings and to report on volumes recycled. Approximately 280 tons of green clippings are estimated to be mulched on-site at County parks in 2016, with an additional 40 tons estimated to be hauled off-site for recycling by EDCO in 2016. DPR also has a recycling program for some of the County parks and reports 40 tons of diversion in 2015. Lastly, the Fire Authority's dying and diseased trees program resulted in removal and diversion of 420 trees in 2015. In some cases, the trees were chipped and ground on-site and used on-site as mulch material. In other cases, trees are diverted through off-site mulching, composting, and biomass use.

As part of the Round 1 internal stakeholder process, 40 departments completed a diversion questionnaire providing information on waste prevention, source reduction, and recycling practices of their department. Results are presented in Attachment D.

3.6 Demographic Information

Demographic data was compiled from San Diego Association of Governments (SANDAG) for the unincorporated areas. Figure 3-7 highlights population, housing, and job data. Detailed information is presented in Attachment L.

Figure 3-7: Population, Housing, and Job Data for Unincorporated Areas

Category	Highlights
Population	• 504,330 in 2015 • 24% projected growth by 2040
Housing	• 173,246 units in 2015 • 78% single-family, 14% multi-family units, 7% mobile homes
Civilian Jobs	• 116,238 civilian jobs in 2012 • 30% projected increase by 2040 • 30% are government jobs

Upon review of demographic data, key factors were identified that will have an impact on the County's strategies for achievement of its Diversion Targets. Figure 3-8 summarizes these observations. These changing demographic factors will not impact the Near-Term program and policy recommendations, but may influence the Mid-Term and Long-Term recommendations.

Figure 3-8: Demographic Considerations for Future Programs and Policies

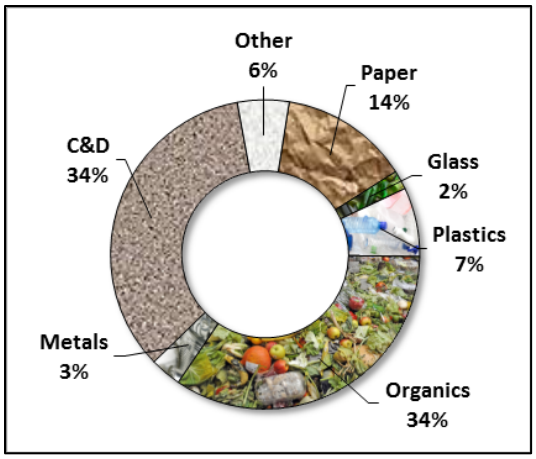
Demographic Factor	Observation	Takeaway for Future Diversion Programs and Policies
Age of Population	27% of the population is below 20 years of age	• School outreach and programs • Outreach through social media
Age of Population	52% of the population is between 20 and 60 years of age	• Workplace outreach and participation • Partnerships with business organizations and chambers of commerce
Ethnicity of Population	Significant increase in the proportion of Hispanics over time	• Outreach in other languages, particularly in Spanish
Dwellings and Land Use	• Single-family is largest dwelling type • Residential land use will see a large gain	• Emphasis on service, cost, and convenience of recycling and diversion programs for single-family customers
Jobs	Government, professional and business services to see high growth followed by education and healthcare	• Programs and outreach to government, businesses, and professional organizations • Programs for medical waste collection • Programs for schools, universities, medical facilities

3.7 Waste Characterization Information

Examining the types and quantities of materials disposed in the landfill is an essential step in understanding current conditions. The data is used to identify target areas for improvements to current programs and for implementation of future programs and policies. Due to the considerable cost, the County has not conducted its own assessment of the waste characterization of solid waste disposed by the unincorporated areas or through internal County operations. In the absence of County-specific data, the City of San Diego's waste characterization data was used. The County's actual waste characterization differs for several reasons: its demographics; differences in residential, commercial, C&D, and self-hauling sectors; scope and nature of diversion programs and policies; and, other factors. However, for the purposes of this study, the City of San Diego's characterization was assumed to be generally applicable.

The City of San Diego waste characterization study was conducted by Cascadia Consulting Group in 2012 and 2013. It involved characterization of more than 1,500 waste samples generated in the City of San Diego (herein referred to as the "City of San Diego Characterization Study"). Using the waste composition percentages from the City of San Diego Characterization Study for residential, commercial, and self-haul sectors, a waste characterization reflecting the average quantities of material disposed by the unincorporated areas from 2013 to 2015 was developed.[8] The sector profiles were used to compile an overall waste characterization for all of the unincorporated area tonnage disposed.

Figure 3-9: Overall Characterization of Waste Disposed by Unincorporated Areas

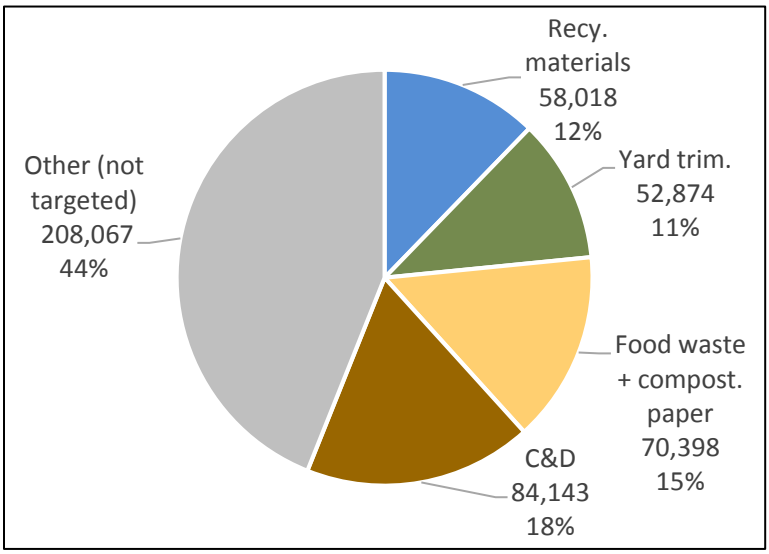


Attachment M provides a detailed waste characterization breakout for the County overall as well as residential, commercial, and self-haul characterizations. Using the waste characterization data, the volume of materials disposed were calculated in seven materials classes, which are presented in Figure 3-9.

The top ten most prevalent material types, which account for 55% of the solid waste disposed, include food; leaves and grass; palms, succulents, and coral trees; compostable/soiled paper; other wood waste; uncoated corrugated cardboard; carpet and carpet padding; remainder/composite C&D; prunings and trimmings; and textiles (listed in order based on quantities from highest to lowest). Of these top ten materials types disposed, the strategic planning process targeted all of these materials for 75% Diversion except for three material types that are not currently readily recoverable including: palm, succulent, and coral trees; other wood waste (includes treated wood); and remainder/composite C&D. To achieve Zero Waste, these materials will need to be addressed.

[8] Waste characterization data was not compiled for the military waste stream because separate disposal tonnage data was not readily available for Camp Pendleton.

Figure 3-10: Target Materials for Diversion, Annual Overall Tons Disposed



The waste characterization data was also used to calculate the tonnages of four material categories targeted for diversion to reach 75% Diversion. These materials included: 1) traditional recyclable materials that are accepted by recyclables processing facilities and through hauler collection programs; 2) yard trimmings; 3) food scraps; and, 4) select types of C&D materials that are commonly recovered at C&D processing facilities. Figure 3-10 shows that over 50% of the materials disposed fall into these categories. These four material categories are key focus areas for reaching 75% Diversion. Detailed information is provided in Attachment M.

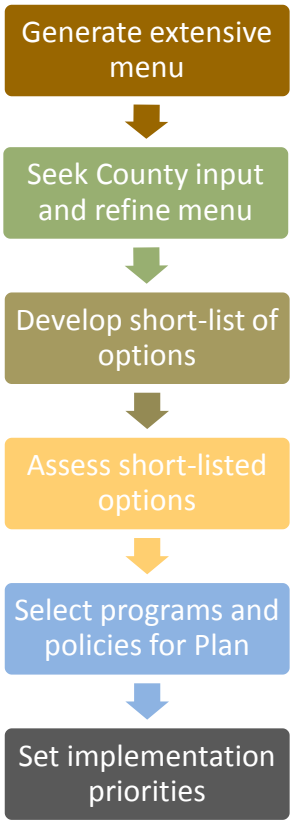
SECTION 4: PROGRAM AND POLICY ANALYSIS

The strategic planning process involved a robust program and policy analysis that included identification of program and policy options, preliminary assessment of options and short-listing, and then extensive analysis of costs, diversion potential, cost per diverted ton, staffing needs, greenhouse gas (GHG) emissions reductions, and job creation potential. The steps of the process are presented in Figure 4-1. The process was followed separately for consideration of programs and policies for the unincorporated areas and for the internal operations. This Section describes the process, identifies key assumptions made in the analysis, and presents the results. Attachments N and O present the menu of approximately 150 program and policy options for the unincorporated areas and approximately 85 options for the internal operations.

4.1 Extensive Menu of Program and Policy Options

For the unincorporated areas, a menu of options that included approximately 150 programs and policies was developed. To develop the menu, the 100 programs and policies listed in "*EPA's Managing and Transforming Waste Streams: A Tool for Communities*" was used as a starting point and expanded to include options that built off existing County programs as well as new programs and policies identified by the County and its consultant .[9] After completing Round 1 of the stakeholder input process and receiving input from County staff, additional programs/policies were added and program/policy descriptions were revised to better reflect local conditions and diversion opportunities supported by the public and industry stakeholders.

Figure 4-1: Strategic Planning Process



The completed menu includes and identifies programs that address key types of generators and a wide range of material types. The options address all aspects of the Zero Waste framework including waste reduction, reuse and repair, recycling, composting, and education. For each program/policy, numerous characteristics are identified to assist in prioritizing the menu options. The EPA's program characteristics served as a starting point and were augmented, resulting in nearly 50 characteristics that can be used to sort and prioritize options. Characteristics included target sectors, relative costs, relative diversion potential, potential for community support, staff knowledge, program category, and more. Attachment N provides the menu of options for the unincorporated areas. It includes a brief description of each program, as well as the sectors served and materials targeted.

For the internal operations, a list of potential program and policy options was prepared based on input received from staff during Round 1 of the stakeholder input process, which involved several internal stakeholder meetings, and from department responses to a diversion program questionnaire. This menu includes approximately 85 program and policy suggestions and is presented in Attachment O.

[9] https://www.epa.gov/transforming-waste-tool

4.2 Short Listing of Options

A detailed analysis of the full menu of program and policy options was not practical. For this reason, a short-listing of programs and policy options was necessary to narrow the number of options that will be further analyzed. A preliminary short-list of programs/policies was developed separately for the unincorporated areas and the internal operations, with a focus on identifying programs to reach 75% Diversion. The short-lists include logical priorities based on the inventory of current collection and diversion programs, relatively high diversion potential, reasonable ease and practicality of implementation for staff, and overall community and political acceptability. The two short-lists were presented to stakeholders during the Round 2 stakeholder input process. Attachment E includes the short-listed options presented during the public and internal stakeholder process (with items suggested by stakeholders in Round 1 presented in blue font). Generally, stakeholders were supportive of the short-listed options; therefore, only minimal changes were made to the list of options.

The short-listed programs are presented in Figures 4-2 and 4-3 (at the end of this Section) for the unincorporated areas and internal operations. Brief program descriptions are included in Attachment P.

4.3 Analysis of Short-Listed Options

For each of the short-listed program and policy options for the unincorporated areas, the analysis included estimation of the following: diversion potential; capital costs; one-time implementation and ongoing costs and County staffing needs; cost per diverted ton; GHG emissions reduction potential; and job creation potential.[10] For the internal operations, the analysis was concentrated on the cost and staffing analysis only. Diversion potential was not estimated for each program option, because the availability of baseline data was limited. Without diversion estimates for internal operations, the cost per diverted ton, GHG emissions reductions, and job creation potential calculations could not be performed.

Diversion Analysis

The incremental additional diversion (in tons per year) that may result from the implementation of each short-listed program and policy was estimated. In many cases, the diversion estimates were based on realistic estimates derived from current program performance, baseline tonnage and account data, and waste characterization data. In other cases, benchmarks were used from other communities, research studies, and industry knowledge to calculate the diversion estimates. The baseline tonnage data and waste characterization analysis presented in Section 3 and Attachment M were a foundation for much of the analysis. The diversion analysis examined the potential of new diversion efforts, and does not include diversion estimates for the current diversion programs.

The actual performance of the diversion programs will differ depending on the manner in which the programs are implemented, the level of participation from the residents and businesses in the programs, the ongoing commitment of the County to the programs, as well as external factors such as the economy, actual composition of the waste stream, growth in the residential sector and changes in demographic conditions, number and types of new businesses, product design and packaging, collection and processing technology, changes in federal and State legislation and regulations, and more. To address some of the variability, “low diversion” and “high diversion” estimates were provided to show a

[10] Job creation potential considers jobs created for the private sector associated with handling, processing, and end uses of recyclables, organics, C&D, and other materials diverted.

range of potential diversion results. The range reflects: (i) estimated variability in program results related to program participation, program maturation, and other factors; (ii) differences in diversion related to the level of effort dedicated by the County to the ongoing program operations; or (iii) a combination of both factors.

Diversion potential was not estimated for internal operations, because baseline data is limited.

Cost and Staffing Analysis

The cost estimates presented in the Strategic Plan provide a reasonable basis for understanding the potential cost impacts and how costs between programs compare to one another; however, it is important to recognize that the estimates are very rough in nature. They are based on readily available County-specific cost information, readily available benchmarks for other agencies, and industry knowledge. The staffing estimates forecast the level of effort the County will need to devote to program and policy planning and implementation, and ongoing management and monitoring. It may be that existing staff can take on some of new diversion programs and policies with additional staff needed for full implementation of the recommended options.

Unincorporated Program and Policy Costs and Staffing

The cost and staffing analysis for the short-listed programs for the unincorporated areas is presented in Figure 4-2 (at the end of this Section). It provides the County's annual cost, annual costs of other parties, total estimated annual costs, and the cost-per-diverted ton (cost-benefit) for each of the programs along with the diversion potential. Figure 4-2 also presents estimated staffing needs for the County to plan, implement, and manage the programs and policies. The programs are listed from those with the highest to lowest estimated annual diversion. Two programs – "Enhance zoning ordinance to support organics processing" (Program 1) and "Supporting organics facility development" (Program 2) – do not have diversion or cost-per-diverted ton estimates because tonnage was not assigned to these programs. The diverted organics tonnage is included in the collection program line items to avoid double counting.

One-time implementation costs, which are annualized and added to the annual ongoing costs, include, but are not limited to, the following:

- County costs for staff time and employee benefits to plan and implement programs except in cases where existing staff are anticipated to be able to take on the additional efforts;
- Consultant support in the planning and implementing phase for: (i) establishing a new HHW facility in North County; (ii) enhance zoning ordinance to support organics processing; (iii) supporting large-scale organics processing facility development, if warranted; (iv) modifying the non-exclusive franchise system and SWMAs;
- Cost incurred by other parties for equipment such as carts and bins for expanded diversion services; small-scale on-site composting systems for organics; and education and outreach materials for program implementation; and,

Ongoing annual costs include, but are not limited to, the following:

- County costs for staff time, technical assistance contractors, printing and distributing education and outreach materials, and procuring a contractor for operation of the new HHW programs;
- Grant funding that is planned for the County to disperse to support programs;
- Costs incurred by other parties for ongoing program efforts;

- Estimated costs for businesses to separate food for donation and/or composting purposes;
- Hauler costs for collection and processing of additional tonnage diverted as well as consideration of avoided solid waste collection and disposal costs; and,
- Education and outreach costs.

In understanding the cost estimates, it is also important to recognize what types of costs are not included. The following highlights key assumptions:

- HHW site acquisition and development costs, as the estimate assumes the County will partner with industry for a site that can be used at no or little cost (similar to current arrangements for its HHW facility in Ramona); if actual site costs are significant, the County can provide additional mobile HHW drop-off events instead of a permanent site (Program 20);
- Costs to implement new funding methods presented in the funding strategy in Section 7;
- Costs related to compliance with the California Environmental Quality Act (CEQA) for any programs or projects that must comply with CEQA review with the exception that costs are included for CEQA review for zoning ordinance changes to support organics processing;
- Organics processing facility development costs by private companies; however, these costs are effectively reflected in per-ton organics processing fees (gate rates) that are included in ongoing cost estimates;
- Potential costs for a future food donation program, which, if selected for implementation, would be covered by the County's Food System Initiative;
- In-kind services that result in no cost to programs (e.g., County staff time that may be performed by employees at no additional cost);
- Costs for current diversion programs and current staff;
- Costs for businesses and farms to manage on-site composting programs if the level of effort has a material impact;
- Additional staff time and costs for businesses, schools, and multi-family premises and C&D contractors that may be incurred to separate recyclables and organics; although, such costs may be offset by reductions in solid waste collection costs; and,
- Savings customers may realize if they reduce their solid waste service levels as a result of their diversion efforts.

Internal Operations Program and Policy Costs and Staffing

For the internal operations cost analysis, HF&H prepared an initial estimate of one-time and ongoing costs for the recommend programs and policies (which are in addition to current costs). The County then reviewed and revised the estimated costs to more closely align with the manner in which the County conducts its internal operations. Figure 4-3 presents a summary of estimated one-time staffing, ongoing annual staffing, one-time costs, and ongoing annual costs for the short-listed programs. Additional detail is provided in Attachment Q.

In estimating staffing and costs for the internal operations programs and policies, one-time implementation costs include, but are not limited to, the following:

- County costs for staff time and employee benefits to plan and implement programs;
- Consultant support in the planning and implementing phase for three programs: (i) feasibility study for partnering with Sherriff's inmate re-entry services to consider training program for

repair; (ii) expanding the recycled products purchasing policy to an EP3 policy; and (iii) evaluating opportunities for food donation from County cafeterias and plan development;
- One-time equipment costs for food storage and collection containers and on-site food waste composting system(s).

Ongoing annual costs include, but are not limited to, the following:

- County costs for staff time and employee benefits for ongoing program support;
- Consultant costs for food waste prevention and social/behavior change marketing programs;
- Increased janitorial staff time for additional recycling program support and cafeteria staff time at leased sites for food donation and food waste collection programs, which would be incurred after the County amends, renews, or executes new service contracts and/or leases to incorporate the diversion program requirements;
- Hauler costs for collection and processing of additional tonnage diverted as well as consideration of avoided solid waste collection and disposal costs; and,
- Printing of education and outreach costs.

In understanding the cost and staffing estimates, it is also important to recognize what types of costs and staffing considerations are not included. The following highlights key assumptions:

- Reductions in costs that may be realized as programs mature over time;
- Increased costs, if any, for purchasing materials in compliance with the EP3 policy;
- In-kind services that result in no cost to programs (e.g., County staff time that may be performed by employees at no additional cost);
- Costs for current diversion programs and current staff;
- Extra staff for separation of recyclables, yard trimmings, and/or C&D materials for diversion programs with the exception of staff time estimated for food donation and food waste collection programs;
- Increased costs, if any, related to increasing C&D diversion requirements of Policy G-15 (Design Standards for County facilities and Property) particularly related to C&D diversion from renovation projects (which is currently not required) and prioritized use of recyclable materials in road construction projects;
- Extra costs, if any, for leased facilities to comply with diversion requirements and reporting, although the lessors may reduce their collection costs through diversion; and,
- Savings the County may realize if they reduce their solid waste service levels as a result of recyclables and yard trimmings diversion efforts.

GHG Emissions Reductions

The net GHG emissions reductions for the unincorporated areas' diversion efforts are estimated to be 211,873 MTCO2E annually for the 75% Diversion and 515,925 MTCO2E for Zero Waste. The estimates reflect the impacts of new diversion efforts and do not include estimates of GHG emissions reductions for the current diversion programs in the unincorporated area. Actual GHG emissions reductions from the 75% and Zero Waste diversion programs and policies will vary annually depending on several factors such as the timing and extent to which the County implements diversion programs and policies; level of participation in and actual results of programs and policies; changing characterization of materials; technology changes impacting materials generated, processing, and diversion potential; regulatory changes; demographic and economic conditions; and accuracy of the GHG models used in the analysis.

For the 75% Diversion Target, potential GHG emissions reductions were calculated for each unincorporated area program and policy based on the high diversion estimates and are presented in Figure 4-2 (at the end of this Section). A hybrid calculation methodology was developed that relied on both EPA's Waste Reduction Model (WARM) for GHG calculations for non-organic materials and a California Air Resources Board (CARB) methodology for estimating GHG emissions reductions from the diversion of organic materials from landfills to compost facilities[11].

A similar method was used to estimate GHG emissions reductions for Zero Waste, with a key differences in that the calculations were performed for the overall Zero Waste diversion estimate (not separately for specific programs and policies).

Job Creation Potential

Processing recyclables, organics, C&D, and HHW requires more labor on a per-ton basis than landfilling of these materials. As a result, the County's diversion of the materials to processing facilities will result in a net increase in the number of jobs at materials management facilities. To estimate the job creation potential for each of the unincorporated area programs and policies, benchmarks from the EPA and the Institute for Local Self Reliance were used. Figure 4-2 presents the net job creation estimates, which account for new job creation less job reduction at the landfills due to additional diversion above the current diversion level. In total, approximately 130 jobs may be created if the 75% Diversion Target is achieved and the processing infrastructure requires the staffing levels reflected in the benchmark estimates. Fewer jobs may result if actual diversion is lower or facilities process materials more efficiently than reflected in the benchmark job statistics.

As part of the cost analysis, the County staff time for implementation and ongoing program management was estimated and is presented as full-time equivalents (FTEs) in Figure 4-2 for the unincorporated area programs and Figure 4-4 for internal operations. The staff time is in addition to the current staff time that supports existing diversion programs and policies.

4.4 Evaluation Summary

Unincorporated Area Programs and Policies

The high-end estimate shows that the short-listed programs are projected to reach just above the target diversion of 164,000 tons per year (as described in Section 1.4) for 75% Diversion. If programs perform at the low end of the diversion estimates for any reason, the 75% Diversion Target will not be met and additional effort will need to be put into the programs and/or additional programs will need to be implemented. The five programs with the highest diversion estimates are collection programs focusing on recycling, yard trimmings, food scraps, and C&D and the program that proposes modification of the C&D ordinance project threshold.

The cost estimate projects annual costs for the County's efforts to be $1.8 to $3.5 million for the new programs and policies, which are in addition to the County's costs and staffing levels for current diversion programs and policies. This estimate annualizes the one-time implementation costs over three to five years. Some of the programs will be phased in, which will allow for up front coverage of the annualized costs. County staffing estimates range from 4.0 to 10.3 full-time equivalents. Actual costs

[11] http://www.arb.ca.gov/cc/waste/cerffinal.pdf

and staffing needs will vary depending on the extent to which the County's existing staff can absorb program efforts into their current job duties. Furthermore, actual costs and staffing needs will vary depending on the level of effort and the final scope of the program(s). As programs mature, ongoing program costs may decrease, creating opportunities to focus on new diversion efforts. Section 7 presents a strategy for program funding.

A significant portion of the other costs estimated will be borne by the non-exclusive haulers and recovered through the rates the haulers charge residential and commercial businesses. Other costs will be incurred by businesses and will be part of their cost of doing business. Increased costs to residents and businesses may be offset partially or fully by reductions in their solid waste collection costs if their diversion efforts allow them to reduce their solid waste service level.

The cost-per-diverted ton ranges from $0 to $290. Generally, these programs can be grouped into two distinct categories (with a few outliers): 1) programs under $100 per ton; and, 2) programs between $100 and $300 per ton. The programs that are less than $100 per-ton diverted are the collection-focused programs. In the $100 to $300 per-ton range are education programs including technical assistance programs, social marketing campaigns, and food prevention programs.

The GHG emissions reductions analysis estimates a net reduction of 211,873 $MTCO_2E$ through implementation of the short-listed programs for the unincorporated area. This GHG benefit is based on achievement of the 75% Diversion Target. The job analysis for the 75% Diversion Target forecasts that as many as 130 jobs may be created through managing and processing the diverted recyclables, food, yard trimmings, C&D, and HHW.

Figure 4-2 provides a summary of key analytics calculated for each program for the unincorporated areas. The relationship between estimated diversion and annualized program and policy cost per ton is illustrated in Figure 4-3. As described above, actual results will be different than estimated. Examples of factors that will impact the final outcome include, but are not limited to the manner in which programs are implemented, the level of participation from the residents and businesses in the programs, the ongoing commitment to the programs, as well as external factors such as the economy, actual composition of the waste stream, and more.

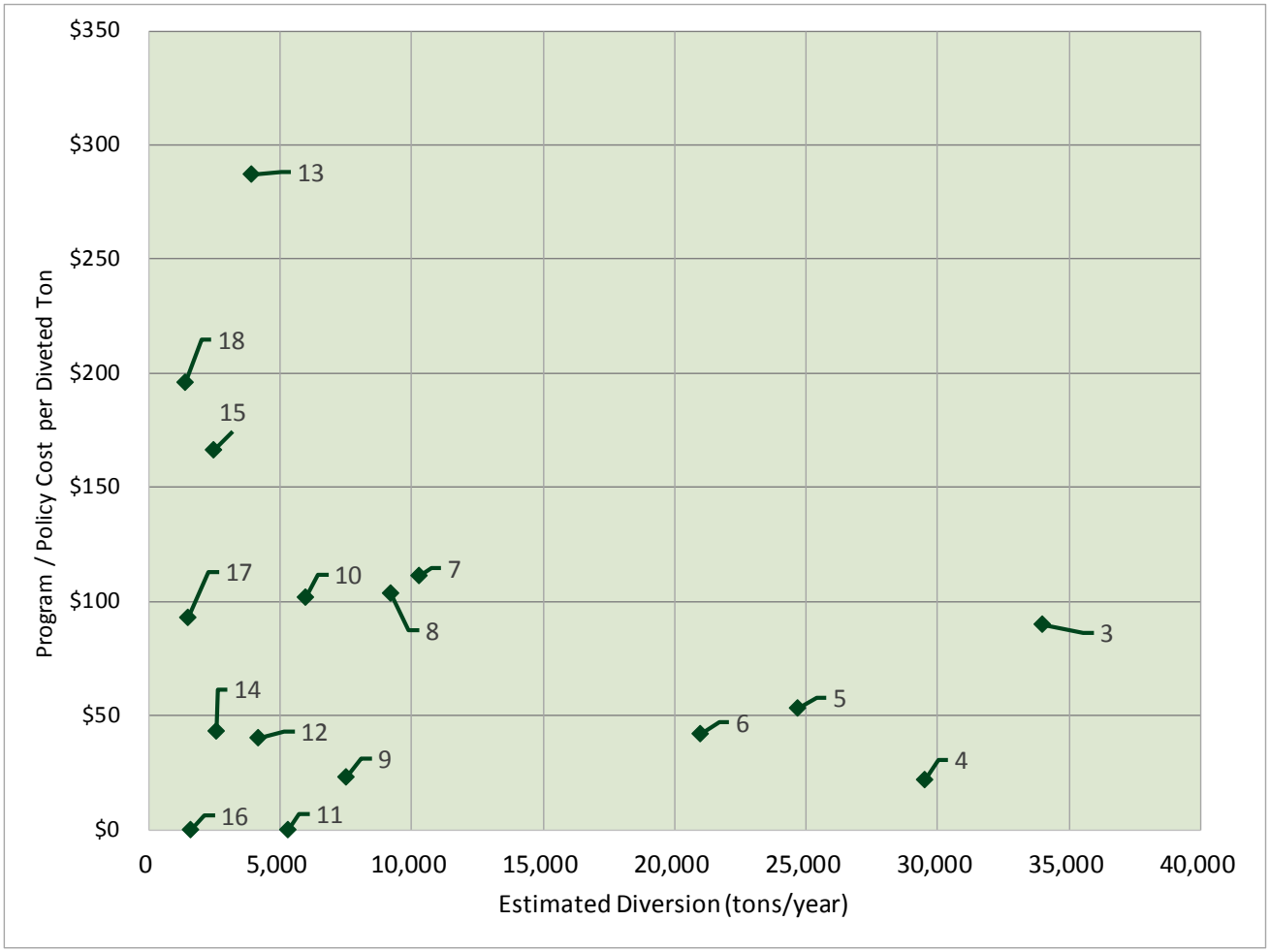
Internal Operations Programs and Policies

Figure 4-4 presents a summary of the estimated staff time and annual costs for implementation of the short-listed programs and policies for internal operations. It shows that the estimated staffing level is nearly three full-time equivalent staff during the one-time implementation period. This time may be spread out over the first two- or three-years of the Near-Term Phase. On an ongoing basis, approximately 2.8 to 4.9 full-time equivalent staff are anticipated. Attachment Q provides additional details on the staffing needs for the key departments involved in the implementation of the internal programs and policies. Other costs are included when contractors and/or consultants are anticipated to be involved. Actual costs and staffing will vary depending on the extent to which the County's existing staff can integrate program efforts into their current job duties, as well as the level of effort and the final scope of the programs and policies.

Figure 4-2: Summary Analysis of Programs and Policies for the Unincorporated Areas

		Diversion Estimate (tons/year)		Estimated Cost / Diverted Ton		Estimated Annual Cost - County Only		Estimated Annual Cost - Other Parties		Estimated Annual Cost - Total		FTE County Staff	FTE County Staff	GHG Estimate ($MTCO_2E$)	Estimated Job Creation (FTE)
	Program/Policy	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	High	High
1	Enhance zoning ordinance to support organics processing (a)	---	---	---	---	$94,000	$225,000	$0	$0	$94,000	$225,000	0.12	0.21	---	---
2	Support organics processing facility development (a)	---	---	---	---	$36,000	$118,000	$0	$0	$36,000	$118,000	0.14	0.36	---	---
3	Implement commercial food scraps collection (b)	22,000	34,000	$90	$90	$28,000	$38,000	$1,901,000	$2,735,000	$1,929,000	$2,773,000	0.12	0.17	(18,579)	29.8
4	Regulate C&D haulers with minimum diversion requirements	16,700	29,500	$22	$22	$9,000	$18,000	$354,000	$621,000	$363,000	$639,000	0.08	0.16	(33,641)	24.9
5	Enhance single-family collection with consistent hauler requirements	12,400	24,700	$64	$53	$86,000	$143,000	$712,000	$1,179,000	$798,000	$1,322,000	0.00	0.00	(29,318)	21.3
6	Enhance commercial collection with minimum recycling level requirements	19,000	21,000	$36	$42	$16,000	$25,000	$662,000	$843,000	$678,000	$868,000	0.12	0.17	(46,802)	17.8
7	Enhance C&D diversion with ordinance amendment to lower project threshold	5,600	10,300	$86	$111	$173,000	$581,000	$306,000	$566,000	$479,000	$1,147,000	1.34	4.50	(11,746)	8.7
8	Expand social/behavior change marketing program	7,400	9,200	$103	$104	$300,000	$418,000	$465,000	$535,000	$765,000	$953,000	0.08	0.23	(12,312)	7.9
9	Support on-site community/commercial/farm composting	1,300	7,500	$100	$23	$126,000	$341,000	$7,000	($169,000)	$133,000	$172,000	0.63	1.85	(4,515)	(1.2)
10	Expand technical assistance for multi-family, businesses, schools	1,500	6,000	$184	$102	$229,000	$438,000	$47,000	$174,000	$276,000	$612,000	0.82	1.63	(11,429)	5.1
11	Support efforts for reuse of textiles and State EPR for mattresses and carpet/padding	2,400	5,300	$0	$0	$0	$0	$0	$0	$0	$0	0.00	0.00	(6,924)	4.5
12	Collect food waste from single-family premises (b)	1,200	4,200	$110	$40	$6,000	$11,000	$127,000	$174,000	$133,000	$185,000	0.05	0.10	(2,515)	3.6
13	Enhance hauler performance standards, including minimum diversion goals	2,600	3,900	$272	$287	$12,000	$25,000	$698,000	$1,100,000	$710,000	$1,125,000	0.11	0.21	(4,605)	3.4
14	Improve diversion, tracking and oversight of haulers	1,300	2,600	$31	$43	$35,000	$101,000	$6,000	$11,000	$41,000	$112,000	0.11	0.21	(3,846)	2.3
15	Promote food waste prevention	1,700	2,500	$182	$166	$404,000	$553,000	($94,000)	($138,000)	$310,000	$415,000	0.13	0.25	(12,954)	(0.4)
16	Support food donation through County Food System Initiative (c)	1,000	1,600	---	---	---	---	---	---	---	---	---	---	(7,620)	(0.2)
17	Establish additional hauler-provided drop-off facilities	400	1,500	$64	$93	$0	$0	$24,000	$140,000	$24,000	$140,000	0.00	0.00	(3,343)	1.3
18	Provide regular education on County and State recycling requirements	700	1,400	$194	$196	$98,000	$199,000	$42,000	$81,000	$140,000	$280,000	0.02	0.06	(1,724)	1.2
19	Collaborate with industry to establish an HHW facility in North County unincorporated	---	---	---	---	$106,000	$259,000	$0	$0	$106,000	$259,000	0.10	0.23	---	0.1
20	Provide additional HHW mobile drop-off events	---	---	---	---	$39,000	$124,000	$0	$0	$39,000	$124,000	0.02	0.02	---	0.1
	Total	**97,200**	**165,200**	**$73**	**$69**	**$1,797,000**	**$3,617,000**	**$5,257,000**	**$7,852,000**	**$7,054,000**	**$11,469,000**	**3.98**	**10.36**	**(211,873)**	**130.3**
	Annual Disposal Tonnage to be Diverted to Reach 75% (c)	**164,000**	**164,000**												
	Surplus in Diversion Estimated (Shortfall in Diversion Estimate)	**(66,800)**	**1,200**												

Figure 4-3: Diversion and Cost per Diverted Ton for Near-Term Unincorporated Programs and Policies



Notes: Each data point represents a recommended program or policy with numbering that correlates to Figure 4-2. Cost and diversion estimates shown here are the 'high' estimates presented in Figure 4-2. Programs 1, 2, 19, and 20 are not included because diversion is not attributed to these programs.

Figure 4-4: Summary Analysis of Programs and Policies for Internal Operations

	Program/Policy	One-Time Staffing (FTE)	Ongoing Staffing (FTE/Yr)	One-Time Staff Costs ($)	One-Time Other Costs ($)	Total One-Time Costs ($)	Ongoing Staff Costs ($/Yr)	Ongoing Other Costs ($/Yr)	Total Ongoing Costs ($/Yr)
2017 / 2018 Timeframe									
1	Establish High Diversion/Zero Waste policy and organization (a)	0.23	0.37	$25,173	$0	$25,173	$40,404	$0	$40,404
2	Establish measurement and reporting process and baseline	0.15	0.14	$26,654	$0	$26,654	$15,231	$0	$15,231
3	Increase use of County's existing reutilization process	0.11	0.06	$12,058	$0	$12,058	$6,769	$0	$6,769
4	Expand the B-67 Recycled Products Purchasing Policy into an Environmentally Preferable Purchasing Policy (EP3)	0.19	0.08	$21,154	$50,000	$71,154	$8,462	$0	$8,462
5	Incorporate Zero Waste objectives into County procurements	0.04	0.15	$4,654	$0	$4,654	$16,923	$0	$16,923
6	Enhance diversion requirements in waste collection contracts	0.08	0.10	$9,138	$0	$9,138	$10,662	$0	$10,662
7	Ensure optimal recycling at facilities owned and/or leased by County	0.04	0.19	$4,442	$0	$4,442	$20,731	$4,912	$25,643
8	Increase diversion of yard/wood /food waste generated by County	0.43	1.97	$47,808	$106,800	$154,608	$216,999	$84,930	$301,929
9	Provide waste reduction and recycling training to employees	0.21	0.11	$23,269	$0	$23,269	$12,058	$3,000	$15,058
10	Require regular training of janitorial staff including contractors	0.03	0.02	$3,385	$0	$3,385	$2,538	$16,800	$19,338
Subtotal		**1.53**	**3.19**	**$177,735**	**$156,800**	**$334,535**	**$350,776**	**$109,642**	**$460,418**
2019 / 2020 Timeframe									
11	Revise G-15 Design Standards to include renovations of facilities	0.05	0.04	$5,394	$0	$5,394	$4,654	$0	$4,654
12	Prioritize use of recycled materials in road construction	0.24	0.07	$26,865	$0	$26,865	$8,038	$0	$8,038
13	Partner with non-profit organization to provide reuse collections or drop-off boxes at County facilities for employees	0.18	0.11	$20,096	$0	$20,096	$12,481	$0	$12,481
14	Partner with Sheriff's Inmate Re-entry Services to consider training program on repair	0.10	0.00	$11,423	$50,000	$61,423	$0	$0	$0
15	Create capability for collection of used pallets from County facilities (b)	---	---	---	---	---	---	---	---
16	Require recycling and composting for County-sponsored events (b)	---	---	---	---	---	---	---	---
17	Support food waste reduction/food donation at County operations	0.50	1.28	$54,577	$130,000	$184,577	$141,281	$56,368	$197,649
18	Increase use of locally-produced mulch/compost at County facilities	0.12	0.05	$13,115	$0	$13,115	$5,712	($13,000)	($7,288)
19	Support waste reduction and recycling by department through technical assistance	0.03	0.14	$3,808	$0	$3,808	$15,442	$0	$15,442
20	Consider expanding partnerships with artists to create displays from repurposed material (b)	---	---	---	---	---	---	---	---
Subtotal		**1.23**	**1.71**	**$135,279**	**$180,000**	**$315,279**	**$187,608**	**$43,368**	**$230,976**
Total		**2.76**	**4.89**	**$313,013**	**$336,800**	**$649,813**	**$538,384**	**$153,010**	**$691,394**

(a) Establishment of a High Diversion/Zero Waste policy (Program 1) is anticipated to occur after a baseline of current conditions is developed (Program 2).
(b) Staff time and costs were not estimated for this program.

SECTION 5: RECOMMENDATIONS FOR UNINCORPORATED AREAS

This Section presents the program and policy recommendations for the unincorporated county areas to achieve the County's Diversion Targets. The recommended programs are organized into three implementation phases: Near-Term (2017 – 2020), Mid-Term (2021 – 2030), and Long-Term (2031 – 2040) Phases.

5.1 Near-Term Programs (2017 – 2020)

5.1.1 Recommended Programs

Based on the analysis presented in Section 4, HF&H recommends that the County implement all short-listed programs in the Near-Term Phase. To achieve 75% Diversion, these programs, which are listed in Figure 5-1, must be implemented quickly and effectively, along with continued support and enhancement of current programs. Implementation of the supplemental programs listed in Figure 5-2, several of which were supported by the stakeholders, will provide a contingency if the diversion from the 20 programs and policies presented in Figure 5-1 does not result in achievement of 75% Diversion. While a separate cost-benefit analysis was not prepared for these programs, the costs associated with these supplemental programs are anticipated to be minimal.

The program and policy analysis presented in Section 4 summarized County costs for implementation and ongoing support of the recommended programs (see Figure 4-2). Based on HF&H's understanding of the County's current operations, HF&H believes that some of the recommended programs may potentially be accomplished within the County's existing budget. In Figure 5-1, these programs are identified. Given that programs will be led by various departments (including DPW, DGS, DPC, and DEH), and each department has different funding sources and funding constraints as well as other strategic initiatives, the County will need to make a final determination on what can be accomplished with its existing resources as each program is implemented. Section 7 presents a funding strategy for generating additional funds to support implementation and ongoing program efforts.

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Figure 5-1: Recommended Near-Term Priorities (2017 – 2020) for Unincorporated Areas

	Program/Policy	Estimated Diversion (d) (tons/year)	2017 / 2018 Priorities	2019 / 2020 Priorities	Potentially Accomplish within Existing Budget
1	Enhance zoning ordinance to support organics processing (a)	---	✓		
2	Support organics processing facility development (a)	---	✓		
3	Implement commercial food scraps collection (b)	34,000	✓		
4	Regulate C&D haulers with minimum diversion requirements	29,500	✓		✓
5	Enhance single-family collection with consistent hauler requirements	24,700	✓		✓
6	Enhance commercial collection with minimum recycling level requirements	21,000	✓		✓
7	Enhance C&D diversion with ordinance amendment to lower project threshold	10,300	✓		
8	Expand social/behavior change marketing program	9,200		✓	
9	Support on-site community/commercial/farm composting	7,500	✓		
10	Expand technical assistance for multi-family, businesses, schools	6,000		✓	
11	Support efforts for reuse of textiles and State Extended Producer Responsibility (EPR) for mattresses and carpet/padding	5,300		✓	✓
12	Collect food waste from single-family premises (b)	4,200	✓		
13	Enhance hauler performance standards, including minimum diversion goals	3,900	✓		✓
14	Improve diversion, tracking and oversight of haulers	2,600	✓		✓
15	Promote food waste prevention	2,500		✓	
16	Support food donation through County Food System Initiative (c)	1,600		✓	
17	Establish additional hauler-provided drop-off facilities	1,500	✓		✓
18	Provide regular education on County and State recycling requirements	1,400		✓	✓
19	Collaborate with industry to establish an HHW facility in North County unincorporated area	---		✓	
20	Provide additional HHW mobile drop-off events	---	✓		
	Total	165,200			

(a) Diversion is not listed for "Enhance Zoning Ordinance" and "Support Organics Processing Facility Development" because the organics diversion is included in other programs.
(b) Food scraps collection implementation is dependent on availability of organics processing facilities; implement collection as soon as possible.
(c) Food donation diversion is dependent on implementation of the County's Food System Initiative. Staffing and costs will be covered by the Initiative, and are not in the High Diversion/Zero Waste Strategic Plan.
(d) Estimated diversion shows the high end of estimates provided in the High Diversion/Zero Waste Strategic Plan. Actual results may be less.

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Figure 5-2: Supplemental Near-Term Priorities (2017 – 2020) for Unincorporated Areas

	Program/Policy
21	Support animal manure collection and diversion (e.g., horse manure)
22	Partner to expand drop-off facility network. Possibilities include: (i) transfer station/landfills operators offering residents "diversion dump coupons"; or, (ii) non-profit or other organizations establishing locations to various materials
23	Continue periodic drop-off events for agricultural plastics with goal to create regularly scheduled events
24	Promote drop-off sites for materials covered by State product stewardship legislation/regulation (e.g., paint, mattresses, other)
25	Continue to support/expand regional campaign efforts and on-line resources (including consistent signage for recycling and reuse, repair, equipment rental opportunities, sharing sites, HHW drop-offs, and hard-to-handle materials) by working with other agencies and non-profit organizations (e.g., I Love a Clean San Diego, San Diego Repair and Reuse Network, Solana Center, and others)
26	Support programs to integrate trainings on plantings, pruning, grass cycling, yard trimming recycling, and on-site composting; offer incentives to attend training; partner with retailers to provide information
27	Create education program and engage and train others to educate the community (through volunteer network or partnerships with and/or funding efforts of community group(s) or local colleges)
28	Develop Zero Waste neighborhood leader program to promote best practices

Note: A cost and diversion analysis was not conducted for these programs.

5.1.2 Near-Term Implementation Overview

The County's Diversion Targets include two milestones: 75% Diversion by 2020 and Zero Waste by 2040. This implementation strategy focuses on achievement of the first milestone. As the analysis presented in Section 4 shows, the County has the potential of reaching 75% by 2020 if all the recommended programs are put in place and diversion results are on the high end of the diversion estimate. In order to meet 75% Diversion by 2020, the County will need to rapidly implement all program and policy recommendations and make a strong commitment to continue support and management of the current and new programs and policies.

If the Board of Supervisors' approves this Strategic Plan in early 2017, the County will have less than four years to achieve 75% Diversion (from 2017 to 2020). Several recommended programs require as much as one to two years of planning and implementation time; and, more time will be needed for organics processing facility design, permitting, and construction. In some cases, programs call for bringing on outside/contracted support or may necessitate hiring new County staff, both of which are processes that can add six months to the timeline. Lastly, the County may need to identify funding sources and build the program costs into its budgeting process. The timing of the budgeting process may delay the start of some program efforts until July 1, 2017, leaving 3.5 years to implement the programs and develop participation and success. Given these factors, reaching 75% by 2020 will require that immediate action and dedication of staff resources by all the departments involved in program and policy planning and implementation.

Sections 5.1.3 and 5.1.4 present an implementation strategy for the Near-Term programs, identifying 2017/2018 and 2019/2020 priorities, respectively. The 2017/2018 priorities are critical to setting up a foundation for the achievement of the 75% Diversion Target. The 2019/2020 priorities can then receive the focus of the County's staff and are essential to reaching 75% Diversion.

5.1.3 2017/2018 Priorities

Several of the recommended programs and policies can be grouped into three key areas of focus: (i) organics processing infrastructure and diversion programs; (ii) changes to the SWMAs to increase residential and commercial diversion and to manage C&D haulers; and, (iii) amendments to the C&D ordinance to expand the C&D recycling requirements to cover more C&D projects. The attention on these three areas must be immediate and intensive as they are critical to provide the infrastructure and framework that support implementation of most of the programs needed to reach the 75% Diversion.

Organics Processing and Diversion Programs (Programs 1, 2, 3, 9, 12, 13)

The recommended organics processing and diversion-related programs include:

- Enhance zoning ordinance to support organics processing (Program 1);
- Support development of large-scale facilities (Program 2);
- Implement commercial food scraps collection (Program 3);
- Support on-site community/commercial/farm composting projects (Program 9);
- Implement single-family food scraps collection (Program 12); and,
- Redirect yard trimmings to processing rather than use as landfill alternative daily cover (Program 13).

Organics diversion processing needs account for approximately 40% (64,000 tons per year) of the estimated diversion needed to reach 75%; and, an additional 37,000 tons per year of processed yard trimmings used as ADC need to be processed to support the 75% Diversion Target. The organics processing infrastructure in the County is very limited, with little or no in-County capacity available to accommodate composting or anaerobic digestion of additional yard trimmings, food scraps, and compostable paper. Without significantly more organics processing capacity, the achievement of 75% by 2020 is not realistic. In fact, the recommended organics collection programs (Programs 3 and 12) cannot be cost-effectively implemented until in-County processing capacity is available.

Not only is organics processing capacity needed to support implementation of the recommended programs/policies, but it is also necessary to comply with the following State legislation:

- AB 1826 (2014) – Requires businesses and multi-family premises to divert organic materials with some compliance requirements effective now and others ramping up through 2020;
- AB 1594 (2014) – Disallows recycling credit in 2020 for processed yard trimmings used as alternative daily cover at landfills;
- AB 876 (2015) – Requires each county or regional agency to identify, in its annual report to CalRecycle, commencing August 1, 2017, a 15-year estimate of organics processing generation, additional processing capacity needed to process this material, and identification of areas for new or expanded processing capacity for the unincorporated areas and cities within the county; and,
- SB 1383 (2016) – Requires State-wide reduction of organic disposal volumes by 50% by 2020 and 75% by 2025 and recovery of 20% of edible food by 2025.

The cities in San Diego County also have a growing demand for additional organics processing capacity to meet State requirements and their own diversion goals. With several cities and tribal governments within the county looking towards Zero Waste, including the cities of San Diego, Oceanside, and El Cajon, there will be significant need for and development of organics processing capacity. These regional

needs offer an opportunity for the County to work with one or more of the cities to support and encourage shared or regional infrastructure. Given the large geographic area of the County, having access to several facilities throughout San Diego County will reduce the transportation costs for organic materials. With a regional approach, a system of five to ten 70,000 to 100,000 ton-per-year facilities could be supported providing convenient access throughout San Diego County. The regional approach is more practical than the County supporting development of a single organics processing facility with a capacity of 100,000 tons per year (sized to meet the County's overall needs), that will require higher transportation costs to move all organics to the single location.

Given the County's organics processing needs and State requirements, supporting the development of organics processing capacity is critical. If the Board of Supervisors approves the Strategic Plan, efforts on this program would need to begin immediately to achieve the 75% Diversion Target by 2020. Successfully stimulating the development of large-scale organics processing facility(ies) will be essential and will take at least two or three years (if not longer) as the facility(ies) will require review under the California Environmental Quality Act (CEQA); design; permitting; and, construction. HF&H understands that there are infrastructure projects under consideration by both public and private entities within the San Diego County to develop and expand organics processing infrastructure. It is likely that one or more of these projects would benefit from additional economies of scale. If the County can engage cooperatively and provide support early in the development process for other facilities, it is possible that some capacity could become available sooner.

To initiate implementation of these programs, HF&H recommends quickly bringing on two consultants: one to assist in amending the zoning and permitting ordinances for organics processing facilities, and the other to assist with modification to the SWMAs and County ordinance to include changes to the non-exclusive franchise system and new hauler requirements.

Enhance Zoning Ordinance to Support Organics Processing (Program 1)

Both the California Legislature and CalRecycle recently took significant steps to enable the growth of small-scale and distributed composting operations as part of the State's goal to dramatically increase organic recycling by 2020. CalRecycle adopted regulations that reduced barriers to small-scale composting. Section 17855(a)(4) of Chapter 3.1 (Compostable Materials Handling Operations and Facilities Regulatory Requirements) of Division 7 of Title 14 of the California Code of Regulations now exempts the following activity from registration and permitting requirements: "Composting green material, agricultural material, food material, and vegetative food material, alone or in combination, is an excluded activity if the total amount of feedstock and compost on-site at any one time does not exceed 100 cubic yards and 750 square feet." This exemption applies regardless of whether the feedstock is generated on-site or obtained off-site.

HF&H recommends that the County review its zoning ordinance and permitting requirements and make modifications that will clarify and support the start-up of on-site community, commercial, and farm composting projects, as well as large-scale facilities. Amendments should focus on defining these different types of composting operations and clarifying conditions under which each type of composting operations can operate including specification of permitting, operating, and reporting requirements (as applicable) for such operations. A tiered-permitting approach should be considered for composting, particularly to consider allowing agricultural sites that pose low potential for impact, to accept organic materials to produce soil amendments. As part of this effort, the County could also potentially reduce the timeline for each large-scale organics processing facility by adopting a programmatic Environmental Impact Report (EIR) for composting and anaerobic digestion facilities within the unincorporated areas.

Support Organics Processing Facility Development (Program 2)

Large-scale organics processing facilities are required for implementation of residential and commercial food scraps collection (Programs 3 and 12) and to support increased yard trimmings collection program participation (Programs 4, 5, 7, 8, 10, 13, and 18), and for finding an alternative to the use of processed yard trimmings as ADC. HF&H recommends that the County take an active role in supporting development of organics processing infrastructure. HF&H recommends that the County include increased performance standards in the SWMAs for franchise haulers to achieve diversion targets for organic and other recyclable materials, including penalties of liquidated damages and default provisions for non-compliance. Adding additional performance standards specifically targeting organic materials is likely to stimulate infrastructure development for processing facilities as haulers will need processing capacity to comply with the SWMA requirements. This is similar to the expansion of the recyclables processing infrastructure that was stimulated in the region after the State passed AB 939 and the County later adopted recycling ordinances requiring separation of recyclables from waste and separate collection of recyclable materials.

As an alternative approach, or if the method above is not successful in providing the necessary infrastructure in a timely fashion, the County could consider bringing on a consultant to conduct an RFP process to secure long-term organics processing capacity at one or more locations at a guaranteed processing rate with the County's commitment to direct some or all of the organic materials collected by the non-exclusive haulers to the selected processing facility(ies); and, contract directly with owners/operators of the organic processing facilities. The County's commitment to deliver organic materials would support facility development, as the developers need this type of guarantee to secure bank financing. The RFP approach may include working cooperatively with other agencies in the County to develop regional facilities, again with a commitment to direct organic materials collected from the unincorporated area (and possibly incorporated cities) to the facilities.

To support organics processing capacity development, it is recommended that the County include requirements in the SWMAs for implementation of residential and commercial food scraps (Programs 3 and 12) (with some recognition that time may be required until processing capacity is available) and redirection of processed yard trimmings from landfill alternative daily cover to processing. Residential and commercial food scraps programs have been widely implemented in the San Francisco Bay Area, where organics processing infrastructure is already in place. Programs are supporting agency diversion goals as well as providing businesses with an organics collection program to comply with AB 1826. As more organics processing options have become available in Southern California, agencies are implementing food scraps collection programs. Examples in Southern California include the cities of San Diego, Chula Vista (pilot program), Huntington Park, Dana Point, Aliso Viejo, Englewood, and San Clemente.

Support On-Site Community/Commercial/Farm Composting Projects (Program 9)

The on-site community/business/farm composting program is estimated to account for 4.5% of the diversion needed to reach 75% and may play a larger role when reaching beyond 75% to Zero Waste. In addition to the diversion benefits, community composting acts as an "important community outreach and engagement tool with a strong compost education component for the public." (New York City Community Composting Report, 2014). Furthermore, the community compost programs keep materials local compared to the use of large-scale facilities, which often require long-distance transport of organic materials to the processing sites and compost products to end users. Community-based composting is

distinct from typical organics collection programs as these enterprise- and cooperative-based community composting projects offer customized solutions to small- and medium-sized generators.

The recommendation is to support the development of on-site composting projects working with food-based businesses, farms, schools, and community gardens. Revisions to the solid waste ordinance and SWMAs are recommended to specify that these parties and other parties supporting their efforts, in addition to non-exclusive haulers, have the right to collect and transport food scraps and yard trimmings. The County will need to clarify under what conditions other parties can transport organic materials, which may include defining the amount of materials that can be transported on a daily or weekly basis, the size of the composting operation receiving the organic materials, whether the compost will be used on-site or for non-commercial purposes, and/or other criteria.

Modifications to the Non-Exclusive Hauling System (Programs 3, 4, 5, 6, 12, 13, 14, and 17)

Eight recommended programs, shown in Figure 5-3, involve making changes to the requirements of the SWMAs, and account for 73% of the diversion needed to reach the 75% Diversion Target (including some of the organics diversion discussed above). These programs (Programs 3, 4, 5, 6, 12, 13, 14, and 17) have objectives of boosting residential and commercial diversion through the collection services provided by the non-exclusive haulers by adding new service requirements, establishing minimum diversion requirements, expanding education obligations, augmenting reporting requirements, and including additional performance standards. One program (Program 4) involves managing C&D haulers through the non-exclusive hauling system.

Figure 5-3: Recommended Programs Reliant on SWMA Changes

		Diversion Estimate (tons/year)	
	Program/Policy	**Low**	**High**
3	Commercial food scraps collection	22,000	34,000
4	Regulate C&D haulers with minimum diversion requirements	16,700	29,500
5	Single-family collection with consistent hauler requirements	12,400	24,700
6	Commercial collection with minimum recycling level requirements	19,000	21,000
12	Single-family food scraps collection	1,200	4,200
13	Enhance hauler performance standards, including minimum diversion goals	2,600	3,900
14	Improve diversion, tracking and oversight of haulers	1,300	2,600
17	Establish additional hauler-provided drop-off facilities	400	1,500
Total		**75,600**	**121,400**
Total Estimated Diversion for All Programs/Policies		**97,200**	**165,200**
Programs related to SWMA (% of Total Estimated Diversion)		**78%**	**73%**

The recommended SWMA changes include not only service and diversion-related changes for the various recommended programs, but also include modifications to other terms and conditions of the SWMAs. Recommended modifications are summarized below. Additional details related to these modifications will need to be addressed by the County, potentially with support of a consultant, during implementation of these changes.

1. **Create Tiered-Hauler Requirements. Create Tiered-Hauler Requirements.** Several of the recommended programs include enhancements to the collection services and outreach and education efforts provided by the non-exclusive haulers. The majority of these requirements are focused on the haulers that provide cart and bin collection services. For this reason, HF&H recommends that additional services, public education requirements, and performance standards be structured as obligations for only those haulers that provide regular cart and bin collection services ("Full Service" haulers). Currently, three "Full-Service" haulers collect 97% of the annual tonnage collected through the SWMA system (including materials from their cart, bin, and roll-off services). The requirements for these haulers will include, but are not limited to, the following: three-cart system in densely-populated areas for residents; minimum recycling and yard trimming cart capacities; pay-as-you-throw rate requirements; minimum recycling service ratios for commercial customers; food scraps collection; drop-off facility(ies) for customers; increased education and outreach obligations; minimum overall diversion requirements; contamination and/or residue standards; performance standards; and, expanded reporting requirements.

   Full-Service Hauler Requirements
   - Three-cart system in densely-populated areas for residents
   - Minimum recycling and yard trimming cart capacities
   - Pay-as-you-throw rate requirements
   - Minimum recycling service ratios for commercial customers
   - Food scraps collection
   - Drop-off facility(ies) for customers
   - Increased education and outreach obligations
   - Minimum overall diversion requirements
   - Residue standards
   - Expanded reporting requirements
   - Enhanced performance standards

   The other haulers that only offer roll-off collection services can be excluded from these "Full Service" requirements. New requirements for roll-off haulers will not be will not be as extensive as the Full Service hauler requirements, but will include, at a minimum, minimum diversion requirements, contamination and/or residue standards, performance standards, and expanded reporting. Furthermore, HF&H recommends that C&D only roll-off haulers be required to secure non-exclusive SWMAs to allow the County to establish minimum C&D diversion requirements, monitor C&D collection activities, receiving reporting, and assess SWMA franchise fees. With this approach, the County can structure the SWMA requirements around a tiered-hauler classification system based on the type of service provided (i.e., Full Service SWMAs for haulers that provide cart, bin, and roll-off services, and Roll-Off SWMAs that include all roll-off collection services and C&D only roll-off collection service).

   As part of the implementation process, the County will need to evaluate its options more fully and define the structure of the tiered-hauler system and the detailed hauler requirements. For example, the County will need to consider how many total haulers will be franchised and if the cap of 29 haulers will remain in effect and if C&D haulers will be capped; the criteria for granting Full-Service vs Roll-off SWMAs; separate requirements for C&D only roll-off haulers; the types of

material covered by the SWMAs; the boundaries of the densely-populated service areas where more requirements will be in effect; administrative fees for each tiered-hauler class, etc.

2. **Establish Diversion Requirements and Enhance Performance Standards**. In order to achieve greater diversion of materials disposed, including recyclables and organic materials, the County will need to require enhanced performance standards for franchise haulers to achieve diversion targets and diversion program requirements. In addition to these requirements, penalties for non-achievement will need to be added to the franchise agreements, including liquidated damages and default provisions. In the event that franchise haulers do not achieve the necessary diversion targets by the end of the Near-Term, the achievement of the County's Diversion Targets will require the County to consider a more active approach in the Mid-Term Phase, as described in Section 5.2.

   The following sections describe the recommended diversion and performance standards for inclusions in the SWMAs slated for the 2017/2018 timeframe.

   a. Minimum Diversion Requirements. Program 13 recommends establishment of a minimum diversion requirement for the non-exclusive haulers. This diversion requirement may be defined differently for the tiered-hauler classifications and for C&D. Furthermore, it may be appropriate to phase the diversion requirements in over a period of several years in incremental steps to provide haulers time to change their collection practices, increase customer participation in diversion programs, and/or secure processing capacity. For example, haulers could be required to increase their diversion rate 5% per year for 10 years to move from the average hauler diversion rate of 27% in 2015 to 75% in 2025. Consideration of the differences in the abilities of Full Service haulers to meet diversion goals compared to Roll-Off haulers will be needed, and may result in different goals and timeframes for the different hauler classifications.

   b. Enhanced Program and Service Requirements. As part of the SWMA amendment process, HF&H recommends that all program, service, and education enhancements identified for Programs 5, 6, 13, and 17 (further described in Attachment P) be incorporated. In addition, HF&H proposes that the residential and commercial food scraps collection requirements for Programs 3 and 12 be integrated with a commencement date that recognizes time may be required until processing capacity is available. These enhancements are summarized below.

      - Single-family services
        - 3-container system for recyclables, yard trimmings, and solid waste in densely-populated areas to increase subscription for recycling and organics service;
        - Minimum weekly capacity of 64 gallons each for recycling and organics (exceptions for space constraints, and customers who are disabled or who have for on-site composting, hardscapes or xeriscapes);
        - Pay-as-you-throw rate structure, potentially with a County-defined minimum rate differential for solid waste cart sizes;
        - Rate discounts for at-home composting;
        - Expanded list of recyclables over time as processing/markets are viable (e.g., plastic bags, e-waste peripherals, rigid plastics, hard cover books, scrap metal/aluminum under 40 pounds, and textiles);

  - Bulky item and re-use collection events specifying minimum program requirements such as number of events per year, minimum material types to be collected, minimum diversion requirements through reuse or recycling, minimum volume to be collected per household, etc.); and,
  - Collection of food scraps with yard trimmings.
- Commercial
  - Establishment of minimum recycling service ratio or container size to be provided by haulers to commercial or multi-family premises; and,
  - Collection of food scraps.
- Drop-off facilities – Requirement that Full-Service haulers provide drop-off facilities for recyclables, used oil and filters, cell phones, batteries, and potentially other materials for the convenience of their customers.
- Other
  - Consistent color scheme for containers and signage;
  - Increased public education requirements (e.g., annual service guide, twice annual newsletters, direct mailer to multi-family units); and,
  - Ongoing education, outreach, and monitoring to comply with the requirements of State AB 341 and AB 1826 and the County mandatory recycling requirements.

HF&H recommends that some of the new collection program requirements be specified for only the more densely-populated areas, where reasonable economies of scale can be achieved in the collection operations. For example, require weekly recyclables collection service in the densely-populated areas, but not in the less densely-populated areas where every other week recyclables collection services may be more suitable from a cost-of-service perspective.

c. Enhance Performance Standards and Consequences for Failure to Achieve Standards. The SWMA identifies several major conditions that qualify as "events of default" under which the County may terminate the agreement. However, the SWMA does not contain specific performance standards and accompanying liquidated damages for enforcing day-to-day performance under the agreement related to fulfillment of diversion-related services. HF&H recommends that such standards, liquidated damages, and additional specific default provisions be included in the SWMAs to serve as a tool for managing the haulers' diversion program performance. Example diversion-related performance standards include compliance with the following requirements: minimum diversion rate; three-cart requirement in densely-populated areas; pay-as-you-throw requirements; minimum commercial recycling level ratios; diversion of organic materials; maximum residue levels for processing recyclables, yard trimmings, food scraps, and C&D; prohibition on use of organics as landfill alternative daily cover; consistent container color and signage; education and outreach efforts; reporting; use of County-designated disposal or processing facilities (if applicable); and more.

The inclusion of liquidated damages is valuable in that it provides the County the option of assessing liquidated damages to hold the haulers accountable to their diversion performance obligations. Liquidated damages are only assessed at the County's option. If such provisions were in place, the County and haulers could work cooperatively to resolve

performance-related matters, and the liquidated damage option can serve to provide pressure to resolve the service deficiencies.

3. **Modify the SWMA Franchise Fee Calculation Method.** As described more fully in Section 7 (Funding Strategy), HF&H recommends that the County change the manner in which the SWMA franchise fees paid to the County by haulers are calculated. These fees are currently $2.35 per ton disposed. The recommendation is to require a franchise fee as a percentage of the gross rate receipts generated by the franchise haulers from rates charged to customers. If the County prefers to continue with a per-ton franchise fee, the fee should be assessed on all tons collected and subject to an annual inflation adjustment factor. Note that by bringing the C&D haulers into the SWMA system, the C&D haulers will also pay franchise fees. This fee modification is a critical component of the sustainable funding plan presented in Section 7.
4. **Establish an Administration Fee**. HF&H recommends inclusion of a separate administration fee in the SWMAs as further described in Section 7.
5. **Require Processing of Yard Trimmings by January 1, 2020.** HF&H recommends that the SWMAs be amended to require that effective January 1, 2020: (i) haulers arrange for all yard trimmings collected from residents and businesses to be processed for diversion; and, (ii) use as ADC is prohibited by the County (in recognition of AB 1594's limitation on counting ADC as diversion).
6. **Include Expanded Reporting Requirements.** HF&H recommends the following reporting enhancements:
   a. Detailed Customer Information. The County currently does not have sufficient customer account information to determine the number of residential and commercial customers voluntarily subscribing to collection services and those self-hauling materials. For this reason, HF&H recommends that the SWMA reporting requirements be expanded to include annual submittal of detailed single-family, multi-family, and commercial account information including solid waste, recyclables, and organics service levels and customer service addresses.
   b. Semi-annual Customer Subscription Data. In addition, HF&H recommends semi-annual submittal of summarized subscription data reporting the number of accounts and number of customers subscribing to each cart, bin, or roll-off service level listed separately for single-family, multi-family, and commercial and separately for solid waste, recyclables, and organics service and the number of bulky item collections performed. Having access to this data will allow the County to assess changes in the subscription levels and diversion capacity with diversion program implementation as well as analyze the customer subscription levels (which will be useful in the Mid-Term Phase, when the County considers implementation of a universal collection ordinance).
   c. Education and Outreach Report. For Full Service SWMAs, require a semi-annual status report of activities completed compared to the annual public education plan.
   d. Franchise Fee Report. If franchise fees are collected based on gross receipts, require a quarterly statement that summarizes monthly gross receipts from all operations provided pursuant to the SWMA and monthly franchise fee payment amounts for the past 12 months. If franchise fees are collected based on tonnage collected, require a quarterly statement that summarizes monthly tonnage collected from all operations listed separately by material type by month and the monthly franchise fee payment amounts for the past 12 months.

e. Pilot and New Programs Report (if applicable). For each pilot diversion and/or new diversion program, provide activity-related and narrative reports, at a frequency agreed-upon by the County, on goals, milestones, tonnage changes, customer subscription changes, and accomplishments.

7. **Exceptions to the Scope**. Revisions to the SWMAs are desirable to allow parties (in addition to non-exclusive haulers) to engage in the transportation of food scraps and yard trimmings for delivery to community- and farm-based composting operations and to food donation programs and facilities.

The SWMAs go through an annual renewal process that typically begins in July with the County's consideration and drafting of modifications to the contract requirements. The County presents proposed modifications to the haulers in the fall for review and comment; and, the process wraps up with a January 1 renewal of the SWMAs. HF&H recommends that the County integrate the changes described above as part of the contract modifications developed in the summer of 2017 so they become effective on January 1, 2018. The haulers may need six months to implement some of the changes to diversion-related services. With the hauler-related diversion programs accounting for as much as 78% of the diversion needed to reach the 75% Diversion Target, implementing these changes as soon as possible is necessary to allow adequate time for customer participation in the programs to mature to levels that reach the high end of the diversion estimates. Updates to the County's solid waste ordinance will need to be made concurrently and such a process will take several months, considering public hearing time required.

Amendments to the C&D Ordinance (Program 7)

Diversion of C&D accounts for as much as 6.2% of the diversion needed to reach the 75% Diversion Target. As a result, HF&H recommends an amendment to the C&D ordinance to lower the project threshold for compliance with the County's C&D recycling program (Program 7). HF&H reviewed 3 years of historical permit data provided by the County and recommends that the project threshold for covered projects, which is 40,000 square feet, be revised to capture all projects over 5,000 square feet and all projects with total job value of $100,000 or more. Estimates anticipate that an additional 115 to 400 C&D projects will be covered C&D projects (at a median project size of 7,000 square feet). Implementation steps will involve stakeholder input, amendment of the C&D ordinance, and education of the C&D contractors. On an ongoing basis, HF&H estimates indicate that an allocation of 1.3 to 4.5 additional full-time equivalent (FTE) DPW Recycling staff time will be necessary to manage and administer the increased number of covered C&D projects and oversee the County's Debris Management Plan and performance guarantee process. The County may establish a threshold of 5,000 square feet for its 90% diversion of inert materials and 70% diversion of all other materials, and adjust its ordinance in other ways to comply with requirements of California's Green Building Standards Code (CALGreen). CALGreen is transitioning from a 50% C&D recycling requirement to a 65% C&D recycling requirements that will be effective January 1, 2017. Furthermore, CalGreen is lowering its threshold to capture nearly all residential and commercial construction projects. Locally, the City of San Diego requires that all construction and demolition projects (with a few exceptions) to comply with their 65% C&D recycling requirement.

As part of the C&D ordinance amendment, HF&H recommends that the County include a C&D permit fee for the management and administration of each Debris Management Plan as further discussed in Section 7 (Funding Strategy).

5.1.4 2019/2020 Priorities

The recommended 2019/2020 programs, which are identified in Figure 5-1, need to be implemented in 2019/2020 to reach the 75% Diversion Target, if the County is focused on meeting its 2020 target. Program 19, the development of a new HHW facility in collaboration with private industry, is an exception as this is not focused on diversion, but rather on providing residents access to a permanent HHW facility in the North County. Alternatively, the County can continue providing occasional mobile HHW collection events to this unincorporated area to meet State AB 939 requirements for safe collection and disposal of HHW generated by residents.

Social Marketing/Behavior Change Marketing Program (Program 8)

HF&H recommends that the County conduct robust outreach campaigns that are focused on one or two key messages (e.g., putting recyclables in the right container, putting food scraps in the green container, or donation of clothing). To be effective, these types of campaigns need to be sustained over a few years to change the behavior of people. The campaign would rely on a wide range of outreach tools such as: TV, Facebook, Pandora/Spotify, mobile online ads, newspaper/print, radio promotions, blurbs in hauler materials, local banners/materials in libraries, and street sign flags. Messaging would be staggered throughout the year, with a blitz in November/December for the holiday season. This program is slated to commence in 2019. HF&H recommends that the County initiate an RFP process in mid-2018 to select a communications firm that will develop and implement the campaign. By bringing on the communications firm by the end of 2018, the County will be in a position to initiate the planning efforts on January 1, 2019 and start the campaign in mid-2019. This timing is critical as behavior change campaigns will require time to see results in diversion programs.

These types of behavior change campaigns are tools that agencies with high diversion or zero waste goals use including: Alameda County (StopWaste.Org), Marin County, San Francisco, and Palo Alto.

Expanded Technical Assistance Program (Program 10)

The County currently manages technical assistance programs for multi-family properties, businesses, and schools, using contractors to provide the services. The technical assistance programs, which served approximately 160 properties in FY 2015/16, include waste assessments, recycling and diversion program recommendations, and implementation support. HF&H recommends that DPW Recycling expand this technical assistance program to triple the number of properties reached.

Reuse of Textiles; State EPR Mattresses and Carpet/Padding (Program 11)

HF&H recommends that the County promote local thrift programs for clothing and textile reuse and the State's mattress and carpet/padding recycling programs. This promotion program is a no cost program to the County, because HF&H recommends that the promotion of reuse and recycling alternatives be integrated into existing education and outreach activities or into new education activities contemplated in other programs, and because State EPR programs for carpet and mattresses shift the recycling costs to industry rather than the end user.

- Reuse of Textiles - The thrift community has the capacity to accept more textiles, which account for 3% of the waste disposed.

- Carpet/padding recycling - The State passed the Carpet Stewardship Law (AB 2398) to set carpet recycling standards. Through this program, more opportunities for carpet/padding recycling are

becoming available. Since carpet/padding is one of the top 10 materials disposed in the unincorporated area (6.1% of total; 29,143 tons per year), the County should promote the recycling opportunities and monitor Carpet America Recovery Effort's (CARE) efforts to ensure sufficient carpet recycling capacity is available in the County.

- Mattress recycling – The State passed the California Used Mattress Recovery and Recycling Act (SB 254), which established an industry-run, state-wide program for mattress recovery and recycling. Similar to carpet recycling, the County should promote the recycling opportunities and monitor the Mattress Recycling Council's efforts to ensure sufficient mattress recycling options are available in the County.

Promote Food Waste Prevention (Program 15)

With food waste making up 11% of the overall waste disposed in the unincorporated areas, food waste prevention will be an important tool to support the County's Diversion Targets. To reach the 75% Diversion Target, food waste prevention is estimated to yield 1.5% of the diversion needed. Recommended tasks include the following:

- Developing a food waste prevention plan;
- Retaining a social marketing/behavior change consulting firm to develop a multi-year campaign on food waste prevention targeted at residents, grocery stores, restaurants, school, institutional, and commercial-based cafeterias, and other food service vendors on opportunities and practices to prevent food waste; and,
- Training DEH staff to provide education on food waste prevention to businesses during DEH inspections/visits.

Resources are available for the County. The EPA recently rolled out "Food: Too Good to Waste Implementation Guide and Toolkit", which provide collateral materials to use by local governments in promoting food waste prevention.

Support Food Donation through County Food System Initiative (Program 16)

The County's promotion of food donations activities is estimated to yield 1.0% of the diversion needed to reach the 75% Diversion Target. The estimated donation quantities have the potential to provide over 1 million meals annually to feed the hungry. The County's Food System Initiative is considering developing a focus on food donation. If selected for implementation, these efforts would be led by the County's Food System Initiative Coordinator.[12] The development of a food donation plan would be the first step in implementation of this program and would provide a more comprehensive road map for the County's role in food donation.

If selected for implementation, the program is likely to pursue the following types of tasks:

- Develop a Food Donation Plan.

[12] The Food System Initiative Coordinator is a new position to be filled in the fall of 2016.

- Promote and support food donation activities through education and outreach of businesses to encourage donation of pre-consumer, edible food from food service vendors to food banks or soup kitchens.
- Encourage farm and garden donation programs through the support of gleaning groups to harvest surplus crops and distribute to food banks.
- Focus on reducing liability of farmers working with gleaners, providing resources, and educating farmers on this subject.
- Evaluate the establishment of a grant funding program to offer grants to organizations involved in food rescue to purchase vehicles, food storage equipment, and technology needed for recovery and distribution; and offer grants to non-profits engaged in food donation efforts.
- Support local organizations that are working on food donation programs (e.g., San Diego Food System Alliance's Food Recovery Working Group, North County Food Policy Council, etc.).
- Train DEH staff to provide education on food donation to businesses during DEH food facility inspections/visits.

Diversion from the food donation program is dependent on implementation of the County's Food System Initiative. Staffing and costs, which will be covered by the Initiative, are not included in the Strategic Plan.

Regular Education on Recycling Requirements (Program 18)

The program is focused on providing regular education to all residents, businesses, and institutions on the County's recycling requirements for residents and businesses as defined in the County's solid waste ordinance, and the State's AB 341 and AB 1826 requirements for businesses and multi-family properties. The education needs to reach not only customers that subscribe to collection services, but also on the residents and businesses that self-haul. While haulers can provide their customers with information on the County and State recycling requirements, the County needs to provide its own regular education, reaching all property owners (e.g., mailing to all postal addresses) once or twice per year.

Collaborate with Industry to Establish an HHW Facility in North County (Program 19)

During the stakeholder process and through the residential questionnaire, residents requested increased access to HHW collection programs, particularly in the northern part of the county. This program was considered in response to this request and anticipates development of a HHW facility in the North County unincorporated area by collaborating with industry. The program costs and diversion estimates for the facility are based on the County's existing HHW programs using information provided by DEH in terms of equipment needs, operating hours, operating costs, and diversion. The facility itself is envisioned to consist of an office trailer, HHW storage lockers, spill deck, storage containers, pallets, and a few other pieces of equipment. The cost estimate anticipates that the facility would be operational two to four days per month.

The cost analysis makes a significant assumption that the County can identify a no-cost site for the HHW facility by co-locating the facility with another existing County facility or partnering with industry to locate it at a hauling company's yard or at a materials management facility (similar to the arrangements for the County's Ramona and El Cajon HHW facilities). If a no cost or low cost location cannot be identified through collaboration with hauling, processing, or disposal company(ies), HF&H does not

recommend developing a permanent HHW in the northern part of the county in the Near-Term Phase. In such case, HF&H recommends providing additional periodic mobile drop-off events, which are discussed below.

Additional HHW Mobile Drop-Off Events (Program 20)

In the past three years, the County has conducted two to five one-day HHW drop-off events per year. These events are mobile events in that they are set up in different locations in the unincorporated areas. DEH has a contractor that operates the HHW drop-off events, each of which can serve hundreds of residents. This is a simple method of increasing the opportunities for residents to properly dispose of their HHW to provide additional HHW collection services, which residents requested during the stakeholder process. With additional funding, DEH can add more events into their calendar year. HF&H's cost estimate reflects two to four additional events per year.

Implementation of Additional Program Recommendations

Figure 5-2 presents eight additional program recommendations that the County can phase in during the Near-Term. While the cost and diversion potential for the efforts were not part of the Strategic Plan evaluation process, HF&H recommends implementation of these program as the resulting diversion will be beneficial in achieving the 75% Diversion Target. This diversion will provide a contingency in the event the recommended short-listed programs and policies in Figure 5-1 do not achieve the high-end diversion estimate.

Implementation of a Sustainable Funding Strategies

As part of its 2017/2017 efforts, HF&H recommends that the County implement a sustainable funding strategy as further discussed in Section 7.

5.2 Mid-Term Programs (2021 – 2030)

HF&H identified a set of programs for consideration in the Mid-Term Phase. These programs and policies were identified during this strategic planning effort, but were not short listed for a variety of reasons. In general, HF&H found that immediate implementation of these programs may not be essential to achieve the 75% Diversion Target by 2020. Most of these programs involve policy mandates, rather than voluntary participation and compliance, which are more typical of the County's approach to recycling programs. Implementation of these programs and policies are logical next steps to move the County closer to Zero Waste. In fact, many agencies with high diversion and Zero Waste goals have implemented these types of programs upon realization that voluntary participation would not be sufficient. The Mid-Term programs are summarized in Figure 5-4 and described below the table. Over the next four years, conditions will change in response to the implementation of this Strategic Plan and as a result of external factors like the global economy. For these reasons, HF&H recommends that the Mid-Term programs and policies be evaluated prior to, or at the commencement of, the Mid-Term Phase and implemented, unless conditions change in such a way that obviates the need for the program. Other program and policy options not listed here, may gain traction in the next few years and warrant consideration as well.

Figure 5-4: Mid-Term (2021 – 2030) Programs and Policies for the Unincorporated Areas

	Category	Program/Policy*
1	Policy	Evaluation of the achievement of the franchise collection system diversion targets; and, if warranted, evaluation of other options including restructuring of the franchise system and supporting organics processing facility development through an RFP process
2	Collection	Expanded hauler diversion requirements
3	Policy	If warranted, evaluation of a universal collection ordinance, and adoption of an ordinance
4	Policy	Enforcement of County and State mandatory diversion requirements
5	Policy	Amendment of the C&D ordinance to increase diversion
6	Policy	Landfill bans on selected materials
7	Policy	Producer responsibility ordinances
8	Policy	Product or packaging bans
9	Collection	More convenient organics collection service
10	Processing	Mixed materials processing

* The Mid-Term program and policy options presented here shall be evaluated prior to or at the commencement of the Mid-Term Phase and implemented, if warranted.

1. **Evaluation of the Achievement of Franchise Collection System Diversion Targets, and, if Warranted, Evaluation of Other Options including Restructuring of the Franchise System and Supporting Organics Processing Facility Development through an RFP Process.** During 2021, HF&H recommends assessing progress against this Strategic Plan, including whether the non-exclusive hauling system has achieved diversion targets or if it is a barrier to achievement of the County's Diversion Targets. If the non-exclusive system has significantly improved diversion performance and the haulers have been effective partners in achieving the County's Diversion Targets, no changes may be required to the franchise collection system and the term of the SWMAs can be extended. However, if the County determines that the non-exclusive system is a barrier to reaching its Diversion Targets and/or is interested in reducing GHG emissions, road maintenance costs, noise, and safety, HF&H recommends that the County evaluate the following other options:

    a. <u>An Exclusive Franchise System</u>. HF&H recommends that the County evaluate the option of restructuring the non-exclusive franchise system to include some type of exclusive franchise service, particularly an exclusive franchise system for residential and commercial cart and bin collection services (for which the greatest benefits of exclusive systems are typically realized).[13] Studies conducted by others on franchise system options, including the cities of San Jose and Los Angeles as well as the City Auditor's report for the City of San Diego, have concluded that exclusive franchise arrangements support high diversion goals.

[13] An exclusive franchise system can be structured in several ways. For example, it can include one or multiple exclusive service districts; and, in some cases, can maintain some non-exclusive services such as recycling, C&D, and/or roll-off service. The County should evaluate a range of options if it considers implementation of an exclusive system.

b. Organics Processing Facility Development through an RFP Process. If organics processing facility development in the Near-Term has not resulted in an infrastructure that can effectively be utilized by the County's haulers for achievement of the diversion targets and yard trimmings and food scraps collection program requirements in the SWMAS, the County can play a role in facility development. For example, the County can consider bringing on a consultant to conduct an RFP process to secure long-term organics processing capacity at one or more locations at a guaranteed processing rate with the County's commitment to direct some or all of the organic materials collected by the non-exclusive haulers to the selected processing facility(ies). In this case, the County can contract directly with owners/operators of the organic processing facilities. The County's commitment to deliver organic materials would support facility development (described further below), as the developers need this type of guarantee to secure bank financing.

c. Reserving Right to Direct Organic Materials to Facilities Designated by the County. As a complementary measure to the RFP process mentioned above, the development of large-scale organics processing facilities could be stimulated by the County's ability to direct the non-exclusive haulers to deliver some or all of the organics collected to the selected organics processing facilities. The current SWMAs include a provision that gives the County the right to direct solid waste to a disposal site designated by the County. The definition of solid waste includes organics. In order to consider this future option, HF&H recommends that the County expressly states that its right to direct materials can be exercised for solid waste or separately for yard trimmings, food scraps, or mixed organic materials and can include direction to processing facility(ies) designated by the County. If this option is selected, it is recommended that this modification be integrated in a future amendment of the SWMAs in the first year or two of the Mid-Term Phase.

d. Elimination of the Auto Renewal of the 10-Year Term**.** Another alternative to the increased performance standards and diversion requirements, or if the enhanced performance standards are not successful in achieving the necessary diversion targets in a timely fashion, the County may wish to consider eliminating the auto renewal of the franchise agreement terms. With the 10-year evergreen provision ("Extension Term") of the current SWMAs, should the County conclude that a non-exclusive system is no longer desired, it is not in a position to implement an exclusive system for a minimum of 10 years. For this reason, HF&H recommends that the County exercises the termination for convenience provision of the SWMAs to eliminate the auto renewal of the 10-year term of the current SWMAs, and initiate the winding down of the contract term. An additional recommendation is to amend the "Extension Term" provision to remove the annual 1-year evergreen extension and structure one or more extensions of the 10-year term to be granted at the end of the 10-year term at the County's sole discretion. The purpose of these recommendations is to put the County in a position to be able to consider options in the structure of the non-exclusive system at the expiration of the 10-year term of the SWMAs. Given that the SWMAs will have a defined expiration date, the SWMAs need to specify that agreements between the haulers and their customers may not extend beyond the term of the SWMAs and that such agreements do not have automatic extension provisions.

2. **Expanded Hauler Diversion Requirements**. Assess options for expanding hauler requirements, particularly for Full Service Haulers or exclusive franchise haulers beyond the diversion requirements implemented during the Near-Term Phase. Consider increasing the hauler-controlled diversion rate target, as well as collection and diversion of additional materials such as, but not limited to, textiles, e-scrap, compact fluorescent bulbs, cooking oil, motor oil, oil filters, and other programs as well as provision of kitchen food scraps pails for residents.

3. **Evaluation of a Universal Collection Ordinance, and Adoption of Ordinance, if Warranted.** Evaluate the option of adopting a universal collection ordinance for residents and business to subscribe to collection services, with limited exceptions for vacant and undeveloped properties and for documented self-hauling of materials. The purpose of this program is to increase the number of customers that have weekly recycling and organics collection services, which is anticipated to increase diversion of these materials. The need for this program can be better assessed toward the end of the Near-Term Phase, when the County obtains residential and commercial subscription level data from the non-exclusive haulers and can accurately determines to what extent residents and businesses voluntarily subscribe to collection services. If warranted, the County can implement some type of universal collection ordinance. Santa Cruz County is an example of an agency that recently implemented a universal collection ordinance in the densely-populated areas of the County.

4. **Enforcement of the County and State Diversion Requirements**. Implement an enforcement program for residents and businesses that are not compliant with the recycling requirements in the County's solid waste ordinance, AB 341 (Mandatory Recycling), and AB 1826 (Mandatory Organics Recycling). The extent to which the residential and commercial customers increase diversion through the implementation of Near-Term programs will indicate the need and level of effort for the enforcement program. In the past few years, Alameda County Waste Management Authority (StopWaste.Org) has developed and managed an active enforcement program for the mandatory recycling ordinances adopted by 15 of its member agencies. The enforcement program initially involved issuance of warnings to non-compliant properties and then shifted to issuance of citations.

5. **Amendment of C&D Ordinance to Increase Diversion**. Evaluate C&D recycling that has resulted from Near-Term changes to the County's C&D ordinance and examine options to increase C&D diversion levels. For example, diversion standards can be increased for specific types of C&D materials and/or specific construction and demolition project types and sizes.

6. **Landfill Bans on Materials.** Consider adopting an ordinance banning disposal of various types of divertible materials (e.g., recyclables, yard trimmings, cardboard, tires) if the State has not already taken such action. Sonoma County is an example of an agency that has adopted an ordinance prohibiting disposal of several types of recyclable materials (e.g., yard debris, recyclable wood waste, cardboard, and scrap metal) at its disposal sites. Alternatively, the County can advocate for the State to enact such legislation.

7. **Producer Responsibility Ordinances**. Consider adopting ordinances to require producers to manage the recovery programs and incur the costs associated with products that are hazardous to public health and/or create public nuisance. For example, local ordinances have been passed by Alameda County, Los Angeles County, and San Francisco for the management of pharmaceuticals. In fact, Alameda County's ordinance was challenged and appealed all the way to the U.S. Supreme Court and has been upheld, establishing a nation-wide precedent. Similar ordinances addressing sharps management have been adopted by Santa Cruz County, San Luis Obispo County, Tulare County, City of Sacramento, and others.

8. **Product or packaging bans**. Consider adopting ordinances that limit or ban sales of toxic or hard-to-recover products and product packaging. Common examples of this type of ban are single-use bag ordinances, which have been adopted by over 150 agencies throughout the State, including Del Mar, Encinitas, Glendale, City and County of Los Angeles, Oceanside, Pasadena, and the City of San Diego.[14] Other examples include approximately 65 ordinances in the State that prohibit use of expanded polystyrene by restaurants including those ordinances adopted by Calabasas, Dana Point, Del Ray Oaks, Hermosa Beach, Malibu, Newport Beach, Oakland, San Francisco, San Jose, Santa Cruz County, and Santa Monica.[15]

9. **More Convenient Organics Collection Service.** Evaluate reducing the frequency of solid waste collection service so that the convenience (frequency) of organics collection is greater.[16] For residential customers, evaluate implementation of every other week solid waste collection. Portland, Oregon has implemented every other week solid waste collection (with weekly organic collection). In California, Mountain View and the Castro Valley Sanitary District are conducting pilot programs for every other week residential solid waste collection. For commercial customers, evaluate reducing the number of days solid waste collection is available for businesses (e.g., reduce from 6 days per week to 3 or 4 days per week) and increasing the number of days organics collection is available (e.g., up to 6 days per week). This approach results in: 1) increased food scraps collection by making organics collection more convenient than garbage collection; and, 2) reduced collection costs for customers. Implement the less frequent solid waste collection service through modifications to the SWMAs, if warranted.

10. **Mixed Materials Processing.** Explore options for processing mixed materials to divert recyclables and organics and implement, if advantageous to the County. This type of processing opens up doors to alternative collection methods such as a two-stream collection (for organics and for other "dry" materials) and processing of materials from premises that are not in compliance with the diversion requirements of the County's solid waste ordinance and State law. Although this type of processing capacity is currently not available in the County and can be costly, processing technologies are advancing rapidly. As this happens, technology and financing risks may decline and system performance may improve. Several agencies using mixed waste processing to divert materials from some of all the solid waste collected from residents and businesses include Anaheim, Los Angeles County, and San Jose.

At the commencement of the Mid-Term Phase in 2021, HF&H recommends that the County concentrate on evaluation of the achievement of diversion targets by franchise haulers or options for restructuring the franchise system, evaluation of a universal collection ordinance, and consideration of landfill bans on selected materials, and implementation of these programs if warranted. The County's focus can then shift to consideration of producer responsibility ordinances and product or packaging bans in 2025 through 2030. In this later portion of the Mid-Term Phase, the County can also explore cooperative regional efforts to develop mixed materials processing or implement mixed materials processing programs if capacity is available. HF&H recommends that the enforcement of County and State

[14] www.cawrecycles.org/list-of-local-bag-bans
[15] www.surfrider.org/pages/polystyrene-ordinances
[16] The State requires removal of "refuse" (including food waste) from premises at least once every seven days pursuant to California Code of Regulations, Title 14, Natural Resources--Division 7, CIWMB, Section 17331. Agencies in California are currently exploring compliance of this requirement through at least weekly collection of putrescible materials with non-putrescible solid waste collection every other week.

mandatory diversion requirements for recycling and organics diversion be conducted throughout the entire Mid-Term Phase with the level of effort adjusted as needed to increase residential and commercial diversion.

The Mid-Term implementation approach will need to be flexible to allow for adjustments based on actual diversion results of programs and current conditions, including new regulatory requirements, technology and infrastructure options, economic conditions, and political support. In 2019, to plan for the Mid-Term Phase, HF&H recommends that the County reexamine its existing programs and identify opportunities for improvements that can be accomplished within their existing budget or for minimal incremental additional costs. After that, the County can focus on evaluating the menu of program and policy options provided in this Section 5.2 and develop an implementation strategy and timeline for each program. A similar reevaluation process is advantageous at the end of the Mid-Term Phase to plan for the Long-Term Phase.

Figure 5-5 summarizes the timing for implementation of both Near-Term and Mid-Term programs and policies. It presents the timeframe during which intensive planning and implementation activities will be conducted. The figure does not illustrate the ongoing program management and monitoring activities of the programs and policies, which will occur on an ongoing basis after implementation.

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Figure 5-5: Planning and Implementation for Near-Term and Mid-Term Phases

	Program/Policy (a)	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
	Near-Term Programs													
1	Enhance zoning ordinance to support organics processing	■	■											
2	Support organics processing facility development	■	■	■	■	■	■							
3	Implement commercial food scraps collection (b)		■	■	■									
4	Regulate C&D haulers with minimum diversion requirements	■												
5	Enhance single-family collection with consistent hauler requirements	■												
6	Enhance commercial collection with minimum recycling level requirements	■												
7	Enhance C&D diversion by lower project compliance threshold	■												
8	Expand social/behavior change marketing program		■	■										
9	Support on-site community/commercial/farm composting	■	■											
10	Expand technical assistance for multi-family, businesses, schools			■										
11	Support reuse of textiles and State EPR for mattresses and carpet/padding			■	■									
12	Collect food waste from single-family premises (b)		■	■	■									
13	Enhance hauler performance standards, including minimum diversion goals	■												
14	Improve diversion, tracking and oversight of haulers	■	■											
15	Promote food waste prevention			■	■									
16	Support food donation through County Food System Initiative (c)			■	■									
17	Establish additional hauler-provided drop-off facilities	■												
18	Provide regular education on County and State recycling requirements			■										
19	Collaborate with industry to establish an HHW facility in North County			■	■									
20	Provide additional HHW mobile drop-off events	■	■											
	Mid-Term Programs (d)													
1	Evaluation of the achievement of the franchise collection system diversion targets; and, if warranted, evaluation of other options including restructuring of the franchise system and supporting organics processing facility development through an RFP process					■	■							
2	Expanded hauler diversion requirements					■	■							
3	Evaluation of universal collection ordinance, and adoption if warranted					■	■							
4	Enforcement of County and State mandatory diversion requirements					■	■	■	■	■	■	■	■	■
5	Amendment of C&D ordinance to increase diversion							■	■					
6	Landfill bans on selected materials							■	■					
7	Producer responsibility ordinances									■	■			
8	Product or packaging bans										■	■		
9	More convenient organics collection service												■	■
10	Mixed materials processing												■	■

(a) Planning and implementation phases are illustrated. Ongoing program management/monitoring is not; it will continue annually after implementation.

(b) Food scraps collection implementation is dependent on availability of organics processing facilities; collection programs to be implemented as soon as possible.

(c) Food donation diversion is dependent on implementation of the County's Food System Initiative. Staffing and costs will be covered by the Initiative, and are not in the Strategic Plan.

(d) Mid-Term program and policy options shall be evaluated prior to or at the commencement of the Mid-Term Phase and implemented, if warranted.

5.3 Long-Term Programs (2031 – 2040)

It is possible that the implementation of Near- and Mid-Term programs, coupled with continued State and private-sector efforts, will result in the achievement of the Zero Waste Target. If such success is not achieved, the County will progress into the Long-Term Phase, which is defined as the final phase from 2031 to 2040, ending with achievement of Zero Waste. By 2040, the unincorporated areas are projected to experience a 25% growth in population and a 31% increase in the developed acreage. Technological, legislative, economic, political, global marketplace, and cultural changes between now and then will impact waste generation, the characterization of materials discarded, and the future of the materials management industry. Given these dynamics, the Strategic Plan does not present recommended programs for the Long-Term Phase as all reasonably cost-effective and currently known options will have been implemented in the Near- and Mid-Term Phases. Furthermore, given the highly dynamic nature of the industry and State legislation on this subject, it is not practical to forecast conditions or the range of program and policy options available at that time. If the implementation of Near- and Mid-Term recommendations do not achieve Zero Waste, it will be critical to prepare a new Zero Waste strategic plan during the Mid-Term Phase to assess then-current conditions and identify how to reach the County's Zero Waste Target within that context.

As the County moves into this phase, programs and policies are more likely to be focused on waste prevention both at the residential, commercial, and industrial levels. For example, restructuring production and distribution systems to prevent waste from being manufactured may be pushed further by corporate stewardship efforts, technology enablers, regulatory standards, and/or mandates. More packaging policies, including take-back programs, reusability and recyclability requirements, and higher recycled-content standards may be implemented to reduce the use of resources, reduce waste, and improve recyclability of discarded packaging. In addition, more emphasis is likely to be placed on extending the useful life of products and improving the recyclability of products at the end of useful life.

More behavior change campaigns may need to be targeted at residents and businesses to further promote waste prevention and to motivate increased participation in diversion programs. The behavior change campaigns can be conducted on their own or can be coupled with adoption of additional regulations that require enhanced waste reduction and diversion program participation. In the Long-Term Phase, it may be that the availability of new processing technologies will create new opportunities for down-stream handling and processing of discarded materials and residues.

In the U.S. and world-wide, many governmental organizations, businesses, and non-profits are already moving ahead with the development and implementation of these types of high diversion/Zero Waste programs and policies. The experiences of others in the Zero Waste community, including success stories and lessons learned, can help the County shape its own unique path towards Zero Waste. In addition, future State and federal legislation is more likely than not to support new diversion-related programs, standards, or requirements. Furthermore, climate change concerns and GHG emissions reduction objectives and plans will reinforce continued action toward Zero Waste.

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SECTION 6: RECOMMENDATIONS FOR INTERNAL OPERATIONS

The County's goals for this Strategic Plan include an assessment of what it will take for the County's internal operations to reach the Diversion Targets. As described in Section 4, the County's current data collection procedures do not include a reporting framework that allows for compilation of comprehensive baseline waste generation, diversion, and disposal data. Without a definitive baseline assessment, making significant long-term commitments of staff time and costs for program and policy implementation does not seem prudent; therefore, the recommendations presented for the internal operations focus only on the Near-Term Phase (2017 – 2020).

Some of the materials generated by the County's internal operations currently are diverted and the remaining materials are disposed. The disposal volumes from the County operations are likely a small portion of the disposal volume that contributes to the County's overall 62% diversion rate for 2015 (as calculated using State reporting method). Although the County operations may have a small influence on the County-wide diversion rate, the County is interested in taking actions to play its part in supporting the Diversion Targets, just like it is looking for residents and businesses to do. For this reason, the Strategic Plan includes recommendations for internal operations. Section 6.1 presents the Near-Term Phase program and policy recommendations and an implementation plan is provided in Section 6.2.

6.1 Program and Policy Recommendations

HF&H recommends that several of the short-listed program and policy options be implemented in the first two years of the Near-Term Phase (2017/2018). The recommended 2017/2018 programs include programs and policies that: 1) will lay the foundation for the County's progress towards its Diversion Targets for internal operations; 2) can be implemented within the County's existing budget; and/or, 3) are advantageous to implement now as County contracts for purchasing and materials management services are rebid or because the programs will effect behavior change. The remaining short-listed program and policy options are slated as 2019/2020 priorities for implementation in the later portion of the Near-Term Phase, and are subject to reconsideration when more baseline data becomes available.

Figure 6-1 presents the recommended programs and policies and the timeframe for implementation. Following assessment of the baseline conditions in 2017/2018, the County can reassess the programs identified herein for 2019/2020 and adjust the implementation timeline based on the baseline conditions and cost effectiveness of the recommended programs. Once implemented, the programs and policies shall be managed and monitored on an ongoing basis to maximize diversion over time.

Recommendations for the Mid-Term Phase (2021 – 2030) are not presented because formulation of program and policy recommendations without a strong baseline assessment of current conditions was not practical. Furthermore, HF&H did not include recommendations for the Long-Term Phase (2031 – 2040) for the same reasons described in Section 5.3 for the unincorporated areas.

Figure 6-1: Recommended Near-Term Programs and Policies for Internal Operations

	Program/Policy
2017 / 2018 Timeframe	
1	Establish High Diversion/Zero Waste policy and organization (a)
2	Establish measurement and reporting process and baseline
3	Increase use of County's existing reutilization process
4	Expand the B-67 Recycled Products Purchasing Policy into an Environmentally Preferable Purchasing Policy (EP3)
5	Incorporate Zero Waste objectives into County procurements
6	Enhance diversion requirements in waste collection contracts (b)
7	Ensure optimal recycling at facilities owned and/or leased by County (b)
8	Increase diversion of yard/wood /food waste generated by County (b)
9	Provide waste reduction and recycling training to employees
10	Require regular training of janitorial staff including contractors
2019 / 2020 Timeframe	
11	Revise G-15 Design Standards to include renovations of facilities
12	Prioritize use of recycled materials in road construction
13	Partner with non-profit organization to provide reuse collections or drop-off boxes at County facilities for employees
14	Partner with Sheriff's Inmate Re-entry Services to consider training program on repair
15	Create capability for collection of used pallets from County facilities
16	Require recycling and composting for County-sponsored events
17	Support food waste reduction and food donation at County operations (b)
18	Increase use of locally-produced mulch/compost at County facilities
19	Support waste reduction and recycling by department through technical assistance (b)
20	Consider expanding partnerships with artists to create displays from repurposed material

(a) Establishment of a High Diversion/Zero Waste policy (Program 1) is anticipated to occur after a baseline of current conditions is developed (Program 2).

(b) Program implementation for leased facilities may be delayed until lease renewal or amendment.

6.2 Implementation Strategy

6.2.1 2017/2018 Priorities

Establish High Diversion/Zero Waste Policy and Organization (Program 1)

The first recommendation is for the Board of Supervisors to formally adopt high diversion/Zero Waste goals and policies for internal operations. Departments would integrate the goals into their Department Excellence Goals. The ability to integrate the Diversion Targets into the Departmental Initiatives is a key strategy for gaining the attention and dedication of resources needed to be successful. Achieving the Diversion Targets, both in the unincorporated areas and internal operations, will require cooperation and integration of programs and policies across numerous departments; therefore, the integration of the Diversion Targets into the County's Department Excellence Goals will provide the direction needed. However, because the County does not have a clear understanding of baseline conditions (as described in Section 3.5.2), defining the scope and specific goals of a High Diversion/Zero Waste policy is challenging. For this reason, the County may decide to hold off on adoption of a policy for a year or two until the baseline conditions are evaluated. Adoption of the policy should occur as soon as practical as increasing the County's diversion rate and implementing the programs and policies in this Strategic Plan intersect with several other County goals and planning efforts including the Climate Action Plan, Strategic Energy Plan, Food System Initiative , and others. The various departments should work together to support the related goals and programs in order to maximize the efficiency and effectiveness of County efforts and support broader County goals.

The Strategic Plan anticipates that the County will designate DPW Recycling as the lead department and identify a staff person that will be responsible for oversight and monitoring of the County's overall progress towards its Diversion Targets. The success of the County's efforts to increase diversion of materials generated in the unincorporated areas and by the internal departments will be dependent on the engagement of all County departments in the process. To engage departments on an ongoing basis, HF&H recommends establishing a requirement that each department designate a Waste Reduction Captain with defined roles and responsibilities. The Captains can serve as the liaisons between the lead department and their respective departments. Captains can be assigned the responsibility of collecting baseline data and ongoing reporting of waste generated, diverted, and disposed. In addition, Captains can be responsible for reporting on programs and policies their department is implementing or is impacted by and the Captains can relay information to personnel in their department as needed.

Establish Measurement and Reporting Process and Calculate Baseline (Program 2)

Getting a more complete understanding of the waste prevention and materials management practices across the County and by department is a key 2017/2018 program. HF&H recommends that the following actions be taken by the County.

- Establish an ongoing diversion measurement and reporting process;
- Calculate or estimate baseline diversion and set diversion goals for overall County operations and by department;
- Require waste reduction and recycling reporting by departments if this data is not already reported through County Collection Contract;
- Track and report annual progress for internal operations overall for the County and by department;

- Track percentage of common supplies purchased from recycled-content list or environmental preferable materials list (using vendor reports); and,
- Identify DPW Recycling as the lead department that will develop a measurement and reporting methodology, prepare a baseline assessment with input from other departments, gather reports from departments on a regular basis, and track diversion performance on an ongoing basis.

To manage the staff time and level of effort associated with the baseline analysis and ongoing tracking process, the County should focus its assessment on programs and policies with the largest impact on diversion of materials from internal operations and that lend themselves to tracking and reporting of diversion and disposal results. The Waste Reduction Captains should support this effort by identifying and reporting waste prevention, diversion, and disposal data for their departments, if such quantities are significant and data can be captured now or in the future. For example, data should be collected not only for diversion and disposal through the County Collection Contract, but also diversion and disposal data should be obtained from the surplus property program; landscaping activities; mulching and composting at County facilities; park maintenance activities; new building projects; road projects; dying and diseased tree program; specialty material recycling contracts (e.g., paper shredding, batteries, bulbs, ballasts, toner cartridges, lead, grease, medical waste, e-waste, other u-waste, etc.). In addition, reporting of materials diverted and disposed should be obtained from facilities/departments that generate substantial quantities of materials or employee a significant number of staff, but do not use the County Collection Contract. These facilities/departments may be identified by reviewing DGS's data on approximately 1,100 County sites and applying some qualifying criteria and by working with the Waste Reduction Captains. Lastly, reporting on waste prevention efforts and use of recycled-content materials in road projects and through product purchases would be useful in defining baseline conditions, setting goals, and monitoring on an ongoing basis.

Increase Reuse through Reutilization Process (Program 3)

Surplus County property is handled in accordance with the Board of Supervisor's Disposal of Personal Property Policy (A-94), which focuses on the sale of scrap or surplus property, including lost or abandoned personal property ("surplus property"). The surplus property is sold through electronic commerce (online), live auctions, and bid processes. Currently, DPC manages a contract for reutilization of its surplus property, which includes an auction process for the County's surplus property. Prior to moving materials to the contractor's warehouse, County departments post surplus property on a website to other County departments, giving them the ability to acquire surplus items. The items are listed for a five-day period and then the surplus property is moved at an expense to the department to the warehouse. At the internal stakeholder meeting, feedback was received that the five-day period was too short and that the reutilization website was not well promoted. In addition, the current contract does not require reporting of estimated tonnages or cubic yards of surplus property auctioned, donated, or disposed, nor is data reported on the quantity of surplus property exchanged between departments. For this reason, HF&H recommends that the upcoming surplus property auction contract language be amended to make several changes (listed below) as well as other changes that can improve the reutilization process.

- Amend Policy A-94 and related sections of the County's Administrative Code to support improved reuse of surplus property. Include consideration of additional opportunities to donate to non-profits (e.g., donate lost or abandoned clothing or personal property, equipment with value less than a defined amount, etc.), which might be framed in a manner similar to the donation of electronics to San Diego Futures Foundation.

- Amend the reutilization contract to incorporate the following requirements, at a minimum:
  - Offer incentives and recognition to departments that acquire property through the reutilization program;
  - Track and report the volume or weight of materials reused, sold, or disposed categorized into various material types (e.g., furniture, electronics, appliances, etc.); and,
  - Reserve the County's right to donate surplus property to charitable organizations, (faith organizations, schools, etc.) limited to defined materials or value of surplus property, and reserve County's right to establish a "Craigslist" type sharing platform for use by its employees and departments, both of which may result in less quantities of materials being handled through the reutilization contractor.
- Promote the reutilization website to employees through the Waste Reduction Captains, the County's online employee news center (*Insite*), and other internal communications. Extend the duration of time for which items are listed on the website for County to acquire surplus property and track quantities of materials reused through this mechanism.
- Offer incentives and recognition to departments that acquire surplus property through the reutilization program.

Expand Policy B-67 (Recycled Products Purchasing) into an Environmentally-Preferable Purchasing Policy (EP3) (Program 4)

The County's B-67 Recycled Products Purchasing Policy focuses on increasing the recycled content of products purchased and used by the County of San Diego, its contractors, and its grantees. As part of the 2017/2018 priorities, HF&H recommends that the policy be updated to provide a comprehensive Environmentally Preferable Purchasing Policy (EP3 policy) or "Green Purchasing" policy that focuses on choosing environmentally-friendly products and services more broadly. EP3 policies typically establish guidelines for a wide variety of products. A few examples include: 1) selecting janitorial cleaning products that are less harmful to the environment and janitorial paper supplies with recycled-content materials; 2) purchasing products for playground equipment, park surfaces, and park furniture made with recycled-content materials; and, 3) purchasing a variety of traffic control products made with recycled-content materials (e.g., traffic cones, traffic barricades, parking stops, sound barriers, object markers, etc.). As part of this effort, the County should reexamine its current pricing threshold for environmentally-preferable products and consider increasing it to support increased purchasing of environmentally-preferable products. For the development of the EP3 policy, the County may want to retain a consultant to assist in the effort or the County can adapt an EP3 policy from another agency like the City of San Diego to meet the County's needs and objectives.

Additional tasks for this program include amending the County's Administrative Codes as needed to support an EP3 policy.

Incorporate High Diversion/Zero Waste Objectives into County Procurements (Program 5)

Because the County is procuring services on an ongoing basis, HF&H recommends, as a 2017/2018 priority, that the County's procurement process be updated to include diversion-related objectives and requirements in the County's RFPs and resulting contracts for product purchases and service providers (such as food service providers, janitorial services, maintenance services, landscaping, etc.). It is not necessary to include these types of provisions in RFPs and contracts for professional services (such as engineers, architects, attorneys, consultants, etc.). To accomplish this, HF&H recommends that the

County evaluate the terms and conditions of the County's existing purchasing contracts to identify opportunities for improvement and amend the contracts for the next re-bid process. The updates to the County's procurement process should be consistent with the County's EP3 policy. Examples of the types of conditions that can be integrated into the County's procurement processes and contracts include the following:

- Avoid purchase of disposable materials when practical;
- Consider reparability and life-cycle analysis of products when making purchasing decisions;
- Work with suppliers to:
  - Offer products that minimize waste in product and packaging design;
  - Require take-back or pick-up of products by suppliers for materials that are hard-to-recycle;
  - Prioritize environmentally preferable products; and,
  - Promote minimal or recyclable packaging in vending machine contracts.
- Report percentage of common office supplies purchased from recycled-content list or environmentally-preferable list by department through the County's purchasing system;
- Require diversion services such as diversion of specific material types such as, but not limited to, recyclables, C&D, yard trimmings, food scraps, and more; and,
- Require reporting of materials generated, diverted, and disposed.

For example, the next time DPC issues an RFP for food, related preparation supplies, services, and equipment, the statement of work can include specific requirements related to waste prevention, procurement of supplies with recycled-content materials, donation of edible food remaining after events, composting of non-edible food scraps and food-soiled paper, and reporting on these requirements.

Enhance Requirements in Waste Collection Contracts (Program 6)

The service data from the County Collection Contract shows that 25% of the collection volume is for recyclable materials, 0.3% for yard trimmings, and 0.2% for food scraps. Significant improvements will need to be made in the County's materials management practices to boost this diversion rate; therefore, this program is identified as a 2017/2018 priority. HF&H recommends several enhancements, listed below, to the County Collection Contract focused on supporting diversion. This contract expires June 30, 2017 or can be renewed by the County for up to three additional years (ending May 30, 2020). Given this, HF&H recommends that the County negotiate modifications with the current provider if it chooses to extend the contract, or integrate these changes into the next County Collection Contract commencing no later than January 1, 2018.

- Set minimum diversion rate requirements in the contract and add incentives or disincentives to motivate the hauler, such as contract extensions tied to diversion compliance;
- Specify reporting format including:
  - Weekly service volume totals for solid waste, recyclables, yard trimmings, and food scrap collected;
  - Estimated tonnage for solid waste, recyclables, yard trimmings, and food scraps collected and provision of detailed supporting documentation (quarterly) on the allocation methodology, including service levels of other non-County customers serviced on the same routes as County facilities or periodic waste audit analysis to determine volume-to-weight conversion factors;

  - Identification of each location separately with columns presenting the solid waste, recycling, yard trimmings, and food waste service level, weekly volume of each material collected, diversion percentage (on a volume basis) and estimated weight-based diversion rate (using pound per cubic yard conversion factors) for each location;
  - Total number of facility locations served; total weekly volume of each material collected, and County-wide diversion percentage (on a volume basis); number of facilities with and without recycling, yard trimmings, and food scraps service; and,
  - Site visits and technical assistance conducted, listing the facility and contact person.
- Define standards for uniform container sizes, colors, and interior/exterior signage;
- Reserve right for the County to change service levels (e.g., material type, container size, frequency of collection) at any facility, which may result in less compensation to contractor and require Contractor to implement requested changes within seven working days. Structure the pricing schedule to include a monthly rate sheet for each service level and define how the monthly price per location is adjusted for changes in service levels, which may occur at any time at the request of the County.

Ensure Optimal Recycling at Facilities Owned or Leased by County (Program 7)

Increasing the collection of recyclables at all County facilities is a primary focus area for the 2017/2018 efforts. For County-owned facilities, this effort should include working with the County Collection Contractor, which is required to provide waste assessments and a diversion plan, to increase the current recycling service volume level of 25%. In addition, HF&H recommends the following tasks, which were suggestions from internal stakeholders.

- Conduct waste assessments for departments and tailor programs based on this information. This task can be performed by 1) the County Collection contractor as part of the County Collection Contract requirements; 2) DPW Recycling staff or technical assistance consultants, particularly in the case of leased facilities serviced by other haulers; or 3) haulers or technical assistance consultants for cities where County facilities are located to the extent the city's hauler or technical assistance contractor is required to provide waste assessments;
- Post recycling "how-to" signs by internal collection containers to remind employees on proper materials separation to increase recycling and reduce the level of contamination in the recycling containers. This is also a task that can be performed by the County Collection contractor or janitorial staff as part of their contract requirements;
- Have janitorial staff trained on proper recycling practices by their supervisors;
- Require that each internal trash bin is accompanied by a recycling bin of at least equal size (twinning); and,
- Upon lease renewal or amendment and execution of new leases, require leased facilities to meet minimum diversion requirements and report data. Given that some leases have 10- to 15-year terms, the County may be delayed in incorporating diversion requirements and reporting described in this Section. In the interim, it is important to recognize that lessors are businesses that need to comply with AB 1826, AB 341, and mandatory recycling requirements of the jurisdiction where the site is located. The County can direct its efforts on informing the lessors of their diversion obligations and verifying their compliance with State and local recycling requirements.

Increase Diversion of Yard, Wood, and Food Waste (Program 8)

HF&H recommends that the County focus attention on increasing diversion of yard, wood, food waste, and compostable paper by requiring diversion of organic materials in its various service contracts. In addition, recommendations also include exploring options for on-site composting at County facilities, including composting at community gardens, parks, and open spaces. This organics diversion program will be needed for the County to comply with the mandatory organics diversion requirements of AB 1826.

- Require that departments generating yard trimmings, which are not mulched or otherwise used on-site or at other County sites, to divert the materials through the County Collection Contract or other approved contracting process;
- Specify diversion of yard trimmings in landscaping contracts and require reporting of where materials were processed and the tonnages diverted by the landscapers; and,
- Explore options for on-site composting at County facilities, including detention facilities, community gardens, parks, and open spaces.

Provide Waste Reduction and Recycling Training to Employees (Program 9)

Through the internal stakeholder input process, several suggestions were received from employees on strategies for educating the employees. HF&H recommends that the County implements these strategies to encourage behavior changes.

- Periodically provide reduction, reuse, and recycling educational materials to employees;
- Implement an annual training module in LMS on waste prevention and diversion programs;
- Develop a recycling training specifically for DPR volunteers and part-time DPR employees for the purposes of educating park visitors;
- Include environmentally-preferable purchasing policy (EP3) education in the purchasing card training program (P-card training); and,
- Disseminate a departmental waste reduction report to employees annually.

Require Regular Training of Janitorial Staff including Contractors (Program 10)

Janitors play an important role in the management of recyclables, organics, and solid waste separated for collection. In some cases, janitors separate the materials; and, in other cases they consolidate materials separated by employees into larger containers for collection. It is critical that the janitorial staff is regularly trained on the nuances of the diversion programs so they can properly manage the materials; help in removing contamination from recycling and organics containers; provide notification of routinely contaminated containers; and assist in maintaining proper signage of containers. Inclusion of training requirements will need to be incorporated into agreements for janitorial services at County-owned facilities and lease agreements for leased facilities. As a result, the training requirements will be phased in over time as contracts are renewed or re-bed and leases are amended or renewed.

6.2.2 2019/2020 Priorities

Programs 11 through 20 in Figure 6-1 are recommended for 2019/2020. Descriptions can be found in Attachment P. These programs can be implemented in any order depending on the available resources of the County department that is responsible for the program. Furthermore, the implementation time frame may be adjusted after the diversion baseline analysis is complete as the findings of the baseline analysis may justify different program and policy priorities.

SECTION 7: SUSTAINABLE FUNDING STRATEGY

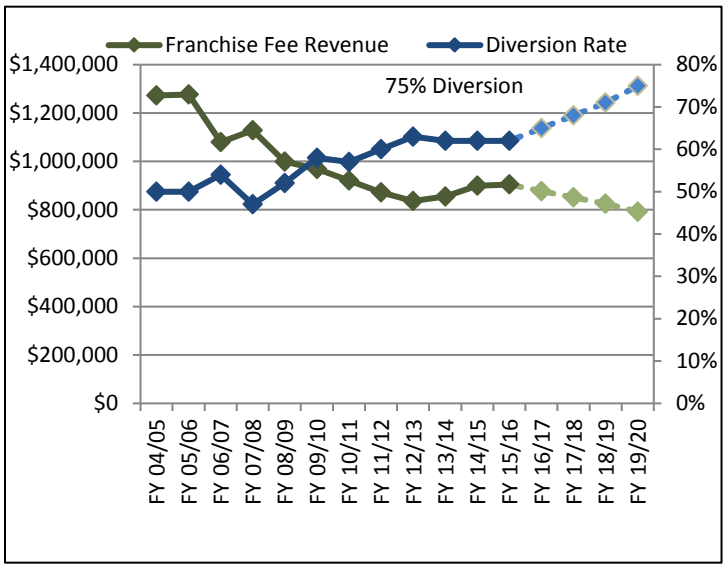
A sound funding strategy is essential to support current programs and policies, to move forward with the Strategic Plan, and to fully implement all proposed programs and policies. The County's current franchise fee funding method is not generating sufficient revenue to cover the costs of current diversion programs and reserve funds cannot sustain programs going forward. For this reason, this Section presents an approach to funding not only the current DPW Recycling programs and DEH HHW programs, but also the recommended programs and policies for 75% Diversion for the unincorporated areas. Funding for the recommended diversion programs and policies for internal operations is not addressed in detail in the Strategic Plan. After a diversion baseline has been established, programs and policy costs included in the Strategic Plan will be reevaluated. It is anticipated that funding for one-time costs would be requested through appropriations from the Board and ongoing costs would be funded through increased internal service funds or general agreements paid by departments.

Figure 7-1: Historical Franchise Fees Received from Non-Exclusive Haulers

Year	Total Revenue	DPW Recycling	DEH HHW
2010/2011	$ 920,410.54	$ 489,580.08	$ 430,830.47
2011/2012	$ 871,872.68	$ 463,762.06	$ 408,110.62
2012/2013	$ 836,469.62	$ 444,930.65	$ 391,538.97
2013/2014	$ 855,257.94	$ 454,924.44	$ 400,333.51
2014/2015	$ 899,535.80	$ 478,476.49	$ 421,059.31
Average	**$ 876,709.32**	**$ 466,334.74**	**$ 410,374.58**

Historically, the County has funded the majority of its diversion-related activities for the unincorporated areas through a $2.35-per-ton SWMA franchise fee on all tonnage landfilled by non-exclusive haulers. DPW Recycling receives $1.25 per ton and DEH HHW receives $1.10 per ton. Figure 7-1 identifies the last five years' franchise fee revenues received for DPW Recycling and DEH HHW programs. Additional funding sources include a $0.02-per-ton countywide solid waste planning fee assessed on tonnage landfilled in San Diego County or generated in San Diego County and hauled to out-of-County landfills; C&D deposit forfeitures; grants; and other periodic funding opportunities. Supplemental information on DPW Recycling's sources and uses of funds in presented in Attachment R.

Figure 7-2: Franchise Fee Funding Decline as Diversion Rate Increases



Since the establishment of the franchise fee and County-wide solid waste planning fee in 1997 almost 20 years ago, the amounts of the per-ton fees have not changed. During the same period of time, tonnage has fluctuated with a decline of about 30% since 2007. The net result of these factors is that costs have increased (both inflationary and on an as-needed basis) and revenues to support those costs

have declined. The existing funding approach and cost structure results in a structural deficit. As the County plans for the policies, programs, and facilities that will help it achieve even higher levels of landfill diversion, the disposal-based funding to support those very programs will decline at the same time as the cost to the County for providing services increases (see Figure 7-2 for an illustration of this dynamic). It is essential that the County aligns its funding methods and amounts to provide sustainable funding as solid waste tonnage decreases so that is can support its current diversion programs and policies as well as those recommended for achievement of the County's Diversion Targets.

7.1 Evaluation of Sustainable Funding Options

A survey of recycling and solid waste funding approaches from other communities throughout California was conducted, as well as a survey of funding approaches approved through legislation. It resulted in identification of the following list of potential funding options that the County can employ as alternatives to the current funding methods. A description of each funding option is included in Attachment R. HF&H identified many other funding approaches and opportunities that are not presented here because they do not fit the County's conditions and/or may exacerbate the shortcomings of the current disposal-based funding methods.

- Customer Rates
- Franchise Fees (Gross Receipts)
- Franchise Fees (Container Volume)
- Franchise Fees (All Tons)
- Franchise Fees (Disposal Tons)
- AB 939 Fees
- AB 341 Fees
- AB 1826 Fees
- HHW Fees
- Administration Fees
- Parcel Fees
- C&D Permit Fees
- State-wide Producer Responsibility Legislation
- County Producer Responsibility Ordinances

7.2 Funding Strategies Proposal

HF&H recommends that the County proceed with implementation of the funding methods summarized in Figure 7-3 below to support the current DPW Recycling and DEH HHW programs and the programs and policies recommended for 75% Diversion.[17] The funding strategies are likely to be similar for achievement of Zero Waste; although the amounts of the various fees will probably be adjusted and additional funding mechanisms may be needed. Each funding strategy is discussed in Sections 7.2.1 through 7.2.5.

Local government funding in California is limited by a series of State-wide voter initiatives (e.g., Propositions 13, 26, and 218). The funding strategies suggested below are in use in other California jurisdictions, and HF&H understands that they can be structured and adopted in ways that are consistent with State law and judicial interpretation. However, there may be local ordinances and/or policies that govern funding approaches, which HF&H is not aware of and may have an impact on one or more of the suggested approaches. Prior to implementation of any funding approach, County Counsel should review the logic of the nexus and the specific adopting documents for each to ensure that the fees are legally compliant with both State- and local-level policies.

[17] The proposed funding strategy does not include funding for supporting food donation through the County's Food System Initiative as the County plans to fund this program through other means.

Figure 7-3: Summary of Recommended Funding Methods and Estimated Fees

Funding Method	Estimated Annual Funding Needed ($/yr)		Estimated Amount		Basis
	Low	High	Low	High	
SWMA Franchise Fees (a)	$2,223,000	$3,309,000	3.4%	4.3%	% of hauler's gross rate receipts
SWMA Hauler Adminstration Fees (b)	$137,000	$225,000	$8,000	$12,000	$ per year per hauler
C&D Permit Fees	$232,000	$640,000	$750	$3,000	$ per permit
HHW Fees	$655,000	$893,000	$4.00	$5.40	$ per year per occupied dwelling unit
Customer Rate	$5,932,000	$8,896,000	9.2%	11.5%	average rate increase including franchise fee

(a) SWMA franchise fees includes current DPW Recycling costs and recommended program and policy costs for DPW Recycling and other departments, excluding current and recommended costs covered by the Hauler Administration Fees, C&D Permit Fees, and HHW Fees.

(b) Hauler Adminstration Fee likely to be less for Roll-Off Haulers than for Full-Service Haulers.

If the County chooses not to implement one or more of the funding methods presented in Figure 7-3 and continues to use franchise fees to generate the funding needed, alternative franchise fee scenarios are presented in Figure 7-4. This figure presents franchise fees on a gross rates receipts basis as well as on a cost-per-ton basis, which are calculated based on all solid waste, recycling, and organics tons collected by non-exclusive haulers in 2015. This per-ton method is an alternative to the gross rate receipts basis and is further discussed in Section 7.2.1.

Figure 7-4: Alternative Funding Methods and Estimated Fees

Alternative Funding Method	Estimated Annual Funding Needed ($/yr)		Estimated Amount	
	Low	High	Low	High
Franchise Fees: % of Haulers' Gross Rate Receipts			% of Gross Rate Receipts	
SWMA Franchise Fee	$2,223,000	$3,309,000	3.4%	4.3%
Hauler Administration	$137,000	$225,000	0.3%	0.3%
HHW Program	$655,000	$893,000	1.1%	1.1%
SWMA Franchise Fee + Hauler Administration + HHW Program	$3,015,000	$4,427,000	4.8%	5.7%
Franchise Fees: $ per Gross Ton Collected			$ per Gross Ton Collected	
SWMA Franchise Fee	$2,223,000	$3,309,000	$4.30	$6.40
Hauler Administration	$137,000	$225,000	$0.30	$0.40
HHW Program	$655,000	$893,000	$1.30	$1.70
SWMA Franchise Fee + Hauler Administration + HHW Program	$3,015,000	$4,427,000	$5.90	$8.50

7.2.1 Modify SWMA Franchise Fee Methodology

Franchise Fees based on Gross Receipts

HF&H recommends that the County work with the non-exclusive haulers to negotiate a standard modification of the current SWMAs to collect franchise fees as a percentage of the gross receipts generated by the haulers from rates charged to customers for all materials collected by franchise haulers (and eliminate the per-ton franchise fee currently paid on solid waste disposal). HF&H further recommends establishing the same type of franchise fee structure for any new classes of non-exclusive haulers (e.g., roll-off, C&D haulers) created in response to this Strategic Plan. This is the most common approach to collecting franchise fees throughout California and typically results in lower administrative burden on the public agency to track and audit than other approaches that can be more easily manipulated by haulers. It is a percentage-based fee; therefore, it tracks with inflation over time (due to growth, price increases, etc.) without the County taking specific action to adjust the funding amount. In addition, collecting County fees based on gross receipts for all materials should reduce the volatility of the annual franchise fee revenues and ensure a continuing revenue stream as customers shift from solid waste collection to recycling and organics collection.

Due to the non-exclusive nature of the system, the County and the non-exclusive haulers will need to agree on a system that allows the County access to haulers' records in order to audit gross receipts without making proprietary pricing information subject to public information requests.

HF&H recommends that the County use the franchise fee revenue to fund all of the County's direct and indirect costs within DPW Recycling associated with both the continuation and enhancement of current diversion programs and implementation of the new programs recommended under this Strategic Plan.

Over the past 5 years, DPW Recycling's share of the SWMA franchise fee revenues has been $466,335 per year. Based on the 5-year average franchise fee payments and HF&H's benchmarks for the cost of hauling and disposal in the region (including a 10% profit margin), HF&H estimates that DPW Recycling's share of franchise fees is approximately the equivalent of 0.6% to 0.7% of the cumulative non-exclusive haulers' costs of service. DPW Recycling projects costs of $800,000 annually for current programs to be funded through the franchise fees. In order to effectively implement the Strategic Plan, $1,423,000 to $2,509,000 will be necessary annually for the recommended program for total annual funding of $2,223,000 to $3,309,000. The estimated funding requirements do not include current and new program and policy costs for hauler administration, C&D permit review, and HHW programs. In order to generate this revenue, HF&H estimates that the County will need to set the franchise fee amount at 3.4% to 4.3% of gross receipts. To put this in context, the average franchise fee is approximately 12% for residential collection for 15 cities in San Diego County (and many of these cities have additional AB 939 and/or administrative fees).

HF&H recommends setting the franchise fee at 4.3% of gross receipts in the first year and reserving the County's right to modify the fee in following years. HF&H further recommends implementing a robust audit program during the first year to monitor and ensure the accuracy of fee payments from each non-exclusive hauler. This allows the County an opportunity to gain experience with the revised fee basis and to more precisely understand the resulting franchise fee revenues. Based on the actual funding from the franchise fees in the first year and the actual funding needs for the implementation of the Strategic Plan, the County should review and adjust the fee to ensure that there is a reasonable alignment between the revenues generated and the funding needs. This review and adjustment process should continue on a periodic basis (every three to five years).

If the County chooses to fund SWMA administrative costs and/or HHW program costs through franchise fees on gross receipts, the franchise fee impacts are presented in Figure 7-4.

Franchise Fees based on Tonnage Collected

If the County chooses to continue with assessment of franchise fees on a per-ton basis, HF&H recommends that the per-ton franchise fee be assessed on all tons collected by the haulers (rather than the current method that collects fees on solid waste tons only). HF&H recommends that the per-ton franchise fee amount be adjusted annually by an inflation factor. Furthermore, the amount of the fee should be periodically reviewed and adjusted to ensure that there is a reasonable alignment between the revenues generated and the funding needs. The per-ton franchise fee amount is estimated to be $4.30 to $6.40 per ton, excluding funding for SWMA hauler administration, C&D permit review, and HHW programs. Given the various factors that will impact franchise fee revenues, the County may want to start at $6.40 per-ton estimate, and review and adjust the fee based on actual funding. On an ongoing basis, the County will need to focus audits on the allocations and accuracy tonnage reported, which will be more challenging for diverted tonnage than for solid waste tonnage because reporting protocols are not well established and haulers often rely on a multitude of facilities for diversion.

If the County chooses to fund SWMA administrative costs and/or HHW program costs through per-ton franchise fees, the franchise fee impacts are presented in Figure 7-4.

7.2.2 Establish SWMA Administration Fee

HF&H recommends establishing an annual SWMA hauler administration fee for all non-exclusive haulers in the form of an annual fee per hauler. HF&H further recommends establishing the administration fees for any new classes of haulers (e.g., C&D haulers) created in response to this Strategic Plan. This approach is recommended in order to fairly align the County's costs of administration to the amounts paid by the haulers. The County's labor efforts to administer, enforce, and audit haulers is a function of the number and extent of the performance requirements and reporting obligations prescribed in the SWMAs. These costs are influenced in only minor ways by the volume of business. For the tiered SWMA system recommended in Section 5.1.3, it is appropriate to establish a higher annual fee for Full Service SWMA haulers that provide cart, bin, and roll-off service than for Roll-Off SWMA haulers because additional staff effort will be required for the more detailed Full Service SWMAs.

HF&H recommends that the County use the administration fee to fund all of the County's direct and indirect costs associated with the administration, monitoring, enforcement, and auditing of the non-exclusive haulers. HF&H estimates that the County will incur $137,000 to $225,000 per year, plus inflation, for the current level of franchise administration and the additional effort to improve hauler regulation. While there is a cap of 29 SWMAs, some haulers hold multiple franchises (generally resulting from acquisitions), so there are effectively 11 haulers. It is reasonable to assume that many of the haulers held by related-party entities and affiliates would be consolidated under a tiered franchise system. Inclusion of C&D haulers needs to be considered as well. HF&H estimated an additional 5 to 10 C&D haulers may become part of the SWMA system. As such, HF&H estimated the administration fee based on having 16 to 21 haulers in the system. Using this estimate, the average fee would need to be set between $8,000 and $12,000 per hauler per year. HF&H recommends that the SWMA administrative fee be less for Roll-Off Haulers than for Full-Service Haulers because the administrative efforts will be less. For example, the estimated administrative fee for Roll-Off Haulers (including C&D haulers) could be set at approximately $8,000 and for Full-Service Haulers at $15,000.The final fee amounts can be refined

prior to implementation to more accurately reflect the number and type of haulers that are anticipated to participate in the tiered-hauler system.

Initially, the County may want to set the administrative fees 25% to 30% higher than the estimates provided here to generate additional funding to cover the increased management and audit efforts that are likely in the first year or two of the new system. It will also allow the County some time to fully understand the ongoing resource requirements for managing the system. Annually for the first two years and periodically thereafter, the County should reassess and adjust the amount of the administration fee to ensure that the revenues received are reasonably aligned with the County's costs.

7.2.3 Establish C&D Permit Fees

In past years, the County funded the review of C&D project compliance with the County's C&D ordinance through unclaimed performance deposits from previous C&D projects. However the availability of this funding has declined as compliance levels have increased, resulting in fewer unclaimed performance deposits. To provide a more sustainable funding method, HF&H recommends establishing a permit fee on all C&D projects that are required to comply with the County's C&D ordinance. This fee should be established: 1) in a manner consistent with other fees and data tracked by the County's building permit process; and, 2) with a reasonable nexus between the amount of the fee and the cost incurred by the County to administer and enforce the requirements of the ordinance relative to that project (e.g., percentage of project valuation, dollars per square foot, etc.).

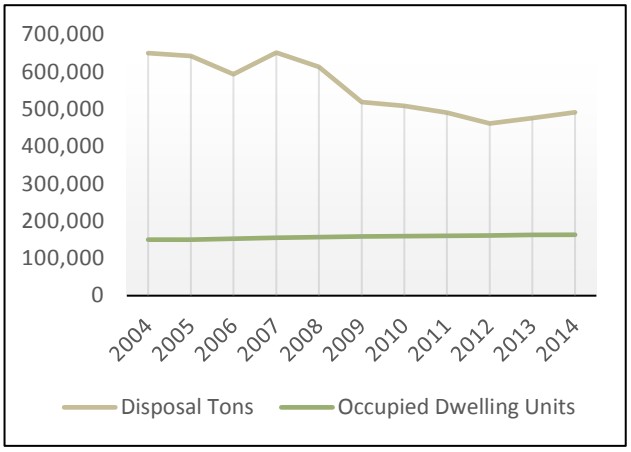
HF&H recommends that the County use the C&D permit fees to fund all of the County's direct and indirect costs associated with the review and evaluation of initial waste reduction and recycling plans for covered C&D projects; periodic assessment of each project's progress against those plans; and, final review of each project's performance against the plan and ordinance requirements. Any costs related to enforcement activities for non-compliant projects should be paid by penalties/fines established in the ordinance and/or through forfeitures of C&D performance guarantee deposits.

HF&H estimates that the County will incur between $232,000 and $640,000 per year, plus inflation, in total costs to manage and monitor C&D permit recycling activities including current and new program costs. This cost range relates to the number of covered projects with 150 projects per year assumed at the low end of the range and 440 projects per year assumed at the high end of the range. Using these costs and assumed number of projects, the permit fee would need to be approximately $1,500 per C&D permit, on average. A mechanism for annual or periodic review and adjustment of these fees should be defined to reflect changes in County costs for administration.

HF&H recommends that DPW Recycling and the Department of Planning and Development Services cooperate in the analysis required to determine an appropriate scaling of the fee at various project sizes to reflect the greater levels of effort associated with larger projects. For example, a fee of $750 per permit may be more appropriate for smaller projects, with larger projects paying $3,000; although more analysis is warranted to finalize these amounts.

7.2.4 Establish HHW Fee through Proposition 218 Assessment

Figure 7-5: Comparison of Current vs. Proposed HHW Fee Collection Basis



HF&H recommends that the County establish an HHW fee on all occupied residential dwelling units in the unincorporated County, using a Proposition 218 assessment process. Under the current funding approach, every customer subscribing to non-exclusive hauling services in the County is paying for the HHW program because the franchise fees paid by the haulers supports the HHW program. An assessment on each occupied dwelling unit provides greater equity by aligning those who benefit from the services (each and every resident in the County) with those who pay for them (each and every occupied residential unit in the County). This funding approach provides significantly greater funding stability and predictability, as illustrated in Figure 7-4. While annual disposal tons declined 24% from 2004 through 2014 (with significant year-to-year volatility), the number of occupied dwelling units have steadily increased by 9% over the same period. Furthermore, HF&H recommends that the HHW fee be established with some type of inflation or cost adjustment mechanism so that as the County's costs increase (due to economic factors, expansion of the HHW program in order to provide a higher level of service, handling of additional materials, or compliance with future regulations) the HHW fee is adjusted to cover actual costs.

HF&H recommends that the County use the HHW fee revenue to fund all of DEH's direct and indirect costs associated with the continuation of current HHW programs and implementation of the new HHW programs recommended under this Strategic Plan.

Over the period from FY 2010/11 to FY 2014/15, the SWMA franchise fee generated an average of $510,000 per year in revenue to fund the DEH-HHW operations. HF&H estimates that the County will incur between $145,000 and $383,000 in additional costs each year for the new HHW operations. This results in a total funding requirement between $655,000 and $893,000 per year. Data and projections published by the California Department of Finance estimate that there are 164,828 occupied dwelling units in the unincorporated County areas. Using these costs and estimated number of units, the HHW fee will need to be between $4.00 and $5.40 per dwelling unit per year. Costs incurred by the County in implementation of an HHW fee would be in addition to the estimated per-dwelling unit fee.

HF&H recommends that DEH, County Counsel, and the County Assessor's Office cooperate to: 1) agree on the exact funding requirement, based on selected programs; 2) establish the number of dwelling units on each residential parcel in the County; 3) revise the estimated assessment amount per dwelling

unit, based on the results of 1 and 2; and, 4) develop the specific assessment mechanisms, timing, and ordinance language required to implement this fee.[18]

7.2.5 Anticipate Customer Rate Increases

Many of the programs included in this Strategic Plan will be implemented and performed through the SWMA hauling system. As a result, the funding for the direct capital and operational costs of these programs will be borne by the haulers and passed on to their customers in the form of higher rates. Due to the non-exclusive, competitive nature of the SWMA system, pricing to customers is dynamic and varies, likely significantly, among haulers, service levels, and geographic areas. As such, the impacts to different customers and customer types will vary and, without rate regulation, will not be fully understood or controlled by the County. However, in the unregulated competitive market, there will likely be competitive pressure to minimize the impacts on customers, as price increase notices are the most common trigger for customers to shop their alternatives.

HF&H estimates that annual costs overall to the non-exclusive haulers, and therefore, to their customers, will increase between $5,932,000 and $8,896,000 including County costs for current and new programs and policies that will be recovered through the franchise fee. Using HF&H's estimate of the total annual hauler costs, it is likely that average customer rates will increase between 9.2% and 11.5% to fund the costs of the new programs recommended in the Strategic Plan, and actual current DPW Recycling program costs (which are greater than the costs funded by the current franchise fee). The estimated increase for the new programs and policies (net of the franchise fee) is approximately 7.0% to 8.2%. In most cases, the monthly cost increases will be greater for businesses (whose bills typically range from $70 to $1,500 per month) and less for residents (whose bills typically range from $15 to $50 per month). For a residential customer paying an average rate comparable to the cities in San Diego County, the rate increase may be $1.90 to $2.40 per month; however, some residents in the unincorporated area may be paying considerably more than the average rate in the cities and may experience rates increases in the range of $4.00 to $6.00 per month.[19] For businesses (whose bills typically range from $70 to $1,500 per month), the monthly rate impact will vary significantly. It is important to recognize that the actual rate impacts will vary because these estimated rate increases do not reflect the manner in which the haulers will adjust their rates to customers and do not take into account roll-off accounts that will share some of the costs.

7.2.6 Benefit from Producer Responsibility Funding

The County will benefit from existing and future State-level producer responsibility legislation for covered products. The State's funding of these programs will enable the County to divert materials that may not have been cost efficient to manage on the County level. The County should monitor the progress of current producer responsibility programs, advocate for their effective regulation and implementation, and work with stewardship organizations to ensure that they are establishing convenient access for unincorporated County residents and businesses. The County should also advocate for the State's expansion of producer responsibility programs into other toxic and hard-to-manage product areas and oppose attempts to shift these costs back to local governments.

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[18] The costs and staffing needs associated with establishing an HHW fee are not included in the program and policy estimates for the unincorporated areas in Section 4.

[19] The estimated rate increase was calculated based on the average 2015 residential rate from a rate survey of 17 cities prepared by the SANDAG Integrated Waste Management Technical Advisory Committee.

As the County implements its Mid-Term plan, it may be appropriate to adopt local producer responsibility ordinances for products or portions of the waste stream that have a significant impact on the County's Diversion Targets, but do not yet have State-level legislation. The County may have other policy reasons (e.g., public health and safety issues surrounding safe disposal of medicines and sharps) to adopt local ordinances sooner than the Mid-Term Phase.

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