
**Performance Audit of the
Environmental Services Department's Waste
Reduction and Recycling Programs**

**OPPORTUNITIES EXIST TO IMPROVE RECYCLING
RATES AND REDUCE ADVERSE IMPACTS
GENERATED BY WASTE HAULING**

AUGUST 2014

Audit Report

Office of the City Auditor
City of San Diego



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THE CITY OF SAN DIEGO

August 11, 2014

Honorable Mayor, City Council, and Audit Committee Members

City of San Diego, California

Transmitted herewith is a performance audit report on the City of San Diego's Environmental Services Department. This report was conducted in accordance with the City Auditor's Fiscal Year 2014 Audit Work Plan, and the report is presented in accordance with City Charter Section 39.2. The Results in Brief are presented on page 1. Audit Objectives, Scope, and Methodology are presented in Appendix B. Management's responses to our audit recommendations are presented after page 70 of this report.

We would like to thank staff from the Environmental Services Department for their assistance and cooperation during this audit. All of their valuable time and efforts spent on providing us information is greatly appreciated. The audit staff members responsible for this audit report are Andy Hanau, Alicia De La Garza, Matthew Helm, and Kyle Elser.

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Results in Brief

Approximately 1.3 million tons of waste generated by San Diego residents and businesses is placed in local landfills annually, including 835,000 tons at Miramar Landfill – the only remaining active City-operated waste disposal site. At this rate of disposal, it is anticipated that Miramar Landfill will reach capacity and close by 2025, at which time the City and its residents are expected to pay substantially higher landfill costs elsewhere. As a result, increased waste diversion and recycling are of paramount importance to the City of San Diego (City). In 2007, the City Council unanimously adopted the Citywide Recycling Ordinance (CRO), which requires most residents, businesses, and special events to recycle, and also adopted a deposit program to encourage recycling of construction and demolition waste. Furthermore, in 2013 the City Council unanimously adopted a Zero Waste Objective, which establishes goals of diverting 75 percent of the City's waste from landfill disposal by 2020 and achieving Zero Waste by 2040. In addition to City requirements and objectives, a variety of state mandates and goals also apply to the City's recycling efforts.

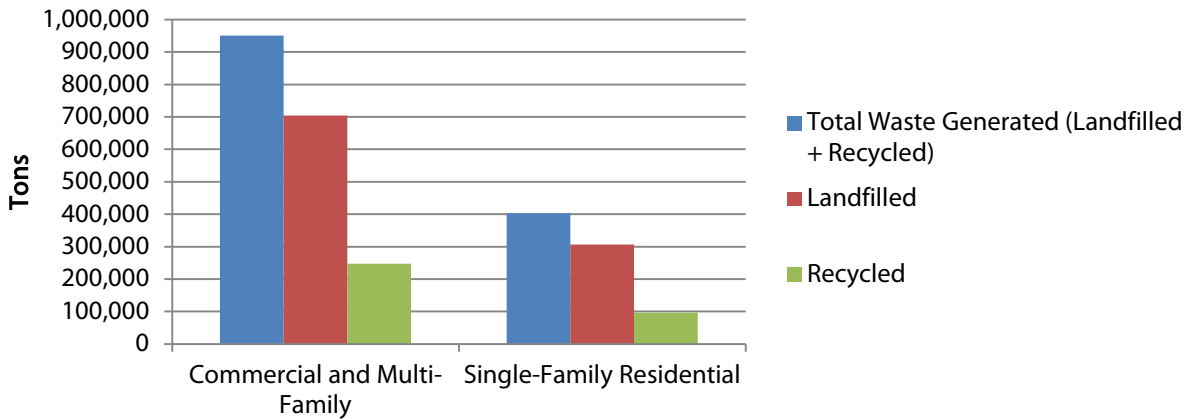
Commercial and Residential Recycling Rates Remain Low

While the Environmental Services Department (ESD) has successfully implemented many innovative programs that have helped increase the City's overall diversion rate to 68 percent,¹ we found that many businesses and residents are not meeting minimum CRO recycling requirements. As a result, the recycling rate for commercial and multi-family properties receiving service from one of the City's franchised waste haulers is only 26 percent, and the recycling rate for single-family residential properties receiving City collection services is only 23 percent. **Exhibit 1** shows total waste generated, landfilled, and recycled by property type in CY 2013.

¹ CY 2012 is the most recent year that the diversion rate has been calculated. According to ESD, the 68 percent diversion rate for CY 2012 will most likely slightly decrease for CY 2013 due to the cleaning and disposal of waste from storm water channels, and the recovering economy which will result in additional waste being generated.

Exhibit 1

Commercial and Residential Waste Disposed and Recycled, CY 2013

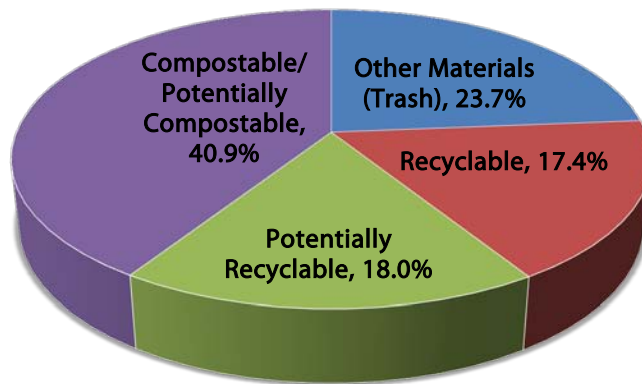


Source: OCA, using data provided by ESD.

At the same time, the City's most recent Waste Characterization Study indicates that the vast majority of waste deposited in landfills is recoverable and could be diverted from landfill disposal. This indicates that there is significant room for improvement in increasing recycling by businesses and residents, which is needed to ensure that the City reaches its waste diversion and recycling goals. **Exhibit 2** demonstrates the key findings of this study.

Exhibit 2

Approximately 76 Percent of Disposed Waste Is Recoverable: Composition of Overall Disposed Waste, CY 2012 - 2013



Source: OCA, based on the City of San Diego Waste Characterization Study, 2012-2013.

The City Can Improve Recycling Rates for Commercial and Multi-Family Properties by Requiring Haulers to Meet Minimum Recycling Requirements

We found that the primary reason for low recycling rates for commercial and multi-family properties receiving collection services from franchised haulers is that the City has not required the haulers – who have the most day-to-day contact with customers – to achieve minimum recycling rates or ensure that customers meet the City's minimum recycling requirements. Other jurisdictions have successfully increased recycling rates for customers receiving service from franchised haulers by including these requirements in franchise agreements. We recommend that the City revise the current franchise agreements and establish a target diversion rate requirement of between 50 and 60 percent by 2020. The revised franchise agreements should include incremental increases in the diversion rate to achieve the 50-60 percent goal by 2020. In addition, the City should require haulers to ensure that customers meet the City's minimum recycling requirements as a condition of providing service.

The City Should Consider a Districted Exclusive Franchise System to Increase Efficiency, Improve Incentives to Recycle, and Reduce Street Deterioration, Air Pollution and GHG Emissions, and Noise

We also found that the City's current non-exclusive franchise system – where many haulers operate in all areas of the City – does not maximize operational efficiency and may not provide the best incentives for recycling. Recently, other large West Coast cities have moved away from open market and non-exclusive franchise systems similar to the City of San Diego's, and toward districted exclusive systems whereby a single hauler operates in a defined area. This allows haulers to maximize routing efficiency and minimize operating costs. For example, a traffic study prepared for the City of Los Angeles estimates that mileage traveled by trash trucks is reduced by 35 percent in a districted exclusive system. Available research shows that this gain in efficiency can reduce average customer rates – even when adding additional recycling programs. In addition, due to their size and other operational characteristics, trash trucks contribute substantially to street deterioration, air pollution and greenhouse gas (GHG) emissions, and noise. Minimizing trash truck mileage would also minimize these adverse impacts on the City's infrastructure and environment.

Recognizing that the choice of franchise system the City uses is a policy decision that can only be made by the Mayor and City Council, we recommend that ESD conduct a study to estimate the costs and benefits of a districted exclusive franchise system in San Diego, and present the results of the study to the City Council as an option for consideration.

The City Can Improve CRO Enforcement for City-Serviced Residential Properties

We also found that several opportunities exist to improve enforcement of the CRO to ensure that residents who receive City collection services are recycling. Specifically, ESD can improve the effectiveness of enforcement efforts by:

- Conducting bin checks systematically instead of randomly to improve efficiency and coverage;
- Consistently placing educational, non-punitive violation notices on all bins where residents are not meeting recycling requirements;
- Taking proactive efforts to ensure all residents have recycling bins;
- Increasing resources for enforcement to more optimal levels; and
- Improving data collection and performance measurement for CRO enforcement activities.

While these steps will improve the effectiveness of enforcement efforts, our review of successful practices used by other jurisdictions indicates that the best way to improve residential recycling rates is to make recycling more convenient by providing weekly collection of recyclables, and by structuring customer rates to incentivize recycling. Neither of these options is currently available to ESD due to the financial and operational constraints that result from the People's Ordinance, which prevents the City from charging residents for trash collection. The City's unique limitations in adopting these successful practices may ultimately mean that the City should consider exercising its ability to issue fines to residents who continue to violate CRO recycling requirements after education and assistance in meeting requirements has been offered. This will help the City improve residential recycling rates, while recovering excessive enforcement costs incurred as a result of a consistent failure to recycle by some residents.

Recycling Efforts Can Be Improved at City Facilities

City facilities, like most businesses and residential properties, are required to recycle by the CRO. While some City facilities, such as beaches, have unique characteristics that may meet criteria to be exempt from CRO requirements, many others, including libraries, recreation centers, and City office buildings, should have adequate recycling available for users and employees. While some City facilities have recycling that meets minimum CRO requirements, others either have substandard recycling or lack recycling altogether.

Because the City requires most residents and businesses to recycle, and because the City's facilities are highly visible and serve a broad spectrum of City residents, the City should set a good example for residents by ensuring that City facilities meet recycling requirements where possible. We recommend that the Administration direct ESD to monitor City departments' compliance with the CRO and report on the status to the City Council on an annual basis. Additionally, ESD should undertake efforts to educate and assist City departments in meeting recycling requirements. Finally, because many City facilities are located in leased commercial space, we recommend that the City include compliance with minimum CRO requirements as a condition in future leases of commercial space.

We made a total of 12 recommendations to address the issues we identified. The Administration agrees with all 12 recommendations. The Administration's response to our findings and recommendations is located after page 70 of this report.

Background

The City of San Diego (City) has been responsible for solid waste management services since the People's Ordinance² was enacted in 1919. Currently, these services include: residential refuse, recyclable materials and green waste collection from single family residences and some apartment complexes; recycling and waste diversion programs; operation of the Miramar Landfill; operation of the Miramar Greenery; maintenance of closed landfills; litter control; cleanup of illegal dumps; and the management of franchises for private solid waste enterprises to provide commercial waste collection and hauling and/or operate solid waste facilities.

The Environmental Services Department (ESD) was established by the San Diego City Council in 1988 to protect the environment and to provide all San Diego residents with properly disposed municipal solid waste, along with an environment free of litter and illegal dumping. ESD pursues waste management strategies that emphasize waste reduction and recycling, composting, and environmentally-sound landfill management to meet the City's long-term disposal needs.

ESD is divided into three operational divisions and the Office of the Director. The three operational divisions are: 1) Collection Services; 2) Waste Reduction and Disposal; and 3) Energy, Sustainability and Environmental Protection. This audit was focused on the recycling programs administered by the Collection Services division and the Waste Reduction and Disposal division.

Waste Diversion Is an Important Part of the City's Long Range Financial and Environmental Goals

Approximately 1.3 million tons of waste generated by San Diego residents and businesses is placed in local landfills annually, including 835,000 tons at Miramar Landfill – the only remaining active City-operated waste disposal site. At this rate of disposal, the Miramar Landfill will likely be filled to capacity and close by 2025. Because of this, recycling and waste diversion are of paramount importance to San Diego. When Miramar Landfill closes, the City, businesses, and residents will have to pay significantly higher costs to dispose of waste at other landfills. For example, the General Fund currently pays

² Under a 1986 voter-approved amendment, the City provides free refuse collection services to eligible residences, primarily consisting of single family homes. The People's Ordinance is codified in San Diego Municipal Code §66.0127.

\$21/ton³ to dispose of residential waste at Miramar Landfill, and total General Fund tipping fee expenses were expected to be approximately \$8.5 million in FY 2014. According to the City's Long-Term Resource Management Plan, once Miramar Landfill closes, General Fund costs for disposal at Sycamore Landfill are projected to rise to \$71/ton, which would increase General Fund expenses to \$29 million at current disposal totals. Once Sycamore Landfill closes, costs are projected to further rise to \$142/ton, which would increase General Fund expenses to \$58 million.⁴ Therefore, while simply disposing of all materials at a landfill is relatively inexpensive today,⁵ failing to recycle imposes a substantial future cost that will be borne by residents, businesses, and taxpayers.

In CY 2012-2013, the City completed a Waste Characterization Study, a scientific tool used by jurisdictions to assess the amount and types of waste being disposed in landfills for the purposes of evaluating and expanding recycling programs. The City's Waste Characterization Study demonstrated that 76 percent of materials being disposed City-wide are recyclable. See **Exhibit 3** for key findings of the study, which shows that 41 percent of overall waste is compostable, 17 percent is recyclable and 18 percent is potentially recyclable. See **Appendix C** for a breakdown of disposed waste by material type.

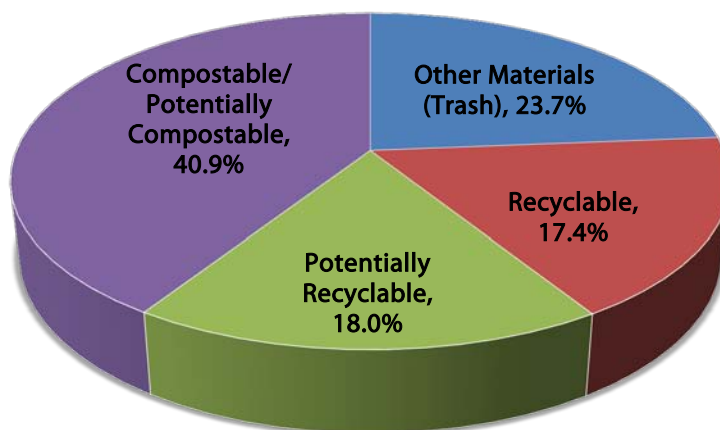
³ On July 1st 2014, the disposal fee for the City's disposal of residential waste at Miramar Landfill increased to \$24/ton.

⁴ The future disposal cost figures cited in the City's Long-Term Resource Management Plan are based on 2012 projections. According to ESD, the projections are subject to a degree of volatility.

⁵ While recycling is generally cheaper than landfilling waste, few customers can currently recycle all of their waste. Therefore, customers who recycle need to have both trash and recycling service, which can be more expensive than trash service alone. This is also discussed in Finding 1.

Exhibit 3

76 Percent of the City's Landfilled Waste is Recoverable: Composition of Overall Disposed Waste, CY 2012 - 2013



Source: OCA, based on the City of San Diego Waste Characterization Study, 2012 - 2013.

According to ESD, San Diegans throw away enough recyclables annually to:

- Energize over 181,000 households for a year;
- Conserve 3,355,937 barrels of oil;
- Fuel over 400 cars for a year (156,610,400 gallons/25 miles per gallon/15,000 miles/year);⁶
- Shorten the lifespan of the Miramar Landfill by an estimated 6-9 months for every year of operation; and
- Risk the City's ability to achieve City and State recycling requirements and goals.

Increased Waste Diversion Is Needed to Meet State Mandates and Goals

In 1989, the State of California passed Assembly Bill 939 (AB 939), which required all jurisdictions to achieve a minimum waste diversion rate of 50 percent by the year 2000 and annually thereafter, and submit an annual update of programs to CalRecycle for approval, or face fines of up to \$10,000 per day. AB 939 also permitted jurisdictions to collect fees (referred to as 'AB 939 fees') to support recycling programs. In San Diego, this recycling fee is currently \$10/ton for all waste collected in the City that is disposed, regardless

⁶ These energy equivalencies were calculated by ESD using the United States Environmental Protection Agency's Waste Reduction Model (WARM). This model compares the amount of energy that would be required to make new materials from virgin resources to the amount of energy that is needed to make them from recycled materials, and translates energy savings from recycling into common equivalents. For example, according to WARM, recycling one ton of paper saves enough energy to power the average American home for six months.

of the disposal location, and all waste disposed at Miramar Landfill, regardless of where it originated. In 2001, California's Department of Resources Recycling and Recovery (CalRecycle) set a goal of Zero Waste in its strategic plan for the state. More recently, the state passed Assembly Bill 341 (AB 341) in 2011, which establishes a statewide goal of 75 percent waste diversion by 2020.⁷

The City Has Implemented Innovative Programs that Have Improved the Overall Diversion Rate

Led by ESD, the City has already been working towards increasing waste diversion and recycling by fostering sustainable resource management practices, as demonstrated by its 68 percent diversion rate in CY 2012.^{8,9} This diversion rate has been achieved due to many innovative programs that the City and ESD have implemented over the past several decades, including:

- Recycling of Christmas trees since 1973;
- Curbside collection of recyclables and green waste since 1988;
- White paper recycling at City offices since 1988;
- Comingled recycling at City offices since 2003;
- Automated trash collection since 1994;
- Partially automated green waste collection since 2000; and
- Automated recycling collection since 2001.

In addition to these programs, in 2007 the City Council unanimously adopted the Construction and Demolition Debris (C&D) Deposit Program. The program creates an economic incentive to recycle C&D debris through the collection of fully refundable deposits which are returned upon proof of the amount of C&D debris that was diverted from landfill disposal. The C&D Ordinance went into effect in FY 2009. According to program management, since the implementation of the program, the amount of C&D that is disposed at Miramar Landfill has declined from approximately 400,000 tons per year to less than 40,000 tons per year. While some of this reduction undoubtedly resulted from a decline in construction activity due to the economic downturn, ESD reports that the recycling rate for C&D materials that

⁷ CalRecycle recently changed the performance metric from diversion rate (percentage of total waste generated that is diverted from disposal) to per capita disposal (tons of waste disposed per capita). The per capita disposal figure can be used to calculate the overall diversion rate. The overall diversion rate is used in this report for clarity and consistency.

⁸ This diversion rate will most likely slightly decrease for CY 2013 due to materials that were cleaned out of drainage channels in the Tijuana River Valley. These materials were disposed in the Miramar Landfill.

⁹ The 68 percent diversion rate includes materials that are recycled by individuals and non-franchised haulers.

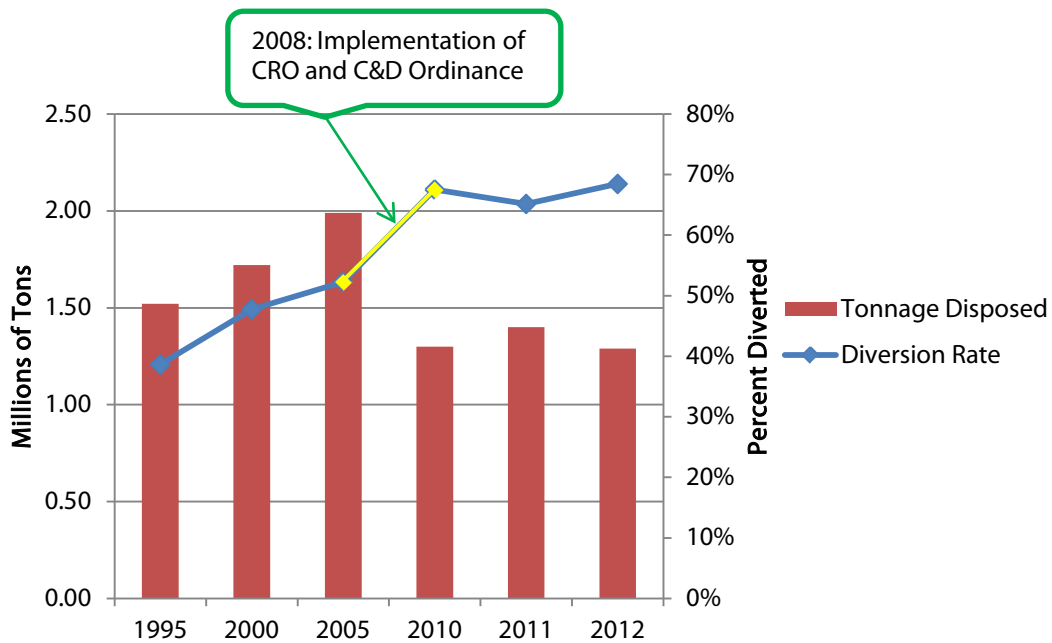
are subject to the deposit program has averaged 85 percent, which is a strong indicator of the program's success.

Also in 2007, the City Council unanimously adopted the Citywide Recycling Ordinance (CRO), which requires most residents, businesses, special events, and City facilities to separate recyclable materials from trash and arrange for recycling collection service. The CRO was phased into effect between 2008 and 2010. The effect of the CRO on the City's recycling rates for commercial, residential, and City facilities is discussed in more detail in the Findings sections of this report.

Exhibit 4 shows how the City's diversion rate has changed over the past 20 years.

Exhibit 4

Disposal and Diversion in San Diego, CY 1995 - 2012



Source: OCA, based on data provided by ESD.

Additional Waste Diversion and Recycling Is Needed to Meet the City's Resource Management Objectives

Despite the improvement in the City's overall diversion rate, additional waste diversion and recycling are needed to achieve the City's resource management objectives and meet state diversion goals. At the beginning of FY 2014, the City Council unanimously adopted a Zero Waste Objective for the City, which establishes targets of diverting 75 percent of waste by 2020 and achieving Zero Waste by 2040, via the elimination of waste from landfill disposal and

the diversion of recyclable materials to reprocessing into usable forms with minimal transport, energy use, and harm to society and the environment. Zero Waste is a principle that entails handling discarded materials as resources rather than waste, conserving these resources through waste prevention, recycling and composting and takes into consideration how resources flow from "cradle to grave."

ESD is currently working on a proposal for a Zero Waste Plan to achieve these objectives. In addition, ESD is in the planning stages for a Resource Recovery Center to be constructed at Miramar Landfill, which will help customers who self-haul their own waste to separate their recyclables from trash. In 2013, ESD began distributing new recycling containers to customers receiving City recycling services, which include printed graphics to educate customers regarding what materials to place in their recycling bin.

Businesses and Most Multi-Family Residential Facilities Receive Collection Service from Private Franchised Haulers

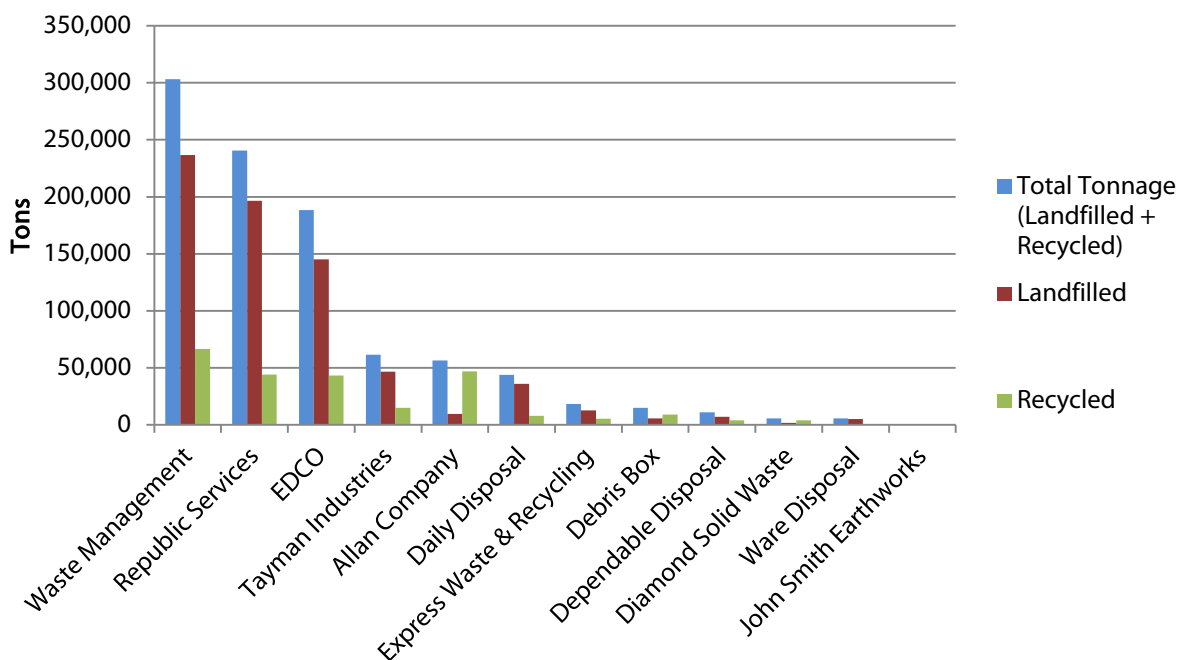
The City of San Diego oversees a non-exclusive franchise system for the collection of solid waste from commercial facilities as well as most multi-family residential properties. Under this system, the City grants franchises to private waste hauling enterprises, which permits them to collect solid waste from customers in the City. Under a non-exclusive system, each hauler is permitted to operate throughout the entire City. According to ESD, 21 companies¹⁰ currently have franchises to provide collection services to approximately 15,000 customers within the City. These companies are required to comply with the terms of their franchise agreements, including the payment of franchise fees to the City's General Fund, which are charged per ton of waste collected in the City. In FY 2013, franchise fee payments totaled approximately \$10 million.

Franchises must be approved by the City Council, and the San Diego Municipal Code limits the term of franchises to 10 years. However, the current franchise agreements are issued for a maximum seven-year term, and are renewed annually. Franchised haulers collected approximately 1 million tons of trash and recyclables in 2013. **Exhibit 5** shows the City's current franchised haulers, the total amount of waste they collected in 2013, and the amount that was disposed and recycled.

¹⁰ According to ESD, while there are a total of 21 franchise agreements, due to consolidation, there are effectively 12 haulers operating in the City. Three franchisees and their affiliates collect approximately 77 percent of the City's commercial waste.

Exhibit 5

Franchise Hauler Tonnage Collected, Disposed, and Recycled, CY 2013



Source: OCA, based on hauler reports from ESD.

Most Residential Properties Receive City Collection Services

The People's Ordinance was enacted by the voters in 1919 and then amended by the voters twice –once in 1981 and again in 1986. The People's Ordinance shifted responsibility to the City to collect and dispose of residential and commercial refuse generated in the City. It also required the Council to levy a sufficient tax to pay for collection and disposal services. However, the City never imposed the tax called for in the Ordinance, which established a precedent for no-fee trash collection. Subsequently, under the 1986 amendment, the language explicitly authorizing the tax was removed, and City responsibility for commercial refuse collection essentially was eliminated. As a result, the City continues to provide free refuse collection services to eligible residences, which primarily consist of single family homes.¹¹ This is a relatively unique municipal arrangement, and limits revenue available for trash collection and recycling operations for residential properties. Only two other jurisdictions in California still provide free trash collection services.

¹¹ In addition to single-family homes, the City provides free collection services to some multi-family residential properties that meet service eligibility criteria. However, most multi-family properties procure refuse collection services from one of the City's franchised haulers.

The City's Collection Services Division provides weekly refuse and every-other-week recyclables collection to approximately 283,000 residential locations throughout the City.¹² Another 190,000 residences receive every-other-week yard waste collection services.

Exhibit 6 demonstrates a sample from ESD illustrating the types of materials that go in the blue recycling bin and black trash bin, and highlights options for the reuse or diversion of other materials.

Exhibit 6

The City's Curbside Service Collects Many Types of Recyclables

WHAT GOES WHERE?

Blue Bin Recycling =

- Magazines and catalogs
- Phone books
- Aluminum cans
- All glass and plastic bottles and jars
- Newspapers
- Mail
- Paper or frozen food boxes
- Cartons and drink boxes
- Clean plastic food containers and cups
- Wrapping paper
- Paper bags
- Shredded paper (bagged and tied/taped)
- Cardboard
- Metal cans
- Clean aluminum foil and foil trays
- EMPTY aerosol cans
- Plastic buckets, tubs, pots, trays and toys

Black Bin Trash =

- Plastic utensils
- Plastic wrap
- Compostable products
- Styrofoam containers
- Glassware
- Ceramics
- Pillows
- Diapers
- Pet poop

Home Composting Bin =

- Leaves
- Grass
- Fruit and vegetable waste

Take yard waste to MIRAMAR GREENERY

Household Hazardous Waste - Please call (858) 694-7000 for disposal options.

- Toxic products
- E-waste
- Paint
- Bulbs
- Batteries
- Motor oil
- Needles and syringes
- Propane tanks/cylinders and helium tanks

Return to Retailer

- Plastic bags
- Styrofoam peanuts

Donate Reusable Items

- Small appliances
- Shirts and shoes
- Pants
- Other clothes
- Comforters

Source: ESD website.

¹² As discussed in more detail in Finding 2, available data indicates that some of these 283,000 customers may not have blue bins to receive recycling service.

ESD Enforces CRO Requirements for Commercial, Multi-Family, and Single-Family Residential Properties

Enforcement of the CRO for commercial and multi-family properties receiving collection service from a franchised hauler is conducted by three ESD Code Enforcement Officers and two Recycling Specialists. According to ESD, enforcement is focused on educating and assisting customers to comply with CRO requirements. While fines for non-compliance are permitted by the CRO, relatively few have been assessed for hotels, multi-family properties, and businesses.¹³

ESD also has a Franchise Administrator to oversee compliance with franchise requirements, and the City Treasurer's Office periodically reviews franchise and AB 939 fee payments to ensure the accuracy of fees paid and to seek payment of underpaid fees.

Enforcement of the CRO for residential properties receiving City collection services is conducted by 12 Code Enforcement Officers who conduct bin checks to ensure that residents are separating recyclable materials from trash and placing them in the blue recycling bins. This is a small part of the many other enforcement duties these officers have, which includes investigating illegal dumping and abatement of homeless encampments. Three of the officers conduct additional CRO enforcement, but this is primarily targeted at commercial businesses, multi-family properties, and special events that are subject to CRO requirements, as noted above. As with enforcement of the CRO for commercial and multi-family properties, ESD's enforcement of the CRO for City-serviced properties is focused on education and assistance in meeting CRO requirements. To date, no single family properties have ever received fines.

The General Fund, Disposal Fund, and Recycling Fund All Support Waste Reduction and Disposal Operations

The City has a complex network of revenue and expenses related to refuse disposal and recycling. Each ton of refuse that is disposed in the Miramar landfill is charged a variety of different fees. Tipping fees support the Refuse Disposal Fund, and vary depending on the type of refuse hauler and the waste delivered for disposal. The Recycling Fund is supported by AB 939 fees¹⁴ and revenues received from the sale of recyclable materials, while franchise fees and the Refuse

¹³ A total of 66 fines have been assessed for commercial, multi-family properties, City-serviced properties, and special events.

¹⁴ Recycling fees are authorized by AB 939, which was enacted to combat the increase in waste generation and the decrease in landfill capacity throughout the State. The bill mandated the reduction of waste being disposed (25 percent by 1995, 50 percent by 2000 and annually thereafter) and allowed the collection of fees to support recycling programs. In San Diego, this recycling fee is \$10/ton on all waste collected in the City that is disposed, regardless of disposal location, and all waste disposed at the Miramar Landfill, regardless of origin.

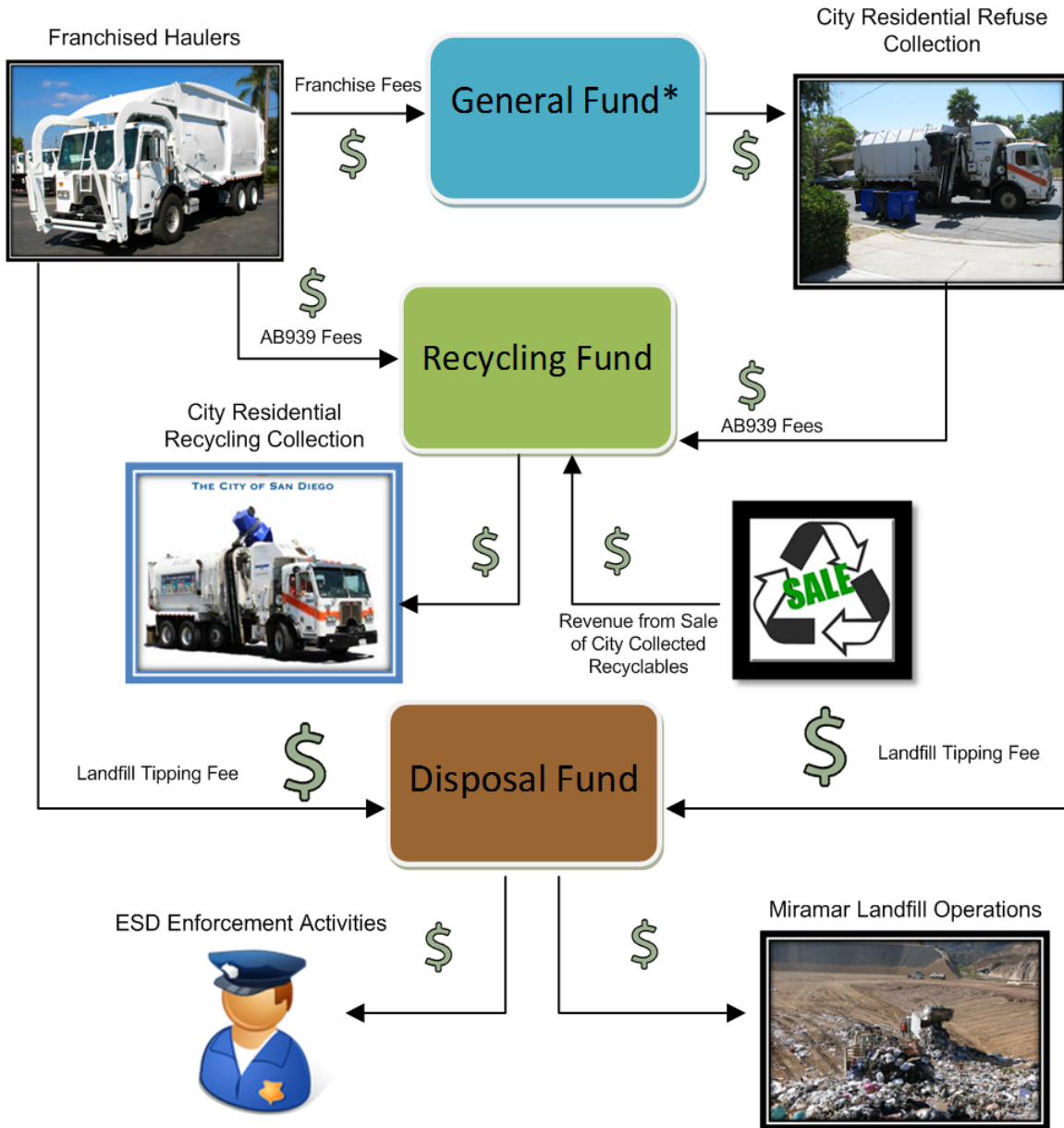
Collector Business Tax¹⁵ are allocated to the General Fund. In addition, several funds within the City must also pay these refuse disposal fees, since they too generate waste and dispose of waste in the landfill. The General Fund bears the largest expense for disposal fees, as a result of providing residential refuse collection free of charge, which includes paying tipping fees to the Disposal Fund and AB 939 fees to the Recycling Fund. **Exhibit 7** diagrams the major revenues and expenses flowing to and from these funds. In addition to the expenditures shown, in FY 2015 the City plans to spend approximately \$70 million¹⁶ to slurry seal and resurface deteriorating streets and repair potholes. A significant portion of these maintenance costs are due to street deterioration caused by heavy vehicles such as trash trucks.

¹⁵ The Refuse Collector Business Tax is assessed on waste disposed at the Miramar Landfill by (i) commercial refuse collectors who are not City franchisees, (ii) other non-franchisee, commercial users of the Miramar Landfill, and (iii) individuals who dispose of two tons or more at a time (considered a commercial amount).

¹⁶ Funding for these expenses comes from various sources, the most significant of which are deferred capital bonds.

Exhibit 7

The City Has A Complex Funding Network for Waste Disposal and Recycling Activities



Note: In addition to the expenditures shown, in FY 2015 the City plans to spend approximately \$70 million to slurry seal and resurface deteriorating streets and repair potholes. A significant portion of these maintenance costs are due to street deterioration caused by heavy vehicles such as trash trucks. Funding for these expenses comes from various sources, the most significant of which are deferred capital bonds.

* Note: The General Fund also receives franchise fees from the Sycamore Landfill Facility Franchise Agreement (FFA) and from the FFA for EDCO's Transfer Station on Dalbergia Street. The EDCO FFA calls for franchise fees of \$0.76 per ton of waste transferred from the Transfer Station and ultimately disposed. The total revenue received from these fees is approximately \$2.8 million.

Source: OCA, using information from ESD and City budget documents.

Exhibit 8 below shows each fund's budget for FY 2014, including waste and recycling related expenditures for the General Fund. **Appendix D** shows major budgeted revenues and expenses for each fund.

Exhibit 8

FY 2014 Budget by Fund

Fund Name	FTE	REVENUES	EXPENDITURES
Automated Refuse Container Fund		\$700,000	\$800,000
General Fund	105.92	\$9,100,000	\$32,257,985
Recycling Fund	107.33	\$17,777,651	\$23,292,297
Refuse Disposal Fund	149.02	\$29,374,301	\$31,932,996
FY 2014 TOTAL	362.27	\$56,951,952	\$88,283,278

Note: Some expenditures in the General Fund are also reflected as revenues for the Recycling and Refuse Disposal Funds.

Source: OCA, using information provided by ESD.

Finding 1: While the City Has Made Significant Progress Toward Increasing Recycling Overall, the Recycling Rate for Commercial and Multi-Family Properties Remains Low and Impacts the City's Ability to Reach Waste Reduction Goals

Although the City's overall diversion rate reached a high of 68 percent in CY 2012, the rate for commercial and multi-family properties that are serviced by the franchised haulers remains low – only 26 percent in CY 2013. Significantly increasing the diversion rate for commercial and multi-family properties – which combined, make up the largest source of waste generation in the City – is necessary to achieve the City's recycling goals. We found that the City's current enforcement strategy, which focuses on holding the property owner responsible for complying with recycling requirements, is unlikely to succeed without concurrently requiring each franchised hauler to achieve minimum recycling rates. The City should revise the current franchise agreements and establish a target diversion rate requirement of between 50 and 60 percent by 2020. The revised franchise agreements should include incremental increases in the diversion rate to achieve the 50-60 percent goal by 2020. Additionally, the City should periodically review minimum recycling rate requirements and determine if the rates should be increased, based on the availability of markets and cost-effective technology to recover additional materials as well as the City's need to increase overall waste diversion.

The Commercial and Multi-Family Recycling Rate Remains Low Despite Citywide Recycling Requirements

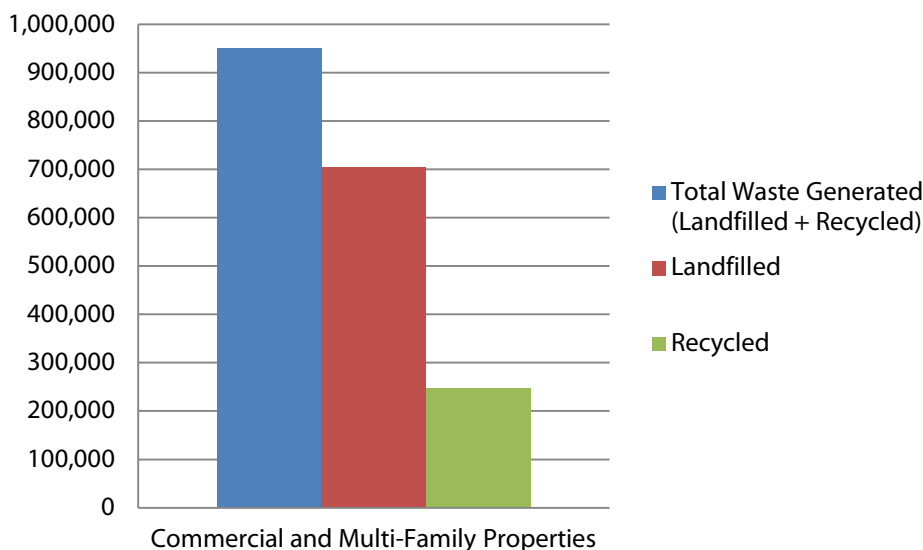
While the City has been able to make improvements in the overall waste diversion rate over the last several years, increased diversion has largely resulted from the implementation of the Construction and Demolition Debris (C&D) Recycling Ordinance. According to ESD, since the ordinance was implemented in FY 2009, the recycling rate for C&D materials subject to the deposit program has been 85 percent,¹⁷ and the amount of construction waste deposited in Miramar Landfill annually has declined from 400,000 tons per year to less than 40,000 tons per year. However, despite the concurrent implementation of the Citywide Recycling Ordinance (CRO) beginning in 2008, hauler waste and recycling reports provided by

¹⁷ This only includes C&D that is subject to the C&D Recycling Ordinance. ESD does not monitor recycling rates for C&D that is not subject to the ordinance.

ESD indicate that the diversion rate for the City's 15,000 commercial and multi-family residential properties remains low – only 26 percent in CY 2013.¹⁸ Of the approximately 1.3 million tons of City waste that was landfilled in 2013,¹⁹ 700,000 tons (54 percent) was generated by commercial and multi-family properties that are serviced by the City's franchised haulers. **Exhibit 9** shows the total amount of commercial and multi-family solid waste collected in CY 2013, along with the amounts that were landfilled and recycled. Due to the amount of waste they generate, continued low diversion rates for commercial and multi-family facilities significantly impact the City's ability to achieve waste reduction goals.

Exhibit 9

Tons of Waste Generated, Landfilled, and Recycled by Commercial and Multi-Family Residential Properties in CY 2013



Note: As discussed in the background section, the City's overall diversion rate as determined by CalRecycle is currently 68 percent. The 68 percent total includes materials that are recycled by individuals and non-franchised haulers, which are not tracked by the City and are not reflected in the totals in this chart.

Source: OCA analysis, based on tonnage data provided by ESD.

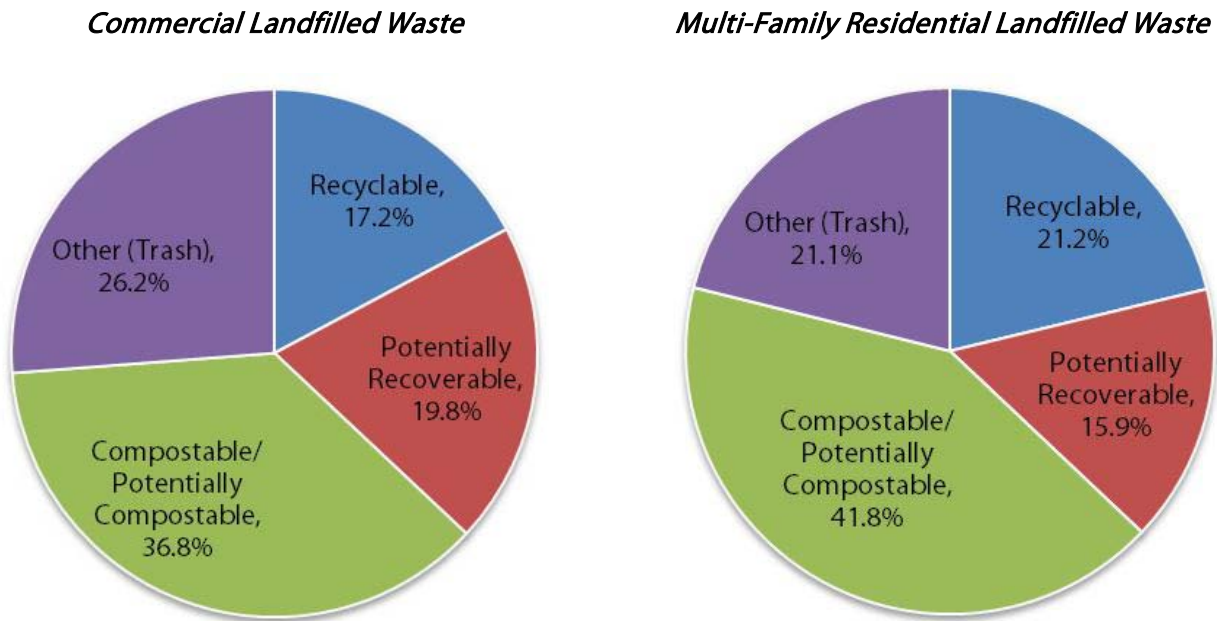
¹⁸ ESD stated that from 2008 to 2011, there was a 92 percent increase in recycling and a 12 percent decrease in trash service volume for commercial and multi-family properties. However, the recycling rate has remained the same for the past two years at 26 percent.

¹⁹ The most recent landfill disposal totals available are for 2012. According to ESD, this total is not expected to change significantly for 2013.

Furthermore, as **Exhibit 10** shows, the majority of landfilled commercial and multi-family waste consists of recoverable materials, including dry recyclables like bottles, cans, and metal products, as well as compostable/potentially compostable materials including food waste, soiled paper products, and yard waste. This indicates that there is considerable room for improvement in current diversion rates for commercial and multi-family facilities.

Exhibit 10

Commercial and Multi-Family Landfilled Waste by Recovery Potential, CY 2012-2013:



Source: OCA, using data from ESD.

The Citywide Recycling Ordinance Requires Most Commercial and Multi-Family Facilities to Recycle

The CRO was unanimously adopted by the City Council in 2007, and was phased into effect between January 1, 2008 and January 1, 2010. For commercial and multi-family properties, which receive trash collection from one of the City's franchised haulers, the CRO requires them to separate recyclable materials, including bottles, cans, paper, and metal products from trash, and to arrange for recycling collection. All facilities which generate at least four cubic yards of trash per week are required to recycle under the CRO.²⁰

The CRO provides ESD with some flexibility in applying recycling requirements. Currently, ESD requires these facilities to maintain a

²⁰ Prior to July 1, 2012, only properties generating more than six cubic yards of trash and recyclables were required to comply with the CRO.

minimum service ratio of 30 percent recycling to 70 percent trash. For example, a property that generates seven cubic yards of trash per week must have at least three cubic yards of weekly recycling service. Larger facilities – multi-family properties with 50 units or more, or commercial properties that are at least 10,000 square feet – are required to have a minimum ratio of 40 percent recycling to 60 percent trash. These requirements are summarized below in **Exhibit 11**. Overall, approximately 10,000 commercial and multi-family facilities are subject to the CRO. These facilities generate approximately 90 percent of the City's commercial and multi-family residential waste.²¹

Exhibit 11

Summary of CRO Requirements for Commercial and Multi-Family Facilities

FACILITY TYPE	MINIMUM RATIO OF RECYCLING TO TRASH
Commercial Facilities - Less Than 10,000 Sq. Ft.	30% Recycling to 70% Trash
Multi-Family Facilities - Less Than 50 Units	
Multi-Family Facilities - 50 Units or More	40% Recycling to 60% Trash
Commercial Facilities - 10,000 Sq. Ft. or More	

Source: OCA, using information from ESD.

Nearly 60 Percent of Commercial and Multi-Family Facilities Do Not Comply With Recycling Requirements

ESD requires the franchised haulers to submit annual reports which contain information on customer trash and recycling service levels so that compliance with the CRO can be monitored. We found that, according to these reports, at least 5,600 (59 percent) of the commercial and multi-family residential facilities receiving trash collection service from one of the City's franchised haulers do not comply with CRO requirements for the minimum required recycling service, including 2,975 (31 percent) which do not have any recycling service at all.²² In fact, the percentage of non-compliant properties is likely significantly higher, but the reports do not contain information on the property type and size that is needed to determine which properties are subject to the higher (40 percent) recycling ratio requirement. As a result, more than 20,000 cubic yards of recyclable

²¹ These totals are based upon OCA analysis of hauler customer reports provided by ESD. These reports are discussed in more detail in the following section.

²² While some facilities may meet criteria for reduced recycling requirements due to lack of space for recycling containers, this is rare according to ESD. In addition, hauler reports may not capture all customers since some may self-haul or have private non-franchised haulers pick up their recyclable materials.

materials are being unnecessarily deposited into Miramar Landfill every week – the equivalent of 1,000 three-cubic-yard dumpsters every day or 50,000 tons per year. These results are summarized in **Exhibit 12** and **Exhibit 13**.

Exhibit 12

Summary of CRO Compliance for Commercial and Multi-Family Facilities

Number of Facilities Subject to CRO	9,555
Number of Facilities Not Meeting Minimum CRO Recycling Requirements	5,621
Percent of Facilities Non-Compliant	58.80%
Actual Weekly Trash Service for Non-Compliant Facilities (Cubic Yards)	105,518
Minimum Weekly Recycling Service Required by CRO (Cubic Yards)	36,466
Actual Weekly Recycling Service for Non-Compliant Facilities (Cubic Yards)	16,036
Recyclables Unnecessarily Landfilled Weekly (Cubic Yards)	20,430

Source: OCA analysis, based on hauler reports provided by ESD.

Exhibit 13

50,000 Tons of Commercial/Multi-Family Recyclables Are Unnecessarily Landfilled Each Year



Because hauler reports indicate that nearly 60 percent of multi-family and commercial properties do not comply with CRO recycling requirements*, more than 20,000 cubic yards of recyclables are unnecessarily landfilled each week. This is the equivalent of 1,000 of these three-cubic-yard dumpsters full of recyclables every day, or approximately 50,000 tons every year.

* Note: While some facilities may meet criteria for reduced recycling requirements due to lack of space for recycling containers, this is rare according to ESD. In addition, hauler reports may not capture all customers since some may self-haul or have private non-franchised haulers pick up their recycling materials.

Source: Public online image.

**Franchised Waste Haulers
Have Few Incentives to
Ensure that Customers Meet
Recycling Requirements**

We found that the primary reason for low commercial and multi-family CRO compliance rates is that the City has not required the franchised haulers – who have the most day-to-day contact with customers – to achieve minimum diversion rates or ensure that customers meet minimum recycling requirements. Instead, ESD currently staffs three Code Enforcement Officers and two Recycling Specialists to educate residents and businesses and to ensure that commercial and multi-family properties are complying with City recycling requirements. However, with approximately 15,000 commercial and multi-family properties²³ to monitor, the City is not well-positioned to ensure that commercial and multi-family facilities are meeting recycling requirements.

In fact, absent any City requirement that each franchised hauler achieves a minimum diversion rate, haulers actually have a disincentive to require customers to meet recycling requirements. While recycling service is generally cheaper to provide than trash service due to the revenues received from the sale of recyclables, some haulers noted that it is more expensive to provide both trash and recycling service than to simply collect all waste as trash and deposit it in the landfill. This means that for a franchised hauler to require a non-compliant customer to increase their recycling service, the hauler may have to increase the amount charged to the customer – and risk losing the customer to another franchised hauler that does not require them to comply with the CRO to receive service.

**Other Jurisdictions Have
Improved Recycling Rates
by Requiring Franchised
Haulers to Meet Minimum
Diversion Requirements**

We found that other jurisdictions have successfully increased commercial and multi-family recycling rates by requiring the haulers to reach minimum diversion rates as a condition of maintaining their franchise with the City. This provides the haulers – who are best positioned to determine the recycling needs of each customer – with an incentive to invest in recycling infrastructure and ensure that their customers are recycling as much as possible.

For example, since 2002 the City of Pasadena, which like the City of San Diego has a large number of franchisees, has required all haulers to achieve at least a 60 percent diversion rate, and may assess liquidated damages²⁴ to haulers that do not meet this target. Only

²³ According to reports provided by the franchised haulers, there are 15,450 commercial and multi-family properties that receive private collection services. Of these, 9,555 generate the minimum four cubic yards of trash per week to be subject to CRO requirements. However, because waste generation characteristics of these facilities may change over time, ESD must monitor all properties to identify those that are currently subject to CRO requirements.

²⁴ Liquidated damages are monetary penalties that are awarded as compensation for breach of contract.

one of Pasadena's 23 haulers is currently falling short of the 60 percent goal, and Pasadena's current commercial and multi-family diversion rate is 58 percent - more than twice the City of San Diego's. In 2012, the City of San Jose implemented a 70 percent diversion rate requirement for its commercial waste franchise hauler, which increases to 80 percent this year. San Jose's diversion rate for commercial and multi-family properties was 71 percent in 2013. A comparison of these jurisdictions is below in **Exhibit 14**.

Exhibit 14

Required and Actual Diversion Rates for Selected Jurisdictions, CY 2013

City	Current Diversion Requirement for Franchised Haulers	Actual Diversion Rate for Commercial and Multi-Family Facilities
Pasadena	60%	58%
San Jose	70%*	71%
San Diego	None	26%

* Note: The minimum diversion rate in San Jose is 80 percent for 2014.

Source: OCA, using information from the City of Pasadena and the City of San Jose.

A Minimum 35 Percent Diversion Rate Is a Reasonable Initial Requirement for Franchise Haulers

As noted above, commercial and multi-family non-compliance with CRO requirements currently results in at least 50,000 tons of recyclables being unnecessarily landfilled each year. If these facilities met the current minimum CRO requirements established by ESD and recycled those 50,000 tons of materials, the City's commercial and multi-family diversion rate would increase from 26 percent to at least 31 percent.²⁵

However, the City's most recent Waste Characterization Study shows that approximately 18 percent of commercial and multi-family waste is comprised of materials that are currently recyclable,²⁶ meaning that adequate infrastructure already exists in San Diego to process and recover these materials. Haulers reported disposing of approximately 700,000 tons of commercial and multi-family waste in 2013, which

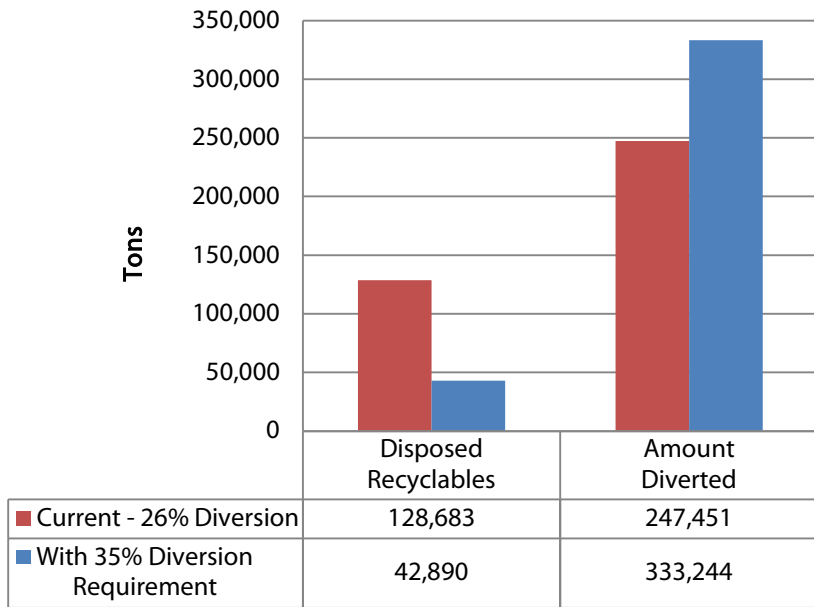
²⁵ The 31 percent estimate is based on non-compliant properties reaching a minimum recycling ratio of 30 percent recycling to 70 percent trash. However, some of these facilities are subject to the higher 40 percent minimum recycling ratio, meaning that full compliance with current requirements would likely result in a diversion rate of more than 31 percent.

²⁶ The Waste Characterization Study found that 17.2 percent of commercial waste and 21.2 percent of multi-family waste is recyclable using existing infrastructure. A weighted average based on tonnage disposed results in an overall average of 18.3 percent.

indicates that approximately 130,000 tons of recyclables were landfilled. While full recovery of all of these materials may not be achievable, even the recovery of only two-thirds of these recyclables (85,000 tons) would improve the diversion rate for commercial and multi-family properties to 35 percent, without requiring significant new investment in recovery facilities. As such, requiring each franchise hauler to divert 35 percent of waste is a reasonable initial requirement. **Exhibit 15** summarizes how a 35 percent diversion requirement would reduce the unnecessary disposal of recyclables.

Exhibit 15

A 35 Percent Diversion Rate Requirement Would Result in the Diversion of an Additional 85,000 Tons of Recyclable Materials from Landfills Per Year



Source: OCA analysis of data provided by ESD.

The Minimum Diversion Rate for Franchised Haulers Should Be Reviewed Annually and Periodically Increased

Requiring franchised haulers to achieve a minimum diversion rate of 35 percent will help divert most materials for which recycling infrastructure already exists in San Diego from landfill disposal. However, the City's Waste Characterization Study shows that an additional 38 percent of commercial and multi-family landfilled waste is compostable or potentially compostable.²⁷ This portion of the waste stream is primarily comprised of food waste, soiled paper products, and yard waste. Another 19 percent is comprised of potentially recyclable materials for which recovery technologies and resale markets are not yet fully developed, such as shingles, some wood products, and certain plastic items. Even as technology improves to recover these materials, haulers will likely have little incentive to invest in infrastructure to recover compostable and other potentially recoverable materials and encourage customers to recycle them unless franchise agreements are revised to require diversion rates exceeding 35 percent in the future.

In order to meet its long-term waste diversion goals, which include targets of 75 percent diversion by 2020 and Zero Waste by 2040, the City will likely need to achieve a commercial and multi-family diversion rate significantly higher than 35 percent – which will require diverting compostable and other potentially recyclable materials from landfill disposal. As experience in other cities shows, haulers are unlikely to significantly exceed minimum diversion requirements on their own – actual diversion rates in Pasadena and San Jose are very close to the required minimum, as shown in **Exhibit 14**. Accordingly, we recommend that ESD establish a policy to review the required diversion rate for franchised haulers on an annual basis and determine whether an increase is needed, based on the City's need to increase overall waste diversion rates and the availability of cost-effective technology to recover additional materials. While the planned Resource Recovery Center and improvements in enforcement efforts for City-serviced residential properties are expected to improve the City's overall diversion rate somewhat, it is likely that a commercial and multi-family recycling rate of at least 50 percent will be needed to achieve the City's 75 percent waste diversion goal by 2020.

²⁷ As noted in Exhibit 10, 36.8 percent of commercial waste and 41.8 percent of multi-family waste is comprised of compostable or potentially compostable organics. The weighted average based on tonnage disposed is 38.2 percent.

- Recommendation #1** In order to improve recycling rates and compliance with the Citywide Recycling Ordinance (CRO) for commercial and multi-family facilities, the City should include CRO enforcement and minimum diversion requirements in all franchise agreements, with liquidated damages for non-compliance. Franchised haulers should be required to provide all customers with a minimum level of recycling service or submit documentation to the City justifying any exemptions that are granted. The City should revise the current franchise agreements and establish a target diversion rate requirement of between 50 and 60 percent by 2020. The revised franchise agreements should include incremental increases in the diversion rate to achieve the 50-60 percent goal by 2020. (Priority 1)
- Recommendation #2** In order to ensure that commercial and multi-family recycling rates are adequate to achieve the City's long-term waste diversion goals, the Environmental Services Department should establish a policy to annually review the minimum required diversion rate for franchised haulers and determine whether an increase is needed, based on the cost-effectiveness of available materials recovery technology and the City's need to increase overall waste diversion rates. (Priority 1)

Finding 2: The City Should Consider Changing Its Solid Waste Franchise System to Improve Efficiency and Reduce Adverse Impacts Generated by Waste Hauling

Although requiring haulers to meet minimum recycling targets will improve recycling rates in the short term, we found that the City's current non-exclusive franchise system for hauling commercial and multi-family residential waste does not maximize efficiency and may not produce the best incentives for recycling. Other large West Coast jurisdictions have recently moved toward districted exclusive franchise systems, whereby a single hauler operates in each defined area. A districted franchise system allows each hauler to maximize routing efficiency, which can result in lower average customer rates even while adding additional recycling programs. In addition, trash trucks produce very high impacts in terms of street wear, air pollution and greenhouse gas (GHG) emissions, and noise, relative to most other vehicle types. Maximizing routing efficiency under a districted exclusive franchise system would allow the City to minimize these adverse impacts as well.

Revising the City's current franchise system would require a policy decision that can only be made by the Mayor and City Council. At the time of this audit, a potential transition to a districted exclusive franchise system was not an option currently being studied by the Environmental Services Department (ESD) to present to policymakers as part of a proposed Zero Waste Plan. However, in consideration of the substantial benefits that may be achieved by changing the City's franchise system for collection of commercial and multi-family solid waste, we recommend that ESD study the specific costs and benefits of a transition to a districted exclusive franchise system in San Diego and present the results of the study to policymakers. The results of the study will help ensure that policymakers are able to make an informed decision regarding the choice of franchise system.

Other Cities Are Moving Toward Districted Exclusive Franchise Systems for Commercial and Multi-Family Solid Waste Collection

Recently, large West Coast jurisdictions have moved away from open market and non-exclusive franchise systems similar to the City of San Diego's, and toward districted exclusive systems whereby a single hauler operates within a defined area. For example, the City of San Jose implemented an exclusive franchise system in 2012, and the City of Seattle has utilized an exclusive franchise system since 2000. In addition, earlier this year, the City of Los Angeles approved a plan to

transition to a districted exclusive franchise system in 2017, and the City of Pasadena is currently considering adopting an exclusive franchise system in the next several years. These cities have pursued an exclusive franchise system to improve incentives for recycling and waste diversion, increase routing efficiency, and reduce street deterioration, street maintenance costs, and air pollution and greenhouse gas emissions. The potential benefits of a districted exclusive franchise system are discussed briefly in the following sections.

While some large jurisdictions continue to utilize a non-exclusive franchise system similar to the City of San Diego's, San Diego is the largest West Coast city to maintain a non-exclusive franchise system. **Exhibit 16** shows large jurisdictions in California, other cities in San Diego County, and selected jurisdictions in other West Coast states by the type of solid waste collection franchise system used.

Exhibit 16**Commercial and Multi-Family Solid Waste Collection Systems Used By Large West Coast Cities*****Cities Using Exclusive Franchise Systems***

City	Population	Number of Districts	Number of Haulers
Los Angeles	3,904,657	11	Up to 11
San Jose	1,000,536	2	1
Seattle	652,405	4	2
Fresno	515,609	2	2
Oakland*	404,355	2	2
Anaheim	348,305	1	1
Chula Vista	256,139	1	1
Oceanside	171,183	1	1
Escondido	147,102	1	1
El Cajon	101,256	1	1
Poway	48,979	1	1

Cities Using Non-Exclusive Franchise Systems

City	Population	Number of Haulers
San Diego	1,345,895	21 **
Sacramento	475,122	17
Long Beach	470,292	15
Irvine	242,651	19
Pasadena***	140,879	23

Note: In addition to the listed cities, we also reviewed the commercial and multi-family solid waste collection systems used by the City and County of San Francisco and the City of Portland, which use open permit systems, and the City of Phoenix, which uses an open market system with no permit requirements. These systems do not provide for the collection of franchise fees and generally allow less oversight than franchise systems. The City of San Diego utilized an open permit system prior to adopting the current non-exclusive franchise system in 1996. According to ESD, an open market or open permit system is not a viable option for the City.

* Note: The City of Oakland has a unique system with one hauler for citywide trash collection and two haulers for residential recycling collection. The commercial recycling collection system is open market with several haulers.

** Note: The City of San Diego has 21 current franchisees, however due to consolidation, three large companies and their affiliates make up 12 of the 21 franchisees. Nine smaller companies make up the rest. Exhibit 20 shows the total waste haulers by tonnage hauled, landfilled, and recycled.

*** Note: The City of Pasadena is currently considering a transition to an exclusive franchise system.

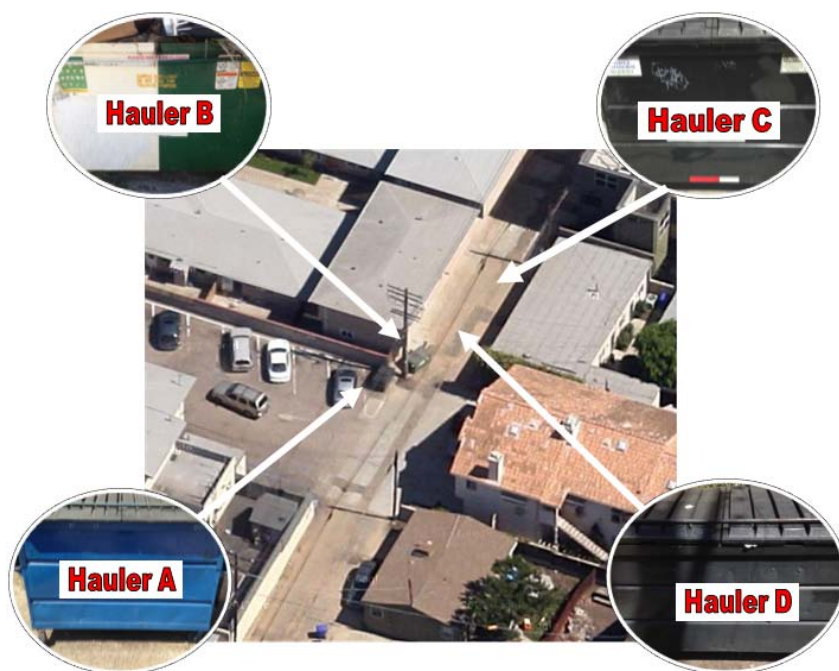
Source: OCA, using information from selected cities.

A Districted Exclusive Franchise System Increases Routing Efficiency, Improves Incentives to Recycle, and May Result in Lower Customer Rates

Under a non-exclusive system, efficiency is reduced because several haulers all service the same area and have overlapping routes. For example, as shown in **Exhibit 17**, four adjacent properties in University Heights use four different haulers – meaning that eight trucks (one trash truck and one recycling truck per property)²⁸ must travel to that location to collect trash and recycling in the current non-exclusive system. Under an exclusive system, only two trucks would be needed. This maximizes routing efficiency and reduces the amount of mileage trash trucks need to travel. According to a traffic study conducted for the City of Los Angeles, total mileage driven by trash trucks is estimated to be 35 percent less in a districted exclusive system, when compared to a non-exclusive system.

Exhibit 17

A Non-Exclusive System Does Not Maximize Routing Efficiency



Under the current non-exclusive franchise system, eight trucks must travel to this location to collect trash and recycling from four adjacent properties. Under a districted exclusive franchise system, only two trucks would be required.

Source: OCA.

²⁸ This assumes that all properties comply with the CRO and have recycling service in addition to trash service.

The gain in routing efficiency that is achieved with a districted exclusive system can be converted into lower average customer rates, increased investment in recycling, or both. Ideally, the franchise for each district is awarded through a competitive Request for Proposal (RFP) process, with points awarded based on the price, minimum diversion rate, and customer service aspects of each proposal, and with penalties in the form of liquidated damages for non-compliance with any of the franchise terms. Because franchisees have a defined customer base in each district, the disincentive to recycle that is created by a non-exclusive system is eliminated.

When compared on an all-else-equal basis,²⁹ exclusive franchise systems awarded using a competitive RFP process have been shown to reduce the average customer cost when compared to non-exclusive systems, even when adding additional recycling programs and requirements. For example, a study conducted for the City of Los Angeles found that, while overall prices in non-exclusive and exclusive cities were similar,³⁰ not all cities awarded exclusive franchises using a competitive RFP process. 21 of 24 cities who awarded exclusive franchises using a competitive RFP process were able to decrease rates by an average of 17 percent. A separate analysis conducted for the City of Seattle estimated that rates would be reduced 4 percent under a districted exclusive system.

In addition, when the City of San Jose transitioned to an exclusive franchise system in 2012, 58 percent of customers received a price decrease. Although San Jose did experience a subsequent 22 percent increase in rates in 2013, this may have been driven by San Jose's very aggressive 80 percent diversion rate target – approximately three times the city's commercial diversion rate prior to implementation. Meeting this goal has required the franchisee to make substantial investments in recycling infrastructure. If San Jose had required a diversion rate of 80 percent while retaining a non-exclusive franchise system, it is likely that any price increases would have been even greater because, as noted above, a non-exclusive system is generally more expensive.

²⁹ Actual prices between cities cannot be fairly compared because of variation in certain costs between cities, such as AB 939 fees and franchise fees. These fees must be subtracted in order to make a fair comparison.

³⁰ Because prices vary significantly between customers for the same level of service in a non-exclusive system, this study calculated total revenue per ton collected, which can be used as a proxy for average user prices.

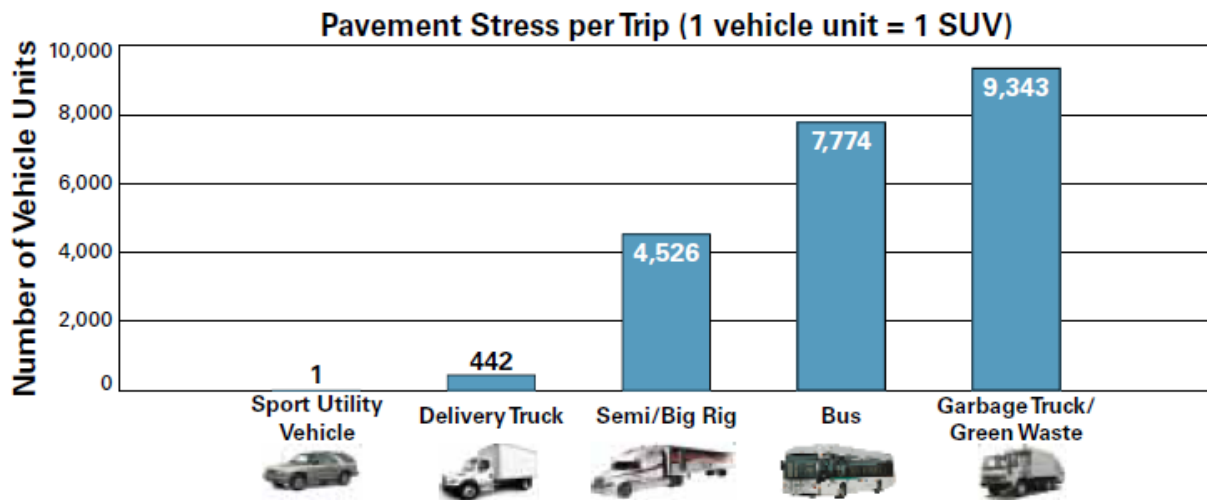
A Districted Exclusive Franchise Minimizes Street Deterioration, Air Pollution and GHG Emissions, and Noise Caused by Trash Trucks

Routing efficiencies that can be achieved under a districted exclusive franchise system also result in the reduction of other direct impacts of trash trucks, including street deterioration, air pollution and GHG emissions, and noise.

Due to their size, weight, and other operational characteristics, trash trucks have a disproportionately high impact on the City's street conditions, air quality, and noise levels. For example, a 2011 study conducted by the Bay Area Metropolitan Transportation Commission notes that, for each mile traveled, a trash truck causes approximately 9,300 times the amount of pavement damage as a mile traveled by an SUV.³¹ Trash trucks are some of the heaviest vehicles regularly operating on City streets, with each truck driving an average of 25,000 miles per year, and are probably responsible for a significant portion of the City's street deterioration, potholes, and related street maintenance costs. If the City of San Diego were able to achieve a 35 percent reduction in mileage traveled by switching to a districted exclusive system, as is estimated in Los Angeles, the benefit to the City in terms of improved street conditions and reduced street maintenance costs would likely be substantial. **Exhibit 18** shows the pavement stress exerted by several common vehicle types.

Exhibit 18

Routing Efficiencies Under a Districted Exclusive System Reduce Street Deterioration



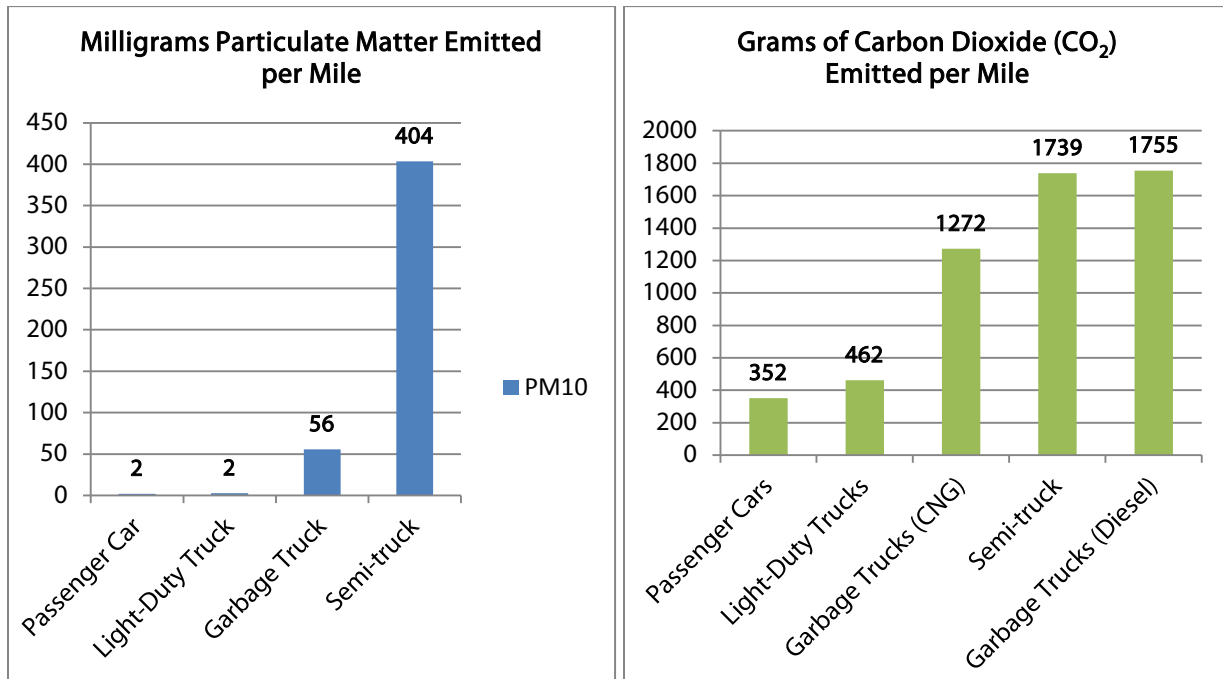
Source: Pavement Engineering, Inc. via Metropolitan Transportation Commission.

³¹ *The Pothole Report: Can the Bay Area Have Better Roads?* Bay Area Metropolitan Transportation Commission, 2011.

In addition, the City's 2008 General Plan³² calls for a reduction in GHG emissions, seeks to ensure that regional air quality meets state and federal standards, and notes that particulate emissions from diesel-fueled vehicles (such as many of the trash trucks operated by the City's franchised haulers) are especially harmful to public health. The City's draft Climate Action Plan also calls for a reduction in GHG emissions, in part by reducing mileage traveled by vehicles. Diesel trash trucks are significant sources of GHG and air pollution emissions relative to other types of vehicles. By maximizing routing efficiency through a districted exclusive franchise system, GHG and air pollution resulting from trash trucks would be minimized. **Exhibit 19** shows diesel particulate matter and GHG emissions for several types of vehicles, including diesel and compressed natural gas (CNG) trash trucks.

Exhibit 19

An Exclusive Franchise System Minimizes GHG and Air Pollution Generated by Trash Trucks



Legend: PM10 is a size distinction of particulate matter, as measured in microns.

Note: We were unable to locate particulate emissions information for CNG-fueled trash trucks.

Source: OCA analysis of data from the U.S. Environmental Protection Agency and Energy Information Administration.

³² The 2008 General Plan is the City's constitution for development. It expresses a City-wide vision and provides a comprehensive policy framework for how the City should grow and develop, provide public services, and maintain the qualities that define the City of San Diego.

In order to reduce residents' exposure to noise from heavy trucks, the General Plan also calls for the City to designate local truck routes to reduce truck traffic in noise-sensitive land use areas. While this is not possible with trash trucks, which must collect trash and recycling from all commercial and most multi-family properties in the City, a districted exclusive system would minimize the mileage and trips trash trucks make, thereby minimizing noise to the greatest extent possible, consistent with General Plan goals.

Haulers May Have Several Concerns Related to an Exclusive Franchise System

We met with several of the City's franchised haulers, who raised concerns about switching to a districted exclusive franchise system. Specifically, these haulers asserted that prices will increase, customer service and choice will decrease, and competition will decline because some haulers will not win a franchise.

While these are legitimate concerns, we found that other jurisdictions were able to address these issues effectively. As noted above, average prices tend to be less in exclusive systems when a competitive RFP process is used to award franchises. To address customer service concerns, the City of Seattle and City of San Jose both included strict customer service standards in their RFP, with liquidated damages due for non-compliance. San Jose and Los Angeles provided exemptions for collection of C&D. To address concerns regarding customer choice, Los Angeles also exempted or provided alternative requirements for certain types of businesses with unique needs, such as film studios.

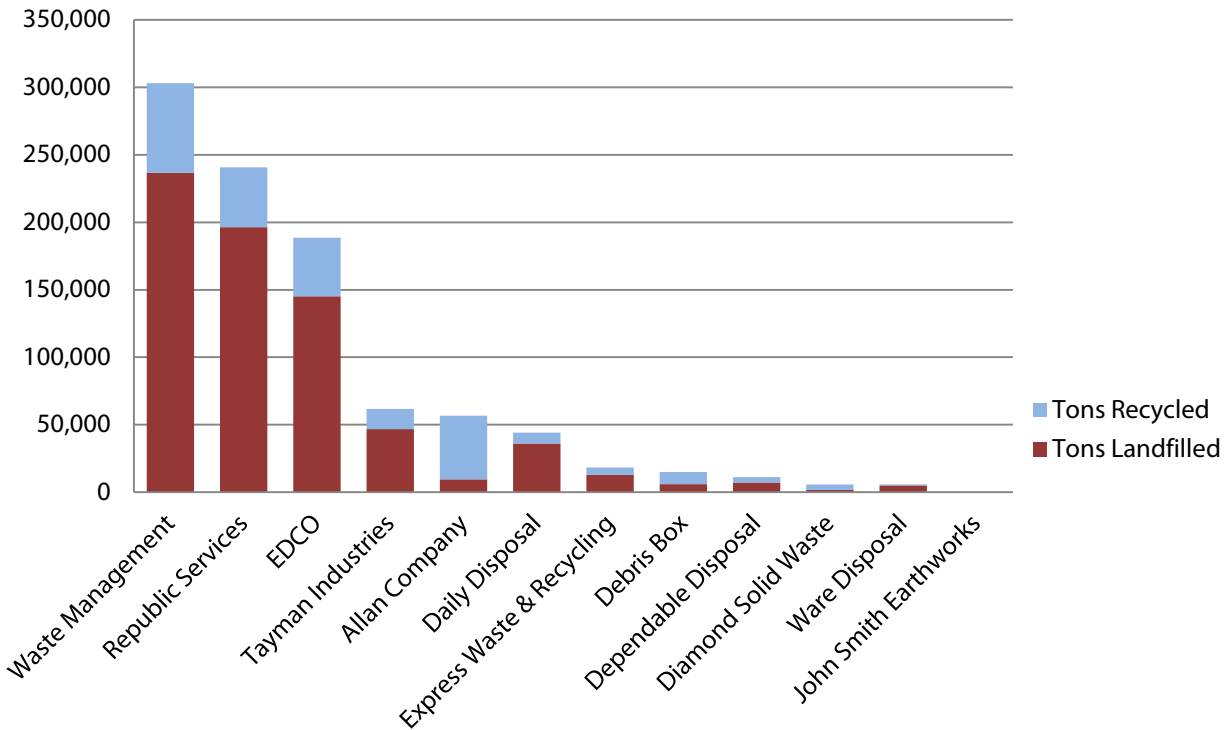
Finally, to address concerns about long-term competition, cities with exclusive franchises can periodically re-issue RFPs for each franchise to ensure competition. In addition, larger cities tend to establish multiple zones within the jurisdiction. For example, Los Angeles is establishing 11 zones, Seattle has four zones, and San Jose has two zones. While San Jose ultimately awarded both zones to the same hauler, Los Angeles limits any one hauler to 49 percent of service provided, sets aside three zones for smaller haulers, and provides incentives for haulers to use subcontractors. For an example of a districted franchise system map from the City of Los Angeles, see **Appendix E**.

While there are 21 haulers franchised by the City of San Diego, three large companies and their affiliates make up 12 of the 21 franchisees. Nine smaller companies make up the rest. In addition, the larger haulers currently hold the vast majority of the City's commercial and multi-family solid waste collection market share. As **Exhibit 20** shows,

the top three companies combined haul 77 percent of the City's commercial and multi-family solid waste tonnage. The top six companies haul 94 percent. Due to its population and geographic size, the City of San Diego could likely accommodate several districts to ensure that the current level of competition for solid waste collection services is maintained.

Exhibit 20

The Larger Haulers Hold 94 Percent of the Commercial and Multi-Family Collections Market



Source: OCA analysis of hauler tonnage data provided by ESD.

Haulers also stated that most of the benefits of an exclusive system could be achieved under a non-exclusive system. Certainly, increases in diversion rates could be improved under a non-exclusive system by adding diversion rate requirements for each hauler, as discussed in Finding 1. Reductions in GHG and air pollution emissions could also be achieved by requiring haulers to use trucks that use cleaner fuels, such as compressed natural gas (CNG). However, even CNG-fueled trucks emit much higher amounts of CO₂ than most vehicles, as shown in **Exhibit 19**. Therefore, while emissions could be reduced under a non-exclusive system by requiring the use of cleaner fuels, a cleaner fuel requirement under a districted exclusive system would

minimize emissions due to the routing efficiencies achieved. Perhaps most significantly, trash trucks – whether diesel or CNG-fueled – contribute significantly to the deterioration of the City's streets due to their size and weight. The only way to minimize this impact is through maximizing routing efficiency.

Policymakers Should Be Presented With the Option of a Districted Exclusive Franchise System for Commercial and Multi-Family Solid Waste Collection

While the effects of an exclusive franchise system in San Diego would likely be similar to the experience in other large cities, ESD should conduct a study so that specific impacts in San Diego can be estimated. ESD estimates that this study will take approximately 12 months at a maximum cost of \$200,000.

Based on average revenue estimates per ton of waste collected in other jurisdictions, total franchised hauler customer costs in San Diego are approximately \$100 million per year. In addition, the City and its residents bear other costs, including what are likely substantial street maintenance expenses resulting from street wear caused by trash trucks, as well as the environmental cost of GHG, air pollution, and noise emissions. The significant benefits that could be realized by reducing these impacts and achieving greater cost-effectiveness for customers clearly justify the time and expense to conduct this study. The results of this study, along with the option to adopt a districted exclusive franchise system, should be presented to policymakers as part of the City's ongoing Zero Waste and Long-Term Resource Management planning. This would ensure that the Mayor and City Council have all of the information needed to make an informed decision regarding which solid waste collection franchise system is best for San Diego.

There are also several legal and financial considerations that the City must take into account. First, a districted exclusive franchise system would allow the City to collect franchise and AB 939 fees as a flat rate from haulers, instead of as a rate based on tons disposed. The current rate based on tons disposed results in unstable revenues because waste disposal varies from year to year (and is declining overall), which leads to ongoing operating deficits in the Disposal and Recycling funds.

In addition, according to the Office of the City Attorney, if the City intends to regulate customer rate structures under an exclusive franchise system, the application of Proposition 26 and Proposition 218 should be analyzed. In addition, the California Public Resources Code³³ requires the City to provide franchised haulers at least a five-

³³ California Public Resources Code §49520.

year notice informing them that the City may adopt an exclusive franchise system. Sending this notice does not require the City to adopt an exclusive franchise system, but establishes a timeline for doing so should policymakers determine an exclusive system is best for San Diego. Accordingly, if the results of the study mentioned above show that a districted exclusive collection system is more viable, then we recommend that the City consider sending the notices required by the Public Resources Code.

Recommendation #3: The Environmental Services Department should present results of a study examining the potential for a districted exclusive collection system as an alternative to the current non-exclusive franchise system so that policymakers can make an informed decision about the ideal franchise system for the City to utilize. This study should include analysis and comparisons of a districted exclusive vs. non-exclusive franchise system in the following areas:

- a. Potential for stimulating private investment and innovation in recycling infrastructure to improve diversion rates, extend the life of Miramar Landfill, and achieve other Zero Waste goals
- b. Impact on customer prices
- c. Impact on customer service
- d. Impact on street conditions and street maintenance costs
- e. Impact on air quality, greenhouse gas emissions, noise, and traffic
- f. Impact on the City's ability to stabilize franchise and AB 939 fee revenues and monitor the accuracy of franchisee payments
- g. Impact on long-term solid waste hauling competition
- h. Analysis by the Office of the City Attorney regarding Proposition 26 and Proposition 218 implications. (Priority 1)

Recommendation #4 If the results of the study show that a districted exclusive collection system is more viable, then the City should consider sending letters of intent to the franchised haulers, as required by the California Public Resources Code, so that a districted franchise system can be implemented as quickly as possible provided that policymakers select a districted exclusive system as the best franchise option for the City. (Priority 1)

Finding 3: The City Can Improve Enforcement of the Citywide Recycling Ordinance for City-Serviced Residential Properties

Despite the implementation of the Citywide Recycling Ordinance (CRO) in 2008, the current 23 percent recycling rate for City-serviced residential properties remains approximately equal to pre-CRO levels. All 283,000 residential properties that receive City collection services are required to recycle under the CRO. However, non-compliance with this requirement remains high, which costs the City millions of dollars per year due to lost sales of recyclable materials and limits the City's ability to reach waste reduction and diversion goals. The Environmental Services Department (ESD) faces several challenges in improving residential recycling rates due to the People's Ordinance, which prevents the City from employing strategies that other jurisdictions have found effective in increasing single-family residential recycling. However, we found several areas where enforcement efforts could be improved, which would raise the single-family residential recycling rate. We also found that, while the primary reason ESD issues CRO violation notices is to educate customers on recycling requirements, the City should consider issuing fines to repeat violators to improve the effectiveness of enforcement efforts and recover a portion of excessive enforcement costs.

Bin Checks Are the City's Primary CRO Enforcement Strategy for Single-Family Customers

ESD's primary enforcement strategy to ensure compliance with recycling requirements is to conduct random bin checks to identify violations. Violations could be of two types: 1) Recyclable materials are placed in the trash container (black bin); or 2) Trash is placed in the recycling container (blue bin). These scenarios are known as contamination. A black trash bin filled with recyclables is shown below in **Exhibit 21**.

Exhibit 21

Code Enforcement Officers Check Approximately 64,000 Bins for Contamination Each Year



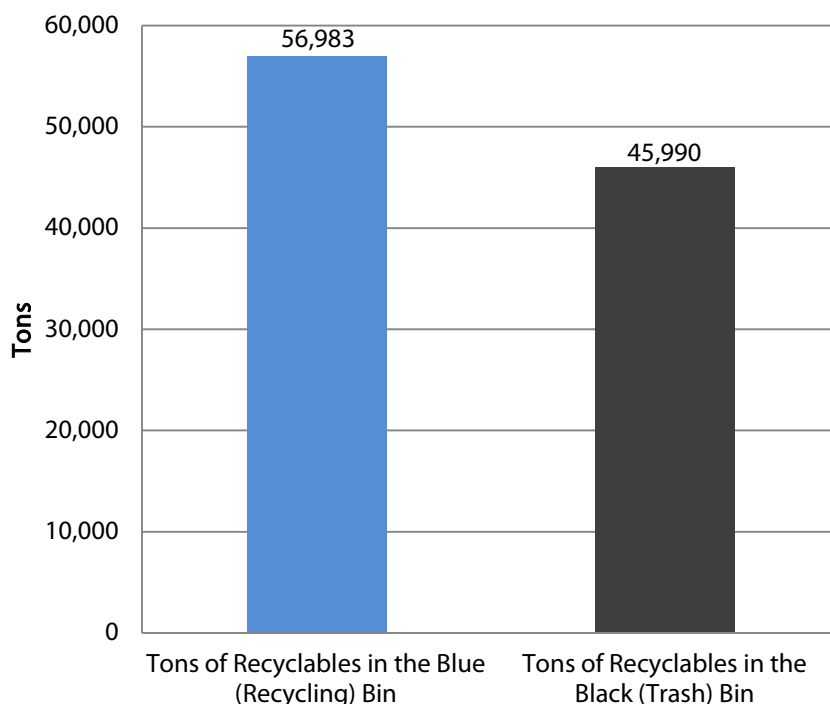
This black trash bin is full of recyclable cardboard. ESD enforcement staff conduct bin checks and place educational notices on bins where customers are not meeting recycling requirements.

Source: OCA.

When recyclable materials are placed in the black bin, this reduces the City's overall diversion rate and increases the amount of material being deposited in the Miramar Landfill, which accelerates the rate at which the landfill will reach capacity. The 2012-2013 Waste Characterization Study found that 46,000 tons (15 percent) of the materials placed in the single-family residential black bins were recyclable. The City collected 57,000 tons of recyclables in the blue bins in CY 2013, meaning that of the total 103,000 tons of recyclable materials collected, 44 percent was deposited in the black bin, as shown in **Exhibit 22**. This indicates that there is significant room for improvement in making sure that residents recycle.

Exhibit 22

46,000 Tons (44 Percent) of Residential Recyclables Were Placed in the Trash in CY 2013



Source: OCA analysis of Waste Characterization Study 2012 - 2013, and ESD data on the sale of recyclables.

Better Compliance with Recycling Requirements Would Significantly Increase Revenues for Recycling Programs and Reduce General Fund Costs

When residential recyclables are placed in the black bin and landfilled, it results in lost revenue for the City due to reduced sales of recycled materials. The Recycling Enterprise Fund received \$4.1 million from the sale of 58,000 tons of recyclables in CY 2012, an average of \$72 per ton. Assuming the composition of the recyclable materials thrown in the black bins is similar to the recyclable materials in the blue bins, the Recycling Fund could have received an additional \$2.8 million³⁴ in revenue if these materials were placed in the blue bin instead, as shown in **Exhibit 23**. In addition, the General Fund, which currently pays disposal fees and AB 939 fees for every ton of waste that is landfilled, would have saved \$1.4 million. Only the Disposal Fund would see a decline in current revenue; however, the Disposal Fund would also see reduced expenditures because there would be fewer materials that would be landfilled due to additional recyclables being diverted.

³⁴ The net benefit is less than the \$3,293,344 that would be generated from the sale of recyclables because of the loss of AB 939 fees. See Exhibit 23.

Exhibit 23

Both the General Fund and Recycling Fund Would Benefit If All Recyclables Were Placed in the Blue Bin

	Disposal Fee	AB 939 Fee	Sale of Recyclables	TOTAL by Fund
General Fund	\$965,790	\$459,900		\$1,425,690
Recycling Fund		(\$459,900)	\$3,293,344	\$2,833,444
Disposal Fund	(\$965,790)			(\$965,790)
TOTAL				\$3,293,344

Source: OCA analysis of information provided by ESD.

While full compliance is unlikely, even if the City were successful in diverting two-thirds of the recyclable materials currently placed in the black bins to the blue bins, this would result in 30,000 fewer tons of unnecessarily landfilled recyclables. In addition, this would generate a net benefit of \$2.2 million to the General Fund, Recycling Fund, and Disposal Fund, as shown in **Exhibit 24** below.

Exhibit 24

Diverting Two-Thirds of Landfilled Residential Recyclables Would Result in a \$2.2 Million Annual Benefit to the City

	Disposal Fee	AB 939 Fee	Sale of Recyclables	TOTAL by Fund
General Fund	\$643,860	\$306,600		\$950,460
Recycling Fund		(\$306,600)	\$2,195,563	\$1,888,963
Disposal Fund	(\$643,860)			(\$643,860)
TOTAL				\$2,195,563

Source: OCA analysis of information provided by ESD.

Bin Checks Are Conducted Randomly Across the City

One approach to reduce the amount of residential recyclables that are landfilled and increase revenue from the sale of recyclables is to improve enforcement of the CRO for City-serviced properties. Currently, ESD Code Enforcement Officers conduct bin checks and attach Notices of Violation (NOVs) to bins that are contaminated – either a black bin that has recyclable materials in it, or a blue one that has trash. ESD uses the City's 46 recycling collection route maps to coordinate bin checks. As reported by ESD, three times a week, each of the 12 officers selects a route map and randomly checks at least 25 black bins and 25 blue bins for CRO compliance. Maps are selected

based on the days when trash and recycling collection service is scheduled.

A minor violation should be issued when contamination is present that is less than 10 percent of the bin contents, and a major violation should be issued when 10 percent or more contamination is present.³⁵ While 10 percent may appear to be a low threshold, as noted above, the current 15 percent black bin contamination rate results in a significant impact to the City, the Recycling Fund, and the General Fund.

According to ESD, NOVs issued for CRO violations are primarily intended to be educational in nature. When a minor violation is identified, the officer will attach a notice to the bin, which identifies the violation and informs the resident what materials should be placed in the blue bin versus the black bin. When a major violation is identified, the officer also attaches a notice to the bin, but starts a separate case in EPACS (ESD's work order system), and makes a note to follow up the next time trash and recycling collection is scheduled to see if the violation is corrected. If corrected, the case is closed out. If the resident still has too much contamination, a second violation is attached. This is usually a bright colored notice that also notifies the collection crew not to pick up the bin. ESD indicates that this is a form of penalty for the resident, because their contaminated trash or recycling isn't collected that day.

Bin Check Efficiency and Coverage Can Be Improved

We found that bin check efficiency and coverage could be improved by conducting bin checks along specific routes instead of randomly selecting bins across a large area. Currently, there is no systematic bin check routing, aside from each officer drawing a map three times a week of an area to check. On average, each of the 46 collection areas contains more than 12,000 bins. Due to time constraints, officers do not record which specific bins they checked, unless they issue a relatively rare major violation. Further, officers have no way of knowing which bins have already been checked by other officers. As discussed below, based on the amount of resources allocated to bin checks, it currently takes approximately 10 years to cycle through all of the bins in the City – making it very unlikely that the officers can remember which of the bins they have checked themselves. This means that the bins are selected more or less at random, and some bins will get checked more than once while others might not get checked for approximately 10 years or more.

³⁵ ESD indicated that since the time of our review, the Code Enforcement Officers have been verbally instructed to issue a major violation when 5 percent contamination is present.

We conducted a statistical simulation and found that, if bins are checked randomly instead of systematically, the probability of a bin not being checked at all over the course of 10 years is 31 percent. At the same time, 31 percent of bins will be checked more than once. In other words, even after 10 years, three in 10 bins will be inadvertently checked more than once, while another three in 10 won't have been checked at all. As a result, ESD is missing opportunities to educate many residents, while checking some residents' bins multiple times. **Exhibit 25** demonstrates the results of this simulation.

Exhibit 25

31 Percent of Bins Will Not Be Checked After 10 Years When Using a Random Bin Check Process

- = Bins checked once (38 Percent)
- = Bins checked multiple times unnecessarily (31 Percent)
- = Bins not checked (31 Percent)



Source: OCA statistical simulation of random bin check process.

Instead of dividing the City up into large areas and randomly selecting bins within that area, ESD could achieve greater coverage by assigning bin checks on a specific route, with each route containing approximately 25 black and 25 blue bins. When an officer is given a route, they would check all the black and blue bins on the route, and then the route would be marked as complete and would

not be checked again until the officers have cycled through all the routes in the City. This would allow ESD to track which residents' bins have been checked to ensure that all bins are checked before cycling through the routes again. This modified process would increase coverage over a 10-year period from 69 percent to 100 percent and improve ESD's opportunities to educate residents on recycling requirements. **Exhibit 26** shows the same neighborhood as above after 10 years when using a systematic route-based bin check process, which would increase bin check coverage from 69 percent to 100 percent.

Exhibit 26

10-Year Bin Check Coverage Would Increase from 69 Percent to 100 Percent By Using a Systematic Route-Based Approach

- = Bins checked once (100 Percent)
- = Bins checked multiple times unnecessarily (0 Percent)
- = Bins not checked (0 Percent)



Source: OCA simulation of systematized bin check process.

Recommendation #5 The Environmental Services Department should adopt a systematic, route-based bin check process to improve the coverage and efficiency of Citywide Recycling Ordinance enforcement efforts. (Priority 2)

Notices of Violation Are Not Consistently Issued to Residents Who Are Not Complying with Recycling Requirements We also found that Code Enforcement Officers do not consistently issue violation notices when they are conducting bin checks and discover that a customer is not complying with recycling requirements. According to ESD, 64,433 bins were checked in FY 2013. The following Exhibits 27-29 summarize the number of black and blue bins that were checked as well as minor and major violations issued for FY 2013.

Exhibit 27

34,000 Black Trash Bins Were Checked for Contamination in FY 2013

Type of Bin Check	Violation	Total	Percent of Total
Trash Bins	No Problem	32,615	95.46%
	Tagged Minor	1,423	4.16%
	Tagged Major	129	0.38%
	TOTAL	34,167	100.00%

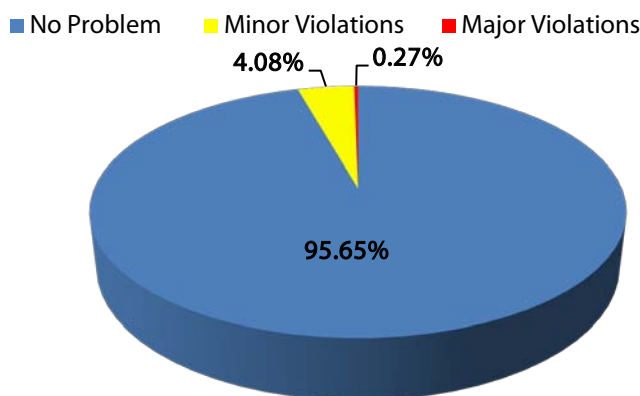
Source: Data provided by ESD.

Exhibit 28

30,000 Blue Recycling Bins Were Checked for Contamination in FY 2013

Type of Bin Check	Violation	Total	Percent of Total
Recycling Bins	No Problem	29,015	95.87%
	Tagged Minor	1,203	3.97%
	Tagged Major	48	0.16%
	TOTAL	30,266	100.00%

Source: Data provided by ESD.

Exhibit 29**A Total of 64,000 Bins Were Checked in FY 2013, But Violations Were Rarely Issued**

Source: OCA, based on data provided by ESD.

As the tables above show, officers rarely issue violation notices. Only about 4 percent of bins checked (1 in 25) receive minor violations (contamination of less than 10 percent). Only 0.27 percent (1 in 370) of bins checked received a major violation (contamination of 10 percent or more).

This indicates that officers are not consistently enforcing the standards for a minor or major violation. Data provided by ESD show that 14 percent of the materials placed in the blue recycling bins are non-recyclable, and as discussed above, 15 percent of the materials placed in the black trash bins are recyclable. This means that the average bin probably meets the criteria for major contamination. While it is likely that contamination is more prevalent in some bins than others, the mathematical minimum percentage of black bins with major contamination is 5.6 percent, as described in the footnote below.³⁶ Even in this unlikely scenario, 1 in 18 black bins should receive a major violation notice – while only 1 in 263 actually do. ESD should ensure that officers are adhering to department guidelines and issuing violation notices when they encounter bins where contamination is present.

³⁶ The average contamination rate in the City's black bins is 15 percent. The scenario in which the minimum number of bins have a contamination rate of 10 percent or more – the threshold for a major violation – would occur if most bins had a 9.99 percent contamination rate, while the remaining few had 100 percent contamination, for an average of 15 percent contamination. We calculated that this would occur if 94.4 percent of bins had a 9.99 percent contamination rate, while the other 5.6 percent were 100 percent contaminated.

Recommendation #6 In order to maximize opportunities to educate and assist residents in meeting recycling requirements, the Environmental Services Department should ensure that Notices of Violation are consistently issued when a resident receiving City recycling collection services is not complying with the Citywide Recycling Ordinance. (Priority 2)

It May Be Cost Effective to Allocate Additional Resources to CRO Enforcement for City-Serviced Residential Properties

The City also dedicates limited resources to the bin checks for City-serviced residents. According to ESD, while 12 Code Enforcement Officers conduct bin checks, most of their time is spent on their many other responsibilities, such as investigation of illegal dumping, homeless camp abatement, and CRO enforcement for properties that receive service from the franchised haulers. As a result, each officer only spends about four hours per week on bin checks for City-serviced properties. In total, approximately 1.2 FTEs are dedicated to this activity at a total cost of approximately \$95,000. This is only about two percent of the revenue received from the sale of recyclable materials.

This indicates that the coverage achieved by the bin checks is relatively minimal, with 1.2 FTEs allocated to conduct checks of more than 577,000 blue and black bins. At the current rate, it would take almost 10 years for the officers to cycle through all properties receiving City collection services and identify opportunities to educate property owners. A study conducted by the National Association of Home Builders found that more than 40 percent of single-family home owners move out after 10 years or less. Further, a survey conducted by the Opinion Research Corporation found that nearly three-quarters of single-family home renters plan to stay in a home for five years or less. Therefore, even if bin check coverage is improved by systematizing the process, as recommended above, many residents will likely move before their bins are checked for the first time. According to Environmental Services staff in the City of Chula Vista, the department tries to check each recycling and trash bin every five years to help ensure they can educate as many residents as possible.

It is likely cost effective for ESD to increase resources allocated to bin checks, due to the increased revenue that the City would derive from the sale of recyclables. For example, tripling the current amount of resources dedicated to bin checks would cost approximately \$190,000 per year, but millions of dollars worth of residential recyclables are currently being landfilled. Increasing the recycling rate by only one percent – from the current 23 percent to 24 percent

– would justify this expense. We recommend that ESD allocate additional resources dedicated to bin checks to ensure that each bin will be checked at least once every five years.

Recommendation #7 The Environmental Services Department should allocate additional resources to Citywide Recycling Ordinance enforcement for City-serviced residential properties so that bins can be checked at least once every five years. Resources allocated to CRO enforcement for City-serviced residential properties should be periodically evaluated using the data captured pursuant to Recommendation #8, below, to determine whether they are optimal from a cost-effectiveness standpoint. (Priority 2)

ESD Can Improve Data Collection to Monitor the Effectiveness of Enforcement Efforts

We also found that, while ESD collects a variety of data on its CRO enforcement efforts, additional data collection and tracking is needed to monitor the effectiveness of bin check efforts and to ensure that resources allocated to bin checks are optimal. As noted above, when an officer issues a major violation for bin contamination, they open a separate work order in EPACS, ESD's work order system. Officers typically follow up on major violations two weeks after the violation was issued (i.e., the next trash/recycling pick-up day).

However, EPACS does not have a problem code for major bin contamination – instead, major violations are logged into the system using the same problem code as all other bin check work orders. This prevents officers from looking up major bin contamination violations in EPACS to track follow-up.

In addition, ESD cannot generate statistics on the effectiveness of the bin checks, because ESD cannot calculate improved rates of compliance resulting from violation issuance. For example, although ESD asserts that the bin checks are an effective enforcement tool and that most violations are corrected upon follow-up, the department does not have data to support this. It would be helpful to know, of the 177 major violations issued in FY 2013, how many were corrected upon follow-up. This would help ESD measure enforcement effectiveness and determine whether enforcement resources are optimal. We recommend that ESD add a problem code for major bin check violations to EPACS and periodically use this information to evaluate follow-up compliance rates for residents who have received a major violation.

Recommendation #8 The Environmental Services Department should improve data collection for Citywide Recycling Ordinance enforcement by tracking major violations with a unique EPACS problem code and developing a procedure to calculate statistics on the effectiveness of enforcement efforts. (Priority 2)

Approximately 30,000 Customers May Not Have Recycling Bins and Cannot Meet CRO Requirements

Since 2008, the CRO has required all residents who receive City recycling collection services to recycle.³⁷ We found that ESD can also do more to encourage recycling by ensuring that all residents who have City trash service also have recycling bins in order to ensure that customers are able to comply with the CRO.

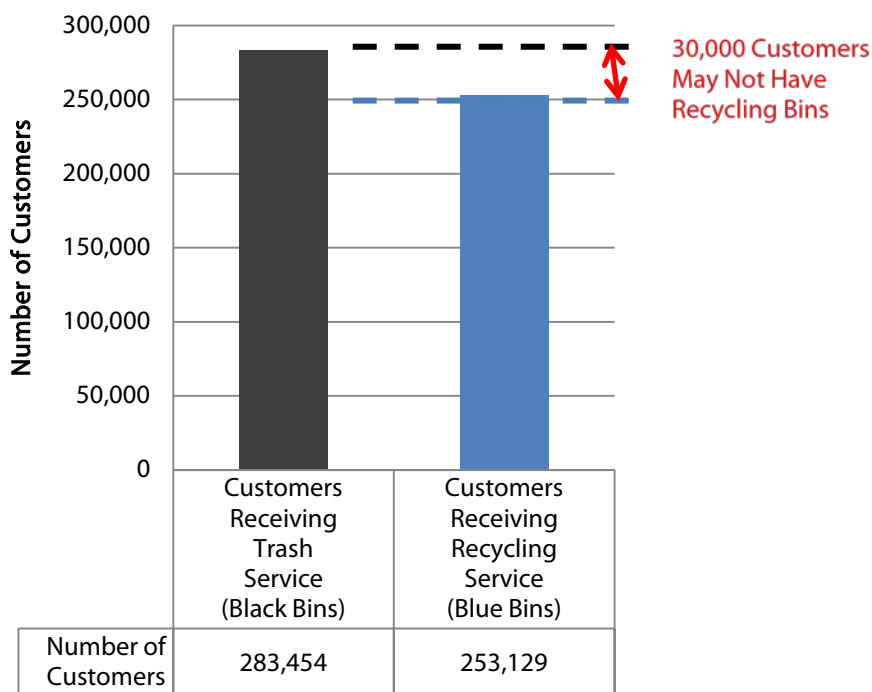
According to data maintained by ESD, of the 283,000 residents who receive City collection services, approximately 30,000 (11 percent) may not have a recycling bin, as shown in **Exhibit 30**. ESD speculates that many of these customers opted not to receive a blue bin when recycling was voluntary, prior to the CRO. In addition, ESD noted that contractors who distributed the bins may have inadvertently excluded some of the bins from the data they provided to the City, and some multi-family units that receive City collection services may share blue bins. However, according to ESD, while the number of customers without a blue bin may be less than the 30,000 indicated by the data, a substantial number of residents do not have a blue recycling bin.³⁸ Without recycling bins, customers cannot actively participate in the City's curbside recycling program and are likely not complying with CRO recycling requirements.

³⁷ SDMC §66.0705.

³⁸ According to ESD, the department has undertaken a variety of efforts to identify customers that do not have recycling bins, and plans to enhance these efforts in response to our audit recommendations.

Exhibit 30

Data Indicate That 30,000 Residential Properties May Not Have Recycling Bins



Source: OCA analysis, based on data from ESD.

We recommend that ESD create a listing of the 30,000 properties that may not have blue bins, assign officers to investigate whether each property has a blue bin during the course of their normal bin check process, and ensure that bins are provided to those properties that lack a blue bin and cannot comply with CRO recycling requirements.

Recommendation #9: The Environmental Services Department should provide Code Enforcement Officers with a listing of all properties that may not have recycling bins and assign officers to verify which customers do not have recycling bins while conducting routine bin checks. When officers encounter a property that does not have a blue recycling bin, officers should educate the resident on how a recycling bin can be obtained. (Priority 2)

ESD Should Consider Issuing Nominal Monetary Penalties to Repeat CRO Violators

While improvements in CRO enforcement efforts for City-serviced residential properties should increase recycling rates, our review of successful practices used by other jurisdictions indicates that the best way to get residents to recycle is to provide incentives, such as making recycling cheaper than trash collection, and making recycling more convenient for residents by providing weekly curbside

collection of recyclables. However, the People's Ordinance does not currently allow the City to pursue either of these strategies. Collecting recycling every other week currently costs \$16.9 million, and the Recycling Fund lacks the revenue needed to finance weekly recycling collection. In addition, while establishing a price structure that incentivizes recycling is an effective way to encourage compliance with recycling requirements the People's Ordinance requires that collection services be provided to eligible residents free of charge.

While opportunities currently exist to improve enforcement efforts, which we believe will increase the recycling rate, it is unlikely that the City will be able to reach the 40 percent recycling rate achieved by other mature residential recycling programs without collecting recycling weekly or establishing a price structure that incentivizes recycling. Currently, ESD occasionally issues fines to commercial and multi-family properties and special events that violate the CRO, but does not issue fines to City-serviced residents. While we were unable to identify other jurisdictions that issue fines for violations of recycling requirements, the City's relatively unique limitations in adopting successful practices used by other jurisdictions may ultimately mean that the issuance of fines to City-serviced residents who repeatedly violate the CRO is the only means the City has to achieve recycling rates commensurate with other jurisdictions and reach waste reduction goals. As a result, we recommend that ESD monitor progress in increasing residential recycling rates once enforcement is improved by implementing **Recommendations 6 - 9**, above. If rates do not improve satisfactorily, ESD should consider issuing monetary fines, as allowed by the CRO and SDMC §66.0718, in those cases where education and assistance have been offered and the violator continues to fail to meet the requirements of the ordinance. This would encourage more recycling amongst City-serviced residents by creating an economic incentive to recycle, and would help the City recover excessive enforcement costs from repeat violators of recycling requirements.

Recommendation #10 As authorized by SDMC §66.0718, the Environmental Services Department should consider expanding efforts to issue fines to repeat Citywide Recycling Ordinance violators to improve the effectiveness of enforcement efforts and recover a portion of excessive enforcement costs. (Priority 2)

Finding 4: Improved Recycling Efforts Are Needed at City Facilities

City facilities, like most businesses and residential properties, are required to recycle by the Citywide Recycling Ordinance (CRO). While some City facilities, such as beaches, have unique characteristics that may meet criteria to be exempt from CRO requirements, many others, including libraries, recreation centers, and City office buildings, should have adequate recycling available for users and employees. While some City facilities have recycling that meets minimum CRO requirements, we found that other facilities either have substandard recycling or lack recycling altogether. We recommend that the City take steps to improve recycling efforts at City facilities in order to set a good example for businesses and residents.

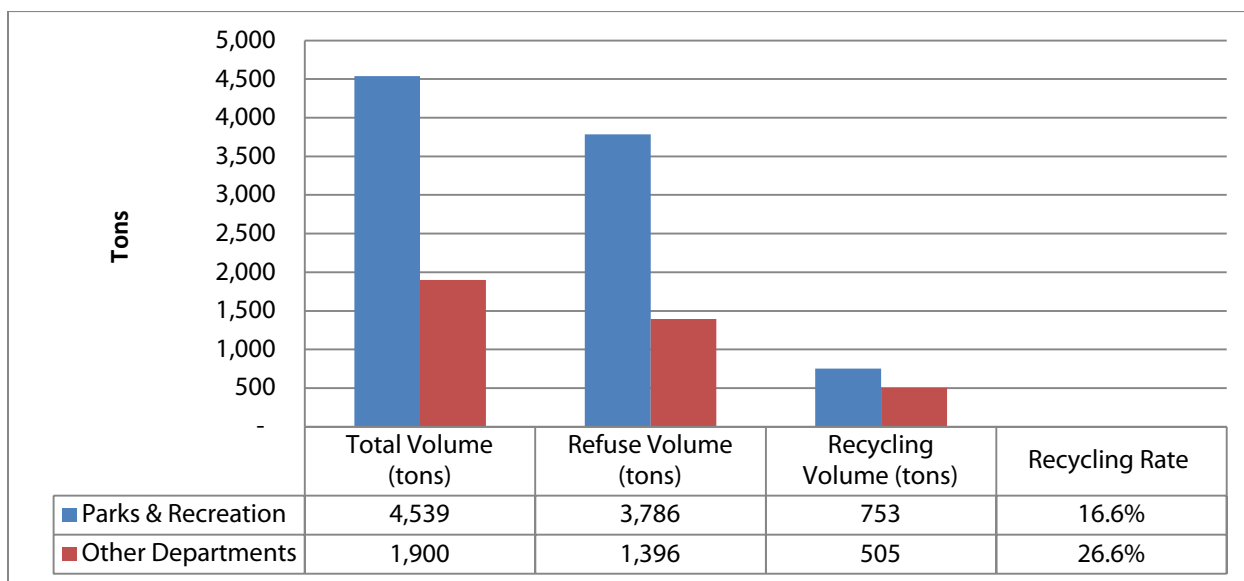
The Recycling Rate at Most City Facilities Is Similar to Commercial and Multi-Family Properties

Although the City does not maintain data on the recycling rate for all City facilities, the City uses a single franchised hauler to collect trash and recycling from many facilities. Data provided by this hauler indicates that, excluding the Parks and Recreation Department (PRD), which maintains the City's parks, beaches, and recreation centers, the recycling rate for City facilities serviced by the hauler is 27 percent – similar to the 26 percent rate for commercial and multi-family facilities Citywide. However, the recycling rate for PRD facilities that receive collection service from the hauler is only 17 percent. Notably, PRD facilities comprise over 70 percent of the total tonnage from City facilities that are collected by the hauler. **Exhibit 31** shows the solid waste tonnage that is expected to be collected from PRD and other City facilities in FY 2015.³⁹

³⁹ The hauler reports estimated collections in cubic yards. For clarity and consistency, we converted the estimates to tons using the estimated weights of a cubic yard of trash and a cubic yard of recyclables.

Exhibit 31

Projected FY2015 Recycling Rate for Departments Based on Annual Volume Serviced



Source: OCA projections, based on ESD data.

Some City Facilities May Meet Criteria to be Exempted from Recycling Requirements

When enforcing CRO requirements for commercial and multi-family facilities, ESD’s enforcement staff may grant exemptions or accept reduced recycling compliance due to unique characteristics of a property. For example, some older multi-family complexes may not have separate chutes for trash and recycling, which makes it more difficult to provide recycling collection space for these properties. Similarly, some City facilities – primarily those operated by PRD – also qualify for exemptions due to special circumstances. For example, based on conversations with ESD and PRD staff, scavenging of recyclables is prevalent in many parks and beaches. According to PRD, the cost of providing separate recycling bins and collecting recyclables cannot be justified in these locations because most of these materials are taken by scavengers. We inspected some of the few recycling cans on City beaches, which are located on the boardwalk in Mission Beach. While the trash bins in the area were relatively full, the recycling bins were mostly empty – likely because scavengers took most of the recyclable materials.

According to PRD, while there are types of scavenger-resistant bins that could be procured and installed, the bins are significantly more expensive than typical trash bins. Furthermore, PRD notes that past pilots of these bins indicate that scavengers will eventually break them, which results in the additional expense of replacing them.

Most City Facilities Should Be Required to Comply with CRO Requirements

While some of the City's outdoor facilities qualify for exemptions from the CRO, others that are located in areas with few scavengers should provide recycling. For example, **Exhibit 32** shows a trash bin with many recyclable materials in it at Lake Murray Community Park in San Carlos. The park does not have any recycling bins.

Exhibit 32

Recyclables Are Placed in the Trash When Recycling Containers Are Not Provided



Source: OCA.

In addition, other City indoor facilities – libraries, indoor recreation areas, and City offices – should comply with the CRO. As noted in Finding 1, 59 percent of commercial and multi-family facilities are not complying with CRO requirements, and commercial and multi-family facilities have a combined recycling rate of only 26 percent. The City's similar 27 percent recycling rate for non-PRD facilities indicates that many City facilities likely do not comply with CRO requirements.

While it was not feasible to review all City facilities, we visited parks, recreation centers, libraries, and beaches in all nine council districts. We found that recycling varied at many of these facilities. Of the 25 facilities we visited, four appeared to fully meet CRO requirements by providing adequate recycling, while 10 appeared to partially comply and 11 did not have any recycling.⁴⁰ **Exhibit 33** summarizes the results of our review. For a full listing of the locations surveyed, see **Appendix F**.

⁴⁰ ESD typically requires commercial facilities to have at least 30 percent recycling to 70 percent trash collection (based on volume), and to place recycling containers next to all trash containers to make recycling convenient.

Exhibit 33

Many City Facilities May Not Have Adequate Recycling

	Appears to Fully Comply with CRO	Appears to Partially Comply with CRO	No Recycling Present
Libraries	3	5	0
Parks/Recreation Centers	1	4	8
Beaches	0	1	3
TOTAL	4	10	11

Source: OCA.

The City Should Set a Good Example for Residents and Businesses by Ensuring That City Facilities Meet CRO Requirements

We met with representatives from PRD and Libraries and found that, while ESD enforcement staff have worked with these departments to assist in meeting recycling requirements at some facilities (such as the new Central Library), overall, the departments' contact with ESD regarding compliance with CRO requirements has been minimal. ESD enforcement staff also told us that enforcement of the CRO for commercial and residential properties is a higher priority than enforcement for City properties.

According to ESD, City facilities make up only about five percent of the City's overall waste disposal. However, because the City is requiring most residents and businesses to recycle, and because the City's facilities are highly visible and serve a broad spectrum of City residents, the City should set a good example for residents and businesses by ensuring that City facilities meet recycling requirements where possible. We recommend that the Chief Operating Officer direct ESD to enforce the CRO for City facilities, and educate and assist City departments in meeting recycling requirements. In addition, because many City facilities are located in leased commercial space, we recommend that the City include compliance with minimum CRO requirements as a condition in future leases of commercial office space.

Recommendation #11 The Chief Operating Officer should direct the Environmental Services Department to monitor City departments' compliance with the Citywide Recycling Ordinance and report to City Council on the status annually. Additionally, the Environmental Services Department should educate and assist other City departments in meeting recycling requirements. (Priority 2)

Recommendation #12 The City should include compliance with minimum Citywide Recycling Ordinance requirements as a condition in contracts for future leases of commercial space. (Priority 2)

Conclusion

Despite the City Council's unanimous adoption of the Citywide Recycling Ordinance (CRO) in 2007, many residents, businesses, and City facilities do not meet minimum recycling requirements. In CY 2013, the recycling rate for commercial and multi-family properties, which receive collection service from one of the City's 21 franchised haulers, was only 26 percent. The recycling rate for single-family residential properties, which receive City collection service, was only 23 percent. Combined, these sources are responsible for more than three-quarters of the 1.3 million tons of landfilled waste generated in the City each year.

Continued low recycling rates for residential and commercial properties threatens the ability to achieve the City's Zero Waste objectives, which the City Council unanimously approved at the beginning of FY 2014. These include targets of 75 percent waste diversion by 2020 and Zero Waste by 2040. The City's most recent Waste Characterization Study found that most of the City's landfilled waste is recoverable, showing that there is considerable room for improvement in the City's overall diversion rate.

The recycling rate for commercial and multi-family customers receiving service from one of the City's franchised haulers could be improved by revising the current franchise agreements and establishing a target diversion rate requirement of between 50 and 60 percent by 2020. The revised franchise agreements should include incremental increases in the diversion rate to achieve the 50-60 percent goal by 2020. Periodically reviewing and increasing the required recycling rate would enable the City to improve waste diversion as new recycling technologies and commodities markets become available.

The City and its residents may also benefit from changing the current non-exclusive franchise system for solid waste collection, whereby all franchised haulers may operate throughout the City. Other large West Coast jurisdictions have recently moved towards districted exclusive franchise systems, where each franchised hauler is assigned a specific area. A districted exclusive system can increase the haulers' routing efficiency, which has been shown to reduce average customer rates even when adding additional recycling programs. Furthermore, a districted exclusive system may improve incentives for recycling, and minimizes adverse impacts generated by waste

hauling, which include street wear, toxic emissions, and noise. Accordingly, policymakers should be presented with a study regarding the potential benefits of a districted exclusive system.

While the People's Ordinance prevents the City from adopting best practices for single-family residential recycling that are used by other jurisdictions, several opportunities exist to improve enforcement of recycling requirements for residential properties that receive City collection service. The Environmental Services Department (ESD) can increase enforcement efficiency and coverage by 1) conducting bin checks systematically instead of randomly; consistently placing educational notices on customers' bins when they are not complying with recycling requirements; 2) ensuring that all customers have recycling bins; and 3) tracking information on the effectiveness of enforcement efforts. In addition, the issuance of fines for non-compliance would help the City recover excessive enforcement costs from repeat violators and encourage them to improve their recycling efforts.

Lastly, while some City facilities, such as parks and beaches, have unique characteristics that justify exemptions from recycling requirements, most other City facilities should be required to comply. In order to set a good example for residents and businesses, ESD should monitor City departments' compliance with the CRO and report on the status to City Council on an annual basis. Additionally, ESD should work with other City departments to educate and assist them in meeting recycling requirements.

Increasing waste diversion and recycling is critically important to achieving the City's long term financial and environmental goals. San Diegans currently dispose of approximately 1.3 million tons of waste each year in landfills, including 835,000 tons at Miramar Landfill--the only remaining active City-operated disposal site. At the current rate of disposal, Miramar Landfill is anticipated to fill to capacity and close by 2025, at which time the City's General Fund, businesses, and residents will need to pay substantially higher costs for landfill disposal elsewhere. The implementation of our recommendations should improve the City's waste diversion rates, and help the City avoid these costs.

Recommendations

Recommendation #1 In order to improve recycling rates and compliance with the Citywide Recycling Ordinance for commercial and multi-family facilities, the City should include CRO enforcement and minimum diversion requirements in all franchise agreements, with liquidated damages for non-compliance. Franchised haulers should be required to provide all customers with a minimum level of recycling service or submit documentation to the City justifying any exemptions that are granted. The City should revise the current franchise agreements and establish a target diversion rate requirement of between 50 and 60 percent by 2020. The revised franchise agreements should include incremental increases in the diversion rate to achieve the 50-60 percent goal by 2020. (Priority 1)

Recommendation #2 In order to ensure that commercial and multi-family recycling rates are adequate to achieve the City's long-term waste diversion goals, the Environmental Services Department should establish a policy to annually review the minimum required diversion rate for franchised haulers and determine whether an increase is needed, based on the cost-effectiveness of available materials recovery technology and the City's need to increase overall waste diversion rates. (Priority 1)

Recommendation #3 The Environmental Services Department should present results of a study examining the potential for a districted exclusive collection system as an alternative to the current non-exclusive franchise system so that policymakers can make an informed decision about the ideal franchise system for the City to utilize. This study should include analysis and comparisons of a districted exclusive vs. non-exclusive franchise system in the following areas:

- a. Potential for stimulating private investment and innovation in recycling infrastructure to improve diversion rates, extend the life of Miramar Landfill, and achieve other Zero Waste goals
- b. Impact on customer prices
- c. Impact on customer service
- d. Impact on street conditions and street maintenance costs
- e. Impact on air quality, greenhouse gas emissions, noise, and traffic
- f. Impact on the City's ability to stabilize franchise and AB 939 fee revenues and monitor the accuracy of franchisee payments

- g. Impact on long-term solid waste hauling competition
- h. Analysis by the Office of the City Attorney regarding Proposition 26 and Proposition 218 implications. (Priority 1)

- Recommendation #4** If the results of the study show that a districted exclusive collection system is more viable, then the City should consider sending letters of intent to the franchised haulers, as required by the California Public Resources Code, so that a districted franchise system can be implemented as quickly as possible provided that policymakers select a districted exclusive system as the best franchise option for the City. (Priority 1)
- Recommendation #5** The Environmental Services Department should adopt a systematic, route-based bin check process to improve the coverage and efficiency of Citywide Recycling Ordinance enforcement efforts. (Priority 2)
- Recommendation #6** In order to maximize opportunities to educate and assist residents in meeting recycling requirements, the Environmental Services Department should ensure that Notices of Violation are consistently issued when a resident receiving City recycling collection services is not complying with the Citywide Recycling Ordinance. (Priority 2)
- Recommendation #7** The Environmental Services Department should allocate additional resources to Citywide Recycling Ordinance enforcement for City-serviced residential properties so that bins can be checked at least once every five years. Resources allocated to CRO enforcement for City-serviced residential properties should be periodically evaluated using the data captured pursuant to Recommendation #8, below, to determine whether they are optimal from a cost-effectiveness standpoint. (Priority 2)
- Recommendation #8** The Environmental Services Department should improve data collection for Citywide Recycling Ordinance enforcement by tracking major violations with a unique EPACS problem code and developing a procedure to calculate statistics on the effectiveness of enforcement efforts. (Priority 2)
- Recommendation #9** The Environmental Services Department should provide Code Enforcement Officers with a listing of all properties that may not have recycling bins and assign officers to verify which customers do not have recycling bins while conducting routine bin checks. When officers encounter a property that does not have a blue recycling bin, officers should educate the resident on how a recycling bin can be obtained. (Priority 2)

- Recommendation #10** As authorized by SDMC §66.0718, the Environmental Services Department should consider expanding efforts to issue fines to repeat Citywide Recycling Ordinance violators to improve the effectiveness of enforcement efforts and recover a portion of excessive enforcement costs. (Priority 2)
- Recommendation #11** The Chief Operating Officer should direct the Environmental Services Department to monitor City departments' compliance with the Citywide Recycling Ordinance and report to City Council on the status annually. Additionally, the Environmental Services Department should educate and assist other City departments in meeting recycling requirements. (Priority 2)
- Recommendation #12** The City should include compliance with minimum Citywide Recycling Ordinance requirements as a condition in contracts for future leases of commercial space. (Priority 2)

Appendix A: Definition of Audit Recommendation Priorities

DEFINITIONS OF PRIORITY 1, 2, AND 3 AUDIT RECOMMENDATIONS

The Office of the City Auditor maintains a priority classification scheme for audit recommendations based on the importance of each recommendation to the City, as described in the table below. While the City Auditor is responsible for providing a priority classification for recommendations, it is the City Administration's responsibility to establish a target date to implement each recommendation taking into consideration its priority. The City Auditor requests that target dates be included in the Administration's official response to the audit findings and recommendations.

Priority Class ⁴¹	Description
1	Fraud or serious violations are being committed. Significant fiscal and/or equivalent non-fiscal losses are occurring. Costly and/or detrimental operational inefficiencies are taking place.
2	The potential for incurring significant fiscal and/or equivalent non-fiscal losses exists. The potential for costly and/or detrimental operational inefficiencies exists.
3	Operation or administrative process will be improved.

⁴¹The City Auditor is responsible for assigning audit recommendation priority class numbers. A recommendation which clearly fits the description for more than one priority class shall be assigned the higher priority.

Appendix B: Audit Objectives, Scope, and Methodology

Objectives In accordance with the City Auditor's FY 2014 Work Plan, we conducted a performance audit of the Environmental Services Department's (ESD's) recycling programs administered by the Collection Services division and the Waste Reduction and Disposal Division (WRAD). Our audit objectives were as follows:

1. Evaluate the extent to which the ESD's enforcement of the City Recycling Ordinance (CRO) against properties receiving trash and recycling collection services from franchise haulers is conducted efficiently and is effective in encouraging recycling;
2. Evaluate current City practices for franchising and monitoring franchisees, including reviewing franchise agreements, different hauler systems, and the implications the current non-exclusive franchise arrangement has for the City and its residents including increased traffic, street deterioration, noise, greenhouse gas emissions, inefficient routing, and customer pricing;
3. Evaluate the extent to which the ESD's enforcement of the CRO against properties receiving trash and recycling collection services from the City is conducted efficiently and is effective in encouraging recycling;
4. Evaluate the extent to which City departments are complying with the City Recycling Ordinance.

Scope and Methodology To evaluate enforcement and oversight of franchise agreements and CRO requirements for franchised haulers' customers, we reviewed franchise agreements, ESD policies and procedures, as well as interviewed relevant ESD staff to identify current requirements for franchised haulers regarding recycling enforcement. In addition, we reviewed the two types of hauler reports submitted by haulers to ESD and interviewed relevant staff to understand how the hauler reports are being used for enforcement purposes. Additionally, to identify best practices regarding recycling enforcement, franchise agreement recycling requirements, oversight of franchise haulers, and franchise system structure (exclusive, semi-exclusive, non-exclusive), we conducted benchmarking against other cities and jurisdictions, particularly large West Coast cities, other and cities in San Diego County, as well as those with successful recycling practices.

Furthermore, we met with four of the 12 haulers to get their perspective on the franchise hauling system and the addition of diversion requirements to the existing non-exclusive franchise agreements.

To evaluate the financial and environmental consequences of the current non-exclusive waste hauler franchise arrangement, we examined San Diego County-specific data from the California Air Resources Board. In our analysis of the data, we compared the carbon dioxide (CO₂) and particulate matter (PM) emissions of several common vehicle types, including passenger vehicles, light-duty trucks, semis, and garbage trucks. Additionally, we used CO₂ emissions by fuel type data from the United States Energy Information Administration in order to estimate the reduction in CO₂ emissions from using compressed natural gas (CNG) powered garbage trucks. We also reviewed published data on the impact that various vehicle types, including trash trucks, have on street conditions.

To evaluate the efficiency and effectiveness for enforcement of the CRO for properties receiving City service, we reviewed current policies and procedures for enforcement, interviewed code enforcement staff and managers, and conducted ride-alongs with code enforcement staff to observe the City's Recycling Ordinance (CRO) enforcement practices. In addition, we reviewed collection data for the 283,000 residential customers with approximately 578,000 black and blue bins in service as of February 2014. We also reviewed and analyzed data on the 64,433 bins that were checked in FY 2013 through EPACS, ESD's work order system. Additionally, we conducted benchmarking against other municipalities and reviewed criteria to identify best practices for encouraging recycling and enforcing recycling requirements for residential properties serviced by City forces. We also conducted analysis of WRAD's current processes to determine whether the current enforcement strategies used by the City are conducted efficiently, effectively, and adequate to ensure compliance with CRO.

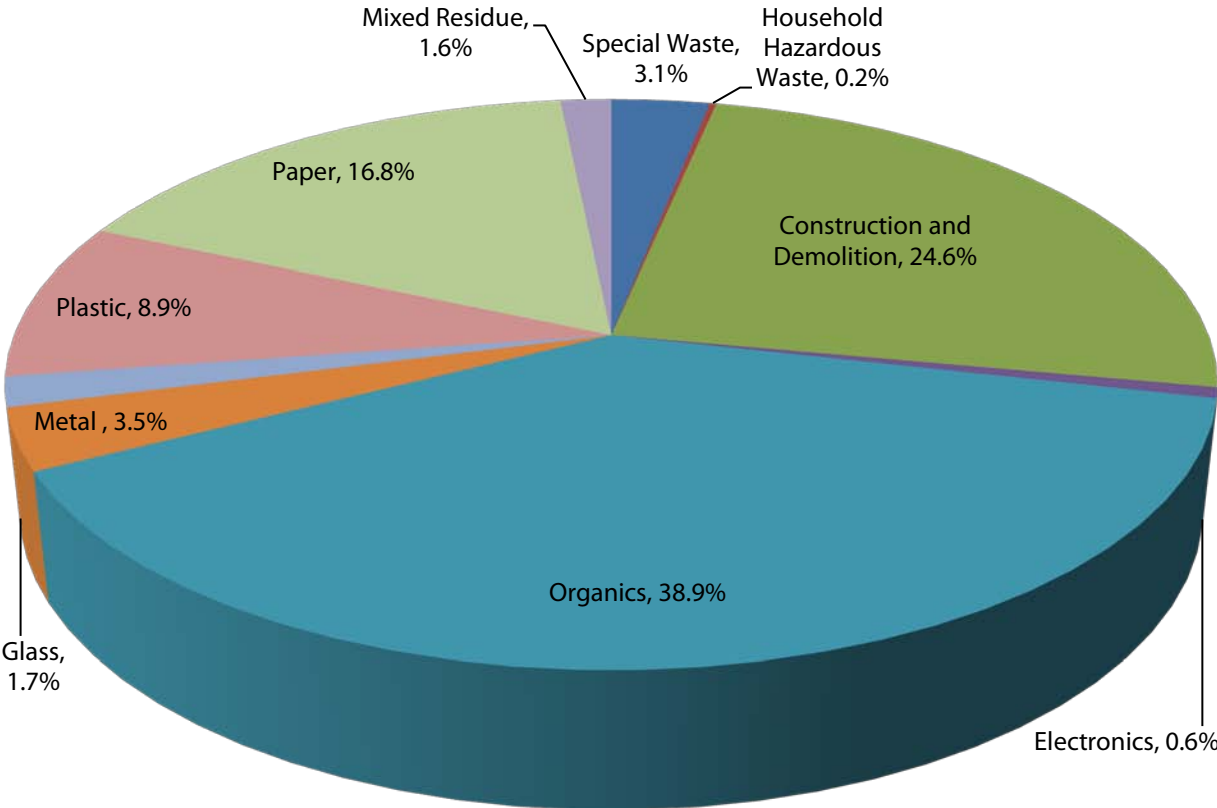
To evaluate the City departments' compliance with the CRO, we selected a total of 25 parks, libraries, and beaches from all nine council districts to conduct site visits and determine if they complied with the CRO. In addition, we interviewed ESD enforcement staff, and relevant staff from parks and libraries to determine current enforcement strategies and interaction between ESD and City departments regarding CRO requirements.

Additionally, we reviewed WRAD's current operations as well as staffing and budget information for FY 2014.

We conducted this performance audit in accordance with generally accepted government auditing standards. These standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on the audit objectives.

Appendix C: Breakdown of Disposed Waste by Material Type

Composition by Material Class, Overall Disposed Waste, CY 2012 - 2013



Source: OCA, using Waste Characterization Study CY 2012-2013, provided by ESD.

Appendix D: Major Revenues and Expenditures by Fund Type

GENERAL FUND	FY2014 BUDGET
REVENUE	
Franchise Fees	\$9,100,000
TOTAL REVENUE	\$9,100,000

GENERAL FUND*	FY2014 BUDGET
EXPENDITURES	
Collection Services Operation	\$19,928,671
Recycling (AB 939) Fees to Recycling Fund	\$3,790,000
Disposal Fees to Disposal Fund	\$8,539,314
TOTAL EXPENDITURES	\$32,257,985

* Note: In addition to the expenses shown here, the General Fund also pays for some City-wide street maintenance, including repairs resulting from wear and tear caused by trash trucks.

RECYCLING FUND	FY2014 BUDGET
REVENUE	
Curbside Recycling Revenue	\$4,000,000
Other Revenue	\$2,059,020
Recycling Fees (AB939) – City	\$3,790,000
Recycling Fees (AB939) – Franchised	\$5,800,000
Recycling Fees (AB939) – Non-Franchised	\$1,160,000
Services to Other Departments	\$968,631
TOTAL REVENUE	\$17,777,651

RECYCLING FUND	FY2014 BUDGET
EXPENDITURES	
Collection Services Division – Residential Recycling + Greenery	\$16,915,089
WRAD Division	\$1,929,841
Other	\$4,447,367
TOTAL EXPENDITURES	\$23,292,297

Performance Audit of the City's Waste Reduction and Recycling Programs

DISPOSAL FUND	FY2014 BUDGET
REVENUE	
Disposal Fee – City	\$8,539,314
Disposal Fee – Franchised	\$9,324,231
Disposal Fee – Non Franchised	\$5,239,768
Greens/Wood Fee	\$2,030,000
General Fund Repayment of Loan for Operation Station	\$807,434
Other Revenue	\$3,433,554
TOTAL REVENUE	\$29,374,301
DISPOSAL FUND	FY2014 BUDGET
EXPENDITURES	
Collection Services Division	\$960,677
WRAD Division (Landfill Operations)	\$24,526,872
Transfer to Landfill Closure Fund	\$1,000,000
Other Expenditures	\$5,445,447
TOTAL EXPENDITURES	\$31,932,996

Source: OCA, based on FY 2014 Adopted Budget.

Appendix E: Proposed City of Los Angeles Franchise Zones

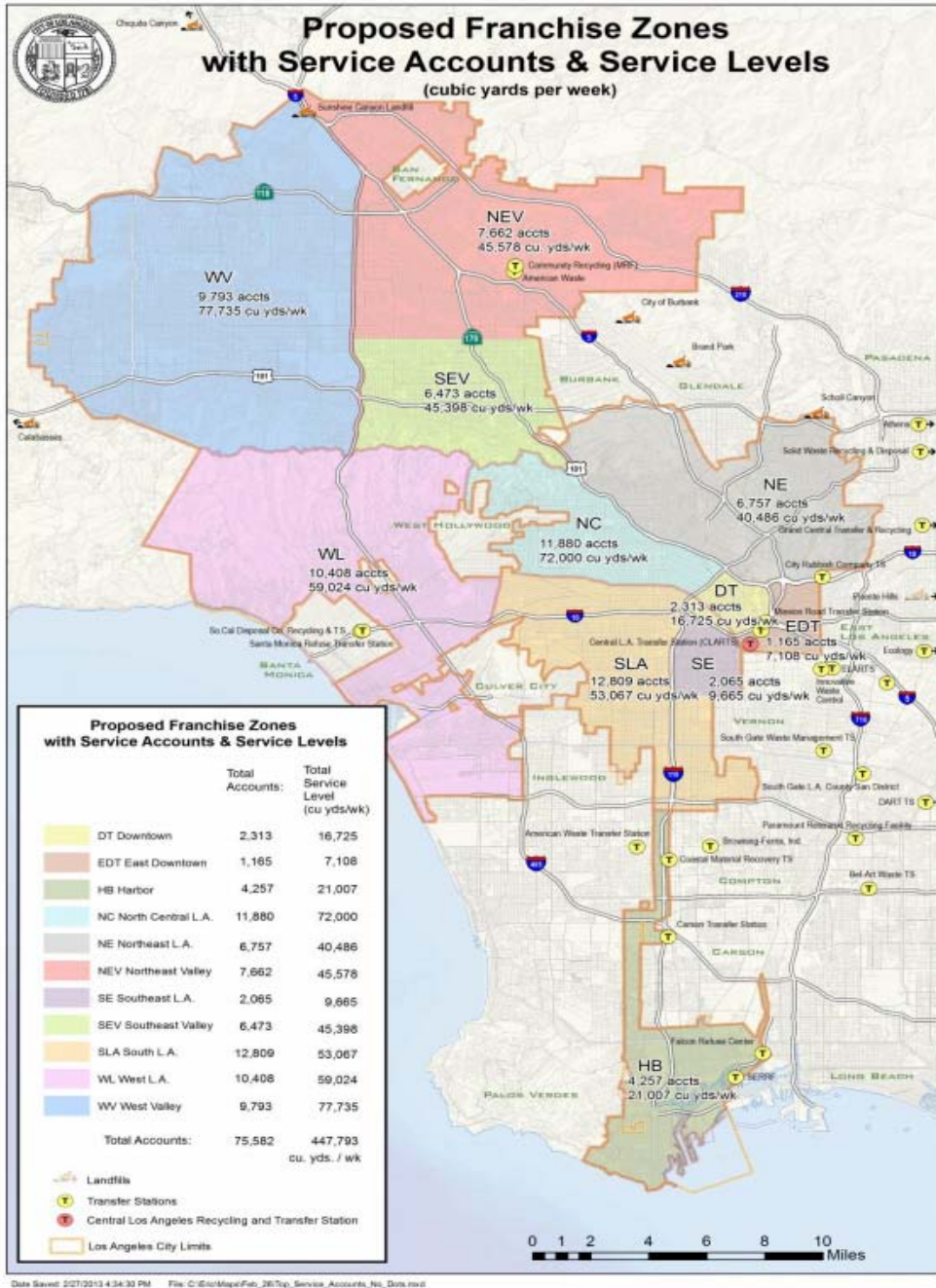


Figure 3-1 – Franchise Zone Map

Source: The City of Los Angeles: Final Implementation Plan for Exclusive Commercial and Multifamily Franchise Hauling System Report.

Appendix F: City Parks, Beaches, and Libraries Surveyed

Council District	City Parks/Beaches/Libraries		Appears to Fully Meet CRO Requirements	Appears to Partially Meet CRO Requirements	Does Not Meet CRO Requirements (No Recycling)
1	Parks	Standley Park		x	
		Calumet Park			x
	Library	University Community Library		x	
	Beaches	La Jolla Shores			x
		WindandSea Beach			x
2	Parks	Tourmaline Surfing Park			x
		Mission Bay Park		x	
	Beaches	Pacific Beach			x
		Mission Beach		x	
3	Park	Balboa Park		x	
	Library	Central Library	x		
4	Library	Mountainview/Beckwourth Branch		x	
5	Parks	Peñasquitos Creek Park			x
		Los Peñasquitos Canyon Preserve	x		
6	Park	Mira Mesa Community Park/Recreation Center		x	
	Library	Mira Mesa Library		x	
7	Parks	Lake Murray Community Park			x
		Linda Vista Park			x
	Libraries	Linda Vista Library	x		
		Mission Valley Library		x	
8	Park	Grant Hill Park			x
	Library	Logan Heights Branch	x		
9	Parks	Colina Del Sol Park			x
		Southcrest Community Park			x
	Library	City Heights Library		x	

Source: OCA.



THE CITY OF SAN DIEGO

MEMORANDUM

DATE: August 7, 2014

TO: Eduardo Luna, Auditor

FROM: Mario X. Sierra, Director, Environmental Services Department

SUBJECT: Management Response to Performance Audit of the Environmental Services Department's Waste Reduction and Recycling Programs

The City acknowledges the Office of the City Auditor Performance Audit of the Environmental Services Department's (ESD) Waste Reduction and Recycling Programs. The following summarizes the audit findings and recommendations contained in that report and the Department's responses to its recommendations.

RECOMMENDATION #1:

In order to improve recycling rates and compliance with the Citywide Recycling Ordinance for commercial and multi-family facilities, the City should include CRO enforcement and minimum diversion requirements in all franchise agreements, with liquidated damages for non-compliance. Franchised haulers should be required to provide all customers with a minimum level of recycling service or submit documentation to the City justifying any exemptions that are granted. The City should revise the current franchise agreements and establish a target diversion rate requirement of between 50 and 60 percent by 2020. The revised franchise agreements should include incremental increases in the diversion rate to achieve the 50-60 percent goal by 2020. (Priority 1)

MANAGEMENT RESPONSE #1: Agree with recommendation

- a) New requirements will be included in the franchise agreements to strengthen CRO enforcement and achieve minimum diversion rates.

Date to be completed: August 1, 2015

- b) Liquidated damages will be included in franchise agreements for non-compliance. ESD will also consider other enforcement mechanisms to achieve the new minimum diversion requirements.

Date to be completed: August 1, 2015

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Eduardo Luna, City Auditor

August 7, 2014

- c) Franchised haulers will be required to confirm that all customers have a minimum level of recycling service, or submit documentation satisfactory to the ESD Director justifying any exemptions that are granted.

Date to be completed: August 1, 2015

- d) Franchise agreements will include a target diversion rate requirement of between 50 and 60 percent by 2020 with incremental increases in the diversion rate to achieve the 50-60 percent goal by 2020.

Date to be completed: August 1, 2015

RECOMMENDATION #2:

In order to ensure that commercial and multi-family recycling rates are adequate to achieve the City's long-term waste diversion goals, the Environmental Services Department should establish a policy to annually review the minimum required diversion rate for franchised haulers and determine whether an increase is needed, based on the cost-effectiveness of available materials recovery technology and the City's need to increase overall waste diversion rates. (Priority 1)

MANAGEMENT RESPONSE #2: Agree with Recommendation

An annual re-evaluation will occur to review the minimum required diversion rate for franchised haulers and to determine whether an increase is necessary to achieve the City's long-term waste diversion goals.

Date to be completed: August 1, 2016, and annually thereafter

RECOMMENDATION #3:

The Environmental Services Department should present results of a study examining the potential for a districted exclusive collection system as an alternative to the current non-exclusive franchise system so that policymakers can make an informed decision about the ideal franchise system for the City to utilize. This study should include analysis and comparisons of a districted exclusive vs. non-exclusive franchise system in the following areas:

- a. Potential for stimulating private investment and innovation in recycling infrastructure to improve diversion rates, extend the life of Miramar Landfill, and achieve other Zero Waste goals
- b. Impact on customer prices
- c. Impact on customer service
- d. Impact on street conditions and street maintenance costs
- e. Impact on air quality, greenhouse gas emissions, noise, and traffic
- f. Impact on the City's ability to stabilize franchise and AB 939 fee revenues and monitor the accuracy of franchisee payments
- g. Impact on long-term solid waste hauling competition

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- h. Analysis by the Office of the City Attorney regarding Proposition 26 and Proposition 218 implications. (Priority 1)

MANAGEMENT RESPONSE #3: Agree with Recommendation

This study will be conducted upon completion of the Long-Term Financing Plan, accompanied by a Zero Waste Plan.

Date to be completed: March 31, 2016

RECOMMENDATION #4:

If the results of the study show that a districted exclusive collection system is more viable, then the City should consider sending letters of intent to the franchised haulers, as required by the California Public Resources Code, so that a districted franchise system can be implemented as quickly as possible provided that policymakers select a districted exclusive system as the best franchise option for the City. (Priority 1)

MANAGEMENT RESPONSE #4: Agree with Recommendation

ESD will send letters of intent to the franchise haulers if the results of the study show that a districted exclusive system is more viable and ESD is directed to do so.

Date to be completed: June 30, 2016

RECOMMENDATION #5:

The Environmental Services Department should adopt a systematic, route-based bin check process to improve the coverage and efficiency of Citywide Recycling Ordinance enforcement efforts. (Priority 2)

MANAGEMENT RESPONSE #5: Agree with Recommendation

ESD adopted a systematic, route based bin check process on June 9, 2014. The written enforcement guidelines were updated on May 28, 2014 with the changes, and Code Compliance Officers were provided verbal instruction on June 9, 2014.

Date to be completed: Implemented

RECOMMENDATION #6:

In order to maximize opportunities to educate and assist residents in meeting recycling requirements, the Environmental Services Department should ensure that Notices of Violation are consistently issued when a resident receiving City recycling collection services is not complying with the Citywide Recycling Ordinance. (Priority 2)

MANAGEMENT RESPONSE #6: Agree with Recommendation

To ensure Notices of Violation would be consistently issued, ESD updated its written enforcement guidelines on May 28, 2014, and ESD's Code Compliance Officers were provided verbal instruction of the change on June 9, 2014. The change included adopting more stringent thresholds

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regarding the allowable amount of contaminants in recycling bins, and recyclable materials in refuse bins.

Date to be completed: Implemented

RECOMMENDATION #7:

The Environmental Services Department should allocate additional resources to Citywide Recycling Ordinance enforcement for City-serviced residential properties so that bins can be checked at least once every five years. Resources allocated to CRO enforcement for City-serviced residential properties should be periodically evaluated using the data captured pursuant to Recommendation #8, below, to determine whether they are optimal from a cost-effectiveness standpoint. (Priority 2)

MANAGEMENT RESPONSE #7: Agree with Recommendation

Based on the outcome of the financing plan mentioned in Management Response #3, ESD will recommend adding two FTE's to achieve this inspection frequency during the FY2016 budget process.

Date to be completed: June 30, 2015

RECOMMENDATION #8:

The Environmental Services Department should improve data collection for Citywide Recycling Ordinance enforcement by tracking major violations with a unique EPACS problem code and developing a procedure to calculate statistics on the effectiveness of enforcement efforts. (Priority 2)

MANAGEMENT RESPONSE #8: Agree with Recommendation

ESD created and began using a unique EPACS problem code for tracking major violations and developed a procedure for calculating statistics on the effectiveness of enforcement efforts on June 2, 2014.

Date to be completed: Implemented

RECOMMENDATION #9:

The Environmental Services Department should provide Code Enforcement Officers with a listing of all properties that may not have recycling bins and assign officers to verify which customers do not have recycling bins while conducting routine bin checks. When officers encounter a property that does not have a blue recycling bin, officers should educate the resident on how a recycling bin can be obtained. (Priority 2)

MANAGEMENT RESPONSE #9: Agree with Recommendation

Code Enforcement Officers will verify that any customers, who do not have a recycling bin set out on collection day, do not have recyclables in their trash. If recyclables are identified, then the resident will receive a notice of violation and will be informed how they can obtain a recycling container if they need one.

Date to be completed: September 30, 2014

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RECOMMENDATION #10:

As authorized by SDMC §66.0718, the Environmental Services Department should consider expanding efforts to issue fines to repeat Citywide Recycling Ordinance violators to improve the effectiveness of enforcement efforts and recover a portion of excessive enforcement costs. (Priority 2)

MANAGEMENT RESPONSE #10: Agree with Recommendation

ESD will monitor progress in increasing recycling rates as a result of implementing Recommendations 6 – 9 above. In those cases where education and assistance have been offered and the violator continues to fail to meet the requirements of the ordinance, ESD will consider issuing monetary fines as allowed by the CRO and SDMC §66.0718.

Date to be completed: July 1, 2017

RECOMMENDATION #11:

The Chief Operating Officer should direct the Environmental Services Department to monitor City departments' compliance with the Citywide Recycling Ordinance and report to City Council on the status annually. Additionally, the Environmental Services Department should educate and assist other City departments in meeting recycling requirements. (Priority 2)

MANAGEMENT RESPONSE #11: Agree with Recommendation

In FY 2015, ESD will expand its efforts to educate and assist City departments to meet their recycling requirements under the CRO. ESD will also develop a monitoring plan. After the first year of the monitoring plan, ESD will present its first report to City Council by October 31, 2016.

Date to be completed: Annual Report to City Council to be completed by October 31, 2016, and annually thereafter

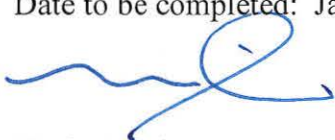
RECOMMENDATION #12:

The City should include compliance with minimum Citywide Recycling Ordinance requirements as a condition in contracts for future leases of commercial space. (Priority 2)

MANAGEMENT RESPONSE #12: Agree with Recommendation

ESD will work with Real Estate Assets Department staff to develop language to be incorporated into leases of commercial office space. Real Estate Assets will include the language in future commercial office space leases.

Date to be completed: January 1, 2015



Mario X. Sierra

MS/sg

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Eduardo Luna, City Auditor

August 7, 2014

cc: Scott Chadwick, Chief Operating Officer
Stacey LoMedico, Assistant Chief Operating Officer
Tony Heinrichs, Deputy Chief Operating Officer, Infrastructure/Public Works
Rochelle Monroe, Acting Assistant Director, Environmental Services Department
Stephen Greal, Deputy Director, Waste Reduction and Disposal Division
Kenneth Prue, Recycling Program Manager