

DRAFT DOCUMENT



CITY OF SANTA ROSA  
**ZERO WASTE  
MASTER PLAN**

A PATH TOWARDS SUSTAINABILITY



May 17, 2019

# ACKNOWLEDGEMENTS

The City of Santa Rosa's Zero Waste Plan was created through the collaboration of City staff, R3 Consulting Group, Inc., and sub-consultants SCS Engineers, Cascadia Consulting Group, and Abbe & Associates, LLC. Together, these parties form the Zero Waste Plan "Project Team."



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# SECTION 1: EXECUTIVE SUMMARY

## INTRODUCTION

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The City of Santa Rosa (City) has a history of leadership in the field of environmental sustainability. In demonstrating its continued dedication to improving quality of life for its citizens by addressing pollution caused by solid waste, the City has invested in developing a Zero Waste Plan (Plan). This publication is intended to serve as a “living document” to help guide the community in diverting its waste from landfill disposal and effectively managing resources to their highest and best use while reducing waste at the source. Currently, over 25 jurisdictions within California have Zero Waste Plans or Resolutions and an additional 12 California communities are working toward creating a plan. By commissioning this work, Santa Rosa has joined a short list of innovators working to proactively address the global challenge of how to sustainably manage the waste generated as a by-product of our individual and collective consumption.

This Plan is the latest of several actions taken in recent years to promote improved environmental practices and policies. In 2012, the City Council approved Santa Rosa’s Climate Action Plan (CAP) to assist the City in meeting or exceeding the emission reduction targets of AB 32 (California’s Global Warming Solutions Act of 2006). The City’s Climate Action Plan provides strategies for reducing local greenhouse gas (GHG) emissions, including many waste related strategies that make up roughly a quarter of the City’s overall emissions reduction targets for 2040. This Plan expands upon the goals established in the CAP and outlines actionable strategies for implementation over a 20-year timeline with benchmarks set to measure success and recalibrate the necessary approach to change.

In 2017, the City conducted a competitive procurement process to select a new hauler for garbage, recycling, and organics collection, and awarded Recology Sonoma Marin (Recology) an exclusive franchise agreement for provision of these services within the City. The “three stream system” forms the core of the solid waste programs that residents and business engage with on a daily basis. As part of the franchise agreement, Recology’s four (4) Santa Rosa dedicated Zero Waste Specialists offer outreach, education, and technical assistance to help customers divert more materials from landfill disposal and conduct site visits to identify opportunities for increasing diversion. Recology took over Santa Rosa’s exclusive franchise on December 24, 2017 and is the current hauler for the City.

## VISION CHANGE AND LEGISLATIVE PREPAREDNESS

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In the past, solid waste has been viewed as a stagnant utility with one goal: collect and transport waste to landfills. Beginning in the 1990’s after the passage of the State’s first recycling law, AB 939, waste diversion programs were developed and a goal of 50% diversion for solid waste was defined. This landmark legislation changed the way Californian’s viewed their waste, planting a seed that allowed individuals and industry to see “garbage” as a potential resource, rather than an inevitable fountain of pollution. The solid waste industry changed again with the development of large-scale composting facilities, enabling additional diversion of thousands of tons of material for transformation into soil amendments. State legislation for recycling and organics composting (AB 341 and AB 1826) have leveraged the available technology to foster further growth in diversion. Now, new laws (SB 1383 and AB 1884) with increasingly stringent goals around the diversion of food waste and reduction of single-use plastics are causing the industry to evolve again. Jurisdictions have been charged with responsibility for implementing large scale transformation at the local level to be in compliance with new legislation. A

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detailed summary of the such regulations and how this Plan will improve local compliance is offered in Section 2 of this Plan.

Since the inception of recycling and organics recycling, a focus on participation and correctly sorting has become the narrative. As programs have matured, however, a conclusion has been drawn: Zero Waste cannot be achieved by recycling and composting alone. Figure 1, below, shows the maximum diversion rate that can be achieved by Santa Rosa if 100% of all recoverable materials in the waste stream (recyclables and compostable materials) are diverted from landfill.

**FIGURE 1: SANTA ROSA CURRENT MAXIMUM DIVERSION RATE**

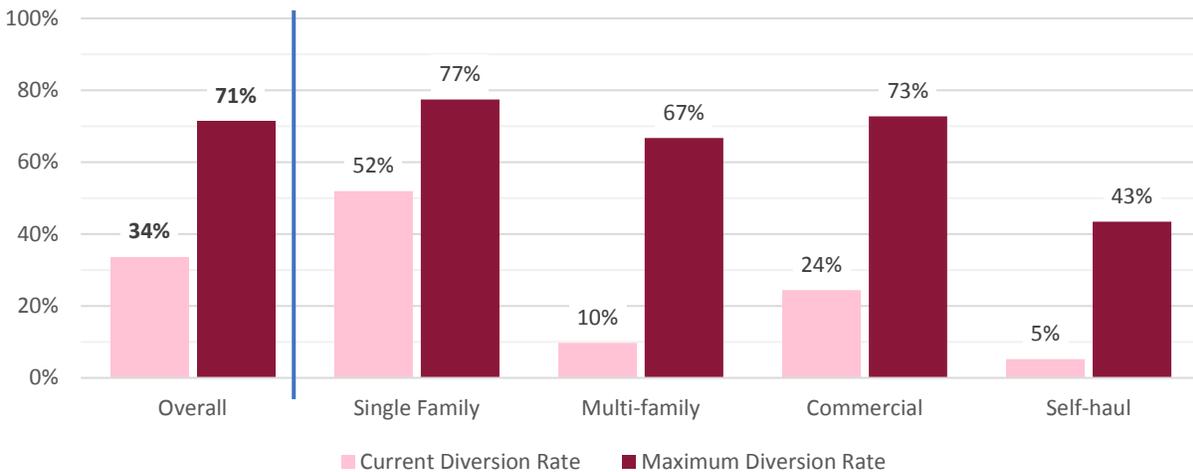


Figure 1 models where the City is at currently in terms of diversion and what the theoretical maximum diversion rate for the City could be within the City’s current waste generation. This graphic shows the substantial growth opportunities in the multi-family, commercial, and self-haul sectors in recycling and composting. By recycling and composting better, the City can raise its overall materials capture rate to achieve its maximum potential diversion rate.

However, the City can also increase its current maximum diversion rate by reducing the amount of waste that is created at the source or reusing materials already in the existing stream. These actions require an upstream approach and are more difficult to achieve. As an innovator, Santa Rosa will target both types of strategies, as described in Section 5 of this Plan, to reduce, reuse, and recycling its way to the City’s zero waste goal and beyond.

**What is Zero Waste?**

Zero Waste is a goal that is ethical, economical, efficient and visionary to guide people in changing their lifestyles and practices to emulate sustainable natural cycles, where all discarded materials are designed to become resources for others to use.

Zero Waste means designing and managing products and processes to systematically avoid and eliminate the volume and toxicity of waste and materials, conserve and recover all resources, and not burn or bury them. Implementing Zero Waste may help to eliminate all discharges to land, water or air that are a threat to planetary, human, animal or plant health<sup>1</sup>.

<sup>1</sup> <http://zwia.org/standards/zw-definition/>

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**Goal Statement**

The City’s zero waste goal is to reduce landfill disposal to less than one (1) pound per person per day of franchised waste and achieve at least 75% diversion of franchised waste from landfill disposal by 2030. More specifically, per capita disposal of waste collected by Recology decreases by 10% each year until 2030 when Santa Rosa’s theoretical maximum diversion rate of 71% is achieved and surpassed.

Santa Rosa can exceed this maximum by reducing materials generation at the source and further reduce the amount of material that is collected in the franchised waste stream. These goals are based on increases in rates of recovery for divertible materials to reach Zero Waste. See Santa Rosa Zero Waste goals and milestones in Table 1, below.

**TABLE 1: ZERO WASTE GOAL AND MILESTONES**

GOAL	2020	2025	2030	2040
Per Capita Disposal based on Recology Tonnage (pounds per person per day)	2.8	1.8	1.0	< 1.0
Diversion Rate*	40%	55%	75%	75%+

\* Diversion will be calculated based the tons of waste collected by Recology (franchised waste). This figure is the best metric for the City to actively monitor and receive reports to track progress.

The City’s Franchise Agreement sets diversion requirements for Recology to achieve. Accordingly, the Plan’s 2025 diversion rate is in alignment with the diversion requirements in the Franchise Agreement. After 2025, the City’s Zero Waste goals exceed Recology’s diversion requirements and will require additional efforts beyond what is currently in the Recology Franchise Agreement.

**Measuring Success**

The City can measure its success in achieving its goal of 10% reduction per year of franchised disposal by monitoring its tonnage and diversions reports generated by its franchised hauler, Recology. This will be the reporting necessary to calculate the City’s annual per capita disposal. The City will need to monitor and benchmark goals for the Construction and Demolition (C&D) Debris separately as this waste stream is not covered under franchised disposal due to the City’s non-exclusive C&D franchise. Additionally, the City can assess the current status of the proposed Zero Waste Strategies at benchmark years 2025, 2030, and 2040 to evaluate the success or failure of programs and policies proposed in this Plan intended to reduce the overall amount of waste disposed by the Santa Rosa community.

**Zero Waste Strategies**

Santa Rosa’s Zero Waste Plan will serve as a guiding document for the implementation of waste reduction policies and program enhancements that will support the City in diverting resources from landfill. These Zero Waste strategies build upon Santa Rosa’s achievements in waste reduction and reinforce waste diversion practices. Please see Section 5 for more information. Table 2 on the following page provides a summary of recommended Zero Waste strategies and target waste generation sectors.

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**TABLE 2: ZERO WASTE STRATEGY RECOMMENDATIONS**

#	ZERO WASTE STRATEGY	RECOMMENDATION	TARGET SECTORS
1	Single-Use Plastics Ban	Develop an ordinance to reduce the sale of single-use plastics in City limits and reduce the overall volume of plastics generated in Santa Rosa and disposed of in landfill.	Commercial, Multi-Family, Single Family
2	Mandatory Participation in Recycling and Composting Programs	Require waste generators to participate in recycling and composting programs.	Commercial, Multi-Family, Single Family
3	Construction and Demolition (C&D) Ordinance Update	Update City’s ordinance to increase data collection, increase the diversion of C&D materials, and/or encourage responsibility of facilities to maintain a minimum diversion rate.	Self-Haul
4	Targeted Technical Assistance	Provide technical assistance with a focus on the top 20% commercial and multi-family waste generators to receive education, resources, and on-site assistance to reduce waste, contamination, and support Zero Waste achievement.	Commercial, Multi-Family
5	Zero Waste Culture Change	Support and encourage behavioral change, source reduction, and reuse within the Santa Rosa community.	Commercial, Multi-Family, Single Family
5.a	Lead by Example	Roll-out recycling and organics collection at all City facilities and promote other waste reduction best practices.	
5.b	School Engagement	Support and provide Zero Waste resources to schools and educators. Participate in discussion around outreach and education for students and teachers.	
5.c	Zero Waste Event Requirements	Amend City special events permit to include requirements and penalties around Zero Waste and the development of a waste plan for every event in City limits.	
5.d	Support for Reuse, Repair, Leasing and Sharing Efforts	Support materials diversion from landfill via Repair Café or Fix It Clinics, car share, tool lending library, and workshops. Maintain a Zero Waste webpage for residents with resources for waste reduction.	

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**Landfill Diversion Potential of Zero Waste Strategies**

In 2018, Santa Rosa had a disposal rate of 2.8 pounds of franchised landfilled material per person per day. This does not include waste that was self-hauled (i.e., not hauled by Recology) for disposal. To estimate the diversion potential of each recommended Zero Waste strategy, the Project Team developed a diversion potential model. See Section 6 for more information and a breakdown of the estimated annual additional diversion potential for each Zero Waste strategy.

These strategies were evaluated based on their effectiveness in cost efficiently diverting the most tons from landfill and were prioritized for implementation accordingly. It should be noted that the City has options for funding proposed strategies, including the possibility of adopting small increases to solid waste rates. Additionally, the more expensive strategies are envisioned for implementation and funding starting around 2025. Upon adoption of this Plan, the City will retain sole discretion with respect to the specific strategies selected for implementation, the schedule of implementation for those strategies, and the specific funding amounts and mechanism for each. Additionally, while some strategies may not have the lowest dollar per ton diverted (i.e., single-use plastics ban), they are still highly important due to their visibility within the community and their potential to change behavior which can significantly impact reducing the overall volume of waste generated. See Table 3 below for more information, and note that the average annual estimated costs are for all years of the Plan, through 2030.

**TABLE 3: ESTIMATED DIVERSION POTENTIAL AND COST**

<b>RECOMMENDED ZERO WASTE STRATEGY</b>	<b>TONS DIVERTED</b>	<b>AVERAGE ANNUAL COST (EST.)</b>	<b>GHG EMISSION REDUCTION</b>
Single-Use Plastics Ban	490	\$38,300	1,000
Mandatory Recycling and Composting	3,670	\$89,800	7,250
C&D Ordinance Update	4,410	\$134,000	4,300
Zero Waste Culture Change	13,680	\$118,400	17,700
Targeted Technical Assistance	15,630	\$438,400	26,700
<b>TOTAL</b>	<b>38,260</b>	<b>\$818,900</b>	<b>56,950</b>

Other measures may be needed at the national, statewide, and local level in order for the City to reach its Zero Waste goals including single-use plastic reduction. Additional diversion can be achieved through other regional waste reduction initiatives which can be supported through these collaborations to further reduce waste in Santa Rosa. Together, these strategies will assist the City in reaching its goal of a 10% reduction in per capita disposal per year. Based on estimated diversion potential, Santa Rosa could reduce its current generation of franchised garbage to approximately 1.7 PPD, surpassing the 2025 milestone, at which time the City is encouraged to evaluate progress and implement new strategies to further reduce waste for reaching its 2030 goal.

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**Estimates of Greenhouse Gas Reduction**

In addition to the benefits of meeting solid waste pollution reduction goals, this Plan contributes to the City’s ability to meet the goals of the CAP discussed earlier in the introduction to this document. The Environmental Protection Agency’s Waste Reduction Model (WARM) was used to estimate greenhouse gas reductions resulting from the implementation of this Zero Waste Plan.

WARM estimates that the emission of approximately 56,950 metric tons of carbon dioxide equivalent (MTCO<sub>2</sub>E) could be avoided each year by source reduction, recycling, and composting currently landfilled, yet recoverable, waste materials captured through Zero Waste strategies. This is equivalent to the annual emissions from 11,990 passenger vehicles, conserving 6,409,850 gallons of gasoline, or 3,570 household’s annual energy consumption. Additional carbon emission reductions could be achieved through greater source reduction of non-recoverable materials and reuse activities.

**Financial Sustainability and Implementation Timeline**

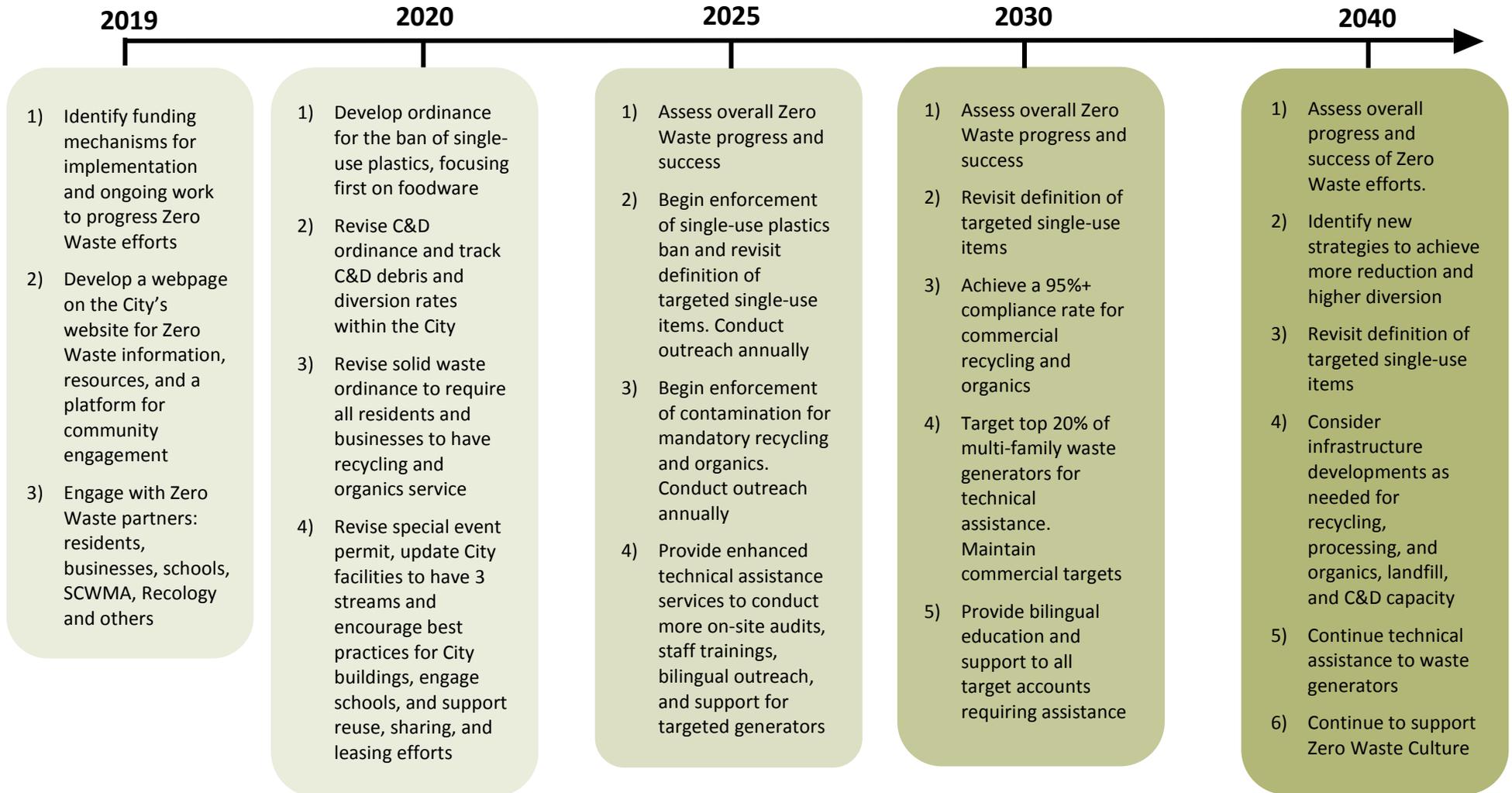
The City has expressed a need for cost-effective strategies that are successful in significantly reducing waste. While cost minimization was heavily considered in asserting the proposed strategies (for example, this Plan anticipates minimal expenses of less than \$150,000 annually prior to 2024, which could be reduced depending on how the City chooses to implement recommended strategies) there will be a need to institute a funding mechanism to support the work described in this Plan. Therefore, the proposed timeline for implementation of the Zero Waste strategies does not begin until 2020. 2019 will serve as a year to further establish the City’s baseline measurements, make preparations for attaining goals, and most importantly, develop a funding mechanism to support and provide resources for Plan implementation. Funding mechanisms may include gradual rate increases, increases to the City’s franchise fees, General Fund contributions, grants, fines for non-compliance and/or other systems. A detailed discussion of funding possibilities can be found in Section 7. See Figure 2 on the next page detailing the estimated implementation timeline for this Plan.

The Plan is divided into 5, 10 and 20-year milestones for the City to monitor its progress. Upon reaching these benchmarks, the City should evaluate and measure goal achievement as well as reassess conditions and strategies as needed. As the later benchmark years approach, the City should not only evaluate the strategies in this Plan but evaluate if other strategies are necessary depending on the status of the waste system in Santa Rosa. This may include evaluating infrastructure needs and performance metrics for facilities. For further background and information on current conditions of Santa Rosa’s solid waste infrastructure, see Appendix D. Re-evaluation of this conclusion should be included in any updates to this Plan.

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**FIGURE 2: IMPLEMENTATION TIMELINE**

Please note this proposed timeline does not restrict the City to begin implementation of strategies prior or beyond suggested date.



## SECTION 2: BACKGROUND

This section provides a summary of systems and policies currently in place to manage solid waste in the City of Santa Rosa. The overall systems are described through a discussion of the partner organizations that make the measurement, disposal, and collection of solid waste happen on behalf of the City and its citizens. Policy is then discussed at the State, County, and local levels to offer an overview of current regulatory conditions and set the stage for improvements recommended within this plan. For more in-depth information on topics within the section, refer to Appendix D.

### REGIONAL ORGANIZATIONS AND PARTNERSHIPS

The current structure of solid waste management in the City of Santa Rosa began to take shape in 1978 when Santa Rosa pioneered a city-wide curbside recycling program. The pilot, entitled Recycle 3, was a collaborative with the City's franchised hauler, the City, and the State. The pilot demonstrated how to support customer behavior changes, resulting in participation increasing from around 25% to over 75%. This program became the model for many other cities including San Jose's first recycling program.

In 1992, the City became a member of the Sonoma County Waste Management Agency (SCWMA). SCWMA is a county-wide Joint Powers Authority (JPA) organized to provide regional programs that assist jurisdictions in meeting waste diversion goals set by the State of California and to act on behalf of its members in performing necessary reporting functions in compliance with State solid waste regulations monitored and enforced by CalRecycle.



### DISPOSAL

Sonoma County (County) owns five transfer stations throughout its territory as well as the Central Landfill where the City of Santa Rosa disposes of its garbage. In 2015, the County contracted with Republic Services, Inc. (Republic) to manage the landfill under a Master Operating Agreement (MOA) which ensures that the County maintains ownership of the transfer and disposal system. Negotiated simultaneously through individual Waste Delivery Agreements (WDA), Santa Rosa has committed waste flow to Republic Service's Central Landfill for a 25-year term.

### SOLID WASTE FRANCHISED COLLECTION SERVICES

In 2017, the City conducted a competitive procurement process to select a new hauler for garbage, recycling, and organics collection, and awarded Recology Sonoma Marin (Recology) an exclusive franchise agreement for provision of these services within the City. The "three stream system" forms the core of the solid waste programs that residents and business engage with on a daily basis. As part of the franchise agreement, Recology's four (4) Santa Rosa dedicated Zero Waste Specialists offer outreach, education, and technical assistance to help customers divert more materials from landfill disposal and conduct site visits to identify opportunities for increasing diversion. Recology took over Santa Rosa's exclusive franchise on December 24, 2017 and is the current hauler for the City.

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## IMPORTANT STATE LEGISLATION

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### **AB 939 – State’s 50% Diversion Requirement and Goals**

AB 939 established a 50% diversion requirement for all solid waste generated in the State of California. To measure progress towards this goal, local jurisdictions or their recognized Regional Agencies are required to report population, waste tonnage disposed, materials tonnage diverted, programs implemented, and other information to CalRecycle via the Electronic Annual Report (EAR) in August of every year. AB 939 also mandated that long-term waste management plans be produced and updated regularly by jurisdictions or their representative Regional Agencies.

### **AB 341 – Mandatory Commercial Recycling**

AB 341 increased the statewide diversion goal to 75% and instituted mandatory recycling service for all businesses, multi-family properties (5 units or more) and public entities that generate more than four cubic yards of solid waste per week. Additionally, the Bill requires education and outreach programs be implemented to inform covered generators of their obligation to meet the terms of the regulation. To measure efforts made to comply with this policy, CalRecycle requires an annual report which details the commercial recycling program, including endeavors in education, outreach, and monitoring.

### **AB 1826 – Mandatory Commercial Organics Recycling**

AB 1826 extended mandatory commercial and multi-family residential recycling requirements to add organics recycling. Under AB 1826, jurisdictions are obligated to identify covered generators that will be subject to compliance, ensure that organics recycling services are available to them, and perform outreach/education and compliance monitoring to make them aware of the requirement to participate. As with AB 341, CalRecycle requires reporting on program offerings and compliance efforts.

### **AB 1884 – Food Facilities: Single-Use Plastic Straws**

AB 1884 legally prohibits full-service restaurants from providing plastic straws to customers unless upon request. Violation of the Bill results in \$25 fines for each day that a restaurant remains out of compliance and is enforced by state and local officials authorized to administer the California Retail Food Code. The Bill went into effect January 1, 2019.

### **SB 1383 – Short-Lived Climate Pollutants**

SB 1383 sets a goal to reduce organic waste by 50% from the 2014 level by 2020 and 75% from the 2014 level by 2025. Additionally, the Bill establishes a target of recovering 20% of currently disposed edible food for human consumption by 2025. The law’s requirements are still under development and, though the latest draft with specific regulatory language was released by CalRecycle in December 2018, adjustments may be made until requirements become effective on January 1, 2022. Although the exact language and details of this Bill are not yet finalized, current draft regulations present the following potential impacts and requirements for local jurisdictions:

- May be required to impose diversion requirements and associated penalties on generators;
- May be required to report on purchasing and procurement of end-use organic waste products internally and/or as a requirement on generators;
- May be responsible for development of end-uses for processed organic waste (e.g. ordinances mandating local use of finished compost product);

**Section 2: Background**

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- May be required to provide organic waste containers adjacent to public refuse bins; and
- May be required to account for organic waste disposal reductions in landfill financial assurance planning.

Jurisdictions across the State are working to prepare for the anticipated impacts of SB 1383. Although the City of Santa Rosa does not currently have policies or procedures in place to meet the listed requirements of this Bill, this Plan will work to prepare the City for the forthcoming regulatory and administrative impacts.

**COMPLIANCE WITH STATE REGULATION**

SCWMA is responsible for reporting Santa Rosa’s fulfillment of AB 939, AB 341 and AB 1826 as part of the Electronic Annual Report (EAR) it submits to CalRecycle in August of every year. Under its franchise agreement with the City, Recology is responsible for meeting outreach and monitoring requirements for these regulations and reporting their work to the City and SCWMA. The franchise agreement specifies that Recology must reach out and conduct on-site waste audits for a minimum of 25% of covered generators per year to ensure that businesses know that recycling and organics collection are available. While this agreement provides for substantial advances toward the policy’s goal, City oversight is necessary to ensure the commitment is fulfilled. While implementation of AB 1884 is not under the auspices of solid waste personnel from the City, the regulation sets a standard which supports strategies discussed in this Plan and coordination with Retail Food Code personnel responsible for compliance could be helpful in implementing these strategies.

In anticipation of new regulations imposed by SB 1383, this Plan seeks to prepare Santa Rosa for compliance in the following ways:

**TABLE 4: SB 1383 PREPAREDNESS**

POTENTIAL REQUIREMENT	COVERAGE
Provide for organics diversion for all generators, either via source separation program or back-end (mixed waste) processing.	City is covered via the Recology Agreement.
Impose subscription, source separation, and education requirements and associated penalties on generators including businesses and multi-family customers.	City is covered via Strategy 4 of this Zero Waste Plan.
Meet certain targets for procurement of end-use organic waste products internally and/or as a requirement on contractors and/or haulers.	City may be covered via the newly awarded organics processing facility.
Meet certain targets for procurement of end-use organic waste products internally and/or as a requirement on contractors and/or haulers.	City may be covered via the newly awarded organics processing facility.

**Section 2: Background**

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POTENTIAL REQUIREMENT	COVERAGE
Engage in annual outreach efforts to generators, outreach to edible food generators, and quarterly contamination route monitoring with distribution of contamination tags to customers.	City is covered via Strategy 4 of this Zero Waste Plan.
Some edible food generators may be required to donate edible food, with the local jurisdiction collecting records and enforcing requirements.	City has begun process for this requirement via the development of the Food Generator Directory for this Zero Waste Plan.
Self-haulers of organic waste may be required to source-separate, deliver for diversion, keep records of amounts delivered, and report annually to jurisdictions (residential self-haulers are exempt)	Not covered currently.
Containers may be required to be replaced by containers with lids of standardized colors statewide.	Covered via the Recology Agreement.

**SONOMA COUNTY POLICIES**

**2018 Zero Waste Initiative Resolution**

SCWMA has adopted the 2018 Zero Waste Initiative Resolution proposed by the Sonoma County Zero Waste Task Force which includes commitments to address waste reduction in each Member Agency jurisdiction. The City is in support of the proposed strategies of the Resolution; elements included and detailed in Appendix D have been used as guidelines in the development of this Plan.

**Ban on Polystyrene Food Packaging**

In 2018, SCWMA developed a model ordinance that levies a \$250 fine on individuals and commercial entities who use, sell, or otherwise possess polystyrene (otherwise known as Styrofoam™) food packaging within the jurisdiction. Both Sonoma County and the town of Sonoma have polystyrene bans currently in effect. While the City has not yet adopted its own polystyrene ban, adopting SCWMA’s model would be consistent for Santa Rosa to reflect the County policy at the local level. Strategy 1 in this Plan includes and addresses compliance with this regulation.

**Waste Reduction Program for Carryout Bags**

SCWMA, including the City of Santa Rosa, unanimously voted to adopt an ordinance to ban plastic bags in Sonoma County. Per this County-wide policy, the City of Santa Rosa has enacted Chapter 9-10: Waste Reduction Program for Carryout Bags. Beginning September 1, 2014, no retail establishment shall provide single-use carryout bags to a customer for the purpose of transporting food or merchandise. If a retailer chooses, recycled bags may be made available to customers for a charge of 10 cents.

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## RELEVANT CITY POLICIES

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In respect to local implementation of the State legislation and County policy discussed above, the City of Santa Rosa has enacted the following policies through its municipal code:

### Analysis of Current City Ordinances

#### Chapter 9-12 Refuse and Sanitation

*9-12.020 - Authority – Sanitation Department - Composting Program*

*9.12.030 - Authority - Rules and Interpretations - Rates for specialized services*

Ordinance 9-12.020 and 9-12.030 have allowed the City to implement and fund curbside pickup of organic waste for single family residences throughout the community. The ordinance is interpreted to extend to the implementation of similar collection services to businesses and multi-family residences even though most generators in this sector do not comply.

*9-12.070 Collection Services*

*(A) Single Family Development Collection Services*

Section A of ordinance 9-12.070 provides baseline regulation to prevent contamination of recycling and organics carts for single family residences.

*(B-D) Multi-Family Developments, Mobile Home Parks, and Commercial Collection Services:*

Like Section A discussed above, Sections B-D of ordinance 9-12.070 establish that recycling containers are not to be contaminated with garbage and could be likewise enhanced through the imposition of a fee for contamination. (Note: contamination fees are imposed on these generators for improper use of recycling bins per the franchise agreement with Recology). More importantly, these regulations are set apart from the single family ordinance in that they do not require the covered generators to subscribe to organics collection. In this way, while the City's current ordinance is reflective of State regulation AB 341 for mandatory commercial recycling, it has not yet come in line with AB 1826 requiring commercial participation in mandatory organics recycling.

#### Chapter 9-14 Construction and Demolition Debris

*9-14.020 Requirement of franchise agreement.*

*9-14.030 Exceptions to franchise requirements.*

Ordinance 9-14.020 and 9-14.030 require that entities providing construction and demolition debris (C&D) collection services enter into non-exclusive franchise agreements with the City and relieves property owners and construction/landscaping contractors from this requirement. Additionally, the ordinance allows for loads of C&D which are recyclable to be transported by unfranchised hauling companies provided that 90% of the material is actually recycled and not disposed of.

*9-14.040 Granting of non-exclusive franchise agreement*

*9-14.050 Franchise – Terms and Conditions*

Ordinance 9-14.040 and 9-14.050 set a standard of 50% diversion of materials from this waste stream. Subsequent policies discussed in this section propose various increases to this standard of diversion which could be reflected in forthcoming updates to this regulation. One problem currently identified in the present regulation is difficulty in measuring diversion in this waste stream overall and, in particular, how the City can capture information regarding recycled tonnages transported by unfranchised haulers.

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### **Additional City Policies**

The City of Santa Rosa currently has several City-led initiatives in place to promote the diversion of waste from landfill, engage with community members on recycling, and provide a strong foundation for the implementation of future Zero Waste strategies. Aside from the municipal code ordinances discussed above, the City has also shown leadership in setting forth the following policies:

#### **Green Building Standards**

In addition, and related to the above, the City also adopted the California Green Building Standards Code, Part 11 of Title 24, 2016 Edition (CALGreen), which contains standards for residential and non-residential building including a minimum of 65% diversion of C&D on all covered projects.

As mentioned above, the City's current ordinance sets a standard of 50% diversion for C&D materials. Following the adoption of CALGreen standards discussed here would require increasing this diversion standard to 65%.

#### **City of Santa Rosa's Climate Action Plan (CAP)**

Adopted June 5, 2012, the City's CAP commits Santa Rosa to reduce the impact of waste on the climate by lessening its contributions to greenhouse gas emissions. The Plan proposes the following strategies to reduce the amount of material sent to the landfill from Santa Rosa:

- Improve the amount and types of waste that are accepted for curbside recycling and green waste pickup and educate the public regarding their options.
- Encourage restaurants to compost food and provide recyclable or compostable to-go containers.
- Increase the City's C&D ordinance to require 75% diversion by 2020 and 85% diversion by 2035.

Additionally, the Plan offers the following Materials Management strategies to reduce the availability of common hard-to-recycle materials:

- Discourage the use of Styrofoam containers and plastic bags.
- Encourage local businesses to reduce amounts of packaging used.
- Discourage the use of bottled water at City events.
- Adopt a long-term waste diversion goal.

The City's Climate Action Plan lays out several strategies that need to be developed for implementation. Of note, and related to the above, the CAP suggests increasing C&D diversion standards to 75% by 2020 and to 85% by 2035. This and other elements will be considered in the policy recommendations produced for the forthcoming waste reduction Plan.

#### **Take it From the Tap**

Santa Rosa Water offers a hydration station for use at City sponsored events and visits Santa Rosa schools to promote healthy hydration and the use of reusable water bottles over single-use plastic options. Students are given reusable water bottles and receive classroom education on the health, environmental, and economic benefits of choosing tap water. This mobile hydration station is the first of its kind in Sonoma County and is a part of the City's "Take it From the Tap!" program.

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### Environmentally Preferable Purchasing Policy

In 2013, the City adopted an Environmentally Preferable Purchasing Policy (EPPP) which established a model for supporting the procurement of environmentally preferable products, positioning the City to lead by example and encourage citizens in the community to adopt similar practices. The EPPP seeks to conserve natural resources, identify and give recognition to manufacturers and vendors that reduce environmental impacts in their production and distribution systems or services, encourage waste stream diversion, and reduce the landfilling of materials. The EPPP supports the City's Extended Producer Responsibility goals, adopted in 2010, and also supports the City's Climate Action Plan adopted in 2012.

### Outreach and Education

The City works to promote Zero Waste culture in Santa Rosa through outreach and education. The annual Earth Day Festival is one avenue through which City staff directly engages the community to inspire awareness: City staff encourage vendors and participants to reduce consumption and increase reuse, recycling and composting. In 2018, the Earth Day Festival's goal was to be a Zero Waste event. City staff are researching the development of Zero Waste event guidelines and requirements to help all large events to achieve high waste diversion. Please see Strategy 5.c in Section 5 for recommended actions regarding the City's event requirements.

## SECTION 3: ASSESSMENT FOR IMPROVING DIVERSION

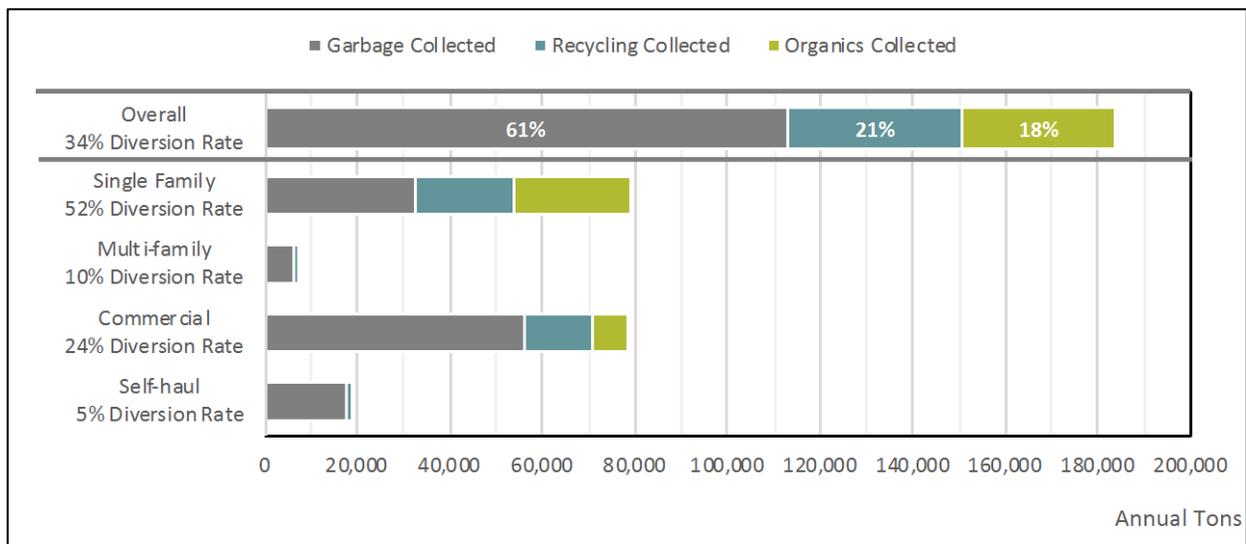
This section presents data on current and potential diversion rates by sector and material stream and identifies the recoverable resources that are most often not captured and removed from the disposal stream. The data is then analyzed and used to guide recommendations for how to approach improvements in capturing these resources for each sector which tie to the strategies proposed in this Plan. For further detail on the information presented, please refer to Appendix A.

### SANTA ROSA DIVERSION ACHIEVEMENTS

Figure 3, below, depicts current amount of material collected as trash, recycling, and compostable materials streams for different waste generator sectors in Santa Rosa. Waste generator sectors have been separated according to subscription levels catalogued by Recology, which are reflective of the type of hauling service provided: single family curbside carts, commercial/multi-family bins, and no service (self-haul). Each waste generator sector has a subsequent diversion rate, defined as the amount of material collected that is recycling and organics over the total amount of material collected. Diversion is a measurement that can be used to quantify the success of recycling programs.

The data presented below indicates that while the multi-family and self-haul sectors require the most improvement for participation in diversion, the single family and commercial sectors generate significantly more material, making them the most important sectors to target for high impact change.

**FIGURE 3: SANTA ROSA DIVERSION ACROSS SECTORS**

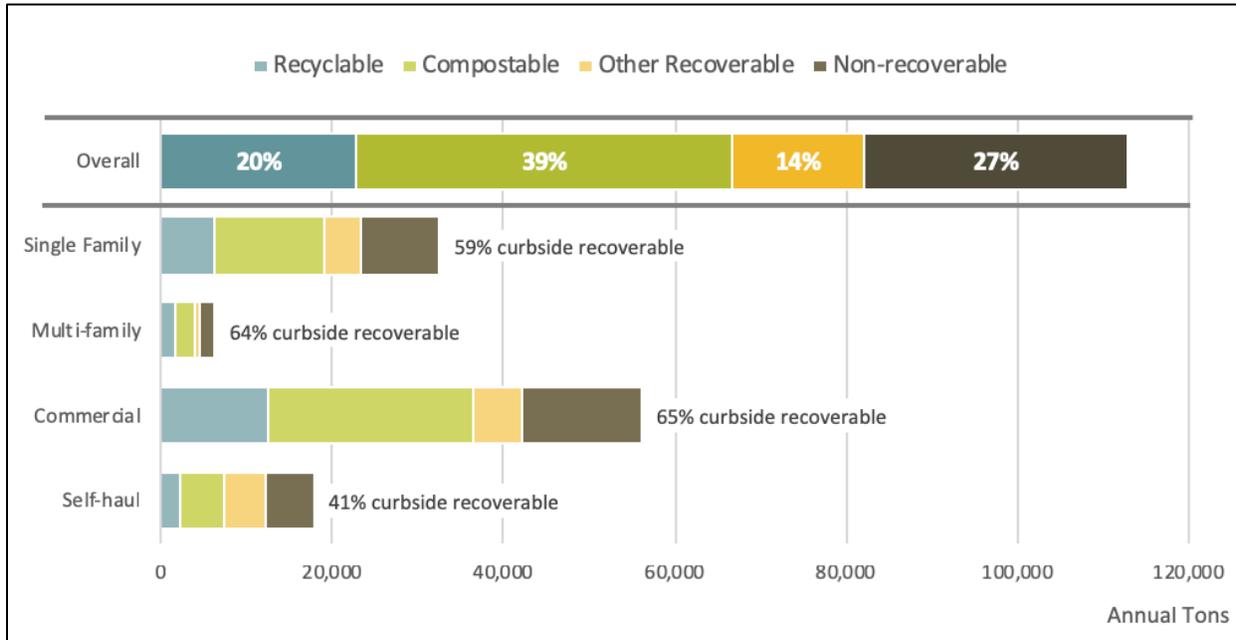


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## OPPORTUNITIES FOR SOLID WASTE COLLECTION SERVICE ENHANCEMENTS

Based on waste composition data modeling for the City of Santa Rosa which is discussed in further detail in Appendix A, each sector represents substantial yet differing opportunities for additional waste diversion. Figure 4 provides a graphic depiction of what the waste stream would look like if all recoverable materials were in fact diverted from the landfill. This waste modeling guides the following recommendations for solid waste collection service enhancements.

**FIGURE 4: RECOVERABILITY OF MATERIALS IN SANTA ROSA GARBAGE STREAM**



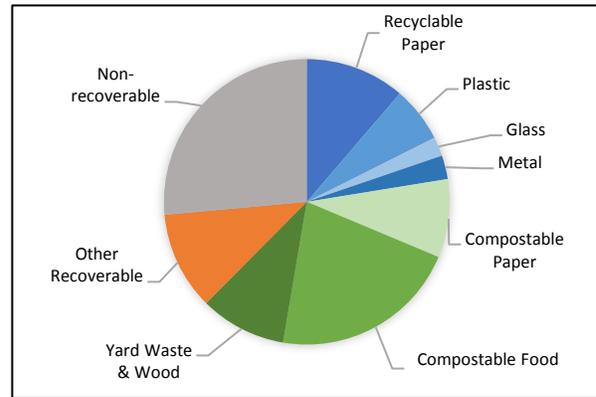
An estimated 39% of what is thrown in the trash in Santa Rosa is compostable and another 20% is recyclable. Recoverability is a measure of what materials could be recovered from the trash and instead recycled or composted. Recoverability is similar to diversion but differs in that it is just looking at the garbage stream while diversion takes into account recycling and organic tonnages. Recoverability is an important metric as it shows possible reduced landfill disposal, a key goal of Zero Waste. A large majority of recoverable material from what is currently thrown in the garbage is compostable, including food waste, food soiled paper, and yard waste. The data also indicates that the majority of unrecoverable waste in Santa Rosa is generated the commercial sector and should be a target for Zero Waste strategies. The Other Recoverable category in Figure 5 refers materials such as e-waste, tires, household hazardous waste, and others like materials.

## UNCAPTURED MATERIALS

Figure 5 asserts further detail by identifying the specific materials from the different streams that are most commonly not recovered. The largest amount of recoverable materials not currently being captured in existing programs are compostable food, recyclable paper, and compostable paper.

Given the information provided above, the following details opportunities to improve diversion for each sector.

**FIGURE 5: WHAT IS IN SANTA ROSA'S TRASH?**



## DIVERSION ANALYSIS BY SECTOR

### Single Family

Santa Rosa single family residents are relatively high diverters of waste. With an overall diversion rate of 52%, and a relatively low (12.5%) contamination level, single family residences have a proven track record in proper participation in waste diversion. Improvements in further limiting waste disposed for this sector will likely come from waste reduction efforts rather than waste diversion. Due to the relative size and potential impact represented in the single-family sector, Strategy 1 has been recommended to address and encourage reducing waste at its source by initiating a policy to ban single-use plastics.

### Multi-Family

Effectively engaging multi-family residents to participate in recycling and composting programs presents a challenge for communities statewide, and Santa Rosa is no exception. Based on the rate model, multi-family has one of the lowest diversion rates at 10%. Recology reports have stated of the 245 multi-family accounts in Santa Rosa, 194 accounts (79%) have recycling service and 33 accounts (13%) have organics collection service, presenting a large opportunity to increase organics collection and diversion.

### Commercial

Santa Rosa's commercial sector has high potential to improve its waste diversion. Based on weekly subscription levels, 52% of the collection container volume is recycling or organics. Of the 2,656 commercial accounts in Santa Rosa, 2,170 accounts (82%) have recycling service and 402 accounts (15%) have organics collection service. Like in the multi-family sector, greater participation in currently offered diversion programs, especially organics collection services, could assist in diverting considerably more materials from landfill disposal.

Strategies 2 and 4 in this Plan address improving multi-family and commercial participation in current services through a mandatory recycling ordinance and through the provision of targeted technical assistance. These strategies are especially important not only for achieving the City's goal of Zero Waste, but also in complying with State regulations AB 341, AB 1826 and potentially SB 1383 discussed in the previous section.

### **Self-Haul**

Self-haul waste is a very small proportion of Santa Rosa's total waste generation. While improvements could be made to enhance diversion through this sector by instituting sorting programs at transfer stations, this Plan targets the self-haul sector through another strategy that addresses a final sector not included in the data presented above: Industrial and Construction Demolition Debris.

### **Construction and Demolition Debris**

Debris box and C&D debris are a significant portion of Santa Rosa's waste. In April through June 2018 alone, 18,150 cubic yards were recycled as C&D debris by Recology. However, this is only 35% of total C&D waste Recology collected; the majority of this material is collected as mixed solid waste. Additional C&D haulers include Pacific Sanitation and Industrial Carting. It can be problematic to monitor C&D debris coming from the City through multiple haulers because not all haulers are required to report their diversion measurements. SCWMA has attempted in the past to come up with a yearly total for the City's C&D tonnage, however the agency has not been successful in breaking out the C&D material by Member Agency jurisdiction. It should be noted that due to the fires that occurred in 2017, C&D material tonnage is particularly high and expected to remain so as residents continue to rebuild. Ongoing monitoring of C&D material is important to ensure that the material is in fact being recycled and builders follow best practices like source separation on site. Requirements and/or incentives around source separation of materials at the jobsite can greatly increase C&D diversion and are addressed in Strategy 3 of this Plan.

## **OVERALL WASTE DIVERSION**

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Based on the waste modeling exhibited above, the City's current diversion rate is 34%. Santa Rosa has the opportunity to greatly increase the City's diversion through the implementation of the new and expanded policies and programs discussed throughout this Plan. See Appendix A for the full diversion model prepared by Cascadia Consulting Group

## **SECTION 4: COMMUNITY ENGAGEMENT PROCESS**

Gathering stakeholder input, ideas, and concerns has been essential to understanding the community's current relationship to waste and developing strategies for increasing waste diversion throughout the City. As a cornerstone in the foundation of this Plan, the City of Santa Rosa and the Project Team conducted outreach to obtain community input on potential new and expanded programs to improve waste management practices. In seeking public involvement, the Project Team developed presentations, facilitated meetings, and communicated with many different stakeholders throughout a six-month engagement period. The full scope of the engagement process can be reviewed in Appendix B and C which include discussion of the following work:

- One (1) online community survey;
- Four (4) community workshops;
- Two (2) focus groups; and
- Twenty-two (22) meetings with a combination of key stakeholders, service providers, active community members, and community groups.

### **COMMUNITY SURVEY**

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A central step in gathering information to create this Plan, was the design and administration of a community survey to collect input from residents, businesses, and other interested stakeholders on potential initiatives to help Santa Rosa reach Zero Waste. The survey also helped gauge the importance of living in a Zero Waste community and documented creative ways community members are working to reduce waste in their daily lives.

The survey was successful in collecting direct feedback from Santa Rosa community members: of the 773 total survey responses received, 95% were from Santa Rosa residents; 89% of survey respondents reported that it is somewhat to very important to live in a Zero Waste community; and 76% felt they could do a better job at wasting less. The most requested resources to support waste reduction included more education, signage, and community classes or workshops. The most highly ranked strategies considered most important for helping Santa Rosa reach Zero Waste were: initiating a mandatory/universal recycling and composting ordinance and placing a ban on single-use plastics. These results were taken into account and are reflected in Strategies 1 and 2 of this Plan.

## WORKSHOPS

In addition to the survey, the Project Team held seven community meetings, three of which were conducted in Spanish and advertised to the Hispanic community which makes up over 30% of Santa Rosa's population.

Through the workshops, participants were educated about the current conditions for waste management in the City, solicited for input and feedback on strategies to implement for improving these systems, and informed about the potential impact of strategies being considered.

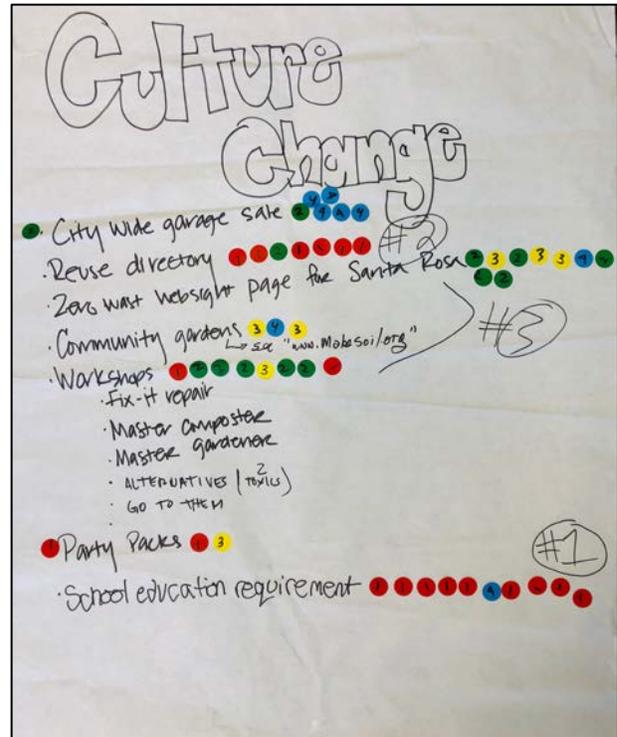
Through the workshops, the Project Team received opinions and ideas on a variety of topics. One theme that repeatedly arose was the need for access to new and existing resources. For example, a need was expressed to provide recycling and composting options for multi-family homes; a resource that is technically available, but currently not being utilized by all property managers. This input further supports the strategy providing a mandatory recycling and compost ordinance that survey participants endorsed. Another issue that was raised by community participants was difficulty in avoiding single-use food and drink wear. For example, participants discussed the challenge of restaurants refusing to permit the use of reusable cups for take-out orders because of public health concerns.

Strategy 3 of this Plan addresses the issue of single-use plastics and would require restaurants to allow for the use of reusable containers. Culturally, there was also feedback centered around strengthening Zero Waste requirements for public events, offering bilingual information about waste diversion, and enhancing education by providing recycling and composting services in schools that match the services offered at students' homes. These issues are addressed by Strategy 5 of this Plan which focuses on the cultural work attaining Zero Waste.

### Hispanic Community Meetings

The Project Team, in conjunction with Hugo Mata of Soluna Outreach Solutions, conducted three community meetings in Spanish as a part of our outreach process. Participants were very engaged, which made the presentations highly interactive. Some common themes mentioned during the meetings included the importance of keeping streets clean, creating more bilingual educational programs focusing on waste reduction in all areas (businesses, schools, religious venues and residents), take-back producer responsibility programs and promoting waste diversion programs utilizing every possible medium (social media, radio, TV, community events). Several participants mentioned that it would be a good idea to ban the use of plastic bags altogether and to enforce the already existing laws to fine people for littering.

FIGURE 6: WORKSHOP 3 STICKER GAME



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These presentations are available as Appendix L as resources to the City to conduct more outreach and education in Spanish.

**WORKSHOP 4 QUOTE**

*“Education has to be targeted to the waste that is generated.”*

**FOCUS GROUPS**

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In efforts to achieve more specific direction from the community, two focus groups were held to test and determine the value of sample work produced by the Project Team. Specific materials were provided to group participants and feedback was collected regarding several aspects of the Plan. Terminology was reviewed to ensure that the public would understand and be responsive to the language used in describing the Plan and its goals. Results of this exercise confirmed that members of the public were familiar with and understood framing the Plan in terms of “Zero Waste”. Additionally, work was performed to assess what questions most often come up for citizens in managing their waste and the most common modes of attaining answers to those questions were identified. Almost all of the questions discussed have answers available through Recology’s website, which was the most common outlet where participants sought out information. Other outlets where people seek solid waste education include their City representatives, and the Press Democrat news publication. One outlet that participants were unaware of, is a phone application offered by Recology where customers can track their waste pickup schedule and easily search a database to find out what material goes in what bin.

This valuable feedback can inform City strategies around the dissemination of information and the integration of different websites and modes of technology to improve the reach of its messaging. In addition to gaining this understanding of what information the community seeks and how people attain it, supplementary materials including a City-wide reuse directory and solid waste event calendar were introduced to determine whether members of the public would value them as resources. Participants confirmed interest in both resources and gave feedback detailing improvements and further information desired.

## SECTION 5: ZERO WASTE STRATEGIES

The following section provides a summary, description, resources needed, potential for partnership, an implementation timeline, and case studies for the 5 proposed Zero Waste Strategies.

### 1 SINGLE-USE PLASTICS BAN

#### Objective

Decrease the amount and use of single-use plastics in Santa Rosa through a City-wide ban. This innovative strategy targets source reduction and promotes the use of reusable materials and items.

#### Summary

The development of an ordinance that targets single-use plastics or a variety of different, commonly used plastics would be written, implemented, and enforced by the City. Not only does this strategy reduce the amount of non-recyclable plastic, but serves as an educational moment for the City's residents and businesses. Many jurisdictions are beginning to work on and implement policies like a foodware ordinance as a way of targeting the upstream impacts of plastics.

The City has already taken steps to reduce the amount of problem materials in its limits by adopting a Plastic Bag ordinance in 2014, which banned plastic bags and put a charge of \$.10 on paper bags. Most recently, the State of California passed legislation in September 2018, requiring all restaurants to only provide a straw upon request, beginning in 2019. SCWMA has also developed a model ordinance for a polystyrene ban. On a regional and statewide level, these policies show support for product bans and targeting issues like plastic waste from an upstream position. The City should not only comply with regional and State policies but take the next step in banning a suite of plastic materials.

The policy would:

- Be a forward thinking and bold policy for the City to show its commitment to the reduction of materials sent to landfill.
- Reduce the amount of harmful, non-recyclable material that is sent to Central Landfill and reduce contamination in the City's recycling stream and organics stream.
- Significantly contribute to the City's CAP goal 6.2 for the management of materials including plastic bottles and polystyrene.

#### Description

##### Phase I – Develop Ordinance and Roll-Out Policy City-wide

- *Write ordinance and begin phase out of the sale of single-use plastics by 2025*
- *Conduct outreach and education for ordinance*

The ordinance itself can be modeled after other City ordinances in regards to the definition of single-use plastics that the City would like to reduce. Alameda, San Francisco, Oakland, and others have recently developed foodware ordinances and have begun implementation of these policies.

The City should look to define single-use plastics for the purposes of framing the ordinance. Defining the ban as plastic and single-use foodware is the current most innovative reach. City should define single-use as foodware, defined as utensils, takeaway containers, and napkins first.

The City should engage many stakeholders in this effort, including the business community, the disabled community, homeless advocates, and others community members that will be impacted by this policy. Coordination between City's solid waste staff and Environmental Health will be needed to determine the safety and logistics for businesses to comply with this measure and deliver clean, sanitary service to customers. After development and adoption of a single-use plastics ordinance, the City would begin implementing this ordinance by informing all affected businesses and residents of the change. The City should pursue a soft implementation with time (e.g., one year) for businesses to use up existing products and make the switch reusable or compostable products instead.

#### Phase II – Enforce Ordinance and Annual Outreach

- *Begin enforcement after a year and a half after ordinance adoption for all businesses in the City.*
- *Reevaluate definition of targeted single-use plastics*

The City should put measures for enforcement and penalties into the ordinance itself but can choose to enforce the ordinance after a phased implementation approach. The phasing could be based on a 2-year schedule from adoption, providing businesses with six months to use up existing products purchased and education around the new ban and 1 year of ban in place with no enforcement. After the year of the ban, enforcement could begin with monetary penalties to pay for enforcement. Annual outreach utilizing mailers, social media, and partnering with Recology to inform businesses of the ordinance when Zero Waste Specialist conduct waste audits could be an effective strategy to inform the community about this policy.

After implementation, enforcement, and community feedback, the City should reevaluate and expand its definition of single-use in the coming years making the definition, and thus the ban, more comprehensive. Further plastics to target would be plastic items sold in store and packaging. The ordinance should provide the option for the City to expand its definition over time and learn from other cities that expand their definitions of single-use as well.

#### **CASE STUDY: CITY OF ALAMEDA**

The City of Alameda began implementation of a Disposable Food Service Ware Reduction law in January 2018. The ordinance was called for by over 300 school children writing the City's council for a ban on straws and other harmful plastics. The ordinance targets single-use plastic straws, requiring they must be replaced with reusable or compostable straws only made available upon request. Food vendors must also provide customers with compostable, fiber-based packaging for to-go items. Alameda's model is focused on the hierarchy of materials using the motto "Reusable is best, Compostable Fiber is Great, and Plastic is going away." The City began enforcing the ordinance in July 2018 and has seen very positive results from their roll out of the policy. Enforcement with penalties will begin in January 2019.

### Resources Needed

Some upfront staff resources are needed to develop a single-use plastics ordinance, and ongoing resources would be required to conduct annual outreach and monitoring. Approximately 200 hours for start-up labor and 150 hours (estimated 0.1 full-time equivalent) in annual labor would be needed.

City staff should partner with Code Enforcement as the enforcement of the ordinance and Recology as an educational partner regarding the implementation and enforcement of ordinance requirements. Fines and penalties for not meeting the requirements of the ordinance could help fund additional outreach and education efforts. This effort is less than 500 hours of staff or consultant time and therefore is relatively easy in terms of time to implement.

### Partnerships

The City should utilize its partnership with Recology as an educational and potential enforcer of an a single-use plastics ordinance. SCWMA can be an asset to the City in its existing ordinance development and education via its website and resources. Finally, the City could partner with the Sonoma County Public Health department who could assess during visits to businesses if they are in compliance with the ban.

**TABLE 5: STRATEGY 1  
 SINGLE-USE PLASTICS BAN | SUMMARY & STEPS**

POLICY SUMMARY	
<b>Additional Potential Diversion:</b> 490 tons	<b>Timeline:</b> 2020-2030
<b>Greenhouse Gas Reduction:</b> 1,000 MTCO <sub>2</sub>	<b>Average Annual Cost Estimate:</b> \$38,330
IMPLEMENTATION STEPS	
1	Develop ordinance and target single-use foodware in Santa Rosa.
2	Implement ordinance and promote through a campaign.
3	Monitor diversion through existing contract with Recology.
4	Enforce ordinance for non-compliance.
5	Evaluate success and reevaluate single-use plastic targets.

## 2 MANDATORY RECYCLING AND COMPOSTING

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### Objective

Increase waste diversion by requiring greater participation in recycling and composting programs.

### Summary

Participation in the City's recycling and composting programs should be required for all single family, multi-family, and commercial waste generators. Reaching Santa Rosa's waste reduction goals will require everyone to take action in reducing their waste, and this expectation should be positively affirmed through an update to the municipal code and conducting community education.

This policy would:

- Consider a future requirement for mandatory recycling (goal of significantly reducing recyclables in the trash via subscription to and participation in recycling programs) for single family, multi-family, and commercial customers
- Consider a future requirement for mandatory composting (goal of significantly reducing organics in the trash via subscription to and participation in composting programs) for single family, multi-family, and commercial customers
- Establish the City's authority to enforce ordinance requirements and assess a fine for excessive contamination of recycling and organics collection containers by single family, multi-family, and commercial customers.
- Further implementation of the City's CAP goal 6.1 to improve the amount of waste collected curbside via curbside recycling and organic waste pickup and educate the community.

### Description

#### Phase I – Update Ordinance and Communicate Requirements

- *Complete solid waste ordinance update by 2025*
- *Conduct multi-media community education*

Current state law requires large multi-family and commercial waste generators to recycle, and increasingly strict thresholds are being phased in to require these generators to also have compostable material collection service. However, small multi-family and commercial generators, and residential customers, are not subject to these requirements.

Updating the municipal code to establish requirements for all waste generators to recycle and compost would simplify and streamline implementation of state legislation, as well as recognize that Zero Waste is a community effort. The City should make positive efforts to inform all members of the community that recycling and composting are mandatory, and offer resources to help waste generators comply (Strategies 4 and 5).

The City can partner with Recology and community groups to spread the message across targeted waste generator sectors. A multi-media and bilingual approach should be taken to ensure the message is

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widespread (e.g., public TV ads and radio show announcements, City website message and information, notification through Recology bill inserts, etc.).

A positive messaging approach to explain this action is 1) in support of the community's Zero Waste goal, 2) reflects increasing state legislation requirements, and 3) encourages everyone to participate in helping Santa Rosa become a sustainable community.

### Phase II – Reduce Contamination

- *Achieve a 95%+ compliance rate for commercial recycling and organics by 2030*
- *Conduct education and assess contamination fines as needed to reduce overall contamination rate to no more than 10% for recycling and 3% for organics*

If progress in reducing waste falls short at the five-year milestone, the City may consider enforcing its solid waste ordinance to achieve a higher rate of compliance and waste diversion. Addressing mandatory recycling and organic collection service, and proper source separation, in the City's ordinance will support Recology's efforts to help generators comply, implement state law, and reduce contamination.

For commercial and multi-family properties without recycling and/or composting collection service, the City should work with Recology to directly notify account holders and either obtain their subscription or establish their exemption from these requirements. However, participation in the City's recycling and composting programs goes beyond subscribing to collection services — waste generators must also source separate waste materials so that recycling and organics collected for diversion are not excessively contaminated with garbage (contamination >10% for recycling and >3% for organics).

Garbage placed in recycling and organic material collection containers hinders processing facilities in diverting the material and results in a lower overall amount of waste diverted. In accordance with the current Agreement, Recology implements the following actions to reduce contamination:

- **1<sup>st</sup> and 2<sup>nd</sup> Occurrences:** container is collected at no charge. A notice is affixed on the container for each occurrence that specifies the contaminant and contains instructions on the proper procedures for source separating recyclable or organic waste.
- **3<sup>rd</sup> and 4<sup>th</sup> Occurrences:** the container is collected and a contamination fees is assessed.
- **5<sup>th</sup> Occurrence:** removal of the recycling or organics container and discontinue recycling or organics collection service for a period not to exceed one year. The City is notified within five work days of the removal of a recycling or organics container

### **CASE STUDY: CITY OF LOS ALTOS**

The City of Los Altos' solid waste ordinance requires commercial and multi-family waste generators to recycle and compost:

*“Commercial recycling and organics collection required. Each commercial generator shall subscribe to a level of service with the franchised hauler that is sufficient to handle the volume of recyclable materials and organic materials generated or accumulated on the premises [...] each commercial generator shall ensure the proper separation of solid waste, as established by the franchised hauler, by placing each type of material in designated receptacles or containers, and ensure that employees, contractors, volunteers, customers, visitors, and other persons on-site conduct proper separation of solid waste.”*

Residents are also required to subscribe to garbage, recycling and organics collection service. This ordinance reflects Los Altos' commitment to reducing waste and partnership with MTWS to reach its goal of 78% diversion.

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for excessive contamination. However, this provision may need to be revised after implementation of mandatory diversion service.

In Phase II, the City should partner with Recology in enforcing ordinance requirements and providing supportive action as needed. For example, the City of San Francisco and Recology San Francisco work together to implement the City's mandatory ordinance. When a driver tags a bin for contamination, the information is loaded into Recology San Francisco's system for future tracking. If a customer is tagged two or more times in a given period, it sends a signal to outreach staff that the account needs additional education and outreach. Recology waste auditors are dispatched into the field to assess the situation on-site, conduct a thorough waste audit, take photos and make recommendations for improvement. By inspecting the waste stream, Auditors can determine if problems are originating from the front of house (e.g. coffee shop customers) or back of house (e.g. janitorial staff) and identify behavioral patterns to be addressed. If the opportunity presents itself, auditors may interact with the customer to notify them of City ordinance requirements and next steps based on their findings. Audit information is fed Recology Waste Zero Specialists, enabling them to effectively interface with the customer and support positive change. Recology San Francisco and the City also coordinate on large accounts with contamination, and the City often provides Recology San Francisco with customer lists to prioritize for audits and/or additional outreach.

### **Resources Needed**

Some upfront staff resources are needed to develop a mandatory recycling and composting participation ordinance, and ongoing resources would be required to conduct an annual outreach program (estimated 0.2 full-time equivalent). City staff should partner with Recology regarding the implementation and enforcement of ordinance requirements. This effort is about 500 hours of staff time and therefore has an easy to medium level of difficulty in terms of time to implement.

Targeted generators include all single family, multi-family, and commercial waste generators.

### **Partnerships**

City staff should partner with Recology regarding the implementation and enforcement of ordinance requirements. Community groups could help spread the message to recycle and compost, and SCWMA could potentially provide additional support through its outreach and education efforts.

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**TABLE 6: STRATEGY 2  
 MANDATORY RECYCLING AND COMPOSTING | SUMMARY & STEPS**

POLICY SUMMARY	
<b>Additional Potential Diversion:</b> 4,050 tons	<b>Timeline:</b> 2020-2030
<b>Greenhouse Gas Reduction:</b> 7,250 MTCO <sub>2</sub>	<b>Average Annual Cost Estimate:</b> \$89,800
IMPLEMENTATION STEPS	
1	Revise solid waste ordinance to require recycling and organic waste recycling for all residents and businesses.
2	Implement ordinance and promote via a campaign.
3	Monitor compliance via contract with Recology.
4	Enforce ordinance for non-compliance through Code Enforcement.

### 3 CONSTRUCTION AND DEMOLITION ORDINANCE UPDATE

#### Objective

Update City’s the C&D recycling ordinance to support higher diversion of recoverable materials, enhance C&D program processes, accurately track C&D recycling, and conduct outreach and education for C&D waste generators.

#### Summary

Building projects produce large amounts of waste that often end up in a landfill, despite its potential to be reused or recycled. C&D debris has been identified in the City’s waste model and the SCWMA 2014 waste characterization<sup>2</sup> as a recoverable material to target and recycle. C&D materials recovery could be increased through updated local ordinance requirements and greater outreach.

#### Description

Reducing the disposal of C&D waste will be a priority for achieving Zero Waste: Santa Rosa has big potential for growth in the coming years as a community in the midst of rebuilding from the 2017 fires. The City has already identified C&D recycling as an area of improvement for better tracking and has prioritized strengthening the City’s ordinance. Making enhancements to the C&D ordinance, program processes, and C&D recycling education will help the City better address the rebuilding effort and associated increased disposal.

Santa Rosa currently requires permitted C&D haulers to recycle 50% of all C&D debris. While there is an annual report due to the City that totals self-reported tonnages, the City should consider changing these

<sup>2</sup> SCWMA’s 2014 waste characterization study can be found at the following link:  
[http://www.recyclenow.org/pdf/sonoma\\_county\\_waste\\_characterization\\_study\\_2014.pdf](http://www.recyclenow.org/pdf/sonoma_county_waste_characterization_study_2014.pdf).

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reports to a quarterly report or implement the following strategies instead of or in addition to the current reporting.

#### Phase I – Ordinance Update and Roll out before 2025

The C&D ordinance could be improved to better align with CALGreen and support higher diversion of materials from landfill. In particular, projects subject to C&D recycling requirements and made to report via updated C&D forms should be expanded:

- **Building Permit Applicants Responsible for Compliance**

Each applicant shall be responsible for ensuring and demonstrating its compliance with the requirements of this Chapter, for all projects that are required to recycle C&D materials per CALGreen.

Per CALGreen, newly constructed buildings and demolition projects, all non-residential projects, and residential projects that increase the structure's conditioned area, volume, or size are required to meet the 65% minimum diversion requirement.<sup>3</sup> Other changes for the City to consider in updating its C&D ordinance include, but are not limited to, the following:

- **C&D Materials Diversion Required**

Each applicant shall divert C&D materials through deconstruction, reuse, and/or recycling for each applicable project. Applicants can recycle C&D materials by using the services of the permitted C&D haulers or by self-hauling C&D materials, or by employing a City-approved deconstruction contractor.

- **Promote Deconstruction and Reuse of Existing Materials**

Applicants are encouraged to deconstruct existing buildings on the project site and salvage materials for reuse. Reused materials or products must comply with the current building standards requirements or be an accepted alternate method or material. Salvaged materials may be reused onsite or for a different project. The City may require documentation confirming that salvageable materials have been reused.

- **Exemptions**

Diversion of C&D materials is not required for work for which a building permit is not required under or for projects that require a building permit but do not meet the thresholds for recycling C&D materials per CALGreen. It is unlawful to split or separate a project into small work projects for the purpose of evading the requirements of this Section.

- **Certification Standards for C&D facilities**

Certification of C&D facilities shall be by City resolution or at the determination of the City Manager or his or her designee. To achieve and retain certification, certified facilities must achieve a minimum level of 65% diversion every month, with supporting documentation of diversion of C&D materials for the prior 12 months. Facilities that achieve levels of diversion equal to or greater than the level of diversion achieved by the facilities used by the City's franchised hauler

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<sup>3</sup> To go beyond CALGreen requirements, the C&D ordinance could be amended to further expand the definition of covered projects as each building project that will generate C&D materials and requires a building permit.

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will receive preference for C&D certification by the City. Facility diversion must be verified through a third-party certification process.

- **Documentation of Diversion**

Except as otherwise specified in this Chapter, on or after the date this Ordinance is enacted, each applicant whose projects is required to recycle C&D materials per CALGreen shall provide the City with documentation of compliance with this Ordinance prior to final building inspection. Documentation of C&D materials diversion includes receipts from the franchised hauler, weight tickets from certified facilities for all loads delivered for recycling, or such additional information deemed necessary by the City to document accomplishment of the requirements of this Ordinance.

- **Enforcement**

Documentation of diversion for applicable projects must be submitted to and approved by the City prior to final inspection. Penalties per ton of C&D materials not recycled will be assessed for a lower than 65% diversion rate on applicable projects.

Implementation of the updated C&D ordinance would be intended to encourage building permit applicants, contractors, and other stakeholders to initiate effective deconstruction, recycling, and waste reduction practices during construction and demolition activities. Oversight of C&D diversion by project could be streamlined by requiring that all covered projects track diversion and disposal through the use of C&D forms or through an online platform such as Green Halo.

The City, or a qualified consultant, would conduct targeted education and outreach on how to reduce and reuse C&D materials by promoting activities such as salvage, deconstruction, and construction techniques that minimize waste.

City should enforce its requirements of permitted C&D haulers via the Non-Exclusive Construction and Demolition Debris Box Collection Franchise Agreement and receive annual tonnage reports from all permitted C&D haulers and assess liquidated damages if necessary. The City is well covered via liquidated damages for haulers to be incentivized to provide reports to the City. Most notably, The City's C&D Contract for C&D haulers has liquidated damages associated with annual reporting (\$100.00 per incident per day) and meeting the minimum diversion rate of 50% (ten percent (10%) of all gross construction and demolition debris box collection revenues for services provided within City). In addition, the City may request monthly reporting including listing of each debris box size, number of collections of each listed debris box, total volume and weight of C&D material collection, and other metrics. It is important for the City to request this information from its permitted haulers to get an understanding of what the C&D tonnage originating from Santa Rosa is currently to establish a baseline and develop a goal for C&D diversion.

## Phase II – Education Focus after 2025

Since C&D materials management processes at a construction or demolition site are often too involved for someone not closely involved in the workflow to make project-specific recommendations for waste diversion, the education and outreach provided through this program would focus on providing remote support. For example, this would include the development of an online C&D recycling guide and making support available over the phone to help guide C&D generators in complying with diversion requirements for their projects' waste materials. Providing benchmarking data for different types of projects, information on local recycling and reuse facilities, guidelines for hard-to-recycle and hazardous materials, updates on recycling markets, and publicizing local success stories are all helpful ways the City can assist C&D generators in diverting more waste from landfill.

In addition, the City can leverage one of the greatest opportunities it has to directly communicate with C&D generators: the building counter. Training building counter staff on CALGreen requirements and how projects can comply is an effective way to reach and assist a large number of people in improving C&D diversion. Processes for permit applicant compliance, and staff review of project documentation, could be streamlined by requiring all applicable projects to report project diversion through an online platform

### **CASE STUDY: ZERO WASTE MARIN**

Zero Waste Marin recently implemented a streamlined system for building permit applicants to achieve CALGreen compliance. This program features certified C&D facilities that applicants and franchised haulers can bring C&D materials to for recovery and receive documentation of compliance, a simplified form with clear steps for meeting recycling requirements, and reduced administrative overhead to review projects. Certified facilities are periodically re-evaluated to verify they meet standards for materials recovery, and building counter staff are trained to assist permit applicants in CALGreen compliance.

such as Green Halo or creating a building counter form, and requiring the use of third-party certified facilities verified to achieve high materials recovery.

### **Resources Needed**

The City's C&D ordinance would need to be updated and time invested to further develop the program, in addition to creating program materials and processes to track C&D diversion and educating building counter staff. Estimated time needed is 200 hours in start-up labor, and 500 hours (estimated 0.25 full-time equivalent) in annual labor to implement, closely monitor and enforce diversion, and make improvements to the program over time. The staff best suited to implement this strategy is the City's Building Department. This effort is therefore a medium level of difficulty to implement in terms of time. Several outreach and educational materials would also need to be developed, and are recommended to be provided in conjunction with a C&D recycling marketing campaign.

### **Partnerships**

The City should work with its building counter staff and its permitted C&D haulers in the development and roll out of the updated C&D ordinance. SCWMA has recently partnered with other regional agencies to develop procedures for monitoring and certifying C&D facilities including the C&D line at Central landfill, the main C&D line used by C&D haulers in Sonoma County. The new procedures, entitled Municipal Recovery Certification (MRC), will be tested in 2019.

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**TABLE 7: STRATEGY 3  
 CONSTRUCTION AND DEMOLITION ORDINANCE UPDATE | SUMMARY & STEPS**

<b>POLICY SUMMARY</b>	
<b>Additional Potential Diversion:</b> 4,410 tons	<b>Timeline:</b> 2020-2030
<b>Greenhouse Gas Reduction:</b> 4,300 MTCO <sub>2</sub>	<b>Average Annual Cost Estimate:</b> \$134,000
<b>IMPLEMENTATION STEPS</b>	
1	Collect C&D tonnage information from current, permitted C&D haulers via the franchise agreement requirements.
2	Develop ordinance and documentation necessary to better track C&D diversion better. Establish C&D diversion goals.
3	Implement ordinance, coordinate with building counter, inform C&D haulers, and educate building permit applicants.
4	Enforce ordinance with penalties for applicants not meeting diversion requirements.
5	Track diversion and measure success of ordinance. Focus on education.

## 4 TARGETED TECHNICAL ASSISTANCE

### Objective

Proactively conduct targeted technical assistance to provide commercial waste generators identified as having the most potential for greater diversion with the individualized training and support they need to reduce waste.

### Summary

This program would provide technical assistance to commercial waste generators to help them initiate or expand recycling, composting and waste reduction practices. The City would publicize the program and encourage businesses to use this free service through Recology to increase waste diversion and potentially lower their disposal costs.

Technical assistance would include conducting on-site waste assessments to identify target materials for recycling and waste reduction, providing contact information for securing recycling equipment, training custodial and operations staff, and distributing appropriate outreach materials describing best practices for setting up or expanding waste diversion services for different types of businesses. Trained staff would help to minimize or overcome various obstacles to recycling faced by commercial customers, such as space constraints, labor and sorting requirements, and lack of information or training.

Helping businesses to reduce waste will also reduce associated greenhouse gas emissions. Conducting technical assistance is also Action 6.1.1. in City's Climate Action Plan.

### Description

#### Phase I – Partner with Recology to Maximize Technical Assistance

- *Target top 20% of commercial waste generators for technical assistance.*
- *Conduct annual on-site audits, staff training, and provide support for targeted generators.*

The City's Solid Waste Collection Services Agreement with Recology includes four Waste Zero Specialists tasked with assisting Santa Rosa's residents and businesses. The City should work with Recology to ensure technical assistance services are fully utilized and resources directed towards targeting commercial customers with the greatest waste diversion potential.

In accordance with the Agreement, Recology Waste Zero Specialists respond to requests from commercial customers to conduct education, perform waste audits, and assist in right-sizing service for all three streams.

### CASE STUDY: CITY OF SAN FRANCISCO

San Francisco and Recology have a longstanding partnership in conducting outreach and technical assistance for commercial and multi-family waste generators. Recology staff work with property managers and building owners to right-size service, implement best-practices for waste diversion, and reduce contamination. San Francisco provides interns and contracted technical assistance staff to provide door-to-door outreach at multifamily buildings and conduct tenant and custodial trainings in appropriate languages. These efforts are coordinated and both work to identify accounts in need of technical assistance.

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They are also responsible for AB 341 and AB 1826 implementation, including conducting on-site waste audits and providing written summary reports for a minimum of twenty-five percent (25%) of all commercial and multi-family service recipients per year, with the primary focus on those service recipients with the lowest program participation or diversion. This targeted approach is important for focusing resources to make a meaningful impact on the waste stream.

When on-site, Waste Zero Specialists advise appropriate personnel (management, employees, janitors, and others) on how the business can maximize diversion and provide educational materials, posters and labels. Personnel are also informed and educated on the full ranges of services offered, including the availability and use of in-house recycling and food waste containers, how to participate in recycling and organics diversion programs, and how to decrease or eliminate contamination.

Recology meets with City staff at least once a month to review current and anticipated activities, specific outreach performed, and discuss other community education-related topics. The City should make full use of these meetings to oversee technical assistance efforts and work with Recology to help commercial waste generators improve waste diversion. The commercial waste stream is a significant portion of Santa Rosa's overall waste stream: improvements in commercial waste diversion will result in improvement to the community's overall diversion and further achievement of its waste reduction goal.

#### Phase II – Grow and Enhance Technical Assistance Services

- *Target top 20% of multi-family waste generators for technical assistance; maintain Phase I targets.*
- *Provide bilingual education and support to all target accounts requiring assistance.*

Upon reaching the 5-year milestone and evaluating the community's progress towards its goal, the City may want to negotiate with Recology to add to its Waste Zero Specialist staff or hire a third-party to complement the outreach and education services offered through Recology. This would provide a greater level of outreach and education needed to reach "higher hanging fruits" when selecting targeted accounts, and continued support for the accounts targeted in Phase I.

Bilingual education should be promoted and made readily available in Phase II. On the Bay Area Census approximately one third of the Santa Rosa community identified as Hispanic or Latino, underscoring the importance of engaging these members of the community through culturally appropriate resources and outreach. Recology provides labeling and certain resources in both English and Spanish, and at the City's request, diversion outreach can be arranged to be provided in Spanish, however, more is needed to effectively provide access to bilingual recycling and composting education. The City could consider negotiating more bilingual services with Recology, or hiring a third-party such as Soluna Outreach Solutions to conduct Spanish and bilingual trainings, workshops and presentations. Community connections, local knowledge and vernacular will be important factors in the success of Phase II technical assistance, bilingual or otherwise.

During this phase technical assistance staff should also expand efforts to target more multi-family properties. While multi-family properties contribute a much smaller amount of tonnage to Santa Rosa's waste stream, as a whole this sector achieves just 10% diversion and certain accounts offer the opportunity to target large generators for technical assistance.

In addition to the technical assistance activities described in Phase I, waste reduction and reuse will have greater emphasis during on-site education with best practices tailored to the account. Accounts targeted in Phase I would continue to be monitored and additional assistance provided as needed to maintain high diversion performance.

**Resources Needed**

Phase I would utilize Recology’s current technical assistance services and rely on the City’s contract management to ensure these services are promoted and maximized through maintaining a strong partnership with Recology. Phase I offers the advantage of ease of implementation; no additional City staff time or resources would be required.

Phase II would require greater contractor resources to provide enhanced technical assistance and bilingual engagement (approximately 2.0 full-time equivalent), making this phase of the strategy difficult in terms of time to implement. City staff time would be needed to negotiate additional services through Recology or procure services through a third party, and thereafter to oversee Phase II technical assistance. Targeted generators include commercial and multi-family waste generators.

**Partnerships**

The City has the opportunity build on its partnership with Recology for the implementation of this strategy. In addition, working with a third-party provider of technical assistance services could complement Recology’s work with commercial waste generators and further bilingual support.

**TABLE 8: STRATEGY 4  
 TARGETED TECHNICAL ASSISTANCE | SUMMARY & STEPS**

<b>POLICY SUMMARY</b>	
<b>Additional Potential Diversion:</b> 15,630 tons	<b>Timeline:</b> 2020-2040
<b>Greenhouse Gas Reduction:</b> 26,700 MTCO <sub>2</sub>	<b>Average Annual Cost Estimate:</b> \$438,400
<b>IMPLEMENTATION STEPS</b>	
1	Establish technical assistance goals for commercial waste generators with Recology.
2	Monitor technical assistance efforts and commercial waste diversion via contract with Recology.
3	Update technical assistance goals to include select multi-family waste generators and bilingual assistance.
4	Procure increased technical assistance resources for implementation through Recology or a third-party.
5	Monitor technical assistance efforts and commercial and multi-family waste diversion via contract with Recology.

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## 5 ZERO WASTE CULTURE CHANGE

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### Overall Objective

Supporting behavioral change as an ongoing process. The City can increase Zero Waste education and awareness in the community by providing resources, leading by example, and supporting other waste reduction initiatives in Santa Rosa and in the County. Culture change is highly dependent on the community's involvement in these strategies. The City can implement the programs and policies described below, however, the City's residents and businesses are ultimately responsible for the success of these strategies. Diversion potential estimates for this strategy are therefore not guaranteed due to the fact that the responsibility and ultimate success of this strategy lies in the hands of the community.

### 5.A LEAD BY EXAMPLE

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#### Summary

The City has shown leadership in waste reduction through the passage of various policies, creation of its robust three stream program, and most notably, its development of this Zero Waste Plan. City staff need to continue to take the lead by becoming experts in reducing the amount of City facility generated waste by recycling and composting more material. This leadership stance is important when introducing new ordinances to the City's residents to ensure that the City staff are supportive and participating in waste reduction efforts.

#### Description

City staff have already taken the initiative to begin the process of getting recycling and organics collection at all City facilities. This effort is not only helpful in that it increases recycling and composting participation but it is a very visual example of the City taking on its own waste reduction strategies. Breakrooms, kitchens, and bathrooms can all be updated and retrofitted with best practices to reduce waste. For example, switching to reusable hand towels in breakrooms or providing staff with reusable foodware is a great first step. Additionally, reconfiguring trash receptacles to be placed in central locations with recycling and organics bins instead of at desks can be a positive strategy to reduce office waste. Finally, the City should update and utilize its Environmentally Preferred Purchasing Policy, developed in 2013.

### 5.B SCHOOL ENGAGEMENT

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#### Summary

Schools in Santa Rosa are not currently a part of the City's solid waste collection program and may contract separately with collection service providers other than Recology. As a result, some schools do not get the same level of support that other commercial customers receive through Recology. The City should engage with the Santa Rosa City Schools Board of Education to decide of how both parties can work together to reduce waste in Santa Rosa and meet the community's Zero Waste goals and other statewide requirements, including SB 1383. The City and its partners can provide resources to students and teachers about waste reduction, recycling, and composting programs in the City and Zero Waste.

A strong school program can reinforce behavior change (as kids often tell their parents how to recycle and compost). Notably, school programs are the most successful when they are aligned with the practices that students have at home.

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There is a wealth of environmental curriculum available to schools and teachers, but the City should work with schools to understand what distinct needs they may have to meaningfully reduce trash. This can also be complemented through service-learning where students participate in the greening of their schools.

### Description

The City should attend School Board meetings to discuss waste reduction and foster a partnership to receive and track data for waste reduction in schools. While the City's hauler, Recology, is not the exclusive hauler for all schools, the City should request tonnage data and establish a baseline for all Santa Rosa schools to understand who the other haulers are and how much waste is collected. The City could potentially request additional reporting specific to school outreach from Recology via its franchise agreement for any information that is not already reported by Recology on a quarterly basis for the schools that they service. Recology's Zero Waste Specialists make presentations and work with schools each year as a part of the City's Annual Education and Outreach Plan. The City should work with Recology to develop an emphasis on schools and providing helpful school resources to teachers and students during presentations and site visits.

## 5.C ZERO WASTE EVENT REQUIREMENTS

### Summary

Event requirements that promote waste reduction are effective as both an educational tactic and promoting reuse in an effort to reduce single-use items commonly used at events. Many cities and counties, including the City of Sonoma have planned or are planning to revise their Special Events Policy regarding single-use plastics. Events are often highly dependent on single-use foodware, particularly utensils, plates, and individual condiment packages. The City should update its Special Event Permit to include best practices and require vendors to limit the amount of disposable products used at City permitted events.

### Description

The City would need to update its Council Policy 000-09 to include requirements that promote recycling, composting, and reuse at events. At a minimum, City should require that all events have secured service for all three streams through the City's hauler, Recology. The City can also explore other policies, including but not limited to:

- All foodware must be compostable or recyclable;
- Ban plastic water bottles;
- A percentage of all foodware must be reusable;
- Vendors must provide condiments and/or drinks in bulk;
- Development of a deposit system or other mechanism for event-specific foodware; and
- Provide trainings for vendors and event planners on new requirements.

### CASE STUDY: EVENTS REQUIREMENTS IN PALO ALTO

Palo Alto has developed robust event requirements in regards to correct recycling, composting, and Zero Waste. The permit itself requires applicants to provide recycling, composting, and garbage service for the event and employ Zero Waste purchasing practices. The City also provides detailed information to applicants to succeed. For smaller events, the City has a Zero Waste Party Pack for residents to borrow for free to help lead the effort to reduce disposables at small events or home events as well.

The City could place an additional deposit onto the existing \$125 per day if the event does not meet the waste reduction requirements, which would incentivize applicants to comply with these new requirements. Additionally, the City could charge the applicant for failure to adequately clean up the event space and deny future approval for events.

## 5.D SUPPORT FOR REUSE, REPAIR, LEASING, AND SHARING EFFORTS

### Summary

Many products and pieces of equipment can be reused or repaired. However, residents and businesses often do not have the knowledge or skills to repair broken items, and would benefit from coaching and/or could be directed to reuse and repair services.

Repair Cafés or Fixit Clinics are models of free events organized by volunteers to repair things collaboratively. In the space where a Repair Café or Fixit Clinic is located, participants have access to tools, materials, and coaches to help make needed repairs on clothes, furniture, electrical appliances, bicycles, appliances, toys, and other items. Participants bring their broken items from home or places of business. Working with the specialists they can start making their repairs and/or lend a hand on someone else's repair job.

The City can also promote the "sharing economy" where owners rent or lend tools, equipment, and other items that are seldom used and can be shared.

### Description

This program would support materials diversion from landfill through repair and reuse. Specifically, the City could:

- Provide space at City facilities for reuse events
- Support organizations that can sponsor quarterly repair workshops
- Connect with Boy Scouts, Girl Scouts, and other service clubs to organize workshops
- Help recruit volunteer "fixers" and appropriate free venues
- Promote repair workshops
- Upload repair café and other Zero Waste event dates to a Zero Waste calendar
- Maintain of the City's Reuse Directory (Appendix J) and Zero Waste webpage<sup>4</sup>

### CASE STUDY: REPAIR CAFÉ MOUNTAIN VIEW

Repair Café Mountain View is a volunteer-run, community service dedicated to encouraging the repair and reuse of goods, rather than relegating them to landfill. At the event, volunteers can guide participants to tackle the repair themselves or "fixers" can fix them while the participants watch and learn. These fixers can help with:

- Small household appliances: toasters, hair dryers, mixers, vacuums, etc.
- Various electronics: computers games, tools, etc.
- Toys, furniture, luggage, kitchen items, etc.
- Bikes, clothing and other sewing projects, jewelry, etc.

<sup>4</sup> The City plans to develop a Zero Waste page on the City's website pending approval of this Plan.

**Overall Resources Needed**

Approximately 350 annual hours (estimated 0.2 full-time equivalent) for all of zero or equivalent would be needed to monitor Zero Waste efforts, going to meetings with franchised hauler, schools, and other stakeholders, and implement these initiatives. This effort is therefore a relatively easy level of difficulty in terms of time to implement. Revisions to the City’s special events permit would take a one-time estimated 250 hours. Buy-in on a City staff-wide basis is needed to lead by example.

**Partnerships**

Partnerships can be forged or renewed with community groups, Recology, SCWMA, and the School Board.

**TABLE 9: STRATEGY 5  
 ZERO WASTE CULTURE CHANGE | SUMMARY & STEPS**

<b>POLICY SUMMARY</b>	
<b>Additional Potential Diversion:</b> 13,680 tons	<b>Timeline:</b> 2020-2040
<b>Greenhouse Gas Reduction:</b> 17,700 MTCO2	<b>Cost Estimate:</b> \$118,400
<b>IMPLEMENTATION STEPS</b>	
1	Revise City’s EPPP and enact best practices for the City to lead by example.
2	Develop Zero Waste requirements for special events permit and resources for vendors and event organizers.
3	Maintain City’s Zero Waste webpage and other waste related resources.
4	Develop relationship with School Board and monitor school tonnage.
5	Provide support for reuse and repair events.

## SECTION 6: GREENHOUSE GAS EMISSION REDUCTION

The Waste Reduction Model (WARM) was used to calculate the Plan’s estimated greenhouse gas emission reduction. WARM was created by the U.S. Environmental Protection Agency to help solid waste planners and organizations estimate greenhouse gas emission reductions from several different waste management practices. The model calculates emissions in metric tons of carbon dioxide equivalent (MTCO<sub>2</sub>E) and metric tons of carbon equivalent (MTCE) across a wide range of material types commonly found in municipal solid waste.

If these Zero Waste strategies were to be fully implemented, approximately 56,950 metric tons of carbon dioxide equivalent could be avoided each year through the source reduction, recycling and composting of currently landfilled waste materials. This is the equivalent to the annual emissions from 11,990 passenger vehicles, conserving 3,570 households’ annual energy consumption, or conserving 70,620 barrels of oil. See Table 10 below for more information.

**TABLE 10: ESTIMATED ANNUAL GREENHOUSE GAS EMISSION REDUCTION**

<b>TOTAL CHANGE IN MTCO<sub>2</sub>E</b>	<b>56,950</b>
<b>TOTAL CHANGE IN ENERGY USE</b>	<b>410,300 million BTU</b>
<b>TOTAL CHANGE IN MTCO</b>	<b>15,540</b>

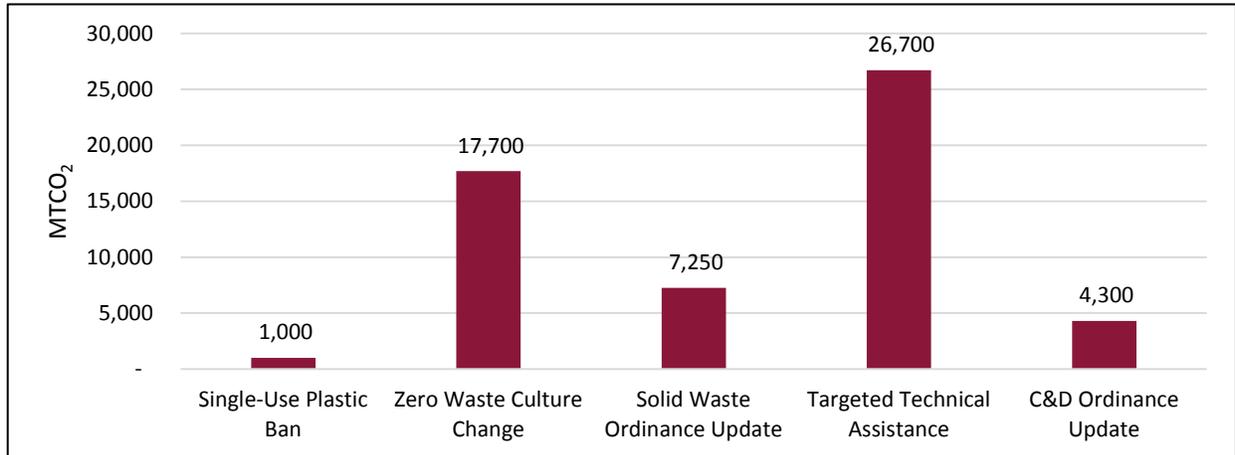
### THIS IS EQUIVALENT TO...

- ✓ Removing annual emissions from **11,990 passenger vehicles**
- ✓ Conserving **6,409,850 gallons of gasoline**
- ✓ Conserving **2,373,510 cylinders of propane** used for home barbeques
- ✓ Conserving **3,570 households’ annual energy consumption**
- ✓ Conserving **70,620 barrels of oil**

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Figure 7 below compares the estimated reduction in MTCO<sub>2</sub> by Zero Waste strategy. When comparing the relative estimated impact of each Zero Waste strategy it is clear to see that strategies which emphasize behavior change yield the greatest reductions in landfilled tons and greenhouse gas emissions. Strategies that take a policy-based approach support behavior change, and could yield greater reductions themselves depending on the level of effort undertaken to educate the community and enforce requirements.

**FIGURE 7: ESTIMATED REDUCTION IN MTCO<sub>2</sub> BY ZERO WASTE STRATEGY**



Moreover, Table 11 lists the estimated additional potential diversion of garbage tons per year for each Zero Waste strategy.

**TABLE 11: ADDITIONAL DIVERSION POTENTIAL BY ZERO WASTE STRATEGY**

RECOMMENDED ZERO WASTE STRATEGY	ADDITIONAL POTENTIAL DIVERSION				
	Single Family	Multi-Family	Commercial	Self-Haul	Total All Sectors
Single-Use Plastics Ban	150	30	310	N/A	490
Mandatory Recycling and Composting	950	280	2,440	N/A	3,670
C&D Ordinance Update	N/A	N/A	N/A	4,410	4,410
Targeted Technical Assistance	N/A	560	15,070	N/A	15,630
Zero Waste Culture Change	4,090	800	7,020	1,770	13,680
<b>TOTAL</b>	<b>5,190</b>	<b>1,670</b>	<b>24,840</b>	<b>6,180</b>	<b>37,880</b>

Combined, full implementation of these priority Zero Waste strategies could accomplish nearly half of the City Climate Action Plan’s (CAP) 2035 greenhouse gas reduction target for waste reduction, recycling and composting (Goal 6). Zero Waste strategies support CAP implementation action items for reducing waste-related emissions. This complementarity streamlines Santa Rosa community sustainability efforts and makes good use of staff time and limited resources for greater impact in achieving both climate action and waste reduction goals.

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**TABLE 12: CLIMATE ACTION PLAN INITIATIVES  
AND ZERO WASTE STRATEGY SUPPORT**

CLIMATE ACTION PLAN MEASURE 6.1 & 6.2	SUPPORTING ZERO WASTE STRATEGIES
<p><b>Action 6.1.1.</b>  Work with local waste haulers to improve the amount and types of waste that are accepted for curbside recycling and green waste pickup. Conduct outreach to and education of the public for dissemination of the information and options.</p>	<ul style="list-style-type: none"> <li>✓ Mandatory Recycling and Composting</li> <li>✓ Targeted Technical Assistance</li> <li>✓ Zero Waste Culture Change</li> </ul>
<p><b>Action 6.1.2.</b>  Work with the Sonoma County Waste Management Agency to encourage local restaurants to compost food and provide recyclable or compostable to-go containers.</p>	<ul style="list-style-type: none"> <li>✓ Single-Use Plastic Ban</li> <li>✓ Targeted Technical Assistance</li> </ul>
<p><b>Action 6.1.3.</b>  Increase the City's construction and demolition ordinance to require 75% diversion by 2020 and 85% diversion by 2035.</p>	<ul style="list-style-type: none"> <li>✓ C&amp;D Ordinance Update</li> </ul>
<p><b>Action 6.2.1.</b>  Discourage the use of Styrofoam containers and plastic bags.</p>	<ul style="list-style-type: none"> <li>✓ Single-Use Plastic Ban</li> </ul>
<p><b>Action 6.2.2.</b>  Encourage local businesses to reduce amounts of packaging used.</p>	<ul style="list-style-type: none"> <li>✓ Targeted Technical Assistance</li> </ul>
<p><b>Action 6.2.3.</b>  Discourage the use of bottled water at City events.</p>	<ul style="list-style-type: none"> <li>✓ Zero Waste Culture Change</li> </ul>
<p><b>Action 6.2.4.</b>  Adopt a long-term waste diversion goal to extend beyond the SCWMA's goal of a 70% diversion rate by 2015 and the State's goal of 75% diversion by 2020 consistent with state law (AB 341).</p>	<ul style="list-style-type: none"> <li>✓ Single-Use Plastic Ban</li> <li>✓ Mandatory Recycling and Composting</li> <li>✓ C&amp;D Ordinance Update</li> <li>✓ Targeted Technical Assistance</li> <li>✓ Zero Waste Culture Change</li> </ul>

## SECTION 7: PLANNING FOR ZERO WASTE

Sustainable funding of waste reduction initiatives is critical for supporting implementation and ongoing progress. Once the City seeks to implement the key Zero Waste strategies described in this Plan it will also need to consider potential funding sources and secure resources needed for implementation. Due to Santa Rosa's continuing fire recovery efforts and limited resources, implementation of this Plan is not anticipated to begin until 2020, and with more costly strategies not forecast for implementation until 2025. The City's estimated costs for each Zero Waste strategy and projected implementation over the planning period are further detailed in Appendix G.

The City should note that actual costs may vary depending on the City's specific implementation approaches, timing of implementation, utilization of existing City resources, and other factors. For example, between 2020 and 2025 this Plan recommends implementation of the C&D Ordinance Update and Zero Waste Culture Change strategies, with annual cost for the two estimated at under \$150,000. Actual costs for implementing those strategies could be reduced if the City relies on existing staffing to perform duties necessary for implementation. Likewise, the City could implement variants on any strategy that may lessen the actual cost of implementation (for example by not providing outreach and education materials for the Zero Waste Culture Change strategy) though the City should be aware that such changes could affect the outcomes of those strategies.

### ESTIMATED COST FOR ZERO WASTE STRATEGIES

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Costs for implementation of recommended Zero Waste strategies were developed by estimating:

- The number of hours that would be needed to develop and maintain each policy or program;
- An average hourly rate for fully loaded staff or consultant time of \$175 per hour, and \$100 per hour for a third-party contractor to conduct technical assistance;
- The annual outreach and education materials expense for each program, including training materials, newspaper advertising, promotional flyers, promotional kits, and outreach campaigns. This also includes supporting equipment such as waste sorting stations and signage; and
- An annual inflation escalator of 2.5% to adjust estimated costs over time.

These assumptions were used to project the annual estimated costs for each strategy. Based on the estimated diversion tons, the cost per ton diverted was also projected for each strategy. Table 13 provides the cost estimates for the Zero Waste strategies and implementation timeline.

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**TABLE 13: ZERO WASTE STRATEGY COST ESTIMATES**

#	RECOMMENDED STRATEGY	EXPENSE CATEGORIES	2020	2025	2030	2040	Average Annual Cost	Strategy Total Cost	Annual Tons Diverted	Total Strategy Diverted Tons	Dollars per ton diverted
1	Single-Use Plastics Ban	Time for Start-up Labor	\$0	\$10,000	\$5,000	\$5,000	\$38,300	\$805,100	490	9,800	\$82
		Time for Annual Labor	\$0	\$28,400	\$32,100	\$41,100					
		Annual Outreach and Education Materials	\$0	\$5,000	\$2,500	\$2,500					
2	Mandatory Recycling and Composting	Time for Start-up Labor	\$0	\$0	\$0	\$0	\$89,800	\$1,885,600	4,050	81,000	\$23
		Time for Annual Labor	\$0	\$57,900	\$65,500	\$83,800					
		Annual Outreach and Education Materials	\$0	\$22,000	\$25,000	\$32,000					
3	C&D Ordinance Update	Time for Start-up Labor	\$35,000	\$0	\$0	\$0	\$134,000	\$2,813,600	4,410	88,200	\$32
		Time for Annual Labor	\$0	\$96,600	\$109,300	\$139,800					
		Annual Outreach and Education Materials	\$20,000	\$22,600	\$25,600	\$32,800					
4	Targeted Technical Assistance	Time for Annual Labor	\$0	\$400,000	\$452,600	\$579,400	\$438,400	\$9,206,800	15,630	312,600	\$29
		Annual Outreach and Education Materials	\$0	\$75,000	\$84,900	\$108,700					
5	Zero Waste Culture Change	Time for Annual Labor	\$61,250	\$69,400	\$78,500	\$100,600	\$118,400	\$2,485,400	13,680	273,600	\$9
		Annual Outreach and Education Materials	\$30,000	\$34,000	\$38,500	\$49,300					
<b>TOTAL</b>			<b>\$146,250</b>	<b>\$820,900</b>	<b>\$919,500</b>	<b>\$1,175,000</b>	<b>\$818,900</b>	<b>\$17,196,500</b>	<b>\$38,260</b>	<b>765,200</b>	<b>N/A</b>

## FUNDING MECHANISMS

### Solid Waste Rates

R3 calculated the potential rate impact of funding Zero Waste strategies, which is presented below in Table 14. If the City were to fund all recommended Zero Waste strategies through the rate base, over time Santa Rosa’s solid waste rates would need to increase by approximately 1.6% to cover the average annual cost of implementation. For single family customers with a 20-gallon garbage cart this would be an additional \$0.42 per month.

However, these rate increases can be done incrementally and do not have to be adopted all at once, especially given that most funds won’t be needed until 2025. Strategies could be phased and are not intended to be implemented all at the same time. Additionally, the City could use revenue from its General Fund, collect enforcement fees, or apply for grant funds to help reduce a rate increase to fund Zero Waste policies and programs.

**TABLE 14: RATE INCREASE FOR ZERO WASTE**

RECOMMENDED STRATEGIES		
1	Single-Use Plastics Ban	0.1%
2	Mandatory Recycling and Composting	0.2%
3	C&D Ordinance Update	0.3%
4	Targeted Technical Assistance	0.9%
5	Zero Waste Culture Change	0.2%

Table 15 below shows the estimated rate increase for Zero Waste as a dollar amount for residential customers based on garbage container size. For commercial customers, the additional dollar amount added per month would be \$4.55 for one cubic yard collected once per week.

**TABLE 15: ZERO WASTE FUNDING IMPACT ON RESIDENTIAL SOLID WASTE RATES**

GARBAGE CONTAINER SIZE	2019 SINGLE FAMILY MONTHLY RATE	ESTIMATED RATE WITH ZERO WASTE FUNDING	VARIANCE (\$)
20-gallon Cart	\$25.57	\$25.99	\$0.42
32-gallon Cart	\$29.14	\$29.62	\$0.48
64-gallon Cart	\$43.65	\$44.36	\$0.71
96-gallon Cart	\$68.11	\$69.23	\$1.12

While Strategy 4 would require the most funding, it is also anticipated to have the highest impact on waste reduction and would need no additional resources to implement until Phase II in 2025. Timing for the implementation of new Zero Waste strategies is subject to the City’s budget process, contract negotiations with Recology or new contracts with another service provider and further collaboration with

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Zero Waste stakeholders. Alternative funding sources for Zero Waste strategies are discussed on the following page.

### **General Fund**

The City could potentially cover, or supplement, funding for Zero Waste strategies through its General Fund. However, due to the need to focus on ongoing fire recovery efforts, and given the City's limited resources and staff time constraints, it is unlikely the General Fund can provide for the implementation of this Plan. Therefore, the City will need to find other funding sources for the near-future and will likely have to rely on other sources of revenue to fund the Plan for the duration of the planning period.

### **Enforcement Fees**

For strategies that create the opportunity for ordinance revisions, the City could consider adding an enforcement and fee component to create revenue for the Plan's implementation. Fees may also drive greater participation. However, it is recommended that during Phase I implementation of these strategies the City focus on making a positive effort to engage and educate the community before considering enforcement in Phase II. Therefore, enforcement fees would not become a significant funding source in the near-term but would remain an option should waste diversion fail to improve. Enforcement fees could help support the implementation of Strategy 1, potentially Strategy 2, and Strategy 3.

### **Grants**

CalRecycle offers a variety of solid waste grants that the City could potentially apply for and use to further its waste reduction goals. Specifically, CalRecycle's Greenhouse Gas Reduction Grant and Loan Programs include a Food Waste Prevention and Rescue Grant Program and new Pilot Reuse Grant Program that could help fund Zero Waste culture initiatives in Santa Rosa (Strategy 5). Non-profit groups also offer grants to fund waste reduction, such as the California Student Sustainability Coalition Zero Waste Mini Grant program. Grant funds are not guaranteed, however, if awarded they can significantly supplement the funding of certain elements of this Plan.

### **Economic Development and Job Potential**

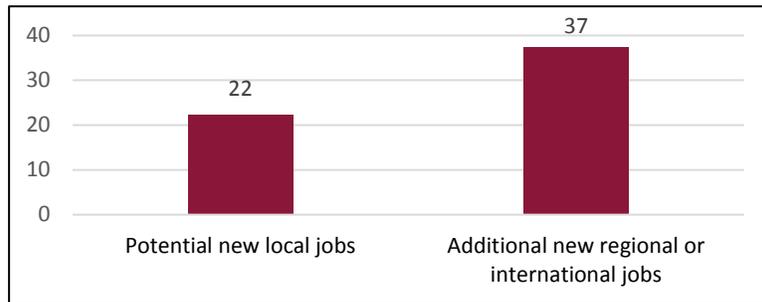
Another benefit of this implementing these Zero Waste strategies is the creation of new jobs. The Project Team conducted an analysis based on the methodology developed by the Institute for Local Self-Reliance<sup>5</sup> and can be used as a tool for measuring the potential new local and regional jobs that could be created if implementation of the proposed Zero Waste strategies were successful. See Figure 8 for more detail. As many as 60 potential new jobs would be created in collection, processing and manufacturing by implementing all of the Zero Waste initiatives.

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<sup>5</sup> Methodology is based on Recycling-Based Job Potential for Los Angeles, Institute of Local Self-Reliance, March 2013.

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**FIGURE 8: ZERO WASTE STRATEGY JOB POTENTIAL**



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## FUTURE IMPLEMENTATION AND PROGRESS

Santa Rosa has already become a leader in zero waste by investing in the Plan. The City can move forward with adoption of the strategies as defined here or new strategies that may arise in the future. It is imperative that the City begin its journey to achieving both an increase in the amount of recycling and composting within the City but over waste reduction as well.

The City's goal is to reduce landfill disposal to less than one (1) pound per person per day of franchised waste and achieve at least 75% diversion of franchised waste from landfill disposal by 2030. This is the per capita disposal of waste collected by Recology decreases by 10% each year until 2030 when Santa Rosa's theoretical maximum diversion rate of 71% is achieved and surpassed. With this goal, the City can measure, monitor, and hopefully surpass its zero waste goals.

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