CITY OF MOUNTAIN VIEW

City of Mountain View
Zero Waste Plan

DRAFT
May 2019

Table of Contents

EXECUTIVE SUMMARY **1**

ZERO WASTE GUIDING PRINCIPLES **2**

BACKGROUND **4**

CURRENT WASTE SERVICES 5

TARGETED MATERIALS **5**

MATERIALS CHARACTERIZATION 6
SINGLE FAMILY CAPTURE RATES 9

RESEARCH AND PUBLIC INPUT **9**

NEW ZERO WASTE INITIATIVES **11**

SHORT-TERM PROGRAMS (FISCAL YEAR 2019-20 THROUGH 2020-21) 11
Fiscal Year 2019-20 ..... *12*
Fiscal Year 2020-21 ..... *13*
MEDIUM-TERM PROGRAMS (FY 2021-22 THROUGH 2025-26) 16
Fiscal Year 2021-22 and 2022-23 ..... *17*
FISCAL YEAR 2023-24, 2024-25 AND 2025-26 23
LONG-TERM PROGRAMS (FY 2026-27 THROUGH 2029-30) 26

COSTS AND KEY PERFORMANCE INDICATORS **32**

DIVERSION ESTIMATES AND GREENHOUSE GAS EMISSIONS REDUCTION POTENTIAL **35**

ATTACHMENT A - WORKSHOP RESULTS **A1**

ATTACHMENT B - ASSUMPTIONS AND CALCULATIONS **B1**

Executive Summary

This Zero Waste Plan describes actions the City can undertake to meet the goals adopted by the City Council in 2018 as part of a Zero Waste Policy, specifically to increase diversion of materials from landfill from the current 78 percent to 80 percent by 2020 and 90 percent by 2030. Meeting these goals will require efforts on the part of the City, residents and businesses to reduce the use of materials, reuse them, and to compost or recycle what remains. This Plan was also prepared to provide a basis for new and revised contracts the City must develop for collection, processing and landfill services by 2021, when the current contracts expire.

The Plan takes into consideration input obtained from:

- Stakeholder interviews with interested residents, commercial businesses, processors, non-profits, community-based service providers, members of the Environmental Sustainability Task Force, property managers and home owner associations; and,
- A public workshop where participants reviewed a menu of policy, program and infrastructure options and provided valuable feedback.

The 38 initiatives contained in this Plan are grouped into Short-Term, Medium-Term and Long-Term timeframes and fall into five general categories:

- Increasing Program Participation
- Waste Prevention and Reuse
- Collection and Processing Changes
- Construction and Demolition Waste Diversion
- Addressing Problem Materials

Taken all together, the actions contained in this Plan are estimated to divert 28,200 tons of material from landfill and reduce Greenhouse Gas Emissions (GHGs) by 40,380 metric tons of carbon dioxide equivalent (MTCO2e). Adjusting for population growth as estimated by the City's General Plan, this would put the City near the 90 percent goal. The City should periodically review progress towards the goal and evaluate additional possible actions as new solutions develop.

	Population	Tons Disposed	Diversion Rate
2017 - Current	80,897	50,443	78%
2030 - Estimated with Existing Programs	103,608*	62,703	78%
2030 - Estimated with Zero Waste Plan Actions	103,608*	34,503	88%

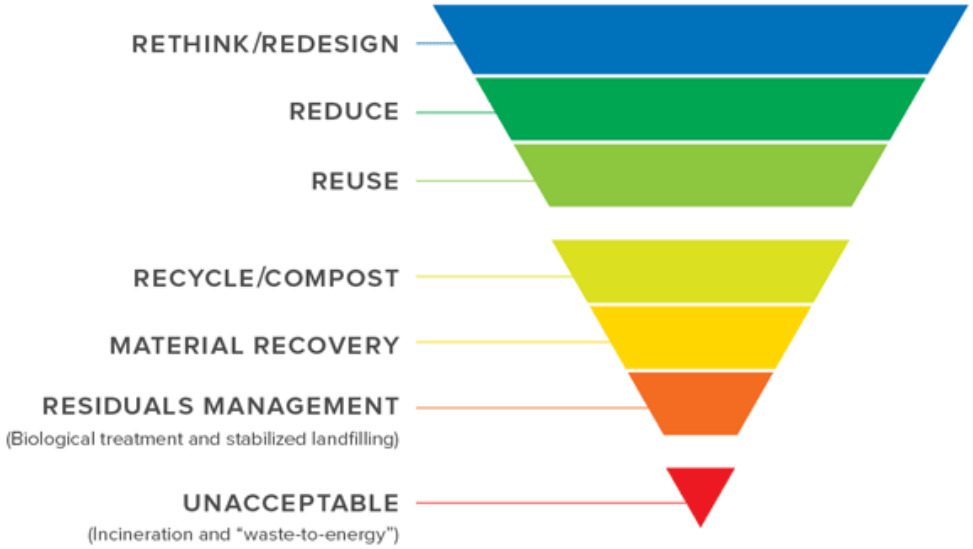
*Estimated by City of Mountain View General Plan

Zero Waste Guiding Principles

Zero waste is a fresh approach to waste management and the use of resources. It goes beyond the "end-of-the-line" treatment of waste and promotes not only the three "R's" (reduce, reuse, recycle), but also focuses on a "whole system" approach to the use of resources including composting and conservation (rot, restore), as illustrated in Figure 1. According to the internationally peer-reviewed definition:

> "Zero Waste: The conservation of all resources by means of responsible production, consumption, reuse, and recovery of products, packaging, and materials without burning and with no discharges to land, water, or air that threaten the environment or human health."

Figure 1: The Zero Waste Hierarchy of Highest and Best Use



The City of Mountain View embraced this approach through the adoption of a Zero Waste Policy (Mountain View Resolution No. 18224, adopted June 2018). The City is committed to responsible waste management that:

- Protects the environment and conserves natural resources.
- Minimizes pollutants from entering the air, land and water.
- Follows the principle of highest and best use so that reducing and reusing waste materials occurs first, followed by recycling and composting, so that eventually no material goes to landfill or high-temperature destruction.
- Creates a more sustainable, efficient economy.

- Preserves the environment for future generations.

This Zero Waste Plan uses the following guiding principles as adopted by the City Council in its Zero Waste Policy:

1. Work to reduce the amount of waste generated and disposed of by Mountain View employees, businesses, and residents with a goal that 80 percent of materials are diverted from landfill by 2020 and 90 percent by 2030.

2. Adopt a continual improvement approach to reducing waste generation and disposal, utilizing relevant data and current scientific research to develop financially realistic strategies and measures targeting remaining materials in the waste stream. For example, current research around sustainable materials management offers principles based on life-cycle analysis for reducing the total environmental impact of materials, focusing our attention on more than just recyclability and weight-based diversion.

3. Encourage employees, businesses, and residents through education and provision of services and infrastructure, to reuse and recycle materials judiciously and pursue source reduction by selecting products or processes that use fewer natural resources, are minimally packaged, and minimize or eliminate the use of toxic materials.

4. Support efforts to reduce wasted food by recovering usable food to feed hungry people.

5. Educate consumers to use their buying power to demonstrate a preference for less-toxic, durable, re-usable, recycled, or composted products and materials over unstainable, toxic, disposable, or single-use products.

6. Reduce the proliferation of plastic food service ware and packaging in daily commerce, to the extent practicable.

7. Support extended producer responsibility (EPR) legislation and efforts that shift financial and physical responsibility for material recovery, at the end of product life, from local government to the producers and sellers (Mountain View Resolution No. 17329, adopted October 2008).

8. Support regional, State, and Federal efforts to implement laws, policies, and regulations that promote zero waste and sustainable materials management.

9. Lead by example and implement waste management plans with high diversion goals for all City facilities and events.

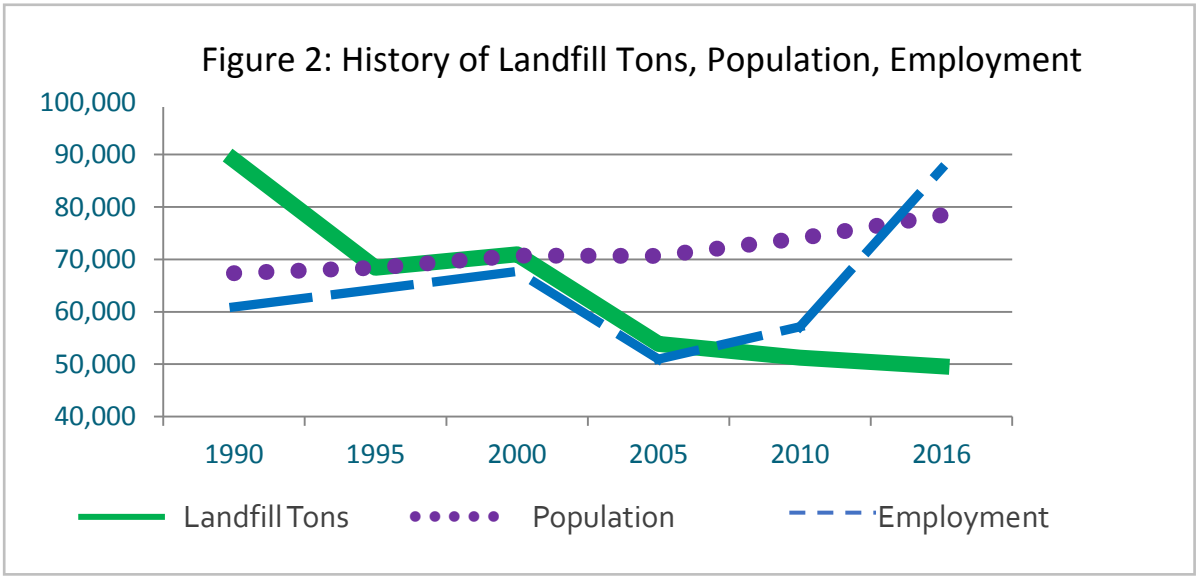
Background

Mountain View has been working towards Zero Waste since the adoption of the City's first Environmental Sustainability Action Plan (ESAP) in 2009. In 2018, the City formally adopted a Zero Waste Policy, establishing a goal of achieving 90% diversion by 2030. This Zero Waste Plan identifies the new and expanded programs and policies that will be needed to reach this goal.

Since adoption of the ESAP, the City has undertaken a number of initiatives to reduce waste, including:

- Environmentally Preferable Purchasing
- Polystyrene Foam Food Service Ware Ordinance
- Reusable Bag Ordinance
- Recycling and Organics Collection Service
- Outreach and Technical Assistance
- Mixed Waste Processing
- Mandatory Construction & Demolition Debris Diversion Requirements and Reporting
- Mixed Construction & Demolition Debris Processing

Over the last 10 years, the diversion rate has increased from 71% to 78%. "Diversion" includes all waste prevention, reuse, recycling and composting activities that divert materials from landfills. Another important measure of progress is the overall reduction of waste deposited in landfills. Figure 2 shows the reduction in landfill disposal since 1990 compared against population and employment growth. In 2017, 50,443 tons of waste was disposed in the landfill. Based on a population of 80,897, this equates to 3.4 pounds per capita per day. To achieve a 90 percent diversion rate in 2030, assuming a population of 103,608 (City of Mountain View General Plan), landfill disposal could be no more than 30,250 tons, or 1.6 pounds per capita per day, to achieve a 90% diversion rate.



Current Waste Services

The City contracts with Recology Mountain View to provide comprehensive recycling and organics collection to all residential and commercial customers in Mountain View.

Mountain View partners with the cities of Palo Alto and Sunnyvale on the Sunnyvale Materials Recovery and Transfer Station (SMaRT Station®). The SMaRT Station processes all of the recyclable materials collected from Mountain View customers including:

- Residential dual stream recyclables
- Commercial single stream recyclables
- Commercial cardboard
- Construction & demolition debris

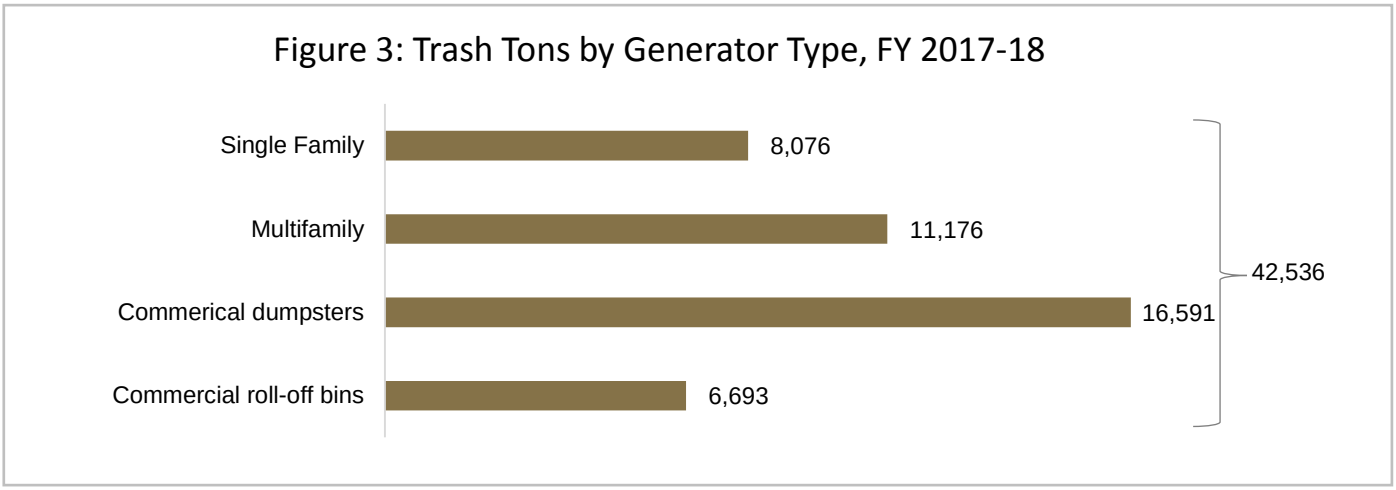
The SMaRT Station also processes mixed waste (materials placed in trash containers) from Mountain View to recover recyclable and compostable materials that would have otherwise gone to landfill. After sorting, remaining trash (residual) is transferred to the Kirby Canyon Landfill in San Jose.

Residential organics (yard trimmings and food scraps) are transferred at the SMaRT Station and composted at South Valley Organics in Gilroy. Commercial organics (food scraps) are transferred at a Recology facility located in San Jose and composted at Blossom Valley Organics North in Vernalis.

In 2021, these contracts for collection, processing and landfill will expire and the City has the option of negotiating new contacts or soliciting proposals for new services.

Targeted Materials

In Fiscal Year 2017-18 (July 1-June 30), 42,536 tons of materials were disposed in trash containers by Mountain View residents and businesses as shown in Figure 3. This disposed material is sorted at the SMaRT Station to recover recyclables and organics before the remainder is sent to landfill.



An additional 12,865 tons of construction & demolition debris was collected in roll-off bins and sent to the SMaRT Station for sorting. Typical materials recovered from C&D loads include sheetrock, concrete, asphalt, green trimmings, clean wood and metal. An unknown amount of additional construction & demolition materials from Mountain View construction projects are self-hauled by contractors to other sorting facilities or landfills.

Materials Characterization

To plan for 90% diversion, the City conducted a materials characterization study profiling single family and commercial trash. The current programs for single family and commercial customers are mature and the City used the characterization study to help evaluate their effectiveness. The City is in the process of rolling out a pilot food scraps collection program at all multifamily buildings. Thus the composition of multifamily trash is expected to change once the program has been fully implemented and so was not characterized for this study. Instead, results from a 2010 characterization were used.

The data in Figures 4 and 5 show that 61% of single family residential, 64% of multifamily residential. The “potentially recoverable” materials found in the residential trash are mostly plastic packaging materials and film that currently have limited or no markets, but for which domestic markets might develop in the future.

Figure 4: Mountain View Single Family Trash – Recoverability, 2018

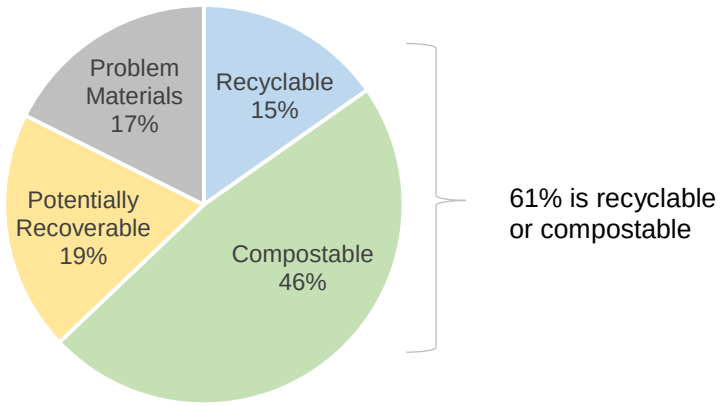
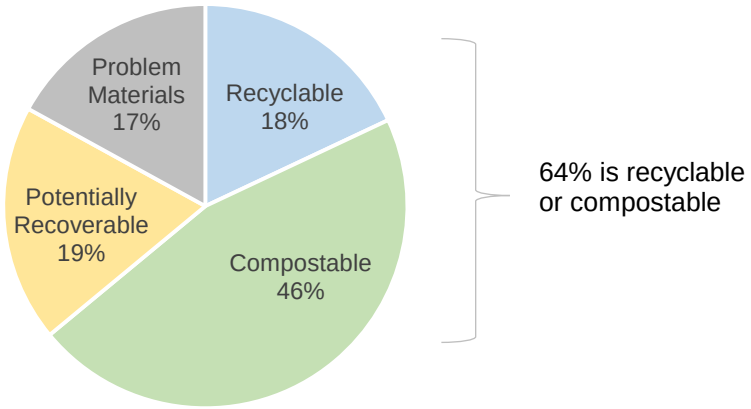
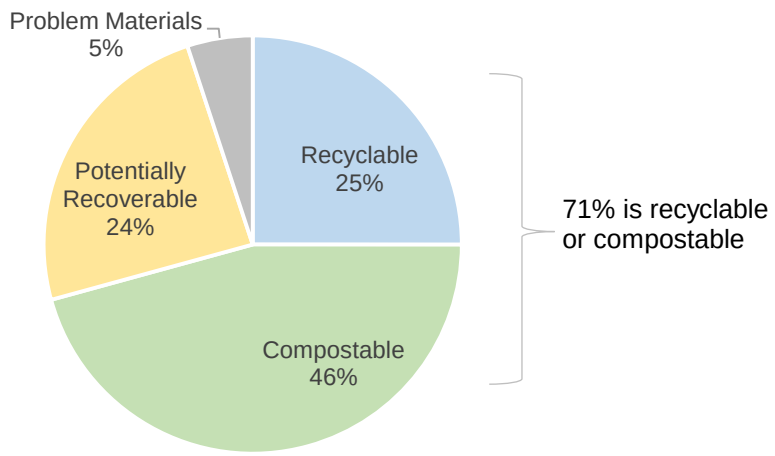


Figure 5: Mountain View Multifamily Trash - Recoverability, 2010



As shown in Figure 6, 71% of commercial trash collected could have been recycled or composted. The commercial trash also includes a significant amount (24%) of "potentially recoverable" materials. Many of these materials are potentially recyclable or compostable, but are not included in the current collection programs (e.g., durable plastic items, scrap metal and textiles). Some are recovered at the SMaRT Station.

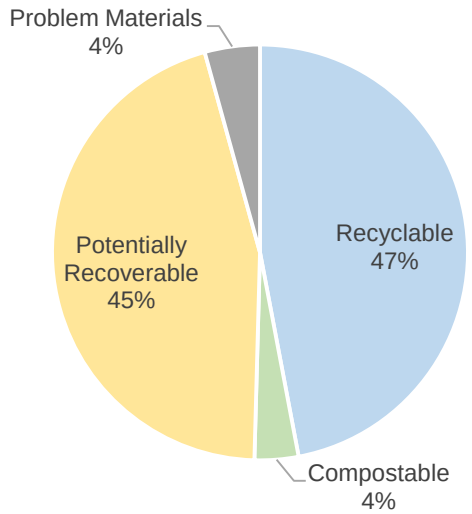
Figure 6: Mountain View Commercial Dumpster Trash - Recoverability, 2018



The materials characterization study also evaluated loads of construction & demolition debris from Mountain View. Recology brings mixed loads of construction & demolition debris to the SMaRT Station where some materials, such as large pieces of scrap metal, big stumps, wood and cardboard are salvaged by a manual floor sort team. Construction & demolition debris loads are dumped on the floor of the transfer station and large pieces are salvaged.

The majority of the materials (92%) are recyclable or potentially recyclable if separated at the source or sent to a dedicated construction & demolition debris recycling facility for more intensive processing (see Figure 7).

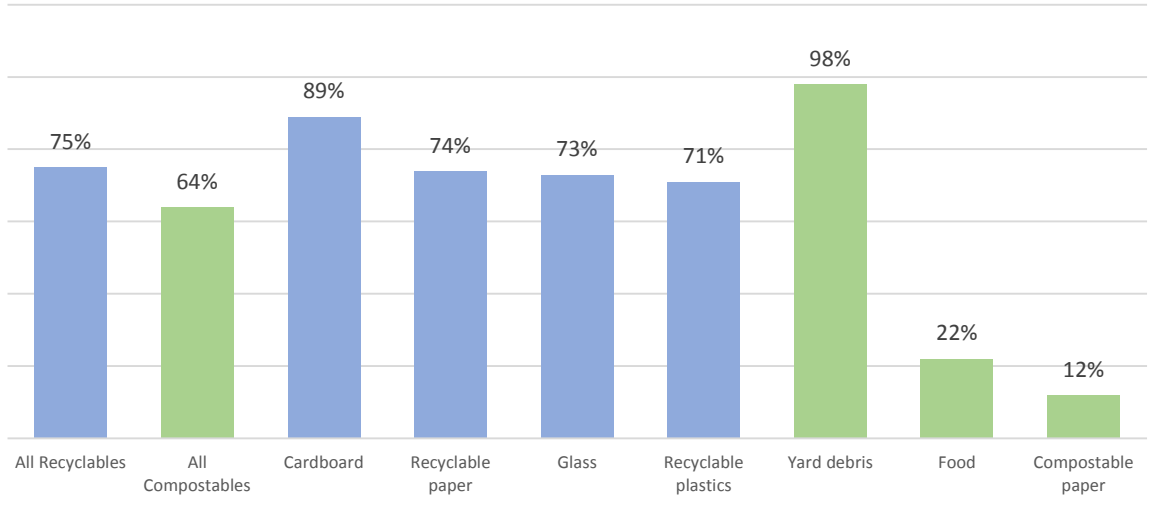
Figure 7: Mountain View Construction Debris - Recoverability, 2018



Single Family Capture Rates

All three carts were sorted for the single family sector to establish a "capture rate." A capture rate indicates what proportion of a material type is being placed in the correct container. Overall, single family residents in Mountain View are doing a good job of sorting correctly, as shown in Figure 8. Single family generators are "capturing" 75% of recyclable materials and 64% of compostable materials. Some materials types, such as food and compostable paper have much lower capture rates and represent an opportunity for program enhancements to increase participation.

Figure 8: Mountain View Single Family Capture Rates, 2018



Research and Public Input

To help identify options for reaching 90% diversion, the City conducted a series of stakeholder interviews with interested residents, commercial businesses, processors, non-profits, community-based service providers, members of the Environmental Sustainability Task Force, property managers and homeowner associations.

Feedback from these sessions included:

Policies

- Consider expanding the foodware ordinance to ban single use plastics.

Outreach & Education

- Homeowners Associations and multifamily buildings need more door-to-door outreach and technical assistance.
- Need regional cooperation and consistency on materials collected, container colors and labels.

- Need to emphasize the basics.
- It's difficult to understand what is recyclable and what isn't.
- Schools need more help to implement sustainable recycling and composting programs.

Rates

- Consider rates that incentivize reduction (such as modifying the multifamily per unit rate and the loose and compactor rates to ensure that that there are no disincentives for waste reduction.)

Infrastructure

- The City's collection programs work, don't change them dramatically.
- Dumpsters need better labeling and color-coding.
- Make it just as easy to use recycling or compost bin as it is to use the landfill bin.
- Need a regional plastic recovery facility.

Using insights from the stakeholder interviews and research on potential new or expanded programs, the City presented a menu of policy, program and infrastructure options at a public workshop on March 4, 2019. Workshop participants received information about new policies, programs and infrastructure projects that could be undertaken by the City to address materials generated by residential, multifamily, commercial, and construction debris generators. Participants then broke up into small groups for longer discussions about each of the alternatives. Additional ideas were recorded and each person identified their high priority items for implementation by the City. This input was used to help develop the final list of Zero Waste initiatives. Results from the workshop are included in Attachment A.

New Zero Waste Initiatives

Thirty-eight Zero Waste initiatives have been identified for implementation in the:

- Short-term (Fiscal Year 2019-20 and 2020-21)
- Medium-term (Fiscal Year 2021-22 through 2025-26)
- Long-term (Fiscal Year 2026-27 through 2029-2030)

The initiatives include efforts focused on waste prevention, reuse, and recycling/composting using a variety of tactics such as changing local and state policies, new or expanded programs, and infrastructure development.

For each initiative, the following impacts have been identified and estimated:

- Potential Landfill Diversion – the number of tons that might be diverted annually.
- Greenhouse Gas (GHG) Emissions Reduction Potential – metric tons of carbon dioxide equivalent (MTCO2e) that might be reduced annually.
- Staff Levels – full-time equivalent (FTE) levels of staffing needed for on-going efforts, unless stated as a one-time need.
- Costs – required for service provider, contractor, or consultant support. Some service provider costs will not be known until new service agreements are negotiated.
- Co-Benefits – other environmental benefits that would result from the initiative.
- Implementation Effort – ranked as High, Medium or Low taking into consideration level of public outreach and education required, coordination or cooperation needed from other entities, and likely acceptance by residents and businesses.
- Key Performance Indicators (KPIs) – including waste generation reduction, landfill reduction, toxics reduction, and greenhouse gas emissions reduction.
- Service Provider Contractor Requirements – the City will be considering changes to its collection and processing contracts that can be implemented in the medium-term. Initiatives that may require changes to service provider contract are highlighted in purple.

The above information for each initiative is detailed below and summarized in the tables found on pages 32-34. Additional information about the assumptions and calculations for diversion and greenhouse gas emissions reductions are included in Attachment B.

Short-Term Programs (Fiscal Year 2019-20 through 2020-21)

The following initiatives are natural outgrowths of programs already under development (multifamily food scraps), projects that are underway at the County level that can be leveraged by the City (foodware packaging reduction, residential food waste reduction), or address large waste streams (technical assistance to construction contractors). They are grouped by fiscal year of implementation priority based on staffing needs.

Fiscal Year 2019-20

1. Foodware Packaging Reduction – Phase 1

Participate in regional efforts to align and expand foodware ordinances and share best practices. Develop a Foodware Packaging Reduction Plan to reduce the amount of single-use, disposable foodware packaging generated in Mountain View and encourage reusable foodware items. As a first phase, consider expanding the Polystyrene Foodware Ordinance to include clamshells, straws, cutlery, stirrers and cold cups distributed by food service establishments (restaurants, cafeterias, food trucks, food vendors). Require that compostable fiber containers are BPI-Certified and do not contain toxic per- and polyfluoroalkyl substances. Send enforcement letters to food service establishments that do not comply with the foodware ordinance. In addition, contract with the ReThink Disposable Program to target eating establishments and businesses that use single-use foodware to assist them in making the transition to reusables. This will lay the groundwork for a second phase of the Plan, which is included as a Medium-Term Initiative.

Diversion Potential	230 Tons
GHG Emissions Reduction Potential	390 MTCO2e
Staff Levels	0.20 FTE (one-time) 0.02 FTE (for on-going outreach and enforcement)
Cost	$50,000 for contractor support
Co-Benefits	Reduce plastic litter in storm drains and waterways Reduce impacts on human health Reduce recycling and organics contamination
Implementation Effort	Medium
KPIs	Landfill reduction, Toxics reduction, GHG reduction

2. Multifamily Food Scrap Collection

Expand food scrap collection program to all multifamily properties. The City is currently piloting a multifamily food scrap collection program to determine best practices and estimate costs and rates. The food scraps program will require dedicated staff or contractor resources to ensure that each multifamily building is set up for success and residents, property managers and custodial staff have been trained in the new requirements. Best practices include door-to-door outreach, distribution of food scrap kits (kitchen pail, sample compost bags, instructions and helpful tips) and clear signage and color coding of bins and configuration of bins to ensure proper sorting.

Diversion Potential	1,290 Tons
GHG Emissions Reduction Potential	840 MTCO2e
Staff Levels	0.50 FTE (for technical assistance)
Cost	$100,000 for supplies and contractor support
Co-Benefits	Continuity of programs across the community
Implementation Effort	High
KPIs	Landfill reduction, GHG reduction

Fiscal Year 2020-21

3. State Packaging and Product Advocacy

Advocate for statewide policies to address sustainable packaging and product design. Continue membership in the California Product Stewardship Council and join the Californians Against Waste Local Government Collaborative.

Diversion Potential	1,280 Tons
GHG Emissions Reduction Potential	2,650 MTCO2e
Staff Levels	0.01 FTE (for advocacy)
Cost	$10,000 annually for membership
Additional Metrics for Success	Guide statewide packaging policy Leverage City's efforts statewide
Implementation Effort	Low
KPIs	Generation reduction, Landfill reduction, Toxics reduction, GHG reduction

4. Generation Reduction Goal

Establish goals for generation reduction (in additional to reducing landfilling and increasing diversion). For example, the C40 Cities Climate Leadership Group, in their Advancing Toward Zero Waste Declaration sets targets of 15% per capita generation reduction and 50% landfill reduction by 2030 (compared to the 2015 baseline).

Diversion Potential	500 Tons
GHG Emissions Reduction Potential	790 MTCO2e
Staff Levels	0.02 FTE (to monitor progress)
Cost	Minimal
Co-Benefits	Focus on waste prevention Demonstrate global leadership
Implementation Effort	Low
KPIs	Generation reduction, GHG reduction

5. Increase Bag Charge

Update the Reusable Bag Ordinance to increase the amount of the minimum charge for a reusable or recycled-content paper bags from $0.10 to $0.25 (subject to review by the City Attorney). Consider modifications to the definition of "reusable bags" to reduce

distribution of plastic bags that function as disposable bags. Increase enforcement to stores that do not charge for bags.

Diversion Potential	100 Tons
GHG Emissions Reduction Potential	180 MTCO2e
Staff Levels	0.10 FTE (one-time) 0.02 FTE (to monitor status)
Cost	Minimal
Co-Benefits	Reinforce original waste reduction goal
Implementation Effort	Medium
KPIs	Generation reduction, GHG reduction

6. Zero Waste Events and Venues

Require all events (requiring City permits) and venues (City facilities and large venue facilities) to adopt Zero Waste plans and procedures. Ensure compliance with future City policies for reducing single use plastics and increasing source-separation and food donation. Train event and venue managers in City requirements.

Diversion Potential	130 Tons
GHG Emissions Reduction Potential	120 MTCO2e
Staff Levels	0.10 FTE (one-time) 0.05 FTE (to provide ongoing assistance/compliance)
Cost	Minimal
Co-Benefits	Lead by example at City facilities and events Ensure universal access to recycling and composting
Implementation Effort	Medium
KPIs	Generation reduction, Landfill reduction, GHG reduction

7. Residential Food Waste Reduction

Participate in County-wide food waste reduction pilot and consider for City implementation. The focus of the pilot is not yet determined, but may include food waste prevention tools and techniques including proper food storage, reusing leftovers, and shopping appropriately.

Diversion Potential	460 Tons
GHG Emissions Reduction Potential	410 MTCO2e
Staff Levels	0.02 FTE (one-time) 0.02 FTE (for outreach and education)
Cost	Unknown, subject to program development
Co-Benefits	Cost savings Community creativity and cohesion
Implementation Effort	Low
KPIs	Landfill reduction, GHG reduction

8. Sustainable Repair Café

Increase support for Mountain View Repair Café (a local, volunteer-driven non-profit). City funding could allow the Repair Café to hire a part-time convener to schedule events, recruit fixers, advertise, staff events and hold more events in Mountain View. This will ensure continuity and regularly scheduled Repair Cafés and potentially reduce volunteer burn-out.

Diversion Potential	20 Tons
GHG Emissions Reduction Potential	MTCO2e
Staff Levels	0.01 FTE (to provide support)
Cost	$12,000 ($2,000 per event)
Co-Benefits	Allow community members to share repair expertise Create the next generation of fixers
Implementation Effort	Low
KPIs	Generation reduction, Landfill reduction, GHG reduction

9. Increase Compost Use

Increase use of free compost, through outreach and advertising. Ensure that residents understand the carbon reduction potential of spreading compost on un-tilled lands. Increase the amount of compost used by City crews. Consider annual distribution of free compost at City events or City facilities to increase availability. Currently, Mountain View residents can pick up free compost from the Sunnyvale SMaRT Station.

Diversion Potential	730 Tons
GHG Emissions Reduction Potential	510 MTCO2e
Staff Levels	0.01 FTE (for outreach and education)
Cost	$2,000 for distributing compost at City event
Co-Benefits	Carbon sequestration Increase tree and plant health Reduce water use Increase accessibility to all residents by providing locally
Implementation Effort	Low
KPIs	Landfill reduction, GHG reduction

10. Technical Assistance to Residential Food Scrap Customers

Increase outreach and technical assistance to residential food scrap customers. Ensure that all new residents receive food scrap kits (kitchen pail, sample compost bags, instructions and helpful tips). Conduct quarterly door-to-door outreach using City staff or contractor resources (lid-flipping, door-knocking, tags on green carts). Target neighborhoods with low participation, then expand Citywide over time.

Diversion Potential	1,800 Tons
GHG Emissions Reduction Potential	1,530 MTCO2e
Staff Levels	0.20 FTE (for quarterly events, outreach and education)
Cost	$20,000 for supplies and contractor support
Co-Benefits	Community culture change Maximize use of collection infrastructure
Implementation Effort	High
KPIs	Landfill reduction, GHG reduction

11. Technical Assistance to Construction Contractors

Ensure that all building contractors operating in the City are fully complying with the City's requirements. Ensure that landfill reports match the City construction & demolition debris diversion reports. Coordinate with building department to follow up with contractors on diversion reporting. Follow up with third-party processors and disposal facilities to obtain information about Mountain View loads that are self-hauled by contractors.

The City's Green Building Ordinance requires contractors and developers to meet 65% diversion for all construction projects. Demolition projects greater than 5,000 square feet of area are required to divert 50%. The City also requires builders to contract with its collection service provider for all roll-off containers. These containers are brought to the Sunnyvale SMaRT Station for processing.

Diversion Potential	770 Tons
GHG Emissions Reduction Potential	1,080 MTCO2e
Staff Levels	0.10 FTE (for follow up and training of contractors)
Cost	$20,000 (one-time for research)
Co-Benefits	Assess current ordinance and identify opportunities for changes or improvements
Implementation Effort	Medium
KPIs	Landfill reduction, GHG reduction

Medium-Term Programs (FY 2021-22 through 2025-26)

The following programs were chosen for medium-term implementation. They are grouped by fiscal year of implementation priority based on staffing needs. The first two years (fiscal years 2021-22 and 2022-23) focus on legal mandates that have implementation deadlines (mandatory program participation as required by SB 1383 regulations designed to divert 75% of organics from landfill) and new programs that require contract changes (such as increased technical assistance and improved materials processing). In the remaining three years, the focus switches to problem materials and food donation programs.

Fiscal Year 2021-22 and 2022-23

12. Mandatory Participation Ordinance

Ensure participation in City recycling and composting programs and customer compliance with state laws through implementation of a mandatory participation ordinance. A new State law (SB 1383, Short-Lived Climate Pollutants) will require mandatory participation in recycling and composting collection services by the end of 2021. An effective ordinance should be paired with a robust technical assistance program, as generators may require extra training and assistance. Explore alternatives for enforcement including audits, warning letters, and administrative fines and penalties, in compliance with SB 1383 regulations. Consider having the collection service provider assist with technical assistance and initial monitoring and reporting. Follow up contacts and enforcement can be implemented by City staff.

Diversion Potential	2,810 Tons
GHG Emissions Reduction Potential	3,930 MTCO2e
Staff Levels	1.00 FTE (to meet requirements of State law SB 1383 for inspection, enforcement, record-keeping and reporting)
Cost	Unknown, subject to contract development
Co-Benefits	Universal programs throughout the City
Implementation Effort	High
KPIs	Landfill reduction, GHG reduction
Service Provider Contract Requirements	Assist with monitoring and customer compliance (collection service provider)

13. Weekly Recycling

Explore weekly collection of recycling as a potential enhancement of the new or extended collection contract. Residential customers receive every other week collection of recyclable materials in dual stream carts. Some customers have expressed interest in every week collection of recyclables to increase convenience and capacity of recycling.

Diversion Potential	500 Tons
GHG Emissions Reduction Potential	640 MTCO2e
Staff Levels	0.02 FTE (one-time)
Cost	Unknown, subject to contract development
Co-Benefits	Expand customer convenience Less confusion and communication about service weeks Reduce use of extra recycling carts
Implementation Effort	Low
KPIs	Landfill reduction, GHG reduction
Service Provider Contract Requirements	Weekly recycling collection (collection service provider)

14. Technical Assistance to Schools

Provide dedicated staff or contractor resources to public and private schools in Mountain View. Work with the school districts to ensure that programs are sustainable. Form district green teams and school site green teams. Conduct quarterly green team meetings to trouble shoot and provide support.

All of Mountain View's 13 public schools have recycling collection and 9 have compost collection service. Overall, the City's public schools have an average diversion rate of 38% (based on service volumes). Improving each school's recycling and composting performance and training students, faculty and staff about the City's programs is a top priority for Mountain View residents. Schools require on-going dedicated technical assistance separate from commercial outreach and training. This includes: teaching sorting lessons to all grade levels, conducting waste audits with students to ensure proper sorting and pinpoint service gaps, training custodians in proper materials management, purchasing containers, custodial equipment, signs and stickers, training student green teams to ensure proper sorting, launching the new program with assemblies, and monitoring the lunchroom sorting until students are confident in their abilities. Training schools in proper sorting has a multiplier effect as students and staff and their families are also members of the community.

Diversion Potential	270 Tons
GHG Emissions Reduction Potential	370 MTCO2e
Staff Levels	0.20 FTE (for program support)
Cost	$5,000 per year for supplies
Co-Benefits	Education and training extended to families
Implementation Effort	High
KPIs	Generation reduction, Landfill reduction, GHG reduction
Service Provider Contract Requirements	Technical assistance and support (collection service provider)

15. Expand Technical Assistance for Multifamily and Commercial Customers

Expand dedicated outreach, education and training to multifamily and commercial customers, focusing on waste prevention. Work with associations, groups and individual companies, complexes and homeowner associations. Facilitate setting each group and business on their own road to Zero Waste, setting baselines and realistic goals. Provide dedicated staff or contractor resources to multifamily complexes and commercial businesses to support them in making the institutional changes needed to fully participate in the City's programs. Establish relationships with property managers and support them in behavior change and program compliance. Provide tools to identify and redesign wasteful practices, products and packaging and right-size collection as well as purchasing more environmentally preferred products. Share model programs and integrate Zero Waste into training programs and new employee orientation. Recognize and promote early adopters, keep innovations in the news and make green the new normal. A robust technical assistance program is a needed complement to a potential enforcement program.

Diversion Potential	720 Tons
GHG Emissions Reduction Potential	830 MTCO2e
Staff Levels	0.20 FTE (for technical assistance)
Cost	$5,000 per year for supplies
Co-Benefits	Universal programs throughout the City Recycling and composting where residents live, work and play
Implementation Effort	High
KPIs	Generation reduction, Landfill reduction, GHG reduction
Service Provider Contract Requirements	Technical assistance and outreach (collection service provider)

16. Improve Materials Processing System

Explore improved processing options for commercial recycling (single stream materials are currently processed on the mixed materials line, which is not ideal), construction & demolition (currently processed using a floor sort), and mixed materials (averaging 31% diversion). The City's collection and processing contracts end in 2021 and the City can consider future processing opportunities and enhancements for implementation during the medium term.

Diversion Potential	3,700 Tons
GHG Emissions Reduction Potential	5,910 MTCO2e
Staff Levels	0.10 FTE (one-time)
Cost	Unknown, subject to contract development
Co-Benefits	Enhance community partnerships Increase regional capacity
Implementation Effort	Medium
KPIs	Landfill reduction, GHG reduction
Service Provider Contract Requirements	Improved materials processing (processing service provider)

17. Direct Construction & Demolition Loads to High Diversion Facilities

Explore options for recovering more construction & demolition debris by directing loads to high diversion processing facilities. The City requires builders to contract with its collection service provider for all roll-off containers. These containers are currently brought to the Sunnyvale SMaRT Station for processing. If appropriate, during consideration of future processing contracts, the City may wish to direct roll-off containers of mixed construction & demolition debris to specialized high diversion facilities.

Diversion Potential	2,640 Tons
GHG Emissions Reduction Potential	3,610 MTCO2e
Staff Levels	0.03 FTE (one-time)
Cost	Unknown, subject to contract development
Co-Benefits	Increase regional capacity Ensure Leadership in Energy and Environmental Design (LEED) points for builders
Implementation Effort	Low
KPIs	Landfill reduction, GHG reduction
Service Provider Contract Requirements	Direct mixed construction debris to high diversion facilities (collection service provider, processing service provider)

18. Expand Commercial Recycling

Explore adding materials to the commercial recycling collection program for businesses. Businesses in Mountain View receive source-separated collection of cardboard (on request) and single stream recycling for containers and paper. Businesses generate some materials that are potentially recyclable, but not included in the City's collection program, including pallets, lumber, scrap metal, and rigid plastic (bins and buckets).

Diversion Potential	1,000 Tons
GHG Emissions Reduction Potential	1,980 MTCO2e
Staff Levels	0.02 FTE (for outreach and education)
Cost	Unknown, subject to contract development
Co-Benefits	Expand customer convenience
Implementation Effort	Low
KPIs	Landfill reduction, GHG reduction
Service Provider Contract Requirements	Expansion of materials accepted by the City's recyclables processor

19. Increase Construction & Demolition Diversion Requirement

Consider modifying the City's Codes which require contractors and developers to meet the California Green Building Ordinance standard for 65% diversion for all construction projects and 50% diversion for all demolition projects. Evaluate increased diversion requirements (e.g., 75% for all construction debris and 100% for concrete and asphalt), source-separation of recyclable materials, and deconstruction prior to demolition to increase salvage and recyclability of materials.

Diversion Potential	450 Tons
GHG Emissions Reduction Potential	840 MTCO2e
Staff Levels	0.10 FTE (one-time)
Cost	Minimal
Co-Benefits	Increase salvage/reuse Increase the amount and quality of recyclable materials recovered
Implementation Effort	Medium
KPIs	Landfill reduction, GHG reduction

20. Foodware Packaging Reduction – Phase 2

Consider expanding the City's Foodware Ordinance to require reusable tableware at sit-down restaurants and reusable take-out packaging (like Go Box) and dishwasher installation at food businesses. Consider implementing a Cup Charge (similar to the Bag Charge) for disposable cups (and potential future expansion to other disposable foodware). Increase enforcement to food service establishments that do not comply with the foodware ordinance, including possible administrative fines or penalties.

Diversion Potential	100 Tons
GHG Emissions Reduction Potential	170 MTCO2e
Staff Levels	0.20 FTE (one-time) 0.02 FTE (for outreach and enforcement)
Cost	Minimal
Co-Benefits	Reduce plastic litter in storm drains and waterways Reduce impacts on human health
Implementation Effort	Low
KPIs	Landfill reduction, Toxics reduction, GHG reduction

21. Zero Waste Ambassadors

Implement a Zero Waste Ambassadors program. Interested Mountain View residents will be trained in the City's Zero Waste programs so they can help their neighbors recycle and compost. Zero Waste Ambassadors can host neighborhood meetings, go door-to-door in their neighborhoods or buildings, make presentations at schools and faith organizations, and store reusable foodware party kits to loan out to neighbors for picnics and parties. The Zero Waste Ambassador program can also be paired with other waste reduction awards or incentive programs where neighborhoods compete for sponsored amenities (like tool lending libraries, neighborhood cleanups or park and landscaping improvements).

Diversion Potential	430 Tons
GHG Emissions Reduction Potential	680 MTCO2e
Staff Levels	0.10 FTE (for quarterly training)
Cost	$10,000 for reusable party kits and other supplies
Co-Benefits	Community cohesion (through formation of neighborhood groups) Climate emergency resiliency (from neighbors knowing neighbors)
Implementation Effort	Low
KPIs	Generation reduction, Landfill reduction, GHG reduction
Service Provider Contract Requirements	Neighborhood amenities to be provided by collection service provider

22. Promote Reuse, Rental and Repair

Promote reuse, rental and repair businesses through on-line directories, material exchanges, and direct assistance, including Zero Waste vendors and caterers. Promote reuse and repair via other internet services (e.g., e-Bay, Craig's List and FreeCycle.org), utility bill inserts, and cooperative advertisements. Although reuse programs are typically only 4-6% of the total tons of materials discarded, they are often 30-40% of the total value of materials discarded. Zero Waste programs focus on reuse programs as a key way to reinvest the value of materials and products discarded back into the local economy and to create jobs. Reuse programs create 75-250 times more jobs than landfilling materials.

Diversion Potential	140 Tons
GHG Emissions Reduction Potential	330 MTCO2e
Staff Levels	0.02 FTE
Cost	$5,000 (for annual promotion)
Co-Benefits	Support local businesses Create local jobs
Implementation Effort	Medium
KPIs	Generation reduction, Landfill reduction, GHG reduction

Fiscal Year 2023-24, 2024-25 and 2025-26

23. Commercial Food Donations

Encourage (and consider requiring) surplus food generators to donate surplus food to local food pantries and food banks. Promote commercial food donation program sponsored by Silicon Valley Food Rescue A La Carte. The City contributed to the development of the A La Carte program that rescues surplus prepared food and delivers it to residents located within "food deserts" in the county. A La Carte is expanding, but collection of surplus food from food generators is a potential service gap. Consider requiring the City's collection service provider to donate funds to local food rescue organizations, such as A La Carte and Peninsula Food Runners.

Diversion Potential	1,060 Tons
GHG Emissions Reduction Potential	930 MTCO2e
Staff Levels	0.04 FTE (to meet requirements of State law SB 1383)
Cost	$10,000 (on-going support to Silicon Valley Food Rescue)
Co-Benefits	Feed hungry people Promote sharing economy
Implementation Effort	Low
KPIs	Landfill reduction, GHG reduction
Service Provider Contract Requirements	Contribution to food rescue organizations (collection service provider)

24. Residential Food Donations

Promote food donation opportunities through local food pantries and through Village Harvest. Educate residents about what types of surplus food are acceptable for donation. Residents can donate non-perishable, packaged food through the food drives sponsored by the Second Harvest Food Bank. Gardeners can also share their harvest through the backyard produce donation program. Mountain View Community Services and the Day Worker Center of Mountain View both accept donations from the public. Village Harvest is a local, volunteer-driven non-profit that harvests fruit from back yard trees in Santa Clara County and delivers the fruit to local food pantries and food banks.

Diversion Potential	580 Tons
GHG Emissions Reduction Potential	510 MTCO2e
Staff Levels	0.02 FTE (for outreach and education)
Cost	Minimal
Co-Benefits	Feed hungry people Promote sharing economy
Implementation Effort	Low
KPIs	Landfill reduction, GHG reduction

25. On-Call Collection of Hard-to-Recycle and Reusable Items

The City provides an on-call collection program for extra trash, recycling and compost plus bulky items such as appliances and furniture. The program is free to residential customers (single family households and multifamily complexes up to 8 units) and is available for a fee to multifamily complexes (9+ units). Consider replacing or adding to the bulky item collection program with a quarterly collection program focused on reusable and recyclable materials, including reusable household goods, reusable furniture, lumber, scrap metal and textiles. Evaluate options for on-call vs. neighborhood-based programs with a goal of maximizing recovery of materials that are hard to recycle through the traditional curbside programs. Consider offering the program to all multifamily and commercial customers as a component of the rate or for a fee. Consider offering a move in/move out component for multifamily customers on-call for reusable household goods, furniture, cardboard and packaging.

Diversion Potential	800 Tons
GHG Emissions Reduction Potential	2,120 MTCO2e
Staff Levels	0.02 FTE (for outreach and education)
Cost	Unknown, subject to contract development
Co-Benefits	Expand customer convenience Promote sharing economy
Implementation Effort	Low
KPIs	Landfill reduction, GHG reduction
Service Provider Contract Requirements	Expansion or replacement of the bulky item collection program (collection service provider)

26. Plastics Solutions

Explore options to increase plastics recovery. For example, the City might participate in a regional effort to develop a plastic recovery facility in the San Francisco Bay Area to process plastics from material recovery facilities throughout the region. Plastic recovery facilities include specialized equipment that can separate mixed plastics (such #3-7) into separate commodity grades and have the benefit of consolidating large amounts of specific materials. The Closed Loop Fund invested in a plastic recovery facility in Baltimore in 2015 to service the majority of the East Coast. Titus Services has developed a plastic recovery facility for the Los Angeles region (which has been used by both San Francisco and Berkeley). Recology and San Francisco built additional

plastic recovery capacity at the Pier 96 recycling facility. If appropriate, the City may wish to direct a portion of its mixed plastics to a regional plastics recovery facility.

In addition, the City could work with others piloting conversion of non-recyclable plastics into reusable chemicals. San Jose is conducting a feasibility study with a new company, BioCellection. BioCellection uses a catalyst to break down long carbon polyethylene plastic molecules into chemical "intermediates" for making new products (e.g. nylon and electrical components). If appropriate, the City may be able to direct a portion of its non-recyclable plastics to a regional commercial-scale plastics conversion facility.

Diversion Potential	640 Tons
GHG Emissions Reduction Potential	1,040 MTCO2e
Staff Levels	0.04 FTE (one-time)
Cost	Unknown, subject to contract development
Co-Benefits	Expand markets for potentially recyclable plastics Increase regional capacity Pioneer new technology
Implementation Effort	Low
KPIs	Landfill reduction, GHG reduction
Service Provider Contract Requirements	Direct mixed plastics to a plastic recovery facility (processing service provider)

27. Waste Reduction for Diapers

Promote reusable and compostable diaper use, through education and outreach, FAQs, and welcome home kits to new parents. Identify barriers and benefits for day care centers and new parents and identify strategies for overcoming barriers and promoting benefits. Diapers are a problem material that comprise a growing percentage of discarded materials (as fewer recyclable and compostable materials are thrown away, problem materials make up more of our landfill trash). Local diaper services, such as Tiny Tots and Earth Baby offer reusable and compostable diaper collection and processing.

Diversion Potential	260 Tons
GHG Emissions Reduction Potential	230 MTCO2e
Staff Levels	0.02 FTE (for outreach and education)
Cost	Minimal
Co-Benefits	Younger potty training Promote sharing economy
Implementation Effort	Low
KPIs	Landfill reduction, GHG reduction

28. Waste Reduction for Pet Waste

Explore options for educating residents about more sustainable handling of pet waste, including in-ground dog waste digesters that convert dog waste to fertilizer for nearby plants (such as Doggie Dooley or Staywell Eco Clean). Work with the Regional Water

Quality Control Plant to ensure dog feces can be accepted through a dog waste sewer line attachment (such as Doggie Doo Drain or Poo Flush).

Diversion Potential	160 Tons
GHG Emissions Reduction Potential	140 MTCO2e
Staff Levels	0.02 FTE (for outreach and education)
Cost	Minimal
Co-Benefits	Reduce guilt of responsible pet owners
Implementation Effort	Low
KPIs	Landfill reduction, GHG reduction

Long-Term Programs (FY 2026-27 through 2029-30)

The final initiatives are for long-term implementation. They introduce large-scale service changes (e.g., reduction in garbage collection) and collaborative efforts.

29. Every Other Week Garbage Collection

Develop a pilot to determine how to design every other week garbage collection in Mountain View and how that might affect future service rates. Less than weekly garbage pick-ups can be more efficient, reduce costs, lessen community impacts and increase diversion.

State law requires weekly collection of all "putrescible" materials (things that putrefy, including food waste) for public health and safety. Once there is a weekly collection of food waste provided to all residents, there is no legal requirement to collect garbage weekly. There are over one hundred communities that have embraced this system in the U.S., including: Renton, WA (Every-other-week collection of residential garbage and recycling and weekly collection of organics, with no charge for setting out extra recyclable or compostable items), Vancouver, WA (Rates for contracted commercial garbage collection service are lower for every-other week service for each container size option, with a once-per-month collection option for 32-gallon cart service offered at a rate less than half that of weekly collection; commercial customers are allowed up to two 96-gallon recycling carts for no additional charge) and Portland, OR (residential garbage pick-up every-other-week, with options to decrease the frequency of garbage service, along with weekly collection of recyclables and organics in 60-gallon carts; the switch to every-other-week trash collection led to a 35% reduction in the amount of garbage collected and tripled the amount of organics collected).

Diversion Potential	1,210 Tons
GHG Emissions Reduction Potential	1,790 MTCO2e
Staff Levels	0.30 FTE (one-time)
Cost	$100,000 (for pilot), plus potential collection savings
Co-Benefits	Reduce traffic, emissions Potentially reduce costs
Implementation Effort	High
KPIs	Generation reduction, Landfill reduction, GHG reduction
Service Provider Contract Requirements	Every other week garbage collection pilot (collection service provider)

30. Waste Reduction Grants

Explore the feasibility of providing grants to nonprofit organizations, schools, businesses and/or individuals to assist the community to implement innovative reduction, reuse, recycling and composting programs and to help foster the culture change needed to achieve Zero Waste. Grants can be awarded in response to sole source proposals, or in response to requests for proposals. The request for proposals can be open to any innovative idea, or can be tailored to specific projects.

Diversion Potential	500 Tons
GHG Emissions Reduction Potential	790 MTCO2e
Staff Levels	0.02 FTE (for program administration)
Cost	$10,000 (for annual grant program)
Co-Benefits	Support community groups Promote culture change
Implementation Effort	Medium
KPIs	Generation reduction, Landfill reduction, GHG reduction, Toxic Reduction

31. Promote Access to Goods over Ownership

Promote services that provide short-term rentals of reusable goods such as tools, sports equipment, party equipment (tables, chairs, serving utensils), as well as sharing websites. Explore a membership-based program that promotes community resource sharing while leveraging communal purchasing power (e.g., a Tool Library delivers affordable tool-lending services to individuals, businesses, and civic or community organizations). Promote neighbor-to-neighbor sharing through Zero Waste Ambassadors and community organizations. Incorporate sharing economy messaging into Citywide Garage Sale program and bulky goods collection.

Diversion Potential	60 Tons
GHG Emissions Reduction Potential	200 MTCO2e
Staff Levels	0.02 FTE
Cost	$5,000 (for annual promotion)
Co-Benefits	Support local businesses Create local jobs

Implementation Effort	Medium
KPIs	Generation reduction, Landfill reduction, GHG reduction

32. Business Reuse Exchange

Consider developing a program that encourages and rewards businesses for institutionalizing reuse (e.g. reuse closets for office supplies or tools, surplus sales to other businesses, remnants, surplus goods and equipment, donating goods to non-profits and giving items away). Each business could have multiple reuse areas: an office supplies reuse closet, an area for reusable goods one department may not want but another may and an area for no longer wanted goods that need a new home. Encourage the use of an online network to foster business-to-business connections to match unwanted material byproducts or commodities to opportunities for reuse or recycling as feedstock. Include a business to nonprofit - reusable items for donation to social services programs, teachers, artists and/or the public (e.g., Materials Marketplace, LA Shares).

Diversion Potential	10 Tons
GHG Emissions Reduction Potential	10 MTCO2e
Staff Levels	0.02 FTE
Cost	$5,000 (for annual promotion)
Co-Benefits	Support local businesses Create local jobs
Implementation Effort	Medium
KPIs	Generation reduction, Landfill reduction, Toxic Reduction, GHG reduction

33. Building Materials Reuse Center

Explore options for developing a Building Materials Reuse Center in the region for the sale of salvaged building materials. The building materials would be available for sale to the public and the Center would provide an outlet for resale from deconstruction.

Diversion Potential	1,050 Tons
GHG Emissions Reduction Potential	1,800 MTCO2e
Staff Levels	0.02 FTE (to monitor status)
Cost	Unknown
Co-Benefits	Local economic development Create local jobs
Implementation Effort	Low
KPIs	Generation reduction, Landfill reduction, GHG reduction

34. Promote Reusable Filling Stations at Stores

Promote the expansion of bulk bin sales at local stores. Promote local and online resources for Zero Waste lifestyles and zero packaging. Promote Zero Waste supermarkets (where everything is sold in bulk).

Diversion Potential	30 Tons
GHG Emissions Reduction Potential	50 MTCO2e
Staff Levels	0.02 FTE (to monitor status)
Cost	Minimal
Co-Benefits	Local economic development Create local jobs
Implementation Effort	Low
KPIs	Generation reduction, Landfill reduction, GHG reduction

35. Bans or Fees on Hard-to-Recover Materials

Consider expanding foodware ordinance to ban other non-recyclable packaging in cooperation with regional or state efforts (e.g., no packaging that cannot be recycled or composted). Work with Google and Amazon to reduce shipping packaging.

Diversion Potential	720 Tons
GHG Emissions Reduction Potential	1,160 MTCO2e
Staff Levels	0.10 FTE (one-time) 0.02 FTE (for outreach and enforcement)
Cost	Minimal
Co-Benefits	Reduce plastic litter in storm drains and waterways Reduce impacts on human health
Implementation Effort	Low
KPIs	Landfill reduction, GHG reduction, Toxics reduction

36. Zero Waste Research Initiative

Work collaboratively with industry, government and educational institutions to find new solutions for items that are hard to reuse, recycle or compost, connecting with the latest developments, innovation and innovative funding (including venture capital). Help in identifying problems that need to be solved and convene groups to research and develop solutions for these problems. Potential targets could include: diapers, film plastics, Mylar and composites), toxic items, medical wastes, value-added products, building products, transportation products and shipping and packaging materials.

One local example of a Zero Waste Research Center (ZWRC) was established at UC Berkeley to research and implement upstream strategies for reducing campus waste, with a focus on purchasing, redesigning products, creating behavior change incentives, and instituting closed-loop “circular economy” waste systems. The Pollution Prevention Resource Exchange (P2Rx™) is a national network of regional P2 information centers whose mission is to advance pollution prevention as a cornerstone of sustainability.

Staff of the centers include engineering and scientific experts who provide technical assistance to businesses upon request. The Green Chemistry & Commerce Council (GC3) is a business-to-business network of companies and other organizations working collaboratively to advance green chemistry across sectors and supply chains. Several businesses have expressed interest in working together with colleges/universities and government agencies to develop innovative solutions for hard to reuse, recycle or compost products or packaging.

Diversion Potential	500 Tons
GHG Emissions Reduction Potential	790 MTCO2e
Staff Levels	0.02 FTE (to support convening)
Cost	Unknown
Co-Benefits	Engage regional partners Support research institutions
Implementation Effort	Low
KPIs	Generation reduction, Landfill reduction, GHG reduction, Toxics reduction

37. Local Product and Packaging Redesign

Support regional outreach campaigns to local businesses to reduce or eliminate non-reusable packaging, transport containers, and food service ware from their processes and retail stores (e.g., Use Reusables, Rethink Disposable). Participate in a regional initiative to encourage businesses to use reusable, recycled content and eco-friendly materials in the design and redesign of new and existing products and packaging; collaborate with local economic development staff to provide assistance and incentives.

Diversion Potential	150 Tons
GHG Emissions Reduction Potential	330 MTCO2e
Staff Levels	0.02 FTE (to monitor status)
Cost	Unknown
Co-Benefits	Local economic development Create local jobs
Implementation Effort	Low
KPIs	Generation reduction, Landfill reduction, Toxics reduction, GHG reduction

38. Market Development

Support a local circular economy. Review procurement practices for each City Department to identify more opportunities to buy reusables, recycled content and/or compost products. Work with state and national organizations and elected officials to support state and national policies to support the expansion of existing and attraction of new businesses and nonprofit organizations that reuse, manufacture with recycled content and/or use compost products and packaging. Promote the San Jose Recycled Market Development Zone and encourage Mountain View City departments and businesses to buy recycled content products from them.

Diversion Potential	400 Tons
GHG Emissions Reduction Potential	630 MTCO2e
Staff Levels	0.10 FTE (for support)
Cost	$20,000 (for additional procurement costs)
Co-Benefits	Local economic development Create local jobs
Implementation Effort	Medium
KPIs	Generation reduction, Landfill reduction, GHG reduction

Costs and Key Performance Indicators

Zero Waste Initiatives	Projected Diversion	Projected GHG Reduction	Estimated Costs FTE = Full Time Equivalent $ = Hauler/Contractor/ Consultant Support		Implementation Effort[2]	Key Performance Indicators GR = Generation Reduction LR = Landfill Reduction TR = Toxics Reduction GHG = GHG Reduction			
	(Tons)	(MTCO2e)	FTE	$		GR	LR	TR	GHG
Short-Term (Fiscal Year 2019-20 and 2020-21)									
1. Foodware Packaging Reduction – Phase 1	230	390	0.20[1] 0.02	$50K	M		·	·	·
2. Multifamily Food Scrap Collection	1,290	840	0.50	$100K	H		·		·
3. State Packaging and Product Advocacy	1,280	2,650	0.01	$10K	L	·	·	·	·
4. Generation Reduction Goal	500	790	0.02	Minimal	L		·		·
5. Increase Bag Charge	100	180	0.10[1] 0.02	Minimal	M	·			·
6. Zero Waste Events and Venues	130	120	0.10[1] 0.02	Minimal	M	·	·		·
7. Residential Food Waste Reduction	460	410	0.02[1] 0.02	Unknown	L		·		·
8. Sustainable Repair Café	20	70	0.01	$12K	L	·	·		·
9. Increase Compost Use	730	510	0.01	$2K	L		·		·
10. Technical Assistance to Residential Food Scrap Customers	1,800	1,530	0.20	$20K	H		·		·
11. Technical Assistance to Construction Contractors	770	1,080	0.10	$20K[1]	M		·		·
Subtotal	**7,310**	**8,570**	**1.35**	**$214K**					

[1]One time staff support or one-time costs
[2]Implementation Effort, L=Low level of effort, M=Medium level of effort, H=High level of effort

Zero Waste Initiatives	Projected Diversion	Projected GHG Reduction	Estimated Costs FTE = Full Time Equivalent $ = Hauler/Contractor/ Consultant Support		Implementation Effort[2]	Key Performance Indicators GR = Generation Reduction LR = Landfill Reduction TR = Toxics Reduction GHG = GHG Reduction			
	(Tons)	(MTCO2e)	FTE	$		GR	LR	TR	GHG
Medium-Term (Fiscal Years 2021-22 through 2025-26)									
12. Mandatory Participation Ordinance	2,810	3,930	1.00	Unknown	H		·		·
13. Every Week Recycling	500	640	0.02	Unknown	L		·		·
14. Technical Assistance to Schools	270	370	0.20	$5K	H	·	·		·
15. Technical Assistance for Multifamily and Commercial Customers	720	830	0.20	$5K	H	·	·		·
16. Improve Materials Processing System	3,700	5,910	0.10[1]	Unknown	M		·		·
17. Direct Construction & Demolition to High Diversion Facilities	2,640	3,610	0.30[1]	Unknown	L		·		·
18. Expand Commercial Recycling	1,000	1,980	0.02	Unknown	L		·		·
19. Increase Construction & Demolition Diversion Requirement	450	840	0.10[1]	Minimal	M		·		·
20. Foodware Packaging Reduction – Phase 2	100	170	0.20[1] 0.02	Minimal	L		·	·	·
21. Zero Waste Ambassadors	430	680	0.10	$10K	L	·	·		·
22. Promote Reuse, Rental and Repair	140	330	0.02	$5K	M	·	·		·
23. Commercial Food Donations	1,060	930	0.04	$10K	L		·		·
24. Residential Food Donations	580	510	0.02	Minimal	L		·		·
25. On-Call Collection of Hard-to-Recycle and Reusable Items	800	2,120	0.02	Unknown	L		·		·
26. Plastic Solutions	640	1,040	0.04[1]	Unknown	L		·		·
27. Waste Reduction for Diapers	260	230	0.02	Minimal	L		·		·
28. Waste Reduction for Pet Waste	160	140	0.02	Minimal	L		·		·
Subtotal	**16,120**	**23,930**	**2.24**	**$30K**					

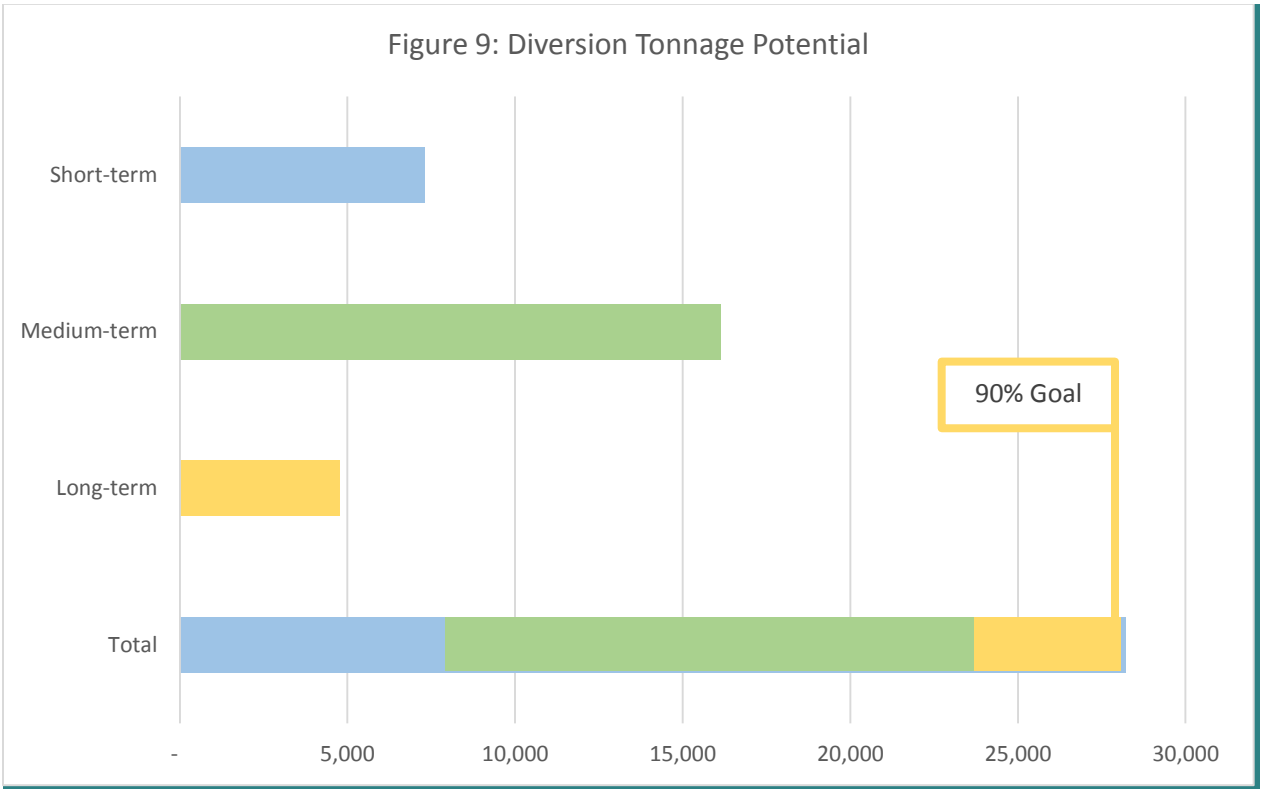
[1]One time staff support or one-time costs
[2]Implementation Effort, L=Low level of effort, M=Medium level of effort, H=High level of effort

Zero Waste Initiatives	Projected Diversion	Projected GHG Reduction	Estimated Costs FTE = Full Time Equivalent $ = Hauler/Contractor/ Consultant Support		Implementation Effort[2]	Key Performance Indicators GR = Generation Reduction LR = Landfill Reduction TR = Toxics Reduction GHG = GHG Reduction			
	(Tons)	(MTCO2e)	FTE	$		GR	LR	TR	GHG
Long-Term (Fiscal Year 2026-27 through 2029-2030)									
29. Every Other Week Garbage Collection	1,210	1,790	0.30[1]	$100K	H	·	·		·
30. Waste Reduction Grants	500	790	0.02	$10K	M	·	·	·	·
31. Promote Access to Goods over Ownership	60	200	0.02	$5K	M	·	·		·
32. Business Reuse Exchange	10	10	0.02	$5K	M	·	·	·	·
33. Building Materials Reuse Center	1,050	1,800	0.02	Unknown	L	·	·		·
34. Promote Reusable Filling Stations at Stores	30	50	0.02	Minimal	L	·	·		·
35. Bans or Fees on Hard-to-Recover Materials	720	1,160	0.10[1] 0.02	Minimal	L	·	·		·
36. Zero Waste Research Initiative	500	790	0.02	Unknown	L	·	·		·
37. Local Product and Packaging Redesign	150	330	0.02	Unknown	L	·	·	·	·
38. Market Development	400	630	0.10	$20K	M	·	·		·
Subtotal	**4,770**	**7,880**	**0.68**	**$145K**					
Total	**28,200**	**40,380**	**4.45**	**$389K**					

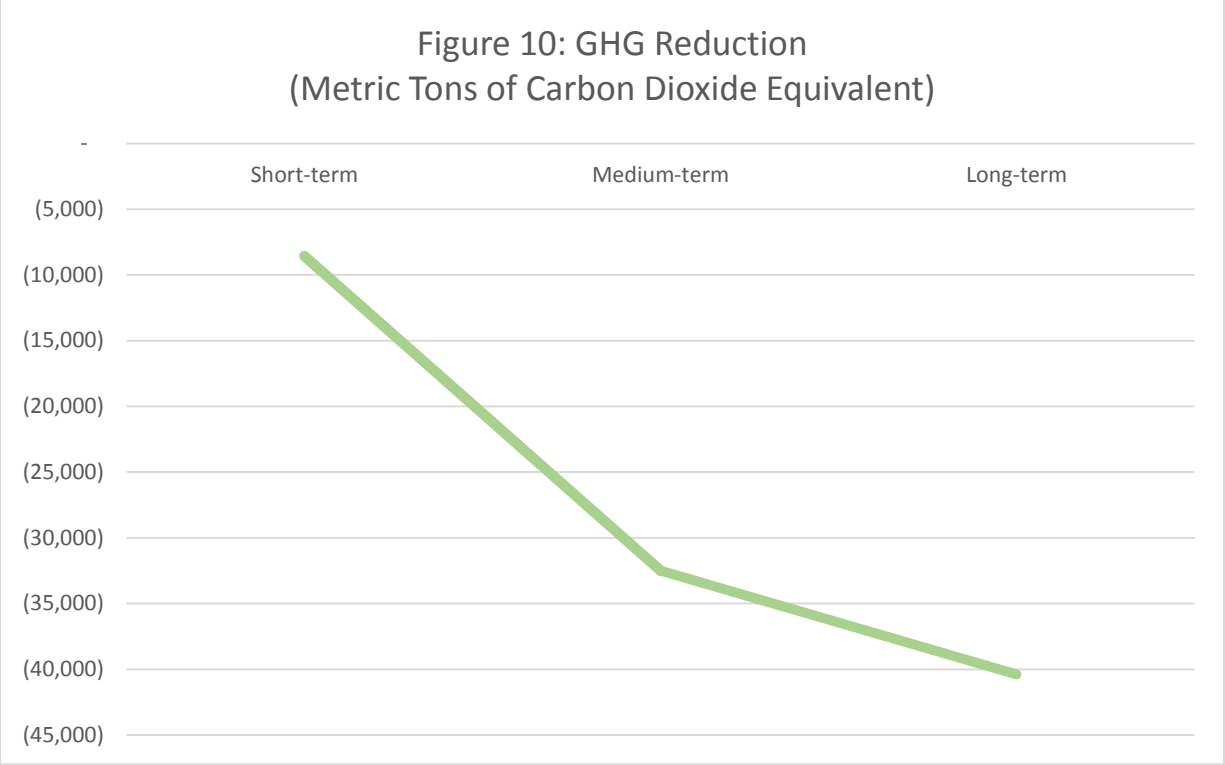
[1]One time staff support or one-time costs
[2]Implementation Effort, L=Low level of effort, M=Medium level of effort, H=High level of effort

Diversion Estimates and Greenhouse Gas Emissions Reduction Potential

Implementing the Zero Waste initiatives identified in this plan update will help the City achieve its 90% goal. Using conservative estimates for capture rates by material type, the short-, medium-, and long-term Zero Waste initiatives would result in an additional 28,000 tons per year diverted from landfill. The assumptions and calculations are included in Attachment B.



Waste prevention, recycling and composting activities also reduce greenhouse gas emissions. Using the U.S. EPA Waste Reduction Model (WARM), the Zero Waste initiatives to be undertaken in the short-, medium- and long-term are estimated to reduce greenhouse gas emissions by approximately 40,000 metric tons of carbon dioxide equivalent. The calculations and projections using WARM are included in Attachment B. This will contribute to the City's greenhouse gas emissions reduction target of 37% below 2005 levels by 2030 and ultimate goal of 80% below 2005 levels by 2050.



Attachment A - Workshop Results

On March 4, 2019, the City conducted a workshop to present the results of the Materials Characterization Study and to identify policies and programs for future implementation. The City presented poster versions of potential new or expanded initiatives for consideration in the Zero Waste Plan. Participants in the workshop indicated their preferred policies and programs and provided written suggestions for further evaluation.

The initiative descriptions were updated for presentation in the plan and recommended for implementation in the short-, medium-, or long-term. Some of the initiative descriptions presented at the workshop were combined or renamed and updated for inclusion in the plan.

Green Highlight means the idea was included as a new or expanded initiative. [The initiative(s) is listed in brackets.]
Yellow Highlight means the idea includes details that will be evaluated as part of a new or expanded initiative. [The initiative(s) is listed in brackets.]
Red Highlight means the idea was not recommended for inclusion in the plan. [An explanation is provided in brackets.]

Communitywide

- Support foodware packaging reduction. Ban single use plastics.
  [1. Foodware Packaging Reduction – Part 1 and 20. Foodware Packaging Reduction – Part 2, 35. Bans or Fees on Hard-to-Recover Materials]
- Fine people $10 per week per bin for doing wrong stuff in wrong bin. Don't take it if it is wrong.
  [12. Mandatory Participation Ordinance]
- No packaging that cannot be recycled or composted. Ban it otherwise.
  [1. Foodware Packaging Reduction – Part 1 and 20. Foodware Packaging Reduction – Part 2, 35. Bans or Fees on Hard-to-Recover Materials]
- It's all about education! How about a school initiative to explain the importance of reduce and recycle.
  [14. Technical Assistance to Schools]
- Same as commercial: Ban all plastic bags (reusable or not). This can be a baby step and as time goes on we can ban more.
  [5. Increase Bag Charge, 35. Bans or Fees on Hard-to-Recover Materials]
- Door Dash (type services) should use Go Box for bringing take out in reusables.

[1. Foodware Packaging Reduction – Part 1 and 20. Foodware Packaging Reduction – Part 2]

Single Family

- I love the Mountain View curbside food/compostable paper, etc. It allows me to keep trash in the house much longer (every two weeks I take it out – it's all plastic)
- Consider split bin for food, like Sunnyvale
  [Note that the City has already committed to co-collection of food scraps with yard trimmings and is implementing the program citywide. The Sunnyvale split bin program has been somewhat controversial within Sunnyvale and is not recommended for the plan.]
- The current program seems more encompassing of getting stuff out of the landfill
- Ban single use plastics in restaurants and grocery stores
  [1. Foodware Packaging Reduction – Part 1 and 20. Foodware Packaging Reduction – Part 2, 35. Bans or Fees on Hard-to-Recover Materials]
- Encourage taking containers with their tare weights marked to markets (and markets set up for it)
  [1. Foodware Packaging Reduction – Part 1 and 20. Foodware Packaging Reduction – Part 2]
- Teach and provide starter supplies for Bokashi composting for pet waste at homes
  [27. Waste Reduction for Pet Waste]
- Reuse plastic produce bags and mesh bags
  [5. Increase Bag Charge, [21. Zero Waste Ambassadors, 35. Bans or Fees on Hard-to-Recover Materials]
- Can we invest in washable party goods? Palo Alto lends them to resident for their parties (plates, cups, utensils, etc.).
  [21. Zero Waste Ambassadors]
- App that tells you if item is recyclable or compostable in Mountain View – take photo of the item and it tells you
  [36. Zero Waste Research Initiative]
- Promote alternatives to disposable diapers (cloth, compostable)
  [26. Waste Reduction for Diapers]
- Incentivize SMaRT Station operator to divert more materials from landfill
  [16. Improve Materials Processing System]

Multifamily

- Need Urban Ore in Mountain View
  [33. Building Materials Reuse Center]
- How are businesses doing? May need more data from hauler on that
  [15. Technical Assistance for Multifamily and Commercial Customers]
- Provide additional incentives for businesses
- [15. Technical Assistance for Multifamily and Commercial Customers]
- Work with daycares for implementing compostable diapers
  [26. Waste Reduction for Diapers]
- Use proper bins
- Charge a large sorting fee for apartments that do not sort
- [12. Mandatory Participation Ordinance]

- Training/resources for resident zero waste advocates/educators
  [21. Zero Waste Ambassadors]
- Educational trash/recycling audits (look through bags)
  [15. Technical Assistance for Multifamily and Commercial Customers]
- Focus – large corporations reusable pallets
  [15. Technical Assistance for Multifamily and Commercial Customers]
- Restaurants – reusables in-house, compostables for take-out. Provide case studies and outreach.
  [1. Foodware Packaging Reduction – Part 1 and 20. Foodware Packaging Reduction – Part 2]
- Clamshells are a problem. Want to be able to recycle them. Have a place at SMaRT Station for those.
  [1. Foodware Packaging Reduction – Part 1 and 20. Foodware Packaging Reduction – Part 2, 16. Improve Materials Processing System, 35. Bans or Fees on Hard-to-Recover Materials]
- The bins at apartments and condos are old and all worn out. Need better signage and color-coding.
  [Note that this is a current project in the City. 15. Technical Assistance for Multifamily and Commercial Customers]
- For HOAs - could we have individual collection at our homes?
  [15. Technical Assistance for Multifamily and Commercial Customers]
- We recycle a lot of cardboard and need a bin for cardboard at our condo complex.
  [Note that this is a current program. 15. Technical Assistance for Multifamily and Commercial Customers]

Commercial

- Make food establishments use reusable or compostable (BPI certified) only. No petroleum based plastics (except bottles for drinks).
  [1. Foodware Packaging Reduction – Part 1 and 20. Foodware Packaging Reduction – Part 2]
- City of Mountain View Mayor, Lisa Matichak is interested in studying the City of Palo Alto school program
  [14. Technical Assistance to Schools]
- Focus on schools in Mountain View. Kids are citizens of Mountain View. If they learn at home or school they will lead the way.
  [14. Technical Assistance to Schools]
- Need recycling/composting outreach and technical assistance program for Mountain View schools.
  [14. Technical Assistance to Schools]
- Can we ban all plastic bags from stores? Residents/shoppers will eventually bring their own.
  [5. Increase Bag Charge, 35. Bans or Fees on Hard-to-Recover Materials]
- Work with Google and Amazon to reduce shipping packaging.
  [36. Zero Waste Research Initiative, 37. Local Product and Packaging Redesign]
- Mandate composting and recycling

[12. Mandatory Participation Ordinance]

- Why are compostable plastics promoted if they don't compost?
  [Note that "compostable plastics" are technically compostable in laboratory settings, but do not break down at the compost facility. The City will consider requiring the use of reusable and fiber-based foodware at restaurants and food service establishments as part of 1. Foodware Packaging Reduction – Part 1 and 20. Foodware Packaging Reduction – Part 2.]
- Partner with school districts on compost and recycling – current and future residents, leaders. Stipend or contracts for janitors and steeper discounts for recycling and composting service at school.
  [14. Technical Assistance to Schools]
- Work with restaurants and corporate kitchens to donate food to shelters. Coordinate better.
  [22. Commercial Food Donations]
- Need Sudbusters (Michael Simintus) washing service for Zero Waste events
  [6. Zero Waste Events and Venues]
- Have restaurants (even under 4 cubic yard limit) compost food. Will need training, education and internal containers.
  [15. Technical Assistance for Multifamily and Commercial Customers]
- Find ways to incentivize SMaRT Station operator to sort better
  [16. Improve Materials Processing System]
- Provide more support for schools. Parents help now, but it is not sustainable. Needs to be institutionalized.
  [14. Technical Assistance to Schools]
- Small businesses need help – but they must compost and recycle and make it available for customers too.
  [15. Technical Assistance for Multifamily and Commercial Customers]
- Require mandatory recycling and composting. Need color-coded containers, labels, proper sorting, audits.
  [12. Mandatory Participation Ordinance]

Construction Debris

- Partner with local manufacturers for closed loop wallboard recycling
  [38. Market Development]
- Support mandatory C&D ordinance, requiring more source-separation
  [19. Increase Construction & Demolition Diversion Requirement]
- Require more diversion from SMaRT for C&D
  [16. Improve Materials Processing System, 17. Direct Construction & Demolition to High Diversion Facilities]
- Like the idea of requiring deconstruction
  [19. Increase Construction & Demolition Diversion Requirement]
- Biocellection partnership
  [25. Plastic Solutions]

Q&A After Presentation

1. How do we recover hard-to-recycle plastics? Through gasification? There are plastic processing facilities that can sort 3-7 plastics with optical sorters. Large amounts of some of the marginal plastics can be sold (if sorted). Biocellection is a startup that uses a chemical process to break down polymers into monomers.

2. What is China National Sword?
   About 5 years ago, China warned that they would accept less contaminated materials. We had gotten used to sending mixed plastics and mixed paper to China. This was the Green Fence initiative. China said don't give us your trash. National Sword – China said we don't want any of your stuff (mixed papers and mixed plastics). China developed their own economy and can recycle their own materials so don't need ours so much. Processors in U.S. and EU have had to recalibrate, cleanup streams, or stop accepting some materials.

3. How do we ban clamshells? How long would it take?
   There is an initiative in development; Santa Clara County and San Mateo County are meeting. Some cities have banned. More effective if region-wide or state-wide. Local Task Force may develop something regionally. The City could adopt its own before countywide or regionwide ban. Discussions have started. Funds have been budgeted beginning in July. Working of food rescue and food waste reduction programs. Palo Alto – 1st step – working on things not to hand out (e.g. straws, utensils, condiments). Need Council and community buy-in. 2 years sounds reasonable. Even when do regionwide, not everyone comes on board. We are trying to develop guidelines so all can adopt the same thing.

4. How can we better enforce businesses with plastic bags?
   We need to rely on citizens to let City know that enforcement is needed. City could send letter or escalate. Rely on eyes/ears of residents.
   Go to City website – ask Mountain View button – will go to right button. Some are switching to thicker plastic bags – which are technically reusable. Hard to know if meets definition for thickness. May be seeing businesses technically in compliance.
   We also have statewide bag ban which pre-empts banning thick bags, but could increase the fee on them.

5. We need to see a push in reusable produce bags, or do without them
   There are communities looking at that. One community wants to say any produce bags need to be certified compostable bags, if that community's composting facility can handle them. Many of the produce bags are too small and no flat bottom. The City considering it would require produce bags to be compostable and have square bottom.

6. How do you manage single use plastic ban? What does it entail?
   Any new Ordinance would go through vetting process, and EIR. Would need to be evaluated. For foodware at restaurants, if City were to pursue that, could

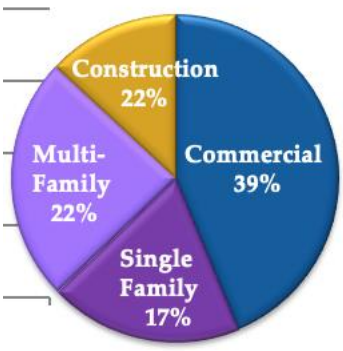
specify requiring compostable cups and/or reusables. City of Berkeley -requiring reusables for sit-down customers, and 25 cents for cups. Bag ban – could require a charge.

7. Businesses are required to compost food. Sure large companies compost food. The restaurants in downtown just see dumpsters in front. Don't see how that's composted. How can they compost food with just one dumpster?
   State of CA requires if 4 cy of trash/week or more, have to have composting service, compost onsite or self-haul. Those businesses may be below that threshold.

8. We should focus on big-scale apartments rather than single families or businesses
   Multifamily and commercial – do need to do more there – lot more to get done. We wanted to do test on single family and capture rate study. Found we're doing pretty good job. Agree big focus needs to be on Multifamily and commercial.

9. Could we adopt a split compost system like Sunnyvale?
   Sunnyvale – food scraps put in split trash container – 2/3 is trash; 1/3 is food only. Food goes to processing facility, dried, squished through system, and used for animal feed. Only downside, other compostable materials (compostable napkins, towels) are not acceptable in that program. Mountain View could look at that. Some people are okay with putting food scraps with yard trimmings. Others may want to have split cart for food only. Look at split cart as a possibility. Now, Mountain View's compostable materials go to composting facility.

10. What is the breakdown of sectors (residential, commercial, etc.) in Mountain View?
    Need to look up (showed slide).



Trash Generation

11. When can residents compost compostable plastics?
    that?
    Compostable plastics are controversial as it's difficult to tell the difference between compostable and non-compostable products. There are facilities that accept them, but not clear if they're actually broken down in the process. City could consider and see if our composting facilities accept compostable plastics. We want to move away from plastics to reusables. Average time spent in composting pile is 10-15 days. Can take up to 30-40 days for compostable plastics. So either slows down the process, or needs to be sorted out in separate.

12. Do you grind up all the compostables?
    They end up as small particles. City could look at processors that can handle compostable plastics.

Attachment B - Assumptions and Calculations

Results from the Mountain View 2018 Materials Characterization Study were used to estimate the diversion potential of each initiative. The study evaluated samples from single family, commercial and construction and demolition loads. The samples were characterized by material type. For the multifamily sector, data from the 2010 Waste Characterization Study was used. The percentages of each material type and the total tons by material were estimated for each generator sector.

To estimate the diversion potential of each initiative in the plan, a “capture rate” by material type was determined. For example, the mandatory participation ordinance for commercial customers was estimated to divert 10% of the clean flattened cardboard from the commercial garbage to commercial recycling. This would result in an additional 99 tons of material diverted from disposal annually. The capture rate estimates were based on results from similar programs or best estimates. It is possible that implementation of this program will result in much higher capture rates. However, conservative assumptions were used for these calculations. The City will be able to refine this analysis once it has fully implemented each program.

The U.S. EPA Waste Assessment Model (WARM) was used to estimate the potential reduction in greenhouse gas emissions anticipated to be achieved through implementation of each initiative. WARM identifies the metric tons of carbon dioxide equivalent (MTCO2e) reduced by material type for each ton diverted from disposal. For example, the 99 tons of flattened cardboard from commercial customers that is diverted from disposal annually through the mandatory participation ordinance is estimated to reduce greenhouse gas emissions by 3.4498 MTCO2e per ton or 342 MTCO2e per year.

A sample calculation for commercial customers is included in this attachment.

Commercial Diversion Potential

GHG Emission	**Mountain View Characterization Study, 2018**		Est. %	Est. Tons	12. Mandatory Participation Ordinance		
Factors MTCO2e	**Front Load Commercial Sorts**			23,284	Capture Rate	Tons Captured	MTC2e Reduced
3.4498	**PAPER**	Uncoated Corrugated Cardboard - Flattened	4.3%	992.68	10%	99.27	342.46
3.4498		Uncoated Corrugated Cardboard - Unflattened	0.1%	17.17	10%	1.72	5.92
1.9084		Kraft Bags/Kraft Paper	0.5%	114.01	10%	11.40	21.76
1.9084		Newspaper	1.1%	266.84	10%	26.68	50.92
1.9084		Office Paper	1.8%	419.91	10%	41.99	80.14
1.9084		Catalogs, Directories and Magazines	0.7%	157.37	10%	15.74	30.03
1.9084		Clean Paper, Other	2.3%	528.32	10%	52.83	100.83
3.4498		Coated Corrugated Cardboard	0.8%	189.93	10%	18.99	65.52
3.4498		Pizzeria Boxes	0.3%	67.99	10%	6.80	23.46
1.9084		Paper Towels/Tissues	5.3%	1,229.73	10%	122.97	234.68
1.9084		Aseptic Packaging	0.1%	27.19	10%	2.72	5.19
1.9084		Gable Top Cartons	0.2%	36.93	10%	3.69	7.05
1.9084		Paper Takeout Containers, Poly-Lined	0.0%	3.66	10%	0.37	0.70
1.9084		Paper Cups, Poly-Lined	0.4%	94.68	10%	9.47	18.07
1.9084		Paper Cups, Eco-cups	0.5%	121.65	10%	12.17	23.22
1.9084		Poly-coated Paperboard Packaging	0.3%	68.68		-	-
1.9084		Compostable Paper	10.4%	2,425.17	10%	242.52	462.82
1.9084		Remainder/Composite Non-Compostable Paper	0.4%	81.53		-	-
1.5781	**PLASTIC**	PETE Bottles (#1)	1.3%	299.12	10%	29.91	47.20
1.5781		PETE Food Containers and Packaging (#1)	0.5%	127.41		-	-
1.5781		PETE Non-Food Packaging (#1)	0.0%	10.62		-	-
1.4313		HDPE Containers (One Gallon Or Less) (#2)	1.1%	245.58	10%	24.56	35.15
1.4313		HDPE Containers (Greater Than One Gallon) (#2)	0.5%	114.29	10%	11.43	16.36
1.5781		Expanded Polystyrene, Food Packaging (#6)	0.0%	7.01		-	-

Commercial Diversion Potential

GHG Emission	**Mountain View Characterization Study, 2018**		Est. %	Est. Tons	12. Mandatory Participation Ordinance		
Factors MTCO2e	**Front Load Commercial Sorts**			23,284	Capture Rate	Tons Captured	MTC2e Reduced
1.5781		Expanded Polystyrene, Other (#6)	0.6%	128.72		-	-
1.5781		Miscellaneous Food Service Containers (#3, #4, #5, #7)	0.8%	178.00		-	-
1.5781		Miscellaneous Containers (#3, #4, #5, #7)	0.8%	197.73		-	-
1.7616		Flexible Pouches	0.3%	70.74		-	-
1.7616		Film, Bags	2.5%	574.95		-	-
1.7616		Film, Non-Bag Commercial And Industrial Packaging	3.1%	727.13		-	-
1.5781		Durable Plastic Items, Bulky Rigid (#2, #5)	0.3%	73.16		-	-
1.5781		Durable Plastic Items, Other	2.6%	599.67		-	-
1.5781		Bags, Compostable	0.0%	1.66	10%	0.17	0.26
1.5781		Compostable Plastics, Other	0.7%	153.70		-	-
1.5781		Remainder/Composite Plastics	1.2%	268.36		-	-
0.3303	**GLASS**	Glass Bottles & Containers, Clear	1.0%	237.55	10%	23.76	7.85
0.3303		Glass Bottles & Containers, Brown	0.4%	98.68	10%	9.87	3.26
0.3303		Glass Bottles & Containers, Green	0.2%	50.00	10%	5.00	1.65
0.3303		Glass Bottles & Containers, Red or Blue	0.0%	-	10%	-	-
0.3303		Non-Composite Glass, Other	0.0%	-		-	-
0.3303		Remainder/Composite Glass	0.0%	4.15		-	-
13.7258	**METAL**	Aluminum Cans	0.4%	82.31	10%	8.23	112.98
5.2848		Non-Ferrous Metal, Other	0.7%	166.66		-	-
1.835		Tin/Steel Cans	0.6%	128.54	10%	12.85	23.59
1.835		Appliances, Small	0.2%	38.77		-	-
1.835		Ferrous Metal, Other	6.1%	1,416.05		-	-
5.2848		Remainder/Composite Metal	0.0%	1.38		-	-
-0.1468	**ORGANICS**	Leaves And Grass	3.0%	686.96	10%	68.70	(10.08)
-0.1468		Woody Prunings And Trimmings	0.3%	68.40	10%	6.84	(1.00)

Commercial Diversion Potential

GHG Emission	**Mountain View Characterization Study, 2018**		Est. %	Est. Tons	12. Mandatory Participation Ordinance		
Factors MTCO2e	**Front Load Commercial Sorts**			23,284	Capture Rate	Tons Captured	MTC2e Reduced
-0.1468		Branches, Logs and Stumps	0.0%	-	10%	-	-
0.8808		Food Scraps, Edible	15.6%	3,636.82	10%	363.68	320.33
0.8808		Food Scraps, Inedible	8.9%	2,081.81	10%	208.18	183.37
0.8808		Recoverable Food	2.6%	595.37	10%	59.54	52.44
0.8808		Diapers	2.3%	527.35		-	-
0.8808		Sanitary Products	0.2%	48.46		-	-
0.8808		Dog and Cat Feces and Litter	0.1%	20.83		-	-
0.8808		Compostable Organics, Other	0.2%	38.22	10%	3.82	3.37
0.8808		Remainder/Composite Non-Compostable Organic	0.1%	14.50		-	-
1.9451	**C&D**	Dimensional Lumber, Untreated	1.8%	409.63		-	-
1.9451		Dimensional Lumber, Treated	0.0%	-		-	-
1.9451		Engineered Wood, Untreated	3.2%	741.08		-	-
1.9451		Engineered Wood, Treated	0.4%	91.67		-	-
1.9451		Pallets And Crates	2.4%	553.87		-	-
0.0367		Asphalt Composition Shingles	0.0%	-		-	-
0.0367		Roofing Materials, Other	0.0%	-		-	-
0.0367		Inerts/Concrete, Rock, Soil and Fines	1.3%	302.69		-	-
0.0367		Gypsum, Unpainted	0.0%	-		-	-
0.0367		Gypsum, Painted	0.0%	2.77		-	-
0.3303		C&D Glass	0.3%	60.93		-	-
0.3303		Fiberglass Insulation	0.0%	-		-	-
7.2666		Carpeting, Non-compostable	0.1%	26.31		-	-
0.0367		Remainder/Composite C&D	0.0%	-		-	-
	HAZARDOUS	Paint, Latex	0.0%	-		-	-
		Paint, Oil	0.0%	5.26		-	-

Commercial Diversion Potential

GHG Emission	**Mountain View Characterization Study, 2018**		Est. %	Est. Tons	12. Mandatory Participation Ordinance		
Factors MTCO2e	**Front Load Commercial Sorts**			23,284	Capture Rate	Tons Captured	MTC2e Reduced
		Non-Empty Aerosol Cans (Propane, Butane, Pesticides)	0.2%	36.03		-	-
		Pesticides, Other	0.0%	-		-	-
		Fluorescent Lamps, Mercury	0.0%	-		-	-
		Cleaning Products	0.0%	-		-	-
		Medical Waste, Untreated	0.3%	67.81		-	-
		Medical Waste, Untreated, Sharps	0.0%	1.11		-	-
		Medical Waste, Treated	0.0%	-		-	-
1.7616		Blue Wrap	0.0%	-		-	-
		Pharmaceuticals	0.0%	-		-	-
1.7616		Cold Packs	0.0%	-		-	-
		Vehicle And Equipment Fluids	0.0%	-		-	-
		Oil & Fuel Filters	0.0%	-		-	-
		Batteries, Lead-Acid	0.0%	-		-	-
		Batteries, Other	0.0%	0.44		-	-
2.3121		Computer-Related Electronics, Small	0.0%	5.54		-	-
2.3121		Computer-Related Electronics, Large	0.0%	-		-	-
2.3121		Televisions and Monitors	0.0%	-		-	-
2.3121		Consumer Electronics, Other	0.0%	8.31		-	-
		Remainder/Composite Hazardous	0.0%	-		-	-
7.2666	**OTHER**	Textiles and Leather	1.4%	336.98		-	-
1.9451		Furniture	0.1%	26.03		-	-
7.2666		Mattresses and Box Springs	0.0%	-		-	-
1.8717		Tires, All Kinds	0.0%	-		-	-
1.5781		Rubber, Other	0.1%	20.83		-	-
1.9451		Reusables, Other	0.0%	-	10%	-	-

Commercial Diversion Potential

GHG Emission	**Mountain View Characterization Study, 2018**		Est. %	Est. Tons	12. Mandatory Participation Ordinance		
Factors MTCO2e	**Front Load Commercial Sorts**			23,284	Capture Rate	Tons Captured	MTC2e Reduced
		Residuals	0.1%	22.41		-	-
	Grand Total		100%	23,284	6%	1,505.86	2,269.46