
Zero Waste Strategic Plan

Pasadena's Path
Toward Zero Waste

October 2014



CITY OF PASADENA
DEPARTMENT OF PUBLIC WORKS

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EXECUTIVE SUMMARY

What is Zero Waste?

Zero Waste is a philosophy and design framework that promotes not only reuse, recycling, and conservation programs, but also, and more importantly, emphasizes sustainability by considering the entire life-cycle of products, processes, and systems. In this Zero Waste Strategic Plan (Zero Waste Plan), we will use the term “Zero Waste” to mean both reducing waste at the source and maximizing diversion from landfills, with the overall goal of striving for Zero Waste.

Zero Waste is not necessarily 100 percent recycling but it shifts the focus to waste reduction, product redesign and elimination of wasteful practices. It is a framework for reducing generation of waste and maximizing diversion, not a strict tonnage goal. By implementing the proposed policies and programs, Pasadena will be moving towards Zero Waste, even though there will still be some residual waste that will be disposed.

Pasadena has already met and exceeded the State of California’s ambitious 50 percent diversion goal and achieved 73 percent diversion in 2010. This Zero Waste Plan is anticipated to accomplish a minimum of 87 percent diversion, which sets Pasadena well on the path to Zero Waste. Pasadena is now poised to move beyond “waste management” to envisioning a world without waste.



Celebrating the 2013 Green City Awards

Why this plan?

The City of Pasadena (City) began its journey on the road to Zero Waste in 2005 with the adoption of the United Nations Urban Environmental Accords, which include a goal of Zero Waste by 2040.

In fall 2011, the City began a planning process to identify the policies, programs, and facilities that will be needed to move as close to Zero Waste as possible by 2040. The Zero Waste Plan is the beginning of a long-term systematic effort to:

- Reduce the total amount of disposed materials originating within Pasadena
- Reduce the quantity of disposed materials generated per person within Pasadena
- Increase the quantity of recyclable and compostable materials as these items are diverted from landfills
- Support State and federal efforts to build the environmental and social costs into the price of products and packaging and require manufacturers to take back products at the end of their useful life.

In developing Pasadena’s Zero Waste Plan, consideration was given to existing programs and the feasibility of undertaking additional initiatives. Community involvement was integral throughout the planning process.

Who participated in the development of this plan?

The plan was prepared by the City of Pasadena Department of Public Works with input from businesses, schools and community members, all included as stakeholders in the planning process. These stakeholders participated in the Zero Waste workshops that were held on February 2, May 24 and August 22, 2012.

Details on the public participation process are included in

Appendix E.

What does the plan do?

This plan describes the policies, programs and infrastructure that could be developed to achieve the City’s goal of Zero Waste.

To understand the effectiveness of the Zero Waste policies and programs identified through the Zero Waste planning process, the City refined and estimated the diversion potential of 19 Zero Waste initiatives which address each of the generator sectors in Pasadena:

- **Single-family residential** – single-family homes and multiplex residences up to four units
- **Commercial and multifamily** – businesses and institutions with cart service or bin service and multifamily complexes with five units or more
- **Other** – Pasadena residents or businesses (including landscapers and construction companies) hauling materials to a landfill or transfer station in their own vehicles

Table ES-1 lists the initiatives developed during the planning process.

**Table ES-1
Recommended Initiatives**

Recommended Zero Waste Programs Initiatives

1. Adopt Zero Waste Plan/resolution
2. Implement product & disposal bans (e.g., polystyrene food packaging)
3. Enhance educational outreach
4. Promote junk mail blocking & catalog & phone book opt-out
5. Expand product stewardship efforts & extended producer responsibility (EPR) policies
6. Enhance enforcement of anti-scavenging ordinance
7. Foster development of local & regional infrastructure for processing food scraps & other organics & compostables
8. Provide business technical assistance
9. Expand school programs
10. Implement diversion programs for food scraps & other organics & compostables
11. Review Pay-As-You-Throw (PAYT) fee structure
12. Expand commercial & multifamily recycling
13. Optimize construction & demolition (C&D) waste diversion
14. Optimize waste diversion at City facilities
15. Implement diversion of food scraps & other organic & compostable materials at stadiums & other large events
16. Develop Zero Waste business partnership program
17. Expand recycling in public areas
18. Optimize self-haul reporting & waste diversion
19. Foster development of local & regional infrastructure for processing residual mixed waste (i.e., no market materials)



Recycling Tree created by Pasadena Unified School District students

How much waste do we generate?

One destination for Pasadena’s waste is disposal in a landfill. Waste can also be redirected or “diverted” from the landfill through activities such as recycling, beneficial reuse and composting.

“Generation” is the sum of tons disposed plus tons diverted and it is used to determine the diversion rate. “Diversion Rate” is the percent of waste diverted from the landfill.

Generation = Disposal + Diversion

Diversion Rate = (Generation – Disposal)/Generation x 100%

For 2010, the State estimated that Pasadena generated as a whole 584,840 tons of waste. Of this total, 152,881 tons were disposed in a landfill and 431,959 tons were diverted, yielding a diversion rate of just over 73 percent for Pasadena.

A portion of Pasadena’s diverted material consisting of green waste, such as tree trimmings, grass clippings and other landscaping materials, is used as alternative daily cover (ADC) at Scholl Canyon landfill. However, based on legislative trends,

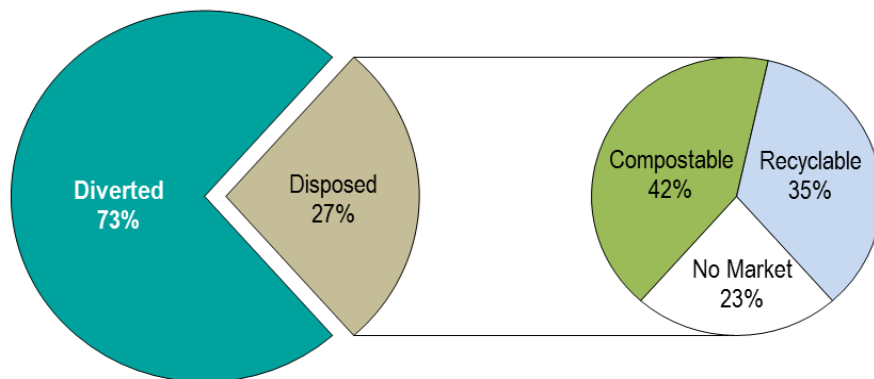
diversion credit for ADC is likely to be discontinued. The City’s diversion rate would be reduced by approximately 3 percent (or daily per capita disposal would be increased by 0.65 pounds per person per day) if this material is not diverted by other means such as composting. It is therefore in Pasadena’s best interest to develop alternatives for diverting food scraps and other organic and compostable materials.

What do we throw away?

To plan for Zero Waste, we first need to understand what we throw away. **Exhibit ES-1** shows the composition of Pasadena’s disposed materials based on the results of the 2008 Statewide Waste Characterization Study conducted by CalRecycle. Currently, 77 percent of what is disposed could be recycled or composted and the remaining 23 percent are “no market” materials that cannot be recycled or composted.

Recyclable materials include: paper, plastic, metals, glass, and construction and demolition materials. Compostable materials include: food scraps, yard trimmings, and compostable paper. No market materials (those that cannot be recycled) include: treated wood, composite materials (things stuck to other things) and diapers.

**Exhibit ES-1
Waste Management Trends and Material Recovery Potential**



Total Material Generated (Diverted and Disposed)

Composition of Materials Disposed in the Landfills

Source: CalRecycle 2008 Statewide Waste Characterization Study

What diversion rate will we achieve with this plan?

Diversion estimates were prepared to identify the waste disposal reduction potential of each recommended policy and program. The diversion projections are based on comparable policies and programs implemented in other jurisdictions, research, and educated estimates. **Table ES-2** summarizes the diversion potential by sector for the proposed Zero Waste policies and initiatives. Based on this analysis, it is estimated that Pasadena can achieve over 87 percent diversion, a very high rate of diversion, by implementing the Zero Waste Plan.

**Table ES-2
Existing Generation and Potential Diversion**

Zero Waste Plan Projected Diversion by Sector	
Sector	Projected Diversion (%)
Single-family Residential	3.4%
Multifamily Residential	0.4%
Commercial	6.6%
Other	3.7%
City's 2010 estimated diversion	73 %
Total Projected Diversion with Zero Waste Initiatives	87.1%

When will these programs be implemented?

In developing the program implementation schedule, the City grouped initiatives into short-term, medium-term and long-term categories. Factors considered in categorizing the initiatives were available resources and technology, performance of current programs and existing infrastructure. Short-term was defined as being from the present to 2017, medium-term as 2017 to 2020, and long-term as 2020 to 2040. The Zero Waste Strategic Plan implementation schedule is shown in **Table ES-3**.

How will these programs be funded?

Many of the policies and programs recommended in this plan can be implemented by the City without increasing resources.

**Table ES-3
Zero Waste Strategic Plan Implementation Schedule**

Term	Initiative
Short-term 2014 – 2017	1. Adopt Zero Waste Plan/resolution
	2. Implement product & disposal bans (e.g., polystyrene food packaging)
	3. Enhance educational outreach
	4. Promote junk mail blocking, catalog & phone book opt-out
	5. Expand product stewardship efforts & EPR policies
	6. Enhance enforcement of anti-scavenging ordinance
	7. Foster infrastructure development for processing food scraps & other organics & compostables
	8. Provide business technical assistance
	9. Expand school programs
Short to Medium-term 2014 – 2020	10. Implement diversion programs for food scraps & other organics & compostables
	11. Review Pay-As-You-Throw fee structure
	12. Expand commercial & multifamily recycling
	13. Optimize C&D waste diversion
Medium-term 2017 – 2020	14. Optimize waste diversion at City facilities
	15. Implement composting programs at stadiums & other large events
	16. Develop Zero Waste business partnership program
	17. Expand recycling in public areas
	18. Self-haul reporting & waste diversion
Long-term 2020 – 2040	19. Foster infrastructure development for processing residual mixed waste (i.e., no market materials)

However, additional resources may be needed to fully implement initiatives such as compostable materials collection and processing. The majority of the planned initiatives will be funded through Public Works' approved annual budget. Any unbudgetted costs will be presented to City Council for approval.

How does Pasadena compare with other California cities?

Many cities across the country are adopting Zero Waste Plans to optimize resources and meet ever higher waste diversion goals. In considering Pasadena's Zero Waste Plan, it is helpful to look at other California cities to gain perspective. Plans vary depending on the initiatives selected, infrastructure available, waste

processing opportunities and levels of service provided. Highlights of Zero Waste Plans are shown for the Cities of Alameda, Los Angeles, Pasadena and Santa Monica in **Table ES-4**. Based on this comparison, Pasadena's Zero Waste Plan initiatives are very similar to those of other cities.

Table ES-4
Comparison to Other California Cities

City	Baseline Diversion Rate	Zero Waste Diversion Goal	Key Initiatives of Zero Waste Plan	
Alameda	67%	89%	<ul style="list-style-type: none"> Process mixed waste prior to landfilling (i.e., dirty MRFing) Add materials to recycling & green carts, both residential & commercial Provide commercial technical assistance Advocate for producer responsibility 	<ul style="list-style-type: none"> Increase take back programs with local retailers Increase C&D Ordinance requirements Develop social marketing campaign targeting all generator sectors
Los Angeles	76%	90%	<ul style="list-style-type: none"> Implement Pay-As-You-Throw Implement bulky item reuse Process compostables Develop social marketing campaign targeting all generator sectors Provide recycling in public areas Increase C&D Ordinance requirements 	<ul style="list-style-type: none"> Develop recycling markets Implement environmental purchasing policy Implement LAUSD Zero Waste Curriculum Advocate for producer responsibility Implement multifamily recycling rollout
Pasadena	73%	87%	<ul style="list-style-type: none"> Collect & process residential & commercial food scraps, organics & other compostable materials Implement product & disposal bans (e.g., polystyrene food packaging) Advocate for producer responsibility Enhance waste reduction programs 	<ul style="list-style-type: none"> Increase C&D Ordinance requirements Enhance education & outreach Provide recycling in public areas Provide commercial technical assistance Expand mandatory commercial recycling
Santa Monica	77%	95%	<ul style="list-style-type: none"> Collect residential & commercial food scraps Foster behavior change Switch to bi-weekly refuse collection 	<ul style="list-style-type: none"> Start wet/dry collection Process residual wastes Expand mandatory commercial recycling

Pasadena's Path toward Zero Waste

Pasadena began the transition from a consuming to a conserving society when the Integrated Waste Management Act (Assembly Bill 939) passed in 1989. From the initial blue box curbside recycling pilot through implementation of a fully automated Pay-As-You-Throw variable rate system, Pasadena's diversion rate has increased from 37 percent in 1995 to 73 percent in 2010. Partnering with the City are the franchise haulers who divert 60 percent of mixed waste and 75 percent of Construction and Demolition Materials from the landfill. Although Pasadena diverted 73 percent of materials from landfills in fiscal year 2010, further diversion is possible. Based on a waste characterization study conducted by CalRecycle in 2008, nearly 77 percent of Pasadena's disposed materials are reusable, recyclable or compostable. To move beyond the current level of diversion toward the goal of Zero Waste, a plan and implementation schedule is needed. This is no small task. The City and its partners will need to increase diversion through existing programs and develop new, more aggressive programs.

The City conducted workshops and solicited input from stakeholders throughout Pasadena and among different generator sectors to elicit feedback on the interests and preferences of the community to implement Zero Waste programs and policies. Based on this feedback, the City has developed a 26-year program which is expected to increase Pasadena's diversion rate to a minimum of 87 percent by 2040.

The Zero Waste Plan is a working document. It represents what the Department of Public Works believes to be the best initiatives at this point in time to achieve maximum diversion. In developing this plan, careful consideration was given to the potential effectiveness, feasibility and level of community support for each initiative proposed. In order for this to be the best possible plan for Pasadena to approach Zero Waste, it will be necessary to review and update this plan as new technologies, opportunities, and challenges arise. City staff will review and update the plan every three years.



View of the Colorado Street Bridge

ZERO WASTE STRATEGIC PLAN

Introduction

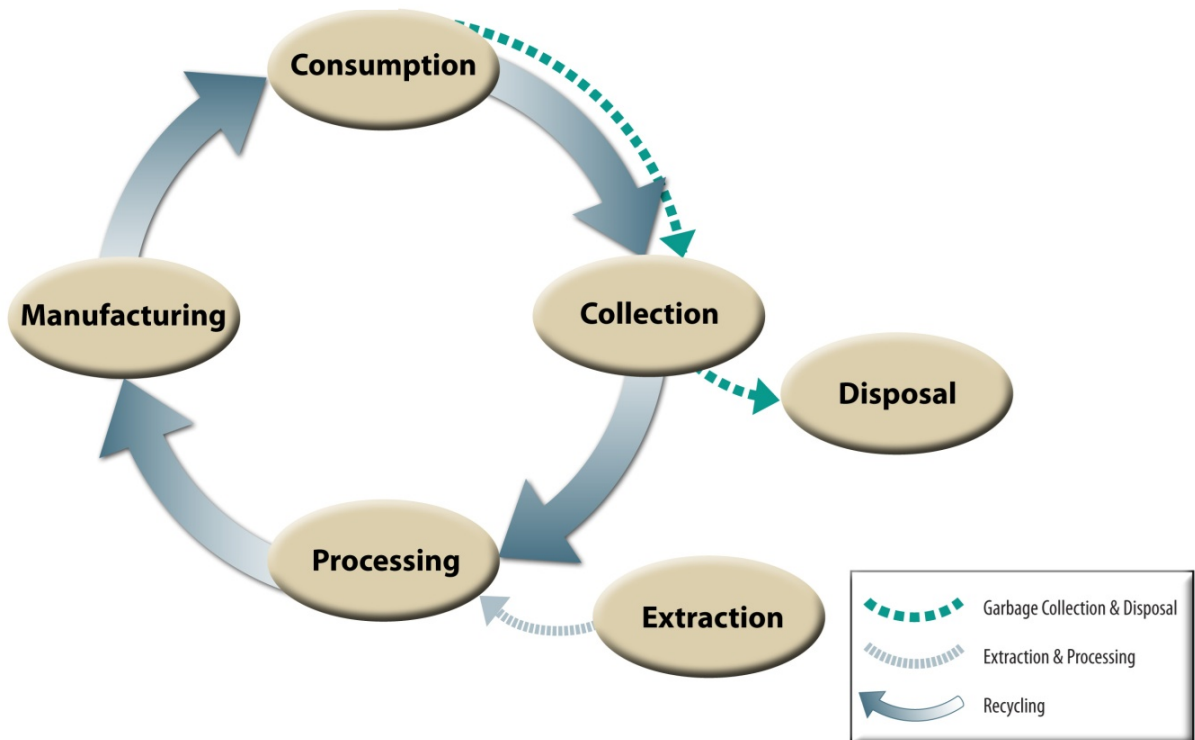
Pasadena is part of a worldwide movement which began in the mid-1990s as communities recognized that “waste” was not inevitable. The City is a Green City leader and has made an effort to reduce its carbon footprint and help conserve natural resources by implementing programs and policies, offering educational outreach, and committing to environmental initiatives such as the United Nations Urban Environmental Accords. The Zero Waste Strategic Plan (Zero Waste Plan) is intended to supplement these efforts by further minimizing disposal and increasing diversion as much as possible.

As defined by the Grassroots Recycling Network¹, Zero Waste is a design principle that goes beyond recycling and focuses first on reducing waste, reusing and recycling products, and then composting the rest. Zero Waste promotes not only reuse,

recycling, and conservation programs, but also, and more importantly, emphasizes sustainability by considering the entire life-cycle of products, processes, and systems. As illustrated in **Exhibit 1**, Zero Waste systems strive to eliminate waste by reducing consumption and getting products and packaging redesigned for reuse and repair, and then recycled back into the marketplace or composted back into soil.

The Zero Waste International Alliance has developed a peer-reviewed, internationally accepted definition of Zero Waste²: Zero Waste is a goal that is both pragmatic and visionary, to guide people to emulate sustainable natural cycles, where all discarded materials are resources for others to use. Zero Waste means designing and managing products and processes to reduce the volume and toxicity of waste and materials, conserve and recover all resources, and not burn or bury them. Implementing Zero Waste will eliminate all discharges to land, water, or air that may be a threat to planetary, human, animal or plant health.

Exhibit 1
The Zero Waste Loop



In this plan, we will use the term “Zero Waste” to mean both reducing waste at the source and maximizing diversion from landfills, with the overall goal of striving for Zero Waste.

The Zero Waste Plan is the culmination of a planning process that began in 2005, when the City became a signatory to the United Nations Urban Environmental Accords and continued with the development and adoption of the Green City Action Plan in 2006. As part of its Green City Action Plan, the City has established the following solid waste targets:

- Increase waste diversion to 75 percent by 2015
- Move as close to Zero Waste as possible by 2040

The Zero Waste Plan is designed to help Pasadena reduce waste, increase diversion, and build a greener and more sustainable local economy. The plan will serve as a broad environmental and policy framework and will guide the future development of the City’s Zero Waste policies, programs, and infrastructure. The Zero Waste Plan is anticipated to accomplish a minimum of 87 percent diversion, which sets Pasadena well on the path toward Zero Waste. Pasadena has already met and exceeded the State of California’s ambitious 50 percent recycling goal and achieved 73 percent diversion in 2010 based on calculations provided by the California Department of Resources Recycling and Recovery (CalRecycle), which is in step with the statewide goal of achieving 75 percent waste diversion by 2020 as set in Assembly Bill 341.

Zero Waste Planning Process

The Zero Waste Planning process included the following tasks:

- Evaluating Pasadena’s needs
- Conducting a waste characterization study of the types and quantities of disposed materials generated in Pasadena
- Developing guiding principles for the plan
- Incorporating stakeholder participation in the decision-making process
- Identifying policy, program, and infrastructure initiatives to address Pasadena’s needs

- Evaluating and selecting initiatives to meet the City’s Zero Waste goals and objectives
- Developing and adopting a Zero Waste Plan

The year 2010 is used as the baseline year for the Zero Waste Plan. Most of the data developed for the plan uses information from fiscal year 2010 (July 1, 2009 to June 30, 2010).

Guiding Principles

The City of Pasadena’s Zero Waste Plan is based on six guiding principles that provide a framework for the policies, programs and actions identified for implementation in the plan. These Zero Waste Guiding Principles are consistent with the goals of the City’s Green City Action Plan and the City’s Environmental Charter:

1. Develop sustainable policies and programs that are equitable, environmentally responsible, and economically sound
2. Maintain Pasadena’s position as a leader in innovation and a role model in resource management
3. Pursue “upstream” strategies that prevent and reduce waste and encourage the transition from a consuming to a conserving society
4. Improve “downstream” reuse and recycling programs to ensure the highest and best use of end-of-life products and materials
5. Lead by example at all City operations and City-sponsored events and activities
6. Increase the diversion of compostable materials and promote development of local infrastructure

City Demographics

To develop the Zero Waste Plan, it is important to understand the demographic makeup of Pasadena. Information on population, age distribution, housing, and employment are important for identifying the types of policies and programs that best meet the needs of Pasadena, its residents, institutions, and businesses.

Pasadena stretches across 23 square miles and is one of the ten largest cities in Los Angeles County. In 2010, the population of Pasadena was 137,122. **Exhibit 2** shows the historical growth in

population. From 2000 to 2010, Pasadena experienced a population increase of 2.4 percent³.

Exhibit 3 provides a graph of the age distribution of Pasadenans in 2010; the median age was 37 years old. In 2010, there were 59,551 housing units within Pasadena; 49 percent were multifamily units. Currently, there are approximately 15,000 businesses in Pasadena. Restaurants, medical/health facilities, and other professional businesses are some of the largest employers. The age distribution, housing and business data offers information the

City can use to help tailor outreach to targeted groups of people.

Materials Management

For 2010, the State estimated that Pasadena generated as a whole 584,840 tons of waste. Of this total 152,881 tons were disposed in a landfill and 431,959 tons were diverted, yielding a diversion rate of 73 percent for Pasadena.

The City tracks waste data for City-controlled programs, which include all curbside services as well as the franchise hauler

Exhibit 2
Population Growth 1910-2010

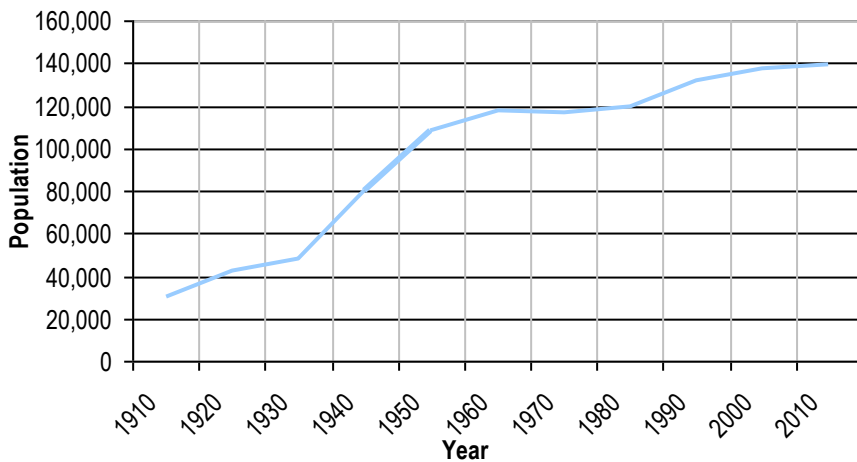
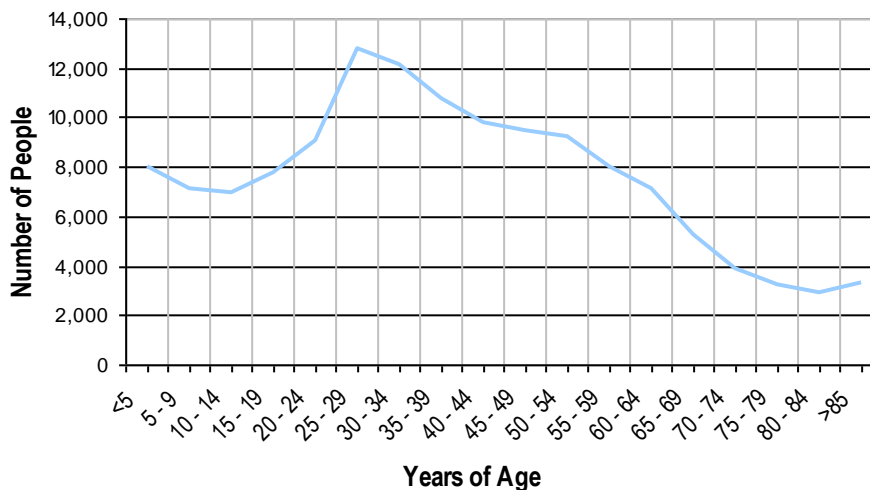


Exhibit 3
Age Distribution of Population in 2010

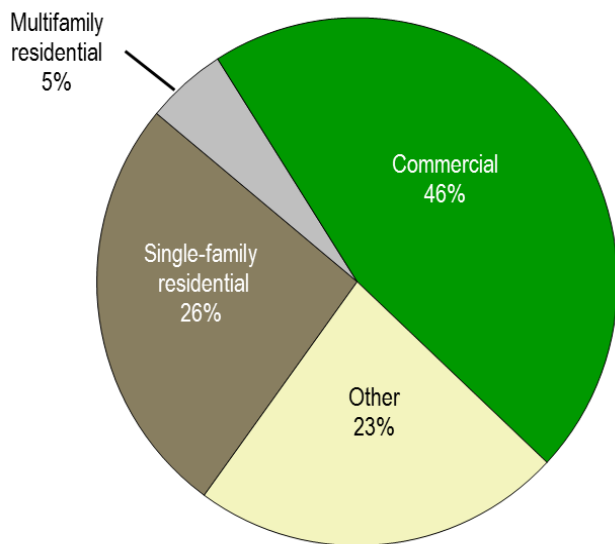


system. In fiscal year 2010, City controlled waste accounted for over 255,000 tons of materials that were either diverted or landfilled. Nearly 153,000 tons were disposed of in landfills, more than 8,000 were treated at waste-to-energy facilities, and over 94,000 tons were diverted from disposal through waste prevention, recycling, and composting.

Approximately 60,000 tons of materials were disposed by “self-haulers,” including residents and businesses who haul their materials directly to landfills or transfer stations. The amount of materials disposed by self-haulers makes up almost 25 percent of the materials that are attributed to Pasadena, which is greater than expected for an urban city. This may be due to self-haulers from adjacent unincorporated areas incorrectly reporting their loads as being from “Pasadena” and inaccurate record keeping by scale house employees⁴. **Exhibit 4** shows the percentage of materials generated by Pasadena’s single-family residential, commercial and multifamily, and other/self-haulers sectors.

Single-family homes and multiplex residences up to four units comprise 60 percent of all households (30,310 housing units) in Pasadena and multifamily complexes with five units or more comprise 40 percent of all households (23,863 housing units)⁵. However, the multifamily residential sector generates only five percent of the total amount of discarded materials in Pasadena. Although this is consistent with both statewide and national data, this chart likely underestimates the multifamily waste generation in Pasadena. The franchise haulers report waste collected from multifamily/retail mixed use properties as commercial tonnage. This tonnage, however, includes waste from approximately 4,000 multifamily units, which represents 16.8 percent of the multifamily units. Also, this chart likely overestimates the waste generated in the Other sector due to inaccurate reporting of waste originating from Pasadena at the Scholl Canyon Landfill. The disproportionately large Other sector throws all the relative percentages off somewhat.

Exhibit 4
Materials Generated in Pasadena by sector in Fiscal Year 2010



Single-family residential – single-family homes and multiplex residences up to four units

Multifamily residential – multifamily complexes with five units or more

Commercial – businesses and institutions with cart service or bin service. Includes multifamily/retail mixed use properties.

Other – residents or businesses (including landscapers and construction companies) from Pasadena that bring materials to a landfill or transfer station in their own vehicles

Table 1 provides a summary of the data including tons disposed, diverted (recycled, composted, etc.), and transformed (processed at a waste-to-energy facility). In order to calculate the total materials managed through programs operated by the City in fiscal year 2010, the project team obtained hauler tonnage data for residential and commercial mixed waste, recyclables, and yard trimmings. The City documents municipally collected tonnage by day and by route type (recycling, yard trimmings, residential mixed waste, and commercial mixed waste). The City collects tonnage data from the non-exclusive haulers and enters this data into a database by sector and material type. The data was then segregated by the residential, multifamily, and commercial sectors for fiscal year 2010. The segregation of the municipal data was determined by descriptions provided by the City. The self-haul tonnage was estimated by gathering disposal data from

CalRecycle's Disposal Reporting System and the landfill tonnage reports from the Counties of Los Angeles, Orange and Riverside, and subtracting the municipal and non-exclusive hauler tonnage provided by the City.

Table 2 and Table 3 summarize, respectively, the disposal and diversion tonnages of the materials collected by the City and by the non-exclusive haulers (including commercial and multifamily residential service provided by the City). These tables do not include diversion activities conducted by residents and businesses that fall outside of the collections performed by the City and the franchised haulers. These diversion activities include source reduction, backyard composting, and other waste prevention or recycling activities that contribute to the City's overall 2010 estimated diversion rate of 73 percent.

Table 1
Tons of Materials Generated in Pasadena (Fiscal Year 2010)

Sector	Disposal	Diversion	Transformation	Total ¹
Residential – Single-family ²	28,273	37,163	239	65,675
Residential – Multifamily ²	5,595	6,372	967	12,934
Commercial ²	59,069	50,410	6,985	116,464
Other ³	59,945	-	-	59,945
TOTAL GENERATED WASTE	152,882	93,945	8,191	255,018

Note: Totals may not add up due to rounding.

¹Table 1 does not include diversion activities conducted by residents and businesses that fall outside of the collections performed by the City and the franchised haulers. These diversion activities include source reduction, backyard composting, and other waste prevention or recycling activities that contribute to Pasadena's overall 2010 estimated diversion rate of 73 percent.

Sources:

²City of Pasadena Collection Reports and Non-exclusive Franchised Hauler Reports, Fiscal Year 2010

³CalRecycle Disposal Reporting System, 2010-2011

Table 2
Materials Collected by the City (Fiscal Year 2010)

Material	Total Disposal (Tons)	Total Diversion (Tons)	Total (Tons)
RESIDENTIAL TOTAL	27,138	28,088	55,226
Recyclables	0	8,348	8,348
Mixed Waste	25,747	0	25,747
<i>Recyclable</i>	9,011	0	
<i>Compostable</i>	10,814	0	
<i>No Market</i>	5,922	0	
Appliances	6	0	6
Abandoned Items	110	0	110
Bulky Items	1,275	0	1,275
Yard Trimmings	0	19,687	19,687
Christmas Trees	0	53	53
COMMERCIAL TOTAL	11,112	1,154	12,266
Mixed Waste	11,112	0	11,112
Street Sweeping	0	1,154	1,154
TOTAL	38,250	29,242	67,492

Source: City of Pasadena Collection Reports, Fiscal Year 2010.

Quantities in italics represent components of total mixed waste composition

No Market materials are those that cannot be recycled, such as treated wood, composite materials and diapers.

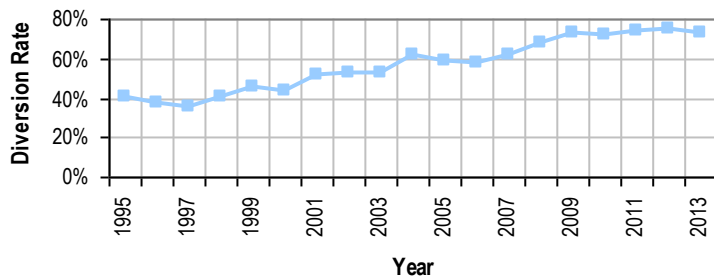
Table 3
Materials Collected by Non-Exclusive Haulers (Fiscal Year 2010)

Sector	Total Disposal (Tons)	Total Diversion (Tons)	Total (Tons)
RESIDENTIAL – SINGLE-FAMILY TOTAL	1,134	9,314	10,448
RESIDENTIAL – MULTIFAMILY TOTAL	5,595	7,338	12,934
COMMERCIAL TOTAL	47,957	56,241	104,199
Mixed Waste	32,694	25,151	57,845
3rd Party Diversion	0	17,625	17,625
Industrial	8,197	4,771	12,968
Construction & Demolition	1,216	8,692	9,908
Exemptions	5,850	0	5,850
Large Venue	0	2	2
TOTAL	54,686	72,893	127,581

Source: City of Pasadena Non-Exclusive Hauler Reports, Fiscal Year 2010.

Note that some single-family materials are collected by franchised haulers from construction & demolition projects.

Exhibit 5
Pasadena 1995 – 2010 Diversion Rate



Pasadena’s diversion rate for fiscal year 2010 was 73 percent⁶.

Exhibit 5 shows the City’s historic diversion rates from 1995-2010, based on the data available from CalRecycle. The slight decline in the diversion rate from 2009 to 2010 may be indicative of the economic challenges experienced throughout the State.

Pasadena’s per capita disposal rate, which is used as another indicator to determine a jurisdiction’s diversion accomplishments, was 5.8 pounds per person per day (PPD) in 2010. Compared to Pasadena’s per capita disposal target of 10.9 PPD, the City easily surpassed the targeted disposal rate. The targeted per capita disposal rate is based on a 50 percent diversion rate requirement that was calculated from waste generation and population data for 2003-2006.

Disposal Characterization

It is important to identify the types of materials disposed in order to identify new diversion opportunities. For this plan, the waste composition percentages contained in the California 2008 Statewide Waste Characterization Study were used to identify the types and quantities of disposed materials⁷. The specific data used for Pasadena was taken from the “Overall Disposed Waste Composition: Southern Region.”

The overall waste characterization for Pasadena is indicated in **Table 4**. Recyclable materials are highlighted in blue, compostable materials are highlighted in green, and materials that cannot currently be recycled or composted are in white/no color cells.

Exhibit 6 shows the composition of Pasadena’s disposed materials and the following key findings regarding disposal trends and recovery potential can be made:

- Approximately 77 percent of disposed materials could be diverted from the landfill
 - Approximately 42 percent of this material is compostable, including food scraps, compostable paper, leaves, grass, wood chips and branches, stumps and trimmings
 - Approximately 35 percent of this material is recyclable, including recyclable paper, plastic, glass, metals, and inert materials such as concrete and asphalt
- The remaining 23 percent of disposed materials are “No Market Materials” for which there is no existing market and which cannot be recycled or composted. The three largest categories of these materials by weight are: painted wood or wood treated with chemicals, diapers, and composite bulky items, such as furniture or equipment

The waste characterization study also profiled Pasadena’s disposed materials based on four generator types. Waste characterization data for specific generator types is included in **Appendix A**. The following generator types were characterized:

- **Single-family residential** – single-family homes and multiplex residences up to four units (30,310 housing units)
- **Multifamily residential** – multifamily complexes with five units or more (23,863 housing units)
- **Commercial** – businesses and institutions with cart service or bin service (includes 4,000 multifamily units in residential/retail mixed use properties)
- **Other** – residents or businesses (including landscapers and construction companies) from Pasadena that bring materials to a landfill or transfer station in their own vehicles⁸

Exhibit 7 and **Exhibit 8** detail the materials disposed for each sector and recovery potential, by tons and percentages, respectively. The percentages displayed in **Exhibit 8** indicate that 81-83 percent of the single-family and multifamily disposed materials are recyclable or compostable, 80 percent of the commercial disposed materials are recyclable or compostable, and 72 percent of the self-haul disposed materials are recyclable or compostable. Based on this understanding, the City can develop targeted programs for each generator sector.



A Pasadena neighborhood



Paper sort line at a Material Recovery Facility

Table 4
Overall Disposal Composition

CATEGORY	TYPE	TONS	PERCENT
Paper		21,300	14%
	Uncoated Corrugated Cardboard	6,207	4%
	Paper Bags	460	0%
	Newspaper	1,596	1%
	White Ledger Paper	901	1%
	Other Office Paper	1,403	1%
	Magazines and Catalogs	802	1%
	Phone Books and Directories	57	0%
	Other Miscellaneous Paper	3,479	2%
	Remainder/Composite Paper	6,395	4%
Glass		1,699	1%
	Clear Glass Bottles and Containers	566	0%
	Green Glass Bottles and Containers	225	0%
	Brown Glass Bottles and Containers	313	0%
	Other Glass Colored Bottles and Containers	108	0%
	Flat Glass	149	0%
	Remainder/Composite Glass	338	0%
Metals		6,410	4%
	Tin/Steel Cans	696	0%
	Major Appliances	76	0%
	Used Oil Filters	17	0%
	Other Ferrous	2,814	2%
	Aluminum Cans	138	0%
	Other Non-Ferrous	326	0%
	Remainder/Composite Metal	2,344	2%
Electronics		361	0%
	Brown Goods	99	0%
	Computer-related Electronics	219	0%
	Other Small Consumer Electronics	42	0%
	Video Display Devices	-	0%
Plastics		12,793	8%
	PETE Containers	612	0%
	HDPE Containers	445	0%
	Miscellaneous Plastic Containers	493	0%
	Plastic Trash Bags	1,192	1%
	Plastic Grocery and Other Merchandise Bags	385	0%
	Non-Bag commercial and Industrial Packaging Film	652	0%
	Film Products	865	1%
	Other Film	1,506	1%
	Durable Plastic Items	3,260	2%
	Remainder/Composite Plastic	3,384	2%
Other		40,513	26%
	Food	17,372	11%
	Leaves and Grass	4,257	3%
	Prunings and Trimmings	4,686	3%
	Branches and Stumps	1,561	1%
	Manures	21	0%
	Textiles	2,234	1%

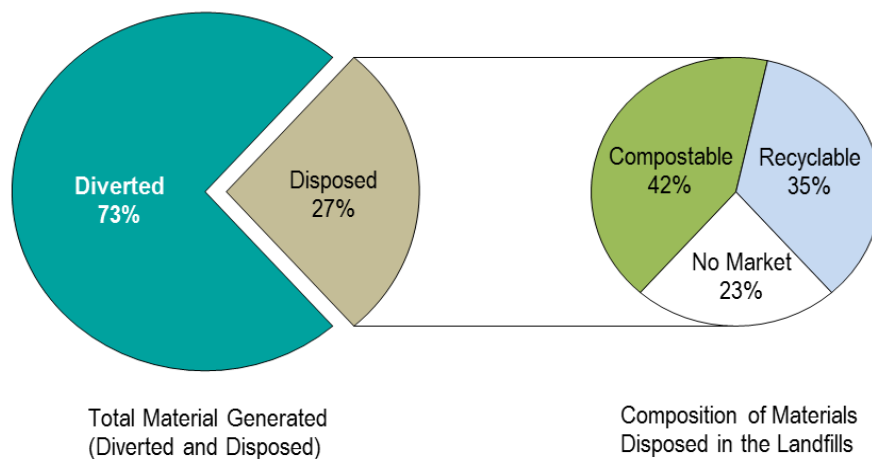
Table 4
Overall Disposal Composition

CATEGORY	TYPE	TONS	PERCENT
	Carpets	5,800	4%
	Remainder/Composite Compostables	4,582	3%
Inert and Other Miscellaneous Building Materials		59,472	39%
	Concrete	2,420	2%
	Asphalt Paving	1,312	1%
	Asphalt Roofing	4,986	3%
	Lumber	28,036	18%
	Gypsum Board	3,568	2%
	Rock, Soil and Fines	8,355	5%
	Remainder/Composite Inert and Other Materials	10,797	7%
Household Hazardous Waste (HHW)		332	0%
	Paint	183	0%
	Vehicle and Equipment Fluids	16	0%
	Used Oil	23	0%
	Batteries	35	0%
	Remainder/composite Household	76	0%
Mixed Residue		1,059	1%
	Mixed Residue	1,059	1%
TOTAL		152,881	100%

Blue = recyclable material
 Green = compostable material
 White/no color = no market material

*Due to rounding the percentages may not total 100 percent

Exhibit 6
Waste Management Trends and Material Recovery Potential



Source: CalRecycle 2008 Statewide Waste Characterization Study

Exhibit 7
Materials Recovery Potential by Sector (tons)

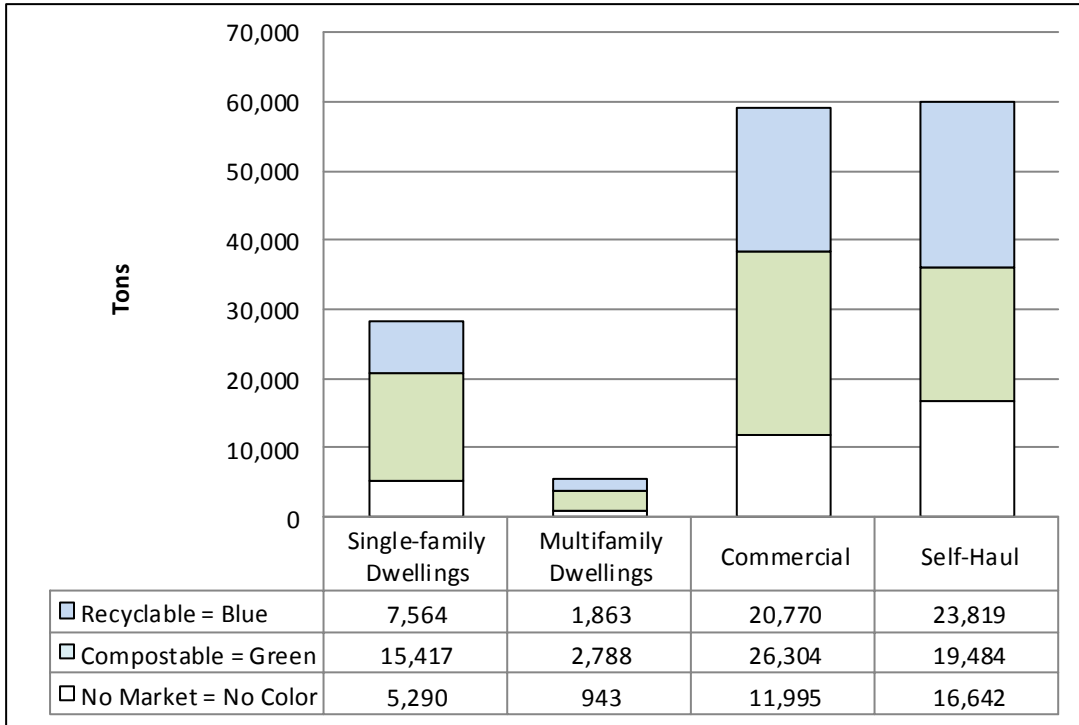
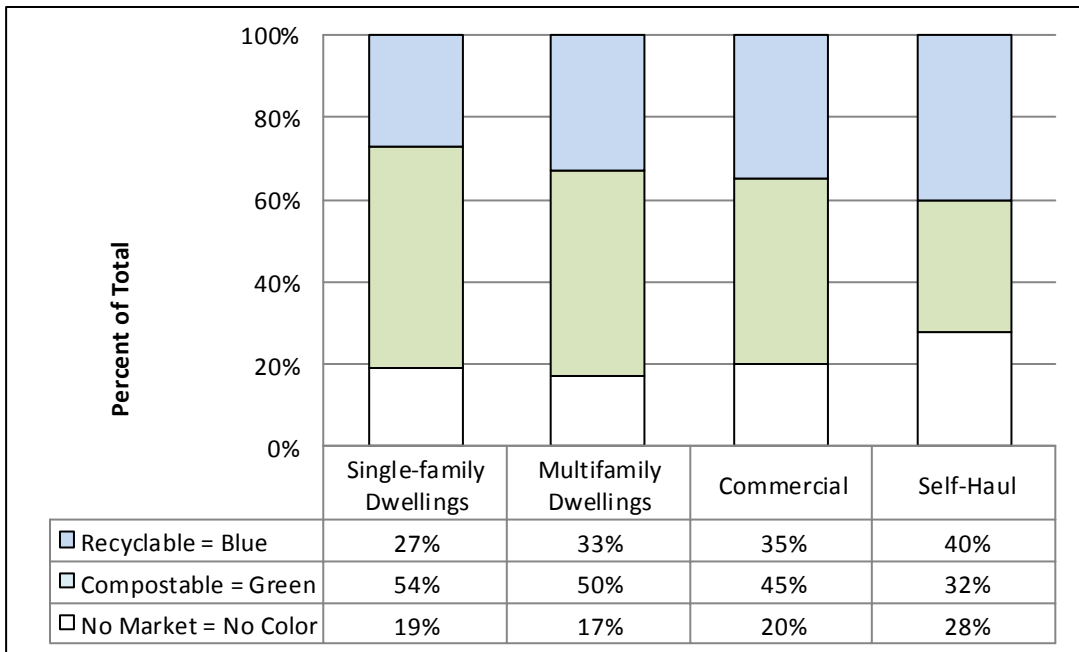


Exhibit 8
Materials Recovery Potential by Sector (percent)





Source: CalRecycle 2008 Statewide Waste Characterization Study;
City of Pasadena Non-exclusive Franchised Hauler Reports; City of Pasadena Collection Reports Fiscal Year 2010

Stakeholder Outreach and Input

A series of stakeholder workshops were held during the initial project planning period to introduce the Zero Waste concept to the community and to gather input from residents and businesses on the plan’s process and development. The workshops included a presentation from City staff and consultants (project team) and breakout sessions where community members were provided the opportunity to share their input about existing City policies and programs and suggestions for the Zero Waste Plan. The input from the workshops was incorporated into the key policy, program, and infrastructure needs that are discussed in this plan. Details on the stakeholder workshops are included in **Appendix E**.

Zero Waste Initiatives

During the Zero Waste planning process, the City developed a number of initiatives for reducing waste generation and increasing recycling and composting. The initiatives incorporate stakeholder suggestions and address opportunities for both the residential and commercial sectors. The following pages outline the description, objective, approach and timeframe for each of these initiatives. For purposes of this plan, the short-term is considered to be the present to 2017, the medium-term is years 2017-2020, and the long-term is years 2020-2040. Although research and preparatory work will begin immediately for many of the initiatives, timeframes reflect the intervals during which active program development and implementation are anticipated. Most initiatives will be ongoing after they are fully implemented. The City will review and update the Zero Waste plan every three years. The next steps for the first three year period are detailed for each initiative. High priority initiatives for the 2014 through 2017 implementation timeframe are indicated with a red flag symbol (). Those initiatives that may involve high cost strategies are indicated with the dollar sign symbol ().

1. Adopt a Zero Waste Plan and Resolution 

Objective: Adopt a Zero Waste Plan and resolution that establishes the City’s commitment to achieving Zero Waste by 2040

Approach: The City will prepare a Zero Waste Plan and resolution for presentation to the City Council for consideration. The plan will outline the City’s goals and objectives for achieving Zero Waste and will align with current City policies, including but not limited to the Pasadena Municipal Code, the California Green Building Standards Code, the United Nations Urban Environmental Accords and Green Cities Declaration, the Green City Action Plan, the U.S. Conference of Mayors’ Climate Protection Agreement, the Green Cities California Sustainability Resolution, the Extended Producer Responsibility Resolution and the Pasadena Plastic Bag Ban Ordinance. The Zero Waste resolution would set the City’s intentions for achieving Zero Waste by 2040 and its commitment to implementing the Zero Waste Plan.

Next Steps:

- Adopt Zero Waste Strategic Plan and Zero Waste Resolution

Timeframe: 2014

2. Implement product and disposal bans (e.g., polystyrene food packaging) 

Objective: Reduce the disposal of reusable, recyclable, organic and other compostable materials at landfills

Approach: The City will support product and disposal bans for environmentally problematic materials by supporting legislation at the State level and implementing local bans and ordinances as appropriate. Building on the success of the local plastic bag ban, an example of another product that could be banned locally is expanded polystyrene (Styrofoam)

take-out food containers and cups. (The City will begin exploring the polystyrene food packaging issue after adoption of the Plan and set a target project completion date of December 31, 2015.) Examples of direct landfill disposal bans include C&D debris, food scraps, and yard trimmings.

Next Steps:

- Research other California cities that have successfully adopted polystyrene food packaging bans
- Research compostable alternatives to polystyrene food containers and insure compatibility with current organics processing systems
- Organize stakeholder meetings with local food vendor representatives, franchise haulers, the Pasadena Public Health Department and other potentially affected parties to collaborate on eliminating the use of polystyrene food packaging and ensuring a smooth transition to compostable packaging replacements
- Compile a list of appropriate compostable food packaging options and provide to local restaurants and food service establishments
- Work with stakeholders to determine specifics of a polystyrene food packaging ban
- Prepare draft polystyrene food packaging ban ordinance for presentation to appropriate City committee(s) and the City Council for consideration
- Upon adoption of the polystyrene food packaging ban ordinance, move forward with implementation, education, technical assistance to businesses and compliance monitoring
- Monitor State legislation regarding product and disposal bans and provide letters of support as appropriate

Timeframe: 2014 – 2017

3. Enhance educational outreach 

Objective: Increase community awareness and participation in Zero Waste efforts

Approach: The City has a goal of increasing participation in existing diversion activities and improving marketing to targeted groups. The City will partner with community groups to increase the visibility of the recycling program and use social marketing techniques to reach populations that have not responded to traditional outreach methods. The City will build on its school recycling program to provide outreach and education to the school community as a conduit to the greater community. Generators in the City need to be educated on the connection between waste prevention and recycling to other environmental impacts as well as economic impacts.

Next Steps:

- Inventory existing educational outreach tools and programs and increase the types of outreach methods and frequency of distribution
- Establish a regular schedule for updates, circulation, and announcements
- Review needs/interests of stakeholders, including commercial businesses and restaurant groups
- Develop a Zero Waste marketing plan to increase awareness of the Zero Waste Plan
- Develop an information packet for new customers or residents
- Increase usage of refuse truck signage for messaging and explore utilizing other types of fleet vehicles
- Explore utilizing existing neighborhood newsletters as outlets for publishing information about waste reduction initiatives
- Explore additional outreach opportunities through community events and the City's Neighborhood Connections programs
- Enhance City website and explore increased use of social media

- Increase English/Spanish bilingual outreach materials and explore the need for translation of materials into additional languages
- Utilize resources for outreach and advertising such as the City's Arts buses, Metro buses, bus stops, billboards and other media opportunities

Timeframe: 2014 – 2017

4. Promote junk mail blocking, catalog and phone book opt-out

Objective: Reduce the generation and disposal of junk mail, catalogs and phone books

Approach: Expand awareness and adoption of methods to prevent the automatic delivery of junk mail, catalogs and phone books by centralizing pertinent information on the City's website and increasing the availability of information on a regular basis. The City currently promotes participation in Catalog Choice, a mail preference service administered by TrustedID® to help residents reduce unwanted junk mail. The City will build on this successful program and provide information about reducing all types of unwanted junk mail through electronic newsletters, newspapers, City websites, and City events.

Next Steps:

- Raise awareness of junk mail opt-out program on City website, City's Twitter messages, and email news blasts
- Promote program through print ads in local newspaper and include in seasonal notifications

Timeframe: 2014 – 2017

5. Expand product stewardship efforts and extended producer responsibility (EPR) policies

Objective: Implement policies for producers to take responsibility for the end of life management of products and packaging they generate and/or sell. Educate consumers on

alternative purchasing practices that support product stewardship.

Approach: Develop EPR policies within Pasadena that build on the existing EPR resolution adopted by the City. Policies could include mandatory take back for problem products, such as pharmaceuticals, batteries, or fluorescent bulbs. Provide education and outreach to consumers on purchasing practices that support product stewardship. The City can support State and federal efforts to build the environmental and social costs into the price of products and packaging and then require manufacturers to take back products at the end of their useful life. The City can do this by supporting groups such as the California Product Stewardship Council. The mission of the California Product Stewardship Council is to shift California's product waste management system from one focused on government funded and ratepayer financed waste diversion to one that relies on producer responsibility in order to reduce public costs and drive improvements in product design that promote environmental sustainability.

Next Steps:

- Keep City staff, elected officials and the community abreast of product stewardship legislation and support legislation as appropriate
- Compile and publicize a list of all local retailers who are willing to take back items such as dry cleaner hangers, batteries, mattresses, carpet and paint
- Publish this list of retailers in City communications and on the City's website

Timeframe: 2014 – 2017

6. Enhance enforcement of anti-scavenging ordinance

Objective: Reduce theft of recyclables from the City's carts and bins, receive full credit for diversion tonnage, and increase the revenue generated from the sale of the recyclables from the City's residential curbside collection program

Approach: The City will commit staff resources to enforce the existing anti-scavenging ordinance. Public Works staff will work with the Pasadena Police Department to identify and cite scavengers. Public Works staff will meet with the Police Department staff to identify strategies for reducing scavenging. These could include: increasing police or code enforcement presence in neighborhoods where scavenging has been significant, conducting public education to raise awareness and help prevent scavenging, advertising a call-in number for residents who observe scavenging, and training collection truck drivers to identify and report scavenging activities they observe on their routes.

Next Steps:

- Review best practices for preventing scavenging throughout the state and across the country
- Formulate strategies for reducing scavenging
- Develop a scavenging prevention educational campaign targeted to residents
- Increase frequency of periodic, coordinated enforcement sweeps

Timeframe: 2014 – 2017

7. Foster development of local and regional infrastructure for processing food scraps and other organic and compostable materials  

Objective: Increase the diversion of organic and compostable materials, including yard trimmings and food scraps. Develop regional processing capacity for organics and compostable materials near Pasadena.

Approach: Using information from the waste characterization study on the types and quantities of organics and other compostable materials generated in Pasadena, identify needs and available processing capacity. (Compostable materials must be confirmed in writing as compostable by a certified processing facility.) Explore methods for incentivizing local infrastructure development. Consider partnering with neighboring municipalities that are pursuing facilities for compostable materials processing, such as the Cities of Los Angeles and Glendale. Some of the City's commercial haulers, including Athens Services and Crown Disposal Company, operate composting facilities within the region. The City of Glendale is pursuing expansion of compostable materials processing capacity at the Scholl Canyon Landfill. There may be an opportunity for a potential partnership between the Cities of Pasadena and Glendale. The City of Glendale is also evaluating building an anaerobic digestion facility at Scholl Canyon Landfill.

A portion of the material the City of Pasadena is currently diverting consists of green waste made up of tree trimmings, grass clippings and other landscaping materials that are used as alternative daily cover (ADC) at Scholl Canyon landfill. Diversion credit for ADC is likely to be discontinued based on legislative trends and the City's diversion rate would be reduced by approximately 3 percent (or daily per capita disposal would be increased by 0.65 pounds per person per day) if this material is not diverted by other means such as composting.

Next Steps:

- Evaluate the potential for transporting materials to existing organics processing facilities and conduct a formal Request for Proposals
- Support appropriate legislation that facilitates the development of local composting capacity
- Stay abreast of developing technologies and facilities for food waste processing within the vicinity of Pasadena

- Pursue partnerships with other jurisdictions as opportunities arise
- Explore funding opportunities for developing new or expanding existing organics processing infrastructure

Timeframe: 2014 – 2017

8. Provide business technical assistance 


Objective: Increase understanding of Zero Waste and the ability to reduce waste generation and increase reuse, recycling, and composting

Approach: Offer free technical assistance to businesses to transition to new programs such as food waste composting and comply with potential mandatory measures such as a polystyrene food packaging ban. Conduct outreach to educate businesses about requirements and ensure their compliance through site visits. City staff will be available to visit businesses, assess existing conditions, provide training materials and make recommendations for enhancements to waste reduction, reuse, recycling, composting and other Zero Waste initiatives.

Next Steps:

- Develop an outreach plan to work collaboratively with businesses in developing new programs and to prepare for mandates such as food waste composting and a polystyrene food packaging ban
- Develop a Zero Waste Pasadena website with information for businesses, schools and institutions to keep them informed of waste diversion options and new initiatives
- Promote the lending of City recycling equipment for all large business events

Timeframe: 2014 – 2017

9. Expand school programs 

Objective: Expand waste reduction, reuse, and recycling at Pasadena schools to help the City meet its Zero Waste goals

Approach: During the 2012/2013 school year, the City and the Pasadena Unified School District (PUSD) collaborated to develop a Green Living Curriculum (GLC) and recycling program for Pasadena schools. The City and PUSD jointly created a curriculum and designed a school recycling program. The Pasadena Department of Public Works and Pasadena Water and Power provided funds to cover 100 percent of the GLC educator’s costs.

The GLC educator provides instruction on the 3Rs (Reduce, Reuse, Recycle) and resource conservation (energy and water). The educator also assists with establishment of student “Green Teams” for student run recycling programs and leads field trips.

The first year of the program, the GLC was taught to second and third grade classes in ten schools. The second year, the GLC was taught to only the second grade classes to avoid repeating the lessons to the same children in 13 schools. In 2013/2014, the GLC was taught to 1,003 second graders in 13 PUSD elementary schools. The program is ongoing.

The City also obtained a State grant to purchase recycling equipment for all PUSD schools. A recycling team made up of Public Works staff, the GLC educator and the PUSD science contractor was formed to design a recycling program tailored to each school. The team strived to develop a convenient, long term, stable recycling program. Although the two year grant period has ended, the City will continue to monitor and support the recycling program by maintaining high awareness, addressing any problems that arise and expanding to other areas such as composting and working with PUSD to minimize or eliminate cafeteria food packaging and food scraps.

Next Steps:

- Investigate the waste diversion efforts at private schools and college campuses and encourage the development of new programs and expansion of existing programs
- Create “Go Zero” challenge for school campuses
- In conjunction with the Pasadena Education Foundation, develop a Zero Waste course to add to the summer enrichment program
- Explore collaborative projects with local colleges to develop engaging Zero Waste videos tailored to students in specific age groups

Timeframe: 2014 – 2017

10. Implement diversion programs for food scraps and other organic and compostable materials 🚩 💰

Objective: Divert food scraps and other organic and compostable materials for beneficial use

Approach: Currently there is limited local infrastructure and experience in food waste collection and processing, though there is some developing regional infrastructure. The approach will be to identify processors within the Pasadena vicinity, work out the collection logistics and identify and remove barriers to diverting this waste material. Investing in local infrastructure will reduce transportation and collection costs, increase the efficiency of City operations and reduce environmental impacts.

Pasadena receives diversion credit for sending yard waste to Scholl Canyon Landfill to be utilized as alternative daily cover (ADC). Diversion credit for ADC is likely to be discontinued based on legislative trends. Consequently, the City’s diversion rate would be reduced by 3 percent (or daily per capita disposal would be increased by 0.65 pounds per person per day) if this material is not diverted by other means such as composting. The City will seek alternative diversion

options for residential yard waste in order to continue receiving diversion credit.

Next Steps:

- To encourage innovative food waste diversion efforts, open the franchise system to composting haulers
- Investigate best practices for organics diversion and facilitate options for the collection and processing of food scraps and other organic and compostable materials generated by businesses and multifamily properties with five or more units
- Keep City staff, elected officials and the community abreast of legislation concerning food waste diversion and support as appropriate
- In anticipation that there will be State mandates for commercial food waste diversion in the near future, assess the feasibility of creating an exclusive restaurant and grocery store franchise zone.
- Provide technical assistance to the business community to optimize participation in commercial food waste diversion programs
- Investigate alternatives to sending residential yard waste to the landfill to be used as ADC
- Haul a limited number of residential yard waste loads over a three to six month timeframe to an organics processing facility in the region to assess feasibility and logistics
- Assess the feasibility of commingling residential yard waste with food waste for transport to an organics processing facility in the region and potentially design a six month residential organics collection pilot
- Promote grass-cycling and backyard composting

Timeframe: 2014 – 2020

11. Review Pay-As-You-Throw (PAYT) fee structure


Objective: Ensure the viability and effectiveness of the PAYT system

Approach: Evaluate the current PAYT system and identify opportunities to improve diversion incentives while maintaining a rate structure that is fair and equitable to rate payers. Over time, if more customers reduce waste and migrate to lower levels of service, these rates may not be adequate to cover the costs of the collection system and pay for the programs needed. Additionally, staff needs to consider whether the cost differential between the three cart sizes is adequate to incentivize residents to recycle more and move toward a smaller, less expensive mixed waste cart. City staff will carefully monitor program costs and needs as well as rate revenues. Future implementation will include an analysis of potential “Zero Waste rate structures” where residents pay a rate based on all services (recycling, compostable materials, and mixed waste) to reflect a true cost of service.

Next Steps:

- Compare rates and included services from other PAYT cities in California and across the country, particularly those cities providing residential food waste programs
- Develop a Request for Proposals (RFP) for a consultant/third party expert to perform a rate study and review of Pasadena’s PAYT system, evaluate the cost differential between the mixed waste cart sizes and determine if changes will be needed to maintain incentives for the future
- Hire consultant to perform rate study and PAYT review

Timeframe: 2014 – 2020

12. Expand commercial and multifamily recycling 

Objective: Increase the diversion rate within the commercial and multifamily sector

Approach: Pasadena has a robust commercial/multifamily recycling infrastructure as well as a competitive environment. Encourage expansion of commercial and multifamily recycling for generators to increase participation and diversion. Some commercial generators in Pasadena fall below the State’s mandatory recycling threshold of four cubic yards of waste generation per week. This initiative may extend recycling requirements to all commercial and multifamily generators.

Multifamily residents express confusion and dissatisfaction concerning the current apartment recycling system. The majority of the multifamily complexes have a system in place where trash and recycling are commingled in the same container. Recyclables are removed at material recovery facilities. The City will investigate encouraging or requiring source separated recycling at apartment complexes by adding more requirements to franchise agreements or by implementing a commercial/multifamily recycling ordinance. Source separated programs are more visible to participants and they can potentially recover a higher percentage of recyclables if participation is high and contamination is kept low. Outreach would also be conducted to property managers, industry groups, apartment residents, and employees so that they understand requirements and implementation timeframes, thus ensuring a smooth transition. Any mandatory recycling policy adopted would be accompanied with an aggressive education and outreach component (as described below) to ensure that generators understand how to “right-size” their mixed waste collection services to reduce costs of collection and increase recycling capacity for additional commodities. Based on the franchised haulers’ compliance with the commercial recycling reporting requirement, the City has an understanding of the existing commercial recycling programs, service opportunities and

service voids. The City can work with its franchised haulers to prioritize commercial generators for technical assistance. For this initiative, the City will conduct stakeholder meetings to identify barriers to implementation of source separated recycling programs, develop a draft commercial/multifamily recycling ordinance for City Council consideration and, as appropriate, implement the new requirements in a phased manner over time. The performance standards which currently require franchise haulers to divert 60 percent of mixed waste and 75 percent of Construction and Demolition Materials from the landfill will be reviewed and raised as diversion technology improves over time.

Next Steps:

- Work through the franchise hauler system to identify the commercial and multifamily properties that generate less than four cubic yards of waste per week
- Determine the amount of waste generated by Pasadena businesses that do not fall under the current commercial recycling mandate and the disposition of this waste stream
- Investigate barriers to requiring source separated recycling at multifamily properties
- Investigate the appropriateness of implementing mandatory measures such as modifications to the franchise hauler system or a commercial/multifamily recycling ordinance
- Research existing commercial/multifamily recycling ordinances throughout the state and across the country to determine best practices

Timeframe: 2014 – 2020

13. Optimize C&D waste diversion

Objective: Review and optimize the C&D diversion requirements in order to divert the maximum amount of C&D debris generated in Pasadena

Approach: Revise/amend the C&D ordinance and the hauler C&D reporting and diversion requirements. In 2014, the C&D Ordinance was amended to comply with the State’s updated California Green Building Standards Code (CALGreen) requirements. Square footage thresholds of covered projects were lowered and the diversion requirements were increased to 75 percent in support of the City of Pasadena’s Zero Waste goal. The City will continue to reevaluate administrative procedures and determine the optimum level of diversion that is achievable.

Next Steps:

- Evaluate future measures such as prohibiting direct disposal of C&D debris or mandatory processing of all C&D materials
- Stay current with C&D recycling ordinances throughout the state and evaluate the applicability to Pasadena’s conditions

Timeframe: 2014 – 2020

14. Optimize waste diversion at City facilities

Objective: Expand waste reduction, reuse, and recycling at City facilities, establishing the City’s leadership and commitment to meeting its Zero Waste goals

Approach: Assess programs and policies currently in place at City facilities and parks and identify opportunities to expand waste reduction, reuse, recycling and composting. Establish consistent waste reduction, recycling and composting programs for City facilities to implement, with provisions for monitoring and accountability. The City will model the behavior it seeks in its residents and businesses by maximizing recycling and composting at all City facilities.

Public Works staff will partner with other City departments to recruit Recycling Coordinators within each department to assist with implementing and monitoring recycling and composting systems. As with commercial and school recycling programs, collection systems at City facilities can be optimized through waste assessments, sharing of “best practices,” and “right-sizing” recycling and mixed waste containers and services. For this initiative, Public Works staff will convene quarterly meetings of the City’s Recycling Coordinators to identify service voids and opportunities and to provide technical assistance and training. A phased-in approach will be utilized to facilitate implementation within the City’s available budget and resource allocations.

Next Steps:

- Perform an audit of existing in-house recycling at all City facilities and parks
- Recruit and train recycling coordinator for each City facility
- Establish recycling programs at facilities lacking existing programs
- Establish guidelines for hosting Zero Waste events

Timeframe: 2017 – 2020

15. Implement diversion of food scraps and other organic and compostable materials at stadiums and other public venues and events

Objective: Divert food scraps and other compostable materials for beneficial use

Approach: Require the implementation of diversion programs for food scraps and other compostable materials at large events (greater than 2,000 persons per day or event) such as Rose Bowl Stadium football games and concerts. The City will conduct a feasibility study and explore grant opportunities for organics diversion programs. Conduct meetings with venue operators and franchised haulers to identify opportunities and barriers to implementation of organics

diversion programs. Prepare program materials, identify costs and implementation tasks, and develop a draft ordinance requiring composting at large events for consideration by the City Council. Require venue operators to collect the materials and arrange for transportation and processing of the materials. Require affected facility managers and event organizers to report to the City on the types and quantities of materials diverted and the final use of the materials.

Next Steps:

- Continue to work with the Rose Bowl Operating Company toward transitioning from conventional food packaging to use of compostable products
- Promote use of compostable food packaging at all large venue events such as the Tournament of Roses Parade, runs, marathons, festivals and flea markets
- Develop Green Events guidelines for events requiring City permits

Timeframe: 2017 – 2020

16. Develop Zero Waste business partnership program

Objective: Expand the visibility of local businesses making significant strides toward eliminating waste to model and raise awareness of best waste reduction practices within the commercial sector

Approach: The City will develop incentive programs to recognize businesses with exemplary waste diversion achievements

Next Steps:

- Review green business programs being implemented locally, throughout the state and across the country and determine best practices
- Develop a Zero Waste business partnership program
- Collaborate with business owners and industry associations to identify businesses interested in

participating in the Zero Waste business partnership program

- Recognize business partners through methods such as publishing the names of partnering businesses on the City’s website and running list ads in local publications
- Enhance existing Green City Award program to recognize businesses that have made substantial progress toward achieving Zero Waste
- Explore implementing a “Go Zero” challenge for businesses and institutions

Timeframe: 2017 – 2020

17. Expand recycling in public areas

Objective: Increase recovery of recyclables from high traffic public areas

Approach: Provide collection receptacles for beverage containers and recyclable paper in public areas throughout Pasadena. Containers would be stationed in high traffic areas such as parks, shopping districts, libraries, museums, the Playhouse District, etc.

Next Steps:

- Identify recycling containers appropriate for Pasadena (preferably high-tech, environmentally friendly compactors), estimate the number of recycling containers needed and the cost to purchase the containers
- Develop a budget line item for purchasing new containers over a five-year period
- Pursue grant programs and other funding opportunities for purchasing recycling containers
- Develop routes for servicing recycling containers
- Procure and install recycling containers

Timeframe: 2017 – 2020

18. Optimize self-haul reporting and waste diversion

Objective: Increase accuracy of disposal reporting by self-haulers

Approach: In order to reach diversion goals it is important to accurately account for the point of origin of waste. Based on the waste characterization study, an unrealistic amount of self-hauled waste is being reported as originating from Pasadena. The City of Pasadena will partner with local jurisdictions to develop more accurate accounting of self-haul waste origin, involving transfer stations, MRFs, and landfill operators.

Next Steps:

- Conduct survey of local landfills to determine the current practices for documenting waste origin (driver’s license, commercial accounts)
- Obtain the records of the landfills and review the list of self-haulers (contractors, clean-up companies, commercial generators)
- Work with the Sanitation District to develop more stringent reporting requirements for self-haulers
- Support regional development of resource recovery parks at landfills and transfer stations for self-haulers to segregate their loads for recycling

Timeframe: 2017 – 2020

19. Foster development of local and regional infrastructure for processing residual mixed waste (i.e., no market materials) \$

Objective: Develop appropriate options for diverting waste materials for which there are currently no markets

Approach: Using information from the waste characterization study on the components and quantities of mixed waste, the City will research opportunities for beneficial use. Several nearby communities are investigating future development of mixed waste processing and are evaluating emerging technologies including anaerobic digestion, gasification and advanced thermal recycling (waste-to-energy). As landfill capacity in the region decreases, these alternative treatment methods will become more economically viable. It may be beneficial to evaluate the initiatives being pursued by Pasadena Water and Power as well as other communities and the private sector before actively engaging in the development of alternative technologies. The City will look for appropriate opportunities for partnerships and continue to monitor the technical and economic viability of emerging residual mixed waste processing technologies.

Next Steps:

- As opportunities arise, partner with Pasadena Water and Power and neighboring jurisdictions that are pursuing facilities for residual mixed waste processing, such as the City of Los Angeles, Los Angeles County and the City of Glendale

Timeframe: 2020 – 2040

Diversion Potential

Diversion estimates were prepared to identify the waste reduction potential of each policy and program. The diversion estimates are based on comparable policies and programs implemented in other jurisdictions, research, and educated estimates. **Table 5** shows the 2010 generation and diversion rate and summarizes the diversion potential by generator sector for the proposed Zero Waste policies and programs. Based on this analysis, it is estimated that Pasadena can achieve 87 percent diversion, a very high rate of diversion, by implementing the policies and programs identified.

Appendix C includes the calculations used for estimating the diversion potential of each of the policies and programs considered by the City.

The diversion rates are presented as a snapshot in time assuming full implementation of all programs. In reality, policies and programs will be developed over time through additional research, testing, and pilot programs before the programs are fully implemented. Some initiatives will require new ordinances and regulations, which will require City Council action and time to implement.

Zero Waste is a design framework for reducing generation of waste and maximizing diversion, not a strict tonnage goal. By implementing the proposed policies and programs, the City will be striving towards Zero Waste, even though there will still be some residual waste that will be disposed.

Table 5
Existing Generation and Potential Diversion

Zero Waste Plan Estimated Diversion			
Sector	2010 Baseline Waste Generation (tons) ¹	Projected Diversion (tons)	Projected Diversion Increase (%)
Single-family Residential	65,674	8,788	3.4%
Multifamily Residential	12,934	1,047	0.4%
Commercial	116,464	16,785	6.6%
Other	59,945	9,390	3.7%
TOTAL	255,017	36,010	14.1%
Pasadena's 2010 overall diversion			73 %
TOTAL PROJECTED DIVERSION WITH ZERO WASTE INITIATIVES			87.1%

¹The data reflects tonnages tracked by the City including the Pay-As-You-Throw Curbside Services, the Franchise Hauler System, Waste to Energy and Other Waste disposed at the landfill.

Greenhouse Gas Reduction Potential

The City of Pasadena is committed to reducing greenhouse gas (GHG) emissions in order to comply with legislation such as Assembly Bill 32 (AB 32), the Global Warming Solutions Act of 2006, and achieve goals outlined in the City’s various policies such as the Climate Action Plan. The Zero Waste initiatives recommended in this plan can significantly reduce the City of Pasadena’s greenhouse gas emissions. Based on the estimated diversion rates previously discussed, **Table 6** presents the GHG reduction potential of the scenarios using the U.S. Environmental Protection Agency’s (EPA) Waste Reduction Model (WARM) to estimate GHG reduction based on material types and amounts diverted.

The U.S. EPA created WARM to help solid waste planners and organizations track and voluntarily report greenhouse gas emissions reductions from several different waste management practices. WARM calculates and totals GHG emissions of baseline and alternative waste management practices—source reduction, recycling, composting, and landfilling. The model calculates emissions in metric tons of carbon equivalent (MTCE), metric tons of carbon dioxide equivalent (MTCO₂E), and energy units (million British thermal units, or Btu) across a wide range of material types commonly found in municipal solid waste. Calculation of carbon equivalency allows for a comparison of sectors contributing to the reduction of greenhouse gases. **Appendix D** includes the detailed results of the WARM calculations.

Table 6
Greenhouse Gas Emissions Reduction Potential

Zero Waste Emissions Reduction	
Sector	Emissions Reduction (MTCO ₂ E)
Single-Family Residential	2,428
Multifamily Residential	468
Commercial	6,870
Other	1,925



Wood pile at a local construction site

Implementation Schedule

In determining the implementation schedule of the plan, the City grouped programs and initiatives into short-term, medium-term and long-term categories. Short-term is defined as being from the present to 2017, medium-term is defined as 2017 to 2020, and long-term as 2020 to 2040. The following factors were considered in categorizing the programs: available resources and technology, feasibility of implementation, performance of current programs and existing infrastructure.

The overall implementation schedule for the recommended Zero Waste initiatives is indicated in **Table 7** and **Exhibit 9**. **Exhibit 10** shows the timeline for initiatives that will be implemented from 2014 through 2017. Note that the short to medium-term initiative 10, implementation of organics diversion programs, has been identified as high priority and will be implemented during the 2014 to 2017 timeframe.



Pasadena residents dropping off recyclables at a redemption center

**Table 7
Overall Zero Waste Strategic Plan Implementation Schedule**

Term	Initiative
Short-term 2014 – 2017	1. Adopt Zero Waste Plan/resolution
	2. Implement product & disposal bans (e.g., polystyrene food packaging)
	3. Enhance educational outreach
	4. Promote junk mail blocking, catalog & phone book opt-out
	5. Expand product stewardship efforts & EPR policies
	6. Enhance enforcement of anti-scavenging ordinance
	7. Foster infrastructure development for processing food scraps & other organics & compostables
	8. Provide business technical assistance
	9. Expand school programs
Short to Medium-term 2014 – 2020	10. Implement diversion programs for food scraps & other organics & compostables
	11. Review Pay-As-You-Throw fee structure
	12. Expand commercial & multifamily recycling
	13. Optimize C&D waste diversion
Medium-term 2017 – 2020	14. Optimize waste diversion at City facilities
	15. Implement composting at stadiums & other large events
	16. Develop Zero Waste business partnership program
	17. Expand recycling in public areas
Long-term 2020 – 2040	18. Optimize self-haul reporting & waste diversion
	19. Foster infrastructure development for processing residual mixed waste (i.e., no market materials)

Exhibit 9 Zero Waste Plan Timeline

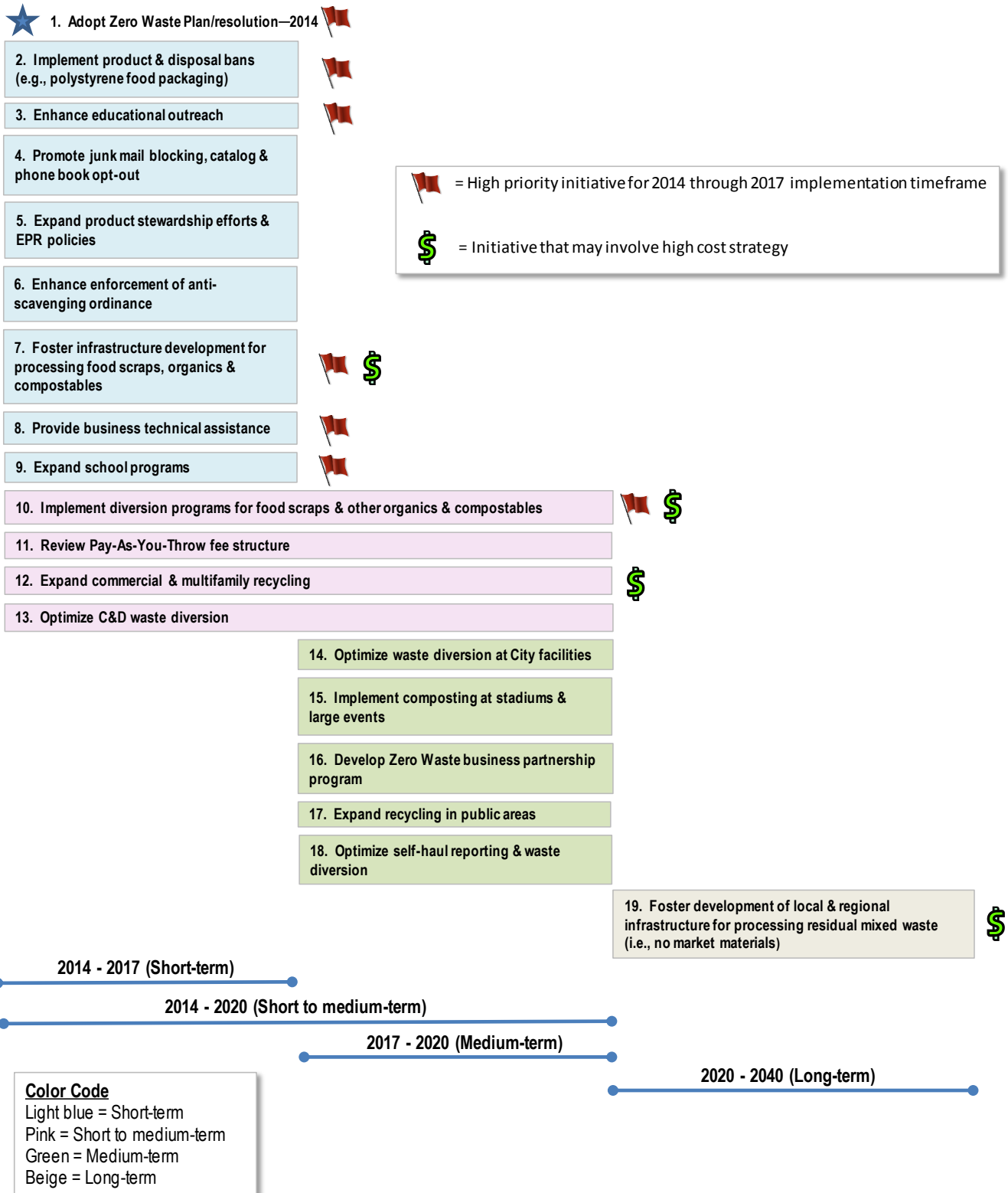


Exhibit 10
Projected Implementation Schedule for 2014 to 2017

2014			2015												2016												2017											
Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

★ 1. Adopt Zero Waste Plan/resolution—2014  

2. Polystyrene food packaging initiative 

2. Other product & disposal bans

3. Enhance educational outreach to businesses & residents 

4. Promote junk mail blocking, catalog & phone book opt-out

5. Expand product stewardship efforts & EPR policies

6. Enhance enforcement of anti-scavenging ordinance


7. Foster infrastructure development for processing food scraps, organics & compostables   


8. Provide business technical assistance 

9. Expand school programs  

10. Implement diversion programs for food scraps & other organics & compostables   

Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2014			2015												2016												2017											

 = High priority initiative for 2014 through 2017 implementation timeframe

 = Initiative that may involve high cost strategy

FOOTNOTES

1. Grassroots Recycling Network, What is Zero Waste? http://www.grn.org/zerowaste/zerowaste_faq.html
2. The internationally peer-reviewed definition of “Zero Waste” was developed by the Zero Waste International Alliance, <http://zwia.org/standards/zw-definition/>
3. U.S. Census Bureau, 2010 Census, State and Cities Quick Facts.
4. The City may conduct a future audit of the local landfills and transfer stations to determine the accuracy of the self-haul reporting.
5. California Department of Finance, Population and Housing Estimates for Cities, Counties, and the State, 2011-2013 with 2010 Census Benchmark, January 2013. <http://www.dof.ca.gov/research/demographic/reports/estimates/e-5/2011-20/view.php> According to the 2010 Census, Pasadena has 59,551 total housing units comprised of 30,310 Single-Family units, 5,248 Multiplex (2-4) units, 23,863 Multifamily (5 or more) units and 130 mobile homes.
6. CalRecycle, “Diversion/Disposal Rate Report.”
7. Cascadia Consulting Group, for the California Integrated Waste Management Board (now “CalRecycle”).
8. The amount of disposed materials from self-haul generators attributed to Pasadena was 39 percent in fiscal year 2010. This is significantly higher than the statewide average of 20 percent for self-haul (source: CalRecycle 2008 Waste Characterization Study). There are several potential reasons for this: 1) self-haulers from adjacent unincorporated areas of Pasadena could be misreporting loads as being from Pasadena; 2) building contractors in Pasadena under certain circumstances may self-haul C&D materials to the landfill instead of subscribing to C&D collection from the franchised haulers.

Contributing Consultants:

HDR Engineering, Inc.

HF&H Consultants, LLC

L2 Environmental

APPENDIX A WASTE CHARACTERIZATION DATA

Composition of Waste Disposed (2010/11)

City of Pasadena

Methodology: % composition was obtained from the California 2008 Statewide Waste Characterization Study (Southern Region data) prepared by Cascadia Consulting Group for CIWMB (CalRecycle).

		Tons Disposed by Sector and Materials Type (2010/11)				
		TOTAL	Single - family dwellings	Multifamily dwellings	Commercial	Self-haul
Category	Type	152,881	28,272	5,595	59,069	59,945
Paper		21,300	5,158	1,241	11,844	3,056
	1 Uncoated Corrugated Cardboard	6,207	566	250	4,410	981
	2 Paper Bags	460	116	28	146	171
	3 Newspaper	1,596	812	170	547	67
	4 White Ledger Paper	901	99	21	647	133
	5 Other Office Paper	1,403	307	159	783	154
	6 Magazines and Catalogs	802	339	64	330	69
	7 Phone Books and Directories	57	32	1	24	0
	8 Other Miscellaneous Paper	3,479	1,262	289	1,343	585
	9 Remainder/Composite Paper	6,395	1,624	260	3,614	897
Glass		1,699	608	161	706	225
	10 Clear Glass Bottles and Containers	566	222	65	275	3
	11 Green Glass Bottles and Containers	225	117	34	70	4
	12 Brown Glass Bottles and Containers	313	101	29	170	13
	13 Other Glass Colored Bottles and Containers	108	32	26	18	31
	14 Flat Glass	149	3	0	11	136
	15 Remainder/Composite Glass	338	132	7	161	38

Waste Composition (2008) - Southern Region			
Single-family dwellings	Multifamily dwellings	Commercial	Self-haul
18.2459%	22.1830%	20.0514%	5.0978%
2.0035%	4.4681%	7.4661%	1.6361%
0.4092%	0.4936%	0.2467%	0.2844%
2.8720%	3.0432%	0.9258%	0.1114%
0.3509%	0.3817%	1.0958%	0.2216%
1.0861%	2.8346%	1.3262%	0.2574%
1.1996%	1.1501%	0.5583%	0.1147%
0.1145%	0.0102%	0.0409%	0.0000%
4.4652%	5.1603%	2.2733%	0.9761%
5.7449%	4.6412%	6.1181%	1.4961%
2.1493%	2.8804%	1.1946%	0.3751%
0.7862%	1.1705%	0.4661%	0.0048%
0.4124%	0.6005%	0.1189%	0.0070%
0.3582%	0.5140%	0.2885%	0.0215%
0.1145%	0.4733%	0.0303%	0.0513%
0.0104%	0.0000%	0.0182%	0.2263%
0.4676%	0.1221%	0.2725%	0.0642%

Tons Disposed by Sector and Materials Type (2010/11)

Waste Composition (2008) –Southern Region

Category	Type	TOTAL	Single - family dwellings	Multifamily dwellings	Commercial	Self-haul
Metals		6,410	1,037	187	2,559	2,626
	16 Tin/Steel Cans	696	251	54	372	19
	17 Major Appliances	76	0	0	76	0
	18 Used Oil Filters	17	17	0	0	0
	19 Other Ferrous	2,814	350	47	889	1,528
	20 Aluminum Cans	138	69	6	59	4
	21 Other Non-Ferrous	326	103	9	148	65
	22 Remainder/Composite Metal	2,344	248	71	1,015	1,010
Electronics		361	104	2	62	193
	23 Brown Goods	99	55	0	44	0
	24 Computer-related Electronics	219	26	0	0	193
	25 Other Small Consumer Electronics	42	23	2	18	0
	26 Video Display Devices	0	0	0	0	0
Plastics		12,793	2,799	390	6,209	3,394
	27 PETE Containers	612	235	60	293	24
	28 HDPE Containers	445	144	57	228	15
	29 Miscellaneous Plastic Containers	493	168	32	286	8
	30 Plastic Trash Bags	1,192	251	42	747	152
	31 Plastic Grocery and Other Merchandise Bags	385	192	29	150	14
	32 Non-Bag Commercial and Industrial Packaging Film	652	12	1	508	131
	33 Film Products	865	3	11	138	713
	34 Other Film	1,506	409	67	949	80
	35 Durable Plastic Items	3,260	949	29	985	1,298
	36 Remainder/Composite Plastic	3,384	437	63	1,925	958

Single-family dwellings	Multifamily dwellings	Commercial	Self-haul
0.8862%	0.9720%	0.6291%	0.0317%
0.0000%	0.0000%	0.1294%	0.0000%
0.0594%	0.0000%	0.0000%	0.0000%
1.2371%	0.8397%	1.5044%	2.5493%
0.2436%	0.0997%	0.0995%	0.0074%
0.3647%	0.1628%	0.2511%	0.1085%
0.8768%	1.2723%	1.7191%	1.6845%
0.3665%	0.0305%	0.1056%	0.3220%
0.1937%	0.0000%	0.0752%	0.0000%
0.0927%	0.0000%	0.0000%	0.3220%
0.0802%	0.0305%	0.0303%	0.0000%
0.0000%	0.0000%	0.0000%	0.0000%
9.8998%	6.9719%	10.5119%	5.6626%
0.8304%	1.0687%	0.4954%	0.0406%
0.5092%	1.0229%	0.3865%	0.0254%
0.5925%	0.5649%	0.4845%	0.0132%
0.8862%	0.7532%	1.2646%	0.2537%
0.6774%	0.5242%	0.2531%	0.0241%
0.0427%	0.0153%	0.8600%	0.2193%
0.0115%	0.1883%	0.2339%	1.1891%
1.4474%	1.1959%	1.6074%	0.1336%
3.3551%	0.5140%	1.6675%	2.1650%
1.5474%	1.1247%	3.2589%	1.5988%

Tons Disposed by Sector and Materials Type (2010/11)

Category	Type	TOTAL	Single - family dwellings	Multifamily dwellings	Commercial	Self-haul
Other Organics		40,513	13,293	2,336	18,817	6,067
	37 Food	17,372	6,837	1,206	9,027	302
	38 Leaves and Grass	4,257	2,189	83	1,473	512
	39 Prunings and Trimmings	4,686	945	5	2,490	1,247
	40 Branches and Stumps	1,561	1	0	435	1,124
	41 Manures	21	21	0	0	0
	42 Textiles	2,234	978	185	625	446
	43 Carpet	5,800	360	346	2,950	2,144
	44 Remainder/Composite Organic	4,582	1,962	511	1,817	292
Inerts and Other		59,472	4,159	992	16,593	37,729
	45 Concrete	2,420	414	0	440	1,566
	46 Asphalt Paving	1,312	0	0	0	1,312
	47 Asphalt Roofing	4,986	57	0	1,372	3,556
	48 Lumber	28,036	2,200	694	9,719	15,422
	49 Gypsum Board	3,568	92	0	1,031	2,445
	50 Rock, Soil and Fines	8,355	464	0	930	6,961
	51 Remainder/Composite Inerts and Other	10,797	931	297	3,101	6,468
HHW		332	68	10	185	68
	52 Paint	183	10	0	157	15
	53 Vehicle & Equipment Fluids	16	6	5	0	5
	54 Used Oil	23	23	0	0	0
	55 Batteries	35	16	4	6	9
	56 Remainder/Composite Household Hazardous	76	13	2	22	39

Waste Composition (2008) –Southern Region

Single-family dwellings	Multifamily dwellings	Commercial	Self-haul
47.0175%	41.7502%	31.8567%	10.1212%
24.1825%	21.5570%	15.2820%	0.5038%
7.7432%	1.4911%	2.4932%	0.8535%
3.3416%	0.0814%	4.2160%	2.0798%
0.0052%	0.0000%	0.7369%	1.8750%
0.0739%	0.0000%	0.0000%	0.0000%
3.4582%	3.3079%	1.0579%	0.7445%
1.2746%	6.1781%	4.9944%	3.5770%
6.9383%	9.1348%	3.0763%	0.4875%
14.7107%	17.7250%	28.0903%	62.9392%
1.4641%	0.0000%	0.7452%	2.6119%
0.0000%	0.0000%	0.0000%	2.1882%
0.2031%	0.0000%	2.3226%	5.9328%
7.7818%	12.4121%	16.4540%	25.7266%
0.3270%	0.0000%	1.7446%	4.0781%
1.6401%	0.0000%	1.5748%	11.6123%
3.2947%	5.3129%	5.2490%	10.7893%
0.2418%	0.1863%	0.3139%	0.1138%
0.0354%	0.0000%	0.2665%	0.0251%
0.0229%	0.0814%	0.0000%	0.0091%
0.0823%	0.0000%	0.0000%	0.0000%
0.0551%	0.0743%	0.0097%	0.0151%
0.0461%	0.0305%	0.0377%	0.0645%

Tons Disposed by Sector and Materials Type (2010/11)

Waste Composition (2008) –Southern Region

Category	Type	Tons Disposed by Sector and Materials Type (2010/11)					Waste Composition (2008) –Southern Region			
		TOTAL	Single - family dwellings	Multifamily dwellings	Commercial	Self-haul	Single-family dwellings	Multifamily dwellings	Commercial	Self-haul
Special Waste		8,942	61	215	2,090	6,576	0.2145%	3.8371%	3.5389%	10.9698%
	57 Ash	103	5	7	91	0	0.0177%	0.1170%	0.1543%	0.0000%
	58 Treated Medical Waste	0	0	0	0	0	0.0000%	0.0000%	0.0000%	0.0000%
	59 Bulky Items	8,610	0	208	1,826	6,576	0.0000%	3.7201%	3.0921%	10.9698%
	60 Tires	147	5	0	142	0	0.0167%	0.0000%	0.2403%	0.0000%
	61 Remainder/Composite Special Waste	82	51	0	31	0	0.1801%	0.0000%	0.0522%	0.0000%
Mixed Residue		1,059	986	61	2	10	3.4863%	1.0890%	0.0040%	0.0171%
	62 Mixed Residue	1,059	986	61	2	10	3.4863%	1.0890%	0.0040%	0.0171%
TOTAL		152,881	28,272	5,595	59,069	59,945	100.0%	100.0%	100.0%	100.0%
Tonnage Allocation (% of total)			18%	4%	39%	39%				

APPENDIX B CURRENT POLICIES AND PROGRAMS

CURRENT POLICIES AND PROGRAMS

Current Policies and Plans

In planning for Zero Waste, it is important to review and understand existing policies and plans to ensure that the Zero Waste Plan supports and enhances the City's existing goals.

Pasadena Municipal Code

Chapters 8.60, 8.61, and 8.62 of the Pasadena Municipal Code (PMC) directly relate to the City's solid waste programs.

Ordinances related to solid waste collection are covered in Chapters 8.60-8.61. Chapter 8.60 contains ordinances for the City's solid waste collection services, including the waste reduction program, solid waste collection and service fees, and the bulky item pickup program. Chapter 8.61 provides ordinances for the franchised collection services, which include requirements for waste reduction and recycling services as well as required recycling diversion rates.

Chapter 8.62 includes a requirement to have waste management plans for certain construction and demolition (C&D) projects. C&D recycling was mandated with the adoption of Ordinance 6917 in 2002. An amendment to Chapter 8.62 was adopted in February 2014 requiring applicable C&D projects to divert a minimum of 75 percent of the materials generated through recycling, salvage, or deconstruction. The ordinance is applicable to all demolitions, residential additions and remodels regardless of size, new structures of at least 120 square feet, tenant improvements of at least 1,000 square feet, and all City projects and competitively bid projects regardless of size. A performance security deposit is required to be collected at the beginning of each project and is refundable when recycling requirements are met. A final report with a summary of the diversion obtained, including documentation, are required in order for the deposit to be returned.

Table B-1 provides an overview of the amount of C&D materials disposed and diverted from 2006 to 2013 from covered projects hauled by franchised haulers.

Table B-1
C&D Debris Disposal and Diversion

Year	C&D Disposed (Tons)	C&D Diverted (Tons)	Diversion (%)
2006	4,586	19,011	81%
2007	3,534	19,506	85%
2008	2,525	17,173	87%
2009	1,705	12,732	88%
2010	1,216	8,692	88%
2011	1,295	11,544	90%
2012	1,467	10,365	88%
2013	1,447	9,929	87%

Source: City of Pasadena Non-Exclusive Hauler Reports, 2006-2013

Zoning Code

The Zoning Code (PMC 17.10-80) describes various types of zoning districts and land use classifications, land use regulations, development standards, and environmental performance standards. The Zoning Code's purpose is to protect and promote the public's health, safety, and general welfare, and to implement the policies of the General Plan. Related to solid waste, Ordinance 17.40.120 requires development and construction of new structures to include storage areas for the collection of mixed waste and recyclable materials. This helps ensure that new buildings account for the space to house the collection of recyclables, which helps promote the implementation of recycling programs.

General Plan

The City's General Plan provides a long range road map to guide the City's decision making process for the future. The General Plan is made up of seven elements that include the following:

1. Land Use
2. Circulation or Mobility
3. Housing
4. Open Space
5. Conservation
6. Noise
7. Safety

In 2009, the City began updating four elements of the General Plan: Land Use, Mobility, Open Space, and Conservation. A General Plan community survey was distributed in the summer of 2011 to collect feedback on the alternatives and the existing General Plan's guiding principles. The survey responses were used to help draft the concept land use map and policies that were presented for review by the public, advisory commissions and City Council in the spring of 2012.

The General Plan's Conservation Element recognizes the finite limits of Pasadena's natural resources and develops means for their protection and orderly use. A major role of this section is to provide policy guidelines for managing Pasadena's natural resources. Goal 2.3 in the Conservation Element states "Environmental management is a key consideration in the planning and decision-making process." The Zero Waste Plan will complement the General Plan by incorporating environmental management as a means of reducing the impact to natural resources.

California Green Building Standards Code

Similar to the City's C&D Ordinance, the California Green Building Standards Code (CALGreen) requires a construction waste management plan for residential and non-residential projects. The State Code requires the diversion of a minimum of 50 percent of the C&D debris generated by "efficient usage, recycling, and reuse on the project site or salvage for future use or sale." The City's C&D Ordinance has many features in common with CALGreen. The added requirement of a deposit plus the higher 75 percent diversion requirement, however, make the City's C&D Ordinance more stringent than the Green Building Standards Code, resulting in it being the superseding document for C&D projects. As discussed previously in this document, the City square footage thresholds were lowered in 2014 to meet the most current CALGreen requirements.

United Nations Urban Environmental Accords and Green Cities Declaration

On September 18, 2006, the City endorsed the United Nations (U.N.) Urban Environmental Accords (UEA). The U.N.'s Green Cities Declaration is an agreement signed as a part of the UEA that recognizes the importance of global cooperation to mitigate climate change. The UEA contains 21 action items that lay the groundwork for addressing urban environmental issues in seven different areas:

1. Energy
2. Waste reduction
3. Urban design
4. Urban nature
5. Transportation
6. Environmental health
7. Water

The UEA was aimed at implementing as many of the 21 Actions as possible by World Environment Day, June 5th, 2012. The 21 action items covered in the UEA are the basis of the City's Green City Action Plan described further in this plan. The UEA addresses the goal of achieving Zero Waste by 2040; the Zero Waste Plan will be developed to help Pasadena reach that goal.

Green City Action Plan

Approved by the City Council on September 18, 2006, the Green City Action Plan is a progressive list of environmental initiatives for the City to take in its mission to become a sustainable and green community. The Green City Action Plan is modeled off of the goals listed in the UEA.

The City has developed a set of sustainability indicators grouped by the seven thematic areas of the UEA. The goal is to use these indicators as a tool for assessing Pasadena's progress in meeting the UEA targets in a verifiable and measurable way; 2008 was the first year the indicators were produced and they have been reported every year since then.

The City has been actively pursuing projects to attain the goals outlined in the Green City Action Plan. As of 2010, the City had successfully implemented eight of the 21 actions.

The Waste Reduction category listed in the Green City Action Plan (and UEA) contains the following three initiatives:

- UEA 4 – Achieve Zero Waste to landfill and incinerators by 2040
- UEA 5 – Reduce the use of a disposable, toxic or nonrenewable product category at least 50 percent by 2012
- UEA 6 – Implement “user-friendly” recycling and composting programs with the goal of reducing 20 percent per capita waste disposal to landfills and incinerators by 2012

Of the three initiatives listed above, the City has successfully achieved UEA 6 and is making progress on achieving UEA 4 and 5. As of 2010, the City had achieved the goal listed in UEA 6 by increasing diversion for yard trimmings, hazardous waste, and electronic waste. The development and implementation of the Zero Waste Plan is designed to enable the City to meet the Zero

Waste goal stated in UEA 4. To target UEA 5, City staff conducted an inventory of toxic chemicals used in City facilities in 2010 and they have developed a process to replace those chemicals with safer, more sustainable alternatives. The plastic bag ban, which went into effect on July 1, 2012, is another way the City is reducing the use of disposable products in this category.

U.S. Conference of Mayors' Climate Protection Agreement

The U.S. Conference of Mayors' Climate Protection Agreement, signed at the same time as the UEA, advances the goals of the Kyoto Protocol. The Agreement offers 12 measures for cities to take that will contribute to reducing greenhouse gas emissions (GHG). In order to achieve these goals, cities are asked to take actions in their own operations and communities. Under the Agreement, cities commit to the following three actions:

1. Strive to meet or exceed the Kyoto Protocol targets in their own communities
2. Urge state governments and the federal government to enact policies and programs to meet or exceed the GHG emission reduction target of a 7 percent reduction from 1990 levels by 2012
3. Urge the U.S. Congress to pass the bipartisan GHG reduction legislation, which would establish a national emission trading system



Beverage container recycling at a UCLA football game at the Rose Bowl

The Agreement is compatible with the UEA and the Green Cities Action Plan, although it has no set dates for communities to reach each measure and the focus is directed towards reducing climate change. The specific measure that targets solid waste is listed in the 10th action: "Increase recycling rates in City operations and in the community." The City has been actively increasing recycling rates and will further expand efforts through implementation of its Zero Waste Plan.

Green Cities California Sustainability Resolution

On February 4, 2008, the City adopted the Green Cities California (GCC) Sustainability Resolution. The purpose of this collaborative effort is to take action to accelerate local, regional, national and international efforts to achieve sustainability. Participating cities include Berkeley, Los Angeles, Pasadena, Oakland, Sacramento, San Diego, San Francisco, San Jose, Santa Barbara, Santa Monica, and the County of Marin, which together represent over eight million California residents.

The Pasadena City Council adopted the resolution that committed to take the following five actions:

1. Purchasing 100 percent post-consumer recycled paper for municipal operations
2. Prohibiting the purchase of bottled water for municipal operations and government-sponsored events
3. Adopting a carbon offset plan for municipal employee air travel

4. Adopting municipal fleet fuel efficiency standards
5. Promoting the purchase of California foods for municipal events and operations

The Resolution and mission of GCC are consistent with the U.S. Mayors' Climate Protection Agreement, the U.N. Green Cities Declaration and UEA, and the Green City Action Plan. The City has either implemented or actively promotes the five GCC actions (via the Green City Action Plan), where possible, meeting the requirements of the Resolution.

Urban Climate Action Plan

The City intends to develop the first-ever Urban Climate Action Plan to focus on reduction strategies to cut GHG emissions by 25 percent by 2030. On top of increasing energy efficiency to reduce GHG emissions, the City is also encouraging residents to compost as a part of the plan. The policies and programs that are addressed in the Zero Waste Plan will support efforts in composting and other waste reduction activities that will lead to a reduction in GHG emissions.

Extended Producer Responsibility (EPR) Resolution

The City adopted an Extended Producer Responsibility (EPR) Resolution on February 22, 2010. The City's EPR Resolution establishes the following:

- Support to pursue legislation and statewide EPR policies
- Support and membership in the California Product Stewardship Council (CPSC)
- Signature of the CPSC Pledge of Support and contributing to CPSC to educate and advocate for EPR policies and programs
- Development of EPR policies within the City

Extended producer responsibility is an important area to address in order to reach Zero Waste and implementation of the Zero Waste Plan will support the goals of the EPR Resolution.

Plastic Bag Ban Ordinance

On October 3, 2011 the City Council unanimously approved an ordinance to prohibit the distribution of single-use plastic carryout bags for consumer use and to establish a \$0.10 fee on single-use paper carryout bags.

Implementation of the Pasadena Plastic Bag Ban Ordinance took place in two phases. Phase 1 of the ordinance went into effect for large supermarkets on July 1, 2012. Phase 2 of the ordinance went into effect on December 31, 2012 and applies to the smaller markets, liquor stores, convenience stores, farmers markets, drug stores, pharmacies, and vendors at City-sponsored events, facilities, or on City property.

The definition of a supermarket includes the following:

- Per the California Public Resources Code (Section 14526.5), a "Supermarket" means a full-line, self-service retail store with gross annual sales of two million dollars (\$2,000,000), or more, and which sells a line of dry grocery, canned goods, or nonfood items and some perishable items"

- Buildings that have over 10,000 square feet of retail space that generate sales or use tax pursuant to the Bradley-Burns Uniform Local Sales and Use Tax Law and have a pharmacy licensed pursuant to Chapter 9 of Division 2 of the Business and Professions Code

At a minimum, the implementation of this ordinance advances the Zero Waste goals by reducing the following: the amount of litter in Pasadena; the number of plastic bags that are disposed in landfills; and the amount of contamination in yard trimmings containers.

Greenhouse Gas Inventory and Reduction Plan

The Greenhouse Gas Inventory and Reduction Plan was released in October 2009 under the premise that the City is capable of addressing the various sources of emissions that contribute to climate change. The objectives of the Greenhouse Gas Inventory and Reduction Plan were to achieve the following:

- Create a greenhouse gas (GHG) baseline
- Provide a plan that is in line with the efforts conducted at the state (AB 32), federal, and global level
- Determine if the City's sustainability efforts meet the City's GHG emissions reduction goals
- Provide a policy for future developments

The GHG emission goals identified in the Greenhouse Gas Inventory and Reduction Plan were to reduce emissions to 1990 GHG emissions levels by 2020, and ultimately by 80 percent below 1990 GHG emissions levels by 2050, which is consistent with the Kyoto Protocol.

Assembly Bill 32 (AB 32), the Global Warming Solutions Act of 2006, requires the California Air Resources Board to develop regulations and market mechanisms to reduce California's greenhouse gas emissions to 1990 levels by 2020. The City has demonstrated that it will surpass the 2020 reduction target established in AB 32 as a result of the ordinances and existing City programs implemented in combination with established State reduction programs. The City is also expected to meet the 2050 goal. Recommended solid waste programs to reduce GHG emissions include implementing the following: a Zero Waste plan; composting; multifamily and commercial recycling; reduction of C&D debris; E-waste recycling; and eliminating single-use bags. Some of the programs have been implemented by the City wholly or partially. Those that are partially addressed are expanded on in the Zero Waste Plan.

Environmental Advisory Commission (EAC)

The Environmental Advisory Commission (EAC) was formed in January 2007 and consists of nine residents who advise the City Council and make policy recommendations in support of the goals and objectives of the City's Environmental Charter and monitor and guide the Green City Action Plan. This commission holds monthly meetings open to the public to discuss environmental issues with local, regional, and global impacts.

Current Programs

Municipal Collection, Recycling, and Disposal

Single-Family Residential Program

The City is responsible for the collection, removal, and disposal of materials from all single-family residences and multifamily complexes that have four units or less. Each single-family home and multifamily residence has three carts for the separate collection of recyclables, yard trimmings, and mixed waste. The wheeled carts are all collected on the same day each week. The City uses a Pay-As-You-Throw (PAYT) variable rate structure for residential collection. The PAYT system charges residents for the mixed waste portion based on the size of the cart: 32, 60, or 100-gallons. It is estimated that approximately 26 percent of residents use 32 gallon carts, 42 percent use 60 gallon carts, and 32 percent use 100 gallon carts. As part of the PAYT system, residents are not charged separately for recycling (collected in 60 gallon carts) or yard trimmings (collected in 100 gallon carts).

Single-family customers can schedule free bulky item pickups twice a year. Additional bulky item pickups are available for a fee that ranges from approximately \$49 to \$104 per pickup. Free curbside collection of used motor oil and oil filters may also be



scheduled. Christmas tree recycling is offered in January through a free curbside program and through a drop-off program at locations around Pasadena.

City of Pasadena PAYT cart options

Commercial and Multifamily Program

The City operates a non-exclusive Solid Waste Franchise System that allows authorized haulers to collect and dispose of materials from commercial businesses and multifamily complexes with five or more units. The current non-exclusive franchised haulers for the City are listed in **Table B-2**. In August 2007, City Council approved the closure of the franchise system to improve customer service and reduce the number of trucks operating within Pasadena and the resulting environmental pollution. The environmental impact of solid waste collection vehicles is significant and includes street deterioration, traffic, noise, decreased air quality and solid waste vehicles interfering with resident vehicle access. Other considerations for the closure of the system included the desire to increase the diversion rate required of franchise haulers, making haulers responsible for collection of all refuse onsite, demonstration by haulers of a greater commitment to applicable elements of the Green City Action plan and providing staff more time to enforce franchise requirements. After the franchise system was closed, the City stopped accepting

applications for new franchised haulers and any non-permitted haulers found operating in Pasadena are fined. Disposed materials from commercial generators are collected primarily in three cubic yard bins, serviced by front-loader collection vehicles. There are a number of compactors located at large commercial sites as well, including office buildings, shopping centers, schools, and colleges/universities. Each franchisee is required to ensure that recycling services are provided to all of its customers directly or by arrangement with another franchised hauler. At least every six months, each franchisee is also required to provide educational outreach to its customers on collection and recycling options for various materials such as Christmas trees.

As of October 2008, (per Municipal Code 8.61.175), the City requires the franchised haulers to divert a minimum of 60 percent of the solid waste and 75 percent of the construction and demolition (C&D) debris collected on a monthly basis. Haulers must report to the City monthly on the quantities of materials disposed and diverted. If the diversion goals are not met, then the haulers are required to pay a fee per ton of recycling shortfall tonnage, based on the diversion rate that was obtained. The recycling shortfall tonnage is the number of additional tons of material that a franchisee would need to divert in order to meet the diversion requirements.

Annually, haulers have the option to report to the City on the quantity of third party diversion that takes place within their customer accounts. The third party diversion reported is incorporated into the hauler's overall diversion rate. Up to 25 percent of materials collected by the hauler can be accounted for from third party diversion at commercial businesses. Each year, the City contacts a select number of businesses that generate a significant amount of disposed materials in Pasadena. Each of the businesses confirm the source reduction and/or recycling programs implemented on-site so the City can account for the third party diversion separately from the materials the hauler collects.

Per Section 12 of the Rules and Regulations, franchised haulers are required to provide customers with on-call, curbside pickup of bulky items twice per calendar year as a part of customers' basic commercial solid waste services. Bulky items include small appliances, furniture, carpets, mattresses, white goods, oversized yard trimmings such as tree trunks and large branches and similar large items discarded by franchisees' customers. Bulky items cannot interfere with pedestrian or vehicular traffic or regular access to the public right-of-way and cannot create a nuisance or a danger to public health and safety.

Also, per Section 13 of the Rules and Regulations, franchised haulers are required to pick up abandoned items on or in front of customer locations as soon as possible upon driver observation and within 24 hours when requested by the City.

Table B-2
Non-Exclusive Franchised Haulers

#	Company
1.	AAA Rubbish, Inc.
2.	American Reclamation
3.	Arakelian Enterprises, Inc. doing business as Athens Services
4.	Cedarwood-Young, Company doing business as Allan Company*
5.	City of Pasadena*
6.	City Rent A Bin/Serv-Wel Disposal/A Rent A Bin
7.	Consolidated Disposal Service, L.L.C.
8.	Crown Disposal Company, Inc.
9.	Direct Disposal
10.	Haul-Away-Rubbish Service Company, Inc.
11.	Heritage Disposal, Inc.
12.	Interior Removal Specialist, Inc.
13.	J & L Hauling & Disposal, Inc.
14.	Metropolis Disposal Inc.
15.	Nasa Services, Inc.
16.	Perez Disposal Company, Inc.
17.	Southland Disposal Company
18.	United Pacific Waste
19.	Universal Waste Systems, Inc.
20.	USA Waste of California doing business as Waste Management
21.	Valley Vista Services, Inc.
22.	Ware Disposal Company, Inc.
23.	Waste and Recycling Services

Source: City of Pasadena list of Non-Exclusive Franchised Haulers, 2012

*Indicates companies that do not accept C&D debris

Construction and Demolition (C&D) Debris

C&D debris is collected by a majority of the non-exclusive franchised haulers (see **Table B-2**). Commercial haulers are required to divert 75 percent of C&D debris generated at construction, demolition, renovation, and remodeling projects.

In 2002, the City established an ordinance requiring each applicable and permitted construction or demolition project to divert 50 percent of C&D debris generated through recycling, salvage, or deconstruction. Projects are required to pay a performance security deposit at the beginning of the project and the deposit is reimbursed if the diversion requirement is met and if the supporting documentation is provided. From 2006 through 2013, the program has contributed to the diversion of over 108,000

tons of materials from landfilling. (Note: The Puente Hills Landfill closed and stopped disposing of waste in the landfill in October 2013.)

In 2014, the C&D Ordinance was amended to comply with the State's updated California Green Building Standards Code (CALGreen) requirements. Covered projects' square footage thresholds were lowered and the diversion requirements were increased to 75 percent to support the City of Pasadena's Zero Waste Goal.

Disposal

The majority of the mixed waste from Pasadena is disposed at the Scholl Canyon landfill located in Glendale, approximately three miles west of the City. Pasadena is one of the Scholl Canyon watershed cities, which by ordinance, limits disposal at the landfill to materials generated within the cities of Glendale, La Cañada Flintridge, Pasadena, South Pasadena, San Marino, Sierra Madre, and a select number of Los Angeles County unincorporated communities.

Other Los Angeles County landfills utilized by haulers serving Pasadena include the Antelope Valley, Chiquita Canyon, Lancaster, Puente Hills, and Sunshine Canyon landfills (Note: The Puente Hills Landfill closed and stopped disposing of waste in the landfill in October 2013). Landfills in surrounding counties are also utilized for disposal of materials from Pasadena. Based on fiscal year 2010 data, approximately 5 percent of disposed materials were taken to one of the waste-to-energy facilities in Los Angeles County: Commerce Refuse to Energy Facility or Southeast Resource Recovery Facility.

Other City Programs

A description of waste reduction, recycling, and disposal programs offered by the City, in addition to those discussed above, is included below:

- Free mulch for residents from February through October at Victory Park
- Ten certified used oil centers at various locations in Pasadena
- Fourteen residential drop off sites located through Pasadena for compact fluorescent light bulbs/batteries/cell phones
- Periodic electronic waste (E-waste) recycling and document shredding events open to all Pasadena residents and businesses
- Recycling receptacles loaned for special events
- Free mail-back program for home generated medical sharps (hypodermic needles) through the Pasadena Public Health Department
- Compost bins available for sale at cost
- Free junk mail opt-out program through Catalog Choice

City Facilities

The City does not own or operate any solid waste transfer stations or landfills. The City contracts with facilities located outside of City limits for waste processing and disposal. Pasadena's residential recyclables are processed by Allan Company at its facility located in Baldwin Park. Mixed waste collected by the City, which includes residential waste and waste generated by City operations, is disposed of at the Scholl Canyon Landfill located in Glendale. When the City's contract for processing curbside recyclables was about to expire in 2013, a Request for Proposals was advertised. In addition to curbside recycling, proposals were solicited for processing food waste, green waste, special events waste and street sweeping materials. Through the Request for Proposals process, the City has secured processing capacity for material generated at special events, including material from the Rose Parade and the Rose Bowl Game.

The City has many programs in place to divert waste generated by City operations. At City-owned facilities, the City collects single stream recyclables including: mixed paper, cardboard, and beverage containers. At offices leased by the City, franchise



haulers run the waste management programs. For special employee events and public meetings held at City facilities, the City provides beverage container recycling. The City has established employee CFL/battery recycling drop off locations at City offices. At the City Yards and Rose Bowl Stadium, dedicated cardboard recycling bins have been installed and they are serviced as needed. Tree trimmings produced by the maintenance of City-owned trees is turned into mulch for use on parkways and City grounds. This free mulch is offered to the public from February through October.

Baled commodities at a Material Recovery Facility

APPENDIX C DIVERSION CALCULATIONS

**Commercial Sector
Diversion Estimates**

Tons Disposed (Source Tab: Tonnage Data)	Short Term													
	Calculation of Tons Disposed by Materials Type (2010/11)		12. Expand Mandatory Commercial Recycling Program			15. School Recycling Programs			13. Enhanced Educational Outreach			14. Technical Assistance to Businesses		
	%	Tonnage	Percent Diverted from Sector	Tons Diverted	Resulting Tonnage	Percent Diverted from Sector	Tons Diverted	Resulting Tonnage	Percent Diverted from Sector	Tons Diverted	Resulting Tonnage	Percent Diverted from Sector	Tons Diverted	Resulting Tonnage
Uncoated Corrugated Cardboard	20.05%	11,844	-	2,961	8,883	-	89	8,794	-	879	7,915	-	396	7,519
Paper Bags	7.47%	4,410	25.00%	1,103	3,308	1.00%	33	3,275	10.00%	327	2,947	5.00%	147	2,800
Newspaper	0.25%	146	25.00%	36	109	1.00%	1	108	10.00%	11	97	5.00%	5	93
White Ledger Paper	0.93%	547	25.00%	137	410	1.00%	4	406	10.00%	41	365	5.00%	18	347
Other Office Paper	1.10%	647	25.00%	162	485	1.00%	5	481	10.00%	48	433	5.00%	22	411
Magazines and Catalogs	1.33%	783	25.00%	196	588	1.00%	6	582	10.00%	58	524	5.00%	26	497
Phone Books and Directories	0.56%	330	25.00%	82	247	1.00%	2	245	10.00%	24	220	5.00%	11	209
Other Miscellaneous Paper	0.04%	24	25.00%	6	18	1.00%	0	18	10.00%	2	16	5.00%	1	15
Remainder/Composite Paper	2.27%	1,343	25.00%	336	1,007	1.00%	10	997	10.00%	100	897	5.00%	45	852
Glass	6.12%	3,614	25.00%	903	2,710	1.00%	27	2,683	10.00%	268	2,415	5.00%	121	2,294
Clear Glass Bottles and Containers	1.19%	706	-	176	529	-	5	524	-	52	472	-	24	448
Green Glass Bottles and Containers	0.47%	275	25.00%	69	206	1.00%	2	204	10.00%	20	184	5.00%	9	175
Brown Glass Bottles and Containers	0.12%	70	25.00%	18	53	1.00%	1	52	10.00%	5	47	5.00%	2	45
Other Glass Colored Bottles and Containers	0.29%	170	25.00%	43	128	1.00%	1	127	10.00%	13	114	5.00%	6	108
Flat Glass	0.03%	18	25.00%	4	13	1.00%	0	13	10.00%	1	12	5.00%	1	11
Remainder/Composite Glass	0.02%	11	25.00%	3	8	1.00%	0	8	10.00%	1	7	5.00%	0	7
Metals	0.27%	161	25.00%	40	121	1.00%	1	120	10.00%	12	108	5.00%	5	102
Tin/Steel Cans	4.33%	2,559	-	640	1,919	-	19	1,900	-	190	1,710	-	86	1,625
Major Appliances	0.63%	372	25.00%	93	279	1.00%	3	276	10.00%	28	248	5.00%	12	236
Used Oil Filters	0.13%	76	25.00%	19	57	1.00%	1	57	10.00%	6	51	5.00%	3	49
Other Ferrous	0.00%	0	25.00%	0	0	1.00%	0	0	10.00%	0	0	5.00%	0	0
Aluminum Cans	1.50%	889	25.00%	222	666	1.00%	7	660	10.00%	66	594	5.00%	30	564
Other Non-Ferrous	0.10%	59	25.00%	15	44	1.00%	0	44	10.00%	4	39	5.00%	2	37
Remainder/Composite Metal	0.25%	148	25.00%	37	111	1.00%	1	110	10.00%	11	99	5.00%	5	94
Electronics	1.72%	1,015	25.00%	254	762	1.00%	8	754	10.00%	75	679	5.00%	34	645
Brown Goods	0.11%	62	-	16	47	-	0	46	-	5	42	-	2	40
Computer-related Electronics	0.08%	44	25.00%	11	33	1.00%	0	33	10.00%	3	30	5.00%	1	28
Other Small Consumer Electronics	0.00%	0	25.00%	0	0	1.00%	0	0	10.00%	0	0	5.00%	0	0
Video Display Devices	0.03%	18	25.00%	4	13	1.00%	0	13	10.00%	1	12	5.00%	1	11
Plastics	0.00%	0	25.00%	0	0	1.00%	0	0	10.00%	0	0	5.00%	0	0
PETE Containers	10.51%	6,209	-	1,552	4,657	-	47	4,610	-	461	4,149	-	207	3,942
HDPE Containers	0.50%	293	25.00%	73	219	1.00%	2	217	10.00%	22	196	5.00%	10	186
Miscellaneous Plastic Containers	0.39%	228	25.00%	57	171	1.00%	2	170	10.00%	17	153	5.00%	8	145
Plastic Trash Bags	0.48%	286	25.00%	72	215	1.00%	2	213	10.00%	21	191	5.00%	10	182
Plastic Grocery and Other Merchandise Bags	1.26%	747	25.00%	187	560	1.00%	6	555	10.00%	55	499	5.00%	25	474
Non-Bag Commercial and Industrial Packaging Film	0.25%	150	25.00%	37	112	1.00%	1	111	10.00%	11	100	5.00%	5	95
Film Products	0.86%	508	25.00%	127	381	1.00%	4	377	10.00%	38	339	5.00%	17	323
Other Film	0.23%	138	25.00%	35	104	1.00%	1	103	10.00%	10	92	5.00%	5	88
Durable Plastic Items	1.61%	949	25.00%	237	712	1.00%	7	705	10.00%	70	634	5.00%	32	603
Remainder/Composite Plastic	1.67%	985	25.00%	246	739	1.00%	7	731	10.00%	73	658	5.00%	33	625
Other Organic	3.26%	1,925	25.00%	481	1,444	1.00%	14	1,429	10.00%	143	1,286	5.00%	64	1,222
Food	31.86%	18,817	-	0	18,817	-	0	18,817	-	1882	16,936	-	0	16,936
Leaves and Grass	15.28%	9,027	0.00%	0	9,027	0%	0	9,027	10.00%	903	8,124	0.00%	0	8,124
Prunings and Trimmings	2.49%	1,473	0.00%	0	1,473	0%	0	1,473	10.00%	147	1,325	0.00%	0	1,325
Branches and Stumps	4.22%	2,490	0.00%	0	2,490	0%	0	2,490	10.00%	249	2,241	0.00%	0	2,241
Manures	0.74%	435	0.00%	0	435	0%	0	435	10.00%	44	392	0.00%	0	392
Textiles	0.00%	0	0.00%	0	0	0%	0	0	10.00%	0	0	0.00%	0	0
Carpet	1.06%	625	0.00%	0	625	0%	0	625	10.00%	62	562	0.00%	0	562
Remainder/Composite Organic	4.99%	2,950	0.00%	0	2,950	0%	0	2,950	10.00%	295	2,655	0.00%	0	2,655
Inerts and Other	3.08%	1,817	0.00%	0	1,817	0%	0	1,817	10.00%	182	1,635	0.00%	0	1,635
Concrete	28.09%	16,593	-	0	16,593	-	0	16,593	-	1,659	14,933	-	0	14,933
Asphalt Paving	0.75%	440	0.00%	0	440	0%	0	440	10.00%	44	396	0.00%	0	396
Asphalt Roofing	0.00%	0	0.00%	0	0	0%	0	0	10.00%	0	0	0.00%	0	0
Lumber	2.32%	1,372	0.00%	0	1,372	0%	0	1,372	10.00%	137	1,235	0.00%	0	1,235
Gypsum Board	16.45%	9,719	0.00%	0	9,719	0%	0	9,719	10.00%	972	8,747	0.00%	0	8,747
Rock, Soil and Fines	1.74%	1,031	0.00%	0	1,031	0%	0	1,031	10.00%	103	927	0.00%	0	927
Remainder/Composite Inerts and Other	1.57%	930	0.00%	0	930	0%	0	930	10.00%	93	837	0.00%	0	837
HHW	5.25%	3,101	0.00%	0	3,101	0%	0	3,101	10.00%	310	2,790	0.00%	0	2,790
Paint	0.31%	185	-	0	185	-	0	185	-	19	167	-	0	167
Vehicle & Equipment Fluids	0.27%	157	0.00%	0	157	0%	0	157	10.00%	16	142	0.00%	0	142
Used Oil	0.00%	0	0.00%	0	0	0%	0	0	10.00%	0	0	0.00%	0	0
Batteries	0.00%	0	0.00%	0	0	0%	0	0	10.00%	0	0	0.00%	0	0
Remainder/Composite Household Hazardous	0.01%	6	0.00%	0	6	0%	0	6	10.00%	1	5	0.00%	0	5
Special Waste	0.04%	22	0.00%	0	22	0%	0	22	10.00%	2	20	0.00%	0	20
Ash	3.54%	2,090	-	0	2,090	-	0	2,090	-	209	1,881	-	0	1,881
Treated Medical Waste	0.15%	91	0.00%	0	91	0%	0	91	10.00%	9	82	0.00%	0	82
Bulky Items	0.00%	0	0.00%	0	0	0%	0	0	10.00%	0	0	0.00%	0	0
Tires	3.09%	1,826	0.00%	0	1,826	0%	0	1,826	10.00%	183	1,644	0.00%	0	1,644
Remainder/Composite Special Waste	0.24%	142	0.00%	0	142	0%	0	142	10.00%	14	128	0.00%	0	128
Mixed Residue	0.05%	31	0.00%	0	31	0%	0	31	10.00%	3	28	0.00%	0	28
Mixed Residue	0.00%	2	-	0	2	-	0	2	-	0	2	-	0	2
TOTAL	0.00%	2	0.00%	0	2	0%	0	2	0.00%	0	2	0.00%	0	2
TOTAL	100.0%	59,069	4.59%	5,345	53,724	0.1%	160	53,563	4.60%	5,356	48,207	0.61%	714	47,493

**Commercial Sector
Diversion Estimates**

Short-to-Medium Term																		
Tons Disposed (Source Tab: Tonnage Data)	19. Commercial Food Scraps & Organics Collection-Pilot program			16. Additional waste reduction, reuse, recycling, and composting policies at City Facilities			20. Mandatory Organics Separation and Collection at Stadiums and Large Venues/Events			17. Expand EPR Policies			18. Product and Disposal Bans			21. Green Business Partnership Program		
	Percent Diverted from Sector	Tons Diverted	Resulting Tonnage	Percent Diverted from Sector	Tons Diverted	Resulting Tonnage	Percent Diverted from Sector	Tons Diverted	Resulting Tonnage	Percent Diverted from Sector	Tons Diverted	Resulting Tonnage	Percent Diverted from Sector	Tons Diverted	Resulting Tonnage	Percent Diverted from Sector	Tons Diverted	Resulting Tonnage
Uncoated Corrugated Cardboard	0.00%	0	7,519	1.00%	44	7,476	0.00%	9	7,467	0.15%	4	7,463	10.00%	277	7,186	1.00%	72	7,114
Paper Bags	0.00%	0	2,800	1.00%	28	2,772	0.00%	0	2,772	0.00%	4	2,768	0.00%	0	2,491	1.00%	25	2,466
Newspaper	0.00%	0	93	1.00%	1	92	0.00%	0	92	0.00%	0	92	0.00%	0	92	1.00%	1	91
White Ledger Paper	0.00%	0	347	1.00%	3	344	0.00%	0	344	0.00%	0	344	0.00%	0	344	1.00%	3	340
Other Office Paper	0.00%	0	411	1.00%	4	407	0.00%	0	407	0.00%	0	407	0.00%	0	407	1.00%	4	403
Magazines and Catalogs	0.00%	0	497	1.00%	5	492	0.00%	0	492	0.00%	0	492	0.00%	0	492	1.00%	5	487
Phone Books and Directories	0.00%	0	209	1.00%	2	207	0.00%	0	207	0.00%	0	207	0.00%	0	207	1.00%	2	205
Other Miscellaneous Paper	0.00%	0	15	0.00%	0	15	0.00%	0	15	0.00%	0	15	0.00%	0	15	1.00%	0	15
Remainder/Composite Paper	0.00%	0	852	0.00%	0	852	1.00%	9	844	0.00%	0	844	0.00%	0	844	1.00%	8	836
	0.00%	0	2,294	0.00%	0	2,294	0.00%	0	2,294	0.00%	0	2,294	0.00%	0	2,294	1.00%	23	2,271
Glass	-	0	448	-	3	445	-	0	445	-	0	445	-	32	412	-	4	408
Clear Glass Bottles and Containers	0.00%	0	175	1.00%	2	173	0.00%	0	173	0.00%	0	173	10.00%	17	156	1.00%	2	154
Green Glass Bottles and Containers	0.00%	0	45	1.00%	0	44	0.00%	0	44	0.00%	0	44	0.00%	4	40	1.00%	0	39
Brown Glass Bottles and Containers	0.00%	0	108	1.00%	1	107	0.00%	0	107	0.00%	0	107	10.00%	11	96	1.00%	1	95
Other Glass Colored Bottles and Containers	0.00%	0	11	0.00%	0	11	0.00%	0	11	0.00%	0	11	0.00%	0	11	1.00%	0	11
Flat Glass	0.00%	0	7	0.00%	0	7	0.00%	0	7	0.00%	0	7	0.00%	0	7	1.00%	0	7
Remainder/Composite Glass	0.00%	0	102	0.00%	0	102	0.00%	0	102	0.00%	0	102	0.00%	0	102	1.00%	1	101
Metals	-	0	1,625	-	3	1,622	-	0	1,622	-	0	1,622	-	4	1,618	-	16	1,602
Tin/Steel Cans	0.00%	0	236	1.00%	2	234	0.00%	0	234	0.00%	0	234	0.00%	0	234	1.00%	2	231
Major Appliances	0.00%	0	49	0.00%	0	49	0.00%	0	49	0.00%	0	49	0.00%	0	49	1.00%	0	48
Used Oil Filters	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%	0	0	1.00%	0	0
Other Ferrous	0.00%	0	564	0.00%	0	564	0.00%	0	564	0.00%	0	564	0.00%	0	564	1.00%	6	559
Aluminum Cans	0.00%	0	37	1.00%	0	37	0.00%	0	37	0.00%	0	37	10.00%	4	33	1.00%	0	33
Other Non-Ferrous	0.00%	0	94	0.00%	0	94	0.00%	0	94	0.00%	0	94	0.00%	0	94	1.00%	1	93
Remainder/Composite Metal	0.00%	0	645	0.00%	0	645	0.00%	0	645	0.00%	0	645	0.00%	0	645	1.00%	6	638
Electronics	-	0	40	-	0	40	-	0	40	-	0	40	-	0	40	-	0	39
Brown Goods	0.00%	0	28	0.00%	0	28	0.00%	0	28	0.00%	0	28	0.00%	0	28	1.00%	0	28
Computer-related Electronics	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%	0	0	1.00%	0	0
Other Small Consumer Electronics	0.00%	0	11	0.00%	0	11	0.00%	0	11	0.00%	0	11	0.00%	0	11	1.00%	0	11
Video Display Devices	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%	0	0	1.00%	0	0
Plastics	-	0	3,942	-	3	3,939	-	0	3,939	-	2	3,937	-	37	3,900	-	39	3,861
PETE Containers	0.00%	0	186	1.00%	1.9	184	0.00%	0	184	0.00%	0	184	10.00%	18	166	1.00%	2	164
HDPE Containers	0.00%	0	145	1.00%	1	144	0.00%	0	144	0.00%	0	144	0.00%	0	144	1.00%	1	142
Miscellaneous Plastic Containers	0.00%	0	182	0.00%	0	182	0.00%	0	182	0.00%	0	182	10.00%	18	164	1.00%	2	162
Plastic Trash Bags	0.00%	0	474	0.00%	0	474	0.00%	0	474	0.00%	0	474	0.00%	0	474	1.00%	5	469
Plastic Grocery and Other Merchandise Bags	0.00%	0	95	0.00%	0	95	0.00%	0	95	0.00%	0	95	0.00%	0	95	1.00%	1	94
Non-Bag Commercial and Industrial Packaging Film	0.00%	0	323	0.00%	0	323	0.00%	0	323	0.00%	0	323	0.00%	0	323	1.00%	3	319
Film Products	0.00%	0	88	0.00%	0	88	0.00%	0	88	0.50%	0	87	0.00%	0	87	1.00%	1	86
Other Film	0.00%	0	603	0.00%	0	603	0.00%	0	603	0.00%	0	603	0.00%	0	603	1.00%	6	597
Durable Plastic Items	0.00%	0	625	0.00%	0	625	0.00%	0	625	0.00%	0	625	0.00%	0	625	1.00%	6	619
Remainder/Composite Plastic	0.00%	0	1,222	0.00%	0	1,222	0.00%	0	1,222	0.10%	1	1,221	0.00%	0	1,221	1.00%	12	1,209
Other Organic	-	81	16,854	-	80	16,774	-	278	16,496	-	0	16,496	-	0	16,496	-	165	16,331
Food	1.00%	81	8,043	1.00%	80	7,963	3.00%	239	7,724	0.00%	0	7,724	0.00%	0	7,724	1.00%	77	7,646
Leaves and Grass	0.00%	0	1,325	0.00%	0	1,325	1.00%	13	1,312	0.00%	0	1,312	0.00%	0	1,312	1.00%	13	1,299
Prunings and Trimmings	0.00%	0	2,241	0.00%	0	2,241	1.00%	22	2,219	0.00%	0	2,219	0.00%	0	2,219	1.00%	22	2,197
Branches and Stumps	0.00%	0	392	0.00%	0	392	1.00%	4	388	0.00%	0	388	0.00%	0	388	1.00%	4	384
Manures	0.00%	0	0	0.00%	0	0	1.00%	0	0	0.00%	0	0	0.00%	0	0	1.00%	0	0
Textiles	0.00%	0	562	0.00%	0	562	0.00%	0	562	0.00%	0	562	0.00%	0	562	1.00%	6	557
Carpet	0.00%	0	2,655	0.00%	0	2,655	0.00%	0	2,655	0.00%	0	2,655	0.00%	0	2,655	1.00%	27	2,629
Remainder/Composite Organic	0.00%	0	1,635	0.00%	0	1,635	0.00%	0	1,635	0.00%	0	1,635	0.00%	0	1,635	1.00%	16	1,619
Inerts and Other	-	0	14,933	-	0	14,933	-	87	14,846	-	0	14,846	-	0	14,846	-	0	14,846
Concrete	0.00%	0	396	0.00%	0	396	0.00%	0	396	0.00%	0	396	0.00%	0	396	0.00%	0	396
Asphalt Paving	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%	0	0
Asphalt Roofing	0.00%	0	1,235	0.00%	0	1,235	0.00%	0	1,235	0.00%	0	1,235	0.00%	0	1,235	0.00%	0	1,235
Lumber	0.00%	0	8,747	0.00%	0	8,747	1.00%	87	8,660	0.00%	0	8,660	0.00%	0	8,660	0.00%	0	8,660
Gypsum Board	0.00%	0	927	0.00%	0	927	0.00%	0	927	0.00%	0	927	0.00%	0	927	0.00%	0	927
Rock, Soil and Fines	0.00%	0	837	0.00%	0	837	0.00%	0	837	0.00%	0	837	0.00%	0	837	0.00%	0	837
Remainder/Composite Inerts and Other	0.00%	0	2,790	0.00%	0	2,790	0.00%	0	2,790	0.00%	0	2,790	0.00%	0	2,790	0.00%	0	2,790
HHW	-	0	167	-	0	167	-	18	149	-	18	149	-	0	149	-	0	149
Paint	0.00%	0	142	0.00%	0	142	0.00%	0	142	0.00%	0	142	0.00%	0	142	0.00%	0	142
Vehicle & Equipment Fluids	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%	0	0
Used Oil	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%	0	0
Batteries	0.00%	0	5	0.00%	0	5	0.00%	0	5	70.00%	4	2	0.00%	0	2	0.00%	0	2
Remainder/Composite Household Hazardous	0.00%	0	20	0.00%	0	20	0.00%	0	20	70.00%	14	6	0.00%	0	6	0.00%	0	6
Special Waste	-	0	1,881	-	8	1,873	-	0	1,873	-	0	1,873	-	0	1,873	-	0	1,873
Ash	0.00%	0	82	0.00%	0	82	0.00%	0	82	0.00%	0	82	0.00%	0	82	0.00%	0	82
Treated Medical Waste	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%	0	0
Bulky Items	0.00%	0	1,644	0.50%	8	1,636	0.00%	0	1,636	0.00%	0	1,636	0.00%	0	1,636	0.00%	0	1,636
Tires	0.00%	0	128	0.00%	0	128	0.00%	0	128	0.00%	0	128	0.00%	0	128	0.00%	0	128
Remainder/Composite Special Waste	0.00%	0	28	0.00%	0	28	0.00%	0	28</									

**Commercial Sector
Diversion Estimates**

Tons Disposed (Source Tab: Tonnage Data)	Medium-to-Long Term						Total Tons Diverted	Resulting Disposal Tonnage
	22. Recycling in Public Areas			25. C&D Diversion Requirements				
	Percent Diverted from Sector	Tons Diverted	Resulting Tonnage	Percent Diverted from Sector	Tons Diverted	Resulting Tonnage		
Uncoated Corrugated Cardboard	-	200	6,915	-	0	6,915	4,930	6,915
Paper Bags	5.00%	123	2,343	0.00%	0	2,343	2,068	2,343
Newspaper	5.00%	5	86	0.00%	0	86	60	86
White Ledger Paper	5.00%	17	323	0.00%	0	323	224	323
Other Office Paper	5.00%	20	383	0.00%	0	383	265	383
Magazines and Catalogs	5.00%	24	463	0.00%	0	463	320	463
Phone Books and Directories	5.00%	10	195	0.00%	0	195	135	195
Other Miscellaneous Paper	0.00%	0	15	0.00%	0	15	9	15
Remainder/Composite Paper	0.00%	0	836	0.00%	0	836	507	836
	0.00%	0	2,271	0.00%	0	2,271	1,343	2,271
Glass	-	14	394	-	0	394	312	394
Clear Glass Bottles and Containers	5.00%	8	146	0.00%	0	146	129	146
Green Glass Bottles and Containers	5.00%	2	37	0.00%	0	37	33	37
Brown Glass Bottles and Containers	5.00%	5	91	0.00%	0	91	80	91
Other Glass Colored Bottles and Containers	0.00%	0	11	0.00%	0	11	7	11
Flat Glass	0.00%	0	7	0.00%	0	7	4	7
Remainder/Composite Glass	0.00%	0	101	0.00%	0	101	60	101
Metals	-	2	1,600	-	0	1,600	959	1,600
Tin/Steel Cans	0.00%	0	231	0.00%	0	231	140	231
Major Appliances	0.00%	0	48	0.00%	0	48	28	48
Used Oil Filters	0.00%	0	0	0.00%	0	0	0	0
Other Ferrous	0.00%	0	559	0.00%	0	559	330	559
Aluminum Cans	5.00%	2	31	0.00%	0	31	28	31
Other Non-Ferrous	0.00%	0	93	0.00%	0	93	55	93
Remainder/Composite Metal	0.00%	0	638	0.00%	0	638	377	638
Electronics	-	0	39	-	0	39	23	16
Brown Goods	0.00%	0	28	0.00%	0	28	17	11
Computer-related Electronics	0.00%	0	0	0.00%	0	0	0	0
Other Small Consumer Electronics	0.00%	0	11	0.00%	0	11	7	5
Video Display Devices	0.00%	0	0	0.00%	0	0	0	0
Plastics	-	15	3,846	-	0	3,846	2,363	3,846
PETE Containers	5.00%	8	156	0.00%	0	156	137	156
HDPE Containers	5.00%	7	135	0.00%	0	135	93	135
Miscellaneous Plastic Containers	0.00%	0	162	0.00%	0	162	124	162
Plastic Trash Bags	0.00%	0	469	0.00%	0	469	278	469
Plastic Grocery and Other Merchandise Bags	0.00%	0	94	0.00%	0	94	56	94
Non-Bag Commercial and Industrial Packaging Film	0.00%	0	319	0.00%	0	319	189	319
Film Products	0.00%	0	86	0.00%	0	86	52	86
Other Film	0.00%	0	597	0.00%	0	597	353	597
Durable Plastic Items	0.00%	0	619	0.00%	0	619	366	619
Remainder/Composite Plastic	0.00%	0	1,209	0.00%	0	1,209	716	1,209
Other Organic	-	0	16,331	-	0	16,331	2,487	16,331
Food	0.00%	0	7,646	0.00%	0	7,646	1,380	7,646
Leaves and Grass	0.00%	0	1,299	0.00%	0	1,299	174	1,299
Prunings and Trimmings	0.00%	0	2,197	0.00%	0	2,197	294	2,197
Branches and Stumps	0.00%	0	384	0.00%	0	384	51	384
Manures	0.00%	0	0	0.00%	0	0	0	0
Textiles	0.00%	0	557	0.00%	0	557	68	557
Carpet	0.00%	0	2,629	0.00%	0	2,629	322	2,629
Remainder/Composite Organic	0.00%	0	1,619	0.00%	0	1,619	198	1,619
Inerts and Other	-	0	14,846	-	3,711	11,134	5,458	11,134
Concrete	0.00%	0	396	25.00%	99	297	143	297
Asphalt Paving	0.00%	0	0	25.00%	0	0	0	0
Asphalt Roofing	0.00%	0	1,235	25.00%	309	926	446	926
Lumber	0.00%	0	8,660	25.00%	2,165	6,495	3,224	6,495
Gypsum Board	0.00%	0	927	25.00%	232	696	335	696
Rock, Soil and Fines	0.00%	0	837	25.00%	209	628	302	628
Remainder/Composite Inerts and Other	0.00%	0	2,790	25.00%	698	2,093	1,008	2,093
HHW	-	0	149	-	0	149	36	149
Paint	0.00%	0	142	0.00%	0	142	16	142
Vehicle & Equipment Fluids	0.00%	0	0	0.00%	0	0	0	0
Used Oil	0.00%	0	0	0.00%	0	0	0	0
Batteries	0.00%	0	2	0.00%	0	2	4	2
Remainder/Composite Household Hazardous	0.00%	0	6	0.00%	0	6	16	6
Special Waste	-	0	1,873	-	0	1,873	217	1,873
Ash	0.00%	0	82	0.00%	0	82	9	82
Treated Medical Waste	0.00%	0	0	0.00%	0	0	0	0
Bulky Items	0.00%	0	1,636	0.00%	0	1,636	191	1,636
Tires	0.00%	0	128	0.00%	0	128	14	128
Remainder/Composite Special Waste	0.00%	0	28	0.00%	0	28	3	28
Mixed Residue	-	0	2	-	0	2	0	2
Mixed Residue	0.00%	0	2	0.00%	0	2	0	2
TOTAL	0.20%	231	45,995	3.19%	3,711	42,284	16,785	42,261

APPENDIX D GREENHOUSE GAS EMISSIONS CALCULATIONS

APPENDIX E PUBLIC PARTICIPATION

PUBLIC PARTICIPATION

February Workshops

The first two Zero Waste workshops were held on February 2, 2012, including a morning workshop focusing on businesses and an evening workshop focusing on residents and the community in general. At these initial workshops, the concept of Zero Waste was introduced and an overview was provided on the City's Zero Waste Goal and the existing programs that contribute to Pasadena's diversion accomplishments. The presentation portion concluded with case studies of businesses and communities that have implemented Zero Waste strategies. The workshops continued with breakout sessions where stakeholders were given the opportunity to provide their thoughts on Zero Waste, the City's efforts, and where they think the City should concentrate in order to reach its Zero Waste goals.

The results of the stakeholder input/brainstorming from these workshops are included in the following pages, organized according to the main areas that were discussed by residents and businesses.

Economics

- Identify the costs and impacts to implementing the Zero Waste Plan
- Provide information on how reducing waste and recycling minimizes costs incurred by a business (at the very least, consider a no-cost alternative as part of the study)
- Explore if the City's general fund can be used to finance social responsibility investments
- Create financial incentives to get to Zero Waste
- Research increasing the cost variance of the Pay-As-You-Throw system to create more incentives
- Minimize or eliminate the financial burden of the plan onto businesses (Note: Any costs should be appropriated amongst the user groups. This may mean higher costs for residents, especially when subsidies from the commercial sector are removed.)
- Explore incentives to expand recycling market development zones (i.e., program combines recycling with economic development to fuel new businesses, expand existing ones, create jobs, and divert waste from landfills)
- Minimize the financial barrier of the franchise fee

City Programs/Management

- Identify how the Zero Waste Plan will be implemented and how the City will provide the personnel and oversight
- Examine ways to encourage construction, recycling, and reuse centers to do business in Pasadena
- Create incentives that encourage businesses to get to Zero Waste
- Provide a list of local recycling centers and green businesses to assist consumers on where to recycle and shop locally and responsibly
- Make information on the City's recycling program website easier to find and provide information on what is recyclable and compostable
- Implement mandatory recycling and composting to get to Zero Waste
- Characterize commercial and residential waste and share the results with the community

- Engage and explore partnerships with other City of Pasadena facilities (i.e., Pasadena Water and Power), colleges, universities, and neighboring cities and mayors
- Expand the recognition program for businesses who are achieving Zero Waste (Green City Awards)
- Research and provide information on Zero Waste best practices nationally and internationally
- Organize a working group made up of professionals, environmentalists and business owners to examine, consider and make recommendations on the Zero Waste initiative before any program is considered for implementation (Note: The group should be equally made up of representatives from various constituencies.)

Yard Trimmings & Other Compostable Materials

- Eliminate the use of yard trimmings as alternative daily cover (ADC) in landfills as the materials are not being composted
- Strong support for compostable materials collection infrastructure from residents and businesses
- Research opportunities to compost, such as partnering with other communities or investing in an anaerobic digestion facility
- Investigate the viability of a mandate requiring grocery stores to divert outdated or leftover food from the dumpsters
- Consider space needs for food scraps collection, health and cleanliness standards, transportation and staff time to oversee and implement the program

Extended Producer Responsibility (EPR)

- Concern that the cost of EPR is levied onto the consumers
- Research upstream policies for packaging
- Encourage manufacturers of packaging and products to adopt EPR principles (e.g., Avery-Dennison is a Pasadena-based corporation; collaborate with corporation headquarters.)
- Implement more EPR policies, such as a pharmaceutical take-back program

Regulations & Policies

- Ensure regulations are compatible and effective so programs are attainable and viable
- Provide information on Assembly Bill (AB) 341 to address recycling for businesses and multifamily complexes (Note: California Assembly Bill 341(Statutes of 2011) requires all commercial generators with four cubic yards or more of solid waste collection per week and all multifamily buildings with five units or more to recycle.)
- Interest in bans of products like polystyrene or juice boxes
- Align program goals with the Renewable Portfolio Standards and State standards

Educational Outreach

- Share and promote resources available to the community (e.g., Trash 4 Teachers, Repurpose, Free Cycle, etc.)
- Provide information on green washing so educated sustainable purchases can be made (e.g., SF approved.com)

- Support and provide outreach for reuse opportunities
- Start with educating students on recycling, composting, and reuse
- Advertise events, programs, and information through KPCC, local radio, media, newsletters, door-to-door promotions, and Mayor Public Service Announcements
- Use social media including: YouTube, Facebook, and Twitter to share information
- Publish the names of green businesses located within Pasadena to increase recognition
- Promote Reduce, Reuse, Recycle, and Re-purpose
- Use LEED certification as an incentive; currently it is a disincentive and creates hurdles (Note: “LEED” stands for Leadership in Energy and Environmental Design, a program of the U.S. Green Building Council.)

General

- Research conversion technologies such as anaerobic digestion or waste-to-energy
- Research alternatives to plastics and Styrofoam
- Include reuse as part of the Zero Waste Plan
- Identify interim goals (e.g., 5 years) to reach Zero Waste before 2040
- Remove barriers rather than impose rules
- Ensure that members of the City Council are present in the stakeholder process

May Workshops

The second series of workshops were held on May 24, 2012. Using a format similar to the February workshops, the morning presentation focused on the business sector and the evening workshop was geared towards residents and the community in general. These workshops presented questions and input from the February workshops, details on the types and quantities of materials generated by residents and businesses in Pasadena, and thoughts on potential Zero Waste policies, programs, and infrastructure. The workshops concluded with breakout sessions where attendees were given the opportunity to provide their comments and input on some potential policies, programs, and infrastructure options. The results of the stakeholder input from these workshops are included below, organized according to the main areas that were discussed by residents and businesses.

Economics

- Demonstrate how businesses can achieve cost savings and identify cost-neutral options that increase recycling and compostable materials collection
- Phase-in the program to demonstrate cost neutrality
- Examine creative ways to restructure rates to incentivize recycling and composting (e.g., Pasadena Water and Power solar and energy incentives)
- Create incentives so revenues are generated to fund programs
- Apply for grants to establish and fund programs
- Provide subsidies for pilot projects to demonstrate costs and ease of implementation
- Phase-in program subsidies; first year is full subsidy and wean the second and third years

- Require or develop financial incentives for higher diversion rate from Material Recovery Facilities (MRFs)

City Programs/Management

- Incentivize diversion for franchised haulers (i.e., fee reduction for recycling more or increase fee on waste disposed in the landfill)
- Create interim goals in the Zero Waste Plan, such as 80 percent by 2020, 85 percent by 2030, and 90 percent by 2040
- Identify synergies between programs, business groups, charities, colleges, environmental organizations, etc.
- Develop a program for food scraps, compostable materials, and reusable items
- Encourage franchised haulers to provide lockable bins to minimize scavenging
- Provide “milk-run” pickups from retail locations, libraries, senior centers, etc. for recyclables or hard to recycle items
- Determine which programs work in other franchised cities and whether those programs would be useful as part of Pasadena’s Zero Waste Plan
- Phase-in new programs as infrastructure becomes available
- Implement the Zero Waste Plan through a phased-in approach
- Help organize business and charity mixers to encourage donations and tax write-offs
- Develop multifamily recycling requirements and source separation programs versus haulers “dirty MRFin” the materials (processing mixed waste through a mixed waste Material Recovery Facility)
- Place water bottle refill stations throughout the City and parks
- Develop a program to collect aseptic items so they are sent to the right mills

Yard Trimmings & Other Compostable Materials

- Factor in costs and logistics in developing a commercial composting facility locally or regionally
- Determine the costs to businesses in establishing a food waste collection program
- Establish exclusive franchise zones to collect compostable materials
- Host mobile events for chipping and grinding yard trimmings
- Create a permanent mulch give-away program that is free to all Pasadena residents
- Add food scraps to green bin program
- Make recycling and compostable materials collection mandatory for residents
- Plan for a composting facility for City generated yard trimmings

Policy and Extended Producer Responsibility (EPR)

- Establish voluntary take-back programs before making them mandatory
- Work with businesses to incentivize participation in an EPR and take-back program
- Partner with universal waste suppliers to provide clear labeling on how to dispose of items
- Support statewide bans and EPR legislation because Pasadena is not an island
- Develop policy for businesses to require using recyclable and compostable products

Educational Outreach

- Provide information on AB 341 to businesses and multifamily complexes
- Expand outreach and education to neighborhood associations, homeowner associations, Pasadena City College, college staff and students, and attendees at City events and meetings
- Focus Zero Waste outreach activities to college and high school students that belong to sustainability clubs
- Research the cost and possibility of using lockable bins to minimize scavenging
- Examine various behavioral change marketing approaches that increase recycling participation
- Brand the Zero Waste program
- Provide residents with more clearly labeled bins that explain what goes in the blue and green bins
- Increase the recycling image of the City by placing clearly labeled recycling bins on City streets and parks
 - Provide Information on how to recycle ink toner cartridges, batteries, and fluorescent bulbs
 - Publicize/model successful Zero Waste businesses to increase peer pressure
 - Delineate what is compostable and recyclable
 - Correctly define gypsum as it's not truly "inert"
 - Make school education a higher priority
 - Examine all the ways to educate children on recycling at home, school, playgrounds, and parks
 - Provide technical assistance for businesses
 - Incorporate additional outreach approaches including door-to-door outreach and personal connections
 - Develop a program that focuses on positive reinforcement
 - Develop competitions to increase participation
 - Provide information on AB 341 and make businesses aware that they are in compliance through the franchise agreement
 - Direct haulers to provide training and bins for services they provide

August Workshop

Based on the input from the stakeholders at the February and May workshops, the City conducted an analysis of the policies and programs to estimate their diversion potential, greenhouse gas emissions reduction potential, and feasibility of implementation. The preliminary findings and draft plan elements were presented to the stakeholders at an all day workshop and open house held on August 22, 2012. The open house format for this workshop allowed residents, representatives from local businesses, business associations, and other community members to attend at a time convenient for them and enabled one-on-one interface with the project team. Posters displayed in the room presented information on the following draft plan elements:

Guiding Principles - The guiding principles introduced to the workshop attendees were developed by the City and incorporated the City's Zero Waste goals, the City's Green City Action Plan and input from previous stakeholder workshops:

1. Develop sustainable policies and programs that are equitable, environmentally responsible, and economically sound
2. Maintain Pasadena's position as a leader in innovation and a role model in resource management

3. Pursue “upstream” strategies that prevent and reduce waste and encourage the transition from a consuming to a conserving society
4. Improve “downstream” reuse and recycling programs to ensure the highest and best use of end-of-life products and materials
5. Lead by example at all City operations and City-sponsored events and activities
6. Increase the diversion of compostable materials and promote development of local infrastructure

These guiding principles provide a framework for the policies, programs and actions to be implemented as part of the plan.

Policy, Program, and Facility Options -The potential policies, programs, and facilities the City is considering for implementation in the Zero Waste Plan were displayed on a series of posters in the workshop venue. The options were broken out by implementation schedule as follows:

- Short-term
- Short to medium-term
- Medium to long-term

Attendees were able to ask questions and also to provide feedback on the potential options.

Estimated Diversion Potential and Greenhouse Gas Emission Reductions - The diversion potential of each of the options was calculated based on the types and quantities of materials disposed and the potential for the option to divert some of the disposed materials from landfilling or transformation. The diversion potential of the options was grouped by the generator type (residential, commercial, and self-haul). In direct relation to the diversion potential of each option is the potential for reducing greenhouse gas emissions. These potential results were also displayed for the stakeholders and they were explained by the project team.

Stakeholder Survey - In addition to attending the final workshop, interested community members and stakeholders were also given the opportunity to complete a survey on the City’s Zero Waste Plan. The Zero Waste survey solicited input on 25 ideas for possible programs, policies, and infrastructure identified during the community workshops. Information about the survey and a link to the survey were posted on the City’s website. The input received was incorporated into the plan. The survey input is included at the end of this section.



Overall Survey Results: Zero Waste Survey

Text Block:

Imagine a Pasadena 30 years from now that produces no garbage and recycles/reuses all that we throw away. The City of Pasadena invites residents and businesses to help develop the Zero Waste Strategic Plan. Your input is valuable as we move toward the City's ambitious goal to achieve Zero Waste by 2040. In 2006, the Pasadena City Council adopted the United Nations Green Cities declaration and Urban Environmental Accords, which provides the framework for the Green City Action Plan. Achieving Zero Waste by 2040 is one of the Urban Environmental Accord Actions. The Zero Waste Strategic Plan is a first step to reaching this goal. Please provide your input on 23 ideas for possible programs, policies, and infrastructure suggested by businesses and residents during recent community workshops. Please complete the Zero Waste Survey by October 8, 2012. Results of the Zero Waste Survey will be available on the City's Zero Waste webpage on October 22, 2012.

Text Block:

POLICY OPTIONS

Are you in favor of the City adopting a Zero Waste policy that formalizes the

City's commitment to achieving Zero Waste by 2040?

1 = Strongly Agree , 2 = Agree , 3 = Neutral , 4 = Disagree , 5 = Strongly Disagree

1	2	3	4	5	Number of Responses	Rating Score*
					45	1.5

*The Rating Score is the weighted average calculated by dividing the sum of all weighted ratings by the number of total responses.

[▶ Show Details](#)

Do you support the expansion of recycling efforts at City facilities to serve as a model for the whole City?

1 = Strongly Agree , 2 = Agree , 3 = Neutral , 4 = Disagree , 5 = Strongly Disagree

1	2	3	4	5	Number of Responses	Rating Score*
					45	1.4

*The Rating Score is the weighted average calculated by dividing the sum of all weighted ratings by the number of total responses.

[▶ Show Details](#)

Private waste haulers provide waste collection services to apartment units and commercial customers throughout the City. Would you support the City evaluating incentive programs for haulers to increase recycling at the commercial buildings?

1 = Strongly Agree , 2 = Agree , 3 = Neutral , 4 = Disagree , 5 = Strongly Disagree

1	2	3	4	5	Number of Responses	Rating Score*
					45	1.4

*The Rating Score is the weighted average calculated by dividing the sum of all weighted ratings by the number of total responses.

[▶ Show Details](#)

Do you support the City evaluating the current residential curbside recycling program, to identify opportunities to improve recycling and try to incorporate incentives into the rate structure

1 = Strongly Agree , 2 = Agree , 3 = Neutral , 4 = Disagree , 5 = Strongly Disagree

1	2	3	4	5	Number of Responses	Rating Score*
					44	1.3

*The Rating Score is the weighted average calculated by dividing the sum of all weighted ratings by the number of total responses.

[▶ Show Details](#)

Do you support the City requiring manufacturers to take-back their products?

1 = Strongly Agree , 2 = Agree , 3 = Neutral , 4 = Disagree , 5 = Strongly Disagree

					Number of	Rating

1	2	3	4	5	Responses	Score*
					41	1.9

*The Rating Score is the weighted average calculated by dividing the sum of all weighted ratings by the number of total responses.

[▶ Show Details](#)

Do you support the City educating residents about sustainable purchasing practices?

1 = Strongly Agree , 2 = Agree , 3 = Neutral , 4 = Disagree , 5 = Strongly Disagree

1	2	3	4	5	Number of Responses	Rating Score*
					44	1.5

*The Rating Score is the weighted average calculated by dividing the sum of all weighted ratings by the number of total responses.

[▶ Show Details](#)

Many residents have expressed their concern over scavengers that rummage through trash and recycling containers when they are placed at the curb for collection. Do you support the City increasing enforcement of the anti-scavenging ordinance?

1 = Strongly Agree , 2 = Agree , 3 = Neutral , 4 = Disagree , 5 = Strongly Disagree

1	2	3	4	5	Number of Responses	Rating Score*
					45	2.6

*The Rating Score is the weighted average calculated by dividing the sum of all weighted ratings by the number of total responses.

[▶ Show Details](#)

Do you support the City targeting specific, hard to recycle materials in the residential and commercial trash (i.e. plastic bags, Styrofoam food packaging) that could be banned from use?

1 = Strongly Agree , 2 = Agree , 3 = Neutral , 4 = Disagree , 5 = Strongly Disagree

1	2	3	4	5	Number of Responses	Rating Score*
					45	1.9

*The Rating Score is the weighted average calculated by dividing the sum of all weighted ratings by the number of total responses.

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Trash hauled by self-haulers to the landfill is a significant portion of the City's total waste. Do you support the City working to improve accuracy of self-haul waste reporting? Accurate waste reporting will be vital in tracking the City's progress toward achieving Zero Waste.

1 = Strongly Agree , 2 = Agree , 3 = Neutral , 4 = Disagree , 5 = Strongly Disagree

1	2	3	4	5	Number of Responses	Rating Score*
					44	2.0

*The Rating Score is the weighted average calculated by dividing the sum of all weighted ratings by the number of total responses.

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Do you support the City requiring separate recycling bins at apartment and commercial units?

1 = Strongly Agree , 2 = Agree , 3 = Neutral , 4 = Disagree , 5 = Strongly Disagree

1	2	3	4	5	Number of Responses	Rating Score*
					44	1.4

*The Rating Score is the weighted average calculated by dividing the sum of all weighted ratings by the number of total responses.

[▶ Show Details](#)

Text Block:

PROGRAM OPTIONS

Do you support the City providing a residential food waste recycling program?

1 = Strongly Agree , 2 = Agree , 3 = Neutral , 4 = Disagree , 5 = Strongly Disagree

1	2	3	4	5	Number of Responses	Rating Score*
					45	1.7

*The Rating Score is the weighted average calculated by dividing the sum of all weighted ratings by the number of total responses.

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Do you support the City pursuing a food waste recycling program for restaurants, supermarkets and other businesses that generate high volume of food scraps?

1 = Strongly Agree , 2 = Agree , 3 = Neutral , 4 = Disagree , 5 = Strongly Disagree

1	2	3	4	5	Number of Responses	Rating Score*
					45	1.4

*The Rating Score is the weighted average calculated by dividing the sum of all weighted ratings by the number of total responses.

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Do you support the City pursuing a food waste recycling program at stadiums and other large venues and events?

1 = Strongly Agree , 2 = Agree , 3 = Neutral , 4 = Disagree , 5 = Strongly Disagree

1	2	3	4	5	Number of Responses	Rating Score*
					43	1.3

*The Rating Score is the weighted average calculated by dividing the sum of all weighted ratings by the number of total responses.

responses.

[▶ Show Details](#)

Do you support the City increasing educational outreach on recycling program, and establishing a regular schedule for updates, circulation, and announcements?

1 = Strongly Agree , 2 = Agree , 3 = Neutral , 4 = Disagree , 5 = Strongly Disagree

1	2	3	4	5	Number of Responses	Rating Score*
					45	1.6

*The Rating Score is the weighted average calculated by dividing the sum of all weighted ratings by the number of total responses.

[▶ Show Details](#)

Do you support the City's efforts to recognize local green businesses through an awards program to increase the awareness of the businesses achievements?

1 = Strongly Agree , 2 = Agree , 3 = Neutral , 4 = Disagree , 5 = Strongly Disagree

1	2	3	4	5	Number of Responses	Rating Score*
					43	1.6

*The Rating Score is the weighted average calculated by dividing the sum of all weighted ratings by the number of total responses.

[▶ Show Details](#)

Do you support the City offering free technical assistance to businesses to help commercial customers achieve Zero Waste through recycling/reuse, and composting?

1 = Strongly Agree , 2 = Agree , 3 = Neutral , 4 = Disagree , 5 = Strongly Disagree

1	2	3	4	5	Number of Responses	Rating Score*
					45	1.4

*The Rating Score is the weighted average calculated by dividing the sum of all weighted ratings by the number of total responses.

[▶ Show Details](#)

Would you use an online service to help reduce/stop junk mail?

1 = Strongly Agree , 2 = Agree , 3 = Neutral , 4 = Disagree , 5 = Strongly Disagree

1	2	3	4	5	Number of Responses	Rating Score*
					45	1.4

*The Rating Score is the weighted average calculated by dividing the sum of all weighted ratings by the number of total responses.

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The City require private waste haulers to recycle a minimum of 60 percent of the waste they collect. Do you support the City establishing incentives for hauler's to exceed

recycling requirements?

1 = Strongly Agree , 2 = Agree , 3 = Neutral , 4 = Disagree , 5 = Strongly Disagree

1	2	3	4	5	Number of Responses	Rating Score*
					44	1.8

*The Rating Score is the weighted average calculated by dividing the sum of all weighted ratings by the number of total responses.

[▶ Show Details](#)

Do you support the City helping to support school recycling programs at schools to increase youth recycling awareness?

1 = Strongly Agree , 2 = Agree , 3 = Neutral , 4 = Disagree , 5 = Strongly Disagree

1	2	3	4	5	Number of Responses	Rating Score*
					45	1.4

*The Rating Score is the weighted average calculated by dividing the sum of all weighted ratings by the number of total responses.

[▶ Show Details](#)

Do you support the City providing recycling collection containers in public places throughout the City?

1 = Strongly Agree , 2 = Agree , 3 = Neutral , 4 = Disagree , 5 = Strongly Disagree

1	2	3	4	5	Number of Responses	Rating Score*
					45	1.5

*The Rating Score is the weighted average calculated by dividing the sum of all weighted ratings by the number of total responses.

[▶ Show Details](#)

Text Block:

INFRASTRUCTURE OPTIONS

Do you support the City supporting the development of regional organics (i.e. food scraps, yard trimmings, soiled paper) composting facilities in partnership with neighboring cities?

1 = Strongly Agree , 2 = Agree , 3 = Neutral , 4 = Disagree , 5 = Strongly Disagree

1	2	3	4	5	Number of Responses	Rating Score*
					43	1.5

*The Rating Score is the weighted average calculated by dividing the sum of all weighted ratings by the number of total responses.

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Recycling facilities generate a certain amount of residual waste material that cannot be easily recycled. Do you support the City pursuing the development of residual waste recycling facilities in partnership with neighboring cities?

1 = Strongly Agree , 2 = Agree , 3 = Neutral , 4 = Disagree , 5 = Strongly Disagree

1	2	3	4	5	Number of Responses	Rating Score*
					42	1.5

*The Rating Score is the weighted average calculated by dividing the sum of all weighted ratings by the number of total responses.

[▶ Show Details](#)

Do you support the City establishing a permanent household hazardous waste (i.e. paints, chemicals, e-waste) collection program within the City limits?

1 = Strongly Agree , 2 = Agree , 3 = Neutral , 4 = Disagree , 5 = Strongly Disagree

1	2	3	4	5	Number of Responses	Rating Score*
					44	1.6

*The Rating Score is the weighted average calculated by dividing the sum of all weighted ratings by the number of total responses.

[▶ Show Details](#)

Do you have interest in regular document shredding services?

1 = Strongly Agree , 2 = Agree , 3 = Neutral , 4 = Disagree , 5 = Strongly Disagree

1	2	3	4	5	Number of Responses	Rating Score*
					44	2.6

*The Rating Score is the weighted average calculated by dividing the sum of all weighted ratings by the number of total responses.

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If you have experienced construction projects do you have any suggestions for improving the Construction and Demolition (C&D) recycling Program?

Number of Responses

8

Additional policies not included above (list below)

Number of Responses

5

Personal Information - Optional

Answer	Number of Responses
First Name	20
Last Name	19
Job Title	12
Company Name	12
Work Phone	11
Email Address	18
Address 1	12
City	17
State/Province (US/Canada)	19
Postal Code	20

APPENDIX F OPTIONS EVALUATION

EVALUATION OF POLICY, PROGRAM AND INFRASTRUCTURE OPTIONS

Evaluation Process

A list of criteria was established to review the policy, program and infrastructure options under consideration by the City. The criteria categories included environmental benefits, impact on services, ability to implement, support of local and state policies, and fiscal impacts. For each category, definitions were established to assist the evaluation of the options. The criteria and definitions are included in **Table F-1**.

Table F-1
Evaluation Criteria

A	Environmental Benefits to the Community	Maximum Points
1	Considers the highest and best use of materials	10
2	Reduces greenhouse gas emissions	
3	Supports new, safe technologies and processes for infrastructure	
4	Protects public health and the environment	
5	Implements sustainable policies and programs	
B	Impact on Services	
1	Improves collection and recycling programs for residents and businesses	6
2	Improves opportunities for recycling and proper management of mixed waste	
3	Improves City operations and City sponsored events	
C	Ability to Implement	
1	Can be implemented using existing, local infrastructure	4
2	Can be implemented using existing services	
D	Support Local and State Policies	
1	Increases diversion to achieve Zero Waste by 2040, in support of the City's Urban Environmental Accords, Action 4	6
2	Expands Extended Producer Responsibility (EPR) efforts in support of the City's existing EPR resolution	
3	Supports 75 percent state-wide recycling goal	
E	Fiscal Impacts	
1	Minimizes impact on customer rates and provides rate equity	8
2	Minimizes impact on City's revenue streams	
3	Minimizes contract management and enforcement costs for programs	
4	Invests in green jobs and economic development	

Using the criteria, the scoring was conducted by City staff and a ranking of the list of options was established. The results of the scoring and ranking are included at the end of this section. As indicated in the scoring results, Option 3, identification of potential improvements to the franchised hauler system, and Option 23, establishment of a permanent household hazardous waste (HHW) program, both scored considerable lower than the other options. These two options were eliminated from the recommended future programs to be implemented.

POLICIES, PROGRAM AND INFRASTRUCTURE OPTIONS		Point Scale: Yes = 2; Somewhat = 1; No = 0; Not Applicable = NA																							
		CATEGORY	A. Environmental Benefits to the Community						B. Impact on Services				C. Ability to Implement			Support Local and State Mandate				E. Fiscal Impacts					
	Criteria	A1	A2	A3	A4	A5	Subtotal	B1	B2	B3	Subtotal	C1	C2	Subtotal	D1	D2	D3	Subtotal	E1	E2	E3	E4	Subtotal	TOTAL	
POLICIES																									
1	Adopt Zero Waste policy that establishes the City's commitment to achieving ZW by 2040	2.0	2.0	2.0	2.0	2.0	10.0	2.0	2.0	2.0	6.0	1.0	2.0	3.0	2.0	2.0	2.0	6.0	1.0	1.0	1.0	2.0	5.0	30.0	
2	Expand waste reduction, reuse, and recycling at all City facilities, to establish consistent waste reduction, recycling and composting programs to serve as a model for the whole City	2.0	2.0	2.0	2.0	2.0	10.0	2.0	2.0	2.0	6.0	2.0	2.0	4.0	2.0	2.0	2.0	6.0	0.0	0.0	2.0	2.0	4.0	30.0	
3	Identify potential improvements to the franchise waste hauler fee system streamline administering the program without adversely impacting rate payers or service providers	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	6.0	
4	Evaluate the C&D diversion requirements for haulers and covered projects to improve consistency and diversion opportunities	2.0	2.0	2.0	2.0	2.0	10.0	2.0	2.0	2.0	6.0	2.0	2.0	4.0	2.0	0.0	2.0	4.0	0.0	0.0	0.0	2.0	2.0	26.0	
5	Evaluate the current residential curbside collection system, to identify opportunities to improve recycling and incorporate incentives into the rate structure	2.0	2.0	2.0	2.0	2.0	10.0	2.0	2.0	2.0	6.0	2.0	2.0	4.0	2.0	0.0	2.0	4.0	2.0	2.0	2.0	2.0	8.0	32.0	
6	Implement producer take-back requirements of products and packaging and educate consumers on sustainable purchasing practices	2.0	2.0	2.0	2.0	2.0	10.0	2.0	2.0	2.0	6.0	2.0	2.0	4.0	2.0	2.0	2.0	6.0	2.0	2.0	2.0	2.0	8.0	34.0	
7	Enhance enforcement of the existing anti-scavenging policy in order to reduce loss of recyclables and potentially increase the revenue generated from the recyclables collected curbside	2.0	1.0	1.0	2.0	1.0	7.0	2.0	2.0	2.0	6.0	2.0	2.0	4.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	2.0	6.0	23.0	
8	Target specific materials in the disposed waste stream that could be banned from sale, distribution or disposal	2.0	2.0	2.0	2.0	2.0	10.0	2.0	2.0	2.0	6.0	2.0	2.0	4.0	2.0	2.0	2.0	6.0	2.0	2.0	2.0	2.0	8.0	34.0	
9	Partner with neighboring jurisdictions to improve the accuracy of self-haul waste reporting.	1.0	2.0	2.0	2.0	2.0	9.0	2.0	2.0	0.0	4.0	2.0	2.0	4.0	2.0	0.0	2.0	4.0	0.0	2.0	2.0	0.0	4.0	25.0	
10	Implement a mandatory source separated commercial recycling policy for all commercial and multifamily generators	2.0	2.0	2.0	2.0	2.0	10.0	1.0	2.0	2.0	5.0	2.0	2.0	4.0	2.0	1.0	2.0	5.0	2.0	2.0	0.0	2.0	6.0	30.0	
PROGRAMS																									
11	Implement a pilot residential food scraps recycling program for potential City wide implementation	2.0	2.0	2.0	2.0	2.0	10.0	2.0	2.0	2.0	6.0	1.0	1.0	2.0	2.0	2.0	2.0	6.0	0.0	0.0	0.0	2.0	2.0	26.0	
12	Implement a pilot food scraps recycling program for restaurants, supermarkets and other businesses that generate high volume of food scraps for potential City wide implementation	2.0	2.0	2.0	2.0	2.0	10.0	2.0	2.0	1.0	5.0	1.0	1.0	2.0	2.0	2.0	2.0	6.0	0.0	0.0	0.0	2.0	2.0	25.0	
13	Implement mandatory food waste recycling program at stadiums and other large venues and events	2.0	2.0	2.0	2.0	2.0	10.0	0.0	2.0	0.0	2.0	2.0	2.0	4.0	2.0	2.0	2.0	6.0	0.0	0.0	0.0	2.0	2.0	24.0	
14	Increase educational outreach on waste reduction and recycling and establish a regular schedule for updates, circulation, and announcements	2.0	2.0	2.0	2.0	2.0	10.0	2.0	2.0	2.0	6.0	2.0	2.0	4.0	2.0	2.0	2.0	6.0	2.0	2.0	2.0	2.0	8.0	34.0	
15	Expand the visibility of local green businesses to increase the awareness of their achievements	2.0	2.0	2.0	2.0	2.0	10.0	2.0	2.0	0.0	4.0	2.0	2.0	4.0	2.0	2.0	2.0	6.0	2.0	2.0	2.0	2.0	8.0	32.0	
16	Offer free technical assistance to businesses to help them achieve Zero Waste through reuse, recycling, and composting	2.0	2.0	2.0	2.0	2.0	10.0	2.0	2.0	0.0	4.0	2.0	2.0	4.0	2.0	2.0	2.0	6.0	2.0	2.0	2.0	2.0	8.0	32.0	
17	Assist residents to reduce their junk mail by promoting the utilization of the tools on the City's website	2.0	2.0	2.0	2.0	2.0	10.0	2.0	2.0	2.0	6.0	2.0	2.0	4.0	2.0	2.0	2.0	6.0	2.0	2.0	2.0	2.0	8.0	34.0	
18	Establish incentives for hauler that exceed recycling requirements	1.0	2.0	2.0	1.0	2.0	8.0	2.0	2.0	0.0	4.0	2.0	2.0	4.0	1.0	0.0	1.0	2.0	0.0	0.0	0.0	2.0	2.0	20.0	
19	Provide school recycling programs at Pasadena Unified School District campuses	2.0	2.0	1.0	2.0	2.0	9.0	2.0	2.0	0.0	4.0	1.0	1.0	2.0	2.0	0.0	2.0	4.0	0.0	2.0	0.0	2.0	4.0	23.0	
20	Provide recycling in public places throughout the City	2.0	2.0	1.0	2.0	2.0	9.0	2.0	2.0	2.0	6.0	1.0	1.0	2.0	2.0	2.0	2.0	6.0	0.0	2.0	0.0	2.0	4.0	27.0	
INFRASTRUCTURE																									
21	Support the development of regional organics processing facilities through partnerships with neighboring cities	2.0	2.0	2.0	2.0	2.0	10.0	2.0	2.0	2.0	6.0	0.0	0.0	0.0	2.0	0.0	2.0	4.0	0.0	2.0	2.0	2.0	6.0	26.0	
22	Pursue the development of residual waste processing facilities through partnerships with neighboring cities	2.0	2.0	2.0	2.0	2.0	10.0	2.0	2.0	2.0	6.0	0.0	0.0	0.0	2.0	0.0	2.0	4.0	0.0	2.0	2.0	2.0	6.0	26.0	
23	Establish a permanent household hazardous waste collection program, either through a permanent facility within the City, or a curbside collection program	0.0	2.0	2.0	2.0	2.0	8.0	0.0	2.0	2.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	2.0	14.0	